LATEX Shelf Data Report

Hydrography
April 1992 through November 1994

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TAMU Oceanography
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1. Introduction

1.1. Background

The Louisiana-Texas Shelf Physical Oceanography Program (LATEX) was supported by the Minerals Management Service (MMS) of the U.S. Department of the Interior. LATEX was divided into three study units; Study Unit A, Texas-Louisiana Shelf Circulation and Transport Processes Study (LATEX A or LATEX Shelf), was conducted by the Texas A&M University System. The LATEX A field program included current mooring measurements, drifting buoys, hydrography, acoustic Doppler current profiling, and meteorological measurements over the Texas-Louisiana continental shelf from the Mississippi River to the Rio Grande. The field program began in mid-April 1992 and concluded in early December 1994. This report covers the data collected as part of the hydrography field component.

This data report consists of the main volume, which describes the surveys and provides information on the methods used for data collection and processing, and ten appendices that present the survey data graphically. The data shown in this report have been submitted in digital form to the National Oceanographic Data Center (NODC), a division of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce; the NODC project number for LATEX A is 0212.

1.2. Objectives

A major task in LATEX A was completion of ten hydrographic surveys over the Texas-Louisiana shelf. The objectives of the LATEX A hydrographic surveys were to

1. characterize the seasonal patterns of water mass characteristics and circulation,
2. study water mass modifications and dynamical processes of circulation over the Texas-Louisiana continental shelf, and
3. assess the annual and interannual variability of the circulation and various water properties.

1.3. Rationale for hydrographic sampling strategy

The original LATEX A hydrographic sampling strategy was specified by the Minerals Management Service in the Request For Proposal for the LATEX A contract. It consisted of 13 surveys of the Texas-Louisiana continental shelf over three years. Figure 1 shows the survey area. One survey was to be conducted in each calendar season: spring, summer, fall, and winter. Each survey was to cover only half of the shelf, with the eastern half covered in field year 1, the middle two quadrants in field year 2, and the western half in field year 3. Each survey was to consist of at least 100 stations.

The eastern half of the shelf was covered on four hydrographic surveys conducted in the first field year, April 1992 through March 1993. Stations were organized into four cross-shelf transects, with three (Lines 1, 3, and 4) adjacent to LATEX A cross-shelf current mooring arrays, a transect along the 50-m isobath at mid-shelf, and a transect along the 200-m isobath at the shelf-edge (Figure 2). Station spacing was selected to provide reasonable sampling of the cross-isobath gradients of water properties. Five kilometer station spacing was chosen for the cross-shelf transects in the coastal boundary layer nearshore and near the shelf-break. Ten kilometer spacing was used for the middle shelf region of the cross-shelf transects. Twenty kilometer spacing was selected for the alongshelf transects. These station spacings approximate the length scales of the first baroclinic Rossby radius of deformation. Further details on the rationale for station spacing can be found in Nowlin et al. (1991).

In winter 1992/93, the data collected from the first LATEX A field year and from climatological data were evaluated. The conclusions were that full-shelf surveys conducted in hydrographic seasons, rather than half-shelf surveys in calendar seasons, would contribute to better understanding of the circulation on the Texas-Louisiana shelf and would provide a substantially improved data set for use in the development, verification, and initialization of shelf models. The major circulation regimes on the Texas-Louisiana shelf are the wind-driven downwelling and downcoast inner-shelf flows

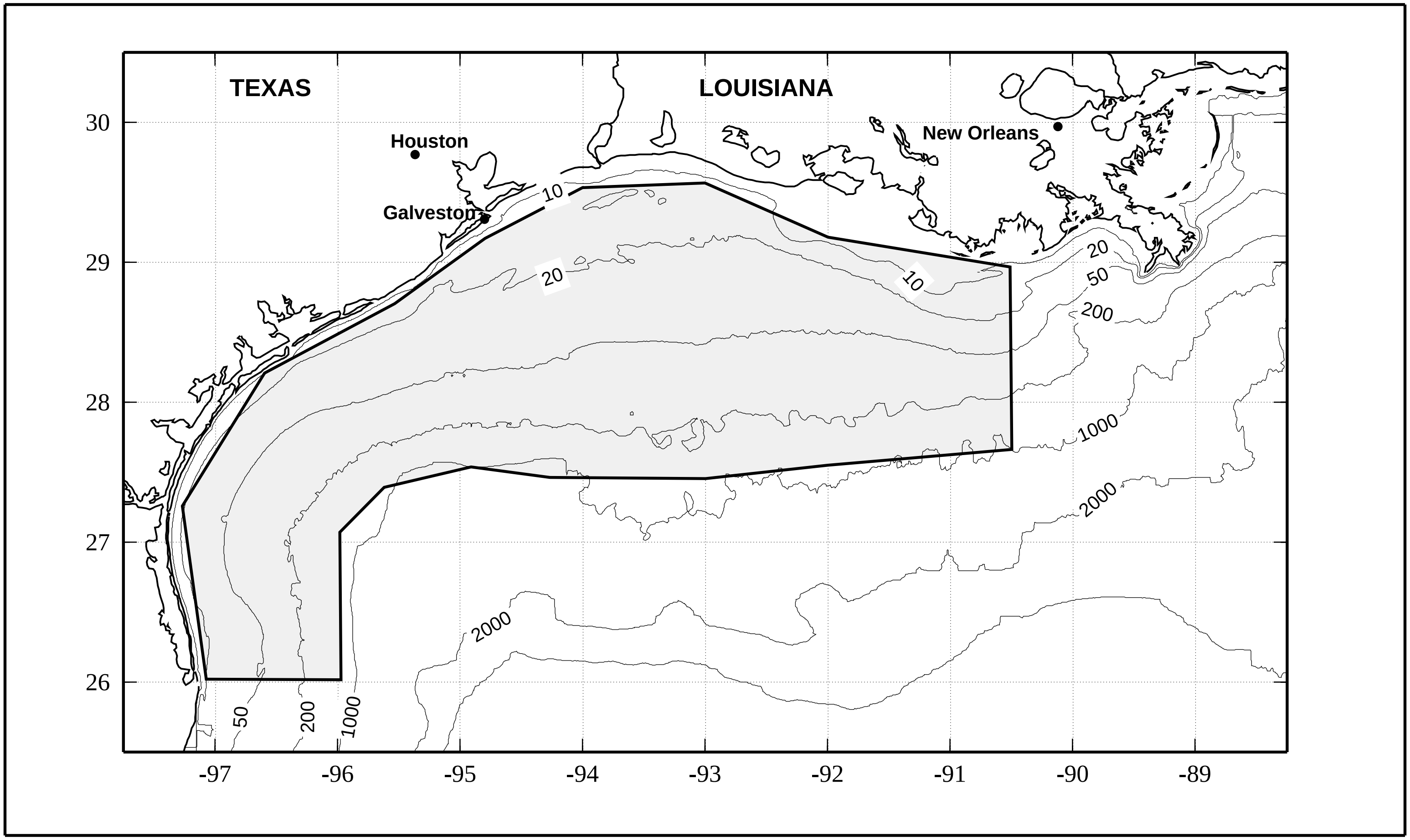

Figure 1. Study area and bathymetry for LATEX A hydrographic surveys over the Texas-Louisiana continental shelf.

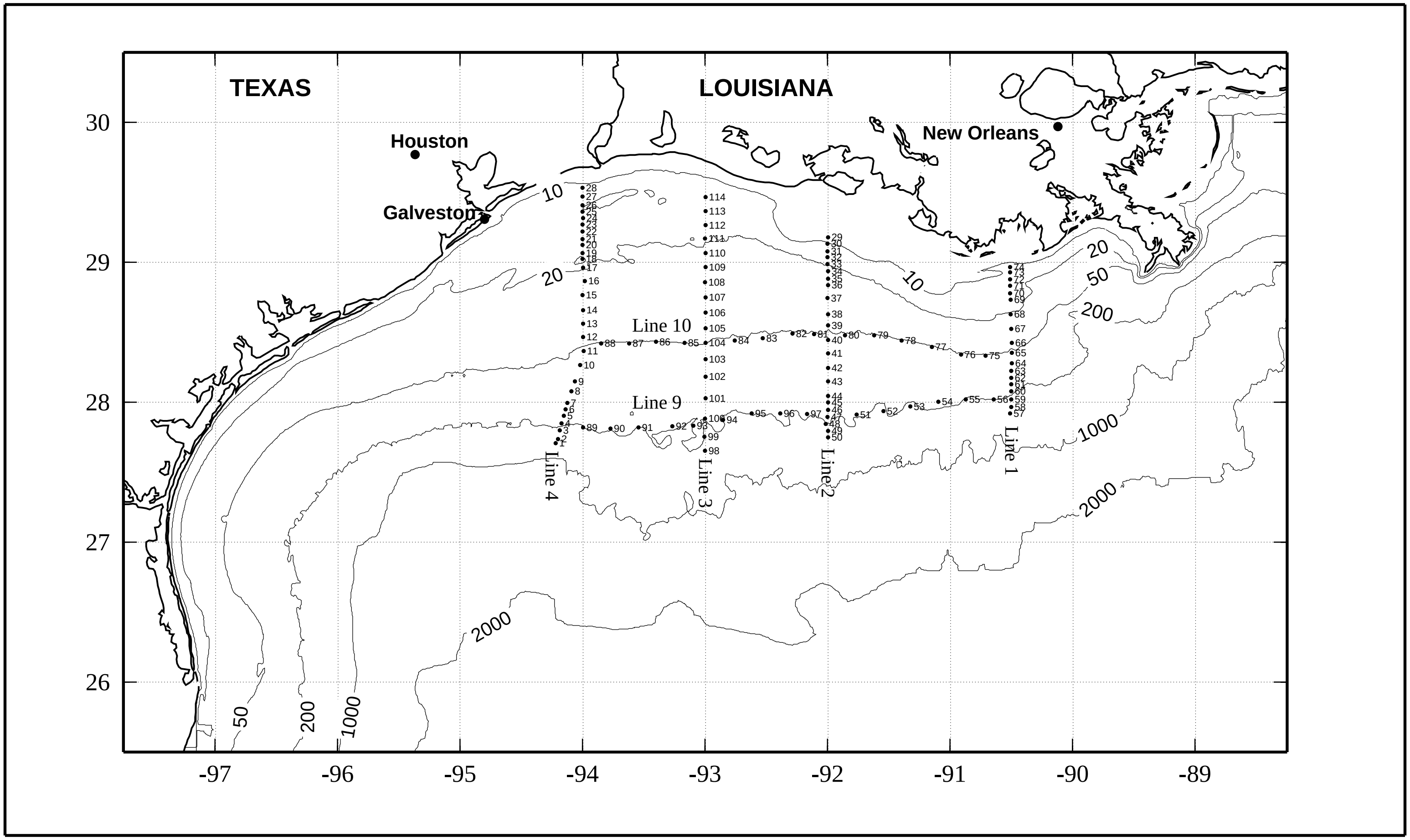

Figure 2. Typical LATEX A hydrographic station locations for field year one, April 1992 through March 1993.

occurring from September to May and the wind-driven upwelling and upcoast inner-shelf flows from June through August. Thus, the surveys were scheduled to coincide with the hydrographic seasons of (1) strong downwelling-downcoast flow and weak stratification (represented by the November hydrographic cruise), (2) strong upwelling-upcoast flow conditions (July/August), and (3) strong downwelling-downcoast flow and strong stratification due to enhanced river discharge (April/May). The evaluation also showed that the closely-spaced, cross-shelf station spacing initially selected was not necessary to detect the mesoscale and larger features of interest to the LATEX A study.

The revised plan for hydrographic sampling was implemented during the second field year, April 1993 through March 1994. Nine cross-shelf transects, five (Lines 1, 3, 4, 5, and 7) adjacent to cross-shelf current mooring arrays, a transect along the 50-m isobath at mid-shelf, and a transect along the 200-m isobath at the shelf-edge were surveyed (Figure 3). Over 200 stations were sampled on each cruise. The station spacing was similar to that of the first field year including, as ship time allowed, the closely-spaced stations.

The data collected on previous, non-LATEX cruises, on earlier LATEX A hydrographic cruises, and from LATEX A current meter moorings were evaluated in winter 1993/94 to develop the sampling plan for the final year of hydrographic data collection. The goal was to eliminate enough stations from the year 2 sampling pattern to allow completion of three full-shelf surveys within budgetary limitations, but without jeopardizing the scientific study. First, the cross-shelf scales of variability in temperature, salinity, and geopotential anomaly (based on historical as well as LATEX data) were examined (Li et al. 1996). The results confirmed that elimination of the closely-spaced stations on the cross-shelf transects would not impair the LATEX A study of shelf circulation.

Next, the alongshelf scales were studied. To assist in this analysis, the station sampling plan for the November 1993 full-shelf cruise was modified to increase the

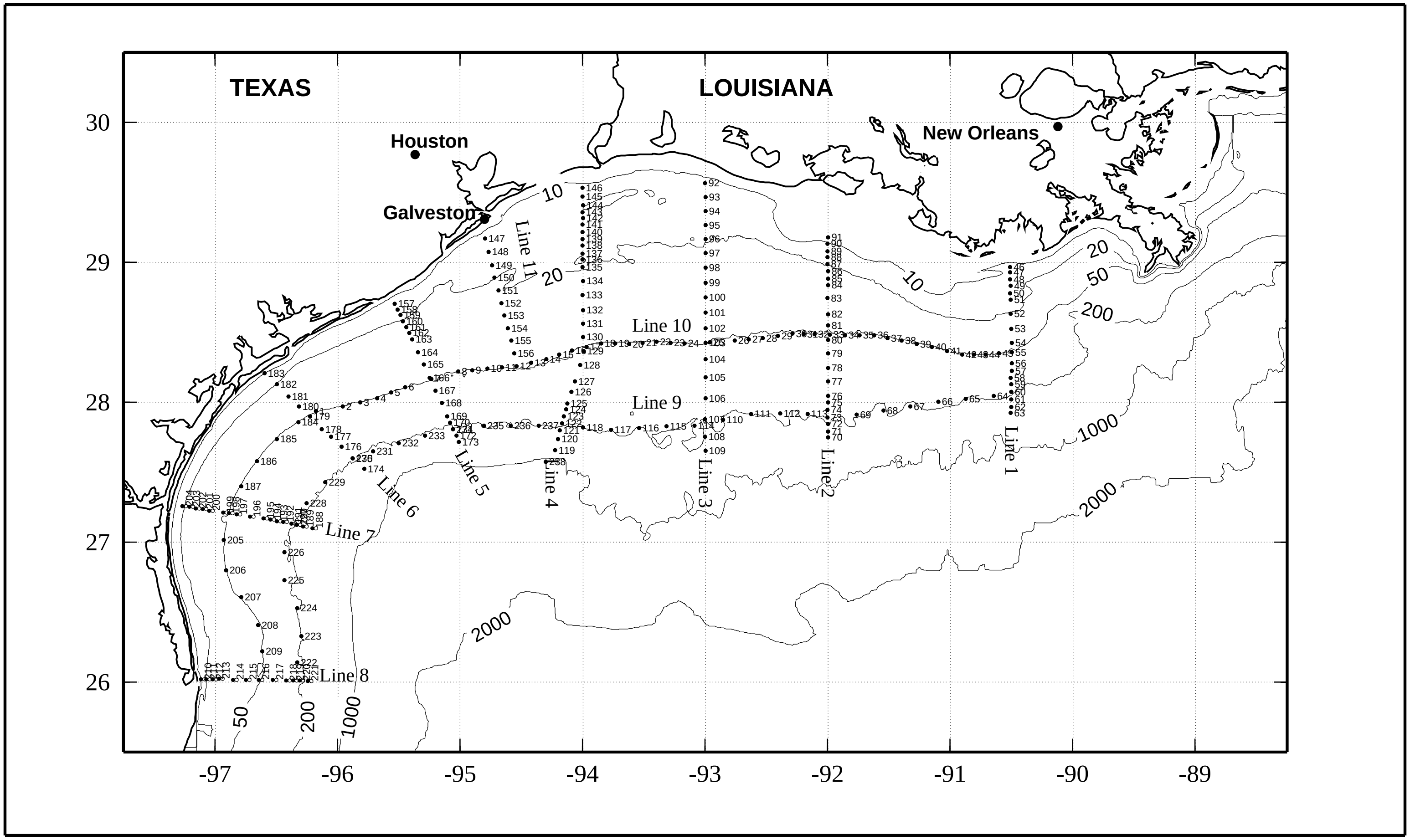

Figure 3. Typical LATEX A hydrographic station locations for field year two, April 1993 through March 1994.

density of stations along the 50-m and 200-m isobaths. CTD samples were taken along the 50-m isobath at approximately an 11-km spacing between 90.3°W and 96°W. One to two XBT samples were taken between CTD stations along the full length of the 200-m isobath, giving sampling separations for temperature of about 8-10 km. The CTD data and measurements taken on earlier cruises showed the alongshelf decorrelation scales at the 50-m and 200-m isobaths are 30-35 km (Li et al. 1996). Thus, an alongshelf station spacing of 20 km is appropriate for study of the general circulation and should resolve the principal baroclinic structure. Finer scale structures associated with higher modes could not be well resolved.

The relative importance of different transects in the existing sampling plan was considered, bearing in mind one goal was to maintain to a large extent the general sampling pattern of the first two field years and so obtain a continuing time series. The cross-shelf transects were critical for resolving the general circulation because they allowed description of water-property gradients, which generally are larger in the cross-isobath direction than the along-isobath direction. Thus, cross-isobath stations were given higher priority in importance for the scientific study than along-isobath stations.

Data collected along the 50-m isobath are useful to provide scale information in the middle shelf and to aid in the description of across-mid-shelf fluxes. The data collected along the 200-m isobath are important for understanding the exchanges of mass, heat, and freshwater between the shelf and the open ocean and, by providing the boundary conditions, are important for modeling. The first seven LATEX A cruises collected data along the 50-m and 200-m isobaths. These data and the current meter data indicated that the flows across and along the 50-m isobath were less complicated than those at the 200-m isobath, near the shelf break. Thus, the stations along the 200-m isobath were given higher priority for the study than those along the 50-m isobath.

The third-year plan of three full-shelf surveys eliminated the alongshelf transect on the 50-m isobath and the dense station spacing on the cross-shelf transects. One hundred seventy stations were completed on each of the three surveys conducted in the final year, April 1994 through November 1994. Nine cross-shelf transects, five (Lines 1, 3, 4, 5, and 7) adjacent to cross-shelf current mooring arrays, and a transect along the 200-m isobath at the shelf-edge were surveyed (Figure 4). If cruise time allowed, one to two stations were added on each cross-shelf transect to extend the transects to near the 1000-m isobath to provide additional information on features over the shelf/slope. The station spacing was approximately 10 km on the cross-shelf transects and 20 km on the alongshelf transect.

1.4. Survey Overview

Ten hydrographic surveys were conducted over the Texas-Louisiana continental shelf during the LATEX A field program from April 1992 through December 1994. Table 1 shows cruise identification numbers and dates. The LATEX ID will be used in the hydrographic data reports. The task ID was used during the field program and is given here for future reference if needed; it gives the year of the survey and, by the alphabetical order, the order of the cruises. The MMS ID gives the hydrographic survey number, the vessel identifier (PW = *R/V J. W. Powell*, GY = *R/V Gyre*), the year of the cruise, and the vessel cruise number for that year. Table 1 also shows the appendix in which the maps and data graphics for each cruise are presented.

In addition to hydrographic data, pigment data were collected on all cruises. During cruises H01 through H05, a full suite of pigments were analyzed (see Section 2.1.2 below). During cruises H06 through H10, only chlorophyll *a* and phaeopigments were analyzed. Only chlorophyll *a* data also are plotted in the appendices for the respective cruises.

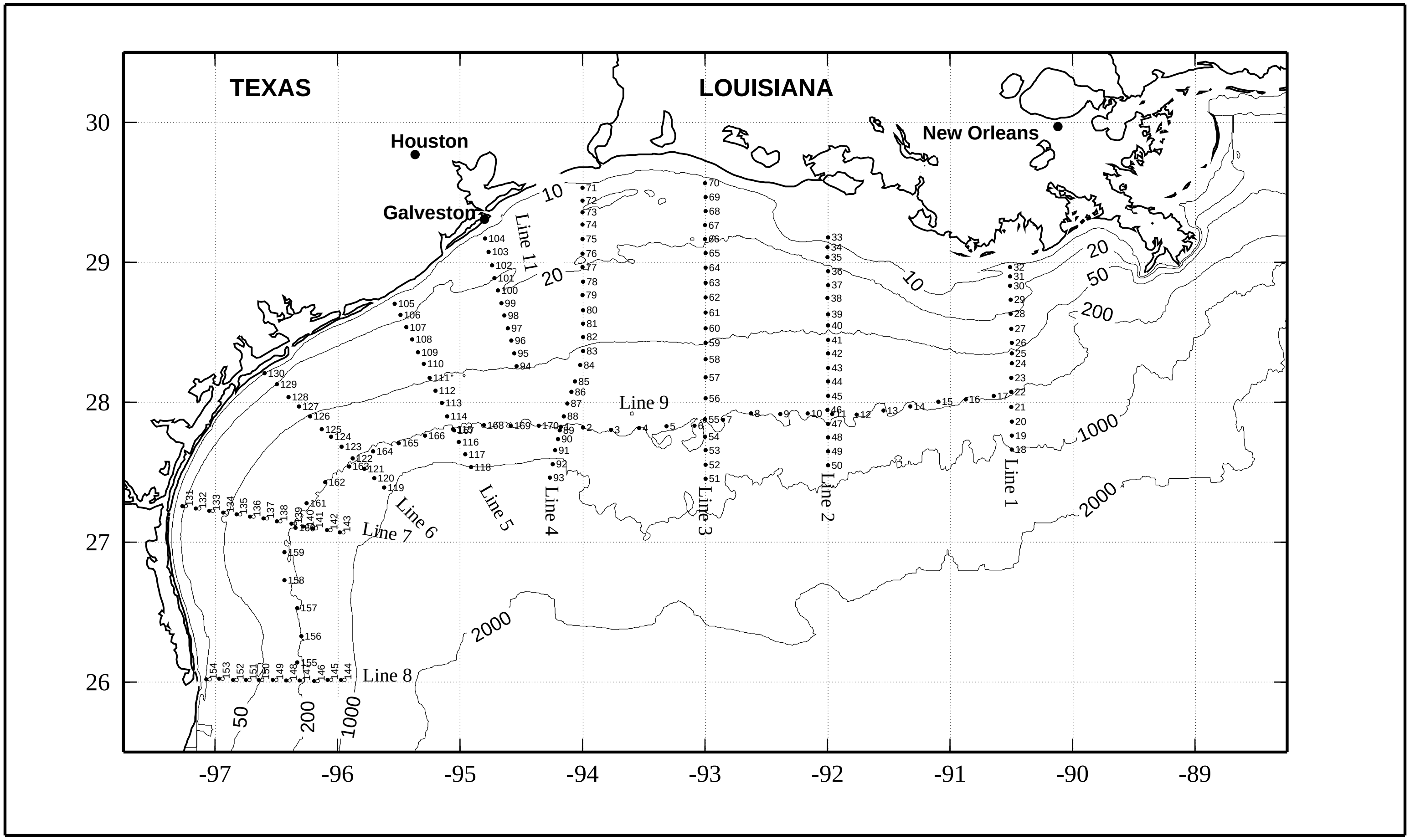

Figure 4. Typical LATEX A hydrographic station locations for field year three, April 1994 to December 1994.

Table 1. Hydrographic survey identifiers and dates.

LATEX ID	**Survey Dates**	**Graphics Appendix**	**Task ID**	**MMS ID**	**R/V Vessel**
H01	30 April - 9 May 1992	A	92a	H01CGY9205	*Gyre*
H02	31 July - 9 August 1992	B	92b	H02CGY9208	*Gyre*
H03	4 - 13 November 1992	C	92c	H03CPW9210	*J. W. Powell*
H04	4 - 13 February 1993	D	93d	H04CGY9302	*Gyre*
H05	25 April - 11 May 1993	E	93e	H05CPW9306	*J. W. Powell*
H06	25 July - 7 August 1993	F	93f	H06CPW9311	*J. W. Powell*
H07	6 - 22 November 1993	G	93g	H07CPW9314	*J. W. Powell*
H08	24 April - 7 May 1994	H	94h	H08CGY9401	*Gyre*
H09	26 July - 7 August 1994	I	94i	H09CPW9410	*J. W. Powell*
H10	2 - 13 November 1994	J	94j	H10CGY9409	*Gyre*

2. Sampling Procedures

2.1. Data Collection

Data taken at each station consist of three types—continuous profiles, water samples, and ancillary measurements. Table 2 summarizes the data collected and scientific participation on the hydrography surveys.

Table 2. Summary of data collected and scientific participation in the LATEX A hydrography surveys.

Description	**H01**	**H02**	**H03**	**H04**	**H05**	**H06**	**H07**	**H08**	**H09**	**H10**
	May 1992	Aug. 1992	Nov. 1992	Feb. 1993	May 1993	Aug. 1993	Nov. 1993	May 1994	Aug. 1994	Nov. 1994
Cruise Duration (days)	9	9	9	9	17	13	16	15	12	13
Cruise Track (km)	1117	1050	1050	1080	3680	3632	3720	3393	3393	3393
Total Hydro Stations	114	124	114	119	215	215	238	170	171	170
CTD Stations	114	124	114	119	215	215	238	170	171	170
Nutrient Stations	114	118	114	118	212	215	212	170	171	170
Oxygen Stations	64	72	77	80	145	148	144	153	154	170
Salinity Stations	64	73	68	71	134	133	133	87	88	104
Pigment Stations	83	88	85	87	153	154	152	154	150	154
Particulate Stations	52	50	56	58	107	109	108	118	119	119
Secchi Disk Stations	51	59	45	47	105	115	97	85	103	68
Weather Observations	27	30	32	30	64	48	60	56	40	44
XBT Launches	0	0	0	0	0	0	52	0	0	62
Nutrient Samples	936	1008	955	932	1682	1704	1685	1465	1482	1473
Salinity Samples	485	588	461	556	1058	1044	1054	728	739	940
Oxygen Samples	481	590	544	636	1129	1155	1125	1267	1297	1473
Pigment Samples	644	689	701	900	1204	1211	1217	1266	1235	1279
Particulate Samples	107	93	116	122	214	221	214	235	238	239
Total Scientific Party	20	20	17	23	23	17	20	20	17	19
LATEX Scientists	14	16	14	18	19	15	18	15	15	17
Guest Investigators	6	4	3	5	4	2	2	5	2	2
Graduate Students	5	8	8	9	9	4	6	6	4	5
Complementary Studies	5	4	3	4	4	4	3	7	4	5

During each cruise, one or more complementary programs were conducted by TAMU and other scientists. Although not part of the LATEX A sampling effort, these programs used the LATEX vessel as a platform of opportunity. Information on these programs is provided in Section 2.1.3.

Two sets of instruments were taken on each cruise to provide a back-up set of instrumentation. Table 3 lists the hydrographic equipment used on the LATEX A cruises. The altimeter allowed the CTD package to be lowered to within 1 to 5 m of the sea floor, depending on weather conditions. Details on the methods of use and calibration of all instruments are given in Jochens and Nowlin (1994). The configuration files used to process the raw CTD data are provided in Section 5.

Table 3. Hydrographic equipment available on each hydrography cruise.

Instrument	Manufacturer	Quantity
CTD System + oxygen sensor	Sea-Bird SBE-911^{+}	2
Rosette	General Oceanics 12 place	2
Rosette frame	TAMU fabrication	2
Niskin Bottles	GO Lever Action, 10 liter	12
Niskin Bottles	GO Standard, 10-12 liter	12
Transmissometer	SeaTech 2000 m	2
Fluorometer	SeaTech 3000 m	1
Fluorometer	SeaTech 500 m (field year 1)	1
Fluorimeter	Chelsea Instruments (field years 2 and 3)	1
Optical Backscatter Sensor	D&A Instruments OBS-3	2
Light Scattering Sensor	SeaTech (field year 3)	1
Altimeter	Datasonics PSA-900	2
PAR Sensor	Biospherical QSP-200L	2
Secchi Disk	TAMU fabrication	2

2.1.1 Continuous profiles

Continuous profiles with pressure were made of temperature, conductivity, dissolved oxygen, downwelling irradiance, backscatterance, transmissivity, and fluorometry. Table 4 lists the specifications for the sensors. The CTD and other sampling instruments were mounted on the Rosette frame below the Niskin water bottles and the Rosette to provide unperturbed, obstruction-free flow of water to all instruments during the descent of the frame. The various instruments were interfaced with the CTD for transmission of data to the CTD deck unit for data logging and storage.

Conductivity, temperature, pressure (CTD): The Sea-Bird SBE-911*plus* CTD obtained continuous profiles of temperature and conductivity with pressure. Sea-Bird model SBE 3-02/F temperature sensors and Sea-Bird model 4 conductivity sensors were used. A Paroscientific Digiquartz pressure transducer, model 410K, with temperature compensated output provided the pressure measurement.

Table 4. Specifications for hydrographic continuous profiling sensors.

Sensor Description	**Measurement Range**	**Accuracy**	**Resolution**	**Comment**
Temperature	-5°C to +35°C	0.004°C	0.0003°C	response time: 0.082 sec (0.5 m/sec drop) 0.070 sec (1.0 m/sec drop)
Conductivity	0 to 7 S/m (0 to 70 mmho/cm)	0.003 S/m/month	0.00004 S/m	response time: pumped: 0.084 sec (0.5 m/sec drop) pumped: 0.070 sec (1.0 m/sec drop)
Pressure as converted to depth	0 to 6800 m	0.05% of full scale over the ambient temperature range of 0. to 25°C; 0.02% with temperature compensation installed	0.004% of full scale	response time: 0.001 sec
Dissolved Oxygen	0 to 15 ml/l	0.1 ml/l with frequent field calibrations	0.01 ml/l	response time: 2 sec @ 25°C 5 sec @ 0°C
Backscatterance	0-2000 FTU* (H01) 0-100 FTU (H02-H07)			sensitivity is a function of particle size
Fluorometer (Sea-Tech 3000 m)	0 to 30 $mg \cdot m^{-3}$	dependent on chlorophyll calibration	0.01 $mg \cdot m^{-3}$	chlorophyll *a*
Fluorometer (Chelsea)	0.01-100 $\mu g \cdot l^{-1}$	±0.01 $\mu g \cdot l^{-1}$	0.01 $\mu g \cdot l^{-1}$ or ±3% over 4 decades, whichever the greater	chlorophyll *a*
Transmissometer (SeaTech 2000 m)	0 – 100% (0 – 5 Volts DC)	±0.5%	0.001 volts or 0.02%	response time is 0.1 second
Light Scattering Sensor (SeaTech)	~33 mg/l on high-gain ~100 mg/l on low gain		0.01% of full scale ~3µg/l	response time is less than 0.1 second
PAR Downwelling Irradiance	0.01 to 100% of full sunlight			

*FTU = Formazin Turbidity Units

The CTD package was lowered into the water column at a typical speed of 25 $m \cdot min^{-1}$ at the surface and near bottom and at a speed of about 40 $m \cdot min^{-1}$ between 100 m and near bottom. It was raised at a typical speed of 60 $m \cdot min^{-1}$, with slowing and stops for taking water samples. The CTD data files contain a parameter labeled "dz/dt" that gives the average rate of descent in each 0.5-m bin. A pump on the CTD system was used to match the dynamic response of the conductivity sensor to that of the temperature sensor. Prior to deployment, the distilled water syringe attached to the temperature sensor input was removed. After deployment, the syringe was re-attached and filled so that distilled water was in the conductivity sensor at all times to prevent it from drying out.

Dissolved oxygen: Continuous profiles of dissolved oxygen were measured with a Beckman polarographic type *in situ* dissolved oxygen sensor, manufactured by Sensor-Medics, Inc. Mounted in the Sea-Bird SBE-911*plus* CTD, the oxygen sensor was attached to a manifold that permitted active pumping of water past the sensor membrane. To maintain sensor stability, care was taken to ensure that the dissolved oxygen membrane did not become fouled with oil or grease. Between casts, the oxygen sensor was flushed and kept filled with distilled water.

Downwelling irradiance: Continuous profiles of downwelling irradiance were measured using a Biospherical Instruments, Inc., Model QSP-200L irradiance-profiling sensor. While the CTD package was on deck, the sensor was covered with an opaque cap for protection. The distance between the middle of the PAR (photosynthetically available radiation) sensor and the pressure sensor on the CTD was 1.58 m.

Particle scattering: Continuous profiles of particle scattering were measured with a D&A Instruments and Engineering, temperature-compensated, optical backscatter sensor (OBS model 3) on cruises H01 through H07. Because of the low particle loads at most of the mid- to outer-shelf stations, the sensor provided useful data only at about 10% of the hydrographic stations. In the third field year, on cruises H08 through H10, a

SeaTech Light Scattering Sensor was used in lieu of the D&A backscatter sensor to better determine the suspended particulate loading. The D&A sensors were used as backup units. The CTD system also was equipped on all ten cruises with a SeaTech, Inc., 25-cm pathlength transmissometer to provide profiles of percent transmission, which were used to determine the suspended particulate loading on the shelf. The transmissometer lenses were cleaned every few stations using distilled water and Kimwipes.

Fluorometry: Continuous profiles of fluorometry were measured with a SeaTech fluorometer during surveys H01 through H04, H07, and H08 and with a Chelsea fluorimeter during surveys H05 through H07, H09, and H10.

2.1.2 Discrete measurements

Water samples for discrete measurements were collected from 10-liter Niskin bottles mounted on a General Oceanics Rosette sampler. During the upcast, the Niskin bottles on the Rosette were closed electronically from the shipboard laboratory by the CTD console operator. Four to 12 bottles per station were used. Bottles were tripped at the maximum depth, at the sea surface (~3 m), and in the chlorophyll maximum as determined from the fluorescence. Other bottles were tripped as determined by the CTD operator to sample above and below the chlorophyll maximum, in mixed layers, and in other interesting features in the temperature, salinity, relative fluorescence, or percent transmission profiles.

Water samples were taken for nutrients (phosphate, silicate, nitrate, nitrite, ammonium, and urea) at all stations and for salinity, dissolved oxygen, suspended particulate material (SPM), and phytoplankton pigments at more than half of the stations. Water samples were drawn and processed as soon as the CTD-Rosette system was brought back on board. Sub-samples for dissolved oxygen were drawn first, followed in order by samples for salinity, nutrients, pigments, and SPM. Water for complementary programs was drawn last. Analyses of dissolved oxygen, nutrients, and salinity were performed at sea. Samples for SPM and phytoplankton pigments were filtered at sea, and the filters returned for final processing onshore.

The at-sea analyses of nutrients, salinity, and dissolved oxygen were performed using a six-channel Technicon AutoAnalyzer for nutrients, a Guildline Model 8400 AutoSal Laboratory Salinometer for salinity, and a microWinkler system for dissolved oxygen. Ranges, accuracies, and resolutions are given in Table 5. Two filtering systems were used for SPM and pigment sample collections. These filtered samples were analyzed onshore using weight differencing for SPM and high performance liquid chromatography (HPLC) and Turner fluorometer methodologies for pigments (including chlorophyll *a*) and chlorophyll *a*/phaeopigments, respectively. Accuracy and resolution of SPM are not shown in Table 5 because they are a function of many factors, including the accuracy and resolution of the balance used in determining weights.

Table 5. Specifications for analyses of water samples.

Parameter	Range	Accuracy	Resolution	Comments
Salinity	0.005 to 42	better than ±0.002 over 24 hrs without restandardization	better than ±0.0002 at 35	Guildline model 8400B Salinometer
Dissolved Oxygen	0.02 to 10 $ml \cdot l^{-1}$	±0.5%	±0.1%	Carpenter/Carritt modification of Winkler titration
Phosphate	0 to 3 $\mu M \cdot l^{-1}$	0.02 $\mu M \cdot l^{-1}$	0.01 $\mu M \cdot l^{-1}$	Technicon AA11 adapted to 6 channels
Silicate	0 to 30 $\mu M \cdot l^{-1}$	0.5 $\mu M \cdot l^{-1}$	0.1 $\mu M \cdot l^{-1}$	same as phosphate
Nitrate	0 to 35 $\mu M \cdot l^{-1}$	0.5 $\mu M \cdot l^{-1}$	0.1 $\mu M \cdot l^{-1}$	same as phosphate
Nitrite	0 to 2 $\mu M \cdot l^{-1}$	0.01 $\mu M \cdot l^{-1}$	0.01 $\mu M \cdot l^{-1}$	same as phosphate
Ammonium	0 to 5 $\mu M \cdot l^{-1}$	0.05 $\mu M \cdot l^{-1}$	0.01 $\mu M \cdot l^{-1}$	same as phosphate
Urea	0 to 5 $\mu M \cdot l^{-1}$	0.1 $\mu M \cdot l^{-1}$	0.05 $\mu M \cdot l^{-1}$	same as phosphate
Phytoplankton pigments	sample dilution allows very high values to be measured	±5%	Detection limit: 1 $ng \cdot l^{-1}$ (HPLC)	HPLC calibrated weekly

Dissolved oxygen: The procedure for collecting oxygen water samples was designed to transfer seawater from the Niskin bottle into a glass flask without allowing any atmospheric oxygen to be trapped in the bottle. Samples for dissolved oxygen analysis were collected in 125-ml, calibrated, glass-stoppered Erlenmeyer flasks. Tygon tubing was attached to the end of the Niskin spout. The Niskin vent was opened, and then the Niskin spout was opened. The flasks were rinsed three times with sample water before collection. With the Tygon tubing touching the bottom, the flasks were filled to the top and allowed to overflow for at least five seconds, while tapping the sides to remove any bubbles clinging to the sides of the flask. The tubing was removed carefully to avoid bubbles. Immediately after sampling, the reagents, manganous chloride and alkaline iodide, were added to the flask with the tip of the repipetter below the neck of the flask. The flask was stoppered, shaken immediately after collection and again about 30 minutes after sample collection, and stored for later analysis onboard the ship. After the oxygen was trapped in the resultant floc and settled to the bottom, the sample was acidified and titrated with sodium thiosulfate to a starch end-point using the microWinkler technique (Carpenter 1965a, 1965b). The end-points from all samples on all cruises were determined by the same person.

Salinity: Samples for salinity analysis were collected in 250-ml glass, airtight bottles with Nalgene caps. The bottles were triple rinsed with sample water before collection. Bottles were filled to approximately one inch below the neck to allow for thermal expansion of the water. Salinity samples were analyzed aboard ship. The AutoSal system measured a conductivity ratio relative to standard seawater. It was standardized each day using batch P119 Standard Sea Water from the Institute of Oceanographic Sciences, Wormley, UK. Each sample was measured three times to assure an accurate analysis. The salinity sample was held at a constant temperature in a water bath while the conductivity ratio was measured. The conductivity and temperature were used to calculate salinity on the practical salinity scale using the equation for practical salinity given in Fofonoff and Millard (1983).

Nutrients: Water samples were collected from Niskin bottles in 50-ml Nalgene wide-mouth bottles, which were triple rinsed with sample water before collection. The bottles were filled to the top and closed. Samples were refrigerated until they were analyzed. The nutrient samples were analyzed aboard the vessel, usually within two hours after sampling, using a six channel Technicon AutoAnalyzer. See Atlas et al. (1971), Slawyk and MacIsaac (1972), Grasshoff (1970), and Aminot and Kerovel (1982) for details on the methods used. The system was standardized by running two to four working standards of all six nutrients prior to, and after, each set of samples was analyzed. The peak height data were recorded and converted to nutrient concentrations in µM by linear interpolation from absorbency relative to the working standards.

Particulate matter: In preparation for each survey, 47-mm polycarbonate Nucleopore filters, with 0.4 µm pore size, were prepared by drying them to a constant weight and weighing them three times on a Cahn Model 29 electrobalance to ±0.1 µg. A ^{210}Po anti-static device was placed inside the balance to remove static electricity from the filters before weighing. The filters were stored separately in plastic petri dishes for use at sea. A series of blank filters also were prepared with each batch for processing to determine the weight change of the SPM filters due to contamination. At sea, the SPM water samples were collected from the surface, near the bottom, and at other depths of interest as determined by the percent transmission profiles made on the downcast. The samples were collected in clear, calibrated glass bottles that were rinsed three times with sample water prior to collection. Water samples were analyzed for SPM by filtering the water (measured to 1 ml) through the pre-weighed filters. To remove excess salt, the filter was washed four times with 5-ml aliquots of distilled water before it was removed from the funnel. During the cruise, the blank filters were placed in the filtration apparatus and subjected to the distilled water washes; no sample was filtered through the blanks. The processed filters were stored at sea in the laboratory in plastic petri dishes, which were in sealed plastic bags.

In the shoreside laboratory, each filter was dried in a desiccator. It then was weighed three times or until the standard deviation of the weights was less than 10 µg. The weight change of the blank filters was averaged to determine an average blank value to apply to all the SPM samples. There were no usable blank values for cruises H03, H04, and H10. For cruises H03 and H04, an average blank for all cruises was applied. No blank was applied to the SPM values for cruise H10 because a change in laboratory procedure was made during the cruise. The procedure was different enough that blanks from other cruises could not reasonably be applied. Blank values, in mg, applied to each cruise are: 0.0464 (H01), 0.0325 (H02), 0.0436 (H03), 0.0436 (H04), 0.050 (H05), 0.0457 (H06), 0.0307 (H07), 0.0477 (H08), 0.0447 (H09), and 0.0 (H10).

Suspended particulate material (in $mg \cdot l^{-1}$) was calculated by subtracting the initial average weight from the final average weight, applying the blank, and dividing by the volume filtered. The method is similar to that described by Trefry et al. (1984), except the filters were not acid washed before use. Weighing filters before and after washing with distilled water has shown no significant weight loss to the filters due to washing.

Phytoplankton pigment data: Duplicate water samples for pigment analyses were collected from each Niskin bottle in one-liter amber Nalgene bottles. The bottles were rinsed three times with sample water prior to collection. The samples were collected through a 333 µm mesh screen to remove zooplankton. In the shipboard laboratory, each one-liter water sample was filtered immediately after collection onto a 47-mm GF/F Whatman fiberglass filter under low-to-moderate vacuum. The filters were wrapped in aluminum foil and frozen in liquid nitrogen to prevent further breakdown of the pigments until analysis could be completed onshore (Neuhard 1994).

Analyses for the full suite of pigments were made using HPLC for samples collected on surveys H01 through H05. This suite consisted of chlorophyll *a*, chlorophyll-c3, chlorophyllide, chlorophyll-c, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, lutein (never observed), zeaxanthin, chlorophyll-b, alloxanthin-a, chlorophyll-c4 (never observed), chlorophyll-a', and carotene. For samples collected on H06 through H10, analyses were made for chlorophyll *a* and phaeopigments using a Turner model 10-AU fluorometer. During surveys H06 and H07, duplicate phytoplankton pigment samples were collected at 28 and 16 stations, respectively. They were filtered and analyzed for chlorophyll *a* using both the Turner Model 10-AU fluorometer and HPLC for comparisons. Measurements made with the Turner method were plotted against measurements of chlorophyll *a* made with the HPLC. Linear regression analysis produced an R value of 0.905 (n=316).

Pigments were extracted from the filters using methods described by Bidigare (1991). Individual samples were injected onto a Spectra Physics model SP8100 HP liquid chromatograph equipped with a Radial-PAK C18 (8 x 100 mm column; 5-5 m particles) at a flow rate of 6 ml per minute. A two-step solvent program was used to separate the various pigments extracted from the natural samples. Mobile phase A (80% methanol, 15% water, 5% ion-pairing solution (Mantoura and Llewellyn 1983)) was ramped to mobile phase B (100% methanol) over a 12-minute period. Mobile phase B then was pumped for 20 minutes, for a total analysis time of 32 minutes. Individual chlorophyll and carotenoid absorption peaks were detected and quantified by area with a Waters Model 440 Fixed Wavelength Detector with a wavelength of 436 nm and a Hewlett-Packard Model 3392A integrator, respectively. Peak identities of the pigment extracts were determined by comparing their retention times with chlorophyll *a* (Bidigare, 1991). On-line diode array spectroscopy from 400 to 700 nm, using a Hewlett-Packard Model HP8451 Diode Array Spectrophotometer, confirmed the identities of the major chlorophylls and carotenoids. Zeaxanthin and lutein coeluted on the HPLC system as set up for this study; consequently, the peaks came out together. To determine which pigment created the peak, the diode array spectrophotometer was used to compare the spectra from concentrated field samples to the spectra of standards of zeaxanthin and lutein. Absorption spectra of field samples closely matched those of standard zeaxanthin. Based on this, it was determined that the peak area was contributed by zeaxanthin.

The methods of Smith et al. (1981) were followed for the analyses using the Turner fluorometer. Prior to analysis, sample collection, filtration, and storage processes were handled in the same manner as filters collected for HPLC. After the extraction was complete, the samples were brought to room temperature, poured into a 13 x 100 mm borosilicate glass tube, and placed into the Turner fluorometer. A reading was taken and recorded. After the addition of two drops of 0.5 N HCl, a second reading was taken and notations were made for phaeopigment determination. Calibration of the fluorometer was done with a Hewlett Packard HP8451A diode array spectrophotometer. A calibration factor was derived using a standard of pure chlorophyll *a* from spinach (Sigma Products, Inc.) in 90% acetone. Concentrations of chlorophyll *a* and phaeopigments were calculated using equations from Smith et el. (1981).

2.1.3 Ancillary measurements

Ancillary measurements included Secchi disk depths, meteorological measurements, XBT profiles, and complementary program measurements. Secchi depth readings were taken at all daylight stations to measure light penetration. The Secchi disk was a circular plate with a standard diameter of 30 centimeters. One side was colored white and the other gray. A graduated line was marked in one meter intervals to 35 m and was secured through a ring at the disk center. Lead weights of 5 to 7.5 pounds were attached to the disk so it would sink rapidly and vertically. The disk, with the white side up, was lowered into the water from the shaded side of the ship until it was just perceptible; that depth in meters was noted. The disk was lowered further until it was no longer visible. It then was raised until it was again just perceptible; that depth was noted. The two depth readings were averaged and recorded as the Secchi depth reading for that station. Table 2 shows the number of Secchi depth readings for each survey.

Routine meteorological data were collected during each cruise and sent to the National Weather Service (NWS). Meteorological observations made were cloud type and amount, visibility, wind speed and direction, dry- and wet-bulb air temperatures, barometric pressure, and mean wave (sea) and swell data. Observations were made every six hours at approximately 0000, 0600, 1200, and 1800 Universal Time Coordinated (UTC). Weather data were logged on the standard NOAA form entitled "Weather Report for Immediate Transmission". During surveys H01, H02, H03, H05, H06, H07, and H09, the weather information was transmitted via the Global Telecommunications System (GTS) of the World Meteorological Organization (WMO) from a Shipboard Environmental Data Acquisition System (SEAS III) provided by NWS. Weather information collected during other surveys was not telemetered to WMO because no SEAS III system was available; the data sheets were mailed to NWS. Table 2 shows the number of meteorological data reports made during each survey.

Expendable bathythermograph (XBT) profiles were taken on surveys H07 and H10. Sparton of Canada T-7 XBT probes, with a depth range to 750 m, were deployed using a Sippican MK-9 launch system. Data were logged on a personal computer. Sippican software was used for recording and initial processing of XBT data. The T-7 probes were launched with the hand-held launcher from amidship on the starboard side of the vessel. One to two probes were deployed between CTD stations along the 200-m isobath. Five minutes prior to launch, radio communication was established between the person performing the launch, the CTD operator, and the person monitoring the recording of the data. The probe was loaded and launched at the designated time while the ship was underway. The latitude, longitude, and time of the launches were recorded by the CTD operator. Drop rates were corrected using the method of Singer (1990). Data collected after the probe reached the sea floor were trimmed from the record. Data were examined for outliers and corrected. Bad casts were eliminated. Table 2 shows the number of XBT observations made on each survey. These data are presented in the drifter and ancillary measurements data report (Howard and DiMarco 1998).

Visiting researchers on each cruise collected complementary data for use in their individual research programs. These data included phytoplankton, zooplankton, phytoplankton productivity, and dissolved organic matter. Drifters were deployed and sediment cores were taken for several researchers. A summary of the complementary programs is given in Table 6. Table 7 lists the guest scientist(s) and their institutions. Questions on these studies should be directed to the guest scientist.

Table 6. Complementary programs on LATEX A hydrography surveys.

Description	H01	H02	H03	H04	H05	H06	H07	H08	H09	H10
Complementary Studies	5	4	3	5	4	4	3	7	4	5
Guest Investigators	6	4	3	4	2	2	2	5	2	2
Phytoplankton Stations	83	88	85	87	28	61	8	32	31	31
Zooplankton Stations	12	11	10	10	0	0	0	36	0	37
DOM Stations	26	0	0	50	0	0	0	0	0	0
Isotope Stations	0	0	0	0	0	0	0	52	59	59
Productivity Stations	8	8	8	7	12	8	9	34	26	31
LATEX Drifter Launch	0	4	5	0	4	0	0	3	0	3
Other Drifter Launches	0	0	0	0	3	0	0	0	1	0
Bottom Samples	0	0	0	0	0	0	0	138	0	0

2.2. Sensor Calibration

2.2.1 Calibrations

Table 8 shows the sensors used on each cruise. Table 9 shows dates of sensor calibration. Post-cruise calibrations were used to process the CTD data.

CTD: The temperature, conductivity, and pressure sensors were returned to Sea-Bird for calibration on the schedule given in Table 9. The calibration tests were performed by the NOAA Northwest Regional Calibration Center. Drift calculations made by Sea-Bird for the temperature and conductivity sensors are given in Table 10.

Table 7. Scientists for complementary studies made on LATEX A hydrographic surveys.

Parameter	Guest Scientist	Institution	Cruises
Primary production	Dr. Sayed El-Sayed; Mr. Khaled Al-Abdulkader Mr. Gaston Gonzales	Texas A&M University	H01 - H10
Zooplankton grazing	Dr. Ed Buskey; Ms. Susan Brown	University of Texas	H01 - H04
Dissolved organic nitrogen	Mr. Diego Lopez-Veneroni (Dr. Luis Cifuentes)	Texas A&M University	H01
Coccolithophorid distribution	Ms. Vita Pariente (Dr. Stefan Gartner)	Texas A&M University	H01 - H03, H05 - H07
Sea surface temperature and salinity	Mr. David Vogele (Dr. Doug Biggs)	Texas A&M University	H01
Sea surface temperature and salinity	Dr. Lauren Sahl	Maine Maritime Academy	H02
Zooplankton tows	Dr. John Rickett; Dr. Richard Roller	University of Arkansas; Lamar University	H04
Dissolved organic nitrogen	Mr. Zang-Ho Shon (Dr. Luis Cifuentes)	Texas A&M University	H04
Drifter launches	Dr. David Sheres; Dr. Harry Selsor	University of Southern Mississippi; Naval Research Laboratory	H05
Phytoplankton net tows	(Dr. Greta Fryxell)	Texas A&M University	H05
Plankton tows	Ms. Paula Bontempi (Dr. Denis Wiesenburg)	Texas A&M University; University of Southern Mississippi	H06, H09, H10
Photosynthesis versus irradiance	Mr. Xiaogang Chen (Dr. Steven E. Lohrenz)	University of Southern Mississippi	H06 - H10
Gravity cores*	Mr. Dan Bean (Dr. Niall Slowey)	Texas A&M University	H08
Gravity cores*	Mr. Youcheng Zhang (Dr. Wilford Gardner)	Texas A&M University	H08
Box cores	Dr. Enriqueta Barrera	University of Michigan	H08
Water samples for oxygen, nitrogen, and carbon isotope analysis	Dr. Enriqueta Barrera	University of Michigan	H08 - H10
Zooplankton samples	Ms. Cammie Coulter; Ms. Noe Barrera (Dr. Ed Buskey)	University of Texas	H08; H10
LATEX A drifter launches	Dr. Worth D. Nowlin, Jr.	Texas A&M University	H02, H03, H05, H08, H10

*Ship time for taking gravity cores was funded by Dr. Kathleen Fisher of the Naval Research Laboratory, Stennis Space Center, Mississippi

Table 8. Sensors used on LATEX A hydrographic survey stations.

Instrument (Mfgr)	**Serial No.**	**H01** 1-114	**H02** 1-124	**H03** 1-114	**H04** 1-119	**H05** 1-215	**H06** 1-215
Temperature (Sea-Bird)	1273	X	X		X	X	X
Temperature (Sea-Bird)	977			X			
Conductivity (Sea-Bird)	987	X	X		X	X	X
Conductivity (Sea-Bird)	663			X			
Dissolved Oxygen (Sea-Bird)	130264	X	X	X	X	X	X
Dissolved Oxygen (Sea-Bird)	130228						
Pressure (Paroscientific)	50131	X	X		X	X	X
Pressure (Paroscientific)	38276			X			
Transmissometer (SeaTech)	103	X	X	X	X	X	X
Transmissometer (SeaTech)	1						
Transmissometer (SeaTech)	596						
Fluorometer (SeaTech)	54	X	X	X	X		
Fluorometer (Chelsea)	058					X	X
Backscatter (D&A Inst.)	137	X	X				
Backscatter (D&A Inst.)	172			X	X	X	X
Light Scattering Sensor (SeaTech)	103						
PAR (Biospherical)	4326	X	X				X
PAR (Biospherical)	4182			X	X	X	

Table 8. Sensors used on LATEX A hydrographic survey stations. (continued)

Instrument (Mfgr)	**Serial No.**	**H07** 1-156	**H07** 157-167	**H07** 168-234	**H07** 235-238	**H08** 1-8	**H08** 9-170	**H09** 1-171	**H10** 1-15	**H10** 16-170
Temperature (Sea-Bird)	1273		X					X	X	
Temperature (Sea-Bird)	977	X		X	X	X	X			X
Conductivity (Sea-Bird)	987		X					X	X	X
Conductivity (Sea-Bird)	663	X		X	X	X	X			
Dissolved Oxygen (Sea-Bird)	130264	X	X	X	X			X	X	X
Dissolved Oxygen (Sea-Bird)	130228					X	X			
Pressure (Paroscientific)	50131		X	X				X	X	X
Pressure (Paroscientific)	38276	X			X	X	X			
Transmissometer (SeaTech)	103									
Transmissometer (SeaTech)	1	X	X	X	X	X				
Transmissometer (SeaTech)	596						X	X	X	X
Fluorometer (SeaTech)	54				X	X	X			
Fluorometer (Chelsea)	058	X	X	X				X	X	X
Backscatter (D&A Inst.)	137									
Backscatter (D&A Inst.)	172	X	X	X	X	X				
Light Scattering Sensor (SeaTech)	103						X	X	X	X
PAR (Biospherical)	4326	X	X	X	X	1-109		X	X	X
PAR (Biospherical)	4182						110-170			

Table 9. Calibration dates for sensors as related to post-cruise processing.

Instrument (Mfgr)	**Serial No.**	**H01**	**H02**	**H03**	**H04**	**H05**	**H06**	**H07**	**H08**	**H09**	**H10**
Temperature (Sea-Bird)	1273	5/20/92	9/2/92		9/2/92	5/18/93	8/18/93	12/9/93		8/18/94	11/29/94
Temperature (Sea-Bird)	977			12/4/92				12/9/93	5/13/94		11/29/94
Conductivity (Sea-Bird)	987	5/20/92	9/2/92		2/24/93	5/19/93	8/18/93	12/15/93		8/17/94	11/30/94
Conductivity (Sea-Bird)	663			12/4/92				12/15/93	5/13/94		
Dissolved Oxygen (Sea-Bird)	130264	2/13/92	2/13/92	2/13/92	4/20/93	7/19/93	11/2/93	1/19/94		1/19/94	11/16/94
Dissolved Oxygen (Sea-Bird)	130228								5/11/94		
Pressure (Paro-scientific)	50131	3/5/92	3/5/92		3/5/92	3/5/92	3/5/92	1/4/94		1/4/94	12/7/94
Pressure (Paro-scientific)	38276			9/3/92				1/4/94	1/4/94		
Transmiss-ometer (SeaTech)	103	2/7/89	10/12/92	10/12/92	10/12/92	6/24/93	6/24/93				
Transmiss-ometer (SeaTech)	1							1/12/94	1/12/94		
Transmiss-ometer (SeaTech)	596								3/16/94	3/16/94	3/16/94
Fluorometer (SeaTech)	54	7/87	7/87	7/87	7/87			7/87	7/87		
Fluorometer (Chelsea)	058					1/13/93	1/13/93	1/13/93		1/13/93	1/13/93
Backscatter (D&A Inst.)	137	1/16/92	6/24/92								
Backscatter (D&A Inst.)	172			6/24/92	6/24/92	6/24/92	6/24/92	6/24/92	6/24/92	6/24/92	6/24/92
Light Scattering (SeaTech)	103								2/17/94	2/17/94	2/17/94
PAR (Bio-spherical)	4326	5/27/92	5/27/92				6/22/93	6/22/93	6/22/93	7/13/94	7/13/94
PAR (Bio-spherical)	4182			11/1/89	11/1/89	11/1/89			7/1/93		

Table 10. Calculations of drift for the conductivity and temperature sensors.

Parameter	Serial Number	Calibration Date	Drift Units	Drift Calculation
Conductivity	663	26 February 1992	S/m/month	0.000042
		2 September 1992		0.000038
		4 December 1992		0.000072
		21 May 1993		
		15 December 1993		0.000014
		13 May 1994		0.000017
		30 November 1994		0.00007
Conductivity	987	27 February 1992	S/m/month	new
		20 May 1992		0.000033
		2 September 1992		0.00007
		24 February 1993		0.00015
		19 May 1993		0.00011
		18 August 1993		0.000095
		15 December 1993		0.000025
		17 August 1994		0.00004
		30 November 1994		0.00003
Temperature	977	26 February 1992	°C/year	0.0088
		4 March 1992		0.01
		2 September 1992		
		4 December 1992		0.0093
		20 May 1993		
		9 December 1993		0.011
		12 May 1994		0.009
		29 November 1994		0.01626
		16 December 1994		repaired 0.02853
Temperature	1273	4 March 1992	°C/year	new
		20 May 1992		0.001
		2 September 1992		0.003
		24 February 1993		bad probe 2
		5 March 1993		new
		18 May 1993		0.0033
		18 August 1993		0.01 probe replaced
		26 August 1993		new
		9 December 1993		0.004
		18 August 1994		0.0035
		29 November 1994		0.01028

Table 11 shows the slope and offset values used to correct the conductivity, temperature, and pressure sensors in the Sea-Bird configuration files (see respectively lines 1 through 3, 4 through 5, and 11 through 14 of the configuration files; Section 5.1 gives the configuration file format and an explanation of the coefficients). For each cruise, the pressure offset used was based on output from the pressure sensor when the CTD was at the surface. The pressure sensor values on the deck and at about 2 m were recorded by the CTD operator. They were plotted at the end of each cruise to determine what, if any, offset to use and to identify whether there was any change in the pressure sensor during the cruise.

Table 11. Slope and offset corrections applied to conductivity, temperature, and pressure sensors to account for drift during the cruises.

Cruise	**Conductivity**		**Temperature**		**Pressure**	
Number	**Slope**	**Offset**	**Slope**	**Offset**	**Slope**	**Offset**
H01	0.99999550	0	1	0	1	0
H02	0.99997800	0	1	-0.0002	1	0
H03	1	0	1	-0.0005	0.99981000	-0.668
H04	0.99997500	0	1	+0.0013	1	0
H05	1	0	1	0	1	0
H06	1.00001900	0	1	-0.0005	1	0
H07:1-156	1	0	1	0	0.99983000	-0.969
H07:157-167	1	0	1	0	0.99979000	+0.523
H07:168-234	1	0	1	0	0.99979000	+0.523
H07:235-238	1	0	1	0	0.99983000	-0.969
H08:1-8	1	0	1	0	0.99983000	+0.969
H08:9-170	1	0	1	0	0.99983000	+0.969
H09:1-170	1	0	1	0	0.99979000	+0.523
H10:1-15	1	0	1	0	0.99980000	+0.804
H10:16-170	1	0	1	0	0.99980000	+0.804

Dissolved oxygen: The dissolved oxygen probes were returned to Sea-Bird for calibration on the schedule shown in Table 9. Calibration coefficients are given in lines 15 through 17 of the configuration files in Section 5. To calibrate the polarographic oxygen probe, the oxygen current bias (B_{OC}) and oxygen current slope (S_{OC}) were determined for the sensor by measuring the current output in a sodium sulfite solution (zero oxygen, yields B_{oc}) and in a seawater saturated with dissolved oxygen (yields S_{oc}). These calibration values, given in the configuration files, were used in the Sea-Bird processing software with the CTD temperature, salinity, and pressure data and oxygen sensor constants to calculate an *in situ* dissolved oxygen (in $ml \cdot l^{-1}$). The required oxygen sensor constants are: temperature correction factor for membrane permeability (tcor), pressure correction factor for membrane permeability (pcor), oxygen sensor response time (tau), and weighting fraction of oxygen sensor internal temperature (w_T). These values are given in the configuration files.

The oxygen concentrations computed with this procedure, however, do not take into account the physics of the probe itself. Therefore, the method of Millard (1993) was applied as described in Section 2.2.2 below. Comparison of oxygen sensor and bottle oxygen values, however, showed significant differences, as may be expected in regions of large gradients. To avoid providing poor quality data in this set, the oxygen concentration data (in $ml \cdot l^{-1}$) derived from the oxygen sensor have not been included with the CTD files. The oxygen sensor current voltages and the oxygen temperatures, however, have been retained so that users can process these data to oxygen concentrations; users are urged to provide extensive QA/QC on the results of any such computations and to use such data with caution (see Section 2.2.2 for examples of problems encountered).

Downwelling Irradiance: The QSP-200L sensor (PAR) was calibrated by Biospherical Instruments using a NIST traceable, 1000-watt type FEL Standard of Spectral Irradiance on the schedule in Table 9. The calibration coefficients used to process the data are given in lines 20 and 21 of the configuration files in Section 5.

Particle Scattering: Initially the backscatter sensor did not have the required sensitivity to measure the dynamic range of particle loads encountered on the Texas-Louisiana shelf except at the most inshore stations. After cruise H01, the sensor was modified by D&A Instruments to increase its sensitivity by a factor of 20. This increased the sensitivity from 0-2000 to 0-100 Formazin Turbidity Units (FTU). More usable data were obtained after this modification. The quantity of useful data, however, remained sparse. A new backscatter sensor, manufactured by SeaTech, became available for use on cruises H08 through H10. This sensor provided an increased quantity of backscatter data. Because of the scarcity of the backscatter data, the suspended particulate material determinations were not used to calibrate the backscatter data from either the D&A Instruments or the SeaTech backscatter sensors. The backscatter data plotted in the LATEX hydrographic data reports are extracted from the raw data to provide a relative distribution of optical backscatter with depth. The gain and offset used for processing the backscatter data are given on lines 30 and 31 of the configuration files in Section 5. The transmissometers were calibrated according to the schedule given in Table 9. The calibration coefficients used in processing the transmissivity data are given on lines 22 and 23 of the configuration files in Section 5.

Fluorescence: Each fluorometer was calibrated by the manufacturer at the time of purchase. The calibration coefficients used in processing the fluorometry data were 1.0 for scale factor for both instruments and 0.0 and 2.0 for offset for the SeaTech and Chelsea fluorometers, respectively. Raw voltage data are plotted as relative fluorescence.

2.2.2 Comparisons of continuous data with bottle data

Dissolved oxygen: At approximately half the LATEX hydrography stations in each cruise, bottle titrations were performed (Carpenter 1965a, 1965b) to determine discrete dissolved oxygen values. These values can be used to calibrate the continuous data from the oxygen sensor. Applying the non-linear least-squares regression technique described by Millard (1993), downcast oxygen sensor values were fit to the upcast bottle sample oxygen measurements. This method gives the calibration coefficients used in the Owens and Millard (1985) algorithm. The downcast oxygen sensor value used was at the same depth as the depth of the oxygen water sample.

Comparison of the derived oxygen concentrations with the bottle oxygen concentrations revealed that substantial problems exist with application of this method to these data sets. Figures 5 and 6 show examples of the types of problems encountered. First, downcast oxygen sensor probe data were calibrated with upcast discrete bottle oxygen data. In shelf waters, there are substantial gradients both vertically and horizontally that can result in the sampling of very different waters between the time of the downcast and that of the upcast. It was found that generally the fits were worse for stations inshore in the eastern part of the study area, a region of larger gradients associated with the presence of freshwater from river discharges. Second, even though water is being pumped past the sensor, the oxygen sensor is slow to respond to changes in oxygen concentration. Therefore, in regions of vertical gradients such as commonly are found in these shelf waters, the oxygen sensor lags the true oxygen values; in some cases such lags can be substantial.

Figure 5 shows three examples of the problems associated with lag. In Figure 5 (left panel) the fit is reasonable except in the region between 40 and 60 m where there is an oxygen gradient and the sensor lags the true values. This lag can be severe as seen in the middle panel of Figure 5, where there are several regions of rapid changes in oxygen concentration. Note that in this figure the station has hypoxic conditions near the bottom which seem to be reasonably approximated by the sensor data. There also can be a lag in the region of the increase in oxygen concentrations at great depth as shown in Figure 5 (right panel) at 900 m; this lag begins on some stations at depths of 600 m.

Other problems of note are shown in Figure 6. Figure 6 left panel shows a case for which the oxygen sensor has not properly equilibrated before the CTD package is lowered through the water column, resulting in oxygen sensor values significantly less that the bottle oxygen values over top 30 m. Stations with such problems have been

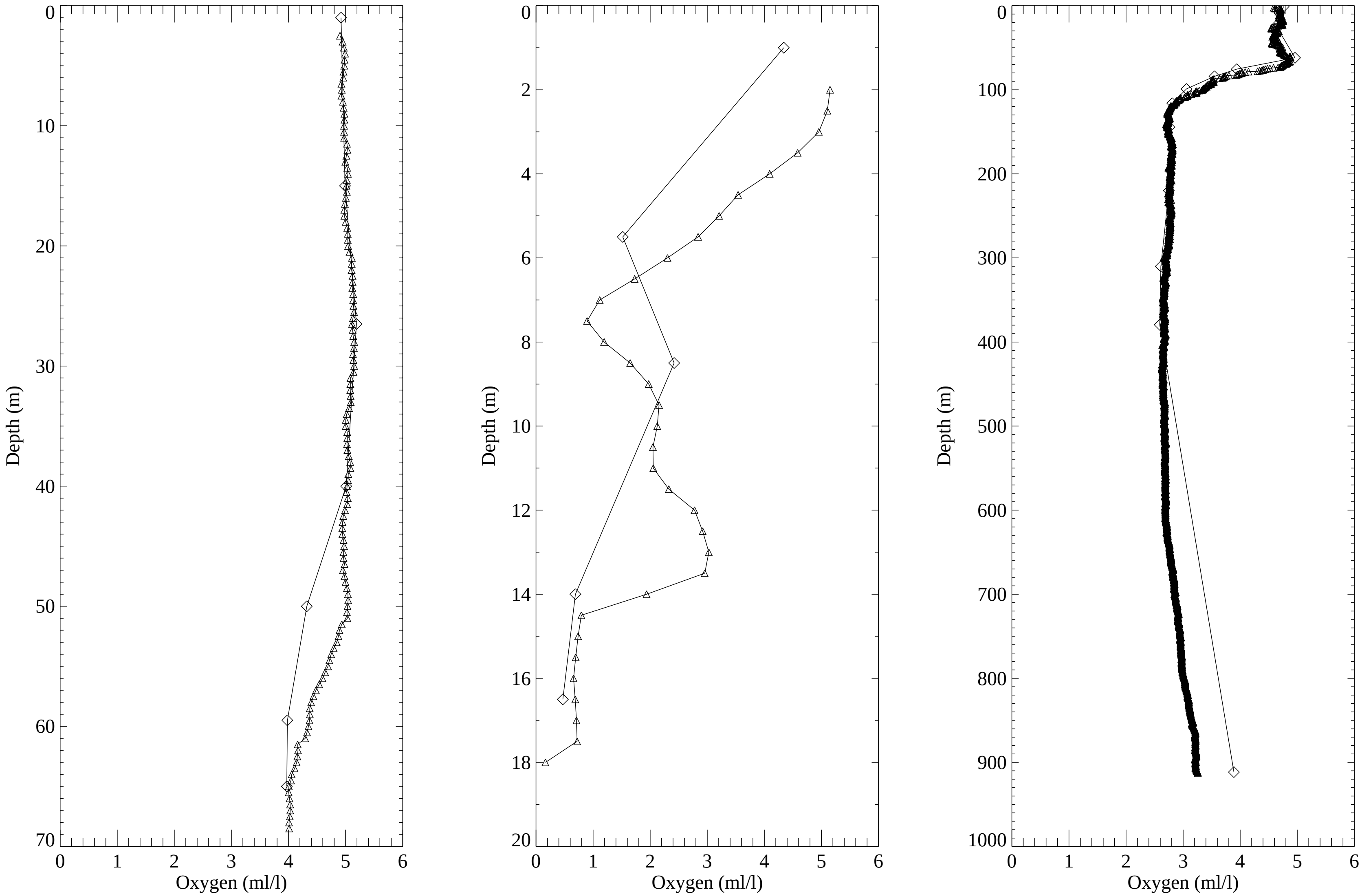

Figure 5. Dissolved oxygen concentrations versus depth for bottle data (diamond) and probe data (triangle) from cruise H08 station 43 (left), cruise H06 station 26 (middle), and cruise H10 station 119 (right).

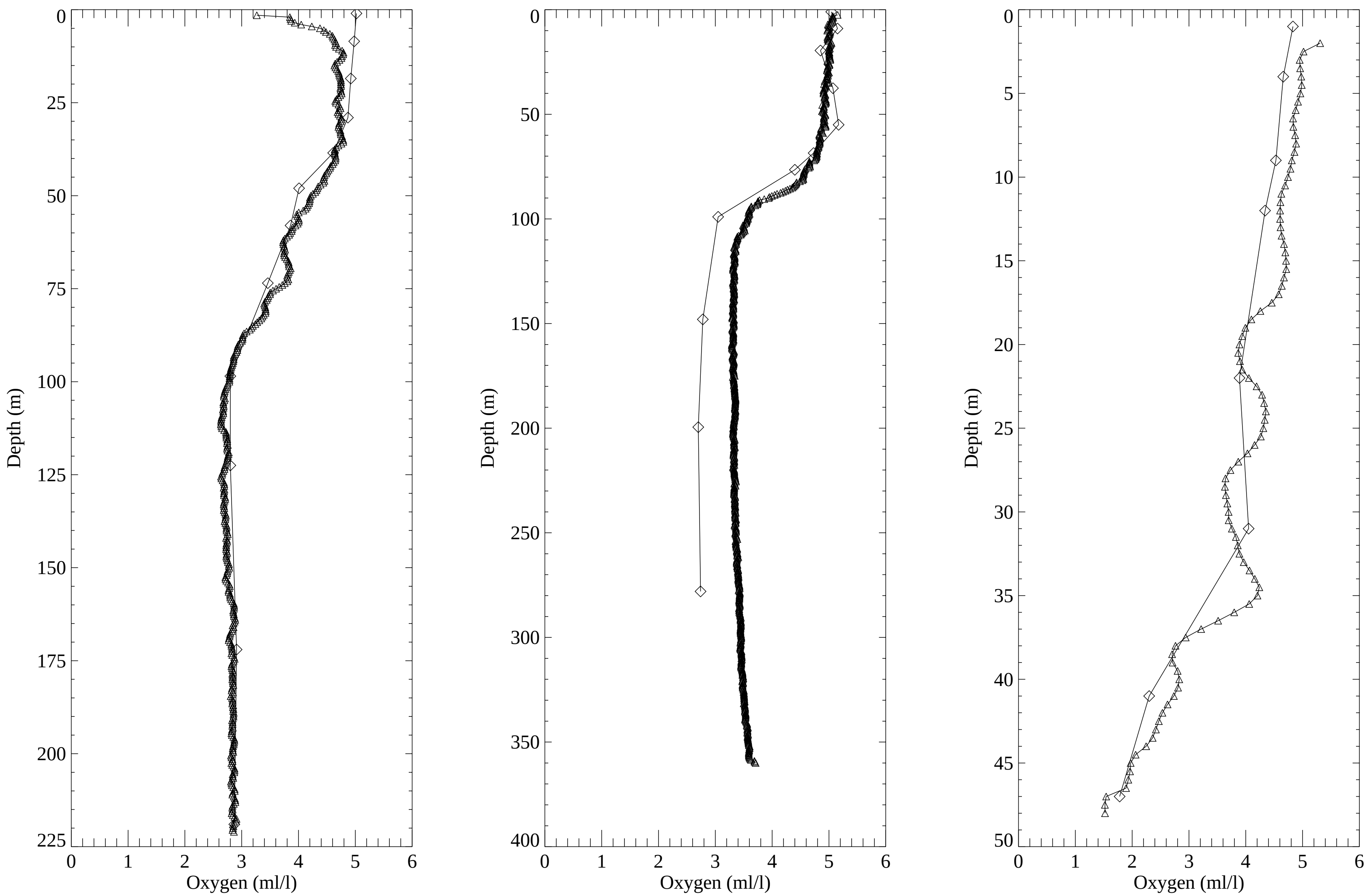

Figure 6. Dissolved oxygen concentrations versus depth for bottle data (diamond) and probe data (triangle) from cruise H07 station 190 (left), cruise H04 station 1 (middle), and cruise H06 station 32 (right).

flagged as suspect in the station header file. A second example (Figure 6 middle panel) is where the computed oxygen concentrations have in a reasonable shape relative to the oxygen bottle concentrations, but for all or a portion of the trace, the sensor-derived values are offset from the bottle values. A final example (right panel of Figure 6) shows greater variability in the oxygen sensor data than in the oxygen bottle data. Whether this indicates a sensor problem, a calibration technique problem, or a bottle resolution issue must be determined on a case-by-case basis.

Because of the variety of problems and level of detail required to convert the oxygen sensor voltages into oxygen concentration, the computation of oxygen concentration from the raw oxygen sensor data is left to potential users. For each bottle trip location, the appropriate temperature, salinity, pressure, sigma-theta, and other sensor data are included in the bottle data files.

Particulate matter: Realities of shipboard sample processing are such that all SPM filters experience some contamination. Low level contamination is corrected by using blanks. A blank filter is a clean filter that is subjected to the same processing as the SPM filters, but no sample is filtered through it. A blank filter is loaded onto the filter holder in the shipboard lab. It is washed with distilled water, stored, dried, and weighed in the same way as the SPM filters. The blanks experience weight changes due to contamination. The SPM filters are presumed to have similar weight changes due to contamination; so, a correction using the average weight of the contamination found on the blanks for each cruise is applied to the SPM filter weights. Values for each cruise are listed in Section 2.1.2.

SPM filters and blanks were examined with a binocular microscope to identify contamination. On the first nine cruises, a glass fiber filter was used to support the SPM filter. These support filters shed filter patches and fibers onto some of the SPM filters. Salt was a contaminant on filters that were not adequately rinsed. Once identified, contaminated filters were eliminated from the data set.

Suspended particulate matter data were further quality controlled by running a linear regression between particle beam attenuation coefficient (PBAC) and suspended particulate matter. PBAC was calculated from the transmissivity data using the formula

$$PBAC = [-4 * LN(transmissivity/100)] - 0.364$$

The factor 0.364 is the beam attenuation coefficient of clean water. By subtracting this value, the beam attenuation due to particles only is obtained.

For a given particle size and type the relationship between PBAC and SPM is linear. Since surface and bottom particles have different sources, it is expected that they have different PBAC properties. Thus linear correlations were run for the surface data set and for the bottom data set for each cruise.

The data points and regression lines for each of the surface and bottom data sets were plotted after contaminated filters were removed from the data set. The plots were examined to identify points that differed greatly from the regression line. These points were flagged and the associated SPM filters were examined again by binocular microscope. If they were found to be contaminated, they were eliminated from the data set. The results of the quality control of the SPM filters are reported in Sahl (1996).

Fluorescence and chlorophyll: The *in situ* fluorometric measurements were compared to the bottle chlorophyll *a* measurements by plotting and inspecting the fluorometric data versus the chlorophyll *a* bottle data. When discrepancies were detected, stations were flagged for further examination. Generally, there was good agreement between vertical profiles for measured *in situ* fluorescence and profiles obtained through laboratory measurements of water samples. If there was a discrepancy between the shape of the vertical profile of the *in situ* fluorescence profile and the vertical profile obtained by measurement of chlorophyll *a* by HPLC or Turner fluorescence, the discrete sample calculations were checked. First, the individual HPLC chromatograms of peak areas for each pigment or the voltages from the Turner fluorometer were checked against the spreadsheet entries. If a peak area or voltage had been entered incorrectly, the value was corrected and the resulting new calculated value entered the pigment data set. Second, if no problems with the calculations could be detected, the sample was rerun and the new results were entered into the spreadsheet when appropriate. Finally, when no filters were available for rerunning a bad sample, the bad value was removed from the pigment data set.

3. Data Processing Procedures

3.1. Continuous profile data

All continuous profile data were processed through the CTD data acquisition software, SEASOFT Version 4 (Sea-Bird Electronics, Inc., 1993), to produce a clean set of 0.5-m, bin-averaged data. The configuration files in Section 5 were used in this processing. These programs included steps to:

1. Convert raw data to engineering units,
2. Separate the up-cast from the down-cast data,
3. Mark/remove wild data points,
4. Correct conductivity for thermal mass effects,
5. Low-pass filter the data,
6. Correct data for pressure reversals,
7. Average data into 0.5 m depth bins, and
8. Compute potential temperature, salinity, and potential density using algorithms in Fofonoff and Millard (1983).

After processing with Sea-Bird software, the bin-averaged data for each station were stored in files with an 11 character filename. The first character of the filename is "d" for downcast; the next three characters identify the cruise, using the task ID shown in Table 1; the next three denote the sequence number of the station; and the final four characters give the extension ".dat". For example, file d93e215.dat contains the bin-averaged data from station 215 of cruise H05.

The d*.dat files were processed further to check for out-of-range data, inversions, and gaps. Processing was completed in batch mode and all problem data points were identified in a log for review and possible correction. Using the temperature, potential temperature, depth, pressure, and salinity values from the files, sigma-theta and thermosteric anomaly were calculated at each depth. During this step, the data for salinity and temperature were checked to be sure the values fell within a reasonable range. Depths were checked to make sure they were monotonically descending.

Data then were checked for gaps or inversions. If data were not spaced at 0.5-m intervals or if the difference between adjacent values of sigma-theta was negative and exceeded 0.05, an error message was written to the log file. The number of inversions, mean inversion, and maximum inversion were written to the log file for each station. Problems identified were corrected in the d*.dat files by linear interpolation across gaps or by replacing bad data with "-999.00" or similar flag; a note on the correction was included in the file header. The latitude, longitude, date and time (in UTC), and water depth included in the header also were checked and corrected as necessary.

For each station, the potential temperature and salinity were interpolated to selected potential density surfaces. A summary list, containing potential temperature, potential density, pressure, depth, dynamic height, Montgomery potential, and geostrophic transport function at selected standard depths and potential densities, was produced and inspected. Problems were flagged, examined, and corrected as appropriate.

Composite plots of temperature versus salinity were generated for each cruise. Individual station plots, consisting of temperature, salinity, and sigma-theta profiles with accompanying temperature-salinity diagrams were prepared and inspected to identify spurious data points. Profiles of oxygen, downwelling irradiance, backscatterance, percent transmission, and fluorometry also were prepared and inspected. Additionally, vertical sections of all CTD variables were produced along each track line. Each section was inspected for spurious data points, which then were identified as suspect in the header of the d*.dat file, corrected by linear interpolation, or replaced with the "-999.00" bad data designator.

The Generic Mapping Tools (GMT) software (Wessel and Smith 1991, 1995) was used for gridding and contouring these data. GMT uses gridding with continuous curvature splines in tension (Smith and Wessel 1990). A number of sections were contoured both by hand and by using different tension factors in GMT and then compared. Results showed that use of a tension factor of 0.25 compared well with hand-contoured sections. This tension factor was used for all plots.

Downwelling irradiance: Prior to contouring, the downwelling irradiance data were converted to percent of surface irradiance (I_o) by normalizing the 0.5-m bin values by the value of the surface irradiance and multiplying by 100. To avoid shading effects due to the hull of the ship, I_o was taken to be the maximum value in the top five bins.

Particulate matter: The transmissivity profile for each station was examined and the up and down casts for each station were compared. Although it is normal for there to be some offset between these two profiles, certain instrument problems result in abnormal amounts of offset. Abnormal offsets were observed at eighteen stations in the course of the hydrography program. Transmissometer data from these stations were eliminated from the data set by replacing bad data with the designator "-999.00"; changes were noted in the header lines of the data set. Most of these problems occurred during cruises H01 through H06, when transmissometer SN 103 was used. The instrument was returned to the factory three times for repair. Transmissometer SN 1 was used for cruises H07 and part of H08 and transmissometer SN 596 was used for cruises H08 through H10. On these cruises, only one station exhibited significant differences between the up and downcast data. At four stations on cruise H07, the transmissometer was not operational; no data were collected. See Sahl (1996) for further details.

To evaluate drift in the transmissometer, the air calibration of the transmissometer was monitored during the cruise. This was done by cleaning the lenses of the transmissometer with Kimwipes and distilled water, then completely blocking the light path and recording the voltage. The lens was cleaned at approximately every fifth station; the cleaning and measurement were made at about every 25th station. The open in-air voltage was recorded at multiple stations during the cruise. After the cruise, these values were examined to determine if there was a change in the calibration value during the course of the cruise. The blocked values were always zero; the clean values were plotted by station to assure that there were no catastrophic problems with the transmissometer during the cruise. If there were no major problems, the highest clean value from the cruise was used to perform computations to obtain the %-transmission calibration coefficients given in line 23 of the configuration files.

PBAC was calculated from the transmissivity data (see Section 2.2.2). PBAC is independent of beam length. This is an advantage over transmissivity, which is dependent on the beam length. In addition, PBAC increases as particle concentration increases, while transmissivity is inverse to particle concentration.

3.2. Discrete measurements

Bottle data were plotted versus depth and examined for spurious results. Vertical sections and selected property-property plots also were made and examined. Obvious problems in the data were corrected after visual inspection of the data.

<u>Nutrients</u>: The TAMU Department of Oceanography's Technical Support Services Group performed the nutrient analyses. During the first year of the LATEX A hydrography program, they participated in an international calibration experiment conducted by an international group, known as QUASIMEME (Quality Assurance of Information for Marine Environmental Monitoring in Europe). QUASIMEME provided a set of standards and a set of six sea water samples of unknown concentration to be determined. A number of these samples were analyzed together with LATEX A nutrient samples. Results of the nutrient calibration experiment were published in a confidential report. Nutrient concentrations submitted by TAMU were found to be in very good agreement with actual nitrate, nitrite, phosphate, and ammonia concentrations in the sea water samples. Urea and silicate were not included in the QUASIMEME tests.

<u>Phytoplankton pigments</u>: Every chromatogram produced from each sample run by HPLC was examined for proper integration by the Hewlett-Packard Model 3392A integrator using the WINner software of Spectra-Physics. Erroneously integrated peaks

were corrected individually. Peak heights obtained by HPLC or voltages obtained by Turner fluorescence were entered into a spreadsheet for calculation into pigment concentrations in $ng \cdot l^{-1}$. The calculations used for individual pigment concentrations were:

$$Cp = [As * (Rf)^{-1}] * [Ev * (Inj)^{-1}] * (Sv)^{-1}$$

where,

Cp = pigment concentration ($ng \cdot l^{-1}$);

As = peak area of individual pigment computed by Hewlett-Packard Model 3392A integrator;

Rf = standard response factor (peak area divided by weight of pigment per 0.5 ml injection volume);

Ev = exact volume (calculated by calibrated canthaxanthin area (internal standard) divided by internal standard area and multiplied by canthaxanthin injection volume of 0.1 ml);

Inj = injected volume (0.5 ml);

Sv = original volume of sample filtered.

The HPLC system was calibrated weekly using a Hewlett-Packard Model HP8451 Diode Array Spectrophotometer. Pure chlorophyll *a* from Sigma Chemical Co., diluted in acetone, was used for calibration. Concentrations obtained from the HPLC system were within 5% of the measured standard.

The calculations for Turner fluorescence were:

$$\text{Chl-a} = Fd * [t * (t-1)^{-1}] * (Rb - Ra) * [Ve * (Vf)^{-1}]$$

and

$$\text{Phaeo} = Fd * [t * (t-1)^{-1}] * [(t * Ra) - Rb] * [Ve * (Vf)^{-1}]$$

where,

Chl-a =	chlorophyll *a* concentration in $mg \cdot l^{-1}$;
Phaeo =	phaeopigment concentration in $mg \cdot l^{-1}$;
Fd =	calibration factor;
t =	acid ratio (ratio of fluorescence of standard chlorophyll *a* before and after acidification);
Rb =	reading before acidification;
Ra =	reading after acidification;
Ve =	volume of extract;
Vf =	volume of sample filtered.

Concentrations then were converted into $ng \cdot l^{-1}$ for comparison with HPLC data. The calibration constant and acid ratio were stored in the Turner-10AU fluorometer and automatically were included in each reading.

4. Structure of Appendices

Appendices A through J contain maps and plots of the data taken on the LATEX A hydrographic surveys H01 through H10. Each appendix includes a map showing station locations and numbers, and a table providing information on sampling times, locations, water depth, and number of bottles tripped. These are followed by vertical and horizontal contour plots of the various hydrographic parameters. Vertical sections are shown for each cross-shelf line and for the alongshelf lines at the 50-m and 200-m isobaths. The horizontal contours plot the surface (3-4 m depth) and bottom values. Ensemble potential temperature-salinity diagrams also are provided. Downwelling irradiance is normalized to the surface irradiance and shown as percent of surface irradiance. To account for shading by the vessel hull, the surface irradiance (I_0) value is taken to be the maximum value of the upper five bins of the station. Users of downwelling irradiance data should check the station metadata for processing caveats.

The figure numbering scheme for the plots of hydrographic data follows an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 12 defines the x, y, and z components of the figure number.

Table 12. Definitions for "x.y.z" figure numbering scheme.

cruise number (x):

1 = Hydrographic survey H01
2 = Hydrographic survey H02
3 = Hydrographic survey H03
4 = Hydrographic survey H04
5 = Hydrographic survey H05
6 = Hydrographic survey H06
7 = Hydrographic survey H07
8 = Hydrographic survey H08
9 = Hydrographic survey H09
10 = Hydrographic survey H10

Table 12. Definitions for "x.y.z" figure numbering scheme. (continued)

plot type (y):

0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-5 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3db relative to 70db)
15 = geopotential anomaly map (3db relative to 200db)
16 = ensemble potential temperature-salinity diagram

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

Typical contour intervals for each parameter are shown in Table 13. Special cases are labeled. Unless otherwise specified, vertical and horizontal intervals were the same.

Table 13. Contour intervals.

Parameter	Units	Intervals
Potential temperature	°C	4., 5., 6., 7., 8., 9., 10., 11., 12., 13., 14., 15., 16., 17., 18., 19., 20., 21., 22., 23., 24., 25., 26., 27., 28., 29., 30., 31., 32., 33., 34., 35.
Salinity	psu	10., 11., 12., 13., 14., 15., 16., 17., 18., 19., 20., 21., 22., 23., 24., 25., 26., 27., 28., 29., 30., 31., 32., 33., 34., 35., 35.5, 36., 36.2, 36.4, 36.6, 36.8
Sigma-theta	$kg \cdot m^{-3}$	vertical: 10., 11., 12., 13., 14., 15., 15.5, 16., 16.5, 17., 17.5, 18., 18.5, 19., 19.5, 20., 20.5, 21., 21.5, 22., 22.5, 23., 23.5, 24., 24.5, 25., 25.5, 26., 26.5, 27., 27.5, 28., 28.5, 29., 29.5, 30. horizontal: no half increments
Transmission	%	vertical: 10., 20., 30., 40., 50., 60., 70., 80., 90., 100. horizontal: adds 85., 95.
Optical backscatterance	voltage	0.01, 0.05, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0
Suspended particlate material	$mg \cdot l^{-1}$	0.25, 0.5, 0.75, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10., 12.5, 15., 17.5, 20., 22.5, 25.
Relative fluorescence	voltage	0.05, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0
Downwelling irradiance	$\%I_0$	1., 10., 20., 30., 40., 50., 60., 70., 80., 90., 100.
Dissolved oxygen	$ml \cdot l^{-1}$	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0
Silicate	$\mu M \cdot l^{-1}$	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10., 12., 14., 16., 18., 20., 25., 30., 35., 40., 45., 50., 55., 60., 65.
Phosphate	$\mu M \cdot l^{-1}$	0.05, 0.1, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5
Nitrate	$\mu M \cdot l^{-1}$	0.1, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0, 22.0, 24.0, 26.0, 28.0, 30.0, 32.0
Nitrite	$\mu M \cdot l^{-1}$	0.05, 0.1, 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0
Ammonium	$\mu M \cdot l^{-1}$	0.05, 0.10, 0.20, 0.30, 0.40, 0.50, 1.00, 1.50, 2.00, 3., 4., 5., 6., 7., 8., 9., 10., 11., 12., 13., 14., 15., 16., 17.
Urea	$\mu M \cdot l^{-1}$	0.05, 0.1, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.3, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6
Chlorophyll *a*	$ng \cdot l^{-1}$	vertical: 100., 200., 300., 400., 500., 1000., 2000., 3000., 4000., 5000., 6000., 7000., 8000., 9000., 10000., 15000., 20000., 25000., 30000., 35000. horizontal: adds 12500., 17500., 22500., 27500.

5. Configuration Files

This section contains the configuration files used to process the CTD data collected as part of the LATEX A hydrographic surveys. These files were used with the SEASOFT Version 4 software by Sea-Bird Electronic, Inc. (1993). Section 5.1 contains a description of the contents of the configuration files. In the cruise files, the column to the right indicates by a check mark those sensors for which actual data were collected; all other data lines were included per Sea-Bird instructions to allow processing of the files. Note that as of cruise H06 the software was modified to include sensors from lines 83-103; none of these additional sensors were used in LATEX A. The 15 cruise files contain the specific configuration data used to process CTD data by cruise and station. Note that on several cruises there was more than one configuration file; this occurred when different sensor configurations were used during the cruises.

5.1. Configuration File Format

Line	Contents	Data
1	conductivity sensor serial number	√
2	conductivity M, A, B, C, D, PCOR	√
3	conductivity cell_const, series_r, slope, offset	√
4	temperature sensor serial number	√
5	temperature F0, A, B, C, D, slope, offset	√
6	secondary conductivity sensor serial number	
7	secondary conductivity M, A, B, C, D, PCOR	
8	secondary conductivity cell_const, series_r, slope, offset	
9	secondary temperature sensor serial number	
10	secondary temperature F0, A, B, C, D, slope, offset	
11	pressure sensor serial number	√
12	pressure T1, T2, T3, T4	√
13	pressure C1, C2, C3, C4	√
14	pressure D1, D2, slope, offset, pressure sensor type, AD590_M, AD590_B	√
15	oxygen sensor serial number	√
16	oxygen M, B, K, C, SOC, TCOR	√
17	oxygen WT, PCOR, TAU, BOC	√
18	pH sensor serial number	
19	pH M, B, VREF	
20	PAR light sensor serial number	√
21	PAR cal const, multiplier, M, B, surface_cc, surface_r	√
22	transmissometer sensor serial number	√
23	transmissometer A, B, path length	√
24	fluorometer sensor serial number	√
25	fluorometer scale factor, offset	√
26	tilt sensor serial number	
27	tilt XM, XB, YM, YB	
28	ORP sensor serial number	

29	ORP M, B, offset	
30	OBS sensor serial number	√
31	OBS gain, offset	√
32	ALT scale, alt_set, alt_hyst	√
33	microstructure temperature sensor serial number	
34	microstructure temperature pre_m, pre_b	
35	microstructure temperature num, denom, A0, A1, A3	
36	microstructure conductivity sensor serial number	
37	microstructure conductivity A0, A1, A2	
38	microstructure conductivity M, B, R	
39	number of external frequencies, number of bytes, number of voltages, instrument type, computer interface, scan rate, interval, append Lat/Lon with NMEA interface box?	√
40	data format channels 1 - 9	√
41	data format channels 10 - 19	√
42	data format channels 20 - 39	√
43	sbe16: use water temperature?, fixed pressure, fixed pressure temperature	
44	firmware version	√
45	number of frequencies from sbe9, number of frequencies to be suppressed, number of voltages to be suppressed, voltage range, add surface PAR voltage?	√
46	IFREMER nephelometer sensor serial number	
47	IFREMER nephelometer VM0, VD0, D0, K	
48	Chelsea nephelometer sensor serial number	
49	Chelsea nephelometer clear water voltage, scale factor	
50	ZAPS sensor serial number	
51	ZAPS m, b	
52	calibration date for conductivity sensor	√
53	calibration date for temperature sensor	√
54	calibration date for secondary conductivity sensor	
55	calibration date for secondary temperature sensor	
56	calibration date for pressure sensor	√
57	calibration date for oxygen sensor	√
58	calibration date for pH sensor	
59	calibration date for PAR light sensor	√
60	calibration date for transmissometer sensor	√
61	calibration date for fluorometer sensor	√
62	calibration date for tilt sensor	
63	calibration date for ORP sensor	
64	calibration date for OBS sensor	√
65	calibration date for microstructure temperature sensor	
66	calibration date for microstructure conductivity sensor	
67	calibration date for IFREMER nephelometer sensor	
68	calibration date for Chelsea nephelometer sensor	
69	calibration date for ZAPS sensor	
70	secondary oxygen sensor serial number	
71	calibration date for secondary oxygen sensor	
72	secondary oxygen M, B, K, C, SOC, TCOR	
73	secondary oxygen WT, PCOR, TAU, BOC	
74	userpoly1 sensor serial number	
75	calibration date for userpoly1 sensor	
76	userpoly1 A0, A1, A2, A3	
77	userpoly2 sensor serial number	
78	calibration date for userpoly2 sensor	
79	userpoly2 A0, A1, A2, A3	
80	userpoly3 sensor serial number	
81	calibration date for userpoly23sensor	
82	userpoly3 A0, A1, A2, A3	
83	Dr. Maardt chlorophyll sensor serial number	
84	calibration date for Dr. Maardt chlorophyll sensor	
85	Dr. Maardt chlorophyll A0, A1,B0, B1, modulo bit	
86	Dr. Maardt phycoenythrin sensor serial number	
87	calibration date for Dr. Maardt phycoenythrin sensor	
88	Dr. Maardt phycoenythrin A0, A1	
89	Dr. Maardt turbidity sensor serial number	

90 calibration date for Dr. Maardt turbidity sensor
91 Dr. Maardt turbidity A0, A1,B0, B1, modulo bit
92 IOW oxygen sensor serial number
93 calibration date for IOW oxygen sensor
94 IOW oxygen A0, A1, A2, B0, B1
95 IOW sound velocity sensor serial number
96 calibration date for IOW sound velocity sensor
97 IOW sound velocity A0, A1, A2
98 Biospherical natural fluorometer sensor serial number
99 calibration date for Biospherical natural fluorometer sensor
100 Biospherical natural fluorometer Cfn, A1, A2, B
101 Sea Tech ls6000 sensor serial number
102 calibration date for Seqa Tech ls6000 sensor
103 Sea Tech ls6000 gain, slope, offset

5.2. Configuration File For H01, All Stations

LATEX A filename: 92a2post.con SEASOFT Version 4.003

Line	Configuration Parameters
1	040987
2	4.7 4.29270269e-006 5.43971886e-001 -4.06552812e+000 -5.58333146e-005 0.00000000e+000
3	2000.0000 0.0000 0.99999550 0.00000
4	031273
5	6691.960 3.67511530e-003 6.03829969e-004 1.54985527e-005 2.43926545e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 1.00000000 0.000 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.3797 -0.033
17	0.67 1.50e-004 2.0 -0.0190
18	
19	0.0000 0.0000 0.0000
20	4326
21	3059507400.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	103
23	20.3082 0.0000 0.250
24	54D
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	137-old
31	400.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	
53	
54	

```
9/93

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9/93







5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000
```

5.3. Configuration File For H02, All Stations

LATEX A filename: 92b2post.con SEASOFT Version 4.012

Line	Configuration Parameters
1	040987
2	4.4 9.55013460e-006 5.43708026e-001 -4.06371995e+000 -1.52510411e-005 0.00000000e+000
3	2000.0000 0.0000 0.99997800 0.00000
4	031273
5	6704.100 3.67401496e-003 6.03828270e-004 1.56396459e-005 2.50638932e-006 1.00000000 -0.0002
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 1.00000000 0.000 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 4.1968 -0.033
17	0.67 1.50e-004 2.0 -0.1260
18	
19	0.0000 0.0000 0.0000
20	4326
21	2413243882.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	103
23	20.7731 -0.0210 0.250
24	54D
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	137-old
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	
53	
54	

```
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9/93

5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000
```

5.4. Configuration File For H03, All Stations

LATEX A filename: 92c2post.con SEASOFT Version 4.012

Line	Configuration Parameters
1	040663
2	4.1 1.37917872e-005 4.28018172e-001 -4.11703117e+000 5.09191715e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6763.950 3.67482118e-003 6.00939712e-004 1.50497209e-005 2.49312612e-006 1.00000000 -0.0005
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	38276
12	3.100637e+001 -1.842865e-003 4.420451e-006 0.000000e+000
13	-3.367366e+004 -3.751503e+000 1.030010e-002 0.000000e+000
14	2.945261e-002 0.000000e+000 0.99981000 -0.668 130 1.158000e-002 -9.177160e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.7526 -0.033
17	0.67 1.50e-004 2.0 -0.0578
18	
19	0.0000 0.0000 0.0000
20	4182
21	10716964960.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	103
23	20.0335 0.0000 0.250
24	54D
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	
53	
54	

```
9/93

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9/93

5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000
```

5.5. Configuration File For H04, All Stations

LATEX A filename: 93d2post.con SEASOFT Version 4.016

Line	Configuration Parameters
1	040987
2	4.3 1.28454563e-005 5.43848368e-001 -4.06480414e+000 -1.42180687e-004 0.00000000e+000
3	2000.0000 0.0000 0.99997500 0.00000
4	031273
5	6704.100 3.67401496e-003 6.03828270e-004 1.56396459e-005 2.50638932e-006 1.00000000 0.0013
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 1.00000000 0.000 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.2561 -0.033
17	0.67 1.50e-004 2.0 -0.0541
18	
19	0.0000 0.0000 0.0000
20	4182
21	10716964960.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	103
23	20.0000 0.0000 0.250
24	54D
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	
53	
54	

```
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9/93


9/93







5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000
```

5.6. Configuration File For H05, All Stations

LATEX A filename: 93e2post.con SEASOFT Version 4.016

Line	Configuration Parameters
1	040987
2	4.1 2.22397103e-005 5.43508017e-001 -4.06284655e+000 -1.93633926e-004 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	031273
5	6345.840 3.68098399e-003 5.98554007e-004 1.49152886e-005 2.22910843e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 1.00000000 0.000 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.5009 -0.033
17	0.67 1.50e-004 2.0 -0.0125
18	
19	0.0000 0.0000 0.0000
20	4182
21	10716964960.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	103
23	20.0461 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	
53	
54	

```
9/93
9/93
9/93
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
```

5.7. Configuration File For H06, All Stations

LATEX A filename: 93f2postn.con SEASOFT Version 4.026

Line	Configuration Parameters
1	040987
2	4.3 1.27050815e-005 5.43739025e-001 -4.06405912e+000 -1.74073648e-004 0.00000000e+000
3	2000.0000 0.0000 1.00001900 0.00000
4	031273
5	6418.770 3.67411381e-003 5.98022799e-004 1.39777290e-005 1.46458797e-006 1.00000000 -0.0005
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 1.00000000 0.000 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.4705 -0.033
17	0.67 1.50e-004 2.0 -0.0148
18	
19	0.0000 0.0000 0.0000
20	4326
21	1942000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	103
23	19.9920 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	8/18/93
53	8/18/93
54	

```
9/93
9/93
9/93
9/1993
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000
 5.00000000 2.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
5.00000000
 5 0.000 2.000
```

5.8. Configuration File For H07, Stations 1 through 156

LATEX A filename: 93g2osto.con SEASOFT Version 4.029

Note: During QA/QC processing it was found that the pressure offset in the configuration file below was in error. The correct offset (line 14, parameter 4) should be +1db, not -0.969db. Data were corrected by adding +2db to the processed pressure.

Line	Configuration Parameters
1	040663
2	4.4 5.82970169e-006 4.28358897e-001 -4.11918692e+000 -1.28323523e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6691.690 3.68109753e-003 6.01297751e-004 1.53578047e-005 2.61698115e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	38276
12	3.100637e+001 -1.842865e-003 4.420451e-006 0.000000e+000
13	-3.367366e+004 -3.751503e+000 1.030010e-002 0.000000e+000
14	2.945261e-002 0.000000e+000 0.99983000 -0.969 130 1.148000e-002 -8.137100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.4300 -0.033
17	0.67 1.50e-004 2.0 -0.0121
18	
19	0.0000 0.0000 0.0000
20	4326
21	1942000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	1
23	20.4879 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000

```
 5.000000 2.000000
12/15/93
12/09/93


01/04/94
1/19/94

06/22/93
1/12/94
01/13/93


06/25/92







5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000 0


 5.00000000 2.00000000


 5.00000000 2.00000000 0.00000000 0.00000000 0


 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000
```

5.9. Configuration File For H07, Stations 157 through 167

LATEX A filename: 93g2ostn.con SEASOFT Version 4.029

Line	Configuration Parameters
1	040987
2	4.5 7.27367181e-006 5.44018338e-001 -4.06566164e+000 -1.36671461e-004 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	031273
5	6166.530 3.68109728e-003 5.98686557e-004 1.48888639e-005 2.21153976e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 0.99979000 0.523 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.4300 -0.033
17	0.67 1.50e-004 2.0 -0.0121
18	
19	0.0000 0.0000 0.0000
20	4326
21	1942000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	1
23	20.4879 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	12/15/93
53	12/09/93
54	

```
01/04/94
19/1/94
06/22/93
15/1/94
01/13/93
06/25/92
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000
```

5.10. Configuration File For H07, Stations 168 through 234

LATEX A filename: 93g2oosn.con SEASOFT Version 4.029

Line	Configuration Parameters
1	040663
2	4.4 5.82970169e-006 4.28358897e-001 -4.11918692e+000 -1.28323523e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6691.690 3.68109753e-003 6.01297751e-004 1.53578047e-005 2.61698115e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330961e-006 4.345320e-009
13	-4.450088e+004 -5.131453e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 0.99979000 0.523 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.4300 -0.033
17	0.67 1.50e-004 2.0 -0.0121
18	
19	0.0000 0.0000 0.0000
20	4326
21	1942000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	1
23	20.4879 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	12/15/93
53	12/09/93
54	

```
01/04/93
1/19/94

07/01/93
1/12/94
1/13/93

5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000 0.00000000 0

 5.00000000 2.00000000

 5.00000000 2.00000000 0.00000000 0.00000000 0

 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000

 5.00000000 2.00000000 0.00000000
```

5.11. Configuration File For H07, Stations 235 through 238

LATEX A filename: 93g2osso.con SEASOFT Version 4.029

Note: During QA/QC processing it was found that the pressure offset in the configuration file below was in error. The correct offset (line 14, parameter 4) should be +1db, not -0.969db. Data were corrected by adding +2db to the processed pressure.

Line	Configuration Parameters
1	040663
2	4.4 5.82970169e-006 4.28358897e-001 -4.11918692e+000 -1.28323523e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6691.690 3.68109753e-003 6.01297751e-004 1.53578047e-005 2.61698115e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	38276
12	3.100637e+001 -1.842865e-003 4.420451e-006 0.000000e+000
13	-3.367366e+004 -3.751503e+000 1.030010e-002 0.000000e+000
14	2.945261e-002 0.000000e+000 0.99983000 -0.969 130 1.148000e-002 -8.137100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.4300 -0.033
17	0.67 1.50e-004 2.0 -0.0121
18	
19	0.0000 0.0000 0.0000
20	4326
21	1942000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	1
23	20.4879 0.0000 0.250
24	54S
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000

```
 5.000000 2.000000
12/15/93
12\09\93
01/04/93
1/19/94
06/22/93
1/12/94
07/87
06/26/92
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000
```

5.12. Configuration File For H08, Stations 1 through 8

LATEX A filename: 94h1post.con SEASOFT Version 4.029

Line	Configuration Parameters
1	040663
2	4.2 1.04930805e-005 4.28160875e-001 -4.11799744e+000 -8.45823838e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6691.730 3.68103591e-003 6.01288245e-004 1.53586140e-005 2.62036537e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	38276
12	3.100637e+001 -1.842865e-003 4.420451e-006 0.000000e+000
13	-3.367366e+004 -3.751503e+000 1.030010e-002 0.000000e+000
14	2.945261e-002 0.000000e+000 0.99983000 0.969 130 1.148000e-002 -8.137100e+000
15	130228
16	2.4607e-007 -5.8072e-010 8.9282 -6.9511 2.5441 -0.033
17	0.67 1.50e-004 2.0 -0.0407
18	
19	0.0000 0.0000 0.0000
20	4326
21	1942000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	596
23	19.9910 0.0000 0.250
24	54s
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	05/13/94
53	05/13/94
54	

```
01/04/94
5/11/94
06/22/93
3/16/94
07/87
06/26/92
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000
```

5.13. Configuration File For H08, Stations 9 through 170

LATEX A filename: 94h2post.con SEASOFT Version 4.029

Line	Configuration Parameters
1	040663
2	4.2 1.04930805e-005 4.28160875e-001 -4.11799744e+000 -8.45823838e-005
	0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6691.730 3.68103591e-003 6.01288245e-004 1.53586140e-005 2.62036537e-006
	1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
	0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
	1.00000000 0.0000
11	38276
12	3.100637e+001 -1.842865e-003 4.420451e-006 0.000000e+000
13	-3.367366e+004 -3.751503e+000 1.030010e-002 0.000000e+000
14	2.945261e-002 0.000000e+000 0.99983000 0.969 130 1.148000e-002 -8.137100e+000
15	130228
16	2.4607e-007 -5.8072e-010 8.9282 -6.9511 2.5441 -0.033
17	0.67 1.50e-004 2.0 -0.0407
18	
19	0.0000 0.0000 0.0000
20	4182
21	2309470000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	596
23	19.9910 0.0000 0.250
24	54s
25	1.000000e+001 0.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 0 3 0 3 1 9 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	05/13/94
53	05/13/94
54	

```
01/04/94
5/11/94
07/01/93
3/16/94
07/87
06/26/92
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000
```

5.14. Configuration File For H09, All Stations

LATEX A filename: 94ipostn.con SEASOFT Version 4.203

Line	Configuration Parameters
1	040987
2	4.4 9.68622065e-006 5.43855997e-001 -4.06483536e+000 -1.53142566e-004 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	031273
5	6175.680 3.68018242e-003 5.98645619e-004 1.48729797e-005 2.19472968e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330961e-006 4.345320e-009
13	-4.450088e+004 -5.131453e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 0.99979000 0.523 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.3792 -0.033
17	0.67 1.50e-004 2.0 -0.0184
18	
19	0.0000 0.0000 0.0000
20	4326
21	1380000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	596
23	19.9910 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	microt
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	microc
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000 0
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 44 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	08/17/94
53	08/18/94
54	

```
01/04/94
01/18/94

07/13/94
3/16/94
01/13/93


06/25/92







5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000


 5.00000000 2.00000000 0.00000000 0.00000000
5.00000000

 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000

 5.00000000 2.00000000
5.00000000

 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000

 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
5.00000000

 5.00000000 2.00000000 0.00000000
```

5.15. Configuration File For H10, Stations 1 through 15

LATEX A filename: 94jpostn.con SEASOFT Version 4.206

Line	Configuration Parameters
1	040987
2	4.6 5.93946722e-006 5.43963462e-001 -4.06510919e+000 -3.04001249e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	031273
5	6173.310 3.68039834e-003 5.98645248e-004 1.46534943e-005 2.00580602e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 0.99980000 0.804 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.6227 -0.033
17	0.67 1.50e-004 2.0 -0.0218
18	
19	0.0000 0.0000 0.0000
20	4326
21	1380000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	596
23	19.9910 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	microt
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	microc
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 74 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	11/30/94
53	11/29/94
54	

```
12/07/94
11/16/94
07/13/94
3/16/94
01/13/93
06/25/92
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000
 5.00000000 2.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
103
02/17/94
 1129 1.000 0.000
```

5.16. Configuration File For H10, Stations 16 through 170

LATEX A filename: 94jposot.con SEASOFT Version 4.206

Line	Configuration Parameters
1	040987
2	4.6 5.93946722e-006 5.43963462e-001 -4.06510919e+000 -3.04001249e-005 0.00000000e+000
3	2000.0000 0.0000 1.00000000 0.00000
4	977
5	6697.870 3.68039874e-003 6.01234693e-004 1.51357470e-005 2.44075742e-006 1.00000000 0.0000
6	
7	0.0 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000
8	0.0000 0.0000 1.00000000 0.00000
9	
10	0.000 0.00000000e+000 0.00000000e+000 0.00000000e+000 0.00000000e+000 1.00000000 0.0000
11	50131
12	3.054770e+001 -4.839360e-004 4.330910e-006 4.345320e-009
13	-4.450088e+004 -5.131450e-001 1.003530e-002 0.000000e+000
14	4.038000e-002 0.000000e+000 0.99980000 0.804 130 1.160000e-002 -8.371100e+000
15	130264
16	2.4621e-007 -3.9393e-010 8.9711 -6.9023 2.6227 -0.033
17	0.67 1.50e-004 2.0 -0.0218
18	
19	0.0000 0.0000 0.0000
20	4326
21	1380000000.00000000 1.00000000 1.00000000 0.00000000 0.00000000 0.00000000
22	596
23	19.9910 0.0000 0.250
24	058
25	1.000000e+000 2.000
26	
27	0.000000 0.000000 0.000000 0.000000
28	
29	0.000000 0.000000 0.0
30	172
31	20.00 0.000
32	5.000 0.000 0.000
33	microt
34	0.0000 0.00000e+000
35	0.0000 0.0000 0.000000000e+000 0.000000000e+000 0.000000000e+000
36	microc
37	0.000000000e+000 0.000000000e+000 0.000000000e+000
38	0.000 0.000 0.000
39	0 24 8 8 120 24.000000000000 0.000000000000
40	0 0 1 0 2 0 5 0 6 2 3 0 3 1 74 0 7 0 12 0
41	13 0 14 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0
42	13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
43	0 0.000000000000 0.000000000000
44	280
45	5 2 0 670 0 0 0
46	
47	5.000000 2.000000 0.000000 670.000000
48	
49	5.000000 2.000000
50	
51	5.000000 2.000000
52	11/30/94
53	11/29/94
54	

```
12/07/94
11/16/94
07/13/94
3/16/94
01/13/93
06/25/92
5.0000e+000  2.0000e+000  0.0000  0.0000  0.0000  0.000
5.00  2.00e+000  0.0  0.0000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000
 5.00000000 2.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000 0.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000
5.00000000
 5.00000000 2.00000000 0.00000000 0.00000000
103
02/17/94
 1129 1.000 0.000
```

Acknowledgments

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LATEX A Hydrographic Survey
Data Report

APPENDIX A: Cruise H01
April/May 1992

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Hydrographic Survey H01

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H01, which was conducted 30 April - 9 May 1992 aboard the *R/V Gyre*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 1.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 1.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 1.12.6 or 1.13.6.

Table 1.1. Definitions for "x.y.z" figure numbering scheme for cruise H01.

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cruise number (x):

1 = hydrographic survey H01

plot type (y):

0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = none for H01
6 = none for H01
7 = none for H01
8 = none for H01
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = none for H01
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 1.1. Definitions for "x.y.z" figure numbering scheme for cruise H01. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

The concentrations of 20 pigments were determined using high performance liquid chromatography (HPLC). Chlorophyll *a* is shown in the plots. Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 1.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H01. Figure 1.0 shows the location map for the stations.

Following Figure 1.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

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Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 1.2. Station time and position data from LATEX A cruise H01.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	01-MAY-1992	1642	27°42.16'	94°13.52'	272.0	12
2	01-MAY-1992	1832	27°44.29'	94°12.27'	432.0	12
3	01-MAY-1992	2217	27°48.01'	94°11.41'	266.0	12
4	01-MAY-1992	2318	27°51.00'	94°10.28'	116.0	6
5	02-MAY-1992	0041	27°54.16'	94°09.31'	95.6	12
6	02-MAY-1992	0202	27°57.07'	94°08.33'	79.0	12
7	02-MAY-1992	0307	27°59.55'	94°07.50'	76.0	7
8	02-MAY-1992	0420	28°04.67'	94°05.52'	63.5	8
9	02-MAY-1992	0532	28°08.97'	94°03.79'	63.0	12
10	02-MAY-1992	0714	28°16.02'	94°01.33'	56.0	7
11	02-MAY-1992	0831	28°21.95'	93°59.64'	50.0	12
12	02-MAY-1992	0947	28°27.93'	93°59.99'	42.1	7
13	02-MAY-1992	1108	28°33.80'	93°59.94'	36.6	6
14	02-MAY-1992	1228	28°39.64'	93°59.94'	30.7	10
15	02-MAY-1992	1424	28°45.98'	94°00.05'	25.2	6
16	02-MAY-1992	1531	28°51.91'	93°59.99'	24.9	7
17	02-MAY-1992	1641	28°57.94'	94°00.14'	16.0	6
18	02-MAY-1992	1822	29°01.29'	94°00.07'	14.0	3
19	02-MAY-1992	1902	29°03.81'	94°00.13'	17.0	8
20	02-MAY-1992	1943	29°07.36'	94°00.08'	12.5	3
21	02-MAY-1992	2018	29°09.98'	94°00.07'	12.5	3
22	02-MAY-1992	2049	29°13.04'	94°00.15'	13.0	3
23	02-MAY-1992	2131	29°16.21'	94°00.13'	14.5	2
24	02-MAY-1992	2207	29°19.00'	93°59.95'	11.0	2
25	02-MAY-1992	2245	29°21.62'	94°00.12'	9.0	3
26	02-MAY-1992	2320	29°24.58'	94°00.04'	8.0	3
27	02-MAY-1992	2359	29°28.16'	94°00.15'	6.0	2
28	03-MAY-1992	0036	29°32.06'	94°00.16'	10.5	2
29	03-MAY-1992	1212	29°10.88'	92°00.00'	7.0	4
30	03-MAY-1992	1304	29°07.99'	92°00.06'	10.1	5
31	03-MAY-1992	1411	29°04.85'	92°00.16'	13.4	4
32	03-MAY-1992	1442	29°02.31'	92°00.08'	16.0	4
33	03-MAY-1992	1531	28°59.33'	92°00.07'	19.6	4
34	03-MAY-1992	1609	28°56.24'	92°00.00'	22.2	8
35	03-MAY-1992	1728	28°52.96'	92°00.02'	25.0	6
36	03-MAY-1992	1804	28°50.27'	92°00.02'	23.0	10
37	03-MAY-1992	1912	28°44.71'	92°00.10'	32.0	8
38	03-MAY-1992	2022	28°37.74'	91°59.91'	35.0	11
39	03-MAY-1992	2150	28°32.99'	91°59.89'	40.5	9
40	03-MAY-1992	2258	28°26.78'	91°59.85'	57.0	7
41	03-MAY-1992	2357	28°21.07'	91°59.86'	56.0	12
42	04-MAY-1992	0105	28°14.70'	91°59.91'	67.0	12
43	04-MAY-1992	0210	28°08.94'	91°59.93'	81.0	12
44	04-MAY-1992	0321	28°02.71'	91°59.96'	103.0	12

Table 1.2. Station time and position data from LATEX A cruise H01. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	04-MAY-1992	0434	27°59.96'	92°00.04'	118.0	12
46	04-MAY-1992	0541	27°56.79'	92°00.05'	102.7	12
47	04-MAY-1992	0705	27°53.60'	92°00.08'	169.5	12
48	04-MAY-1992	0804	27°50.69'	91°59.98'	196.0	12
49	04-MAY-1992	0923	27°47.53'	91°59.99'	389.0	12
50	04-MAY-1992	1033	27°44.97'	91°59.89'	491.0	12
51	04-MAY-1992	1302	27°54.80'	91°45.89'	174.5	12
52	04-MAY-1992	1452	27°56.69'	91°32.67'	228.3	12
53	04-MAY-1992	1700	27°58.23'	91°19.55'	264.0	12
54	04-MAY-1992	1841	28°00.40'	91°05.85'	128.0	12
55	04-MAY-1992	2011	28°01.42'	90°52.39'	187.0	12
56	04-MAY-1992	2150	28°02.72'	90°38.58'	162.0	12
57	05-MAY-1992	0131	27°55.46'	90°30.48'	496.5	12
58	05-MAY-1992	0242	27°58.00'	90°30.18'	435.0	12
59	05-MAY-1992	0343	28°01.29'	90°30.08'	256.0	12
60	05-MAY-1992	0440	28°04.66'	90°30.20'	147.0	12
61	05-MAY-1992	0545	28°07.68'	90°30.17'	118.5	5
62	05-MAY-1992	0800	28°10.48'	90°30.15'	95.5	12
63	05-MAY-1992	0937	28°13.56'	90°30.02'	77.5	10
64	05-MAY-1992	1058	28°16.84'	90°30.00'	60.0	9
65	05-MAY-1992	1156	28°21.63'	90°29.96'	48.0	12
66	05-MAY-1992	1332	28°25.44'	90°29.96'	45.5	8
67	05-MAY-1992	1438	28°31.62'	90°30.15'	36.5	11
68	05-MAY-1992	1545	28°37.94'	90°30.30'	22.0	12
69	05-MAY-1992	1713	28°43.97'	90°30.37'	13.5	8
70	05-MAY-1992	1802	28°46.78'	90°30.70'	18.0	3
71	05-MAY-1992	1841	28°49.98'	90°30.57'	17.0	12
72	05-MAY-1992	2005	28°52.71'	90°30.62'	15.0	4
73	05-MAY-1992	2046	28°55.73'	90°30.86'	13.0	8
74	05-MAY-1992	2131	28°58.10'	90°30.62'	12.5	6
75	06-MAY-1992	0140	28°20.44'	90°42.59'	47.0	5
76	06-MAY-1992	0259	28°20.41'	90°54.58'	53.5	10
77	06-MAY-1992	0442	28°23.71'	91°08.91'	49.5	9
78	06-MAY-1992	0626	28°26.42'	91°24.02'	51.5	8
79	06-MAY-1992	0759	28°28.78'	91°37.23'	51.3	6
80	06-MAY-1992	0931	28°28.79'	91°51.59'	52.9	8
81	06-MAY-1992	1112	28°29.40'	92°06.60'	52.6	6
82	06-MAY-1992	1228	28°29.41'	92°17.37'	52.7	10
83	06-MAY-1992	1406	28°27.63'	92°31.81'	54.0	6
84	06-MAY-1992	1536	28°26.48'	92°45.67'	53.2	12
85	06-MAY-1992	1840	28°25.35'	93°10.13'	48.0	12
86	06-MAY-1992	2021	28°25.96'	93°24.00'	44.0	7
87	06-MAY-1992	2200	28°25.13'	93°37.29'	48.0	7
88	06-MAY-1992	2356	28°25.26'	93°51.01'	48.5	12

Table 1.2. Station time and position data from LATEX A cruise H01. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	07-MAY-1992	0439	27°49.26'	94°00.05'	199.0	12
90	07-MAY-1992	0705	27°48.37'	93°46.28'	187.0	12
91	07-MAY-1992	1151	27°49.06'	93°32.62'	198.0	12
92	07-MAY-1992	1423	27°49.84'	93°19.16'	148.0	12
93	07-MAY-1992	1630	27°50.08'	93°05.31'	175.5	12
94	07-MAY-1992	1921	27°52.50'	92°51.39'	216.0	9
95	07-MAY-1992	2104	27°55.14'	92°37.45'	194.5	12
96	07-MAY-1992	2301	27°55.14'	92°23.41'	82.0	6
97	08-MAY-1992	0056	27°55.14'	92°09.95'	143.0	9
98	08-MAY-1992	0607	27°39.39'	92°59.92'	316.0	12
99	08-MAY-1992	0737	27°45.30'	93°00.17'	205.4	12
100	08-MAY-1992	0905	27°52.87'	93°00.12'	188.0	12
101	08-MAY-1992	1042	28°01.82'	92°59.89'	103.6	12
102	08-MAY-1992	1216	28°10.86'	92°59.98'	73.4	12
103	08-MAY-1992	1313	28°18.50'	92°59.90'	54.5	7
104	08-MAY-1992	1431	28°25.42'	92°59.97'	50.4	12
105	08-MAY-1992	1558	28°31.89'	93°00.00'	44.5	6
106	08-MAY-1992	1658	28°38.43'	92°59.94'	36.5	7
107	08-MAY-1992	1755	28°44.95'	92°59.95'	30.0	8
108	08-MAY-1992	1847	28°51.44'	93°00.00'	25.0	6
109	08-MAY-1992	1935	28°57.81'	93°00.00'	25.0	7
110	08-MAY-1992	2024	29°03.99'	92°59.96'	24.0	7
111	08-MAY-1992	2126	29°10.06'	93°00.03'	19.0	6
112	08-MAY-1992	2209	29°15.91'	93°00.01'	17.0	5
113	08-MAY-1992	2257	29°22.01'	92°59.97'	12.5	3
114	08-MAY-1992	2343	29°27.93'	92°59.97'	13.8	5

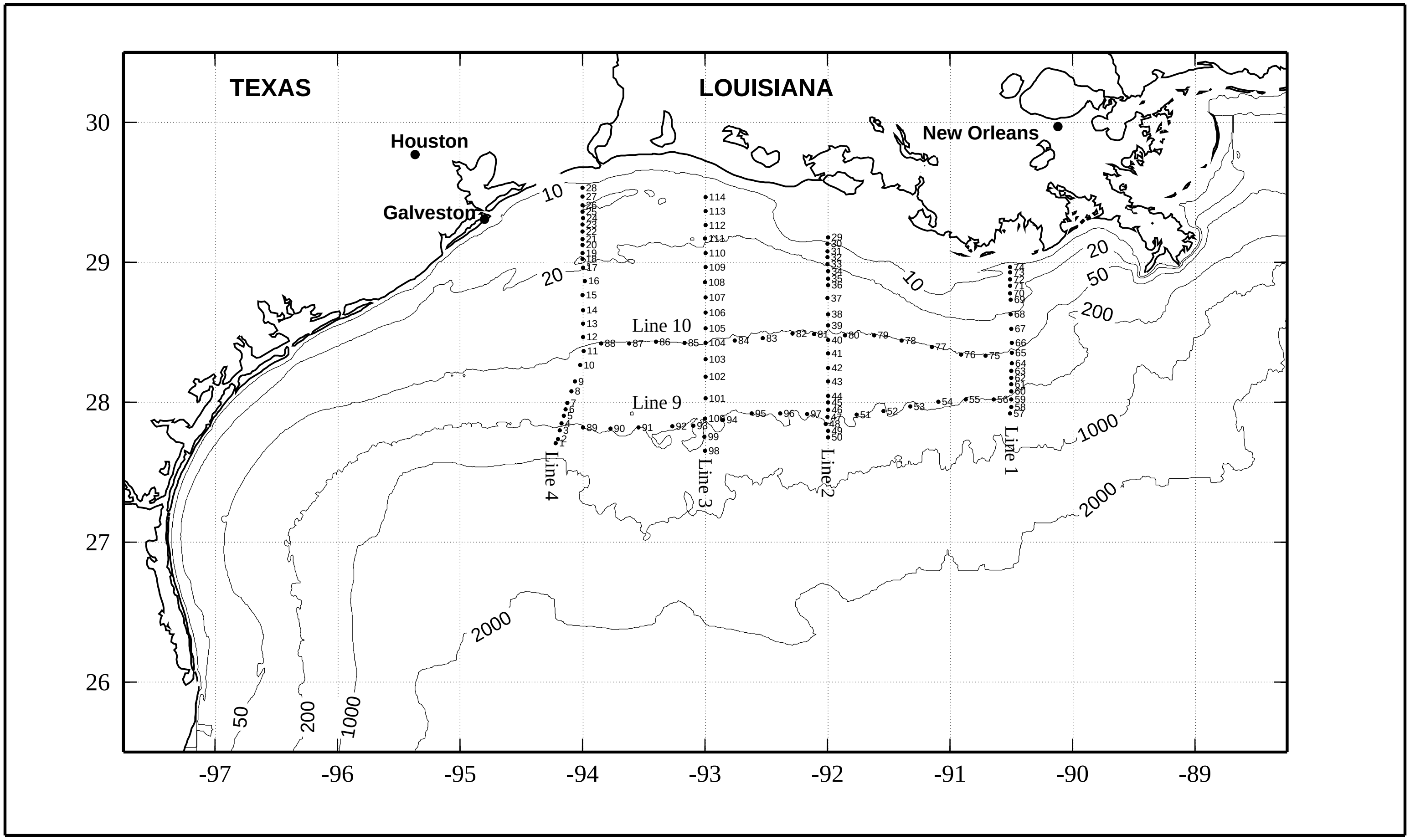

Figure 1.0. Cruise track and station locations for LATEX A Hydrographic Survey H01, 30 April - 9 May 1992.

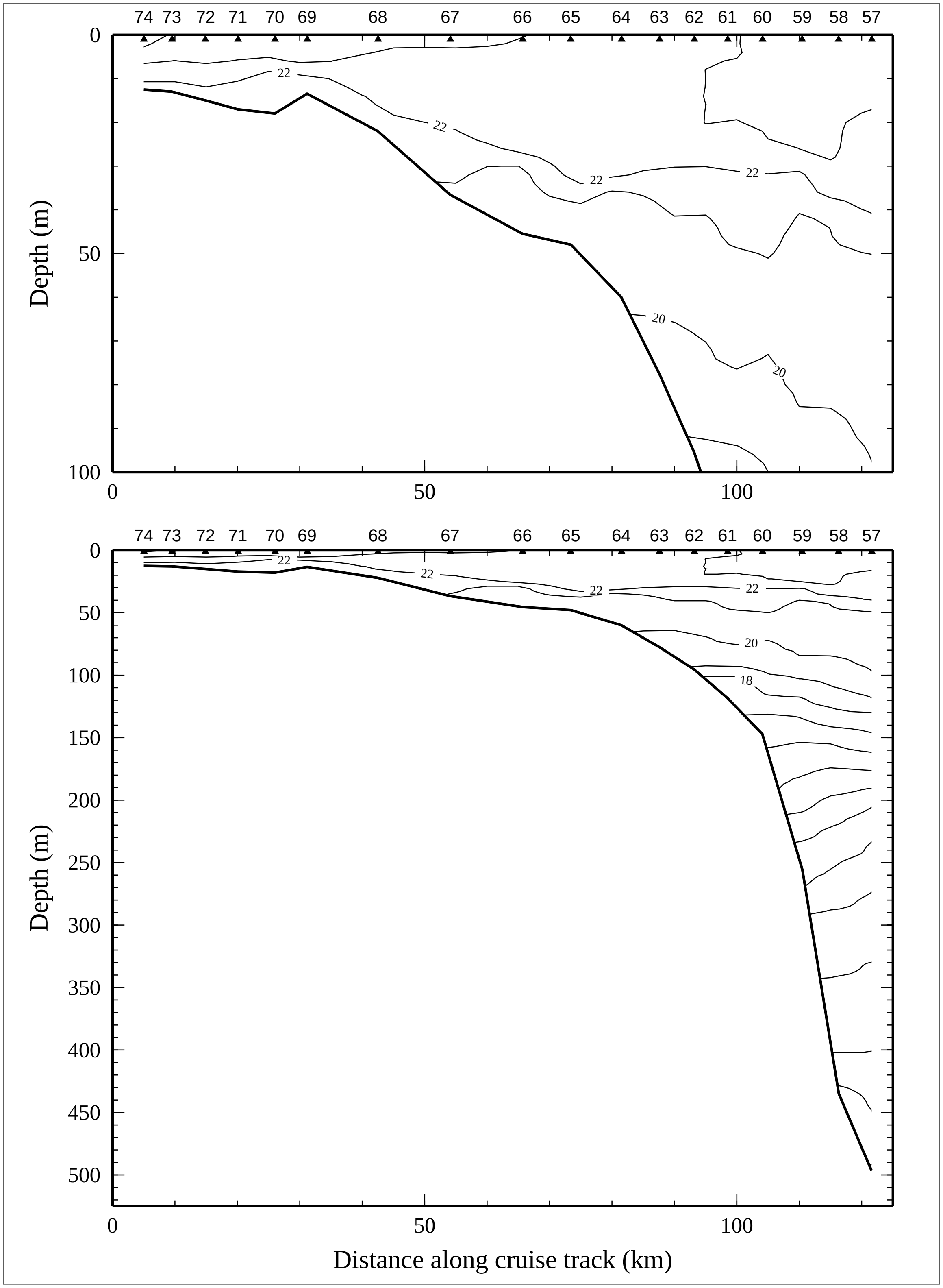

Figure 1.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H01,
30 April - 9 May 1992.

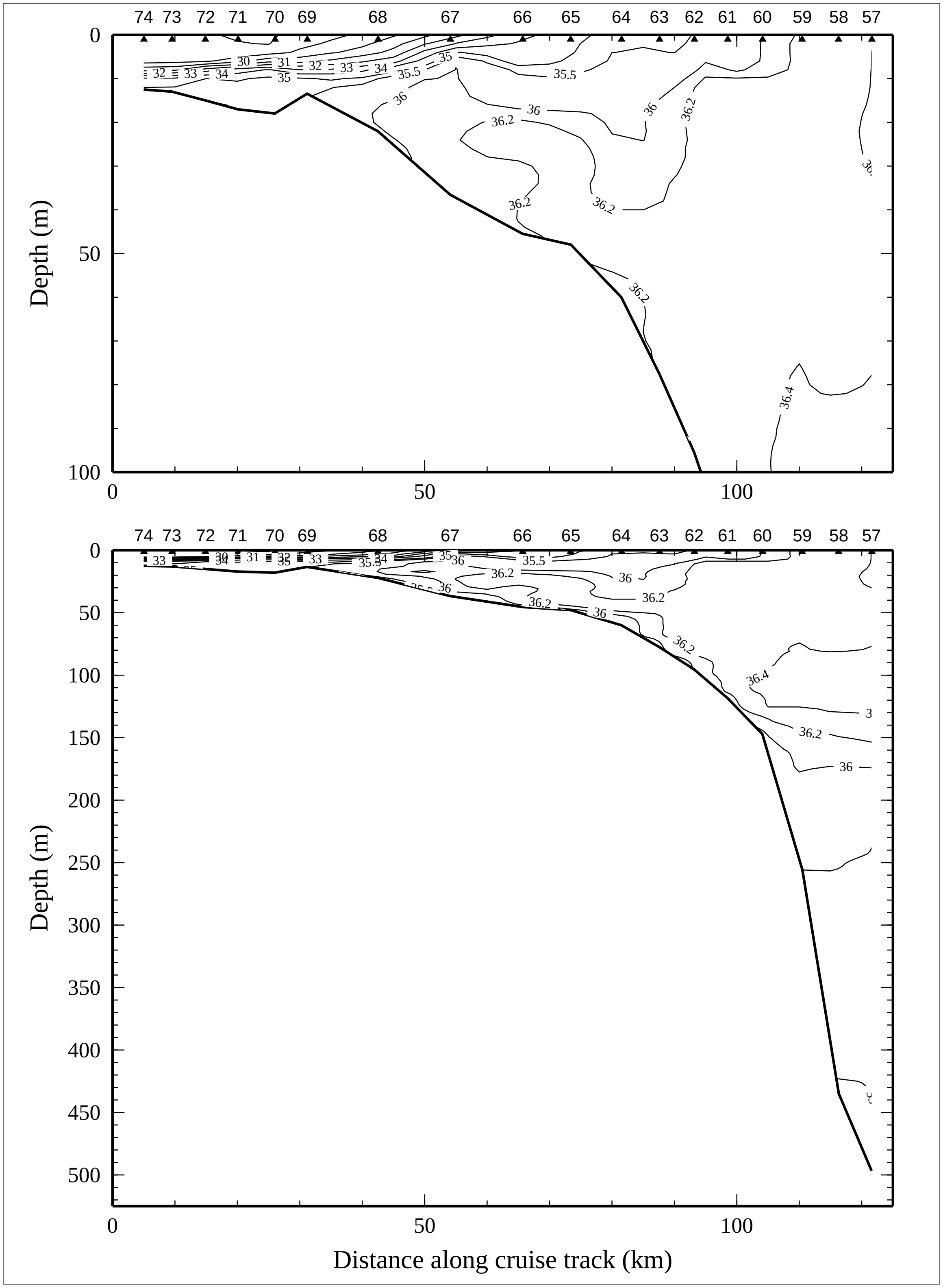

Figure 1.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

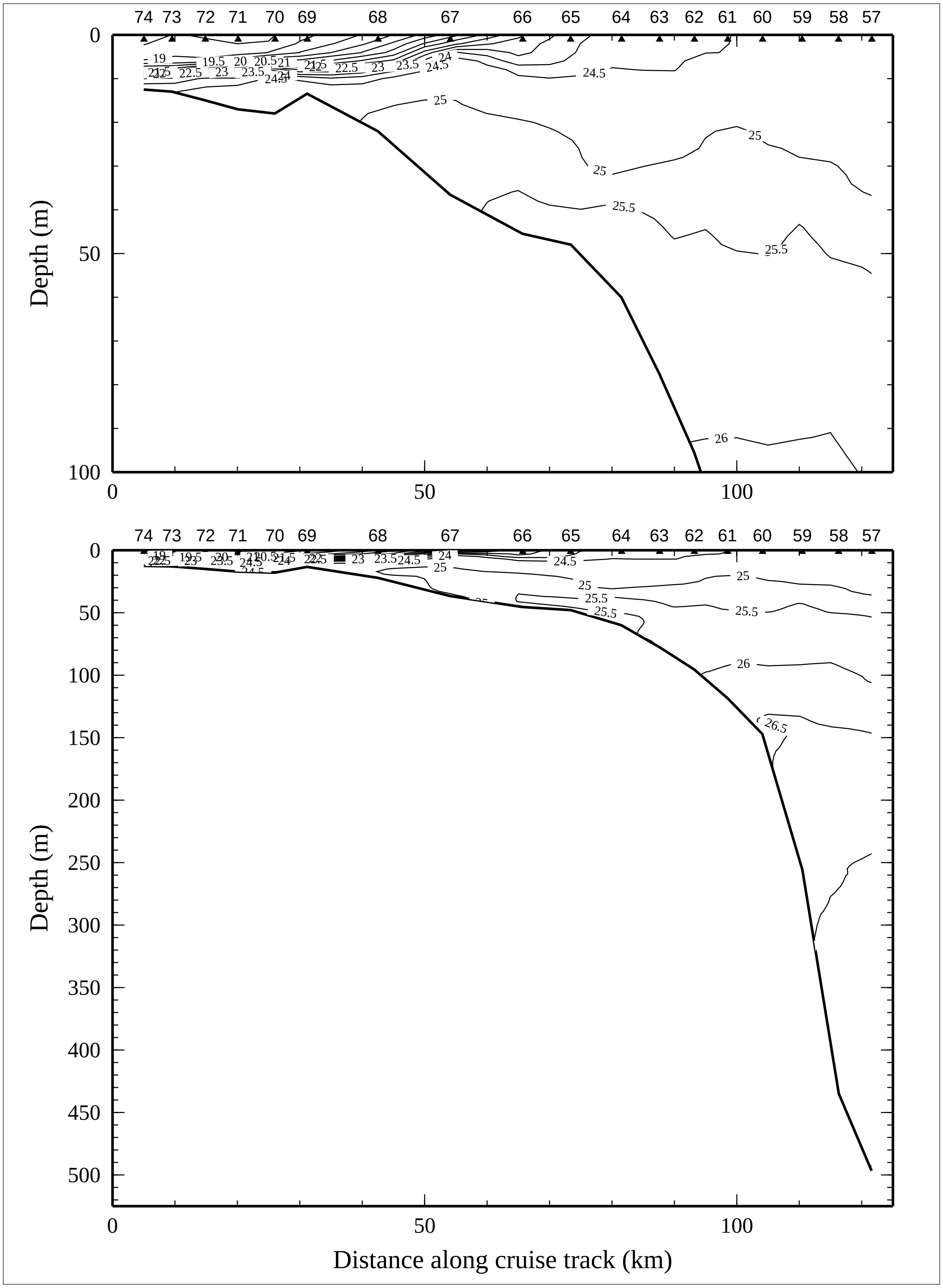

Figure 1.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

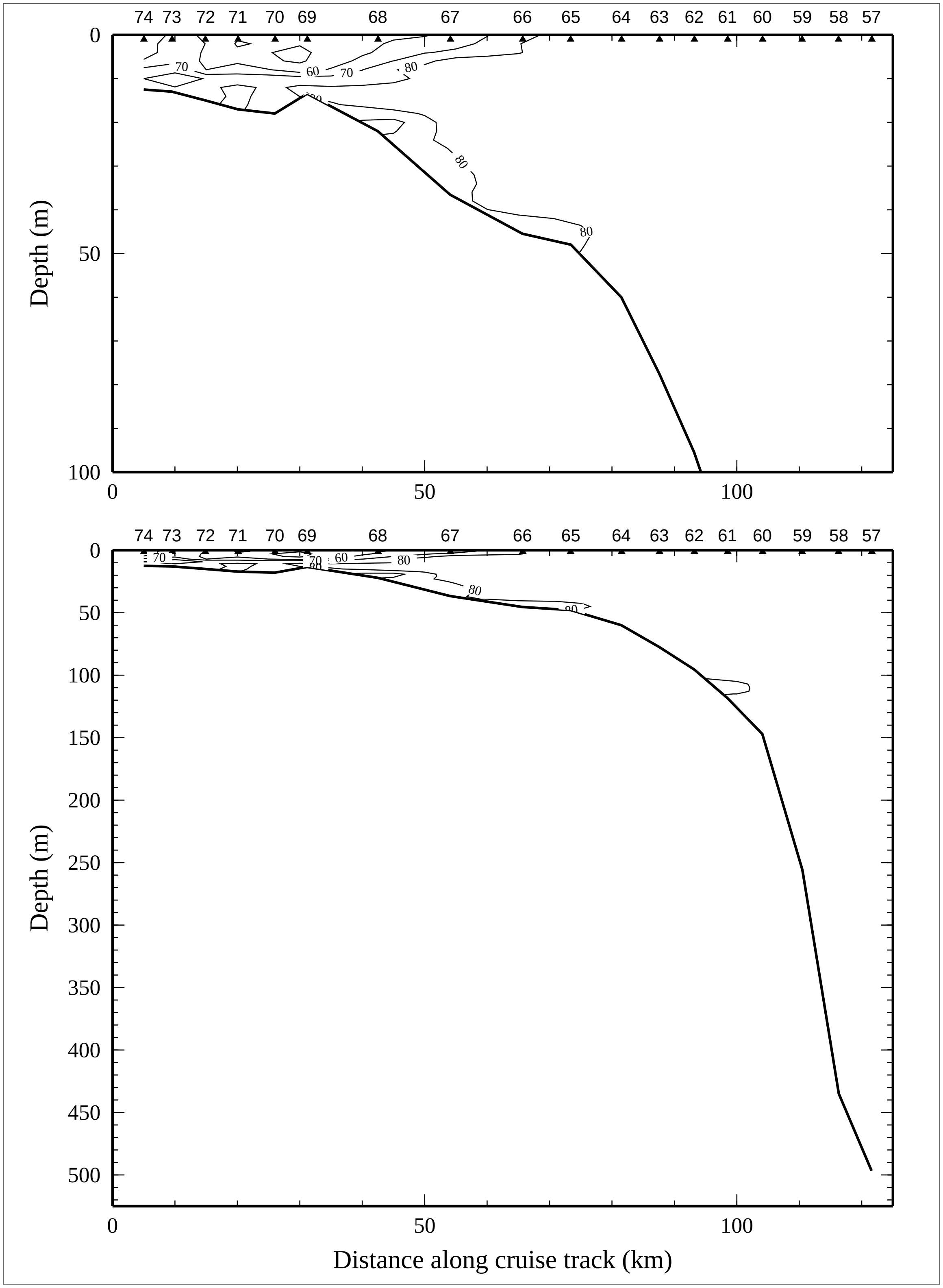

Figure 1.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

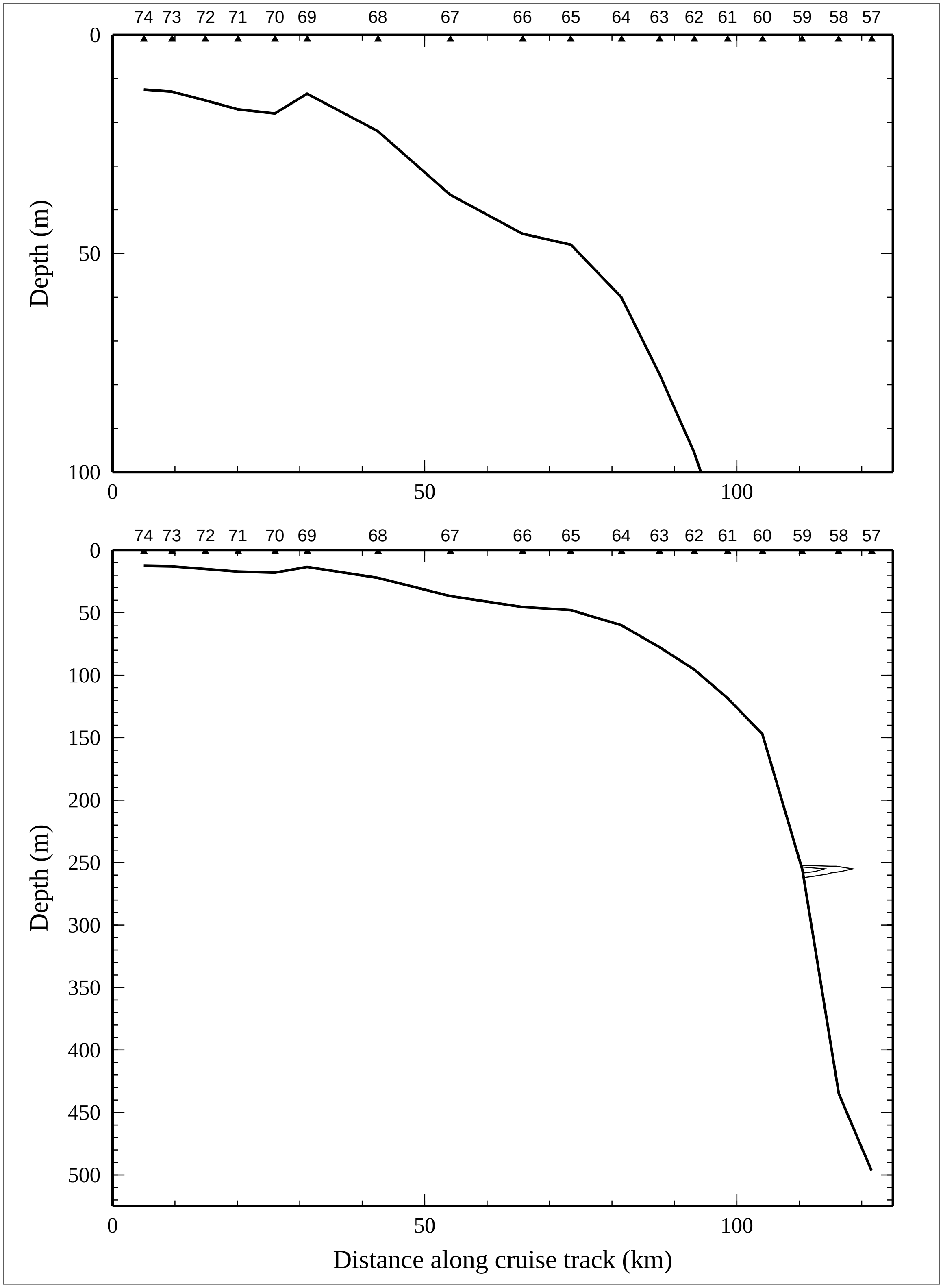

Figure 1.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

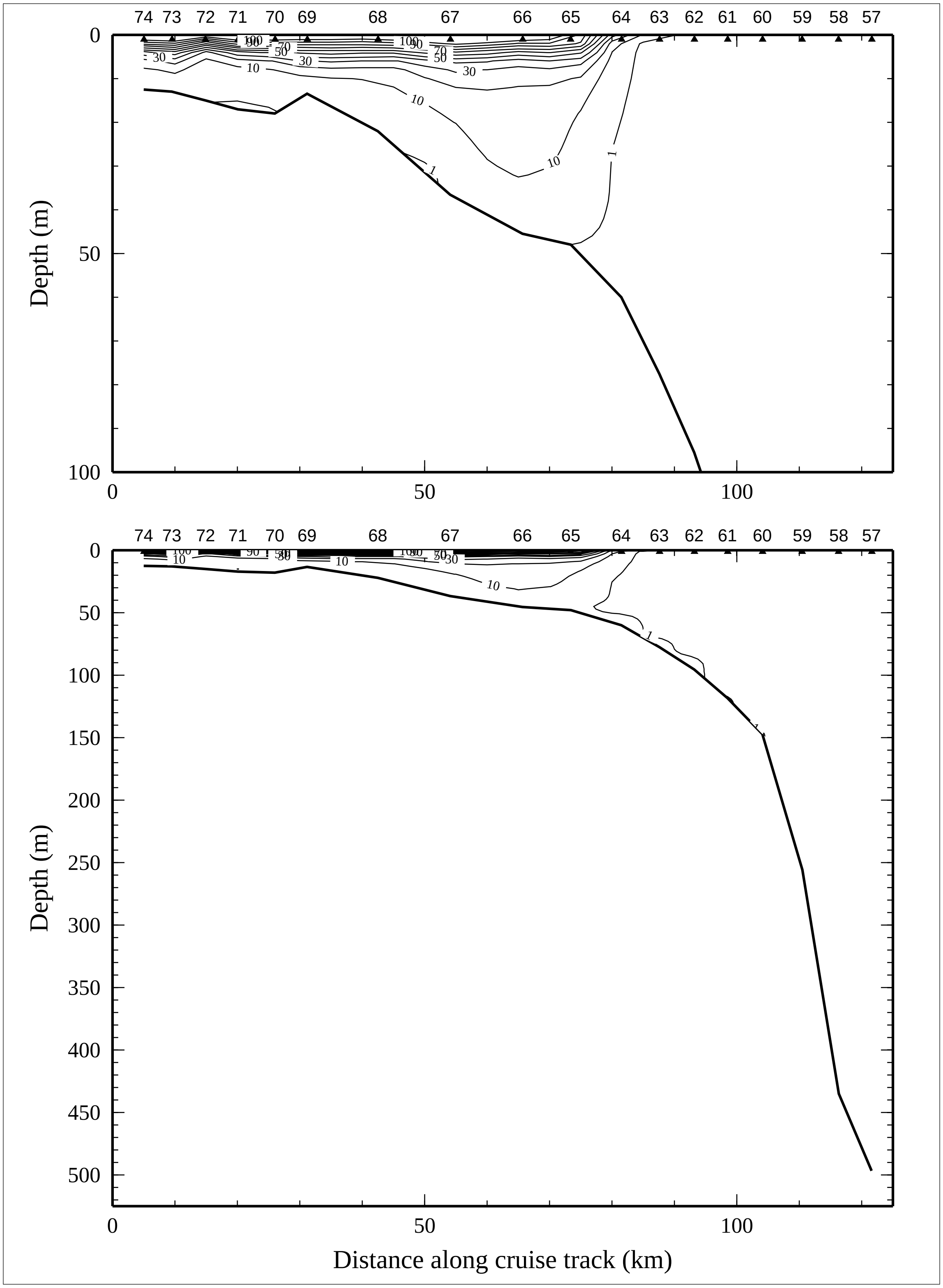

Figure 1.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

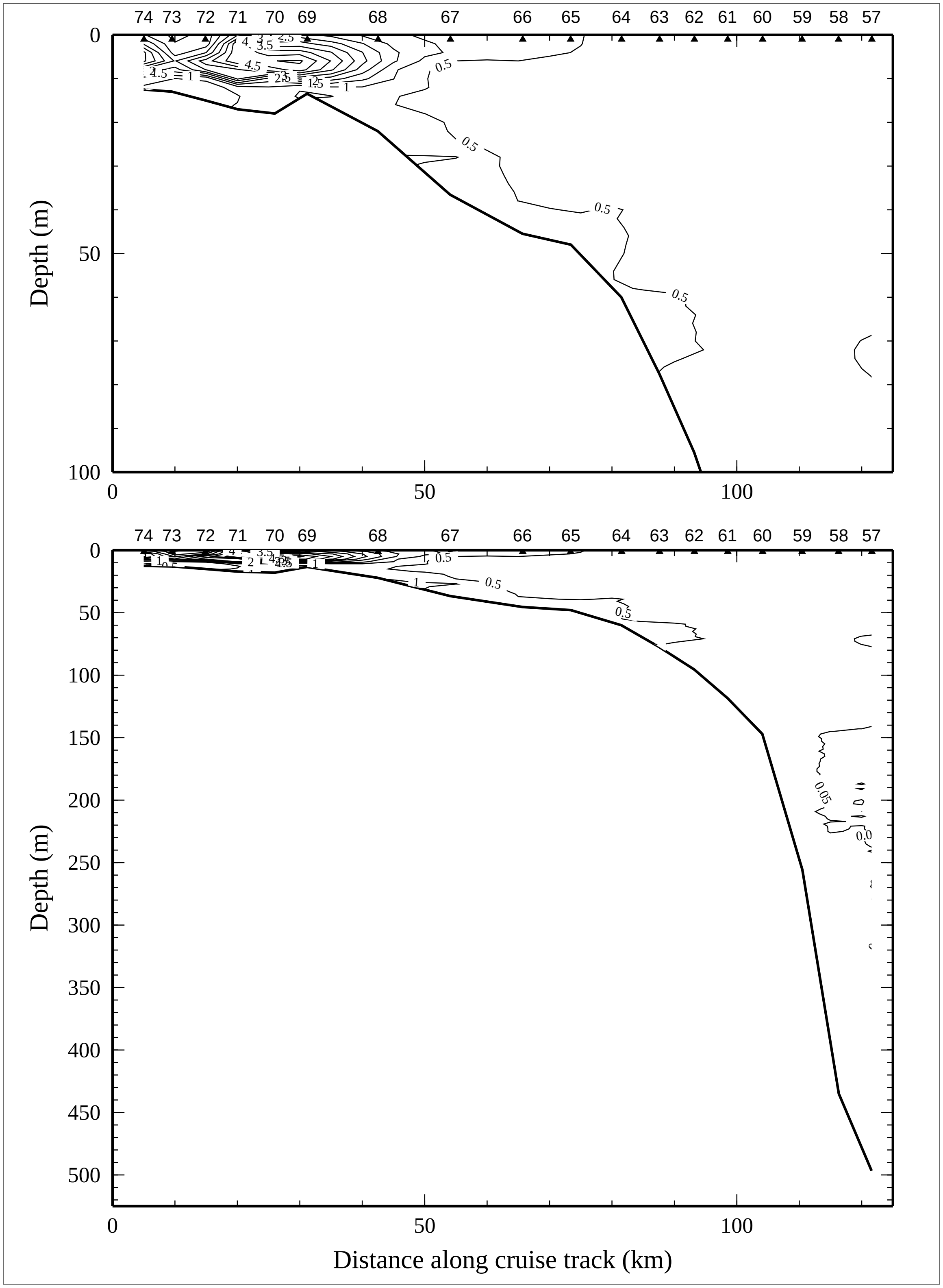

Figure 1.1.7. Relative fluorescence on line 1 of LATEX A survey H01,
30 April - 9 May 1992.

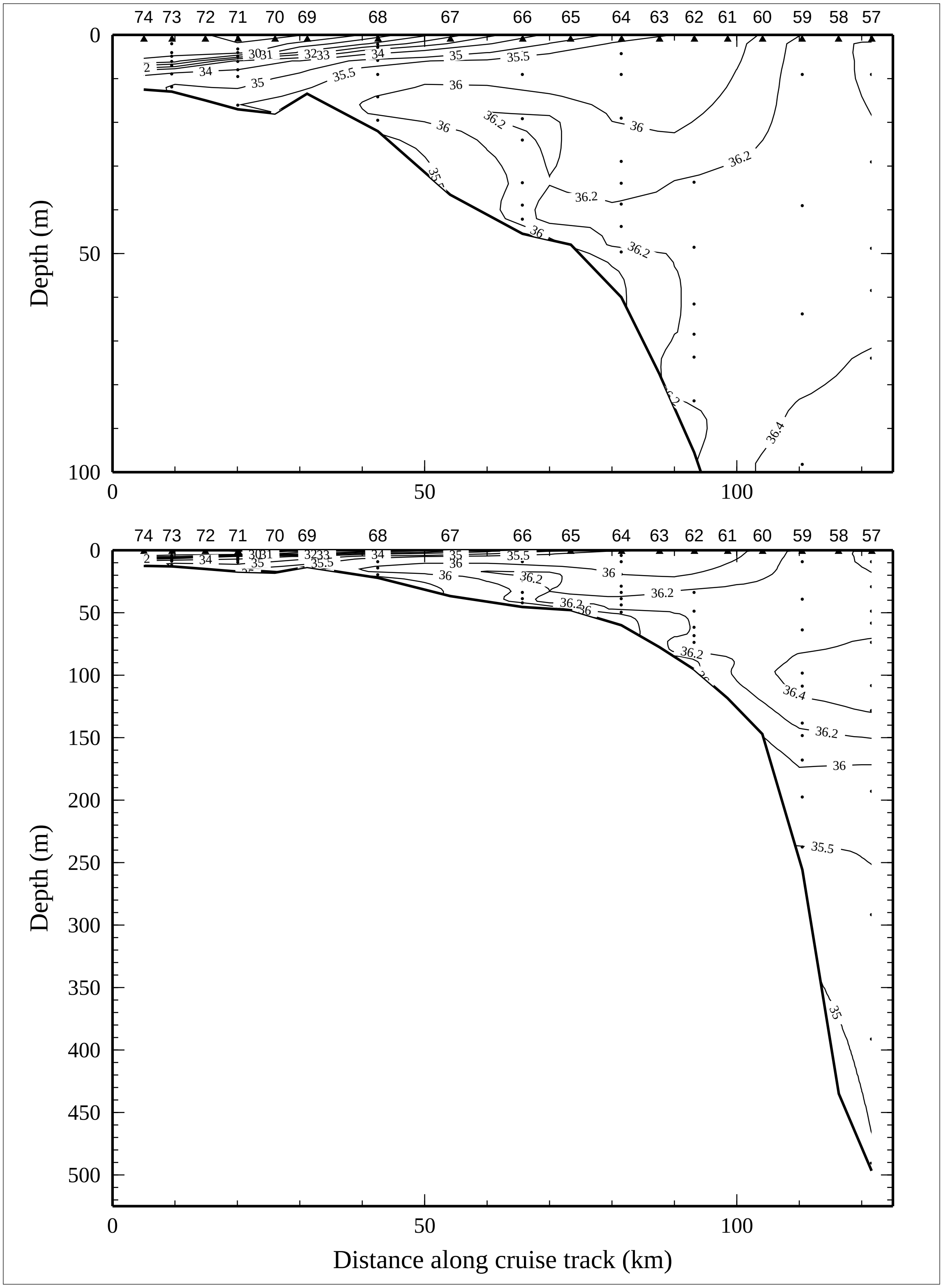

Figure 1.1.8. Bottle salinity on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

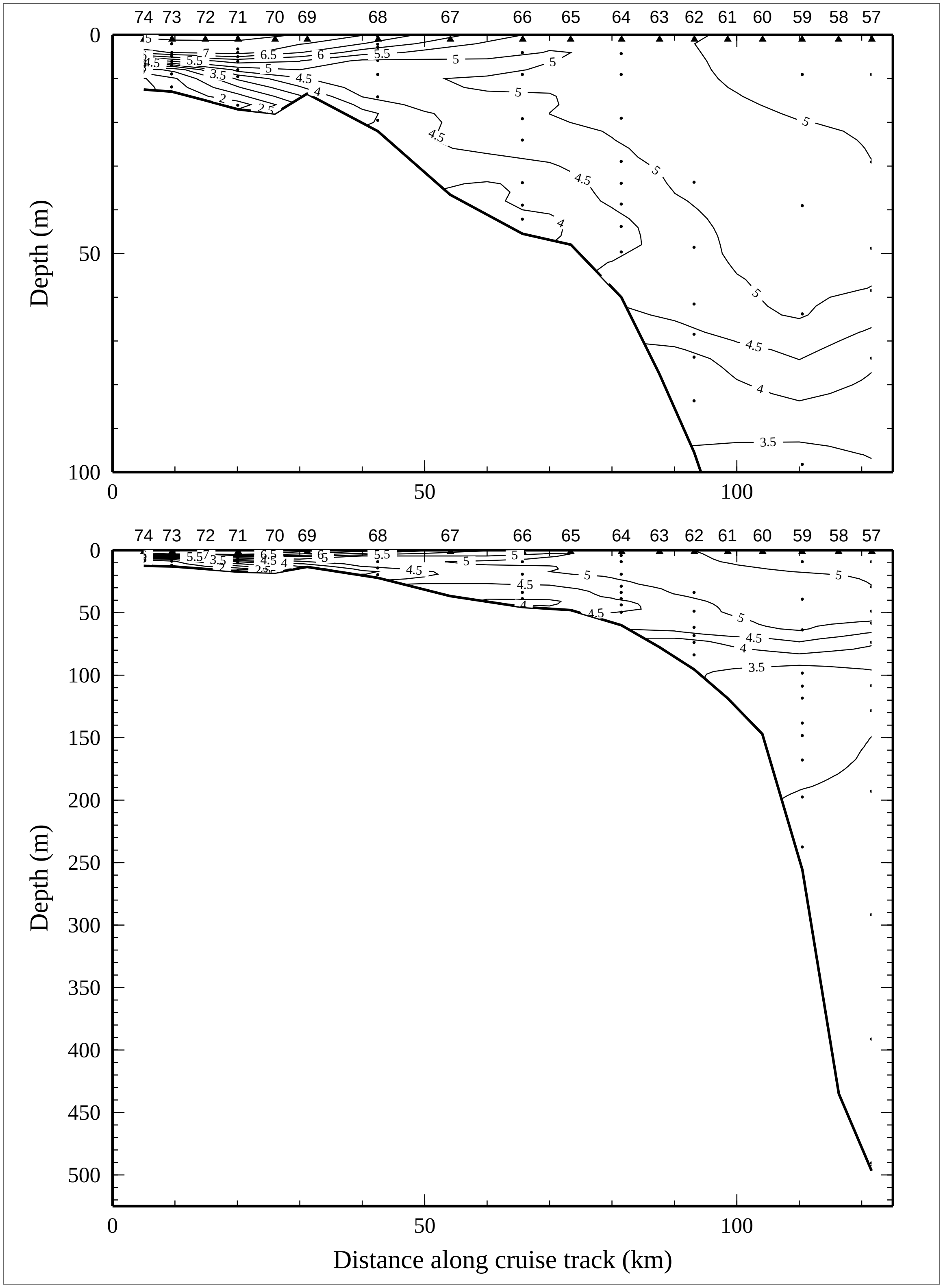

Figure 1.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

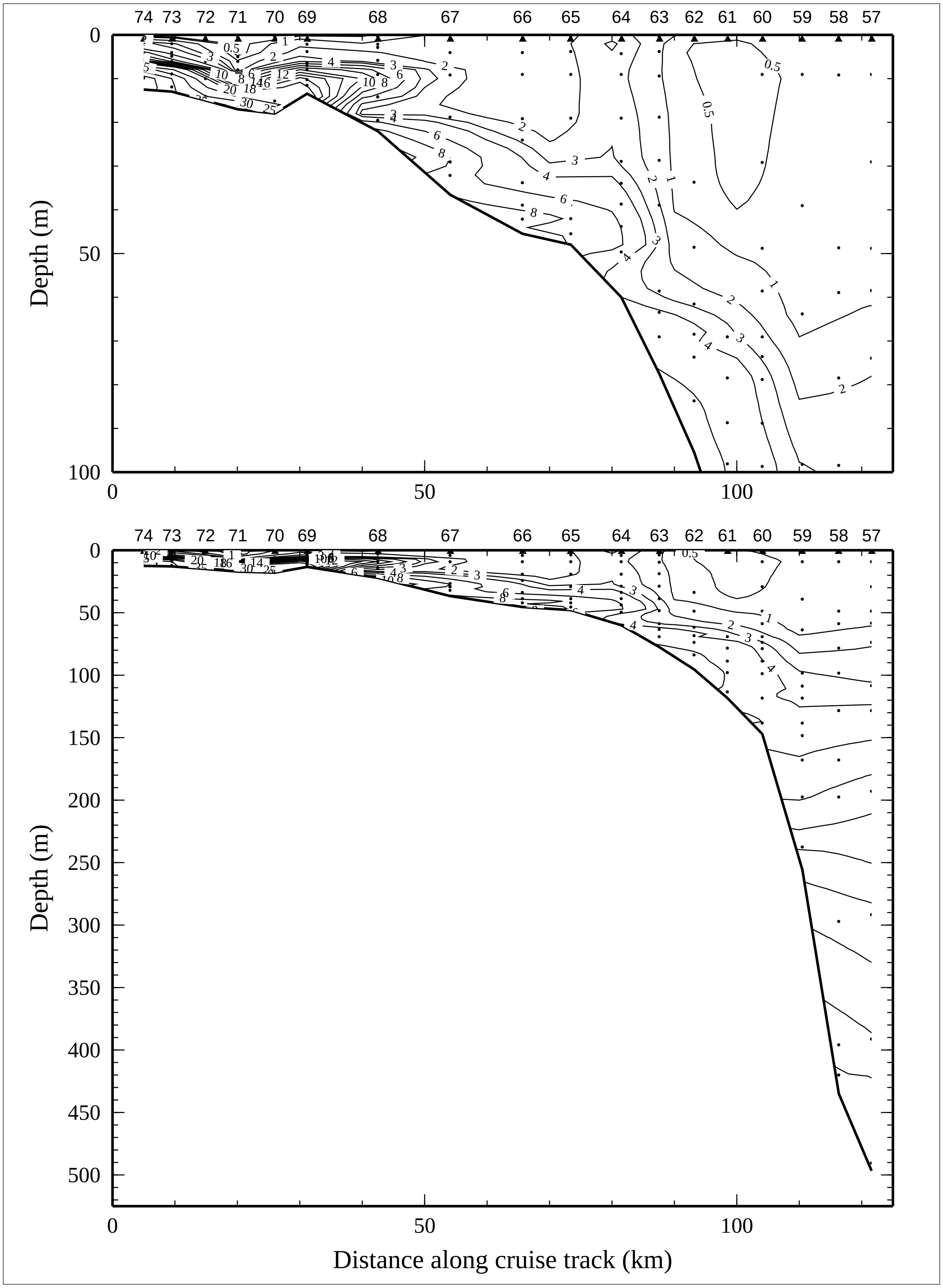

Figure 1.1.10. Silicate (μmol·l[-1]) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

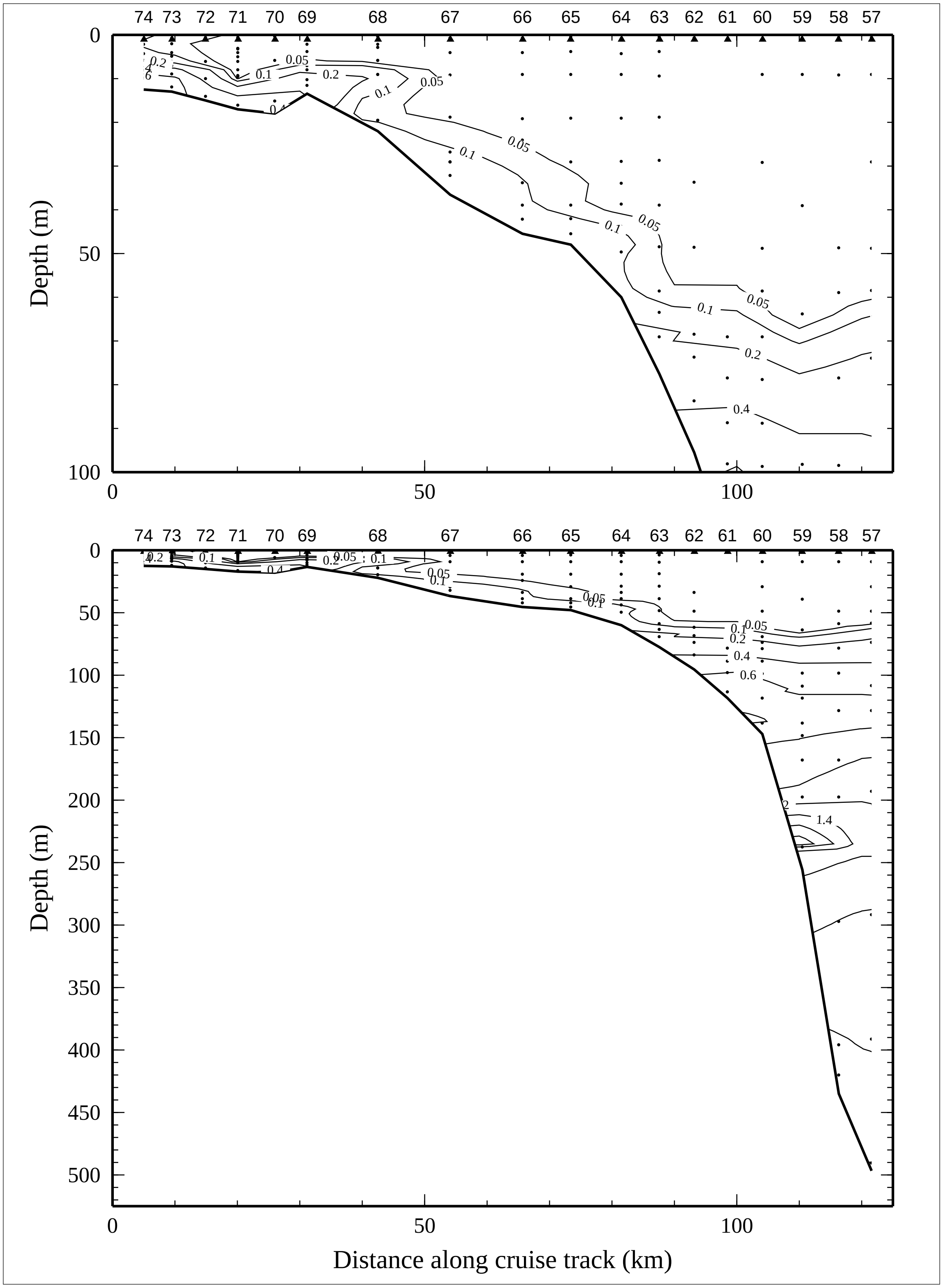

Figure 1.1.11. Phosphate (μmol·l^{-1}) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

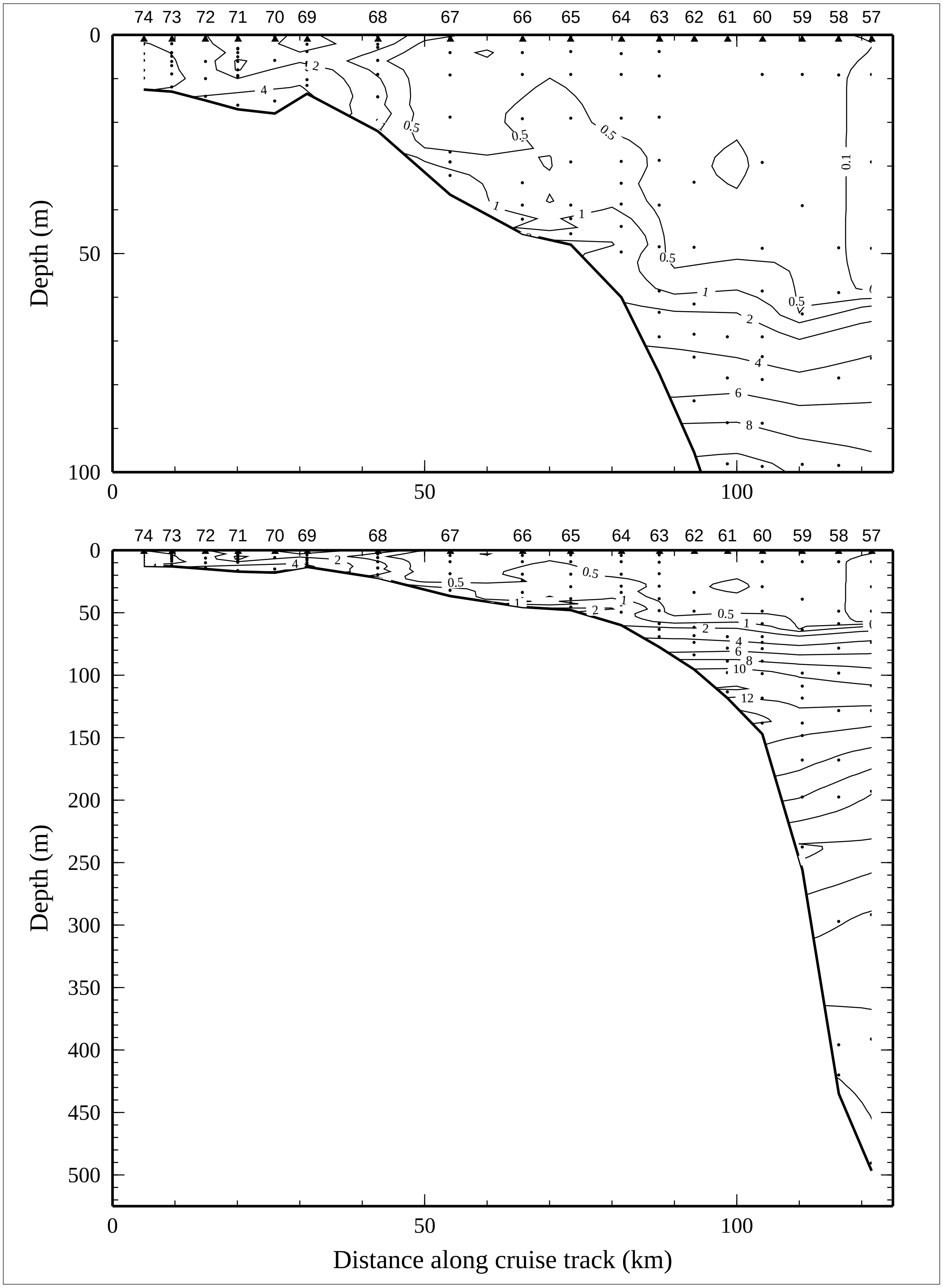

Figure 1.1.12. Nitrate (μmol·l^{-1}) on line 1 of LATEX A survey H01,
30 April - 9 May 1992.

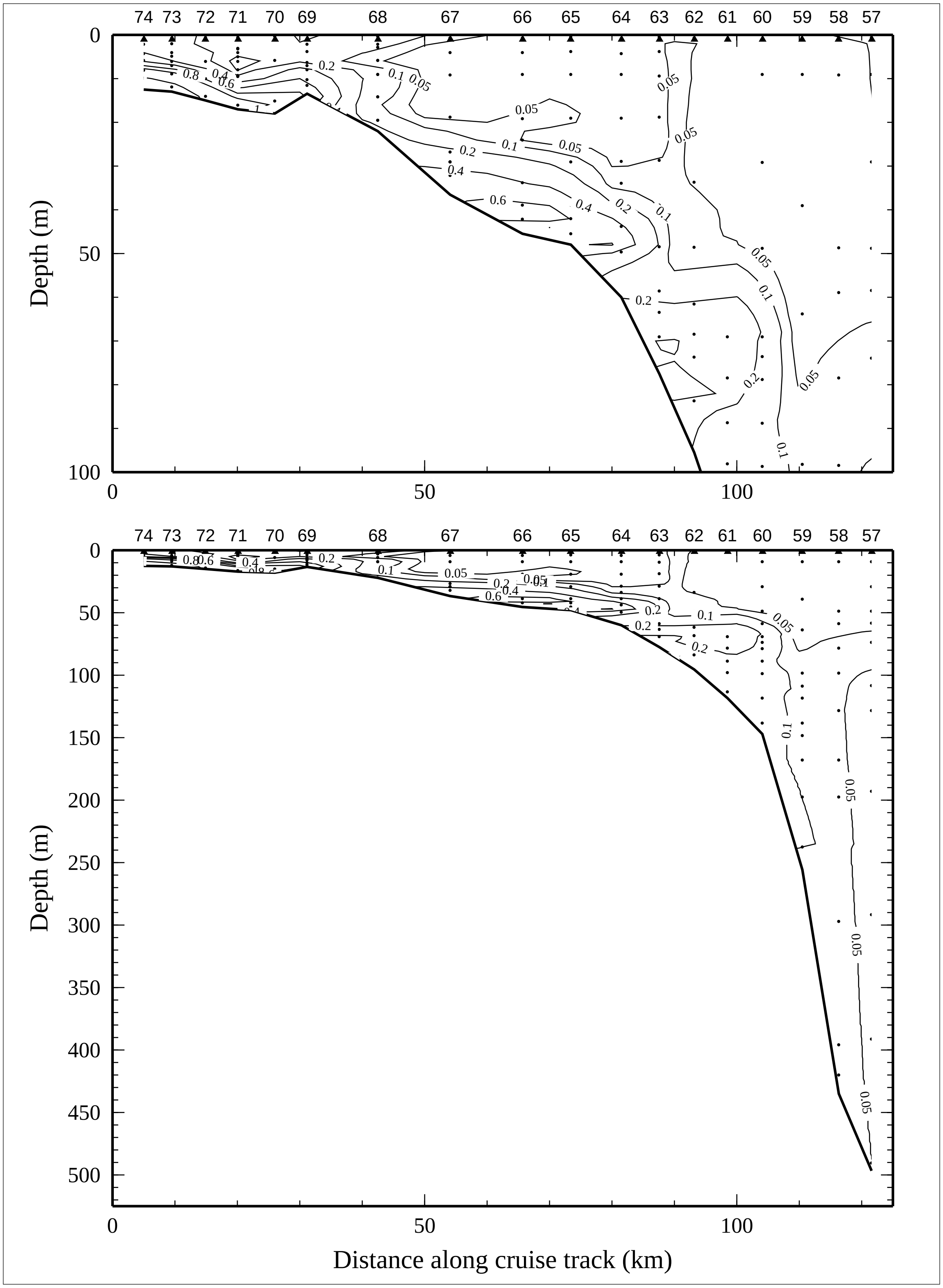

Figure 1.1.13. Nitrite (µmol·l^{-1}) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

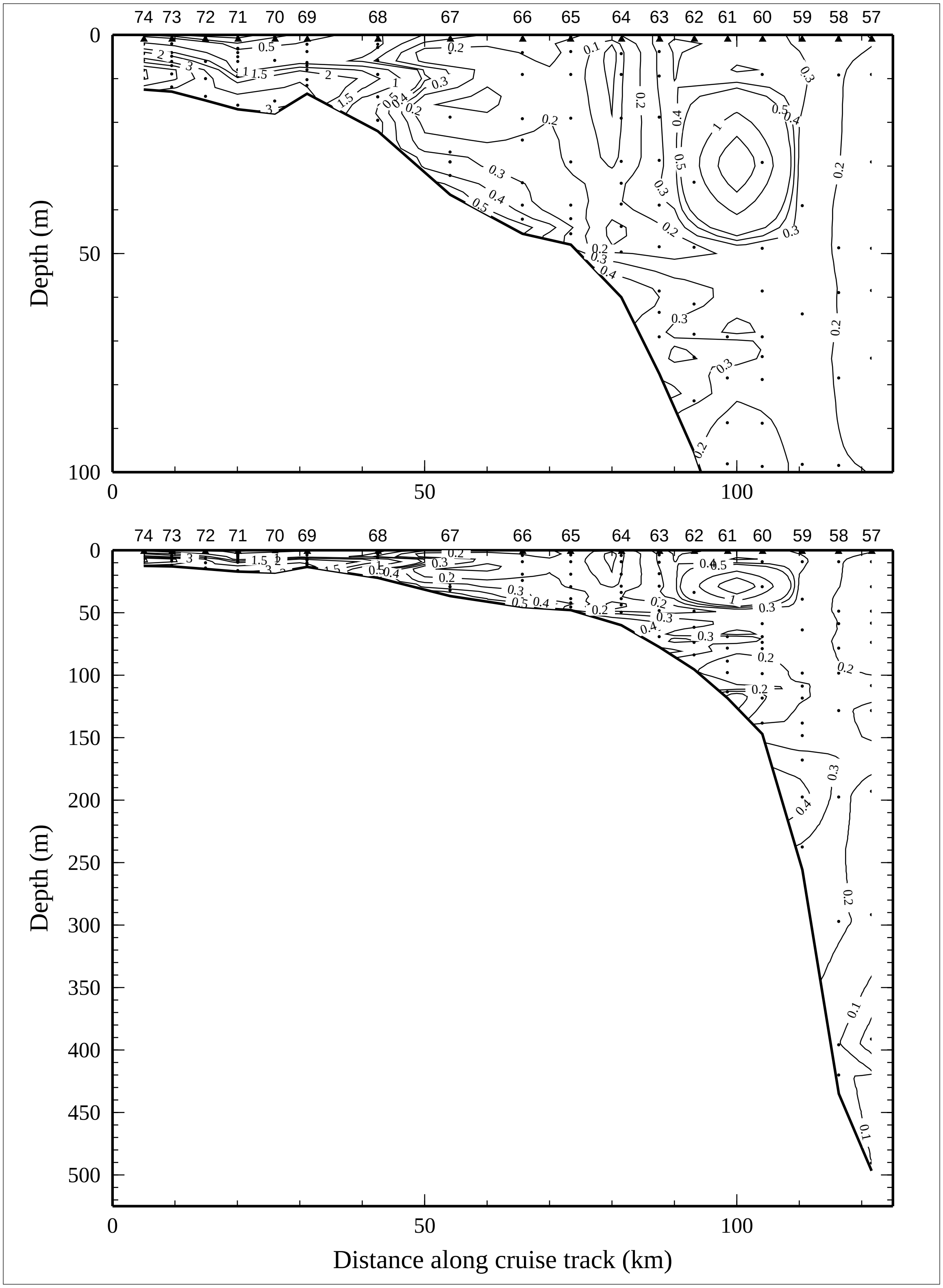

Figure 1.1.14. Ammonium (μmol·l⁻¹) on line 1 of LATEX A survey H01,
30 April - 9 May 1992.

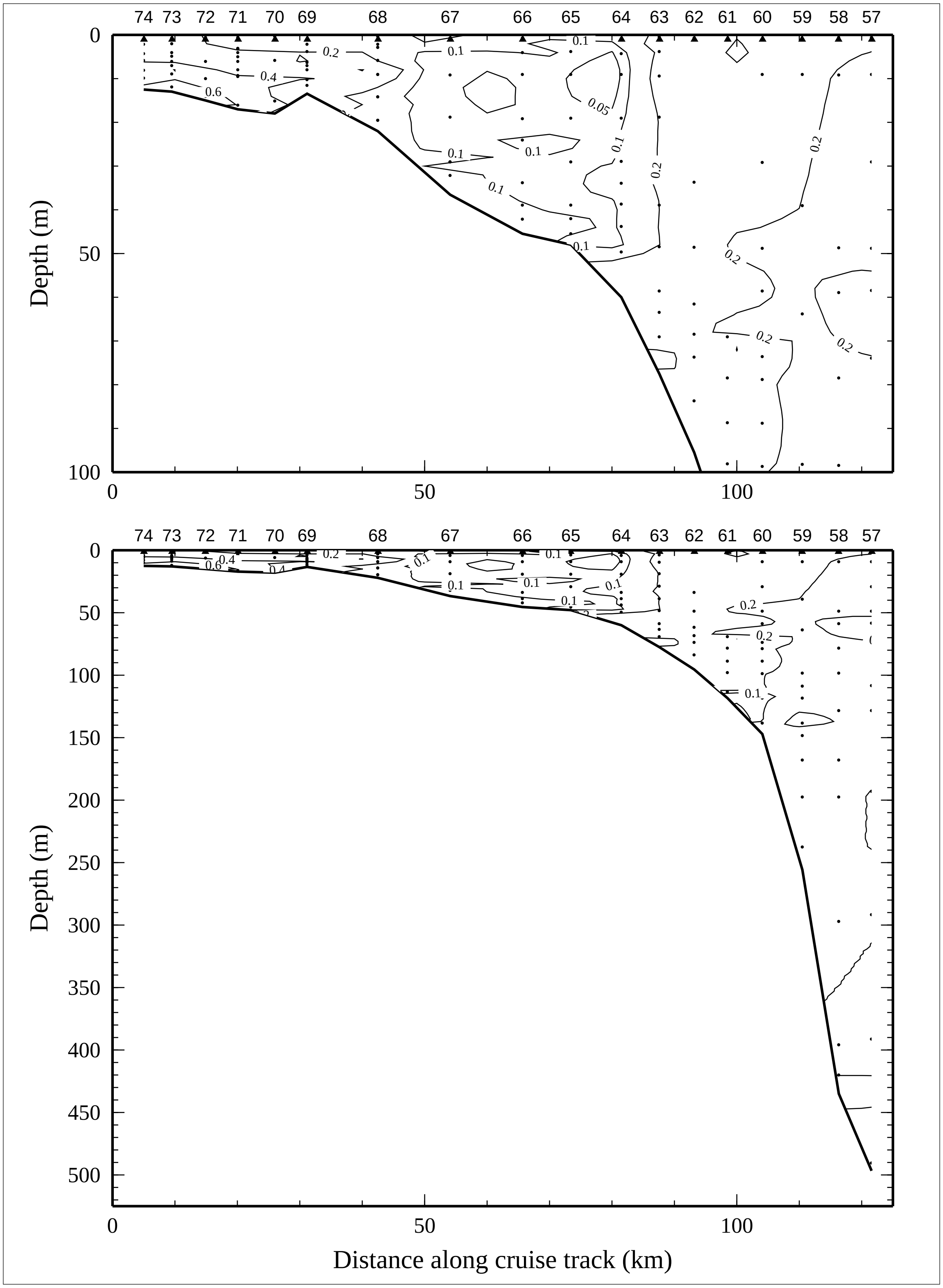

Figure 1.1.15. Urea (μmol·l-1) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

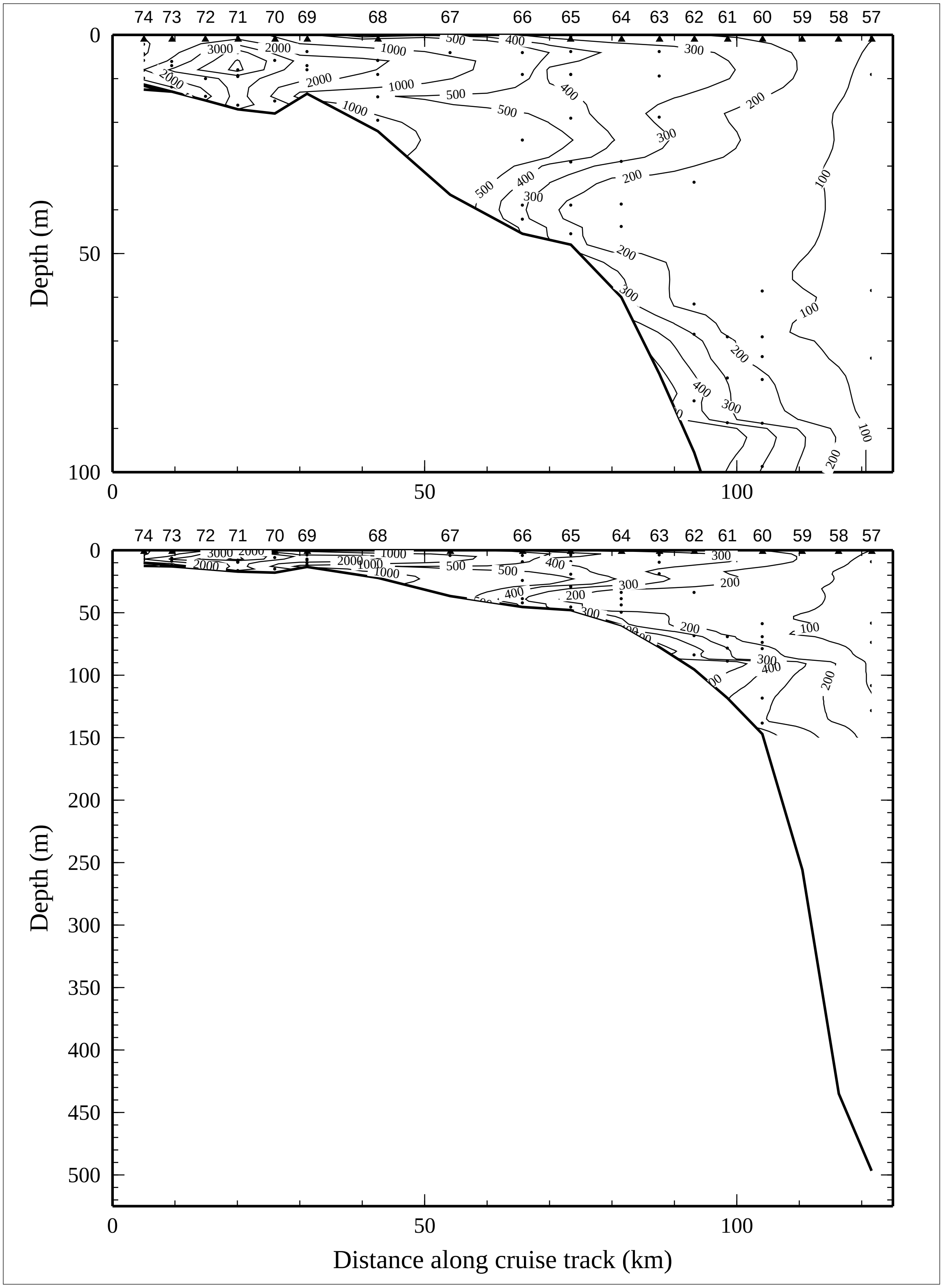

Figure 1.1.16. Chlorophyll a (ng·l-1) on line 1 of LATEX A survey H01, 30 April - 9 May 1992.

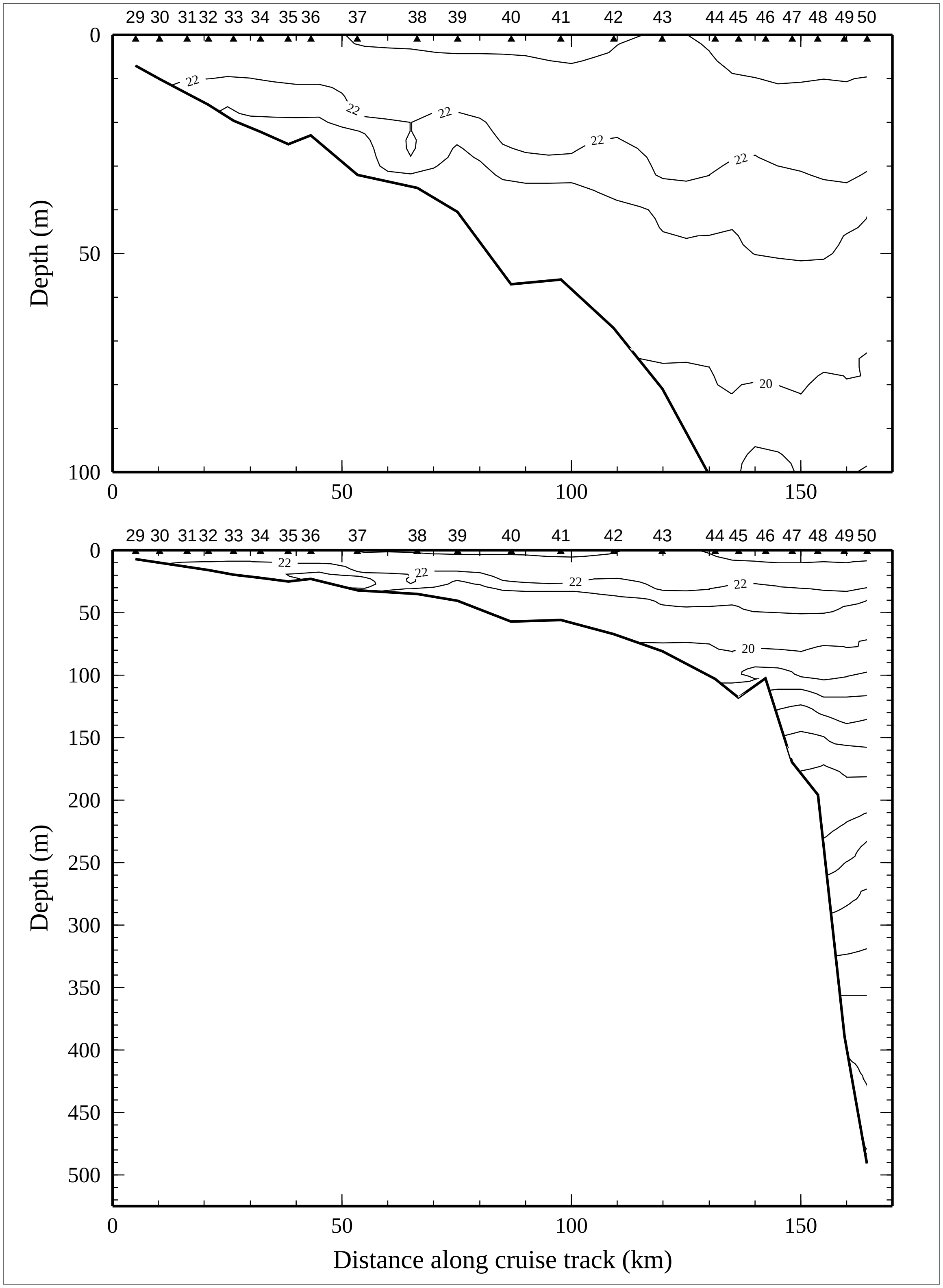

Figure 1.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H01,
30 April - 9 May 1992.

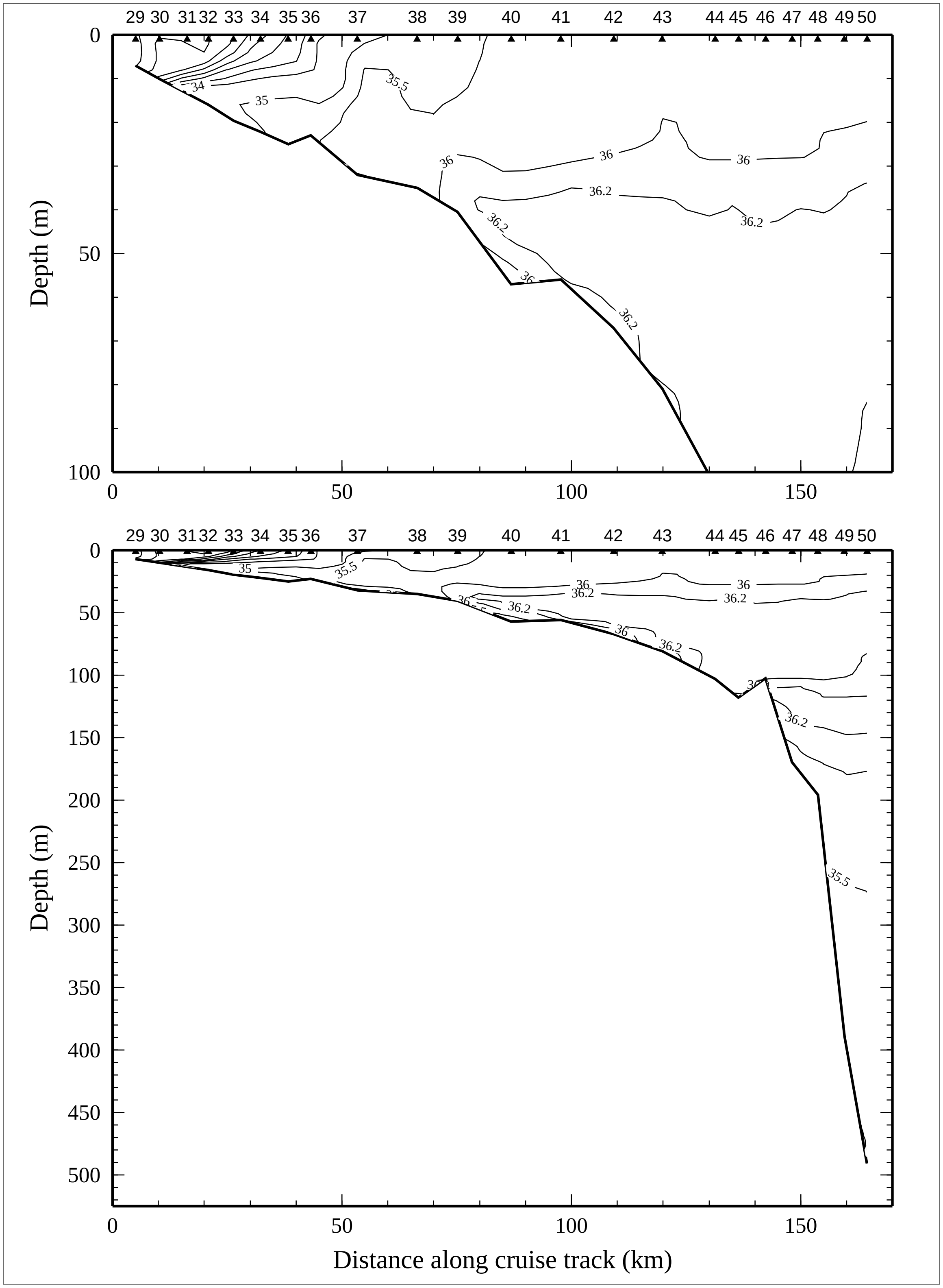

Figure 1.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

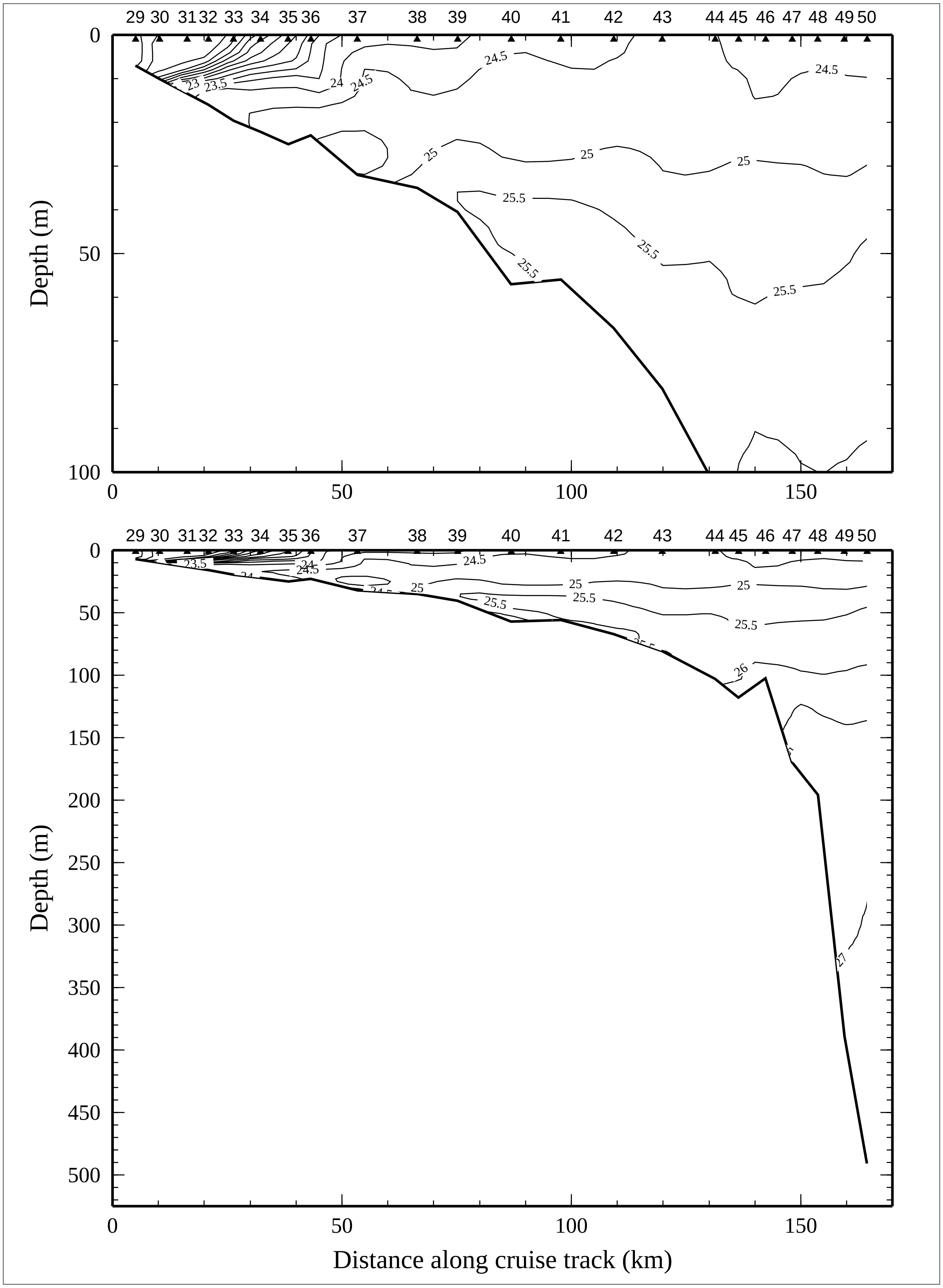

Figure 1.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

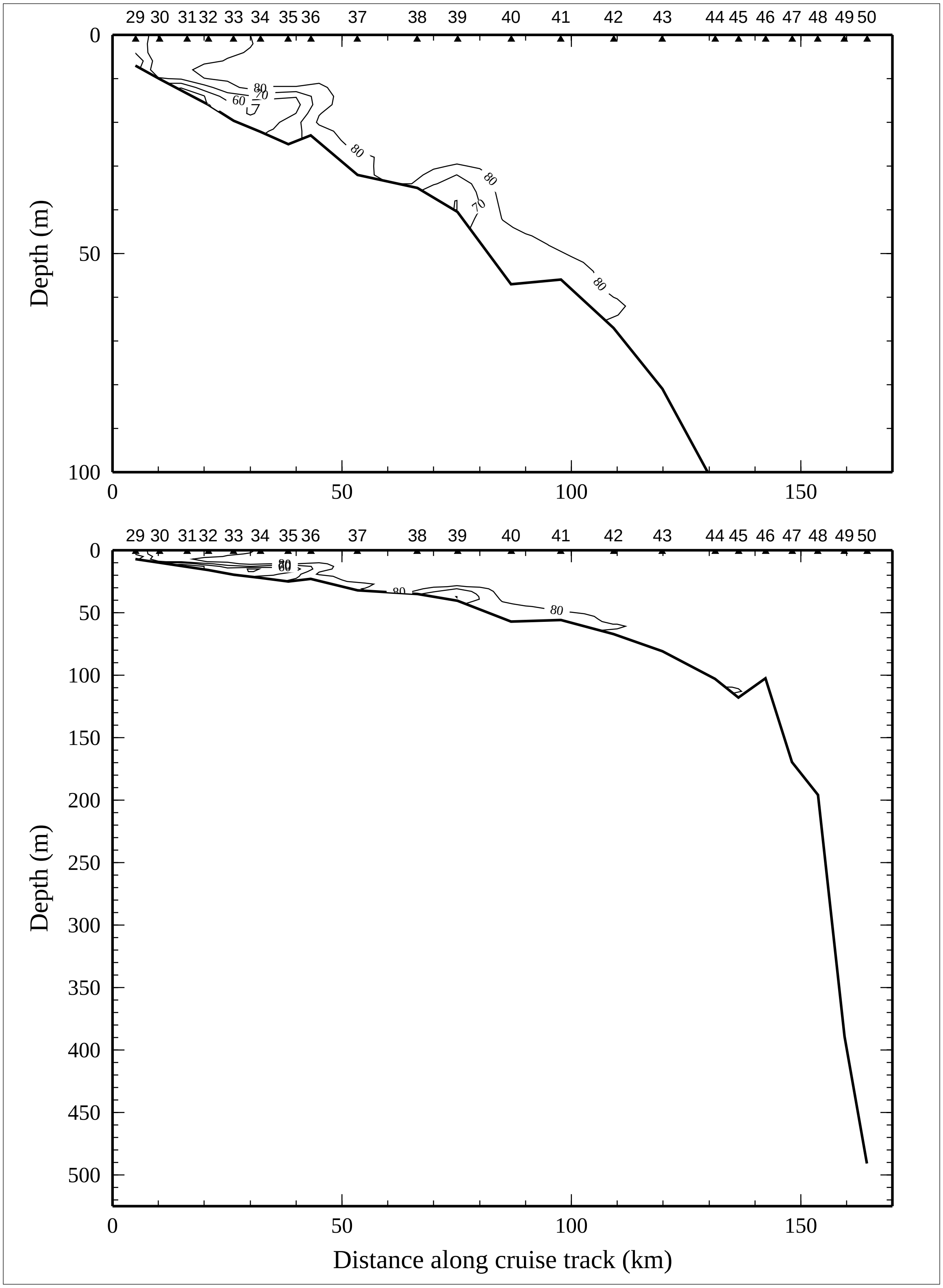

Figure 1.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

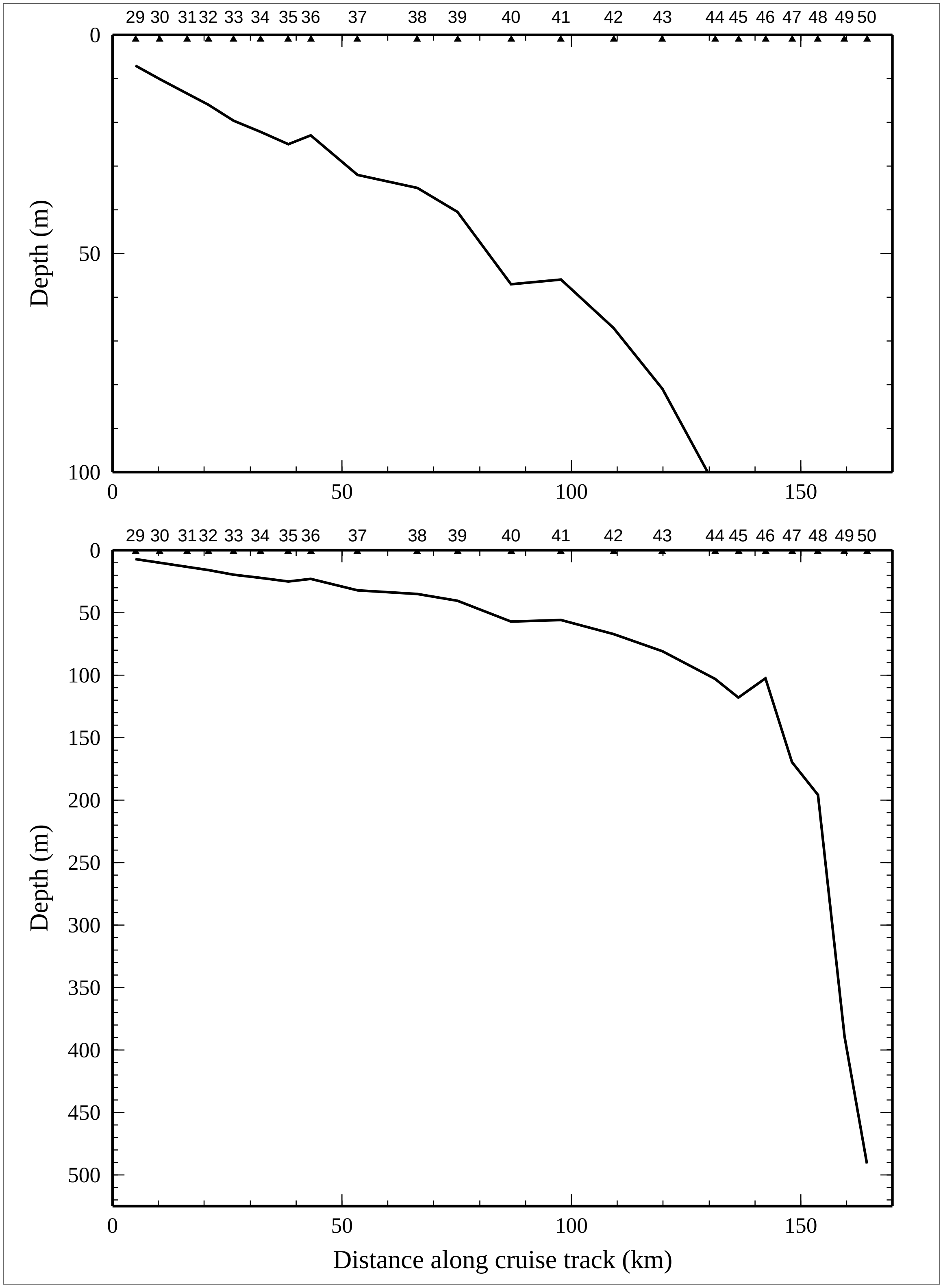

Figure 1.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H01, 30 April - 9 May 1992. Values were less than 0.05.

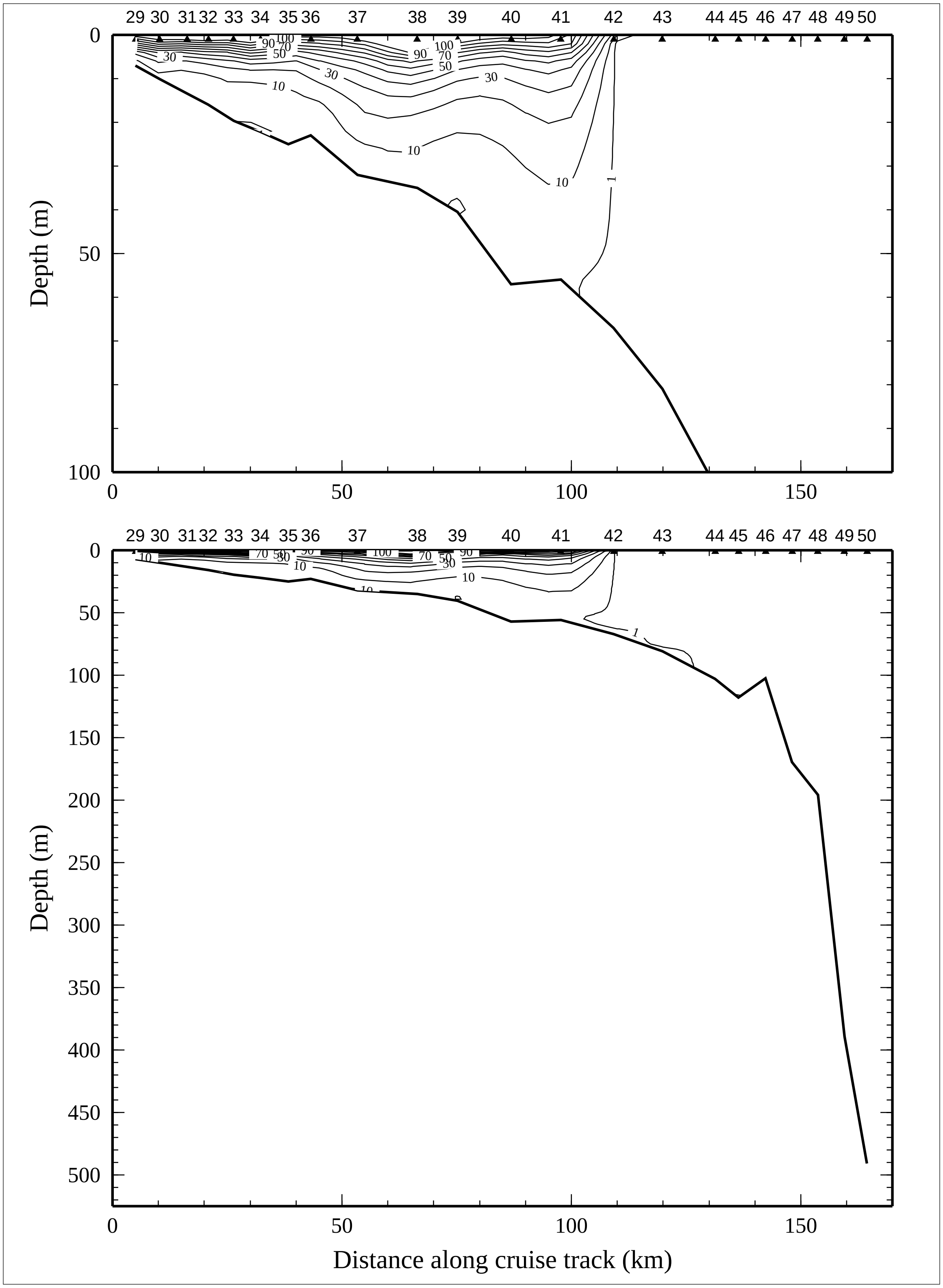

Figure 1.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

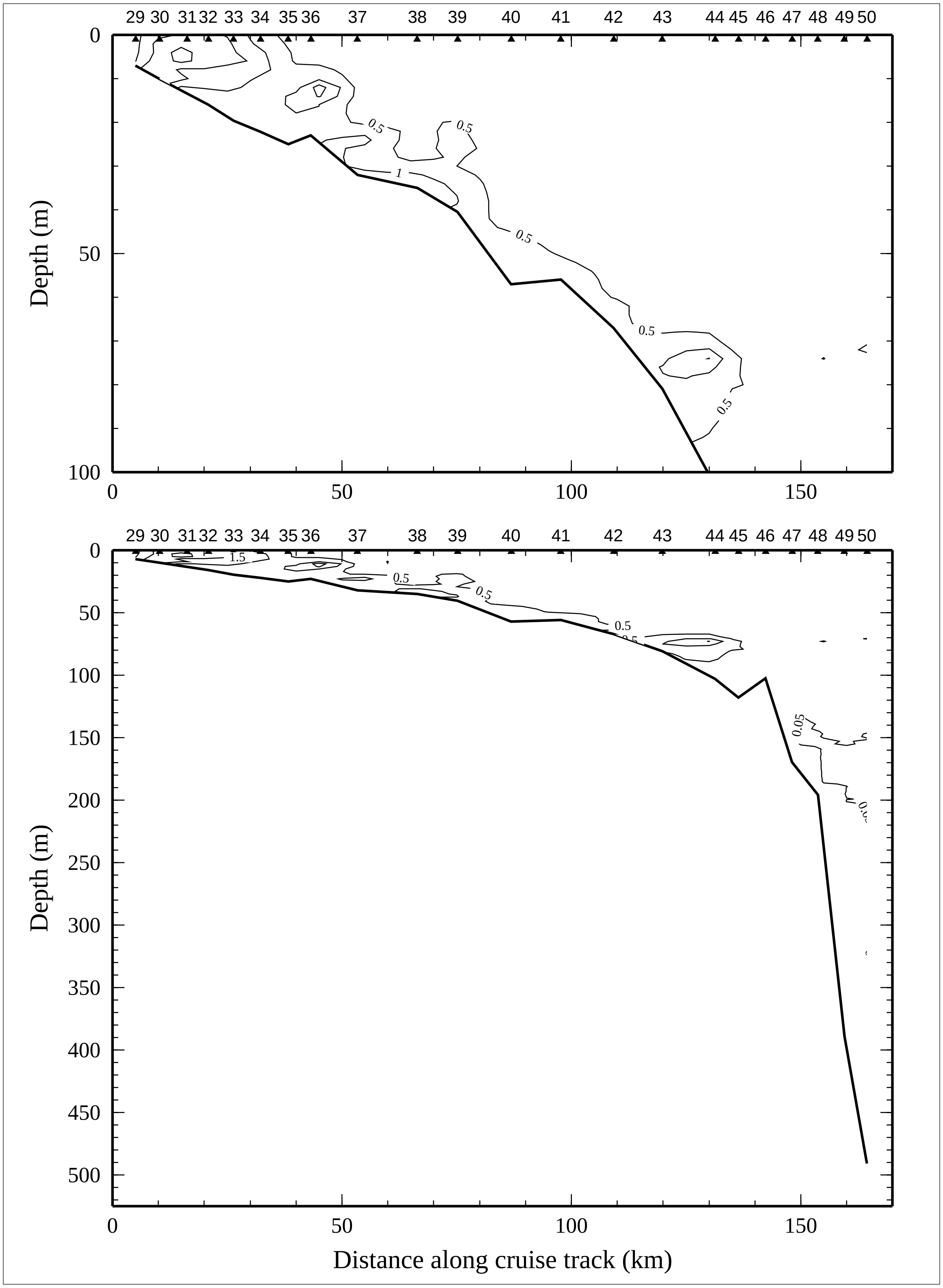

Figure 1.2.7. Relative fluorescence on line 2 of LATEX A survey H01,
30 April - 9 May 1992.

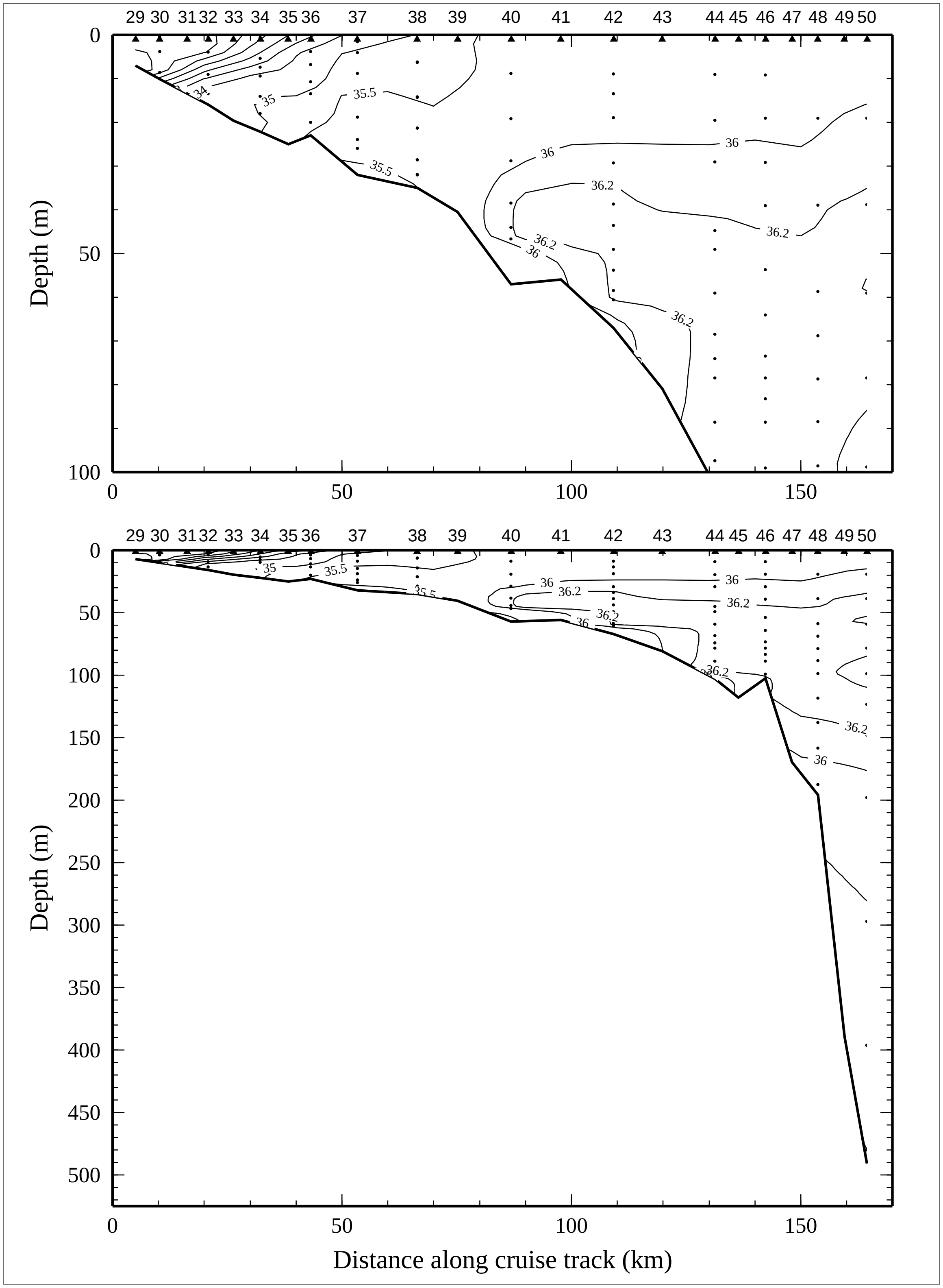

Figure 1.2.8. Bottle salinity on line 2 of LATEX A survey H01,
30 April - 9 May 1992.

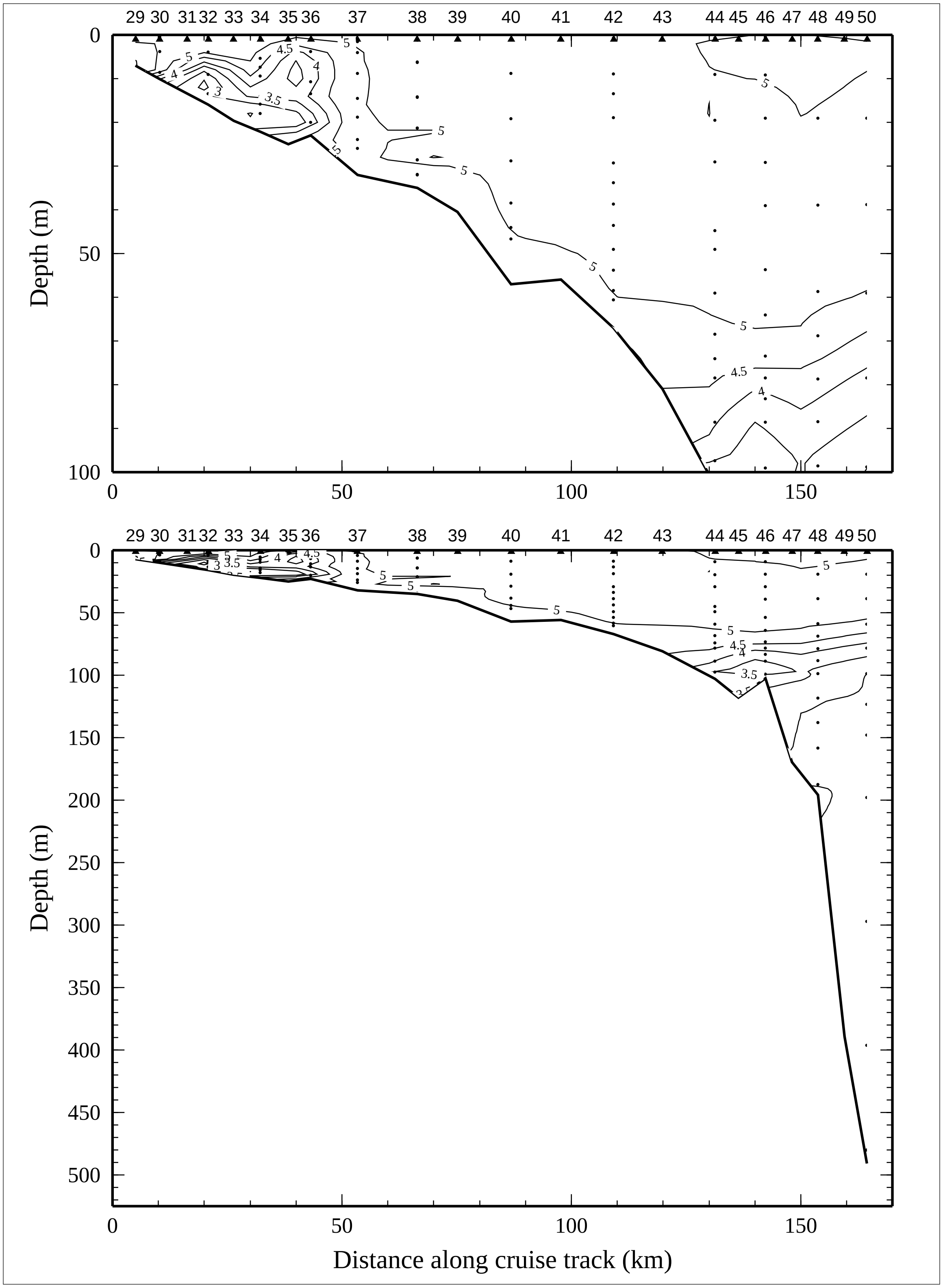

Figure 1.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

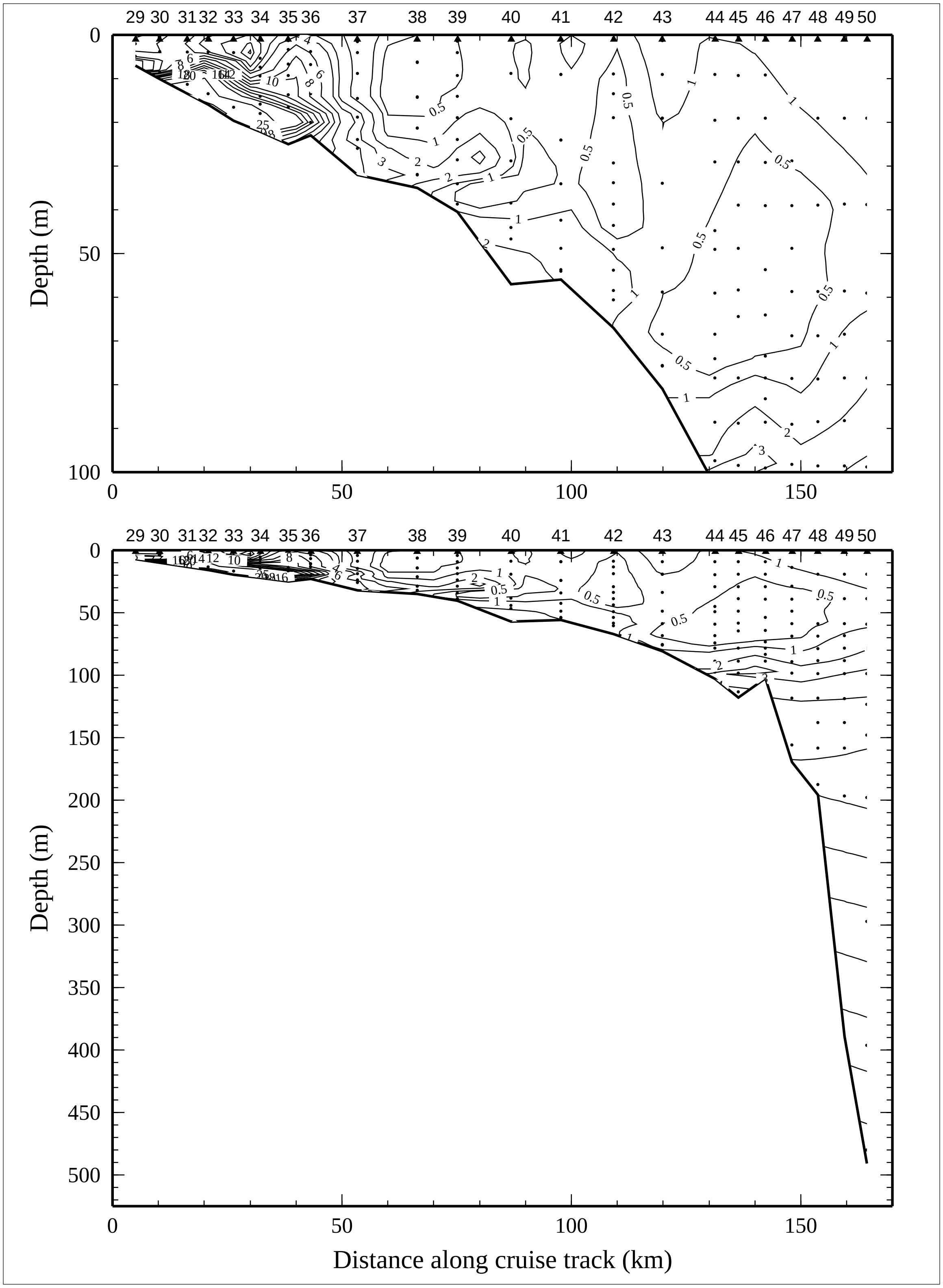

Figure 1.2.10. Silicate (μmol·l-1) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

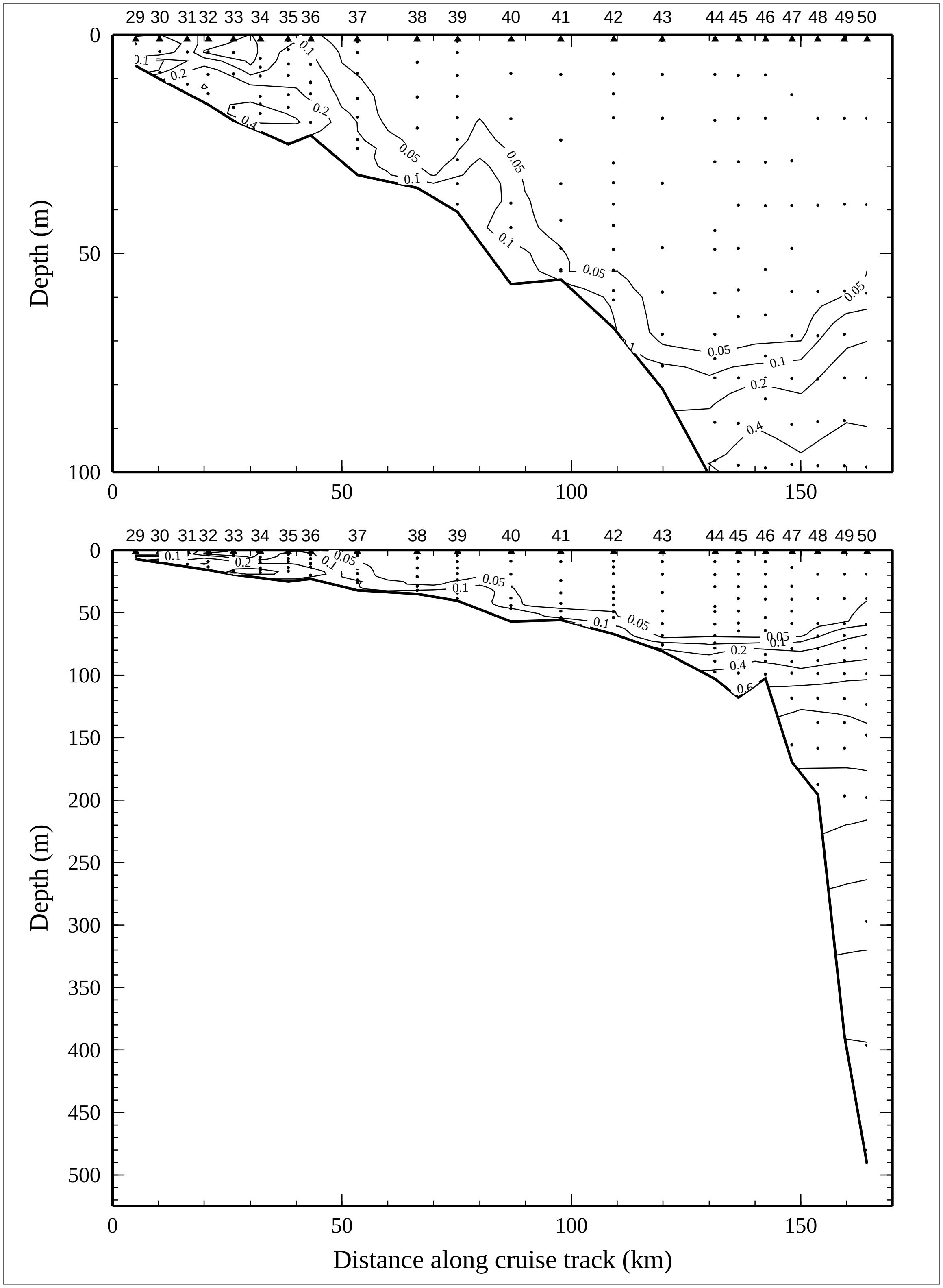

Figure 1.2.11. Phosphate (μmol·l-1) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

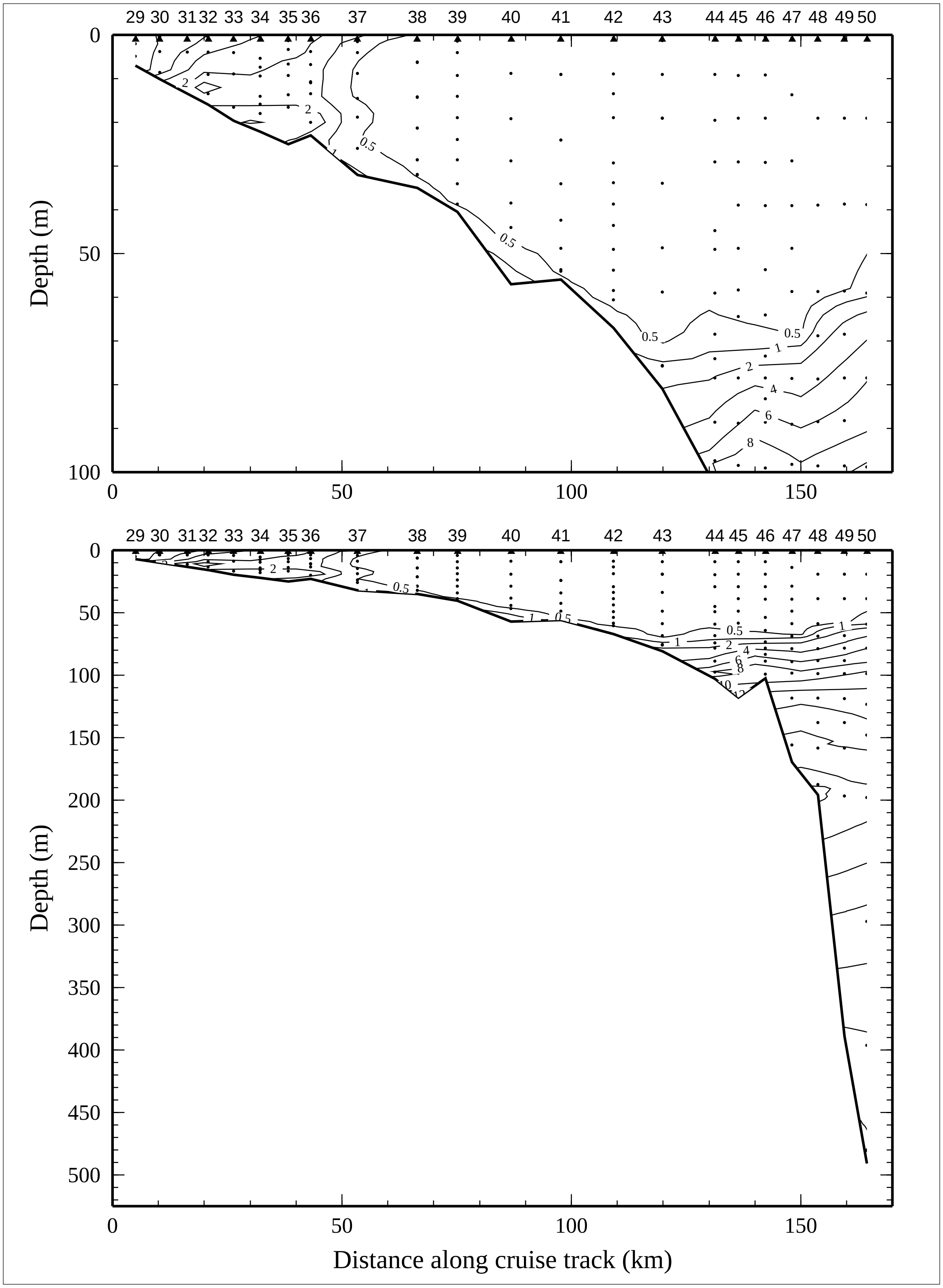

Figure 1.2.12. Nitrate (μmol·l⁻¹) on line 2 of LATEX A survey H01,
30 April - 9 May 1992.

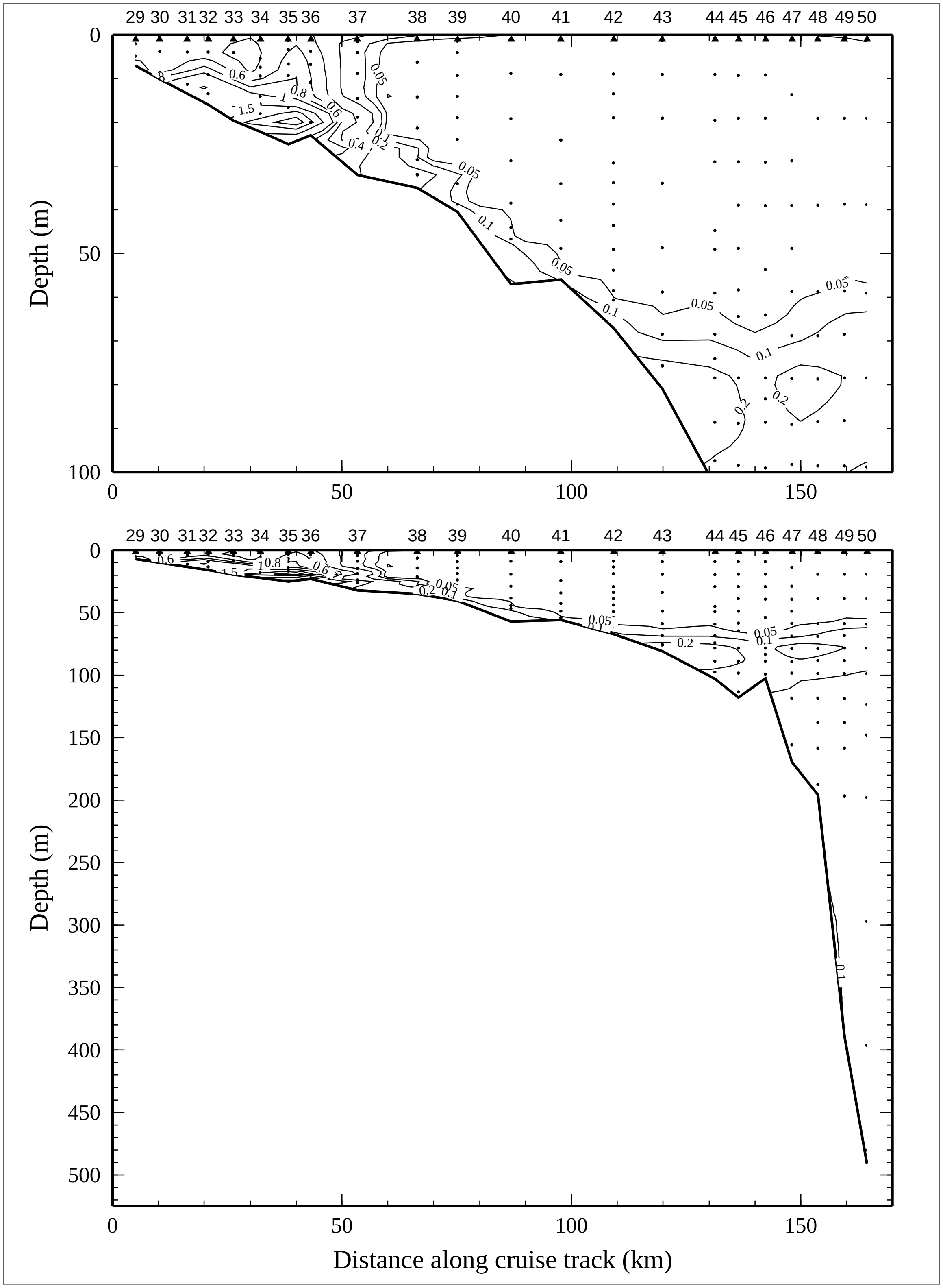

Figure 1.2.13. Nitrite (μmol·l^{-1}) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

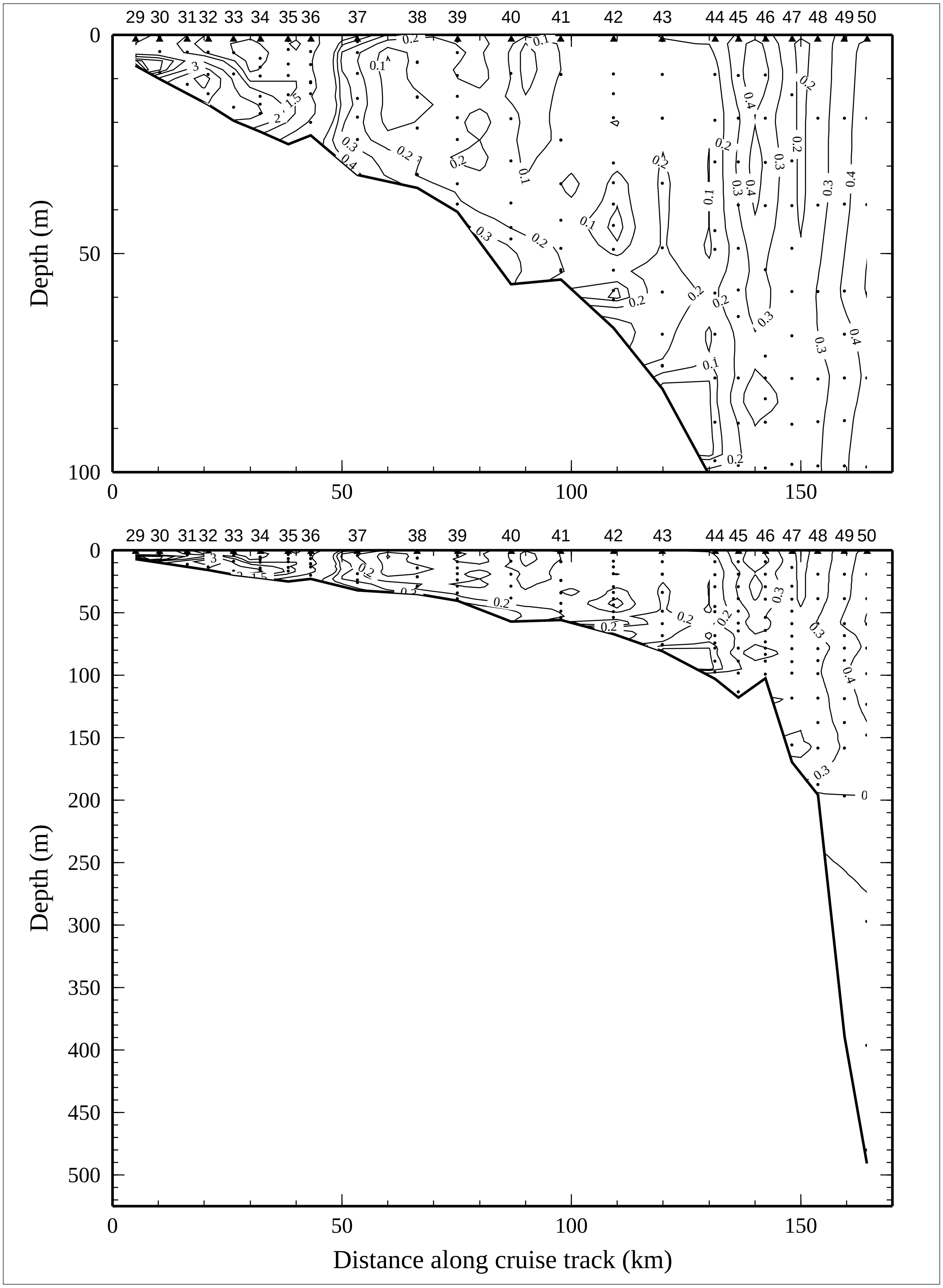

Figure 1.2.14. Ammonium (µmol·l-1) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

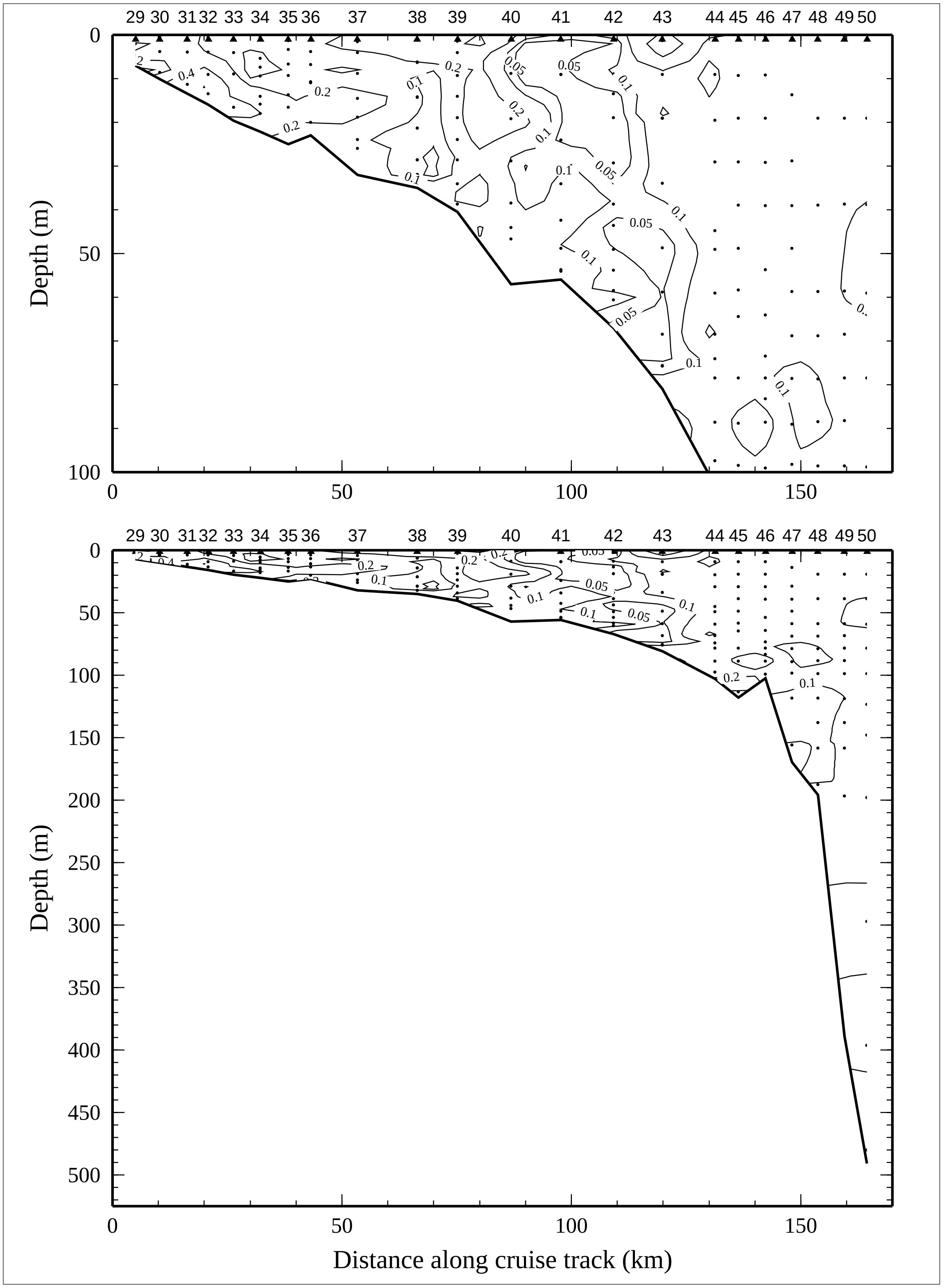

Figure 1.2.15. Urea (μmol·l-1) on line 2 of LATEX A survey H01,
30 April - 9 May 1992.

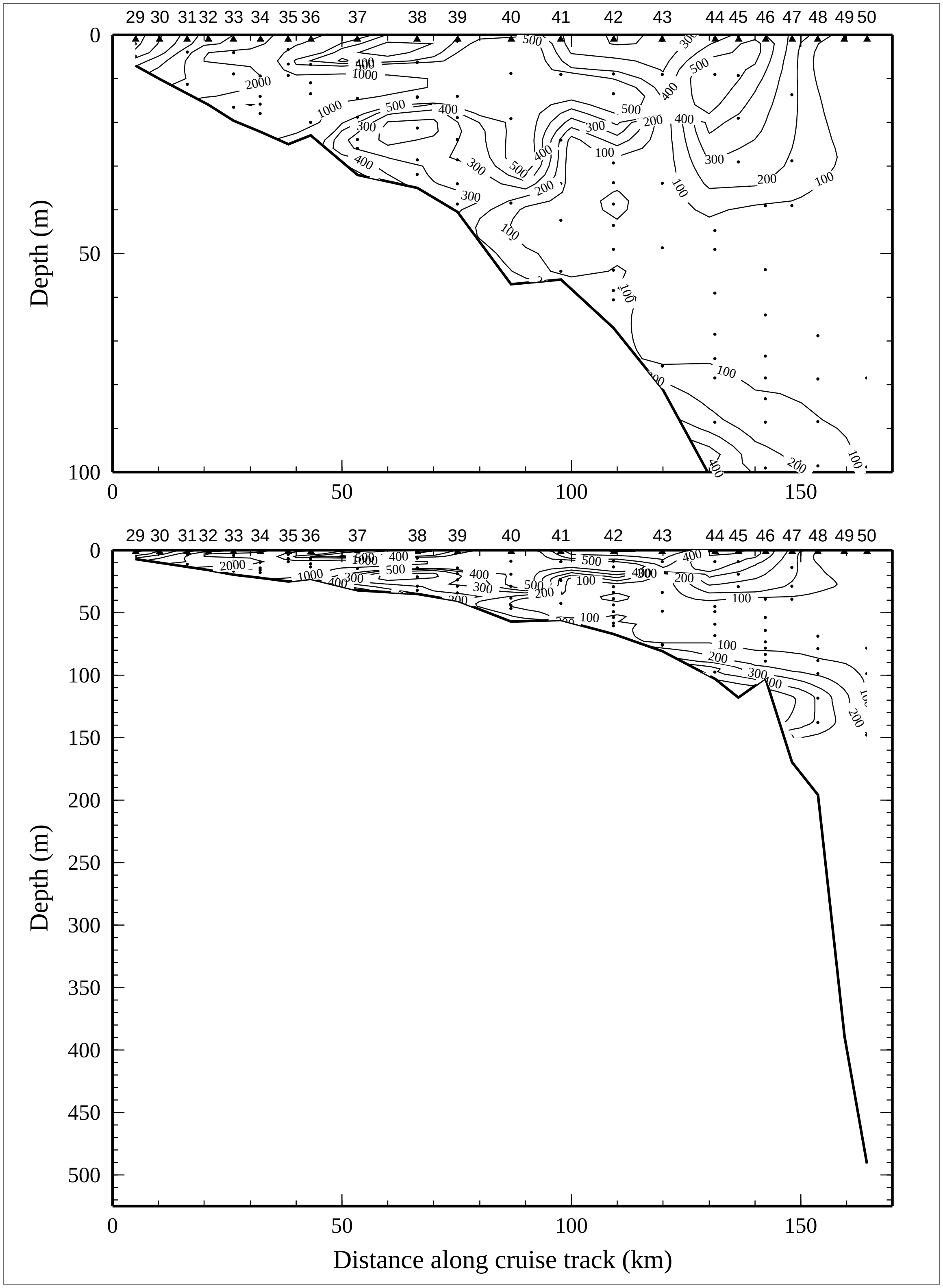

Figure 1.2.16. Chlorophyll a (ng·l⁻¹) on line 2 of LATEX A survey H01, 30 April - 9 May 1992.

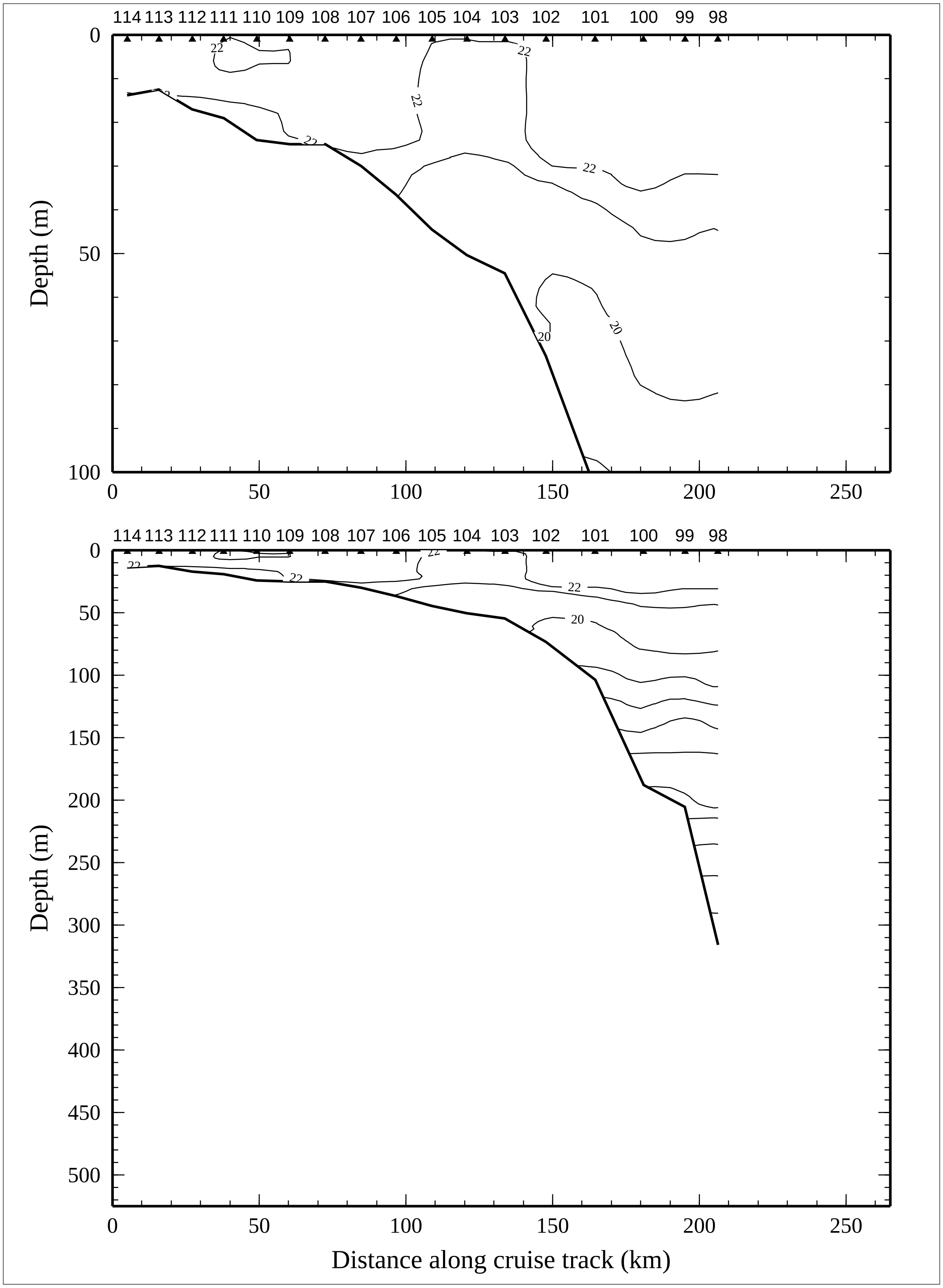

Figure 1.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

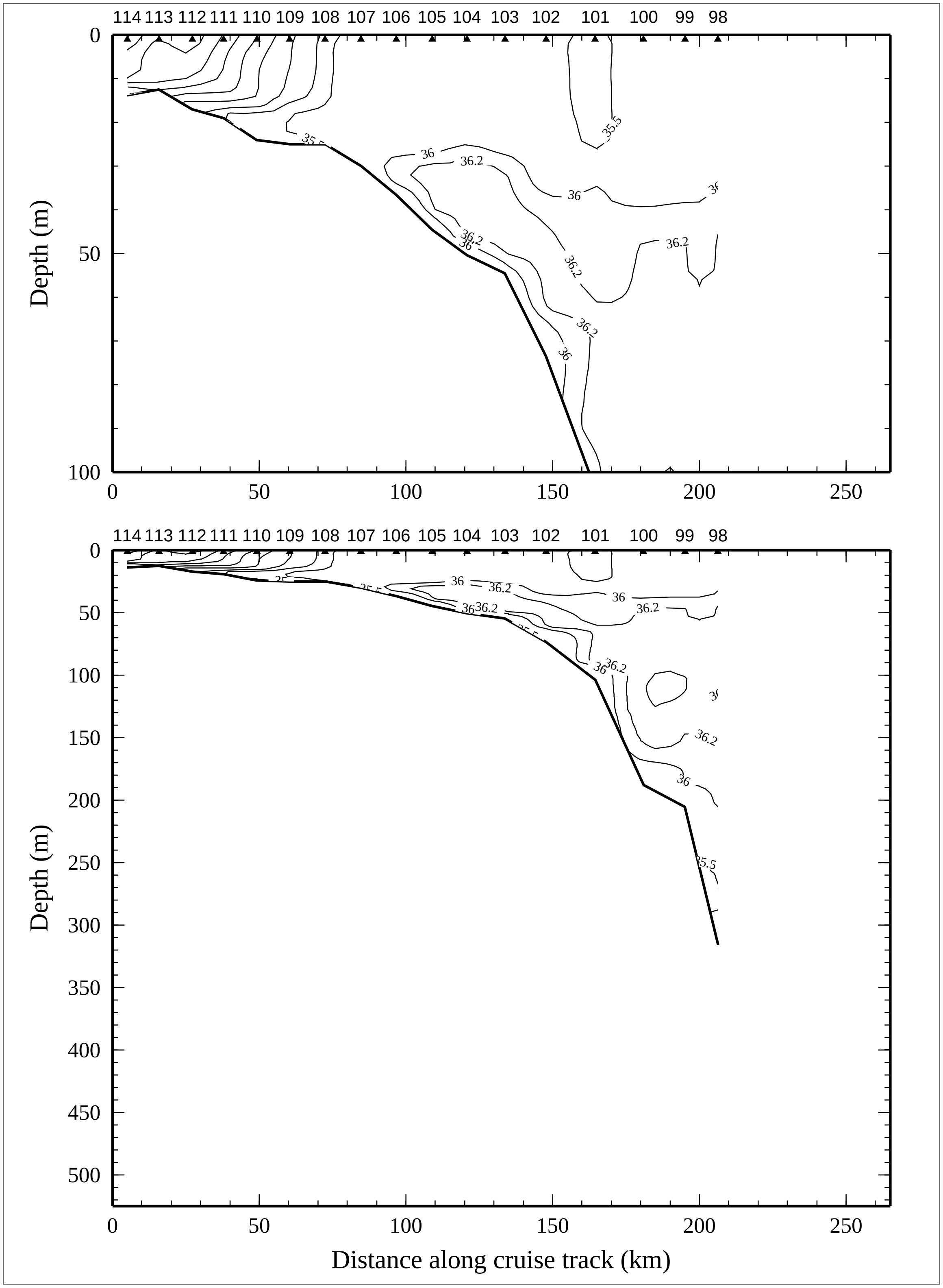

Figure 1.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

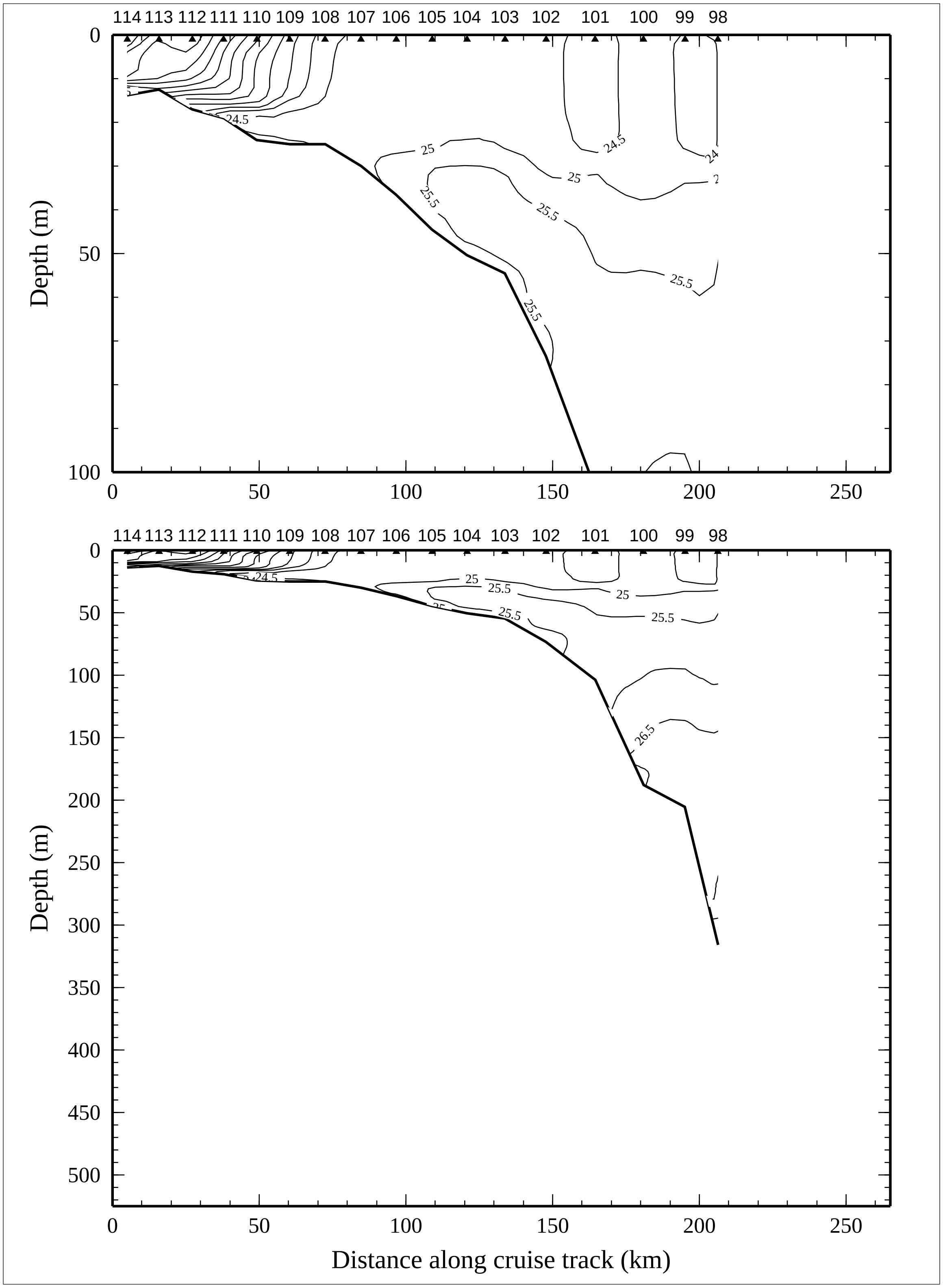

Figure 1.3.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

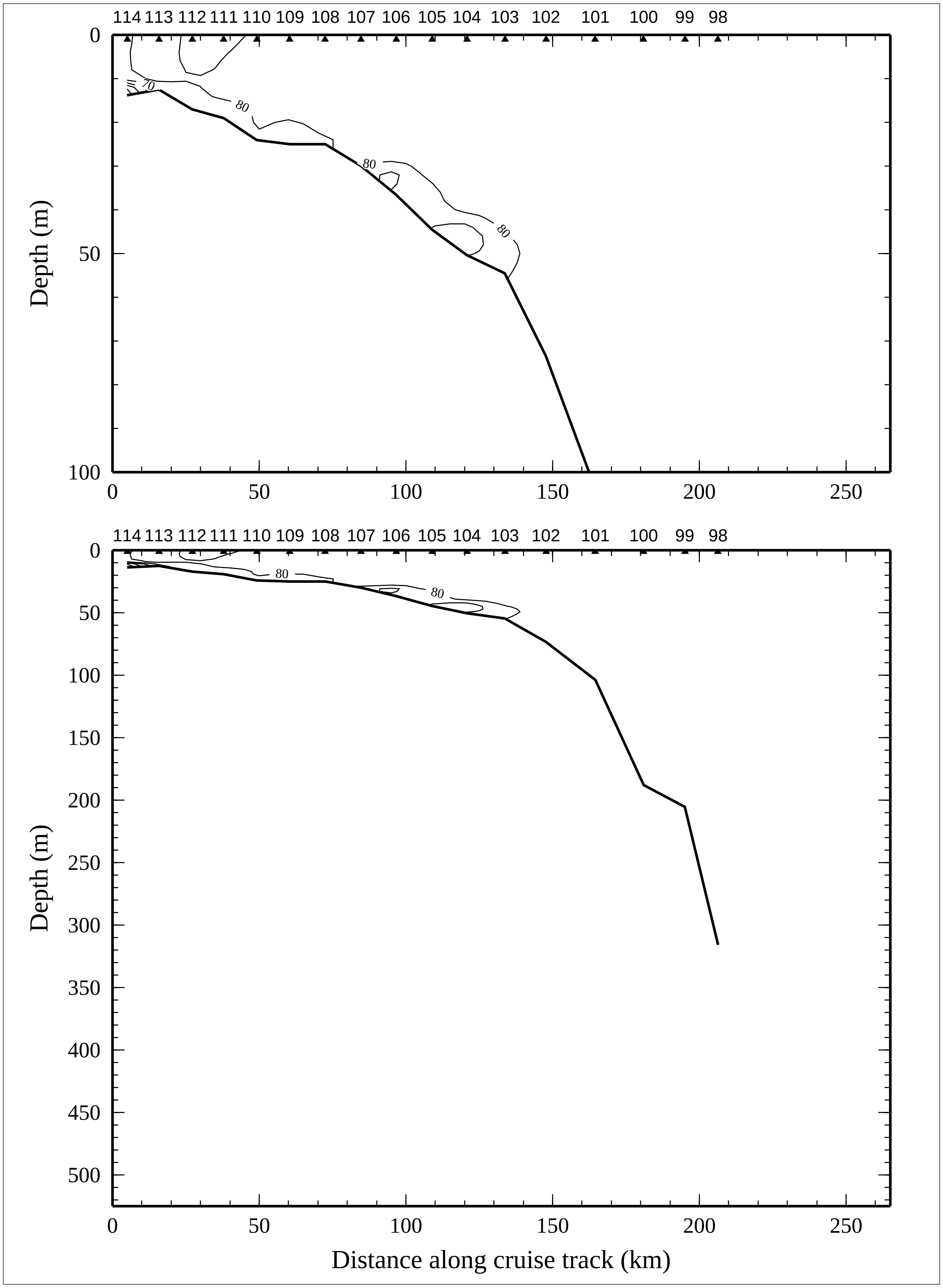

Figure 1.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

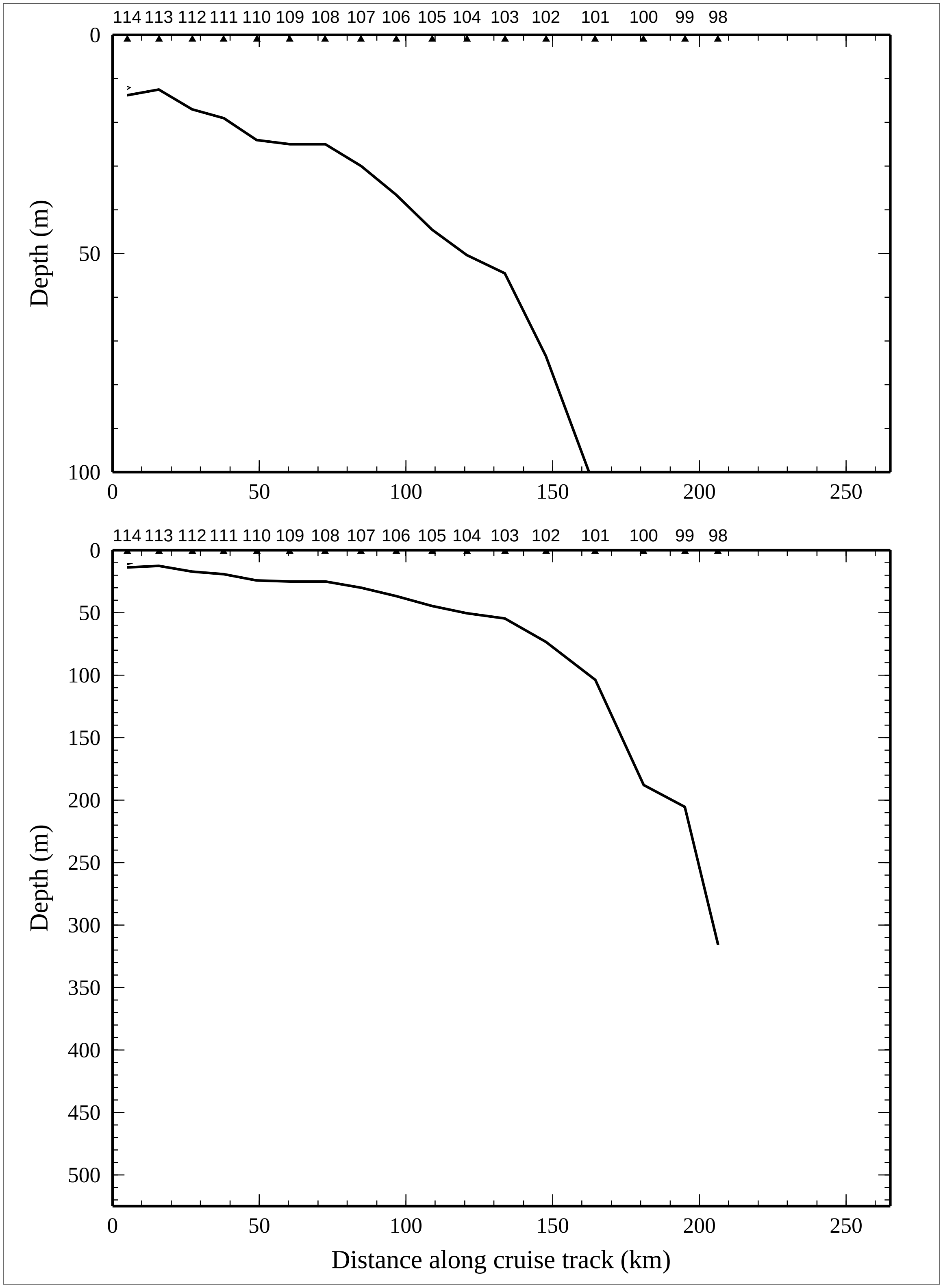

Figure 1.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H01, 30 April - 9 May 1992. Values were less than 0.05.

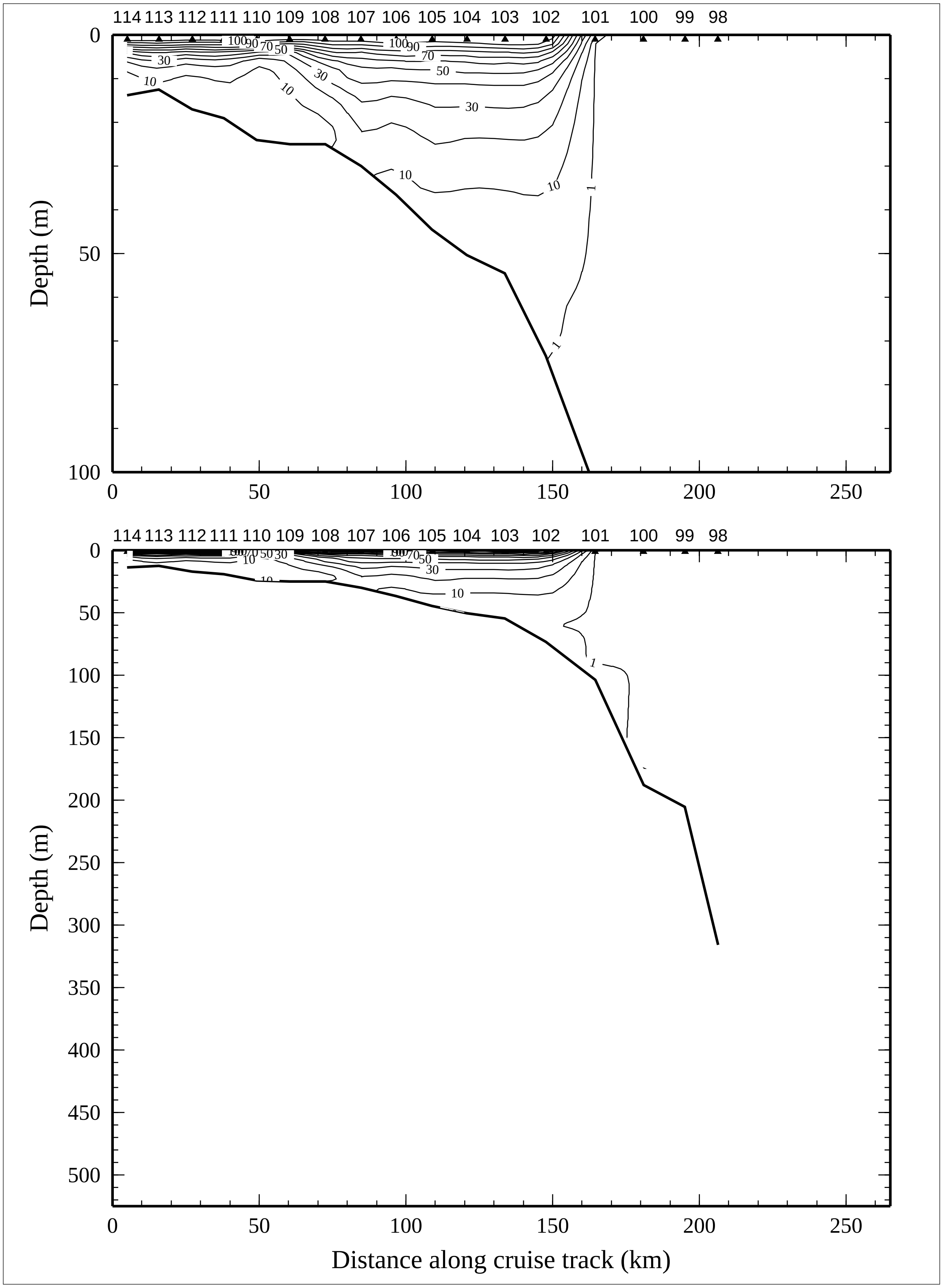

Figure 1.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

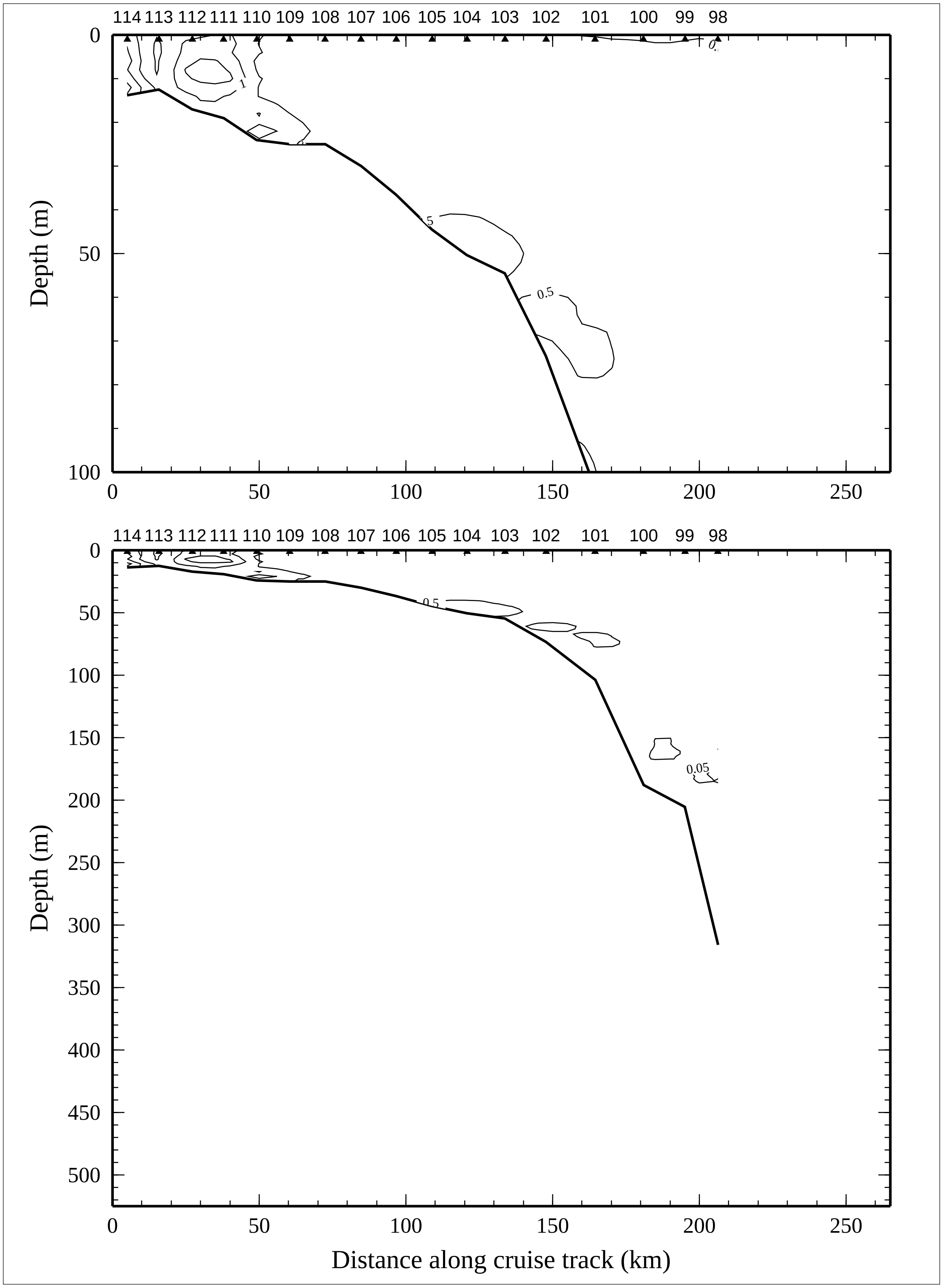

Figure 1.3.7. Relative fluorescence on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

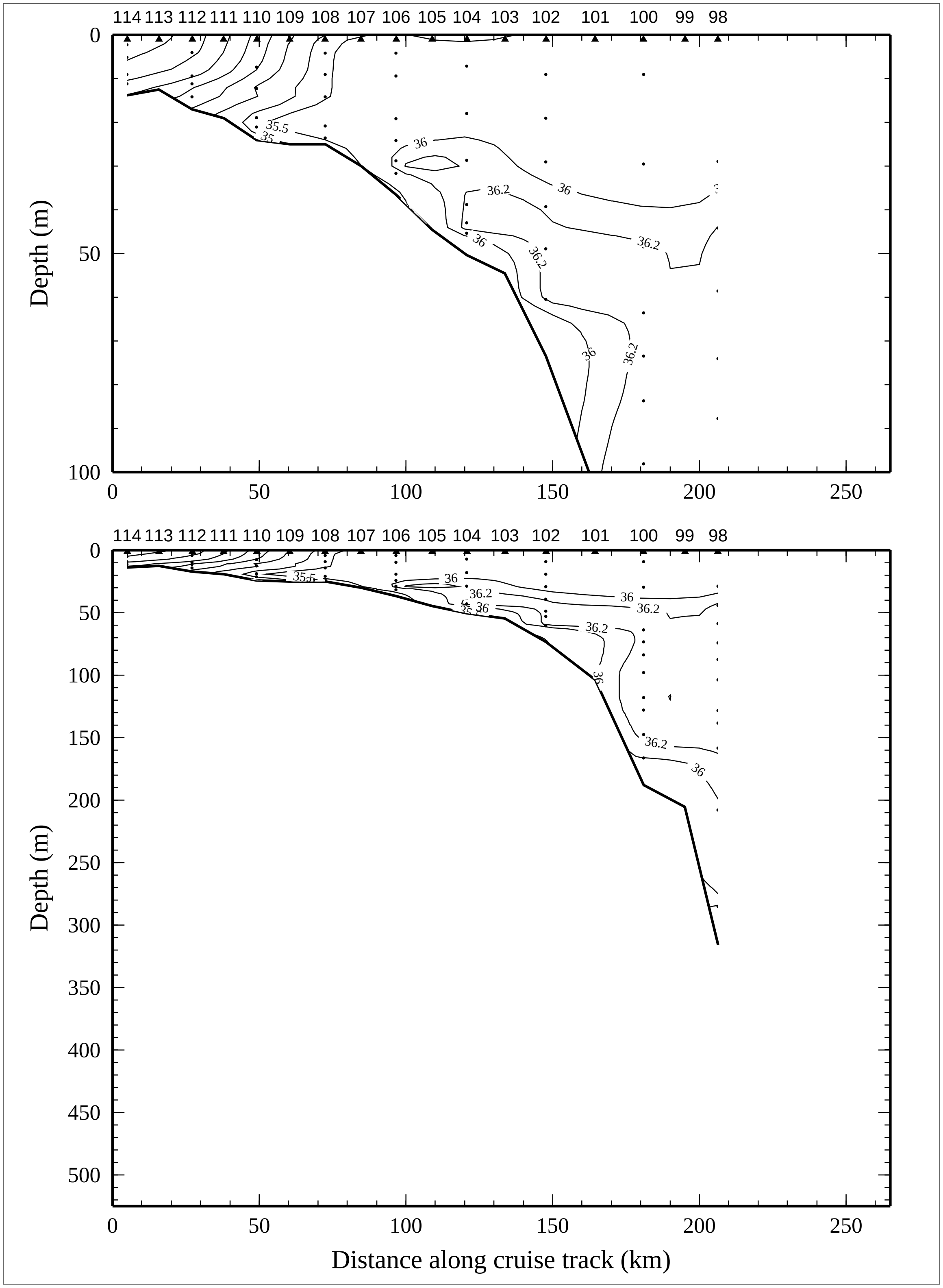

Figure 1.3.8. Bottle salinity on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

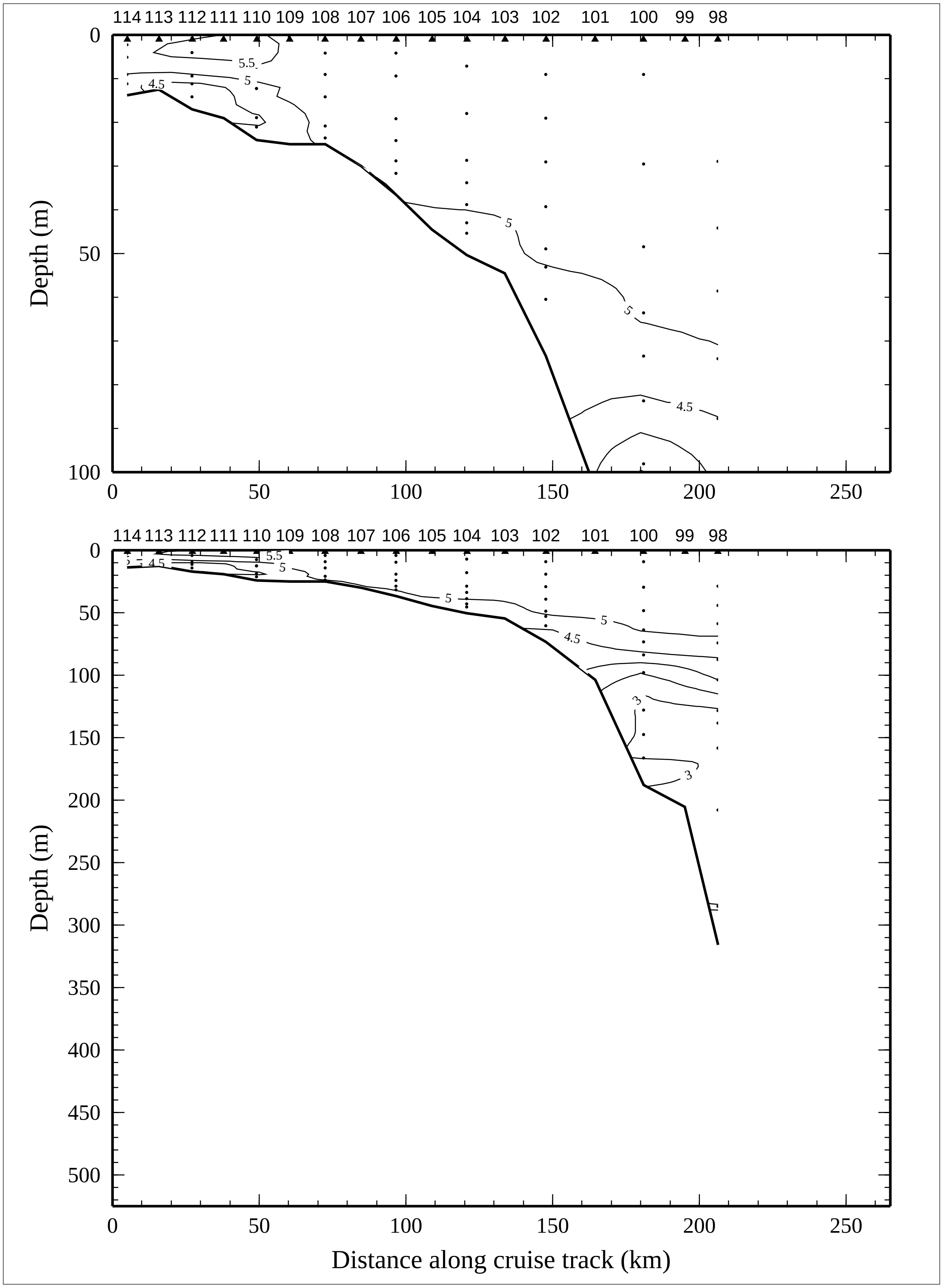

Figure 1.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

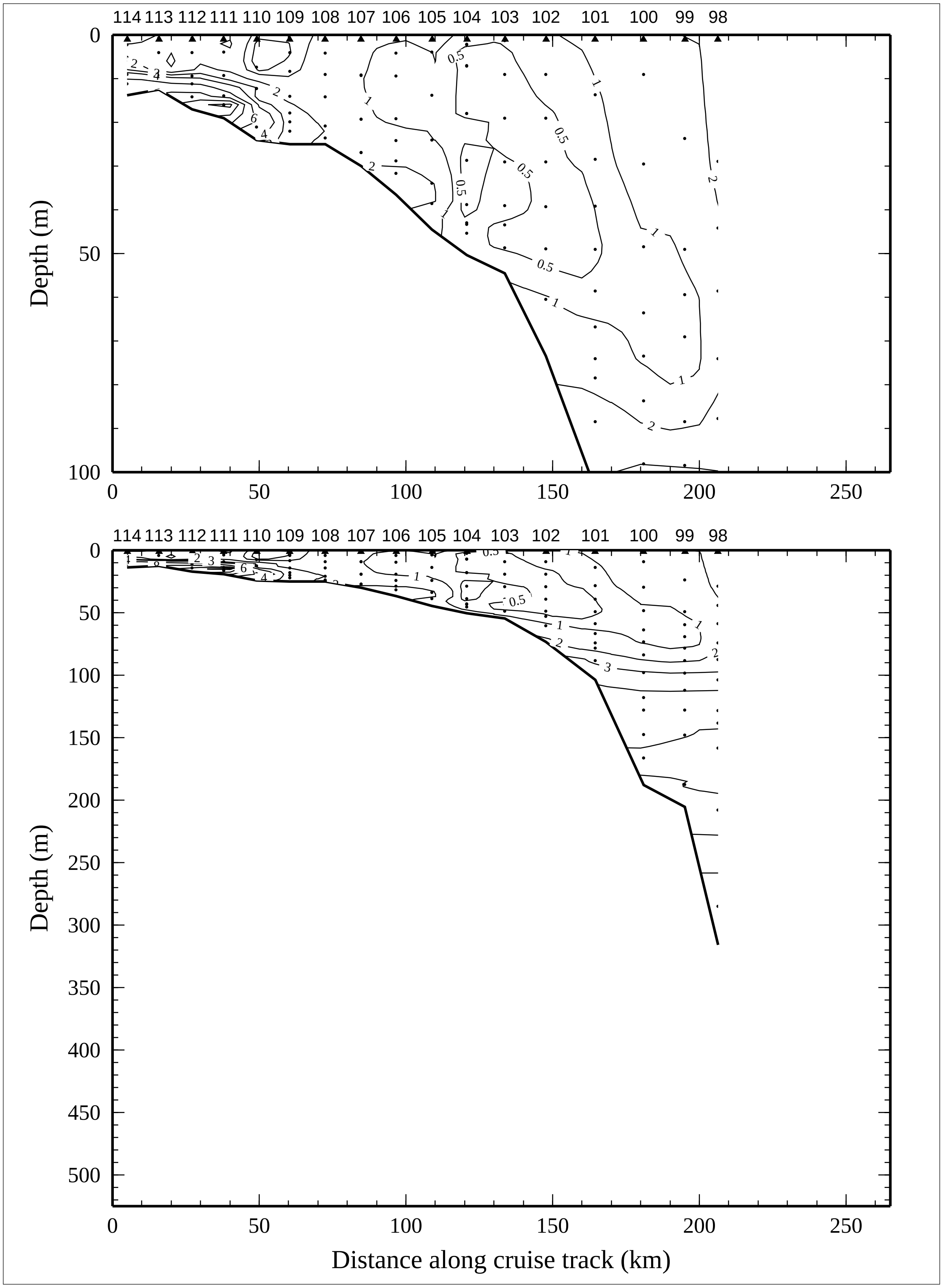

Figure 1.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H01,
30 April - 9 May 1992.

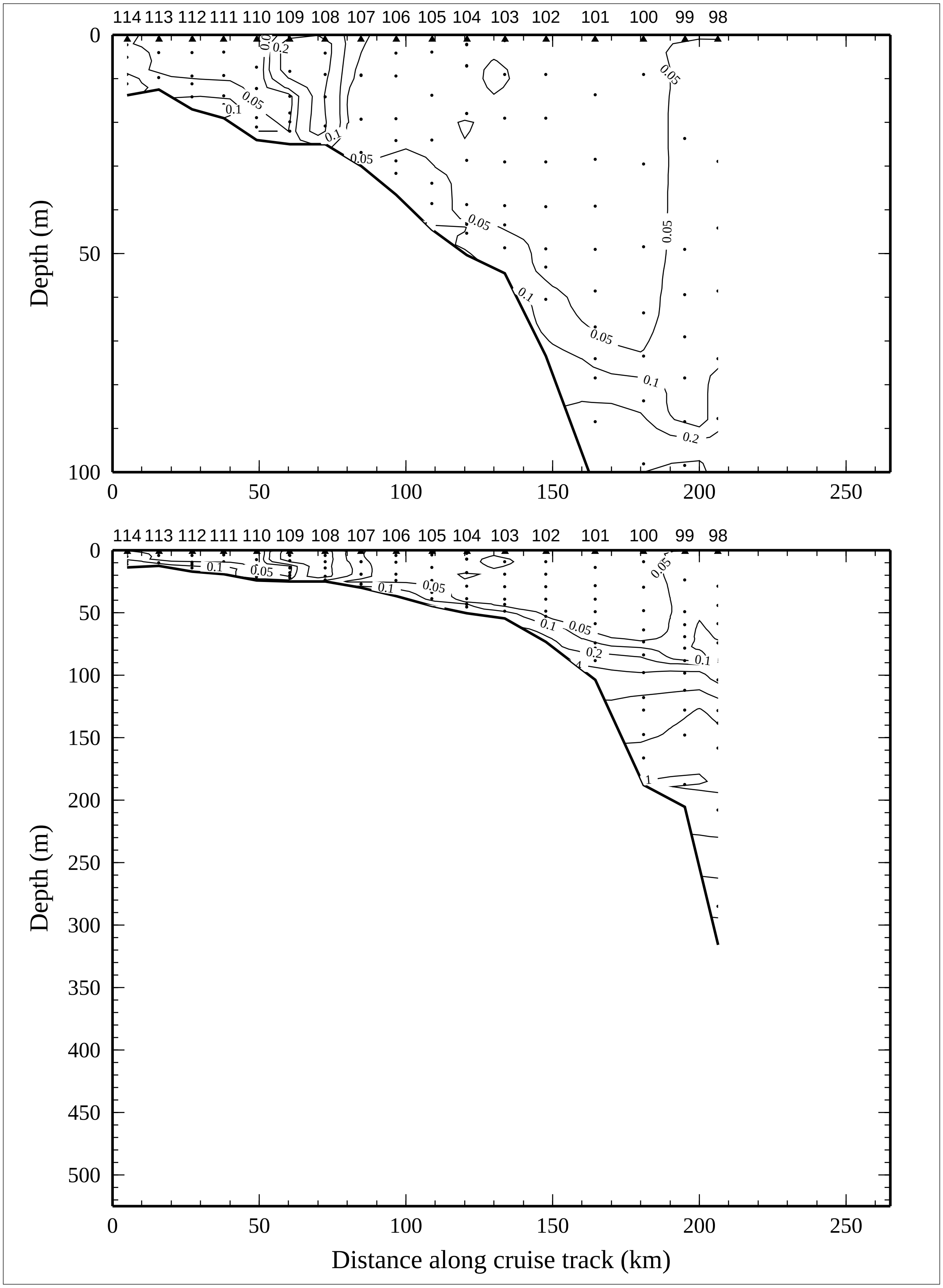

Figure 1.3.11. Phosphate (µmol·l-1) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

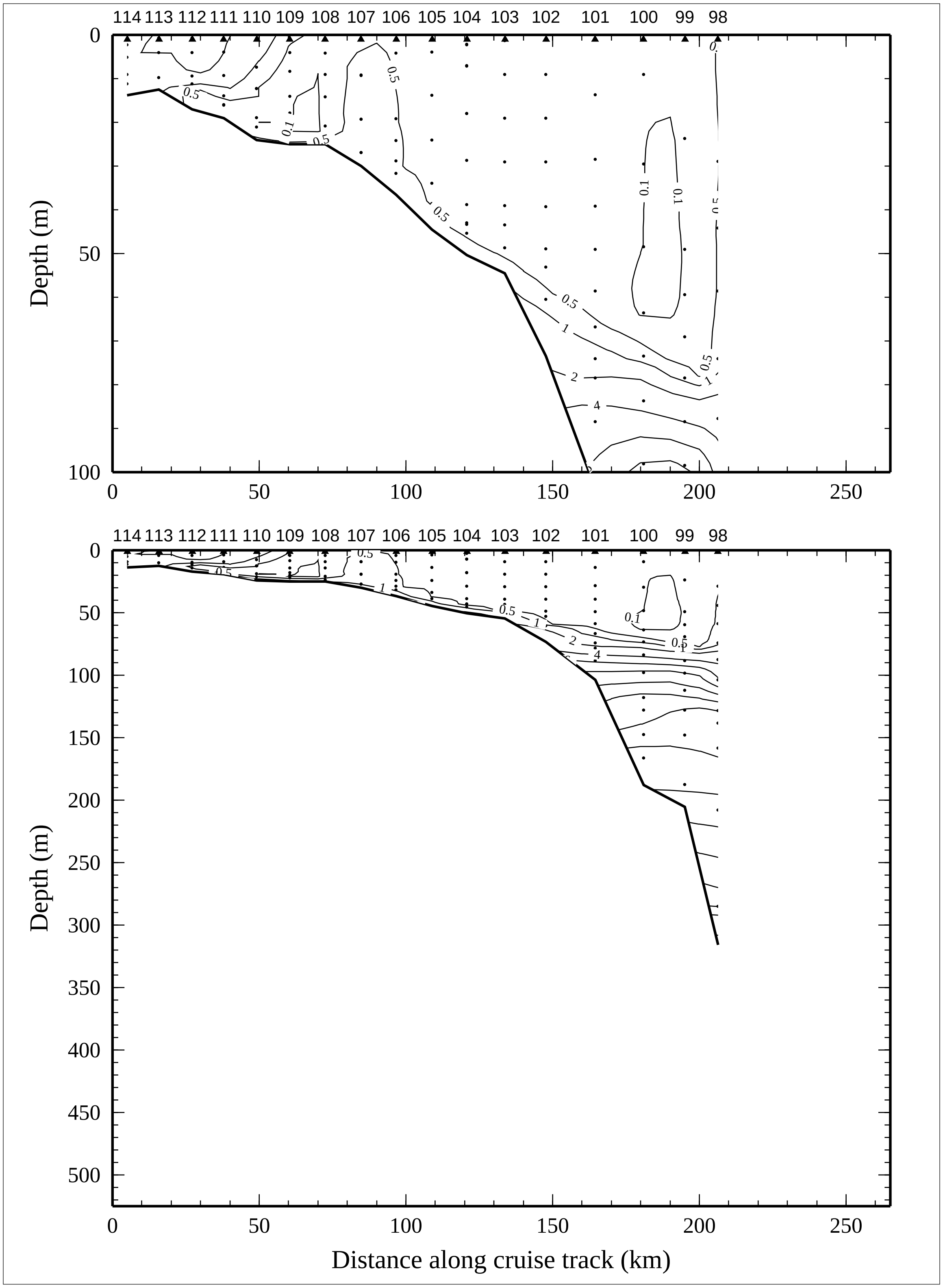

Figure 1.3.12. Nitrate (μmol·l[-1]) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

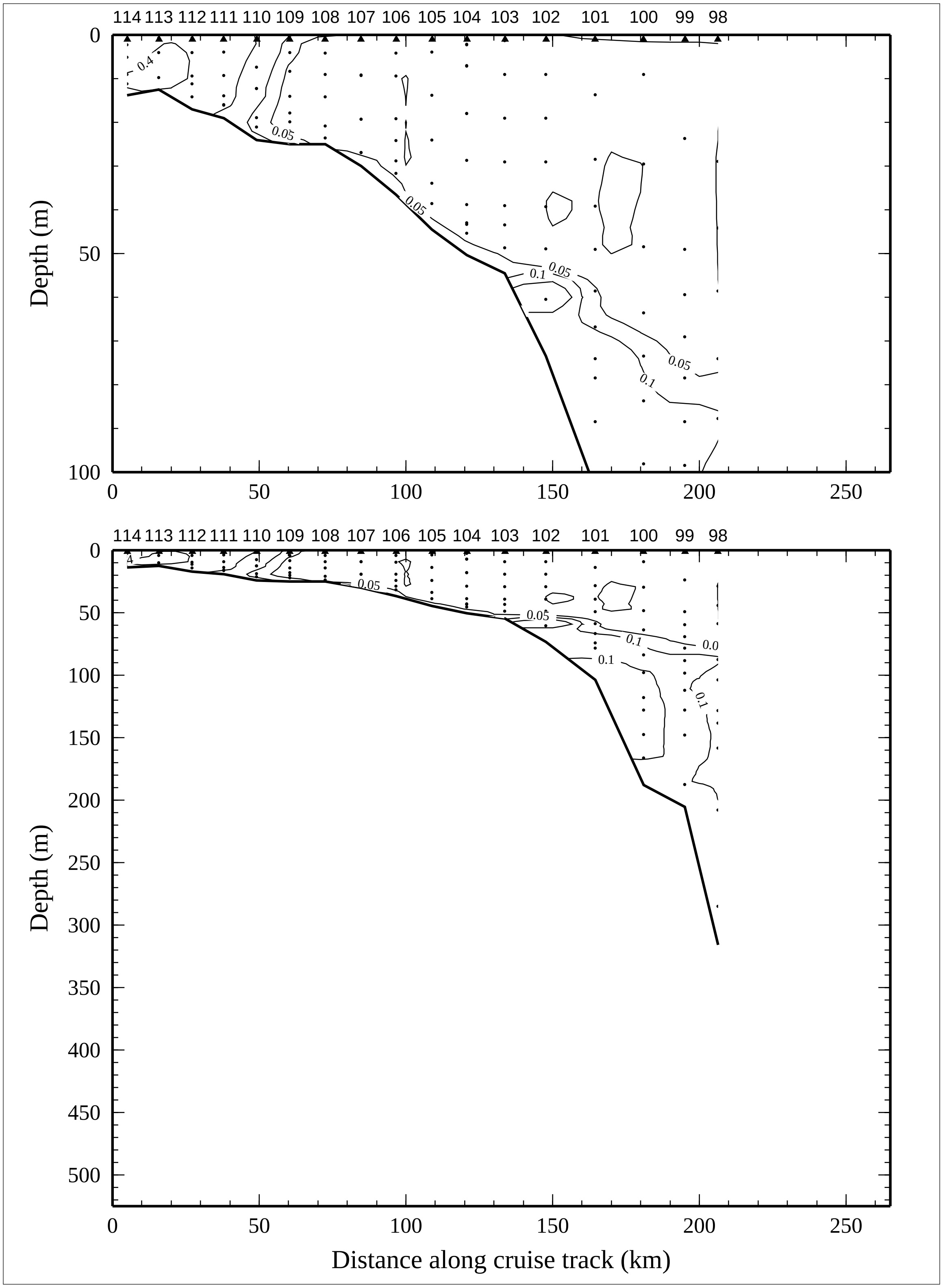

Figure 1.3.13. Nitrite (μmol·l^{-1}) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

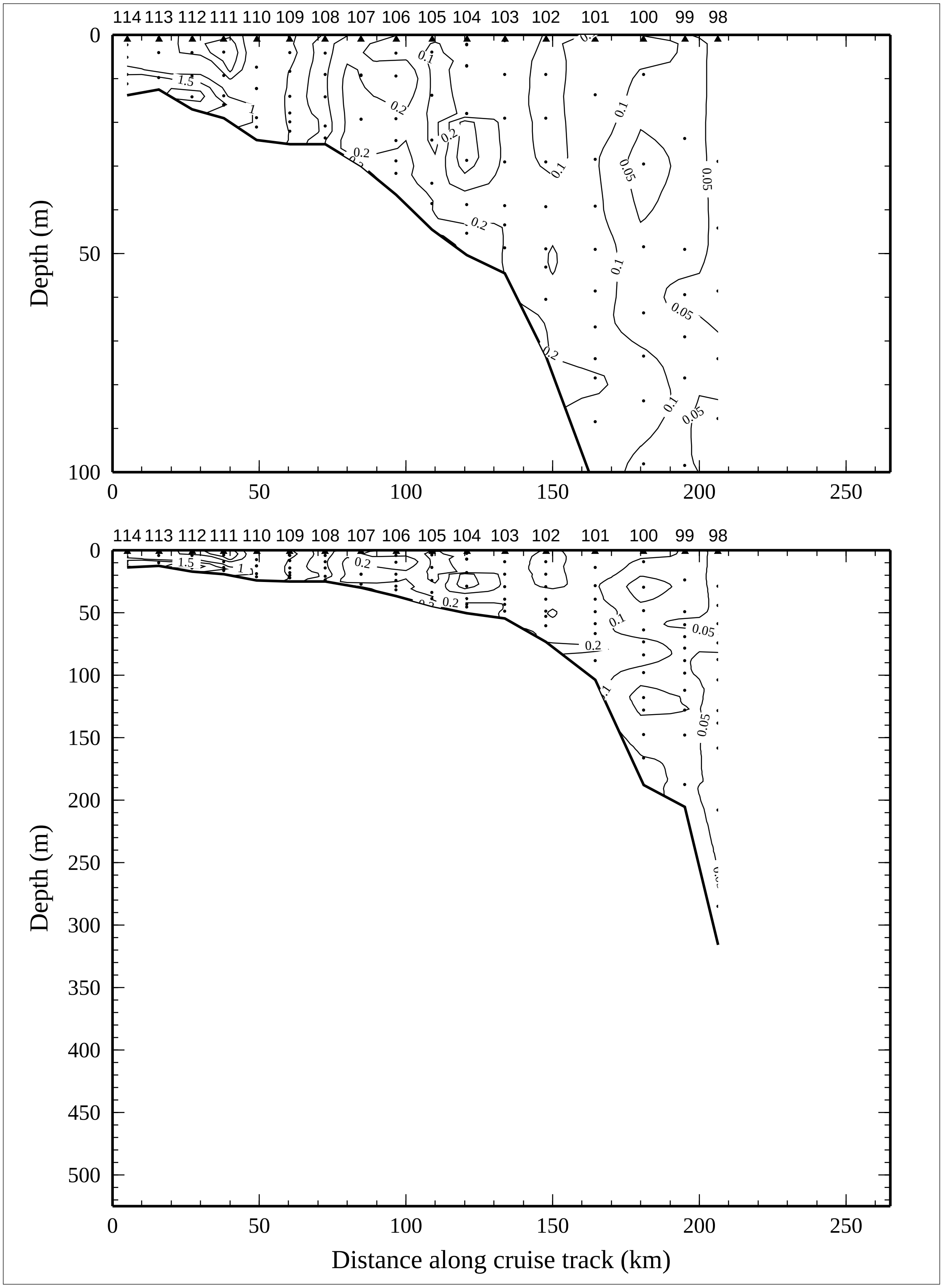

Figure 1.3.14. Ammonium (μmol·l-1) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

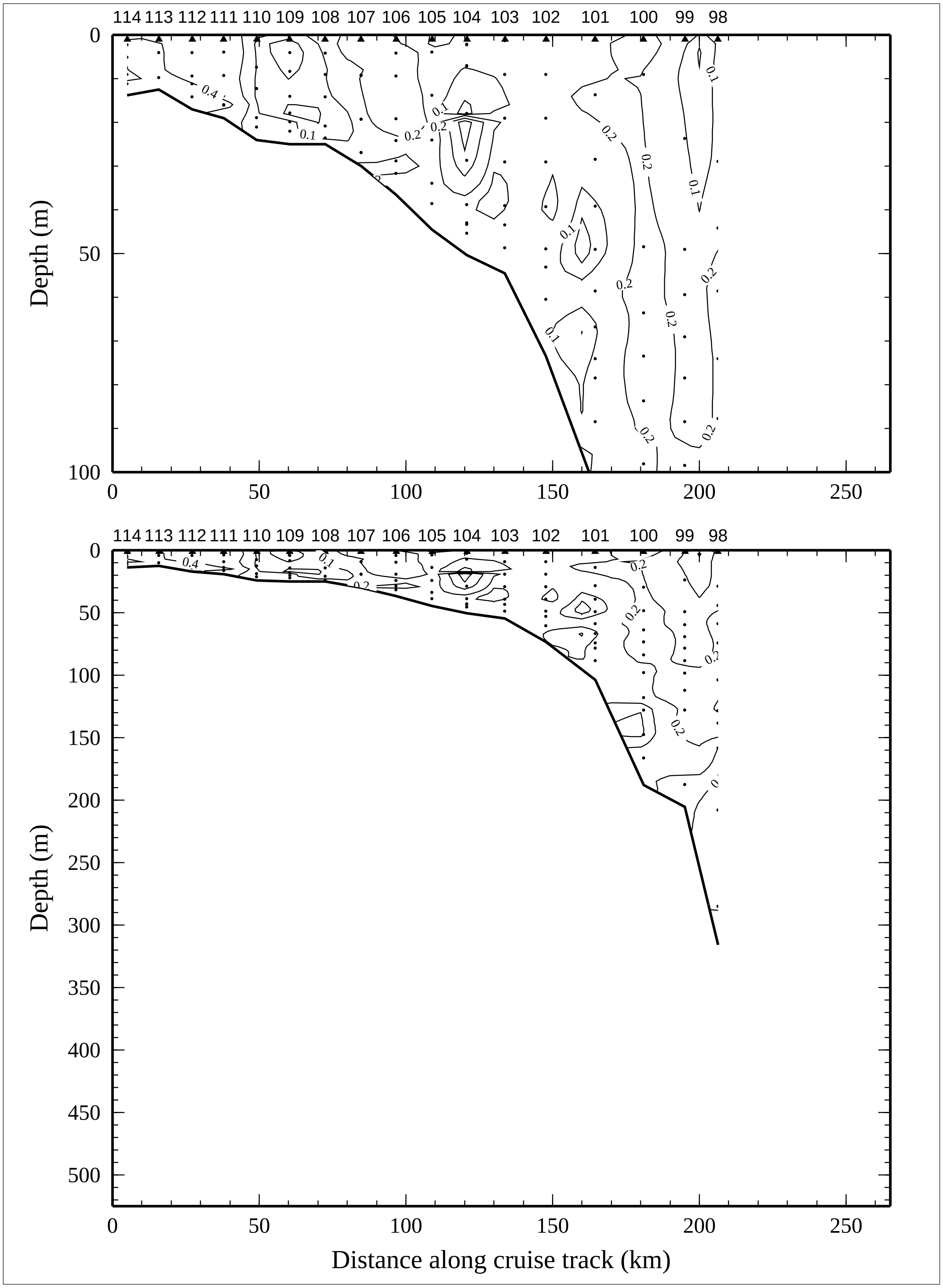

Figure 1.3.15. Urea (µmol·l^{-1}) on line 3 of LATEX A survey H01,
30 April - 9 May 1992.

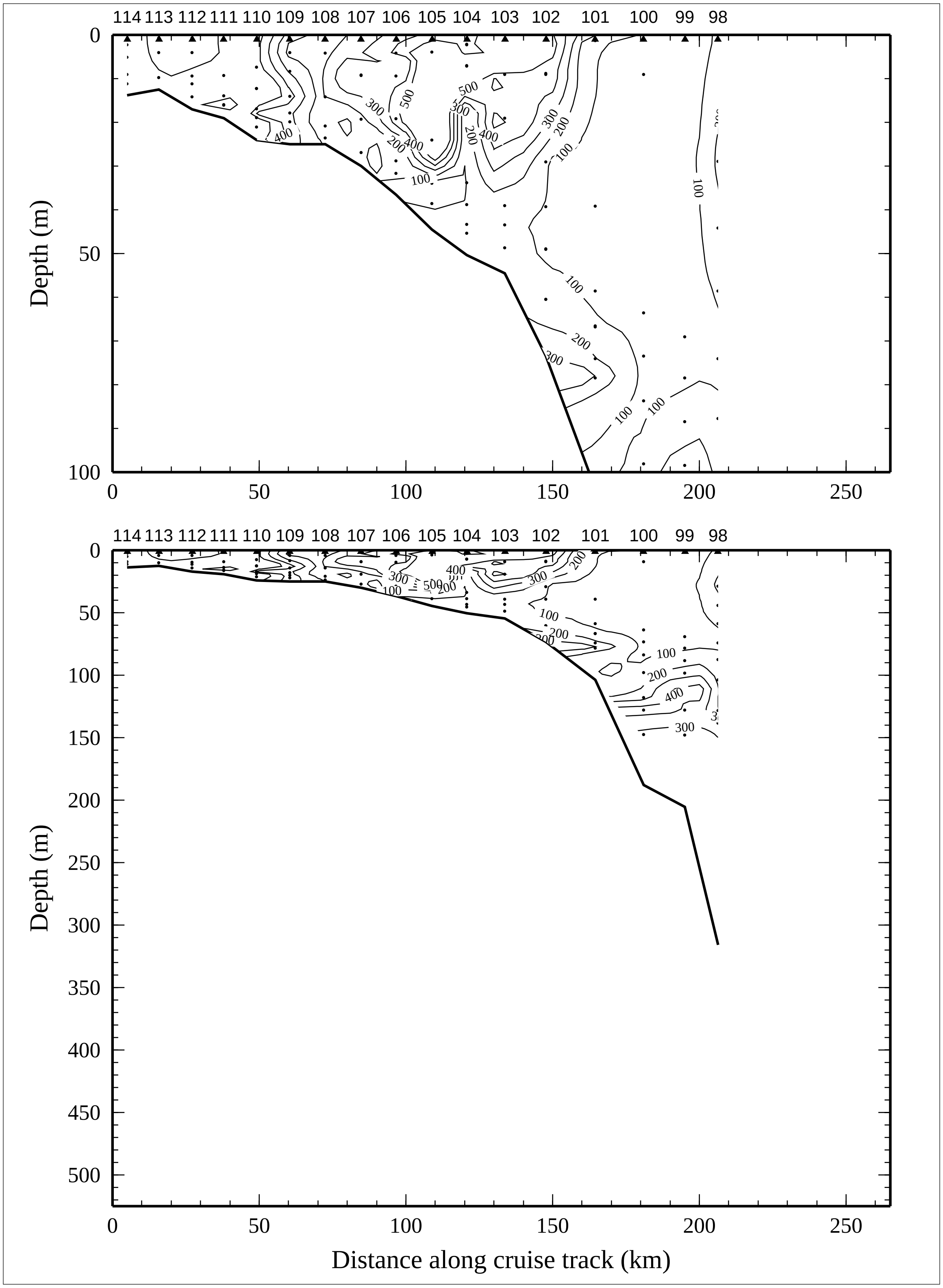

Figure 1.3.16. Chlorophyll a (ng·l^{-1}) on line 3 of LATEX A survey H01, 30 April - 9 May 1992.

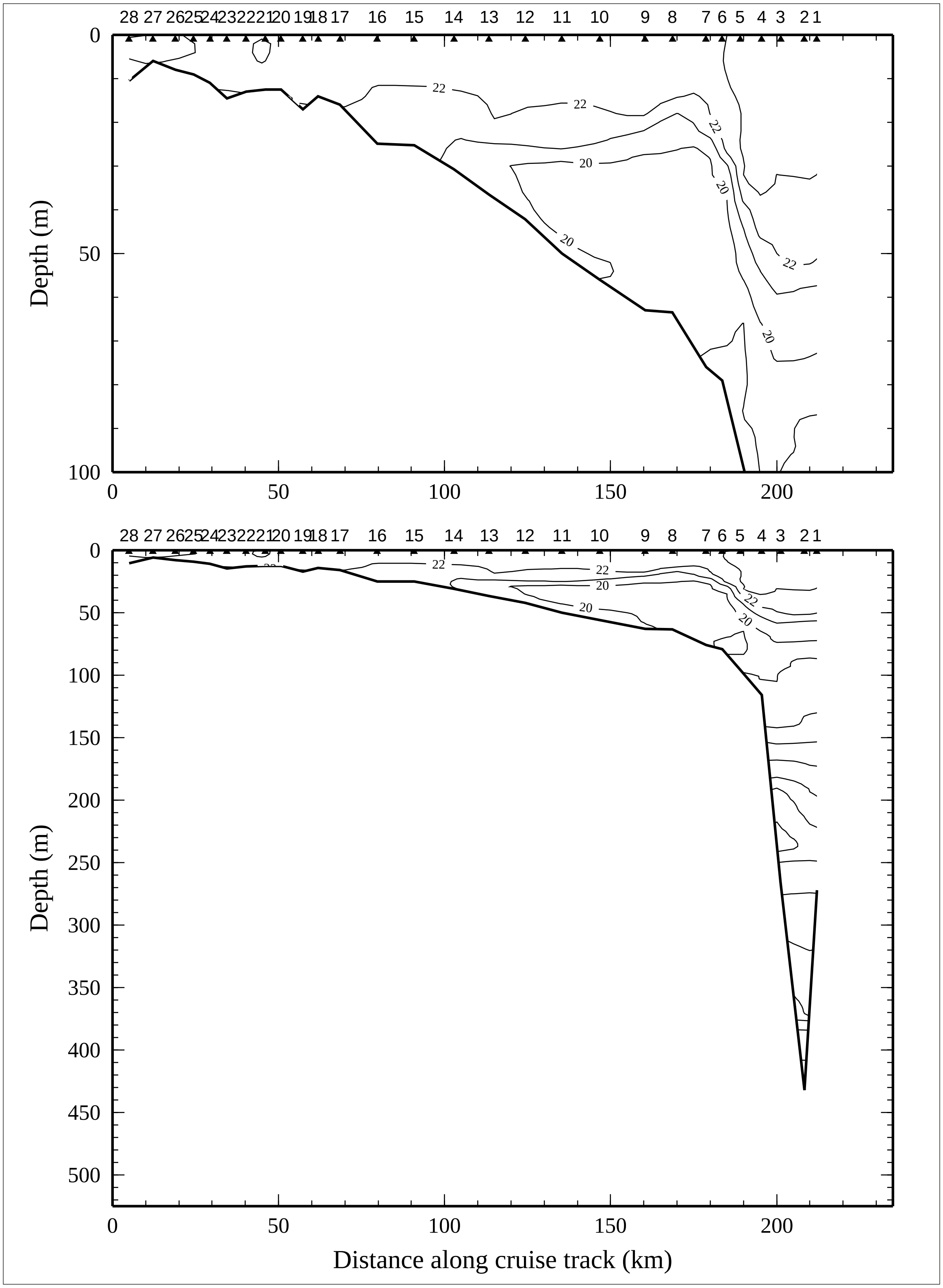

Figure 1.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

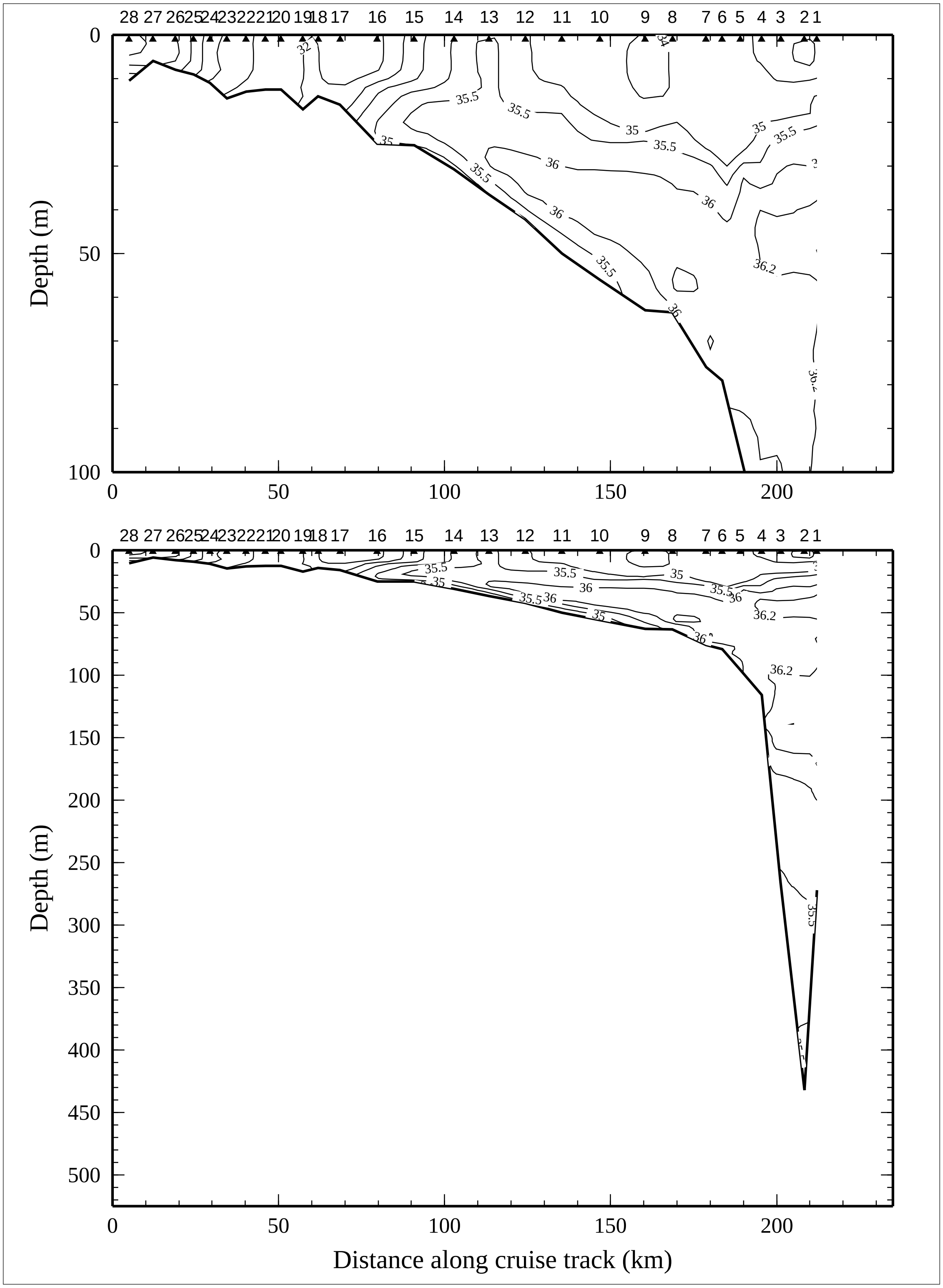

Figure 1.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

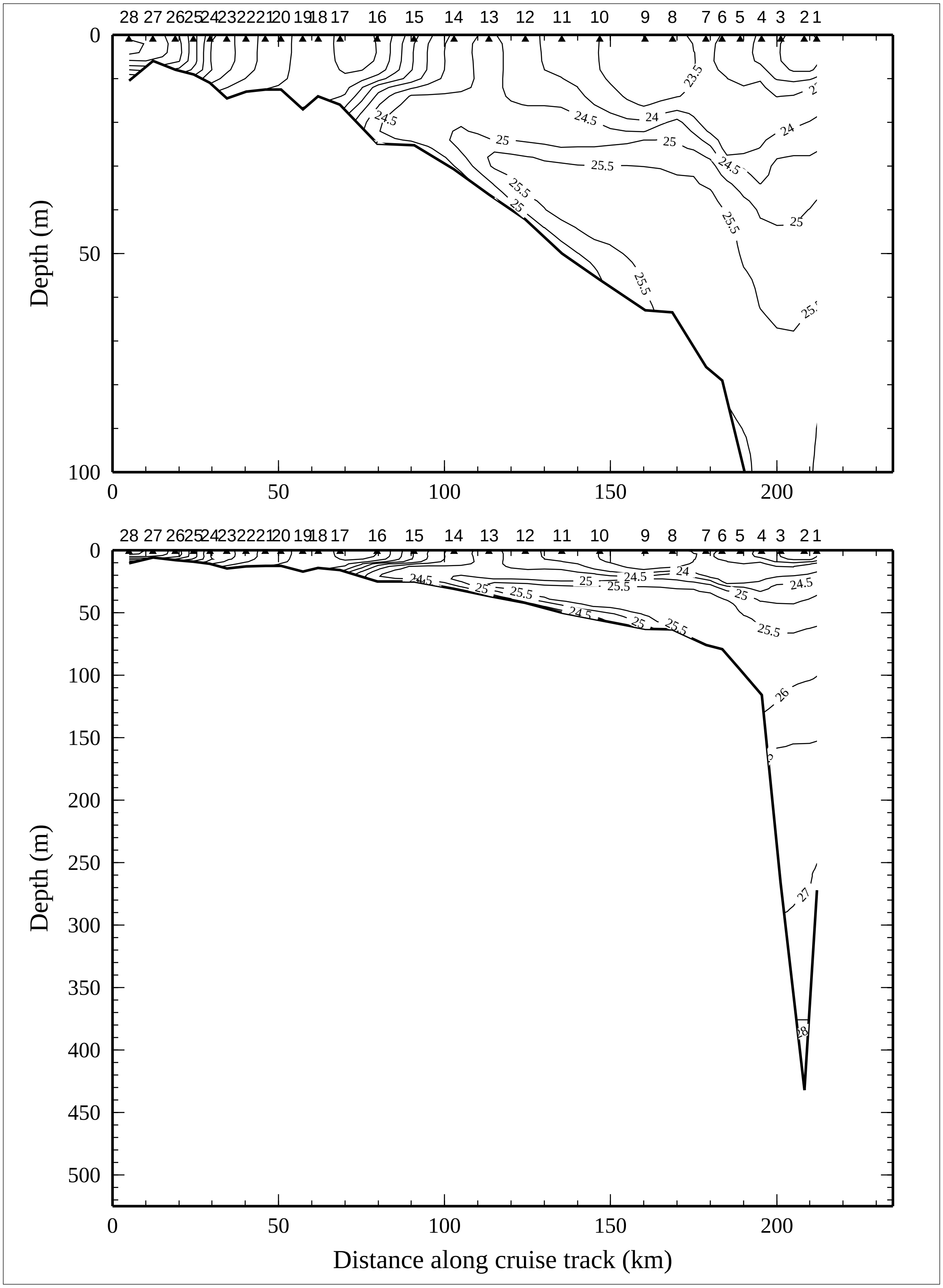

Figure 1.4.3. Density anomaly (σ_θ in $kg{\cdot}m^{-3}$) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

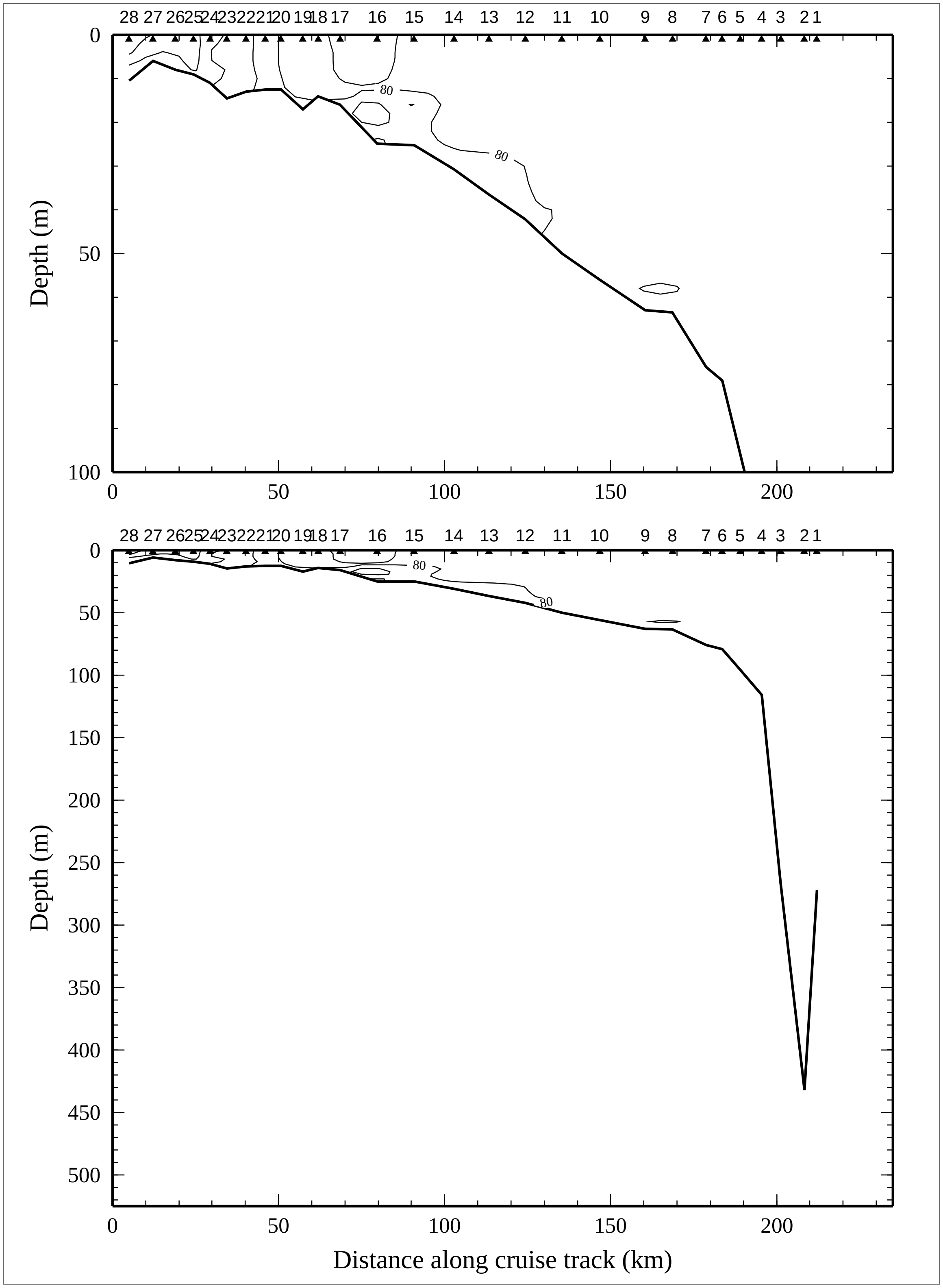

Figure 1.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

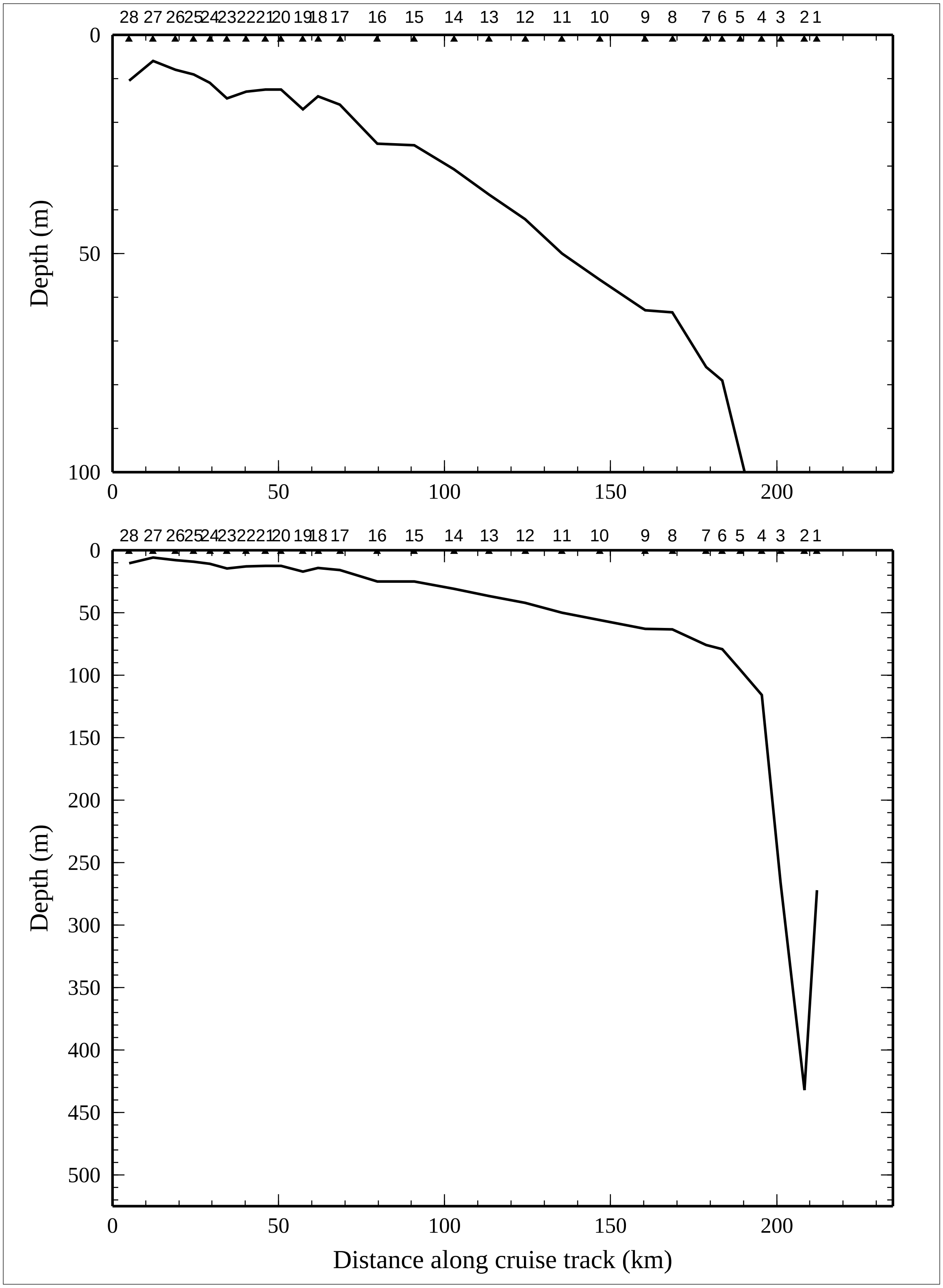

Figure 1.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H01, 30 April - 9 May 1992. Values were less than 0.05.

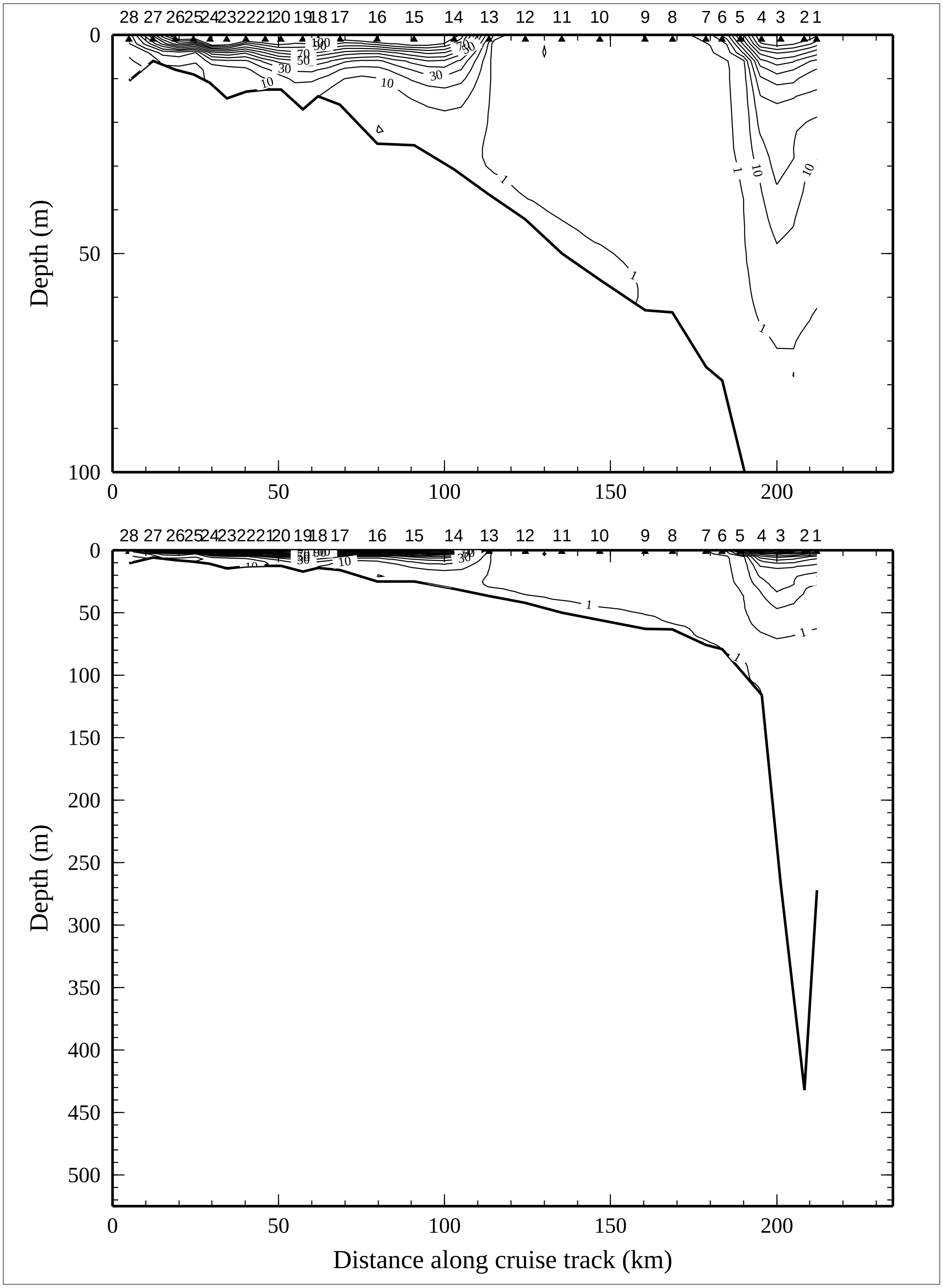

Figure 1.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

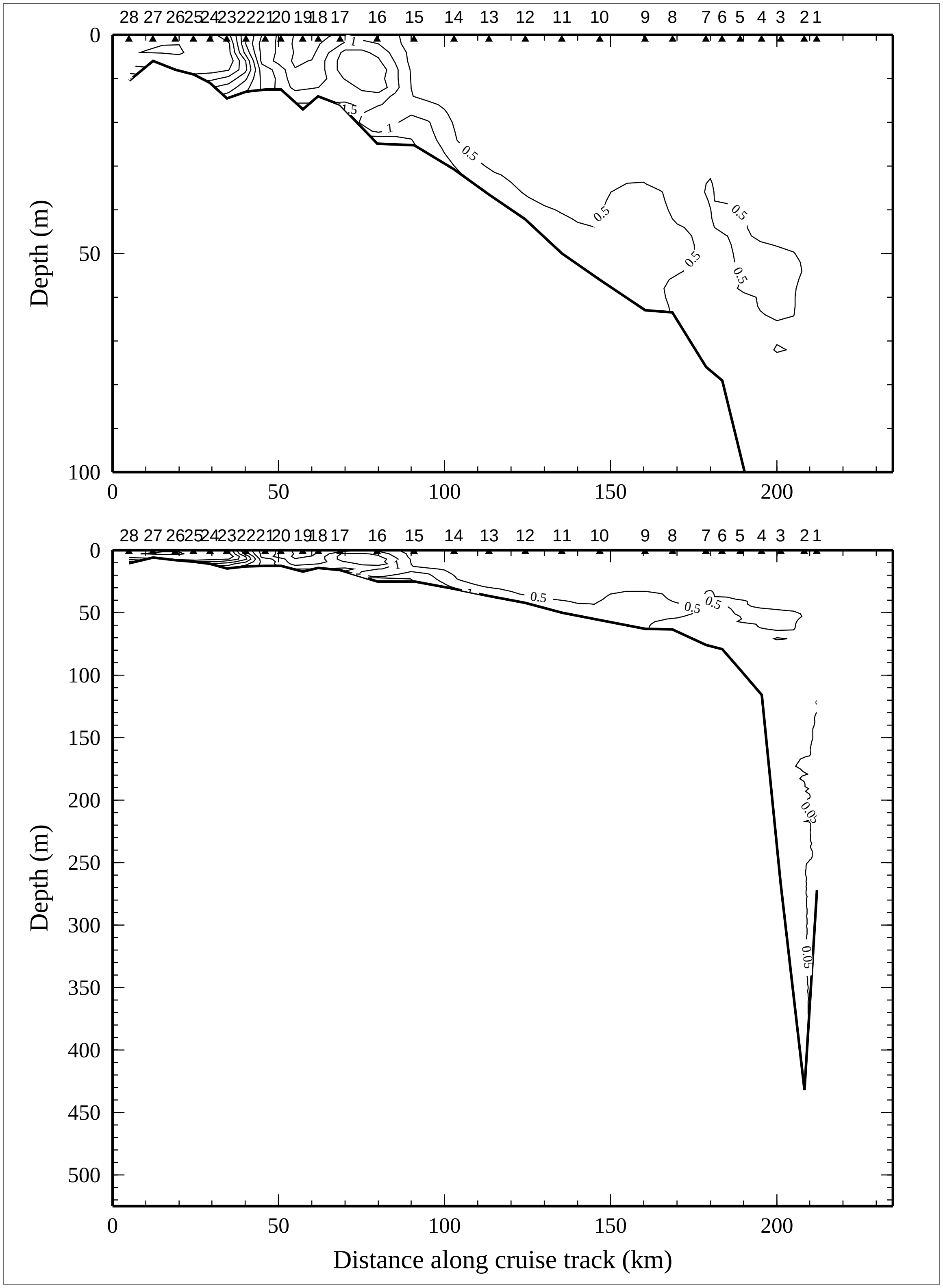

Figure 1.4.7. Relative fluorescence on line 4 of LATEX A survey H01,
30 April - 9 May 1992.

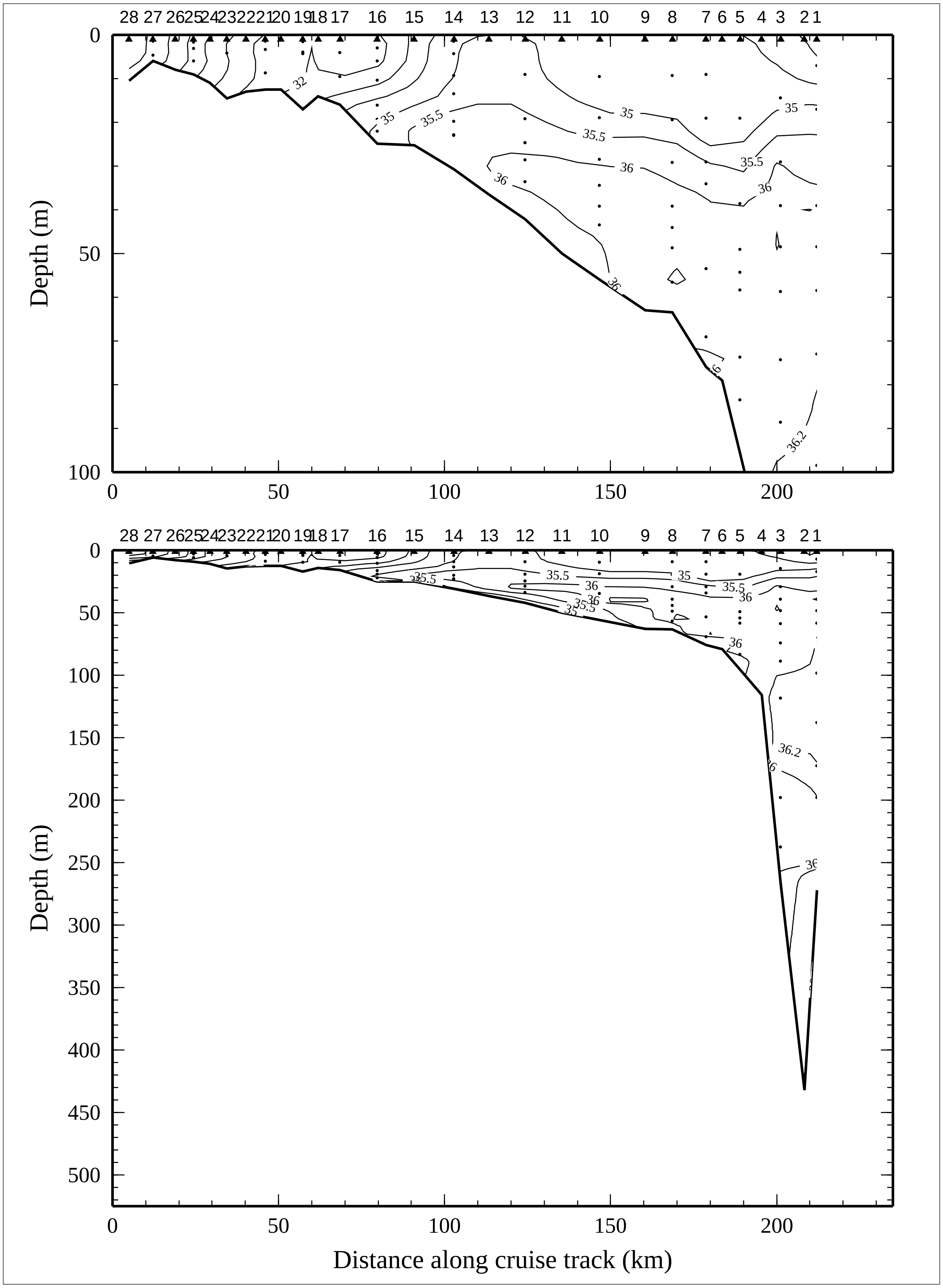

Figure 1.4.8. Bottle salinity on line 4 of LATEX A survey H01,
30 April - 9 May 1992.

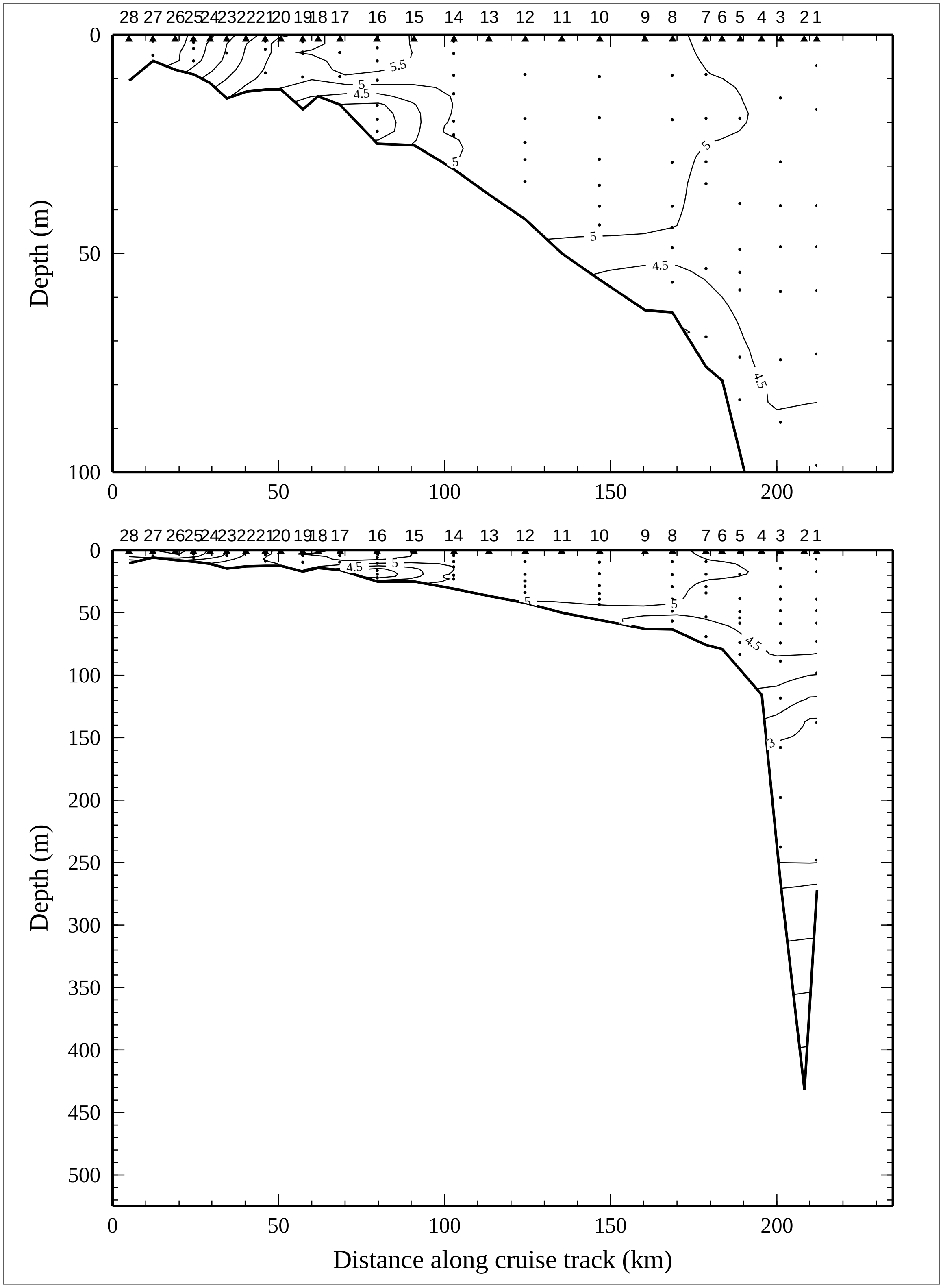

Figure 1.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

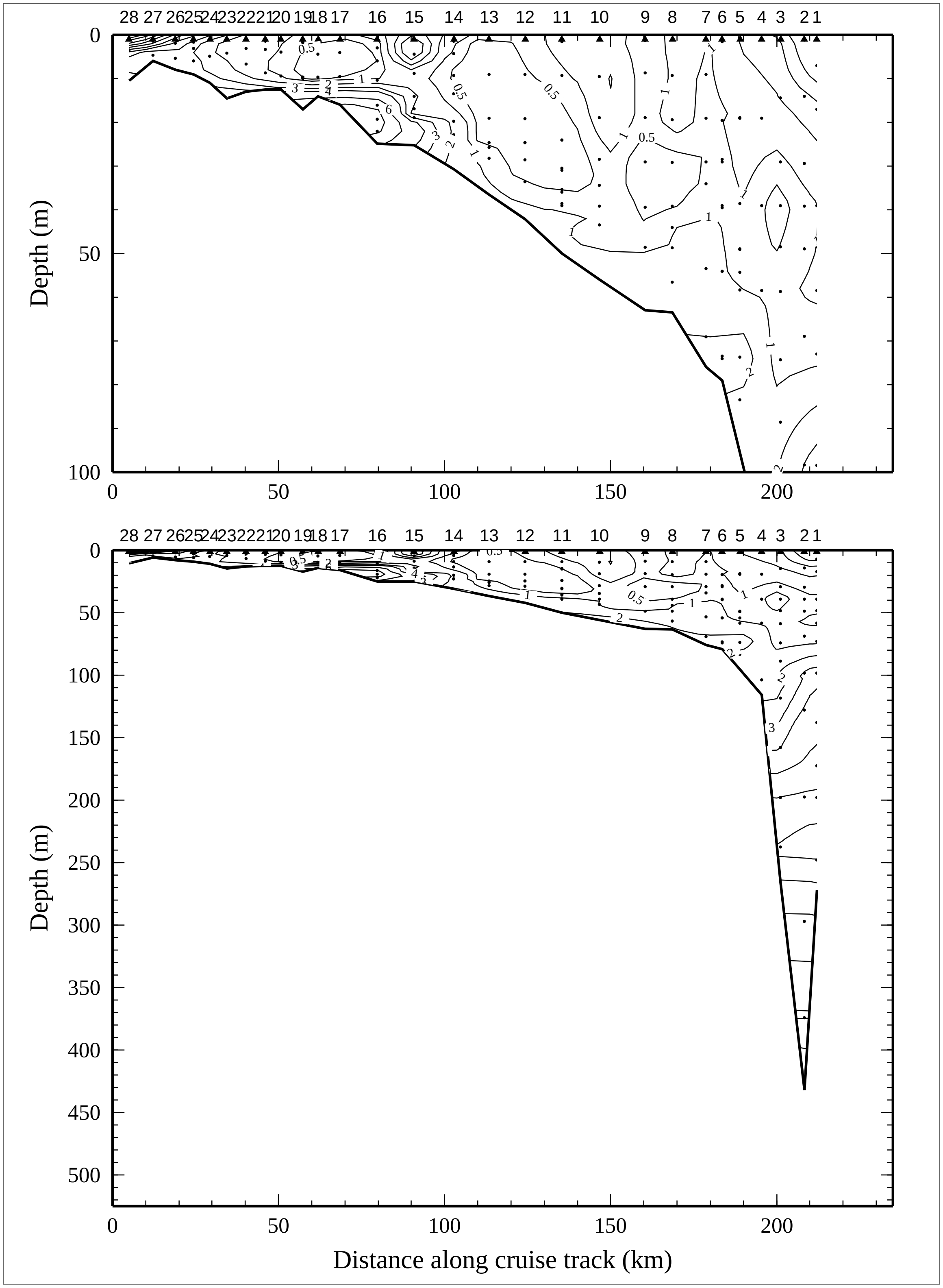

Figure 1.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

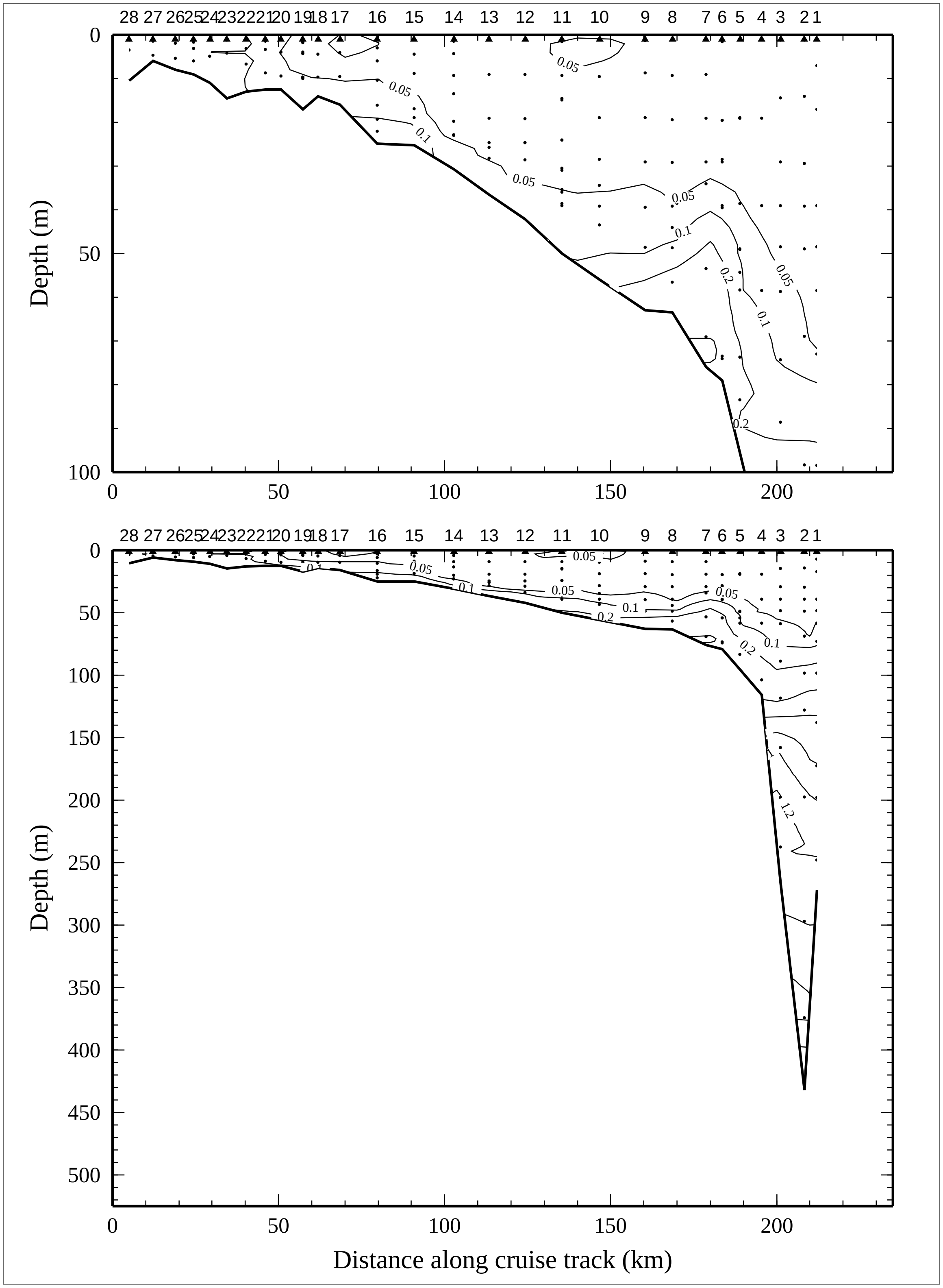

Figure 1.4.11. Phosphate (μmol·l⁻¹) on line 4 of LATEX A survey H01,
30 April - 9 May 1992.

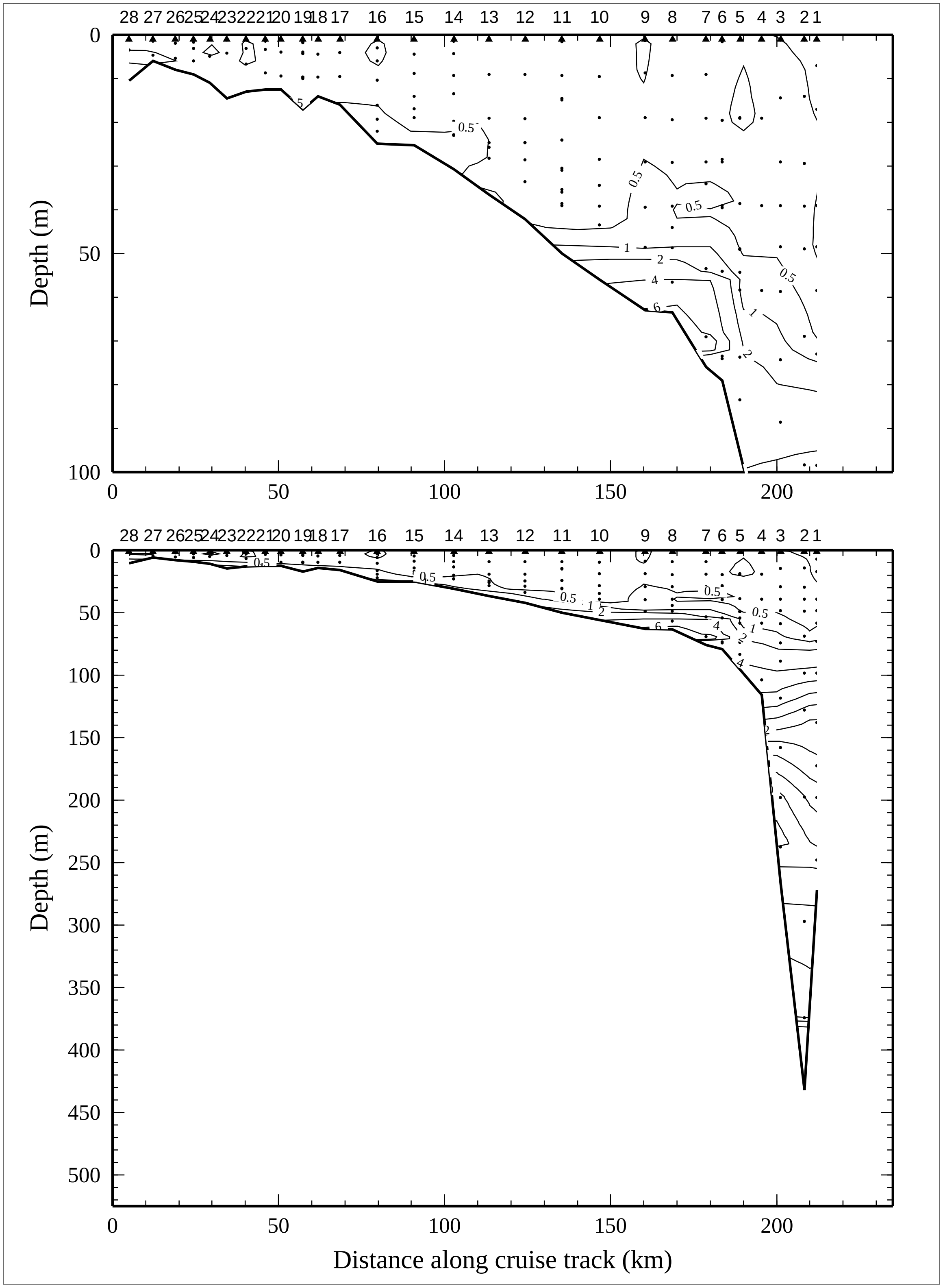

Figure 1.4.12. Nitrate (μmol·l^{-1}) on line 4 of LATEX A survey H01,
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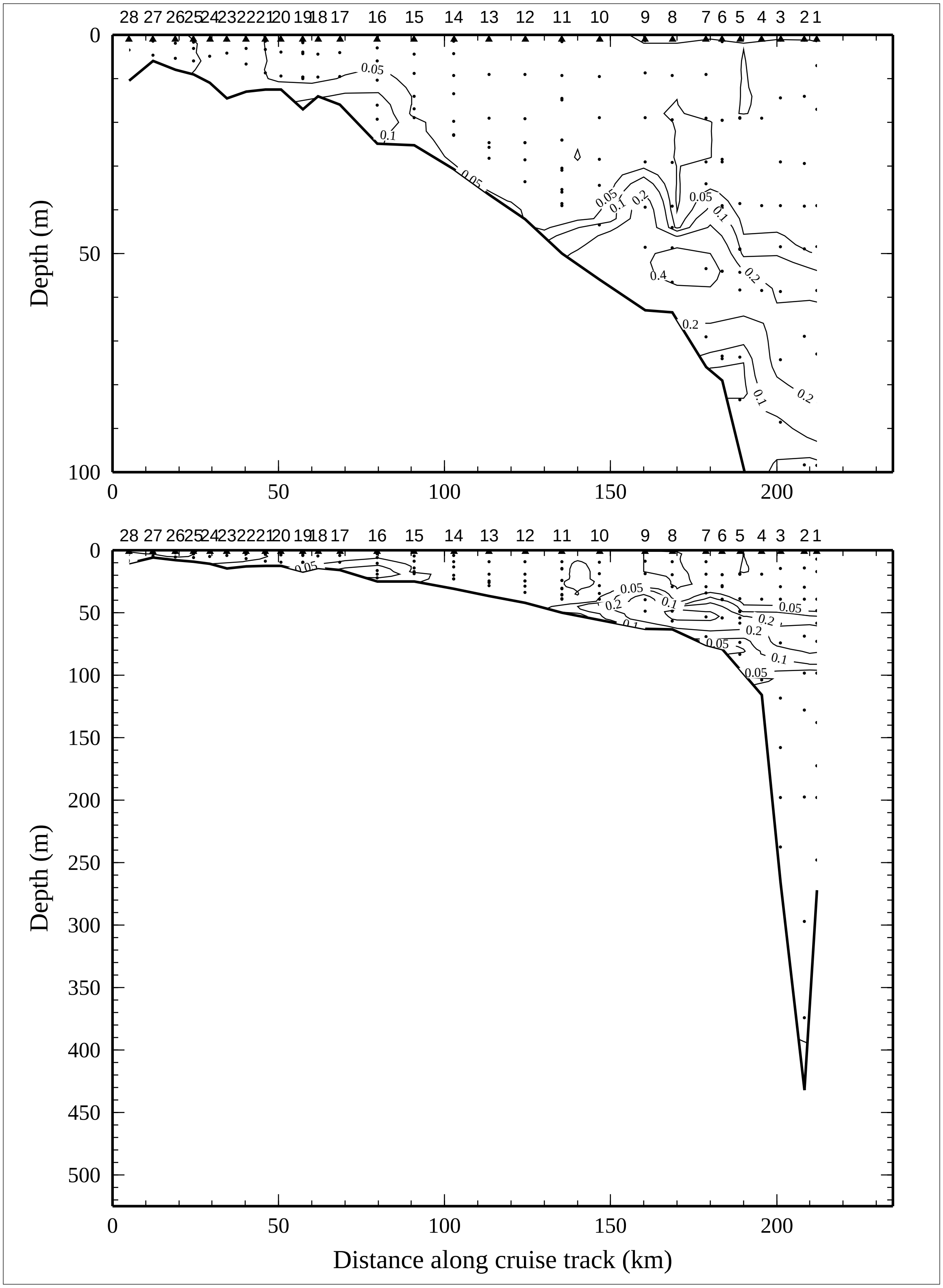


Figure 1.4.13. Nitrite ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

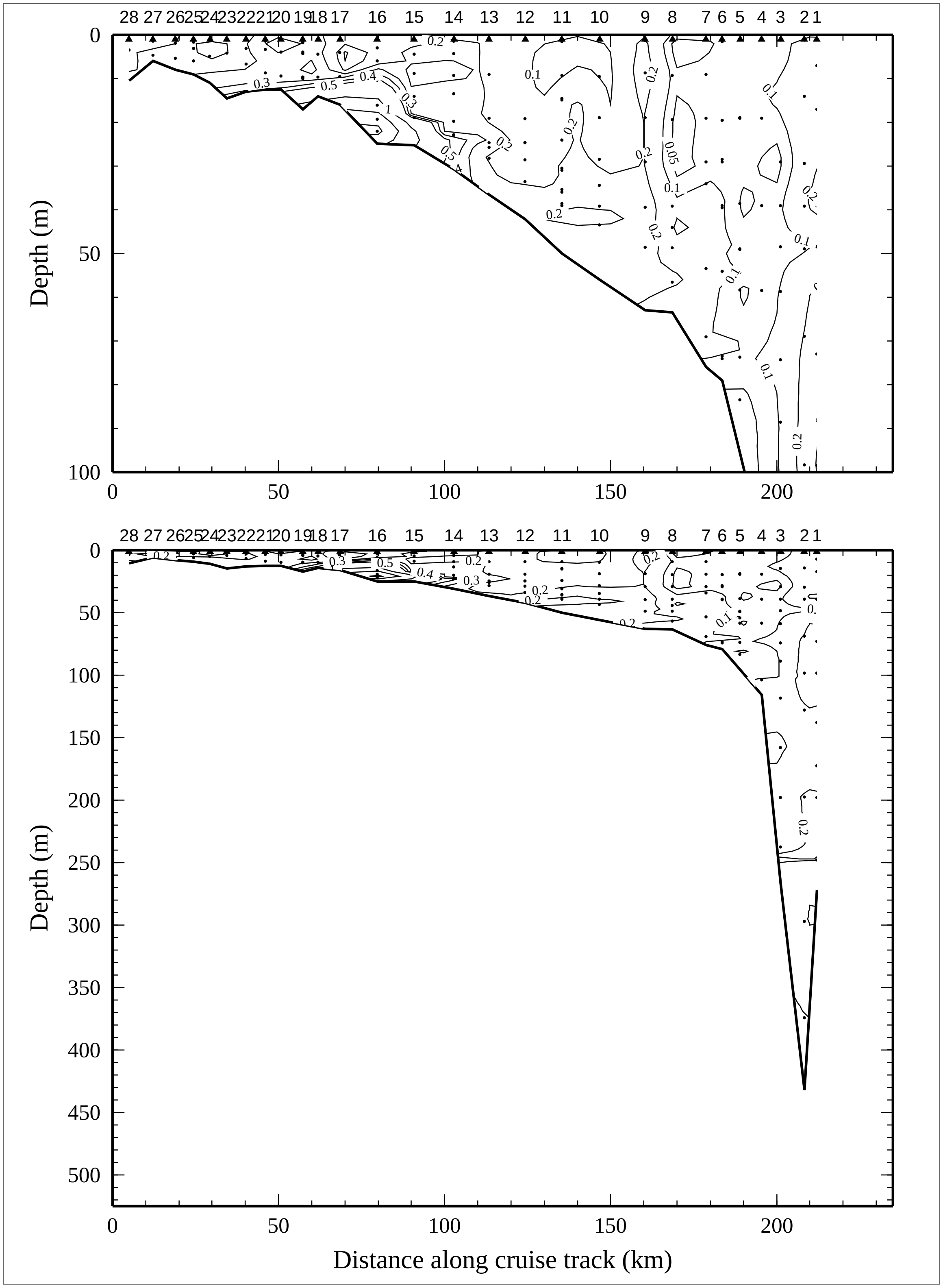


Figure 1.4.14. Ammonium (μmol·l[-1]) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

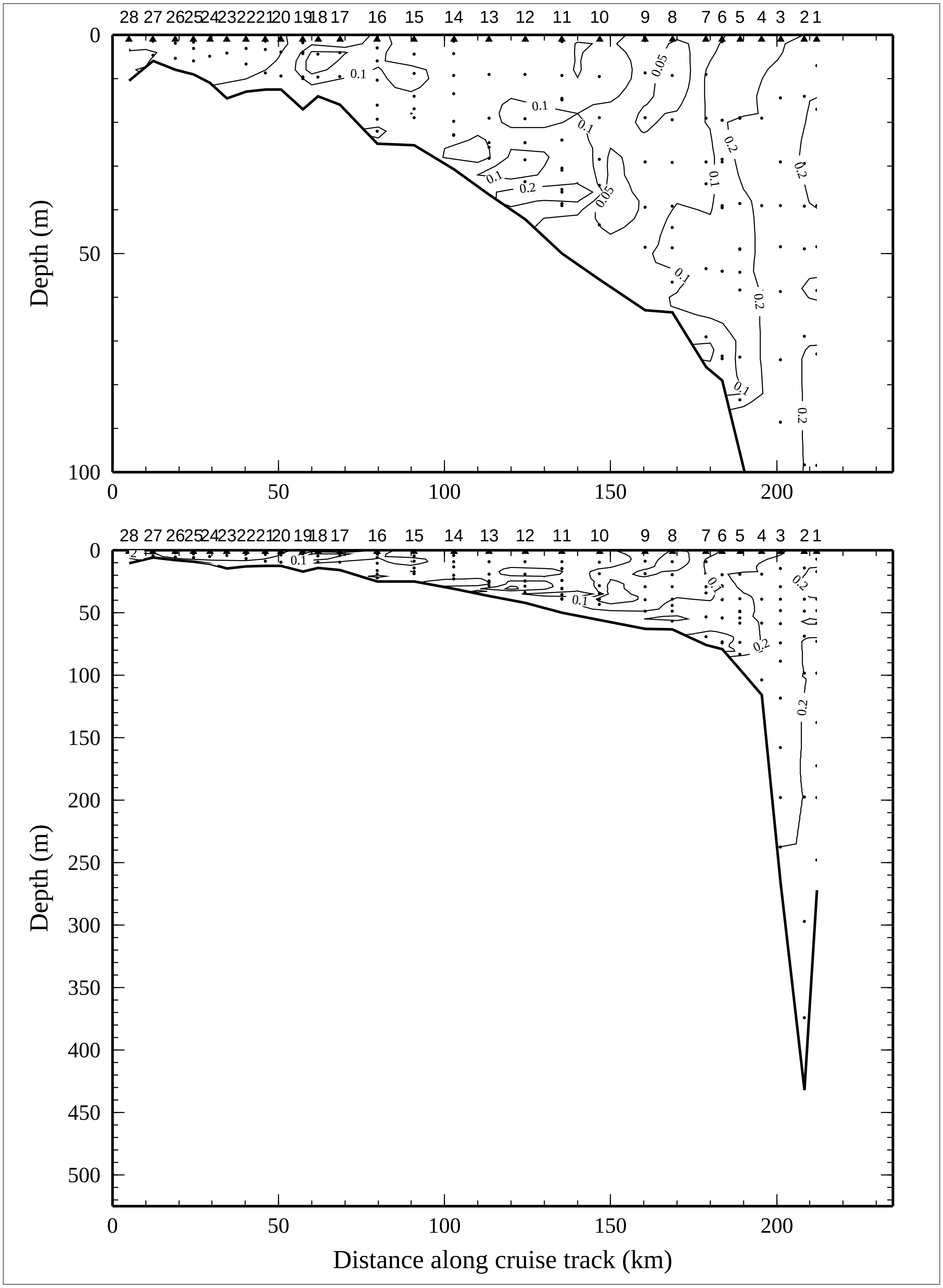


Figure 1.4.15. Urea (µmol·l⁻¹) on line 4 of LATEX A survey H01,
30 April - 9 May 1992.

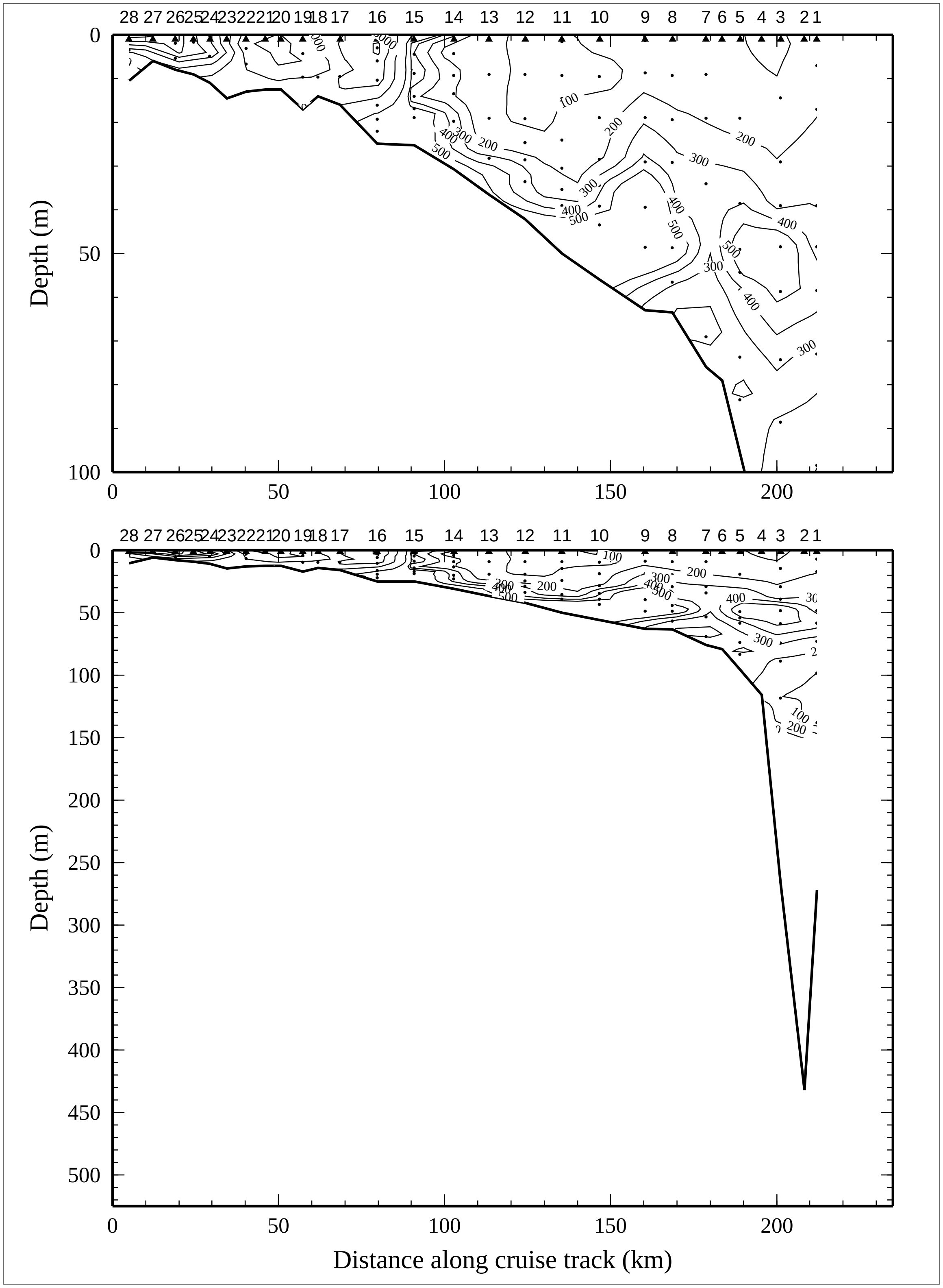


Figure 1.4.16. Chlorophyll a (ng·l^{-1}) on line 4 of LATEX A survey H01, 30 April - 9 May 1992.

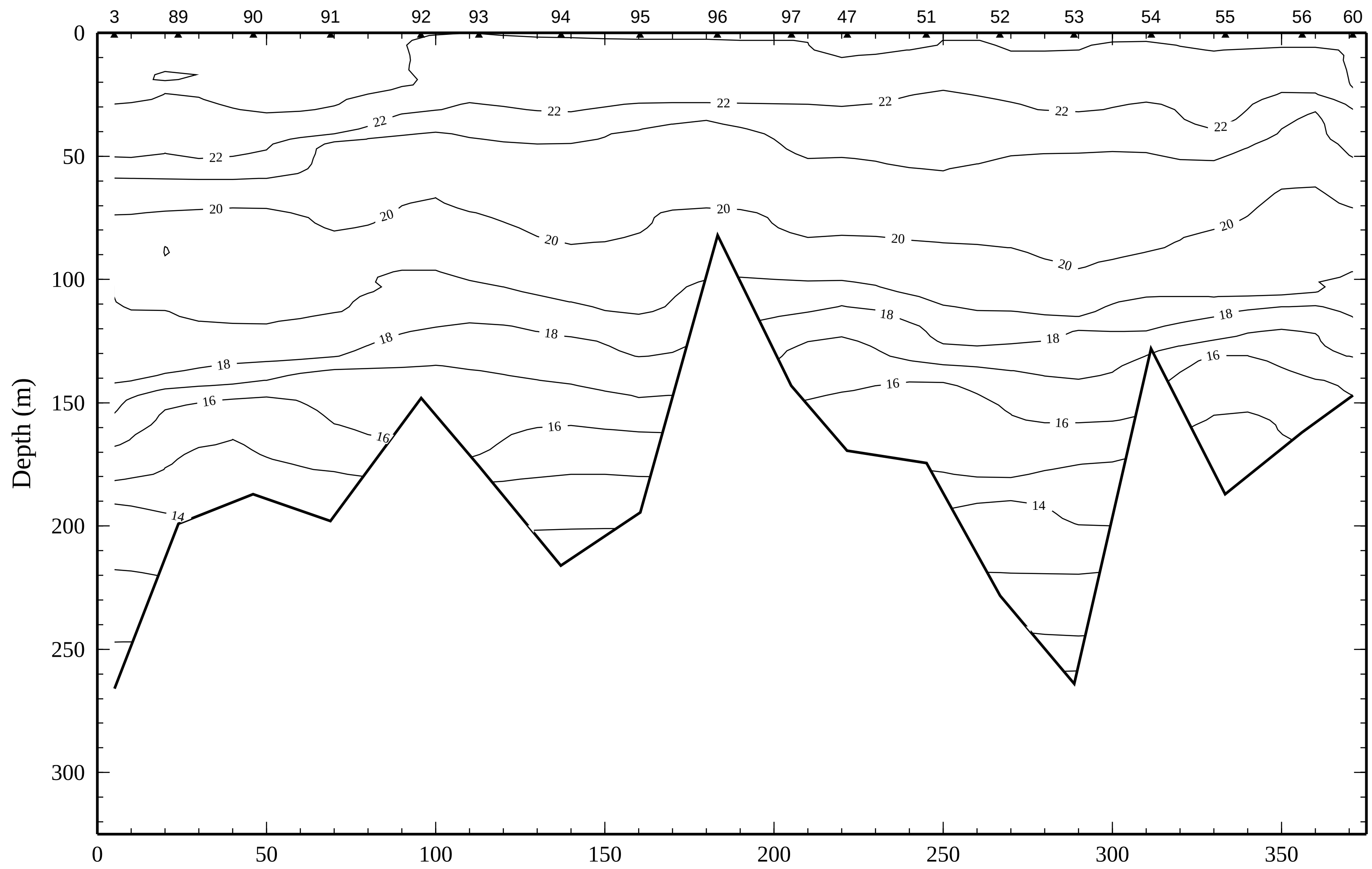


Figure 1.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

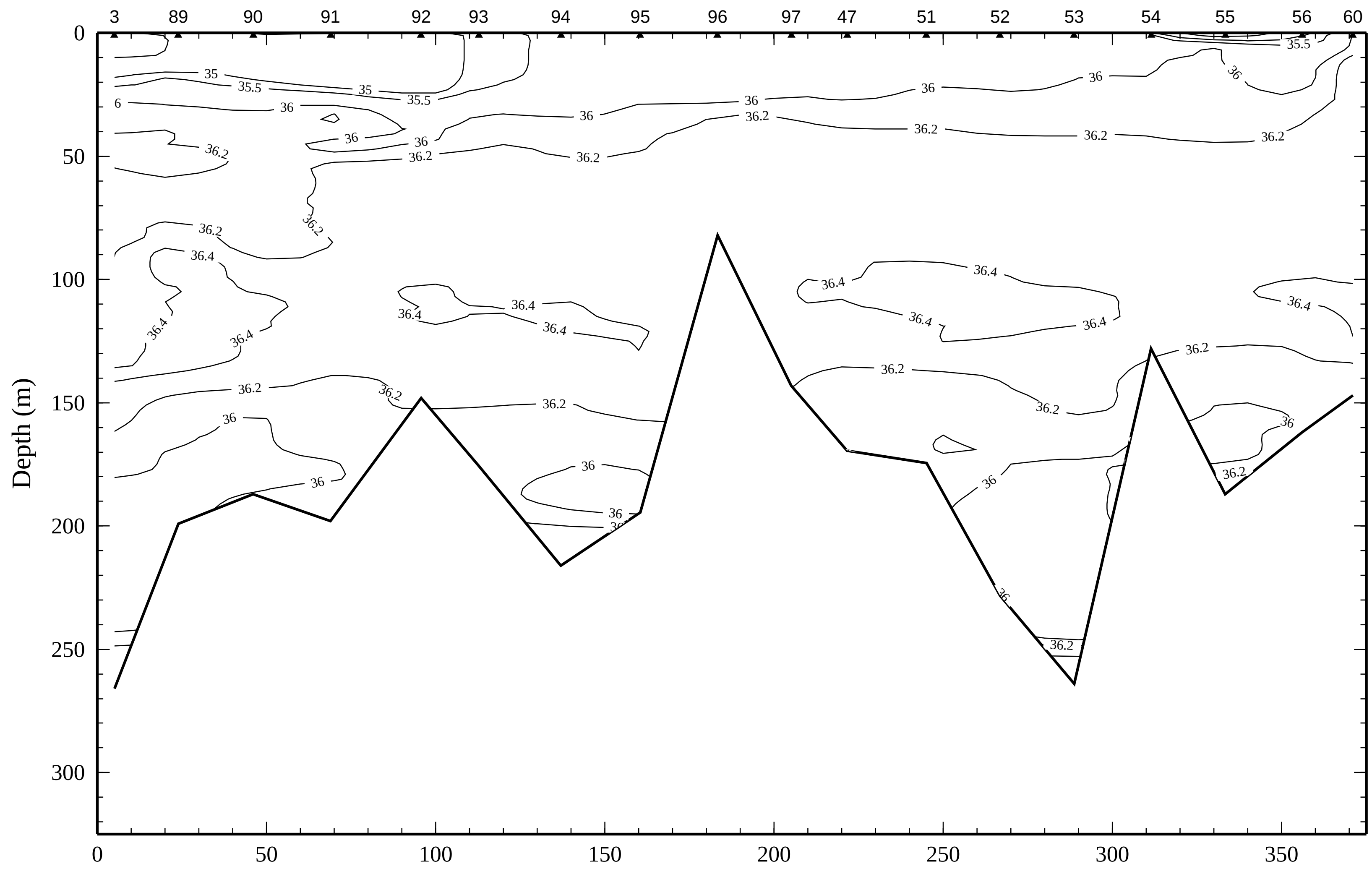


Figure 1.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

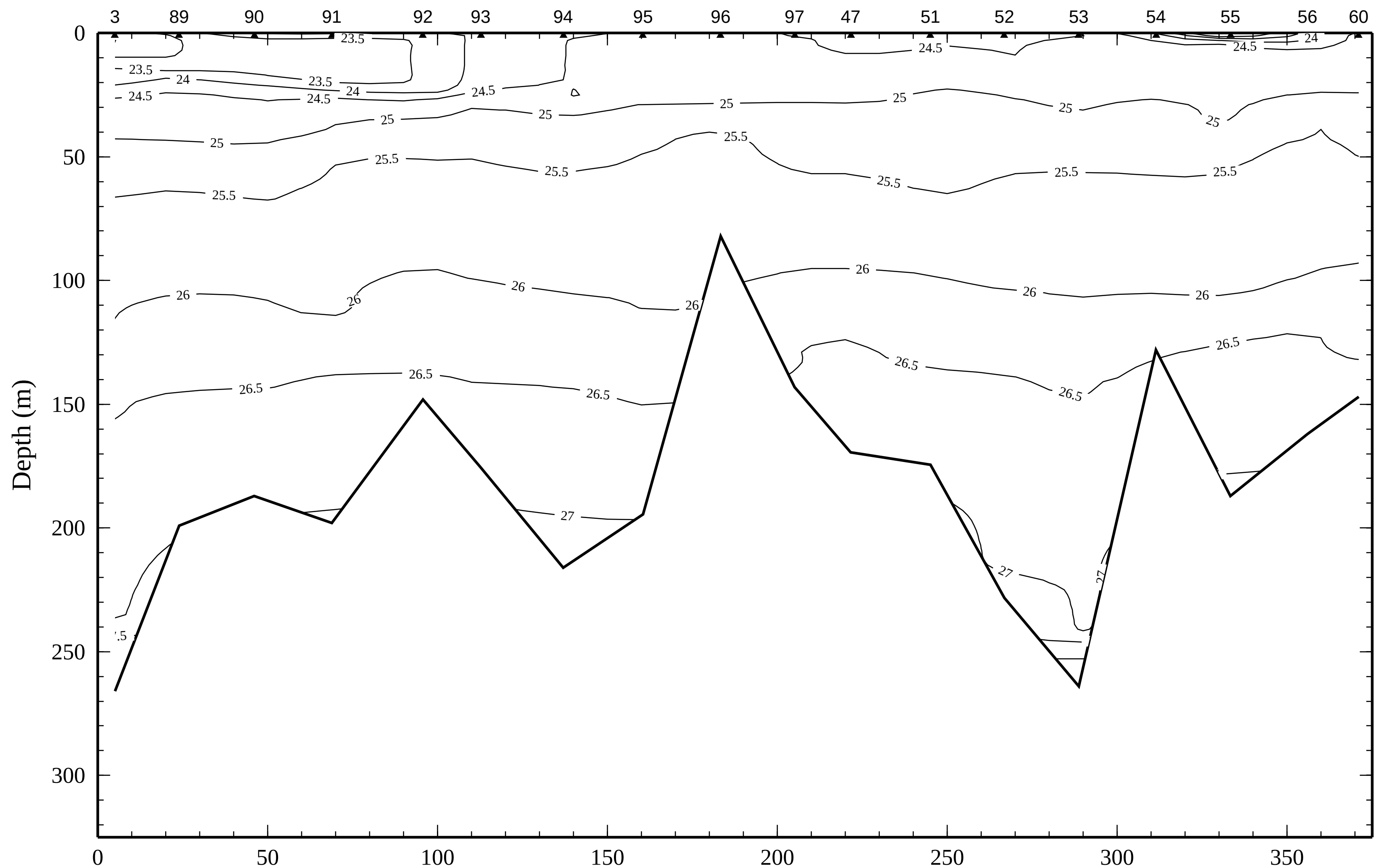


Figure 1.9.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

A75

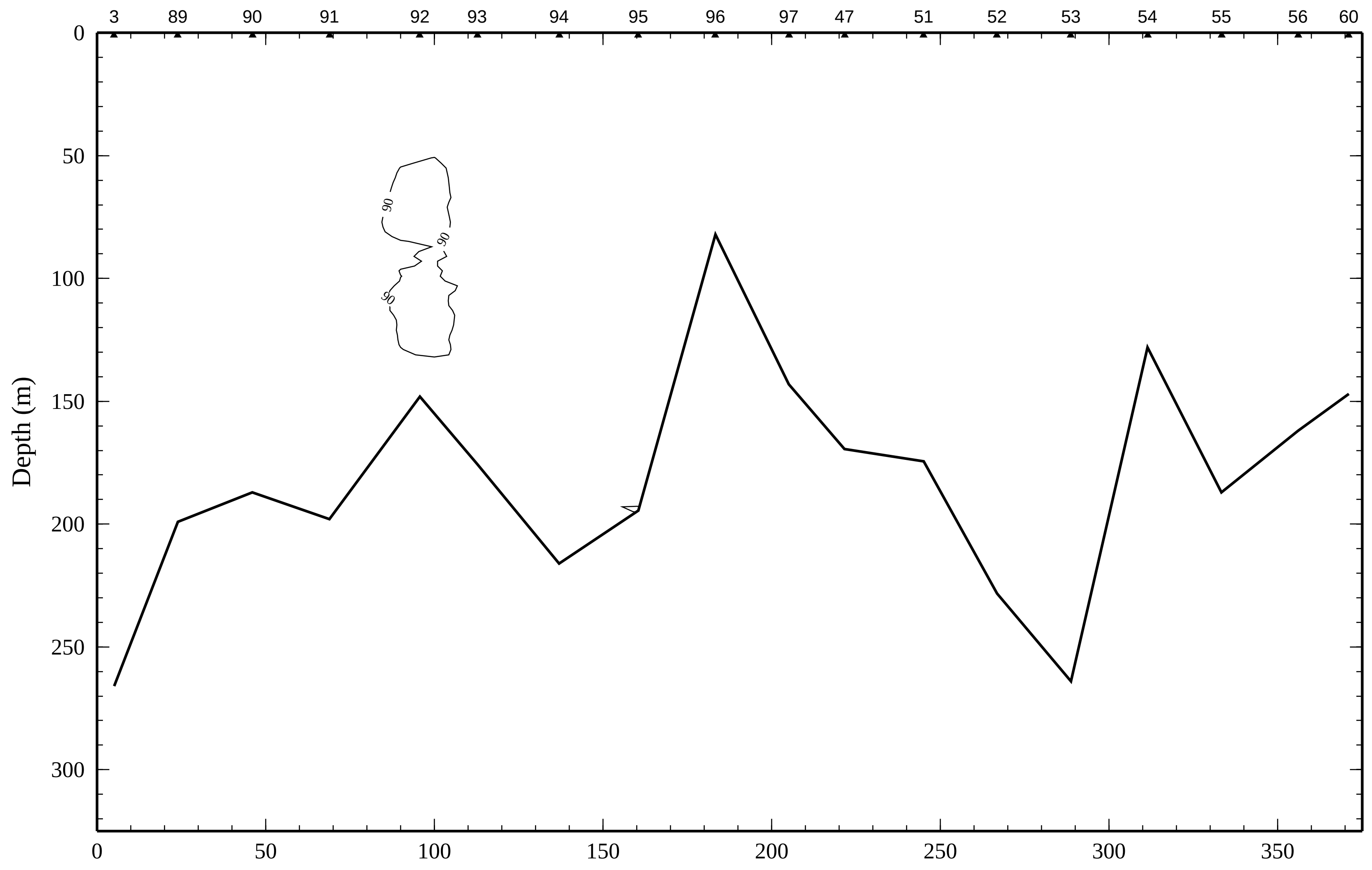


Figure 1.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

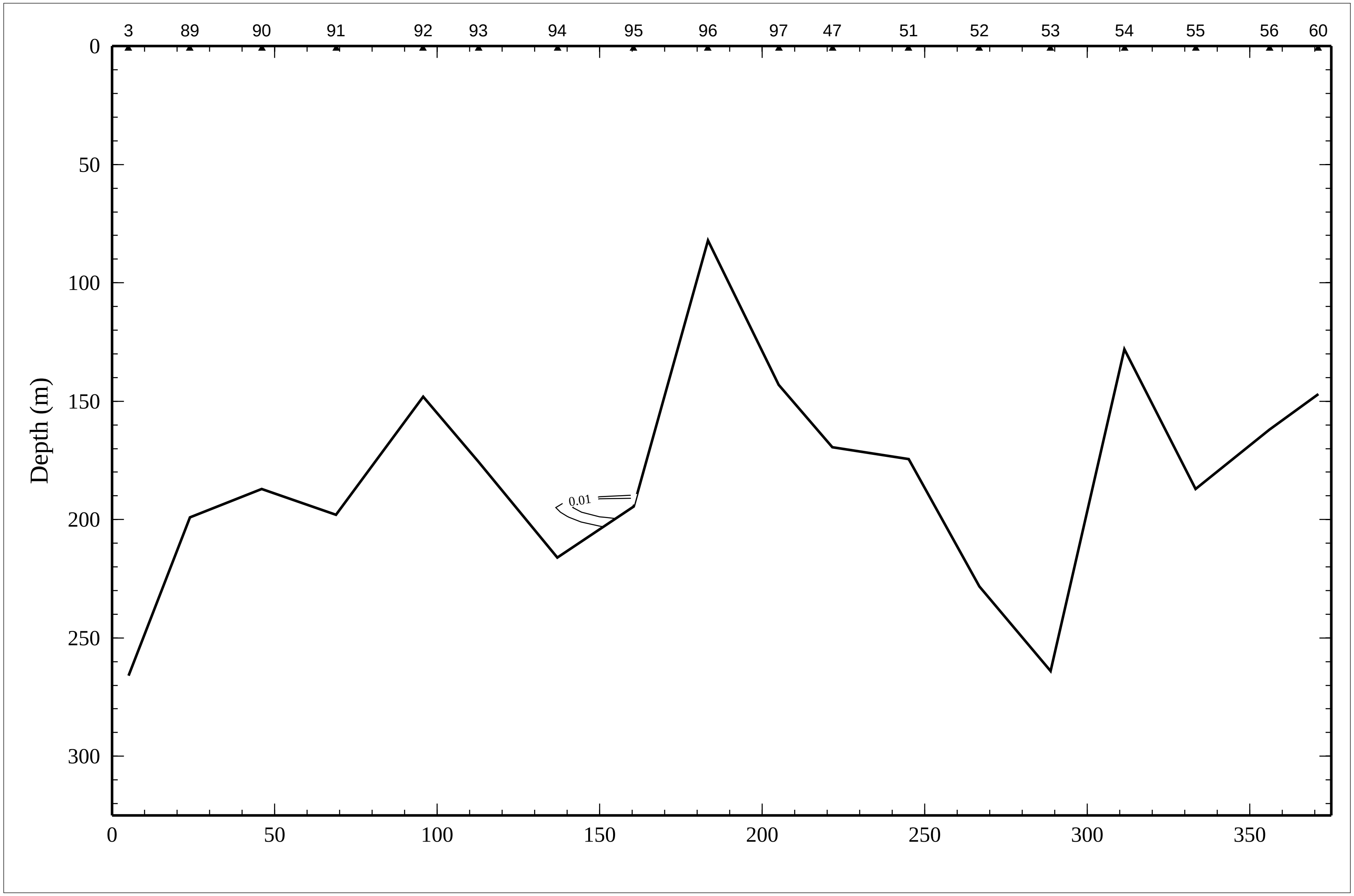


Figure 1.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.
Values were less than 0.05.

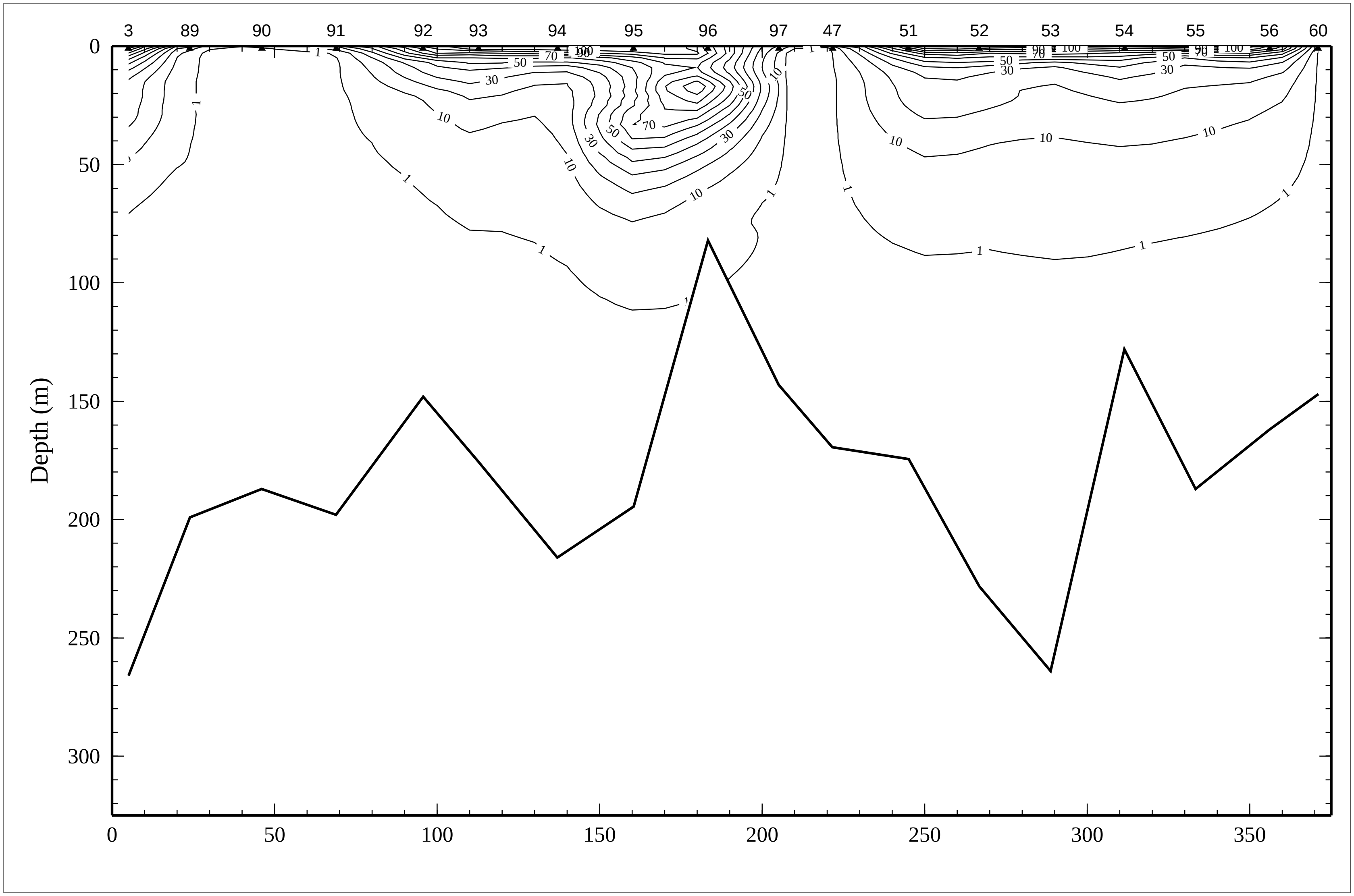


Figure 1.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

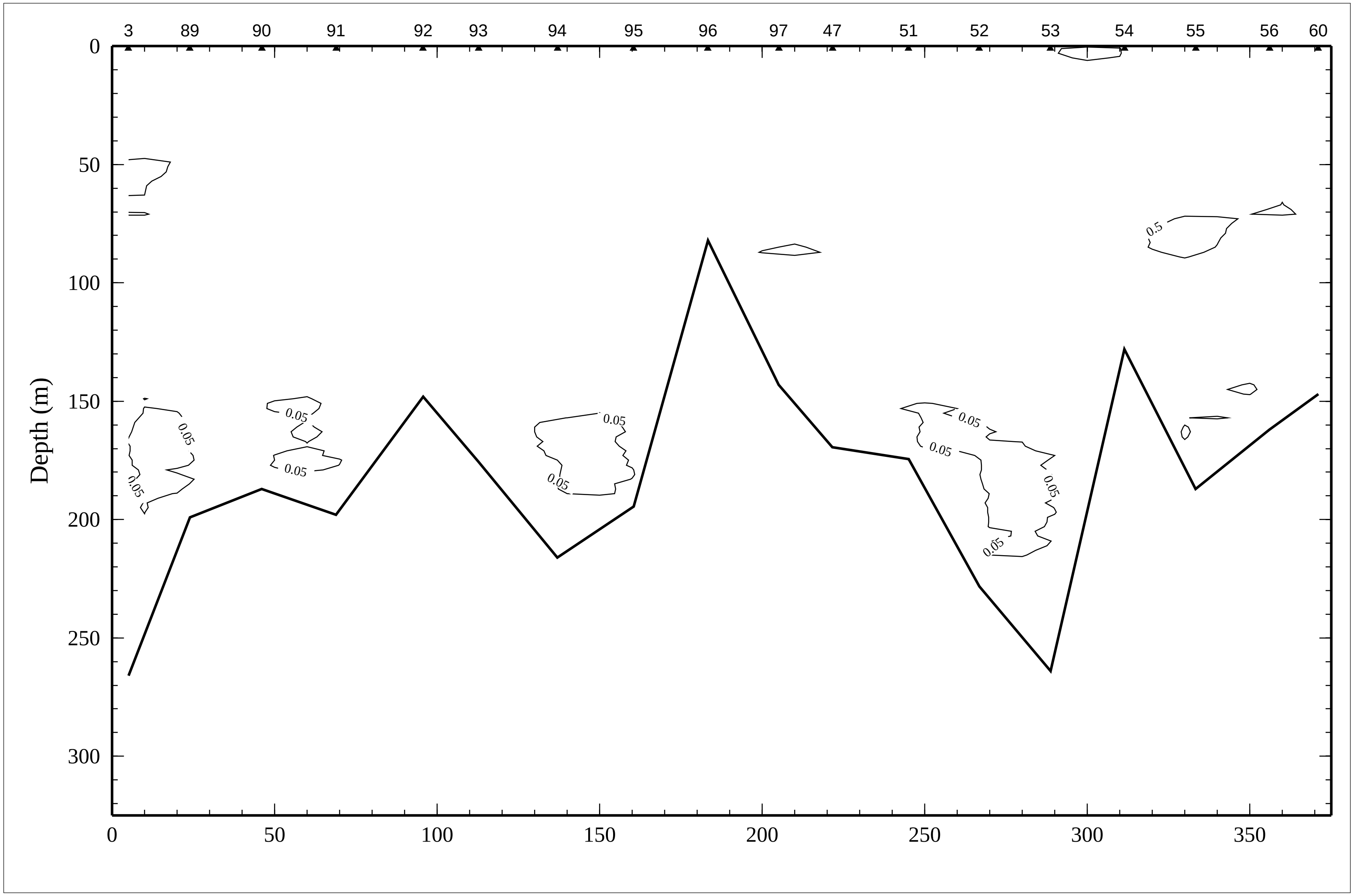


Figure 1.9.7. Relative fluorescence on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

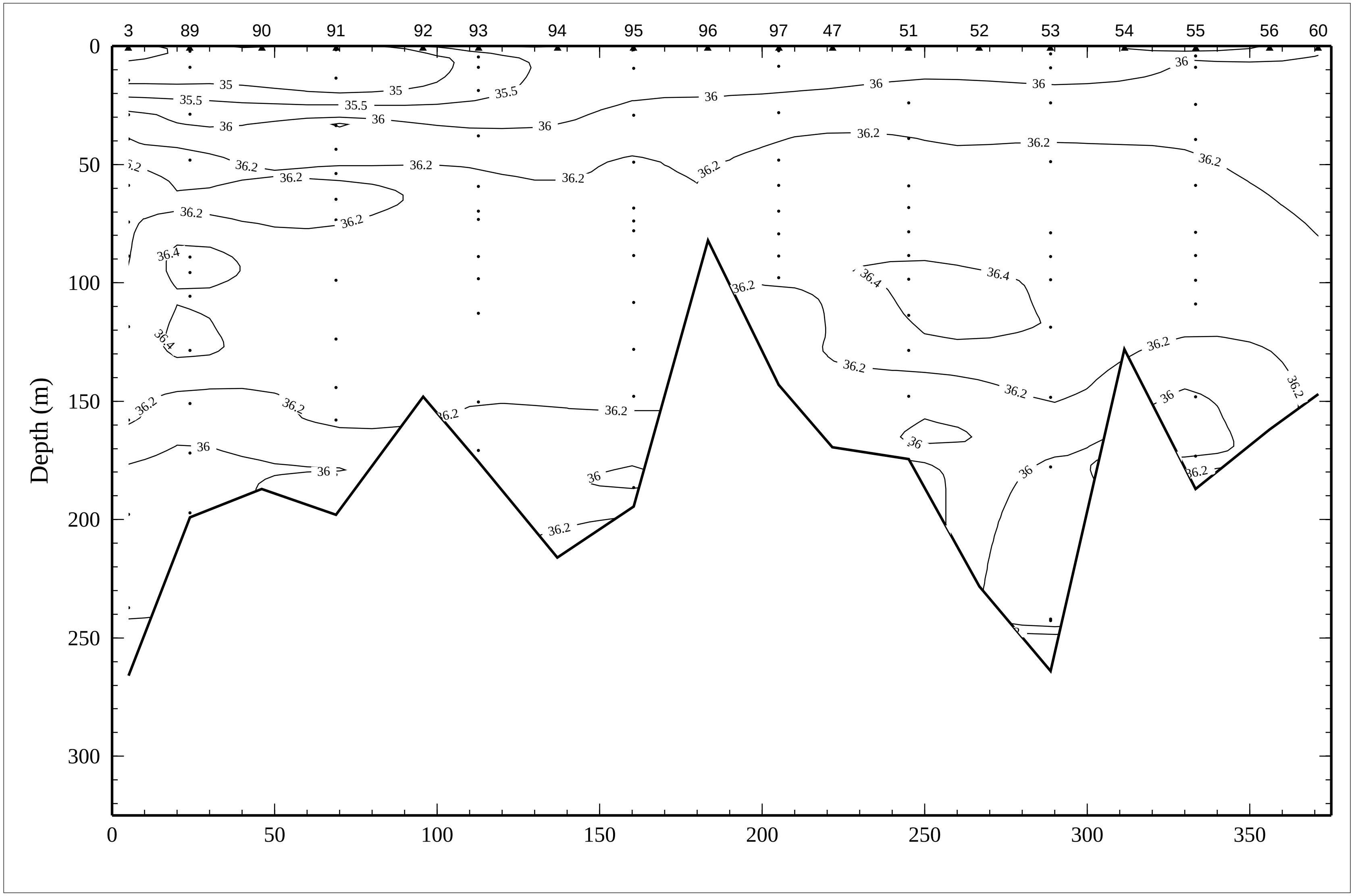


Figure 1.9.8. Bottle salinity on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

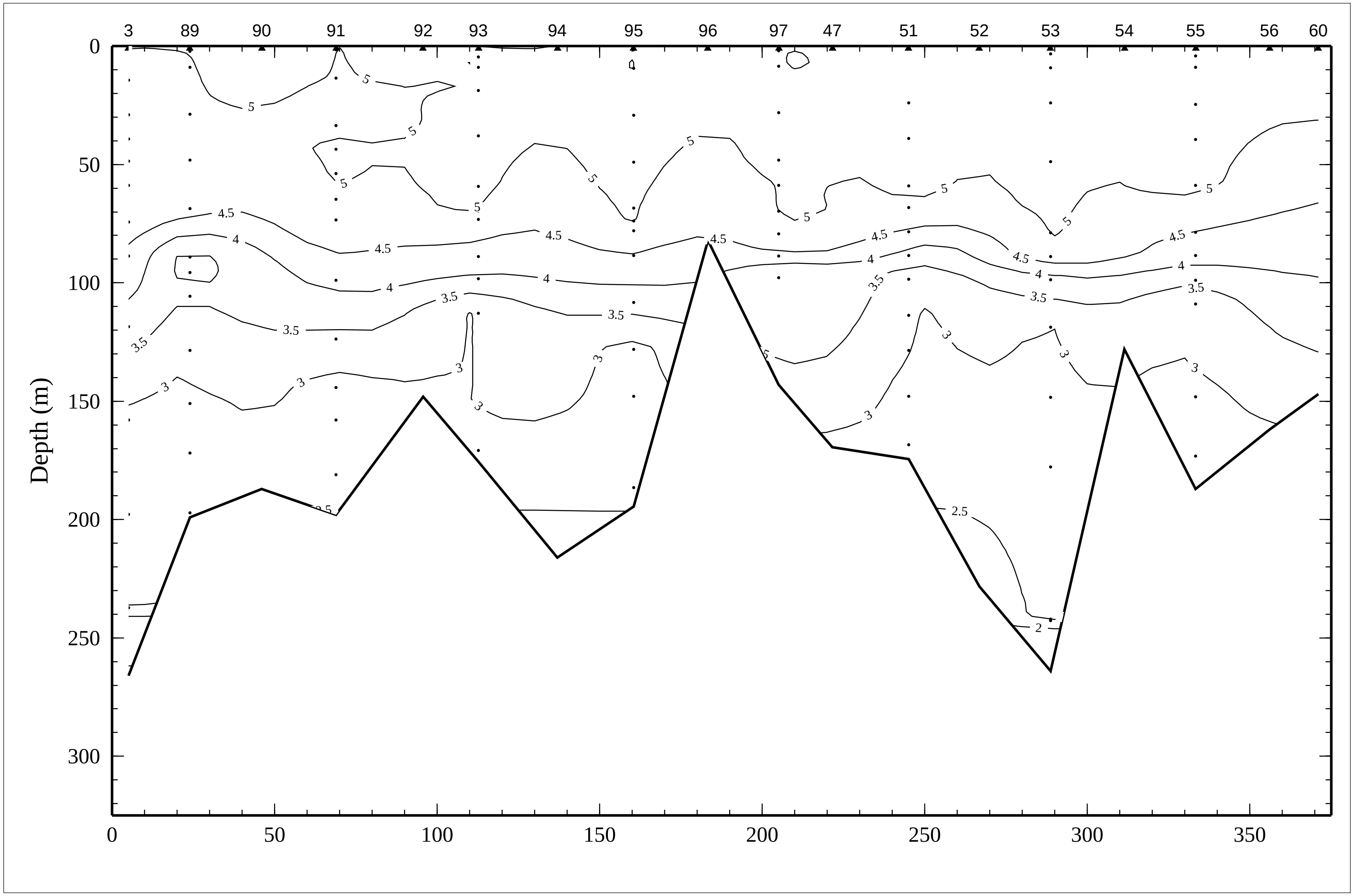


Figure 1.9.9. Dissolved oxygen ($ml \cdot l^{-1}$) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

A80

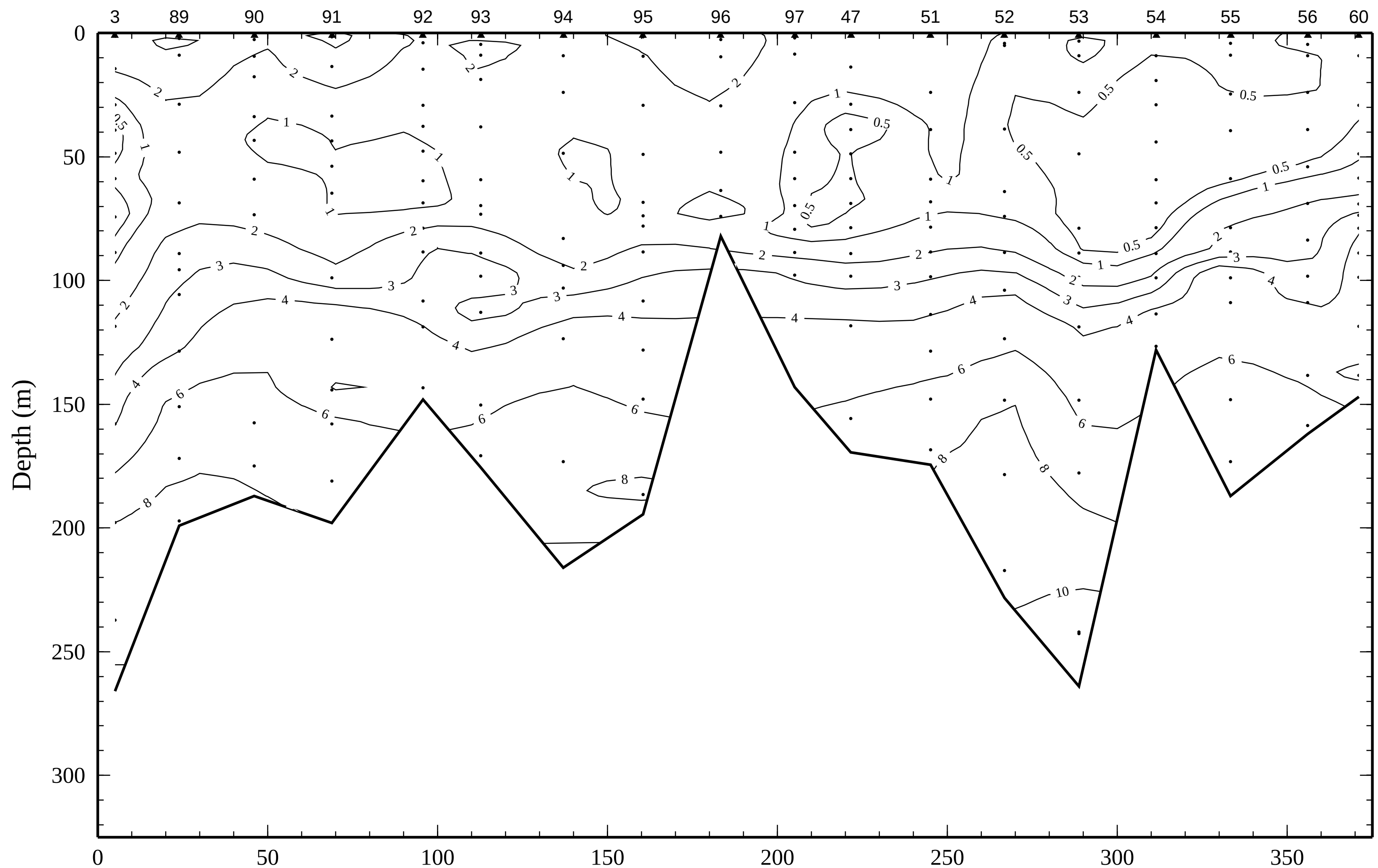


Figure 1.9.10. Silicate (μmol·l^{-1}) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

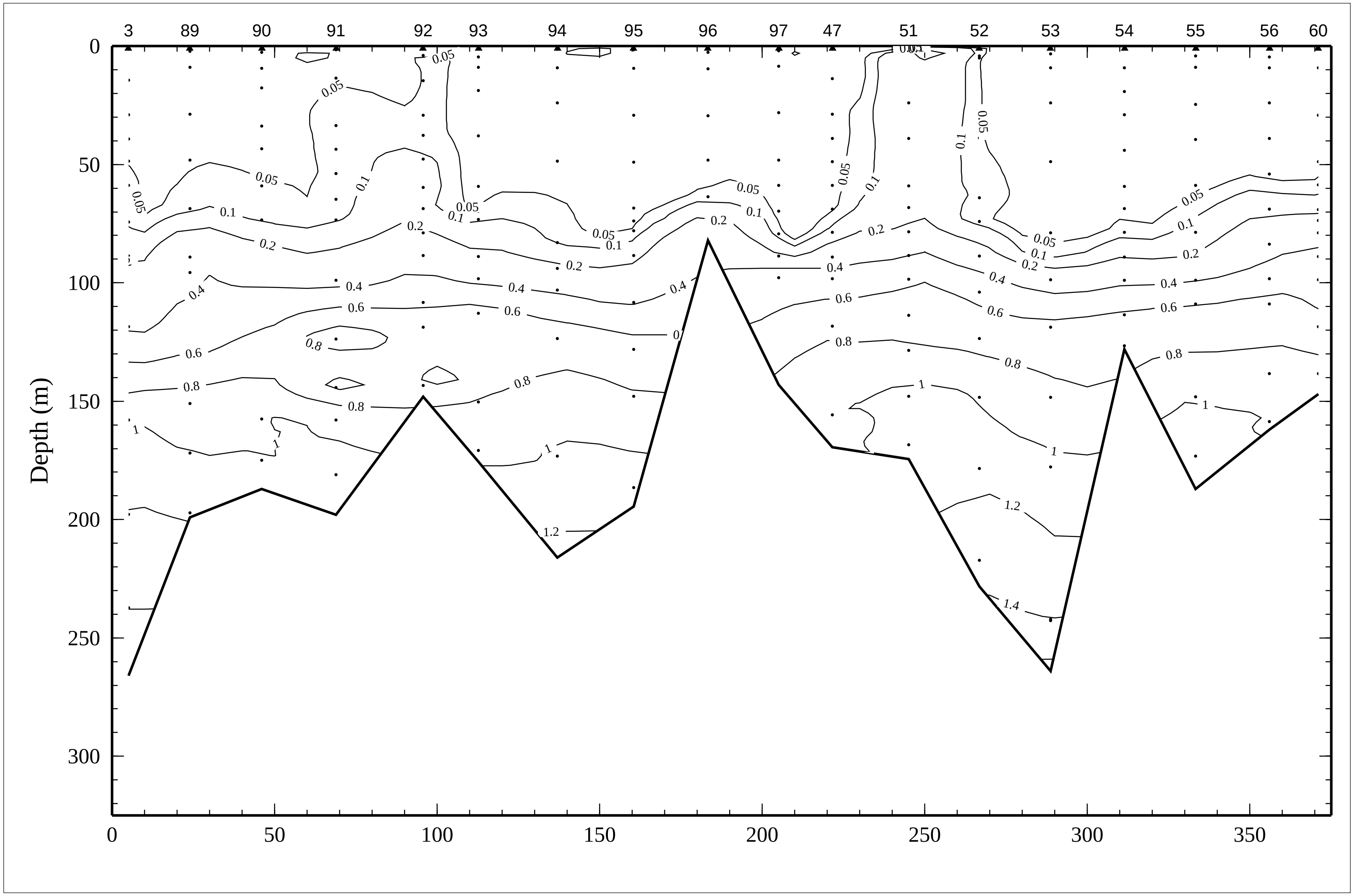


Figure 1.9.11. Phosphate ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

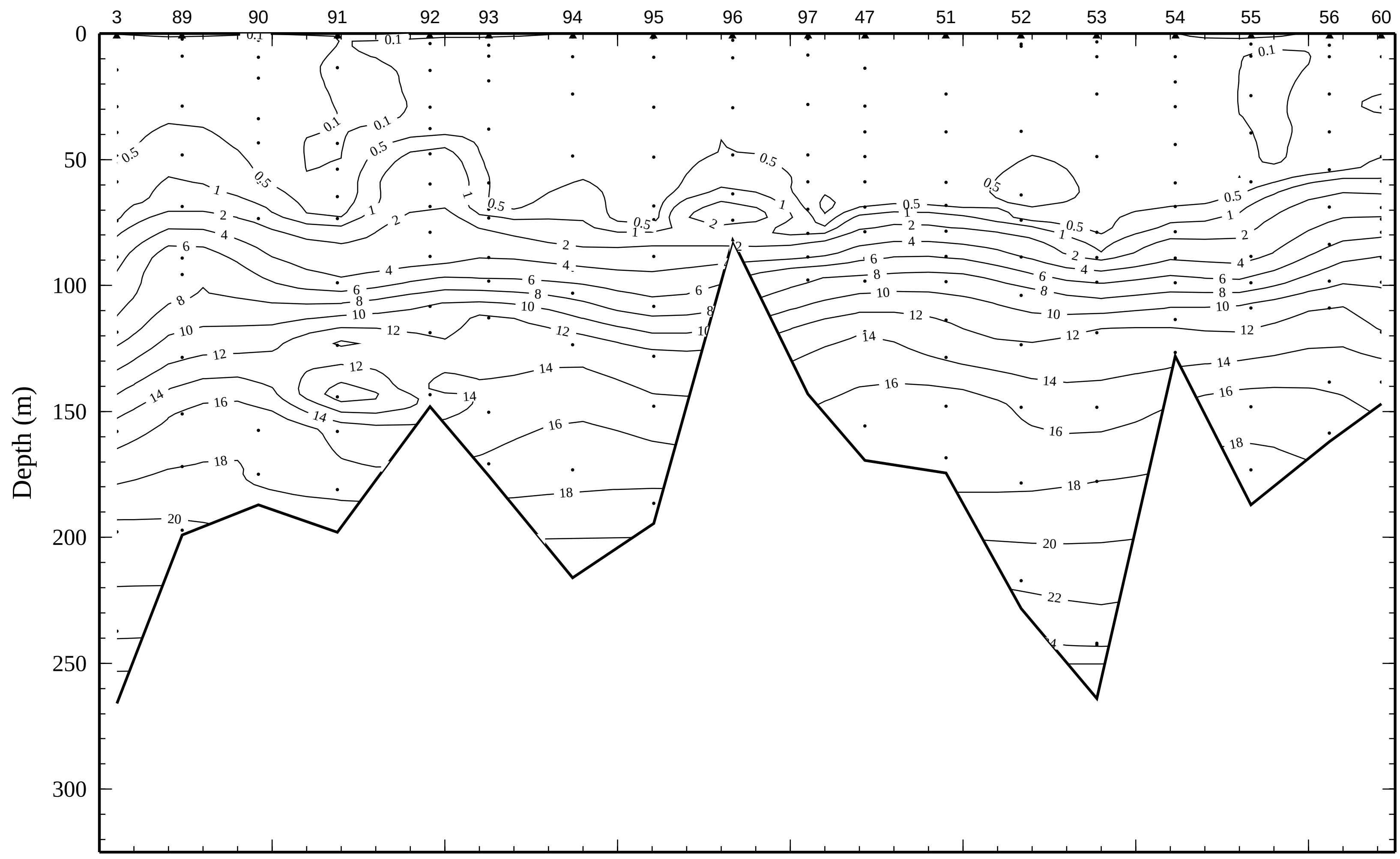


Figure 1.9.12. Nitrate (μmol·l^{-1}) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

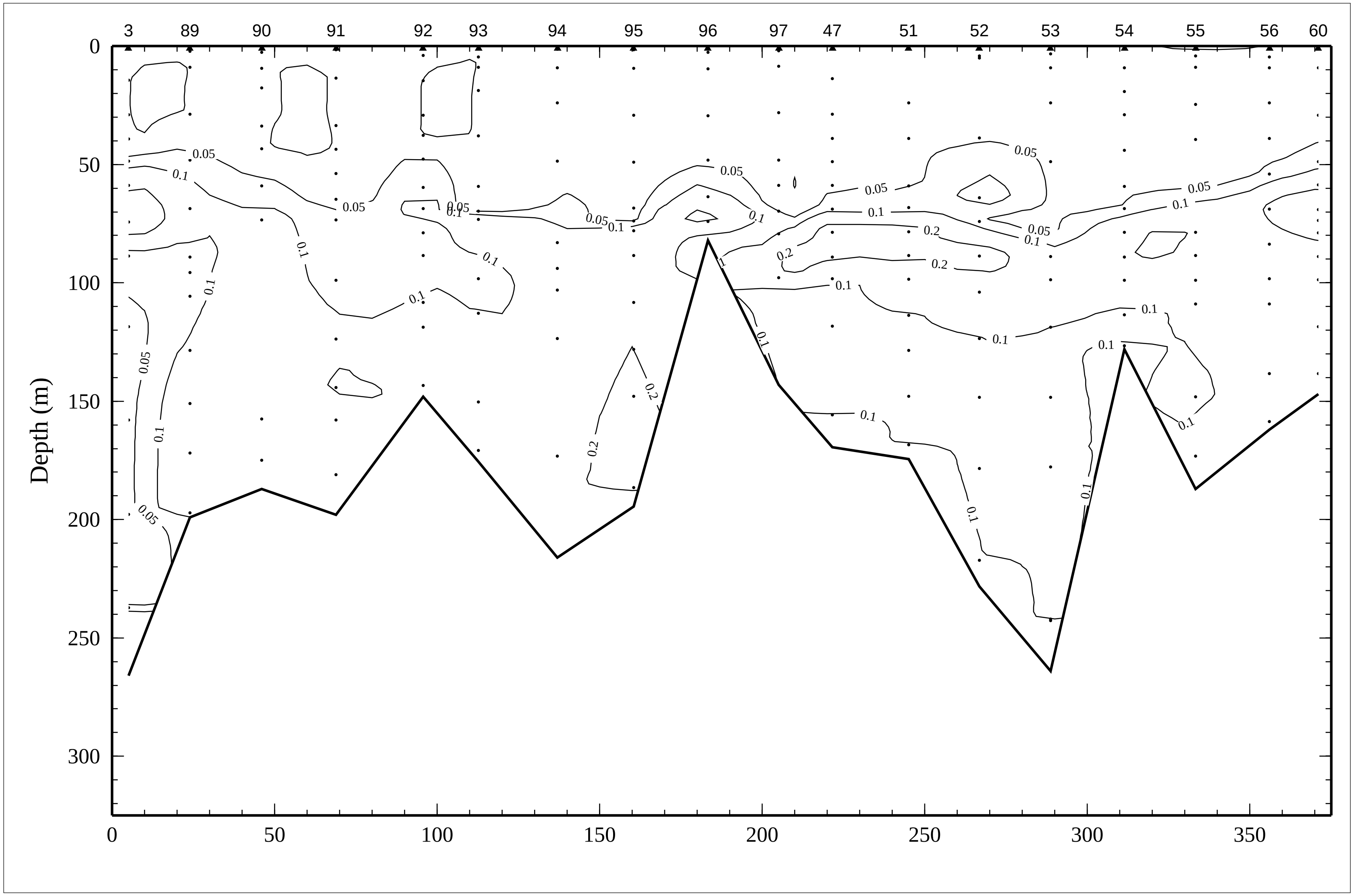


Figure 1.9.13. Nitrite ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

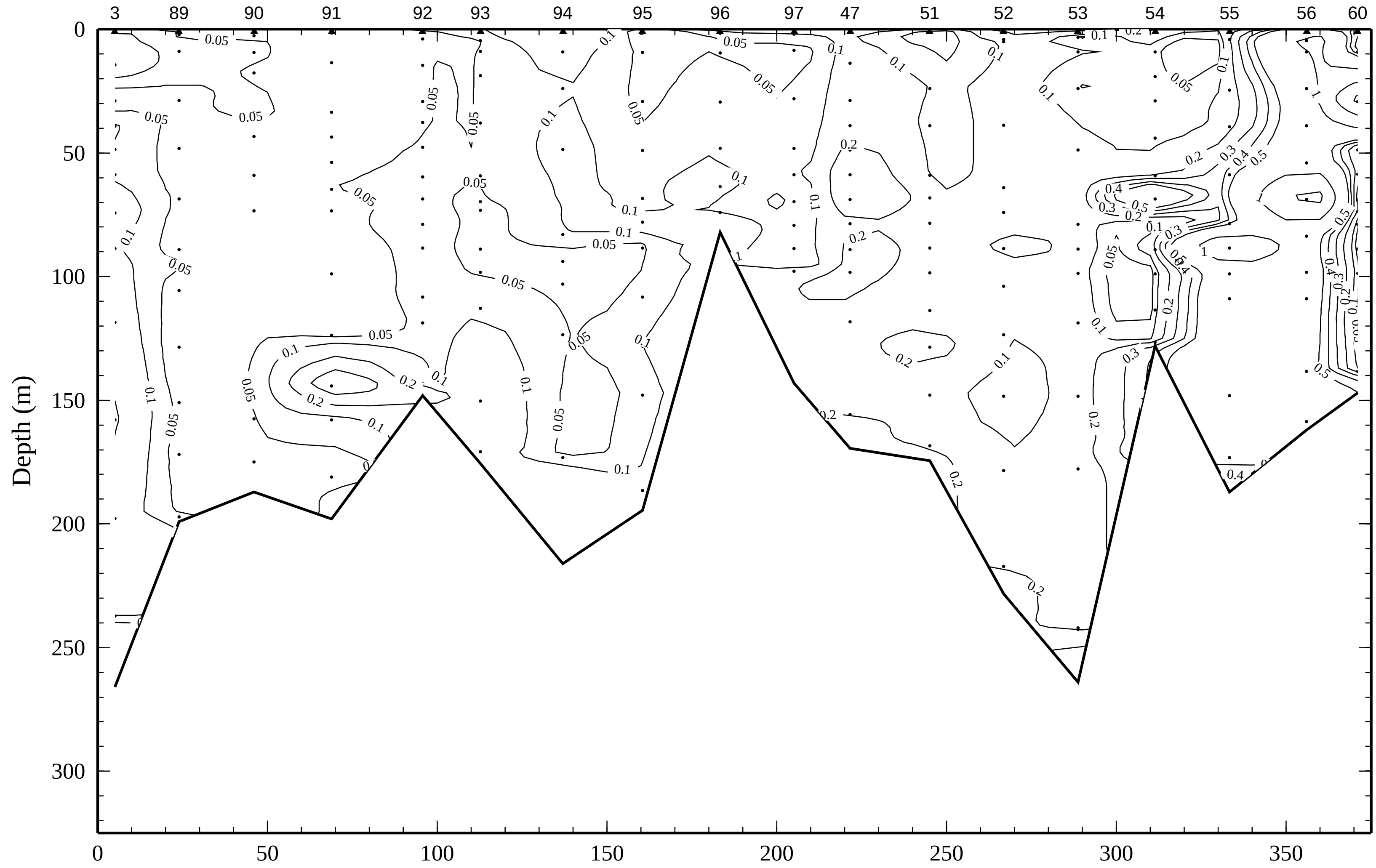


Figure 1.9.14. Ammonium (μmol·l⁻¹) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

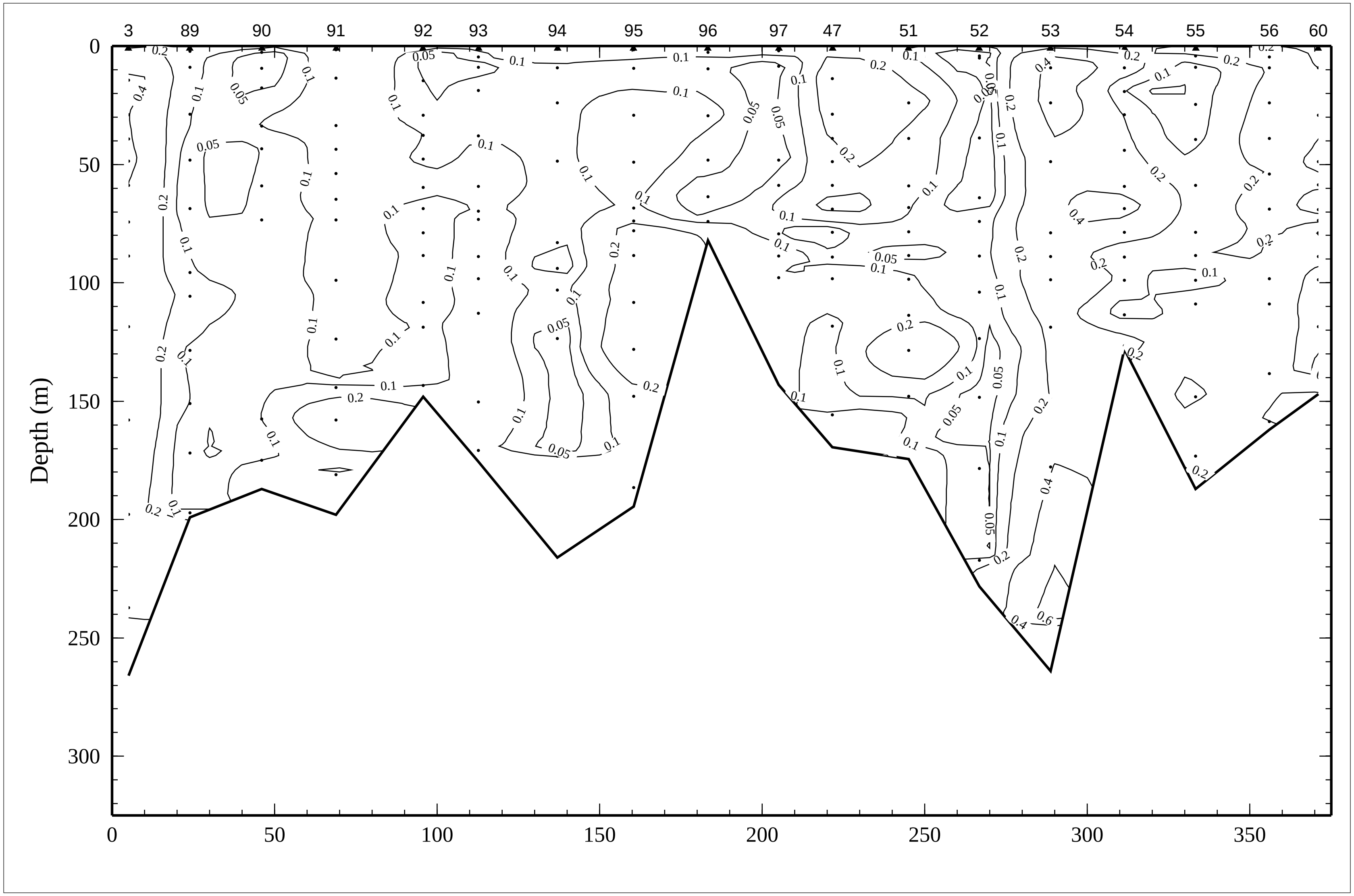


Figure 1.9.15. Urea (μmol·l^{-1}) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

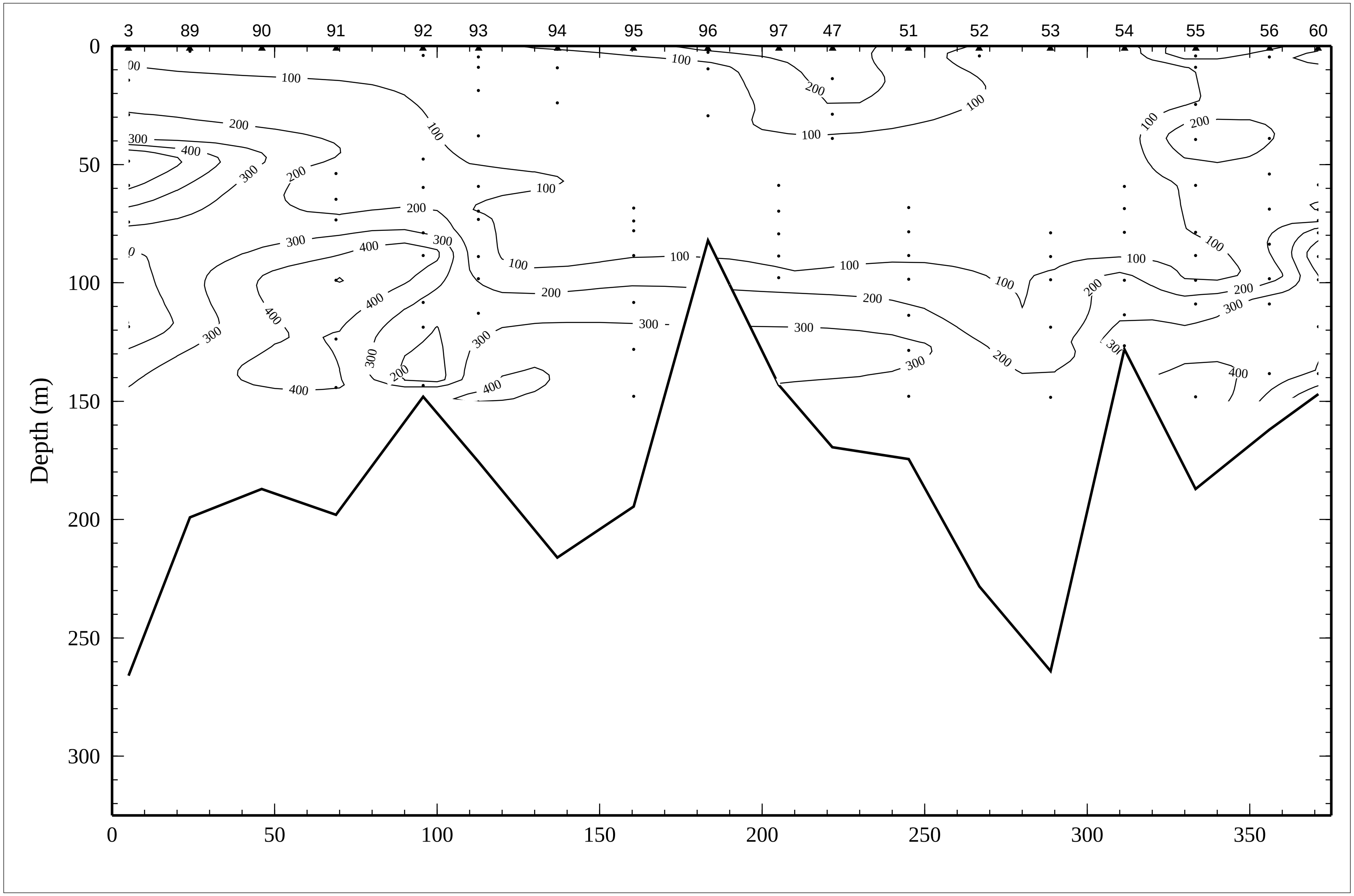


Figure 1.9.16. Chlorophyll a (ng·l^{-1}) on line 9 of LATEX A survey H01, 30 April - 9 May 1992.

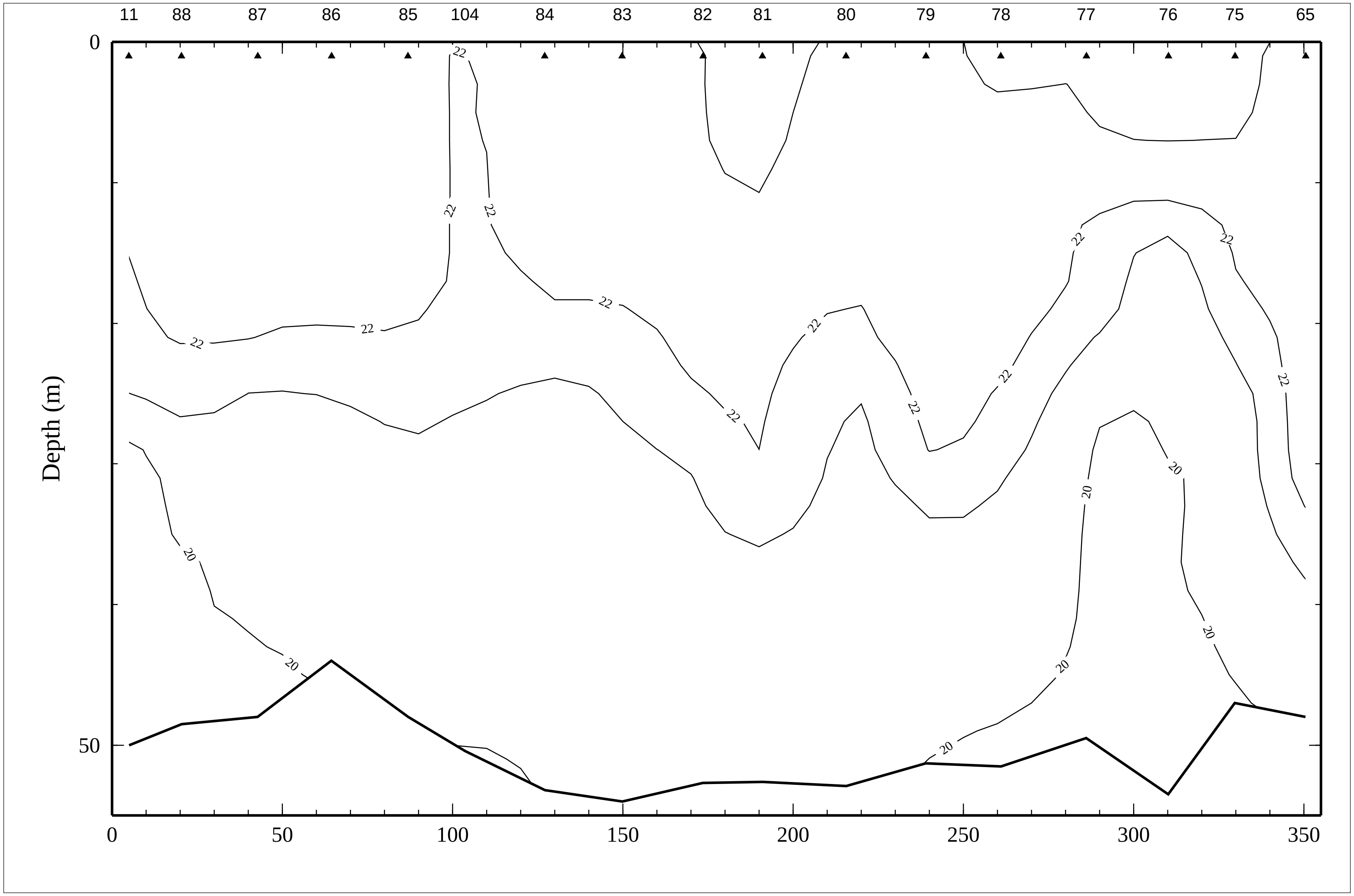


Figure 1.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

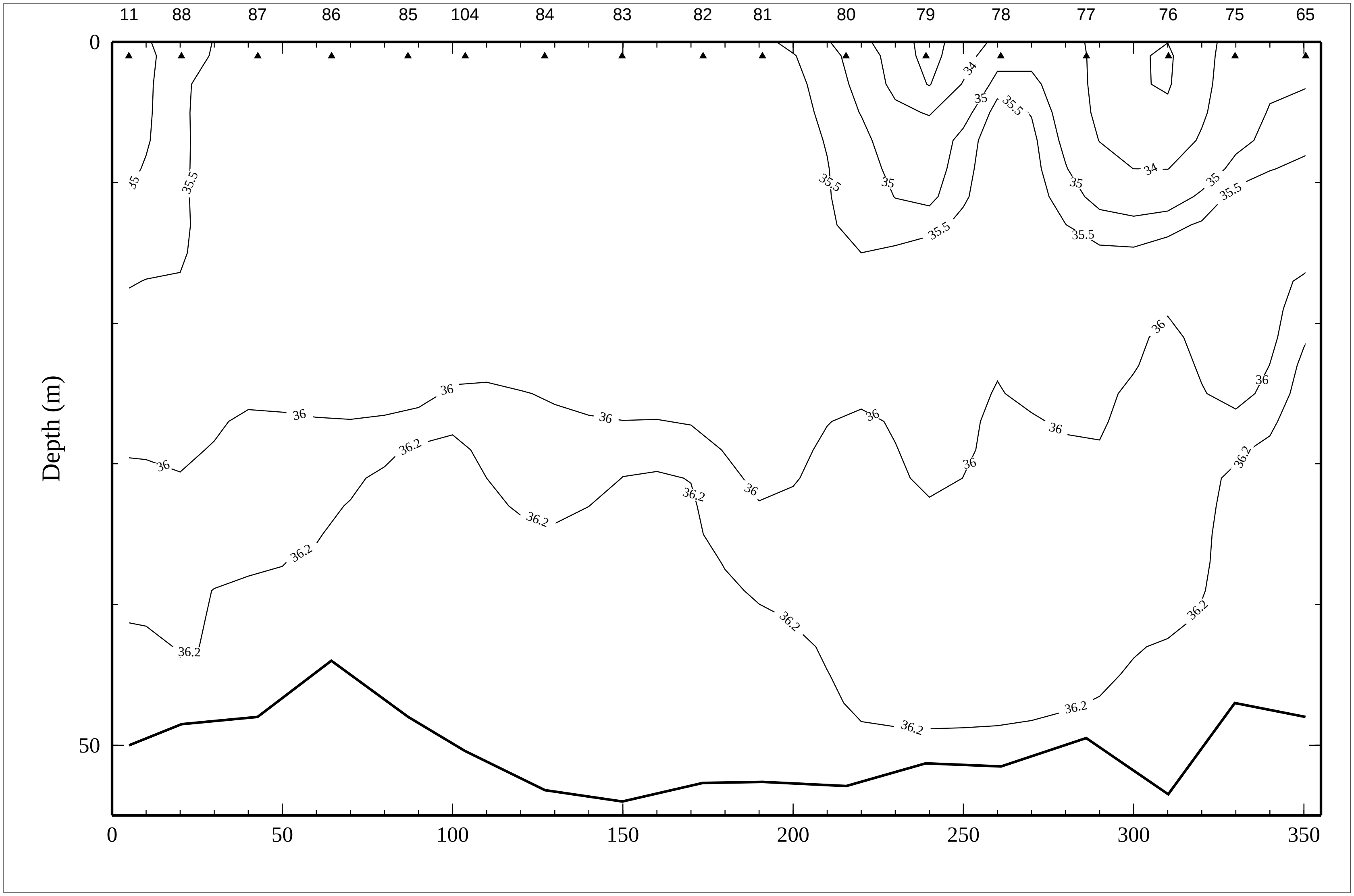
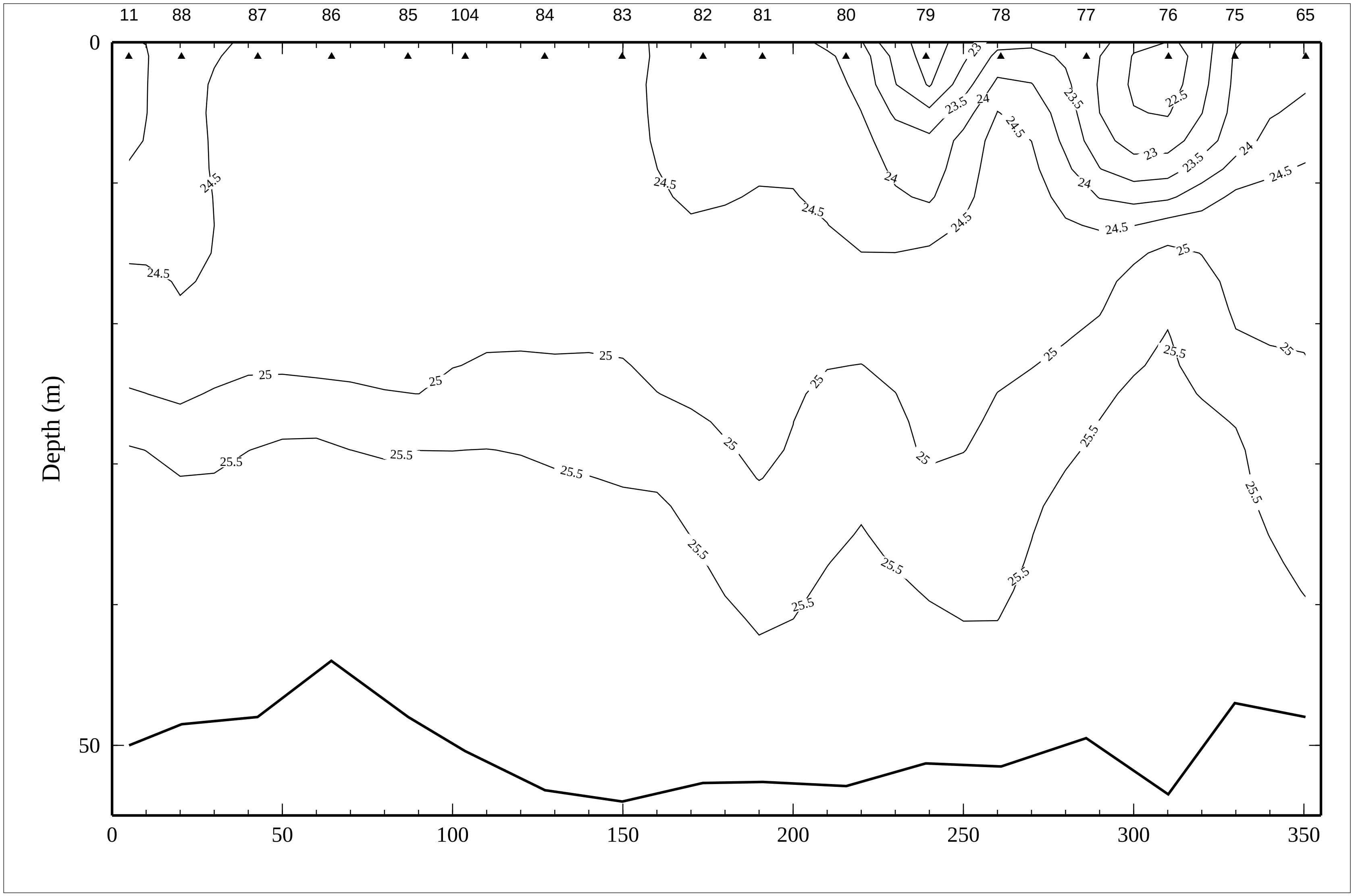


Figure 1.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H01, 30 April - 9 May 1992.



A90

Figure 1.10.3. Density anomaly (σ_θ in kg·m^{-3}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

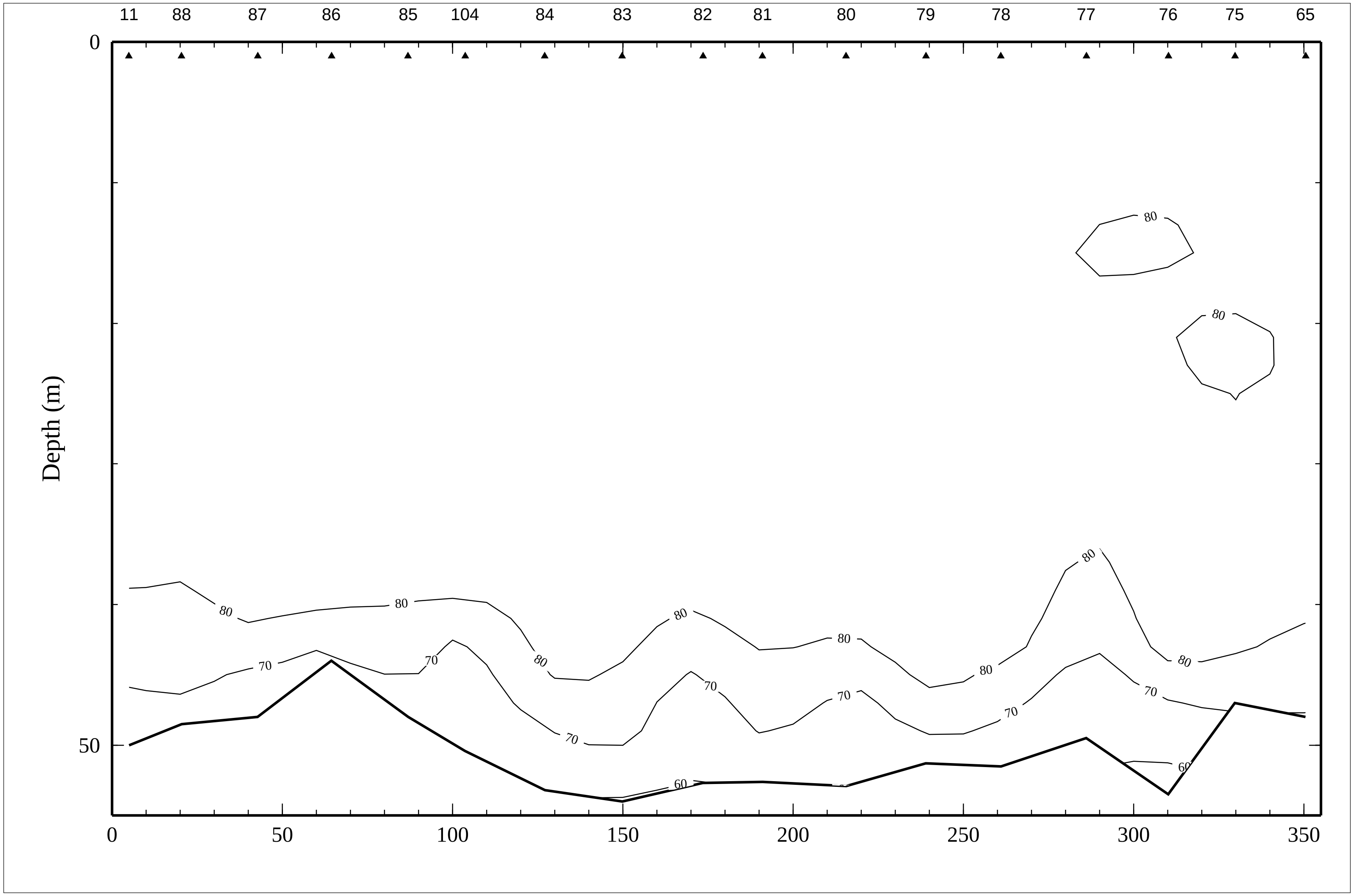


Figure 1.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

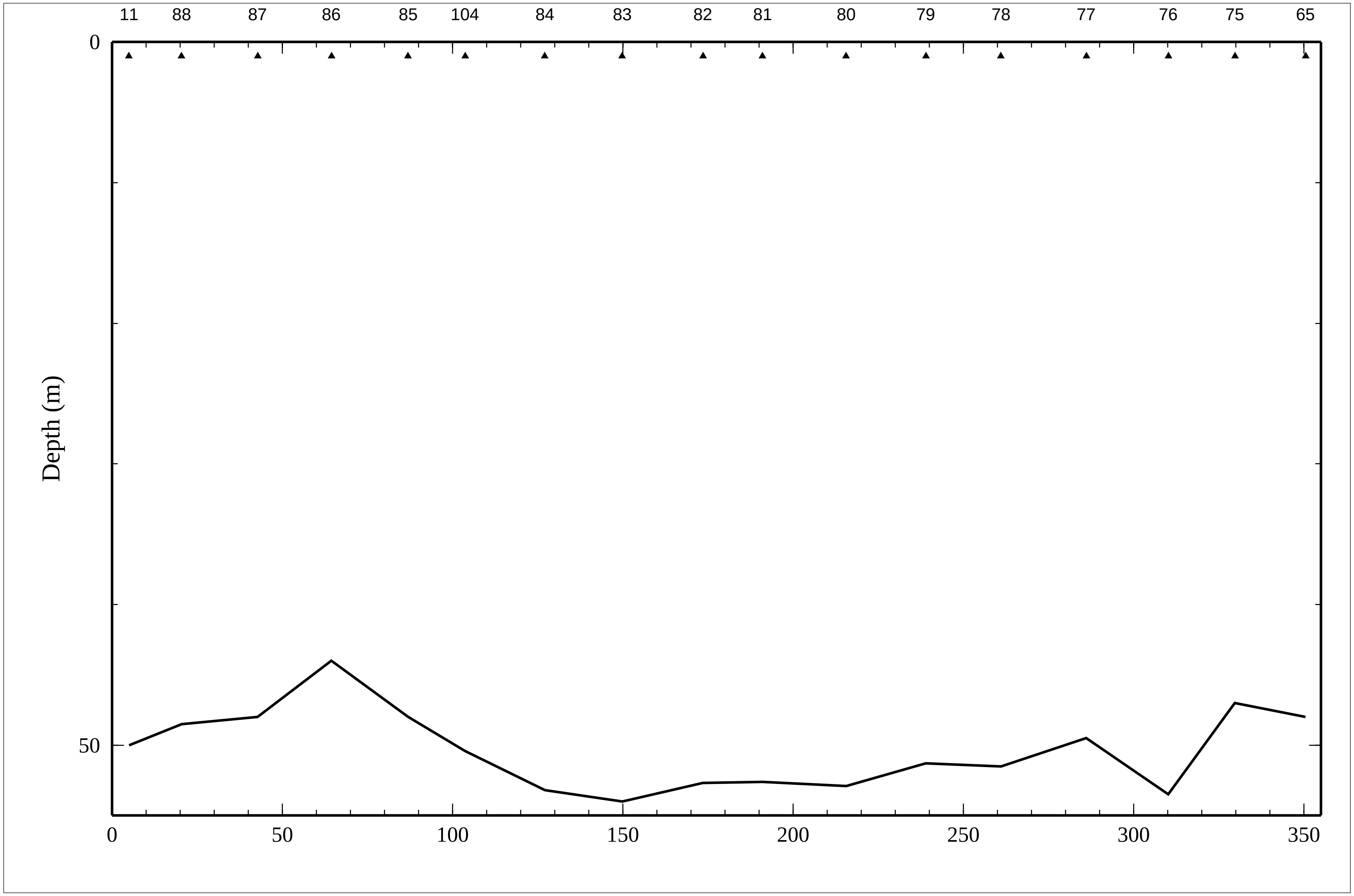


Figure 1.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.
Values were less than 0.05.

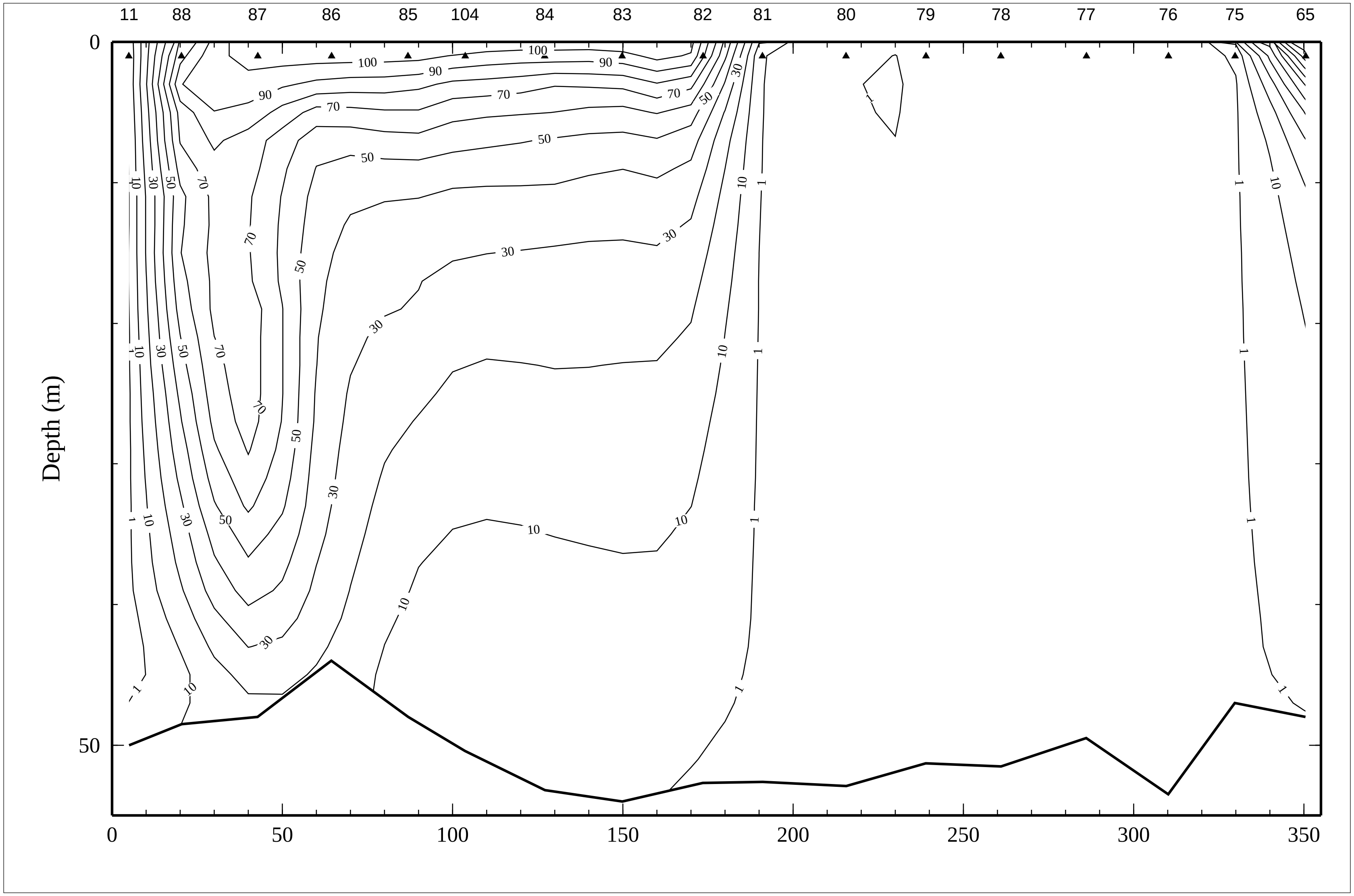


Figure 1.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

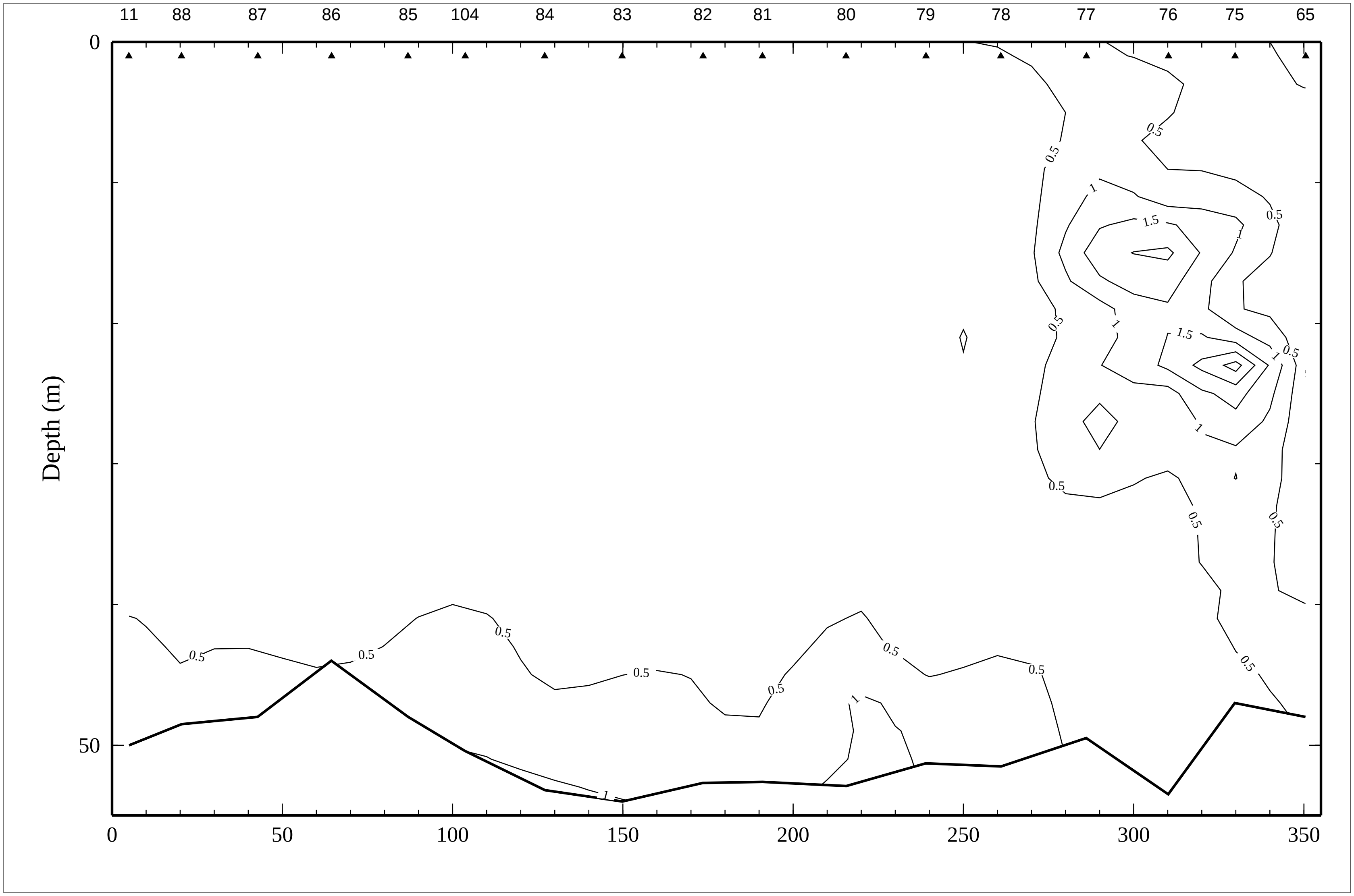


Figure 1.10.7. Relative fluorescence on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

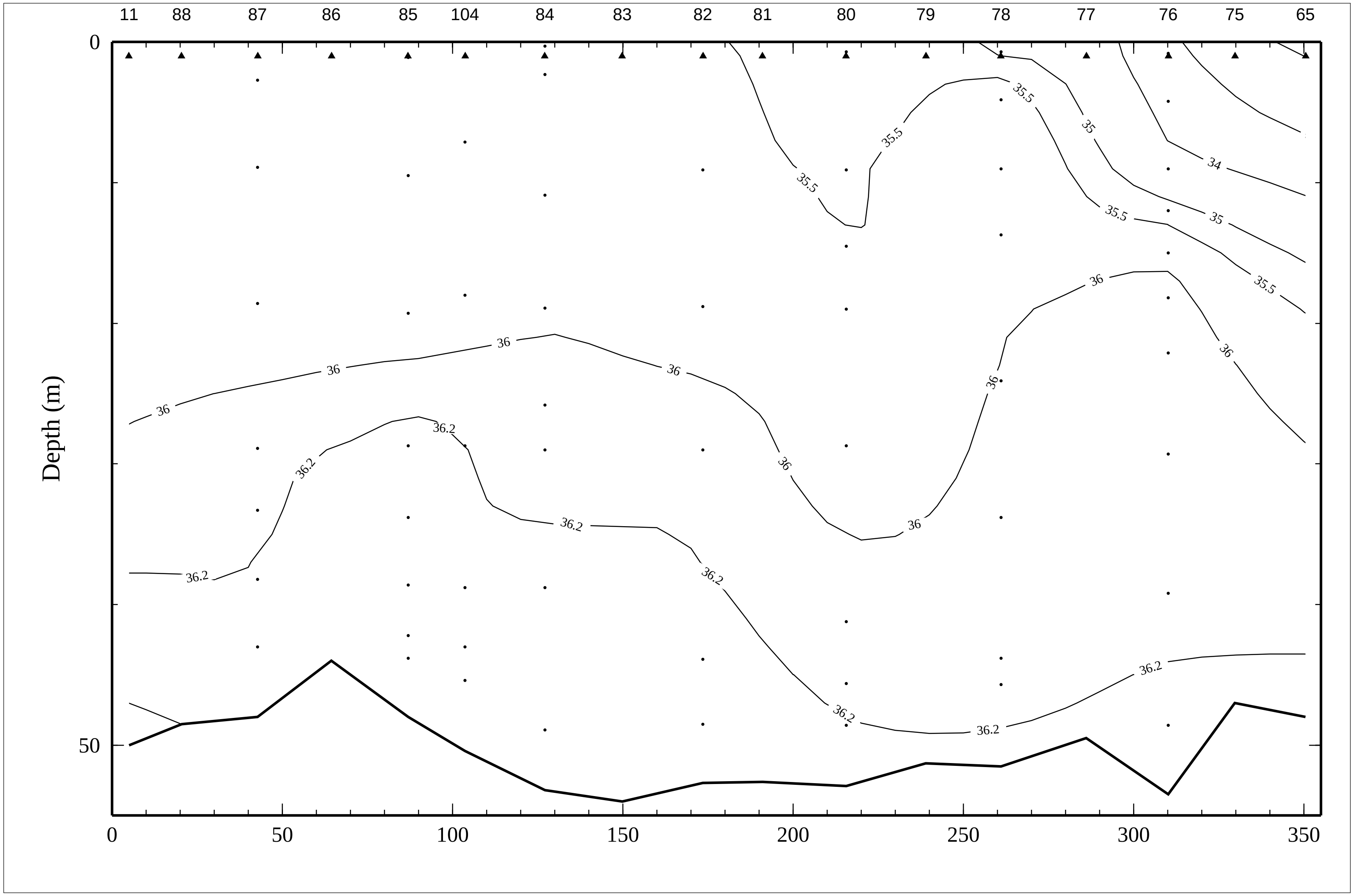


Figure 1.10.8. Bottle salinity on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

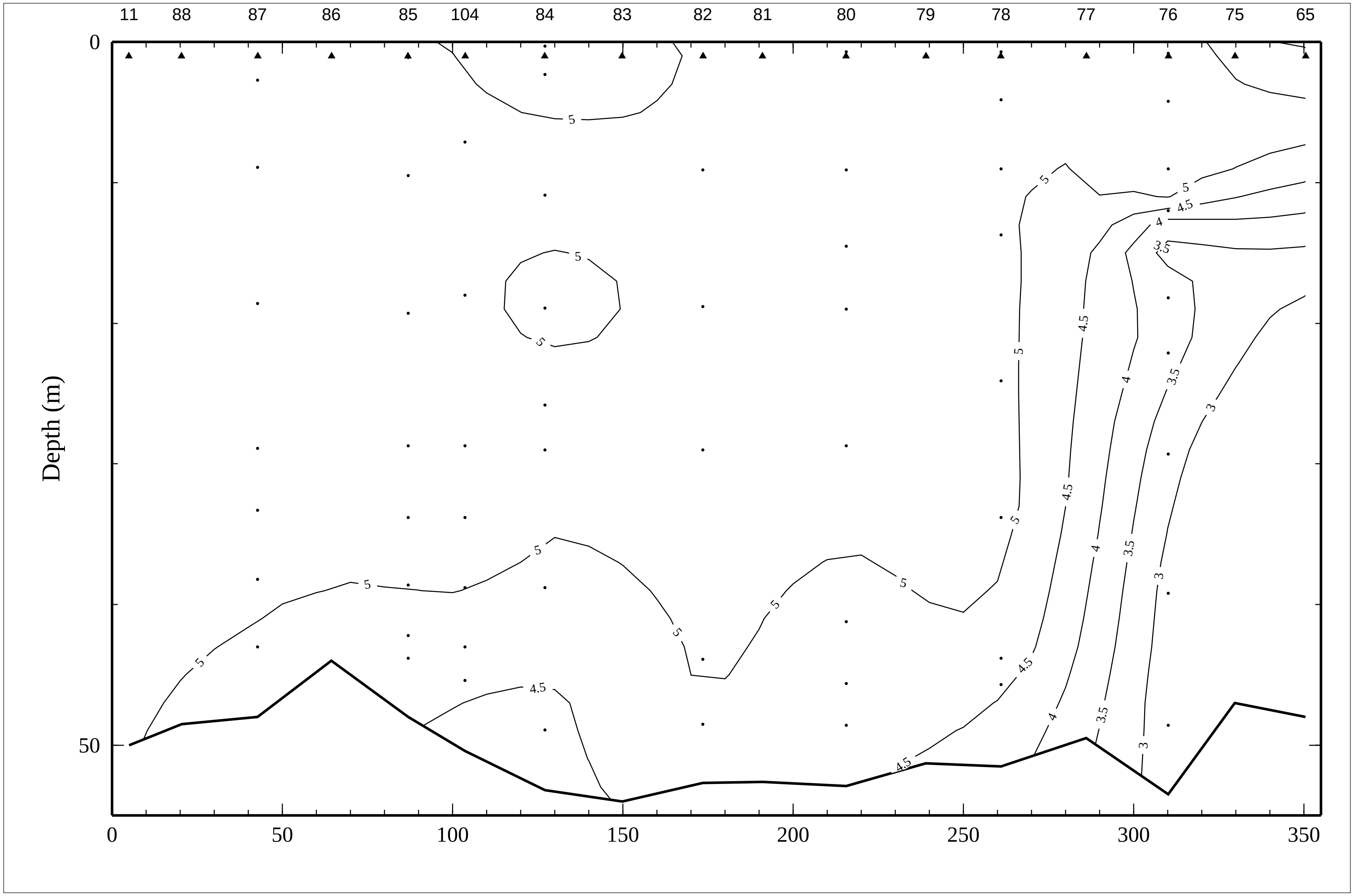


Figure 1.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

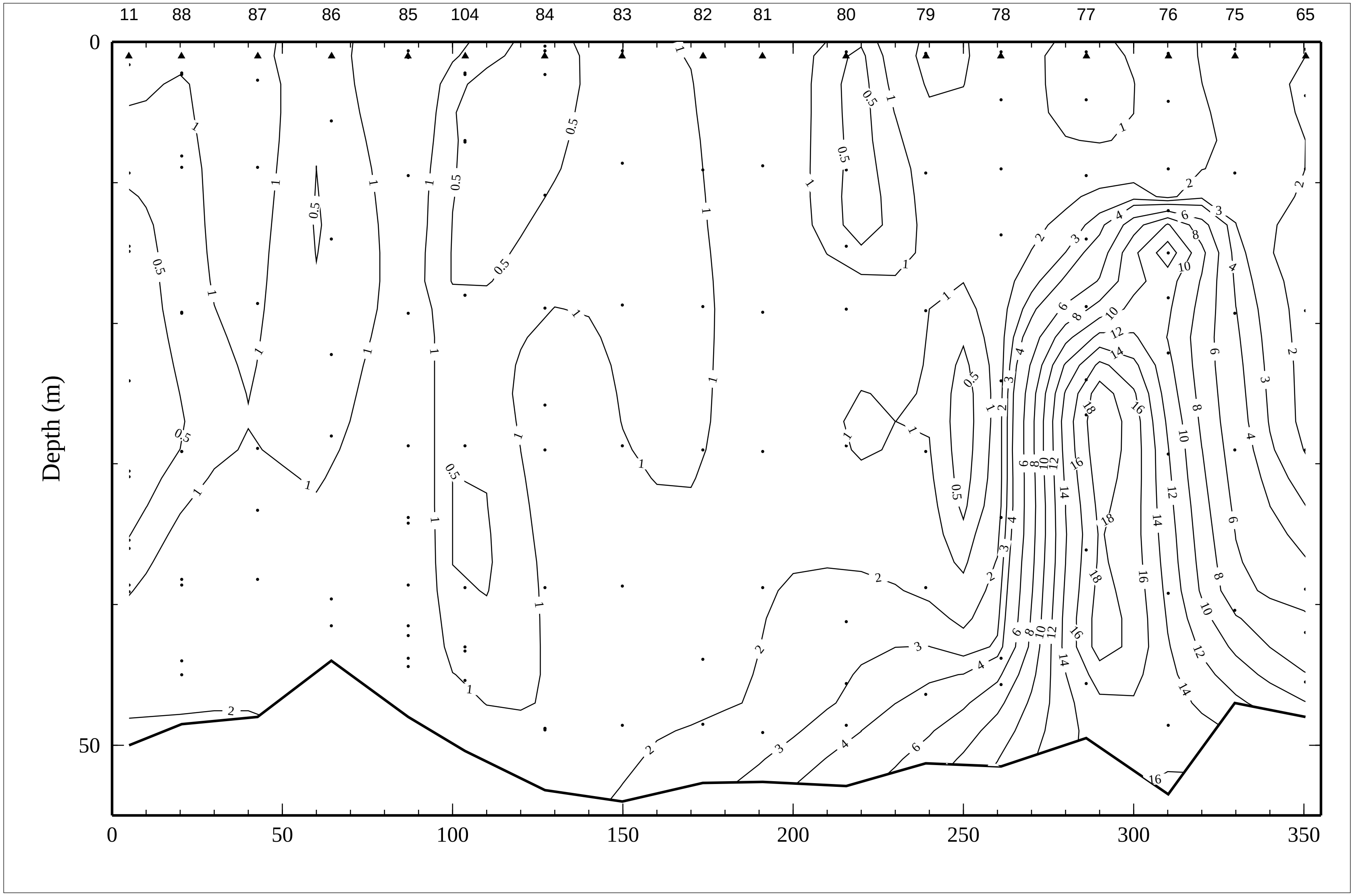


Figure 1.10.10. Silicate (μmol·l^{-1}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

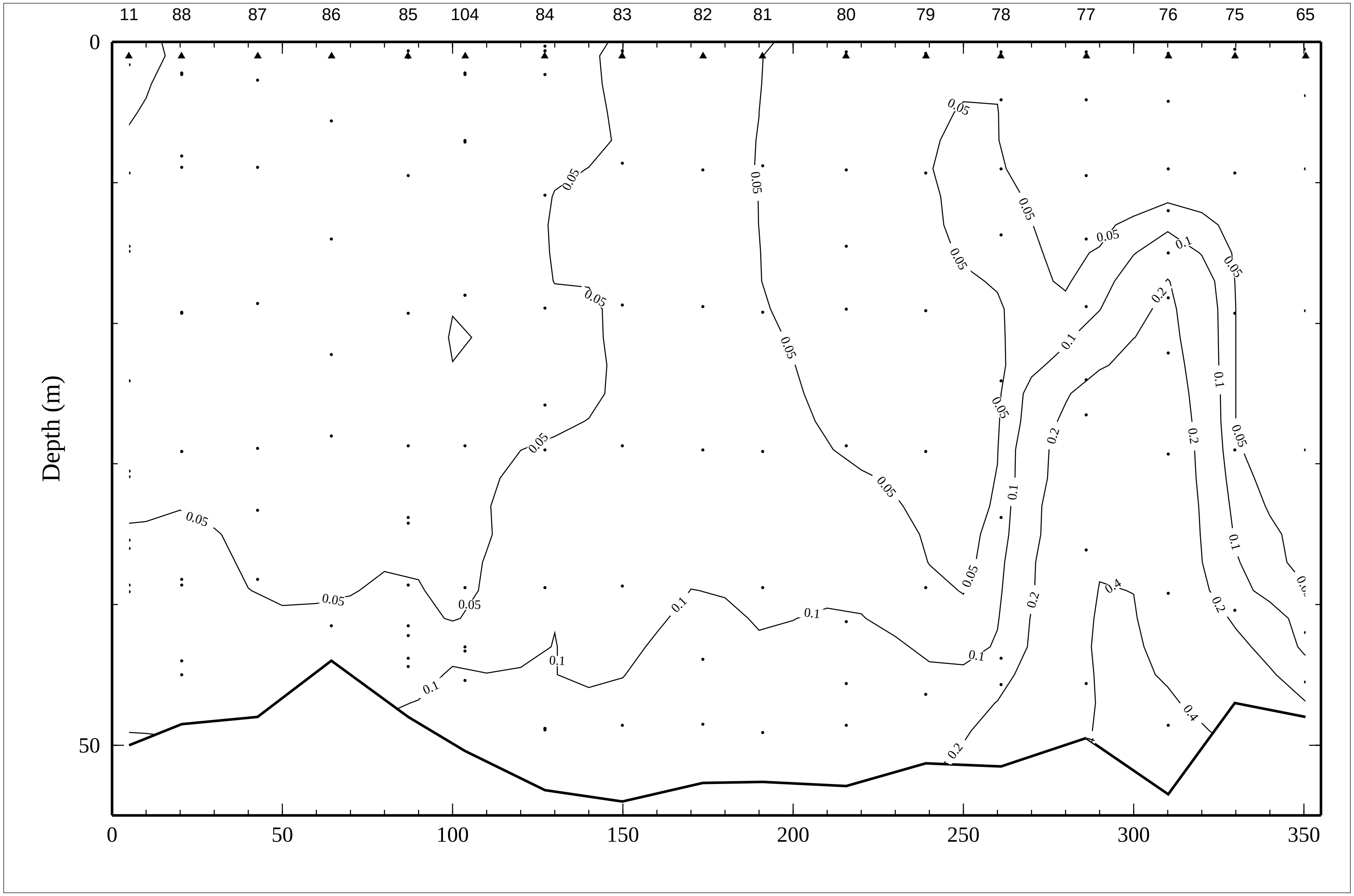


Figure 1.10.11. Phosphate (μmol·l^{-1}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

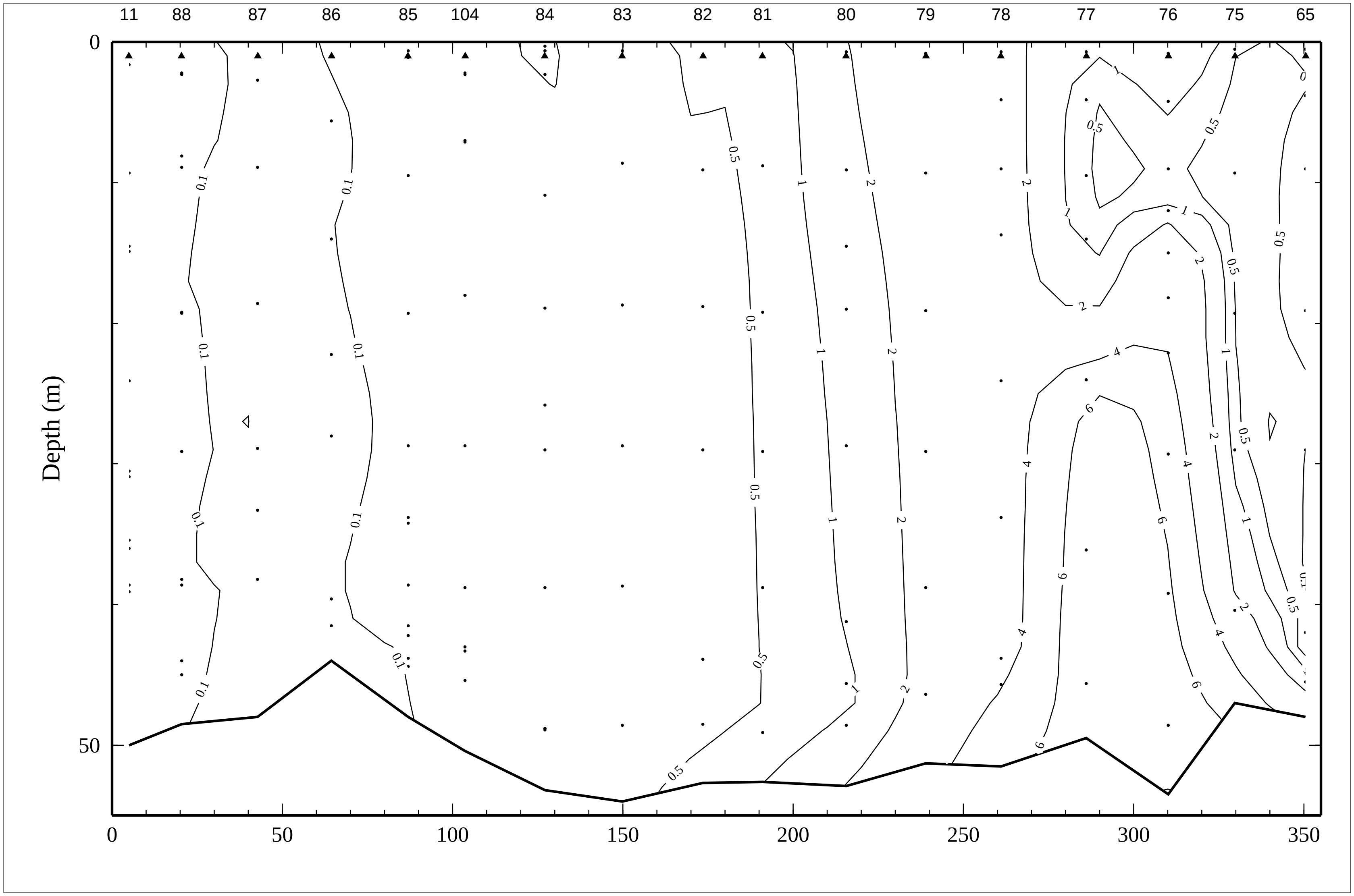


Figure 1.10.12. Nitrate (μmol·l-1) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

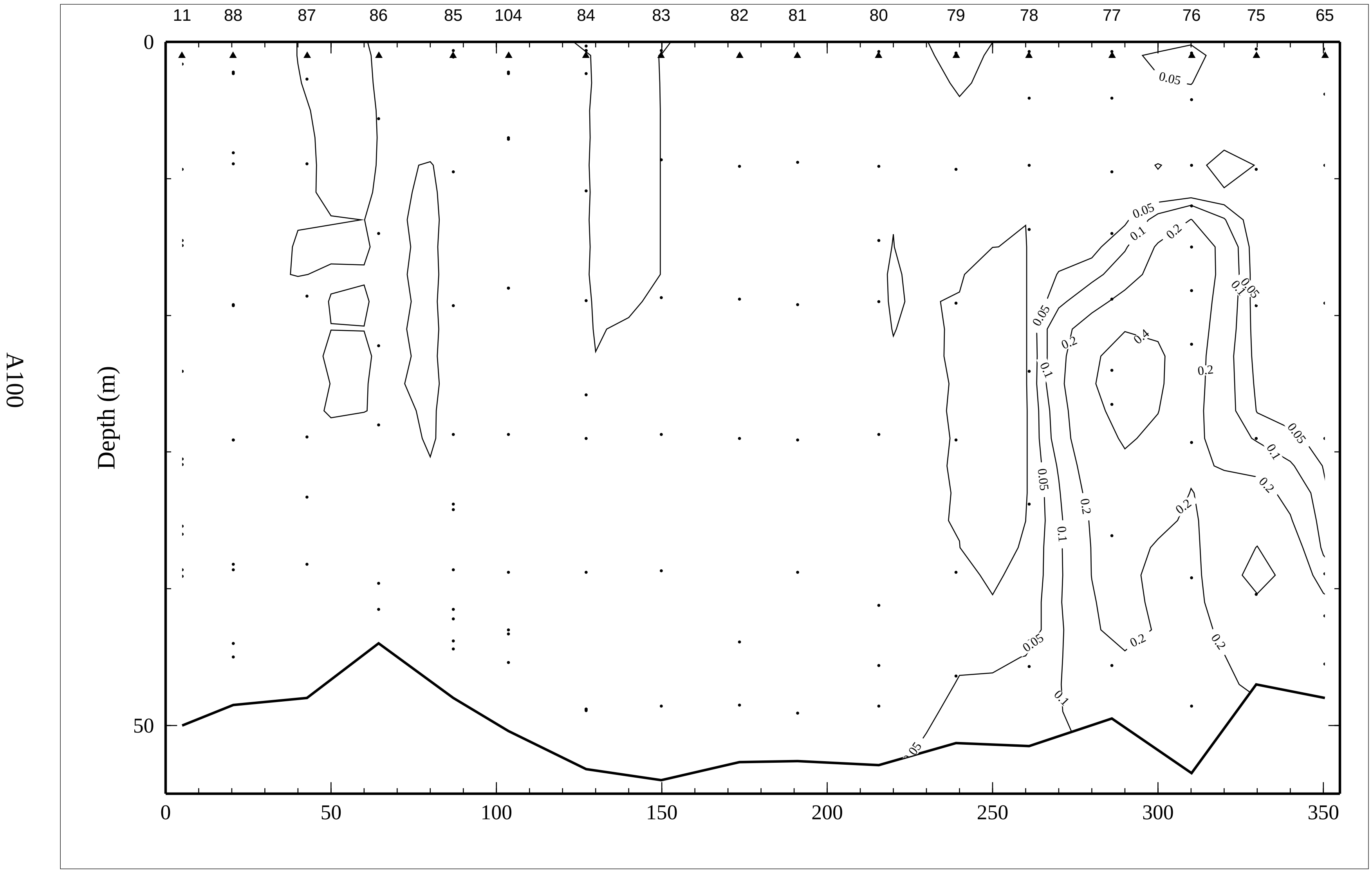


Figure 1.10.13. Nitrite (µmol·l-1) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

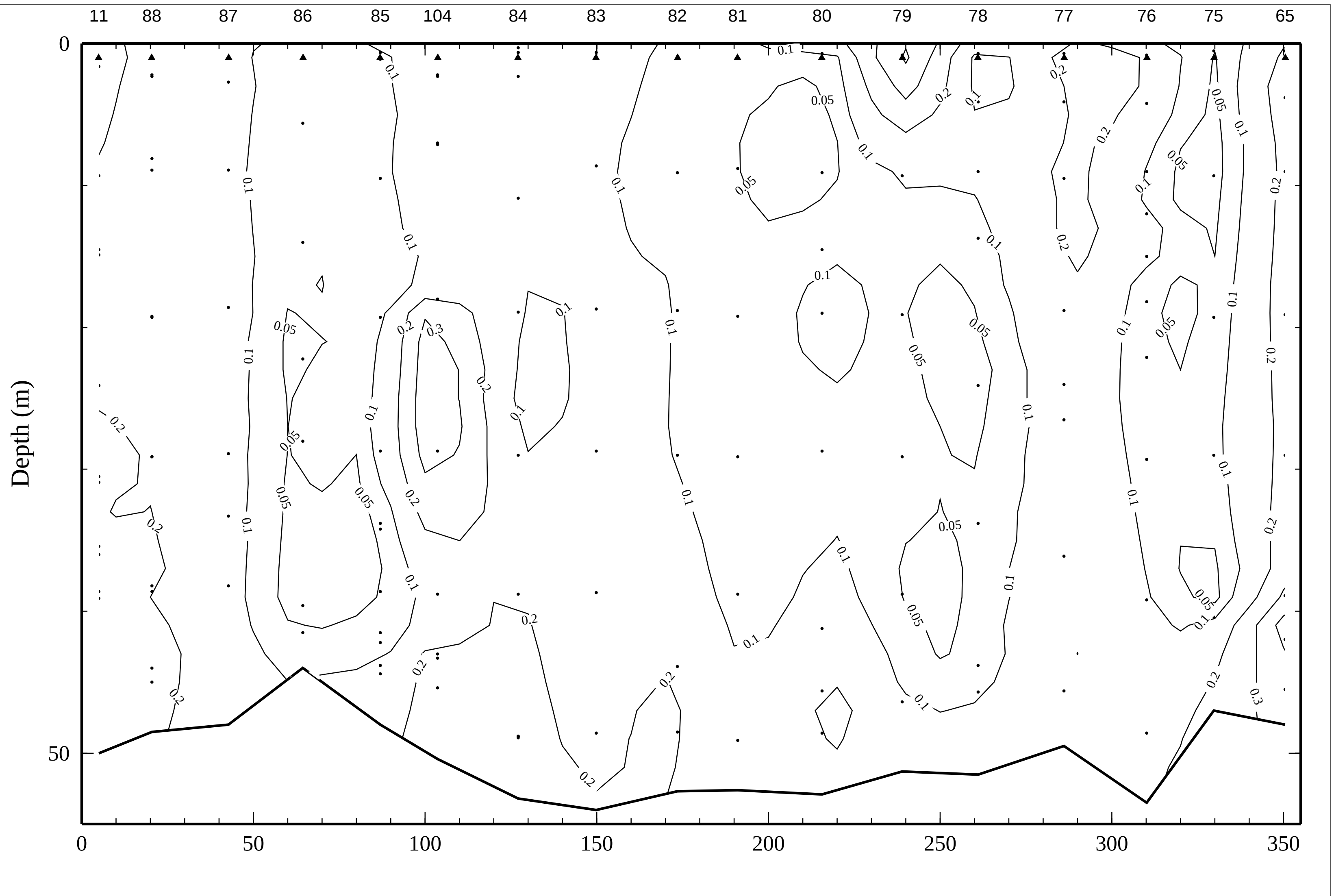


Figure 1.10.14. Ammonium (μmol·l^{-1}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

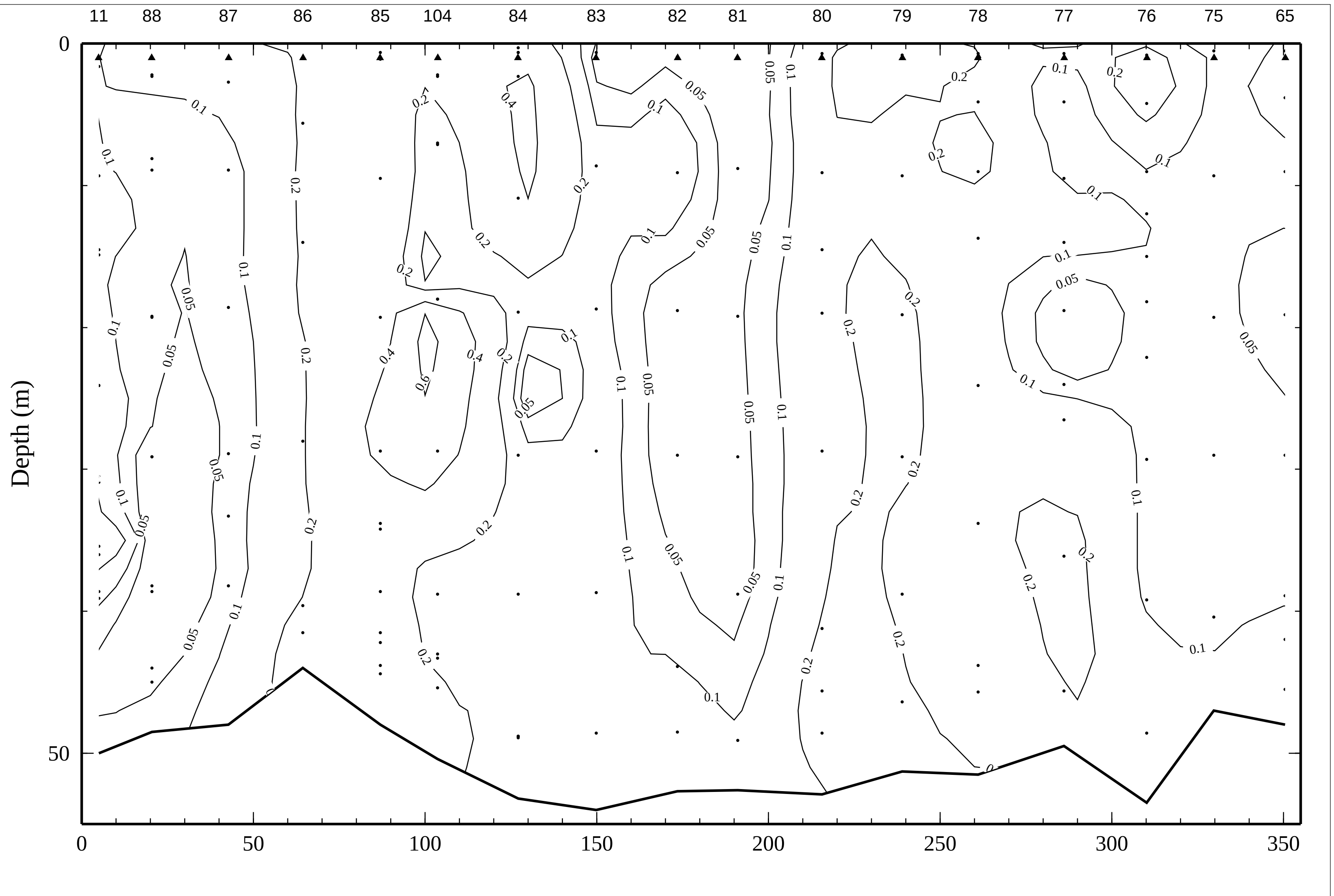


Figure 1.10.15. Urea (μmol·l^{-1}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

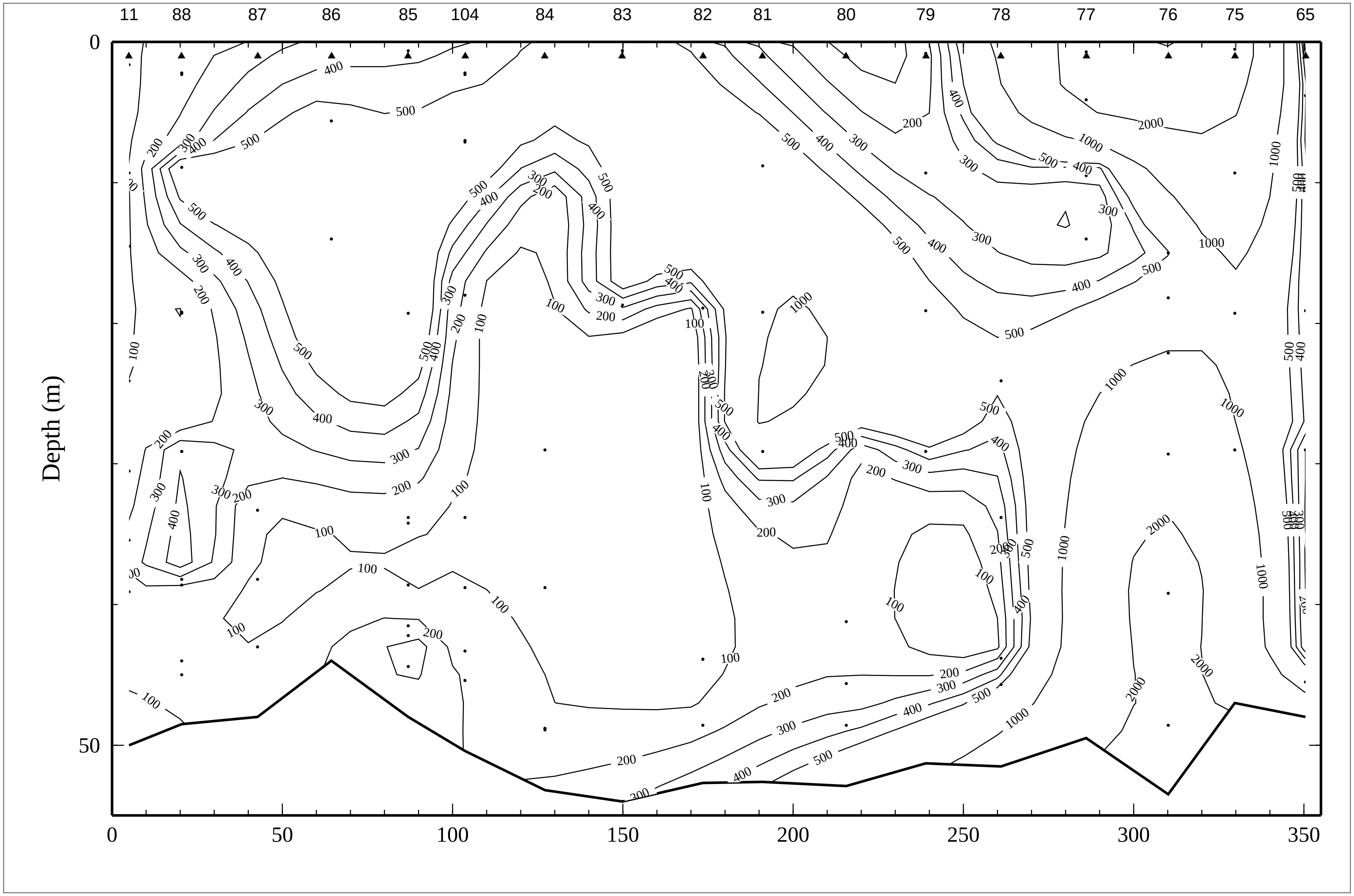


Figure 1.10.16. Chlorophyll a (ng·l^{-1}) on line 10 of LATEX A survey H01, 30 April - 9 May 1992.

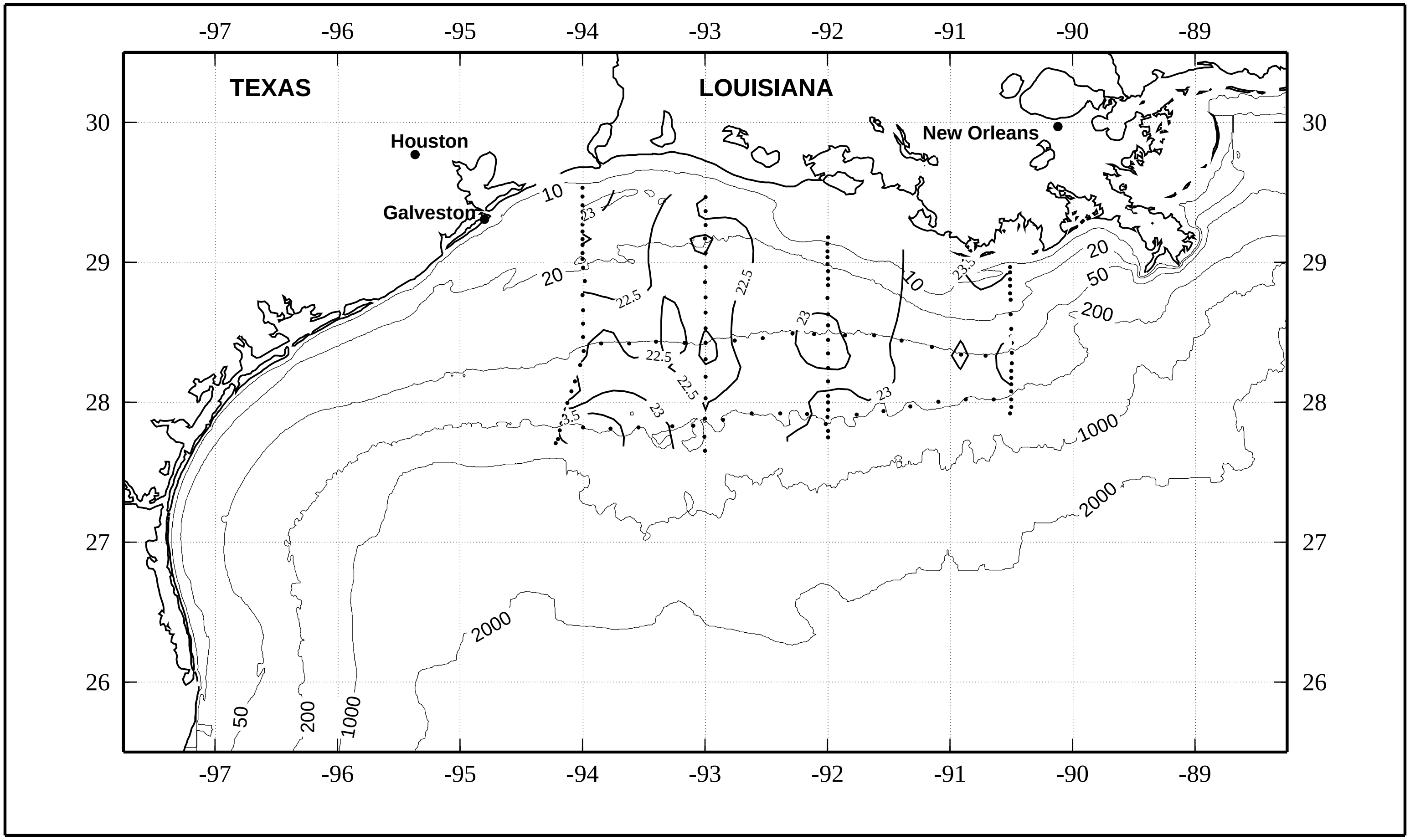


Figure 1.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.
Contour increments are 0.5˚C.

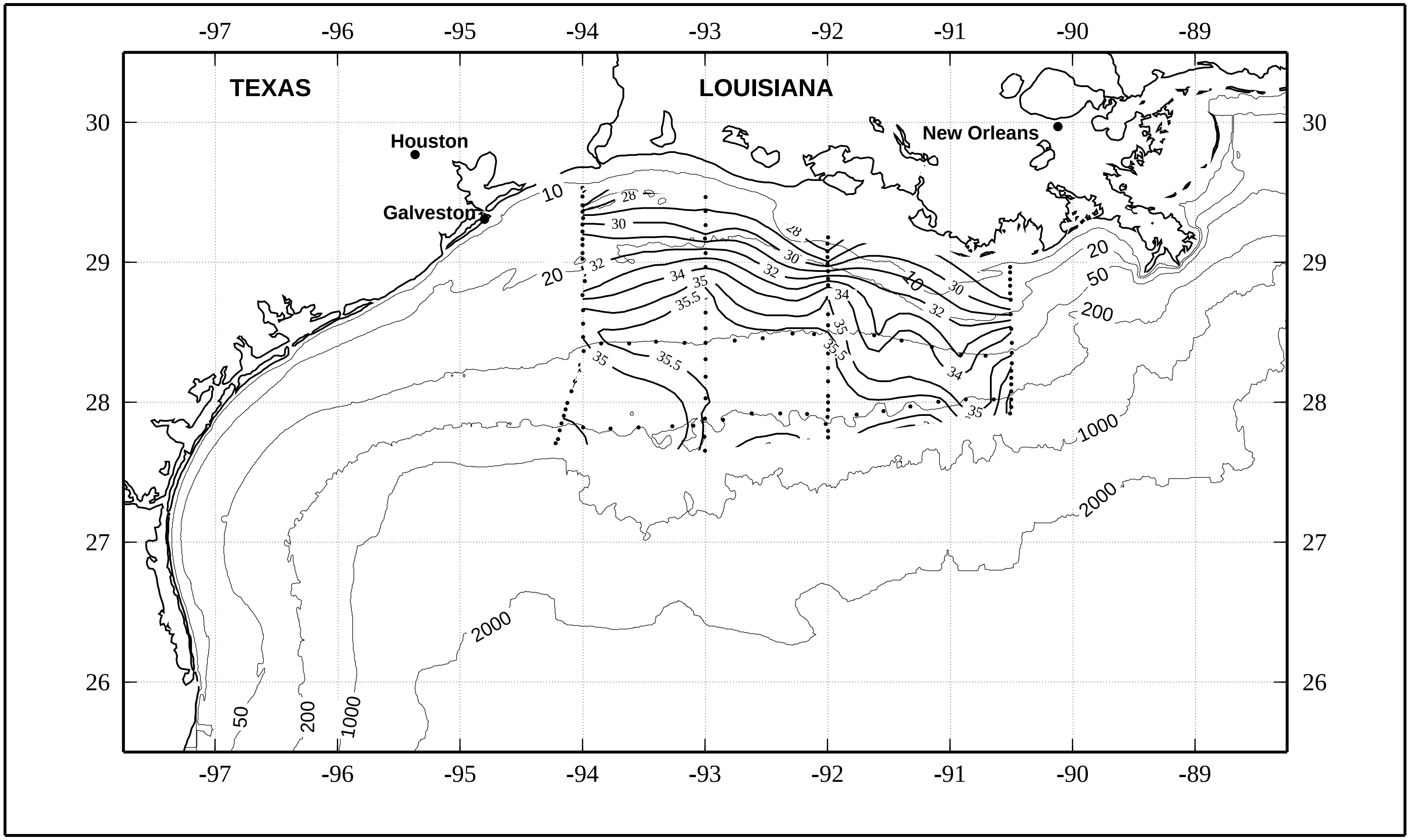


Figure 1.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

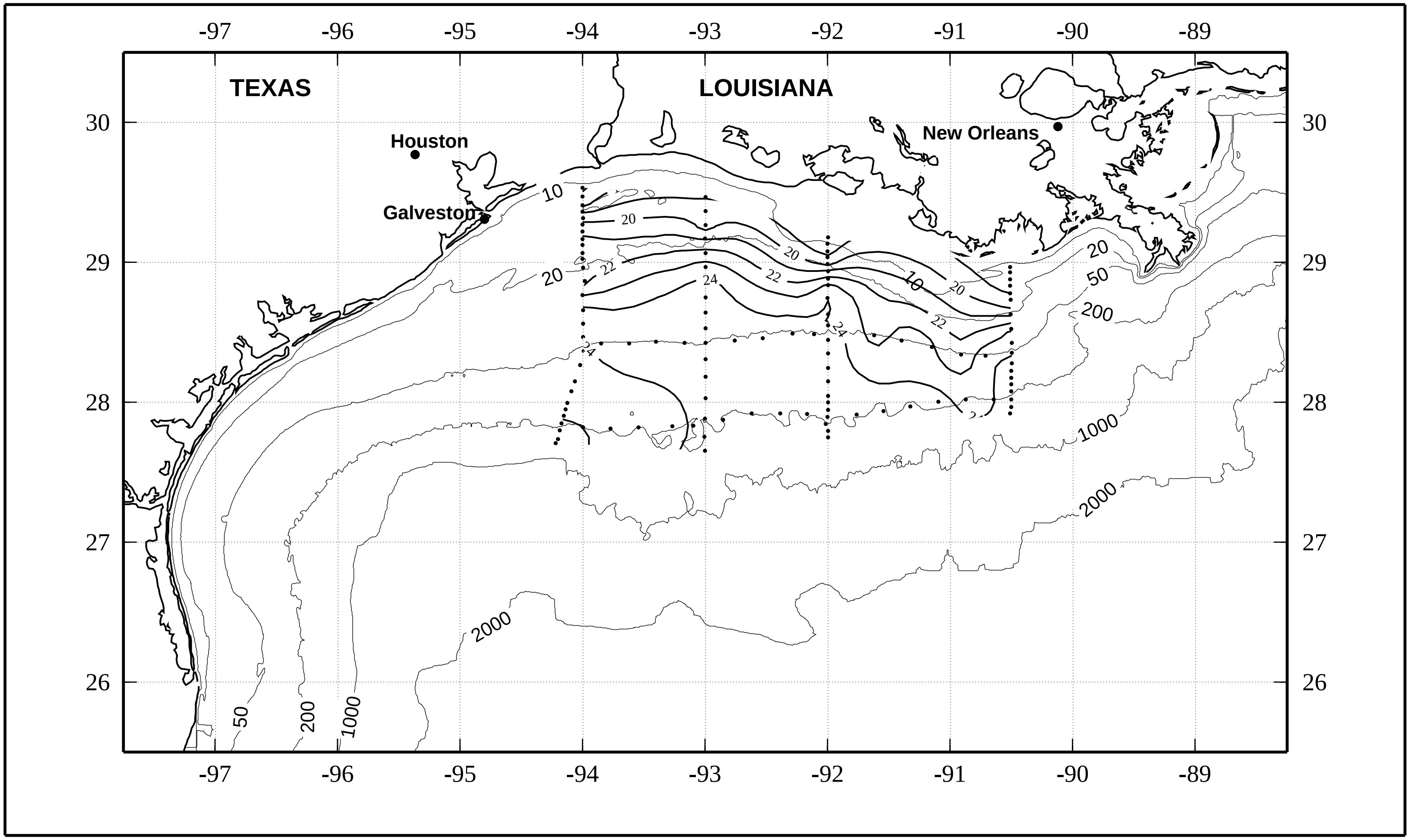


Figure 1.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

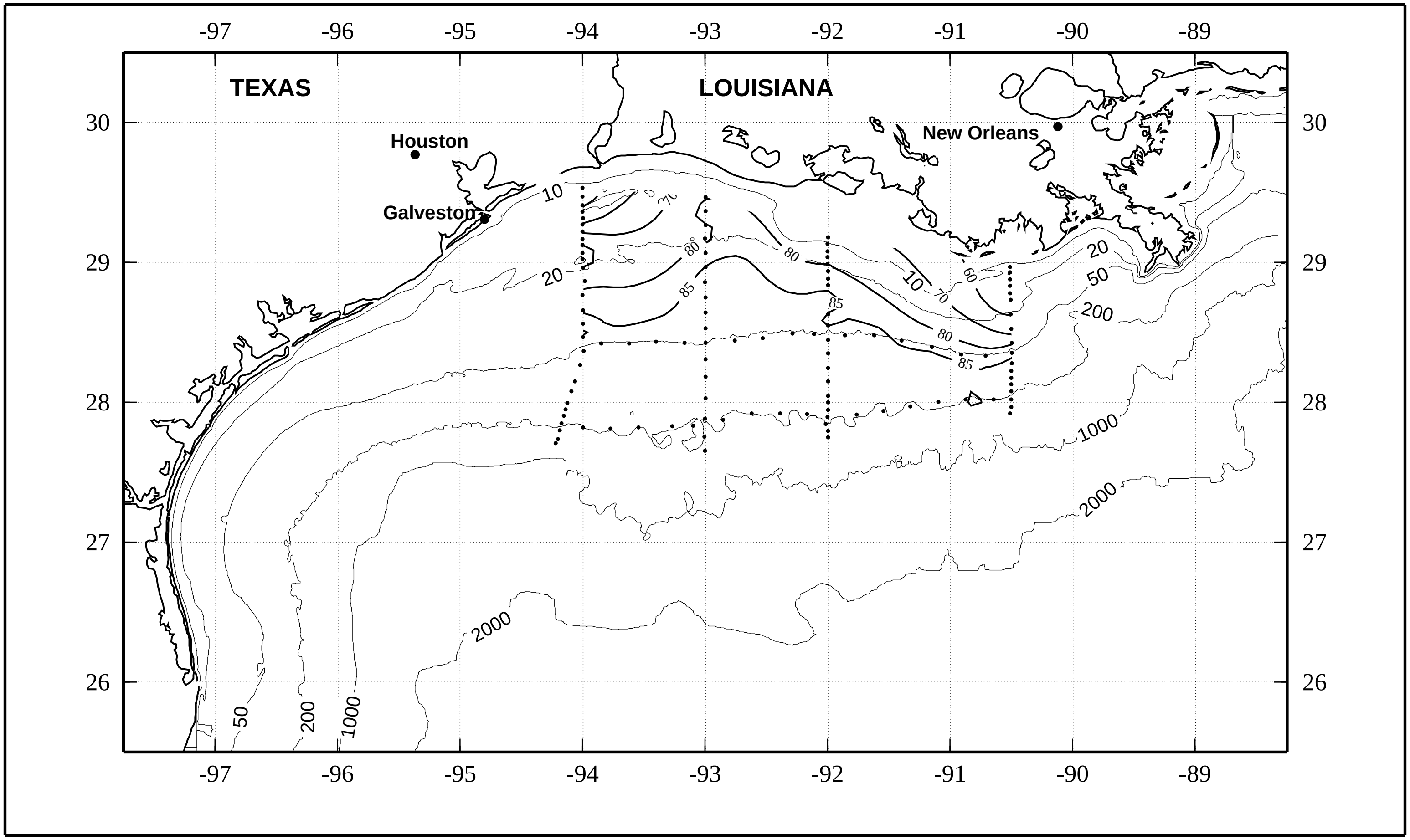


Figure 1.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

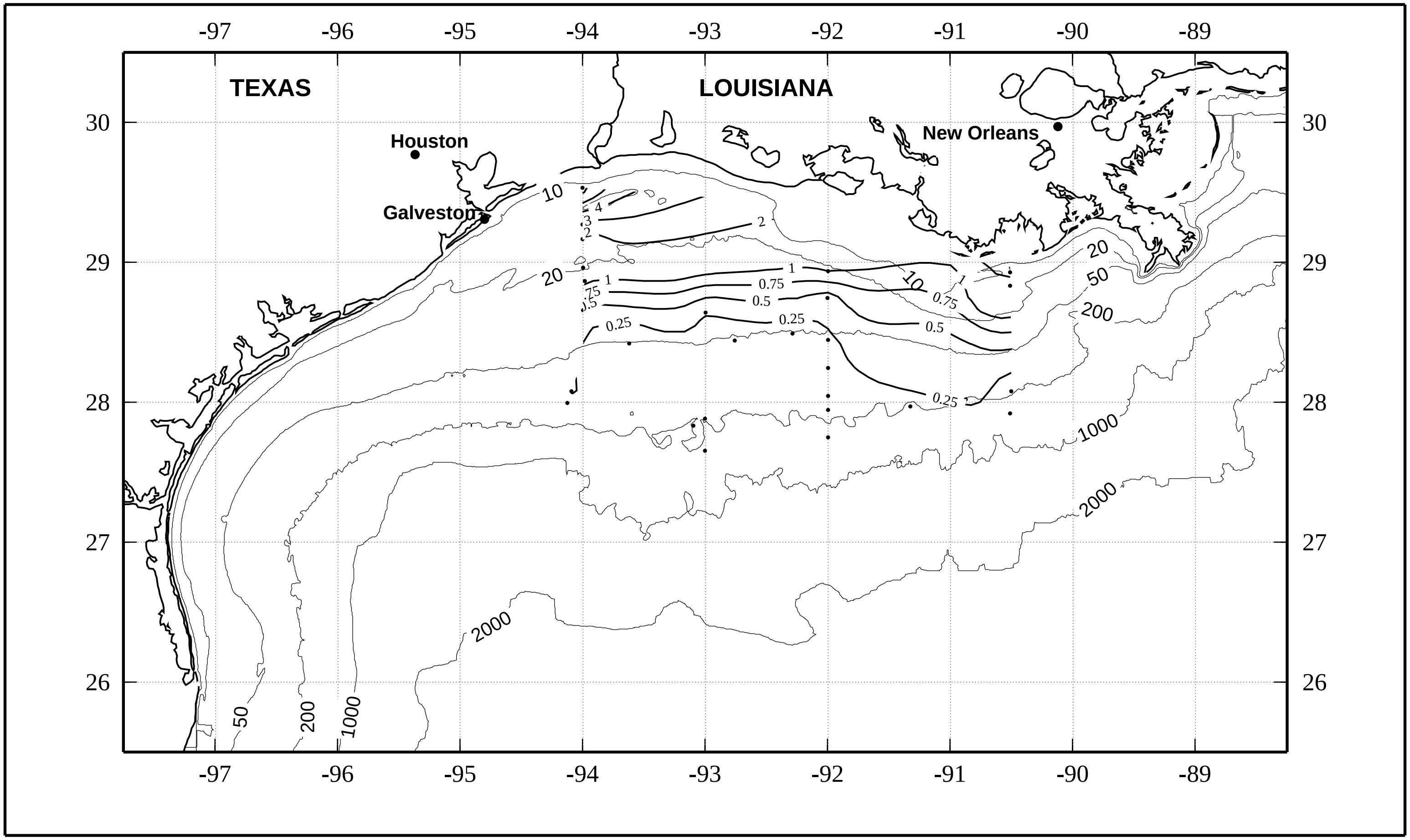


Figure 1.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

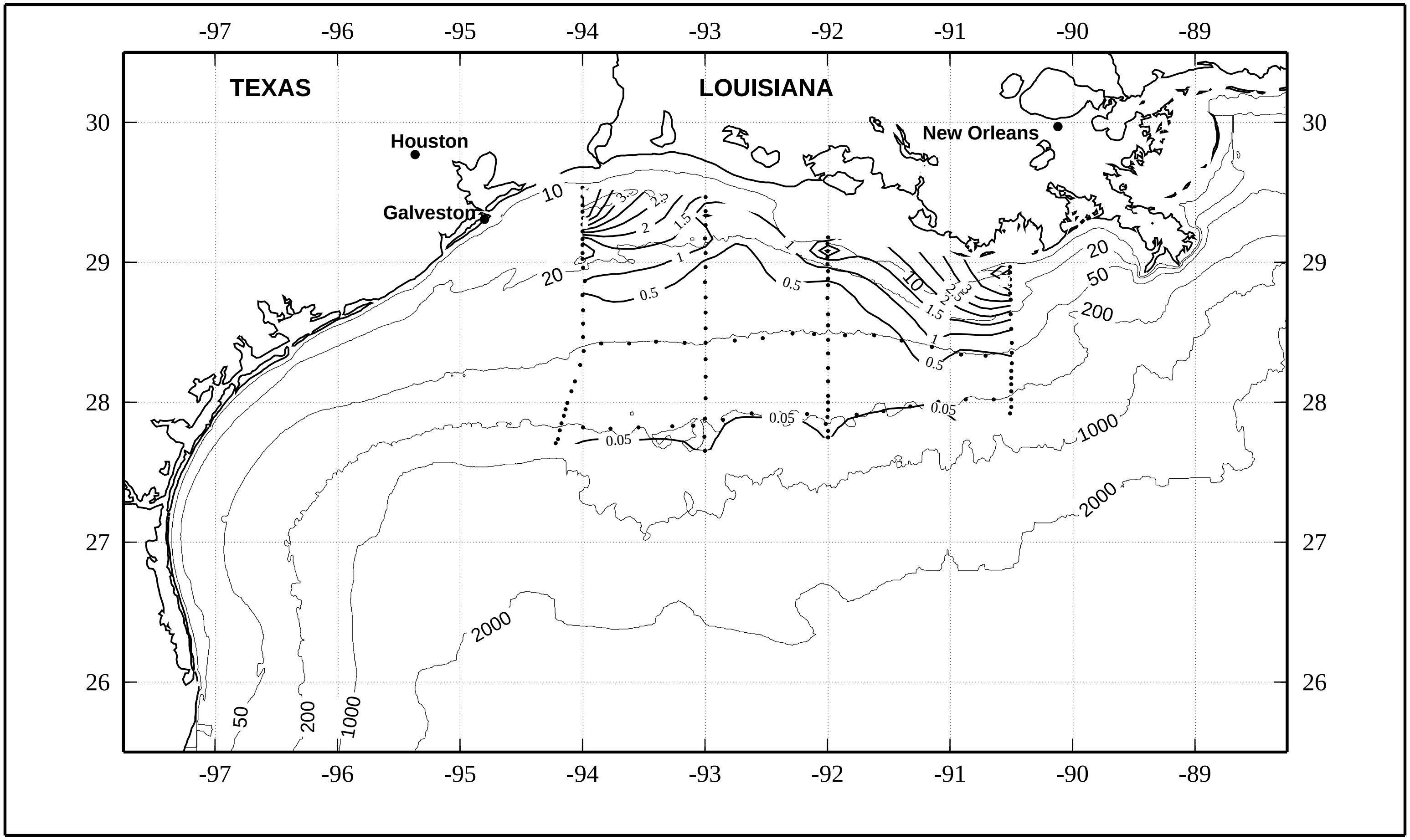


Figure 1.12.7. Relative fluorescence at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

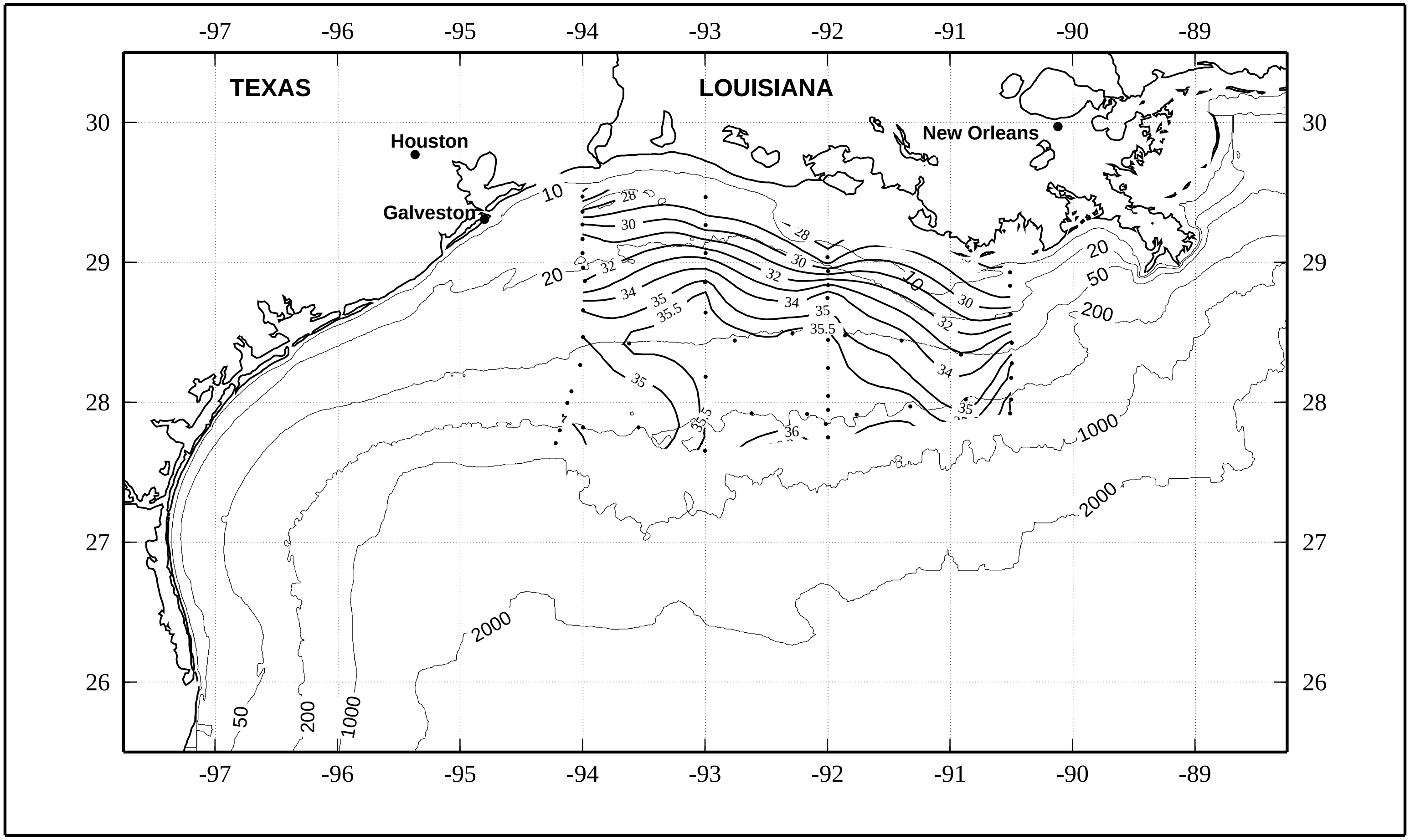


Figure 1.12.8. Bottle salinity at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

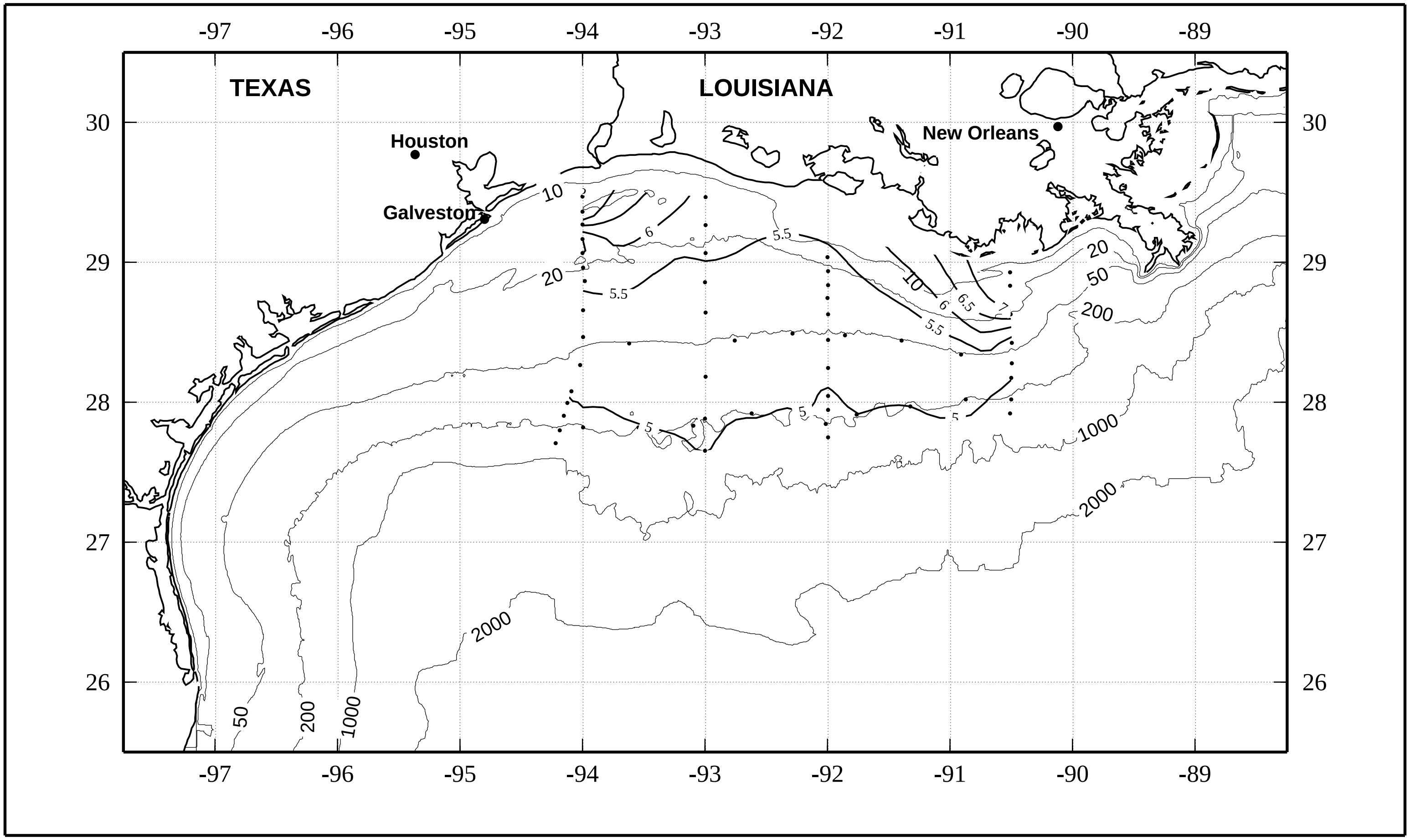


Figure 1.12.9. Dissolved oxygen (ml·l-1) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

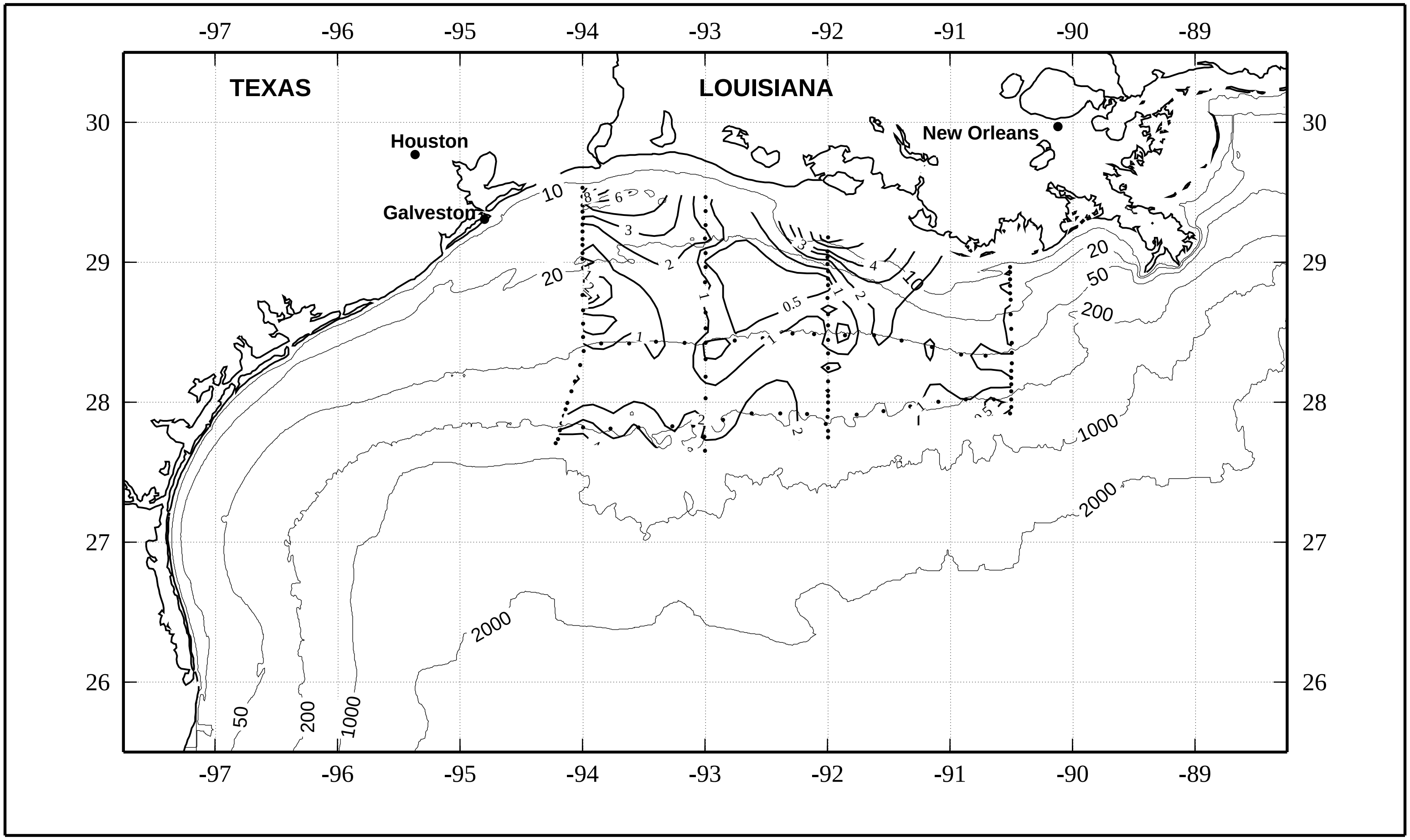


Figure 1.12.10. Silicate (µmol·l^{-1}) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

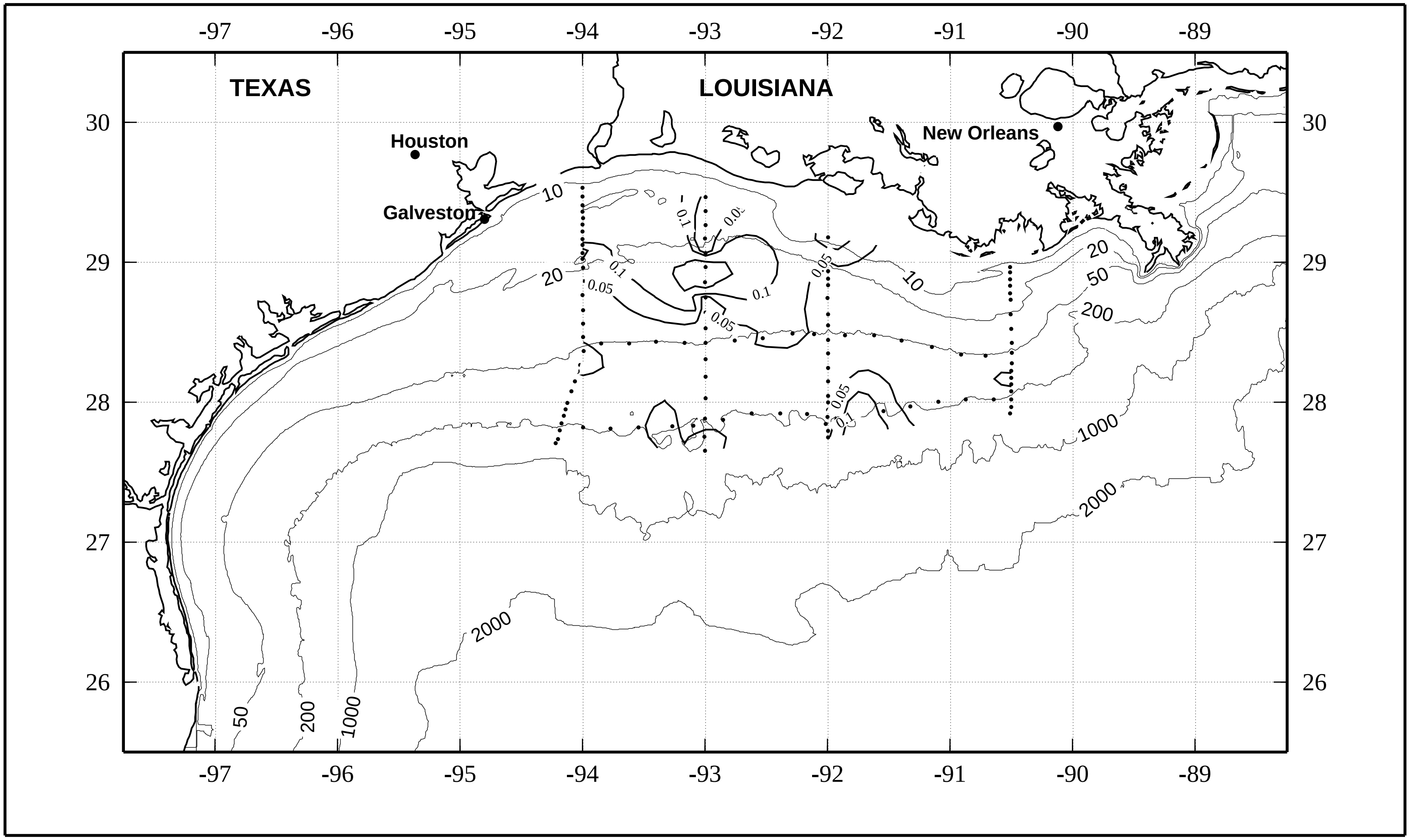


Figure 1.12.11. Phosphate (μmol·l[-1]) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

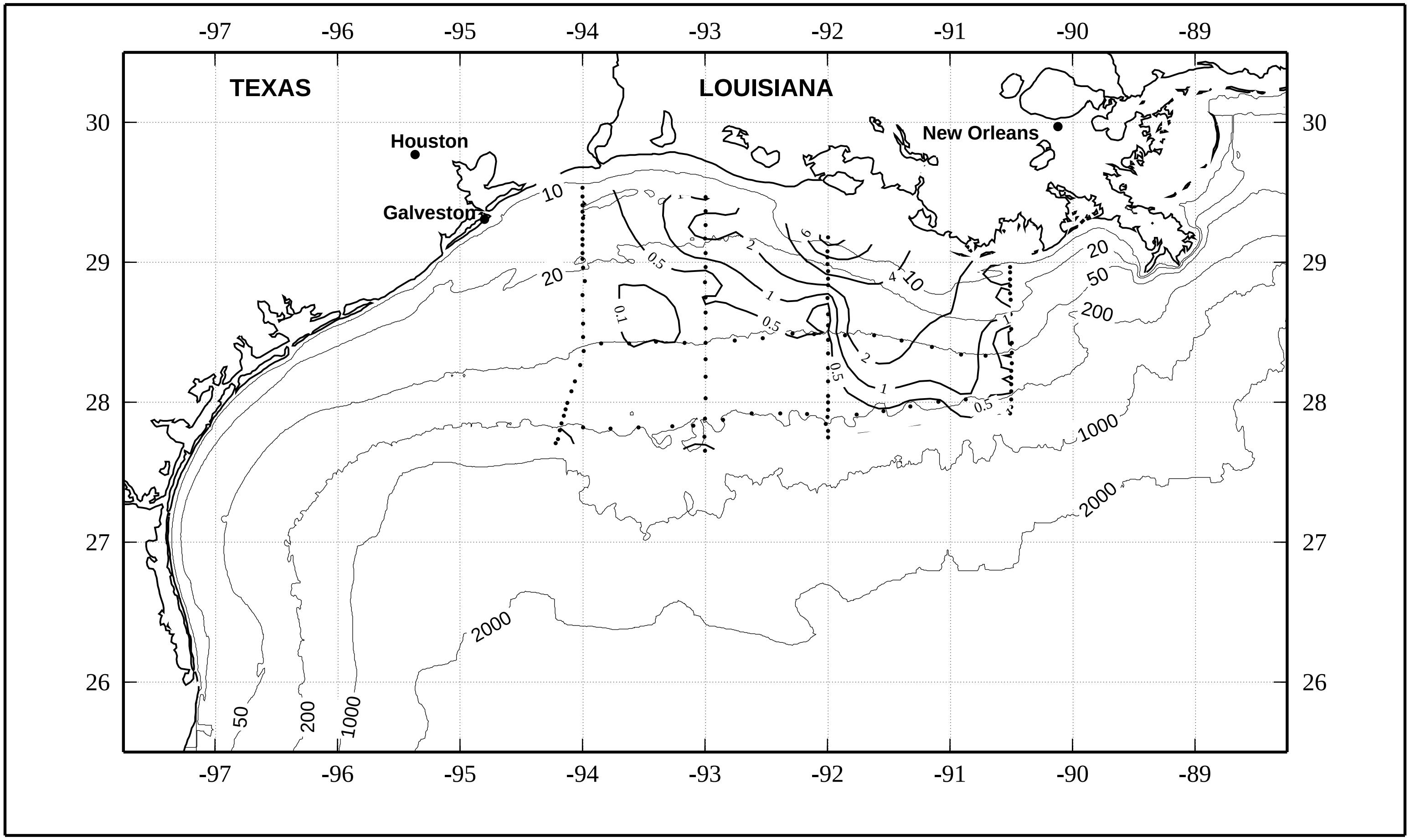


Figure 1.12.12. Nitrate (μmol·l-1) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

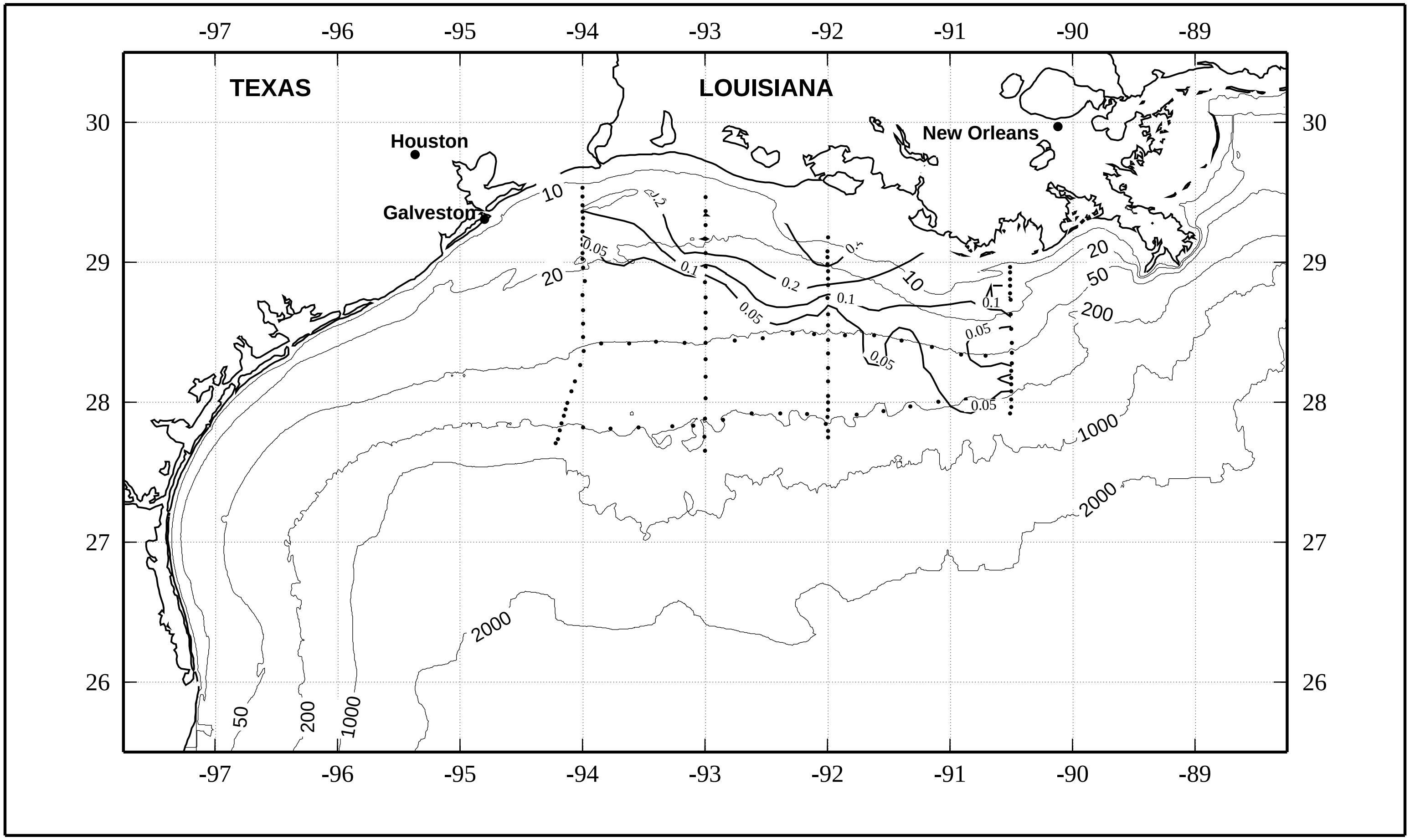


Figure 1.12.13. Nitrite (µmol·l^{-1}) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

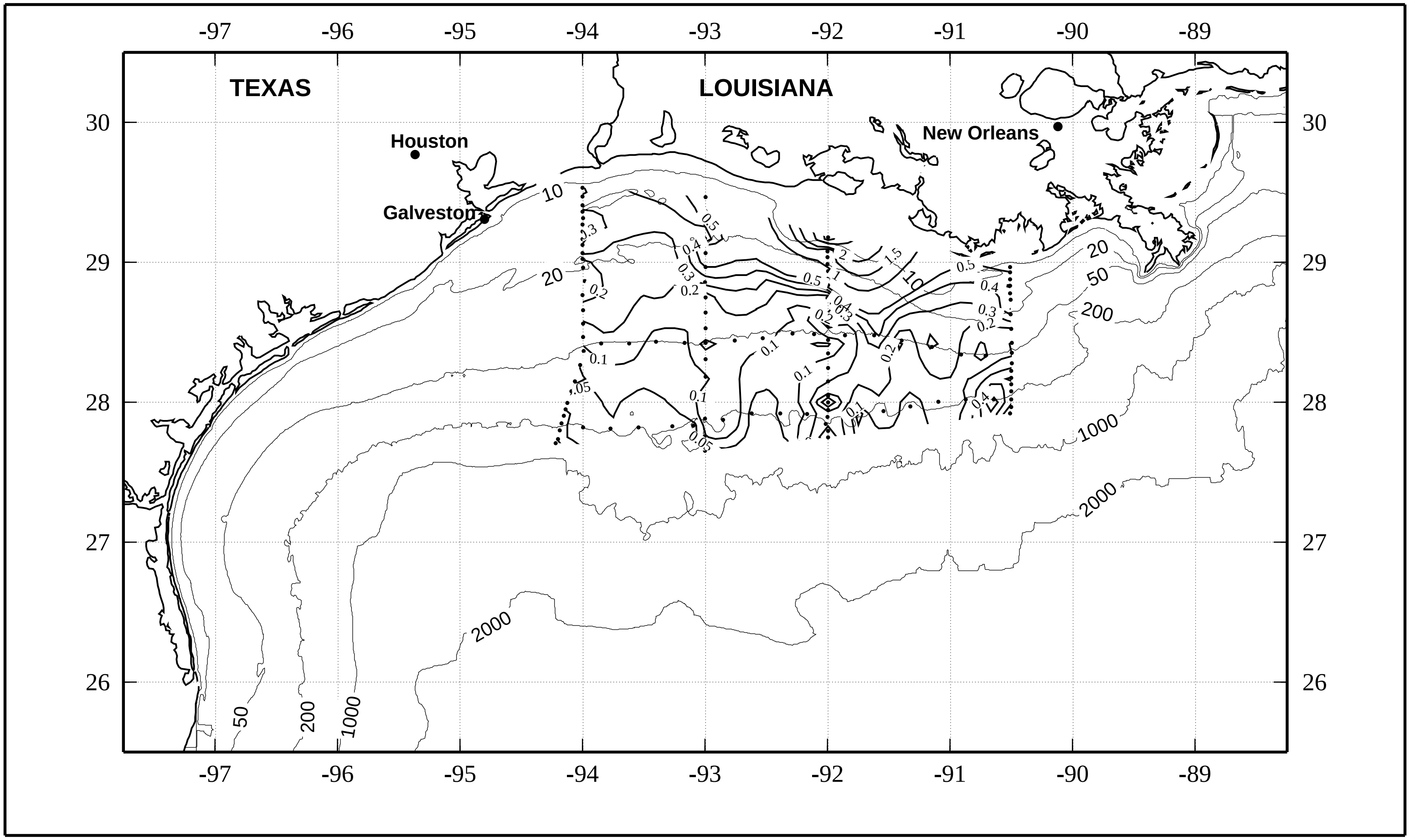


Figure 1.12.14. Ammonium ($\mu mol \cdot l^{-1}$) at 3 m on LATEX A survey H01, 30 April - 9 May 1992.

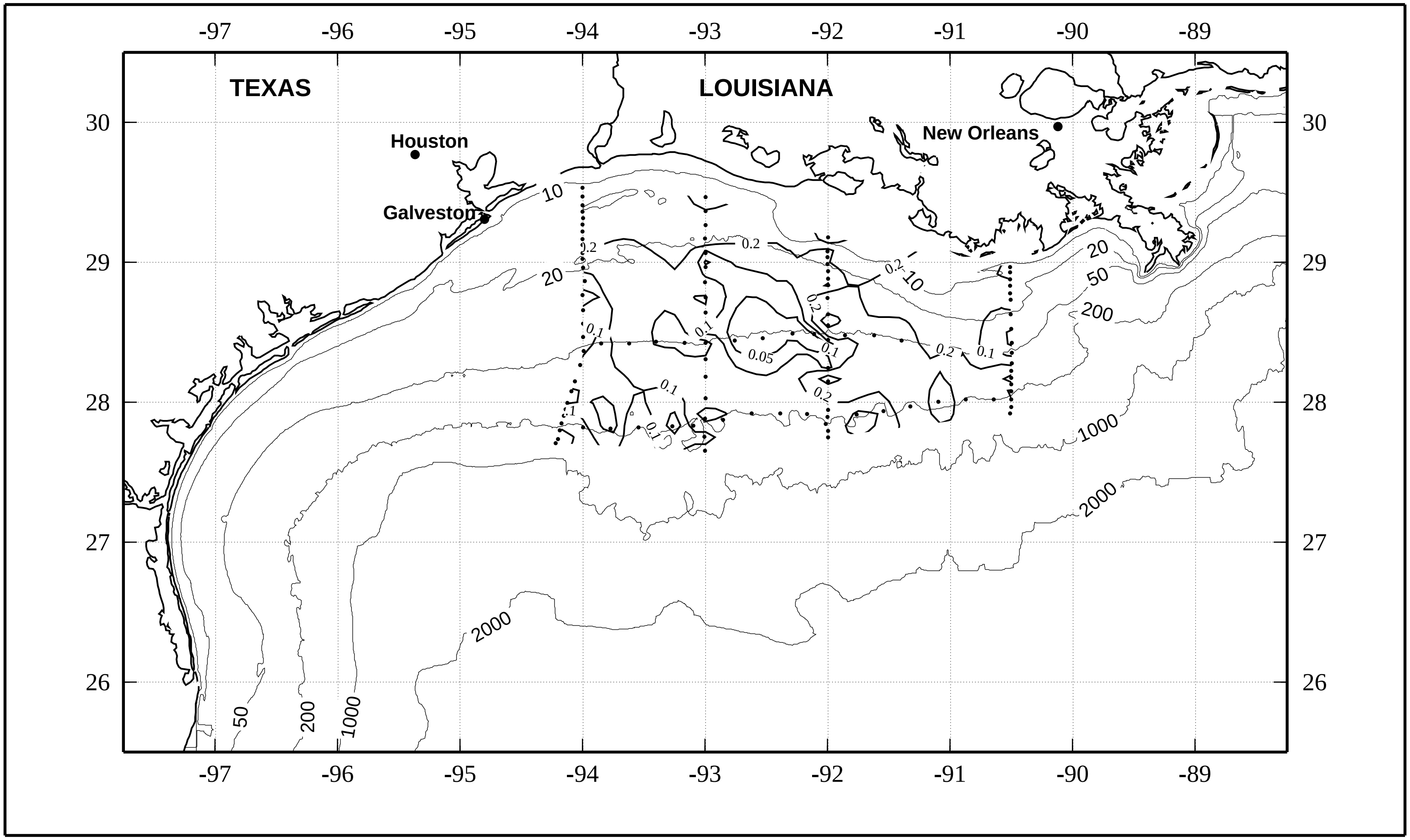


Figure 1.12.15. Urea (μmol·l^{-1}) on LATEX A survey H01, 30 April - 9 May 1992.

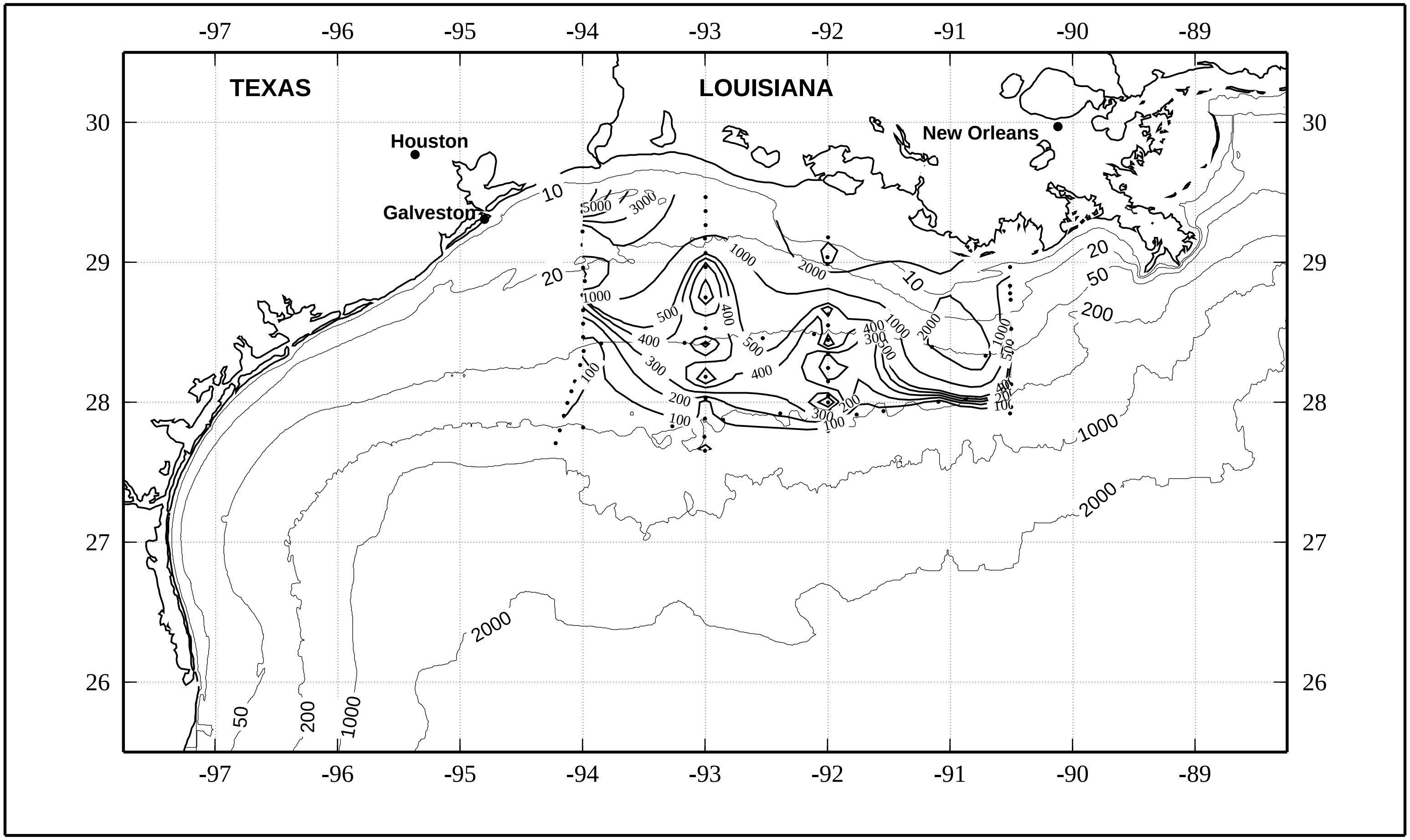


Figure 1.12.16. Chlorophyll a ($ng \cdot l^{-1}$) at maximum on LATEX A survey H01, April - 11 May 1993.

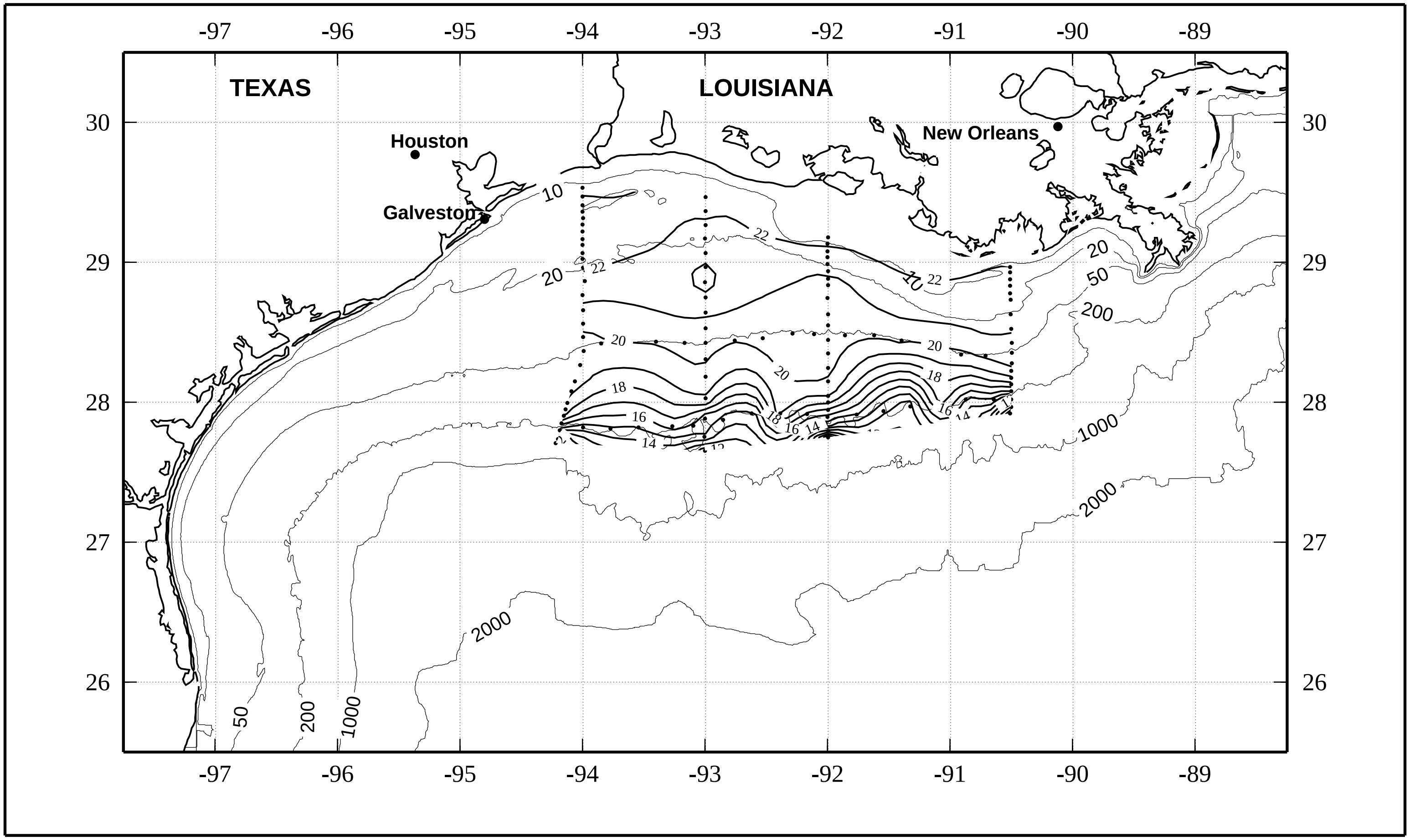


Figure 1.13.1. Potential temperature (˚C) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

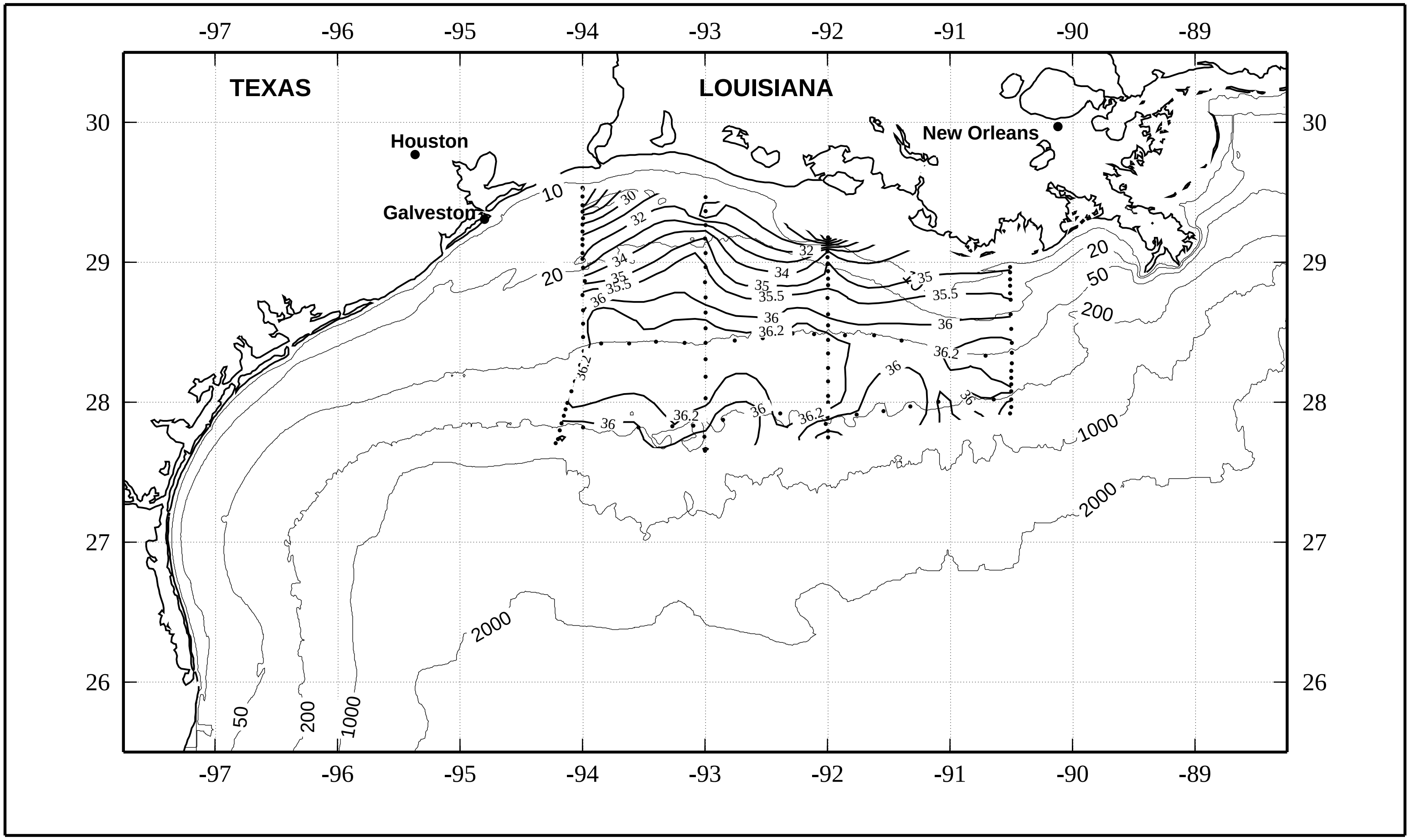


Figure 1.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H01, 30 April - 9 May 1992.

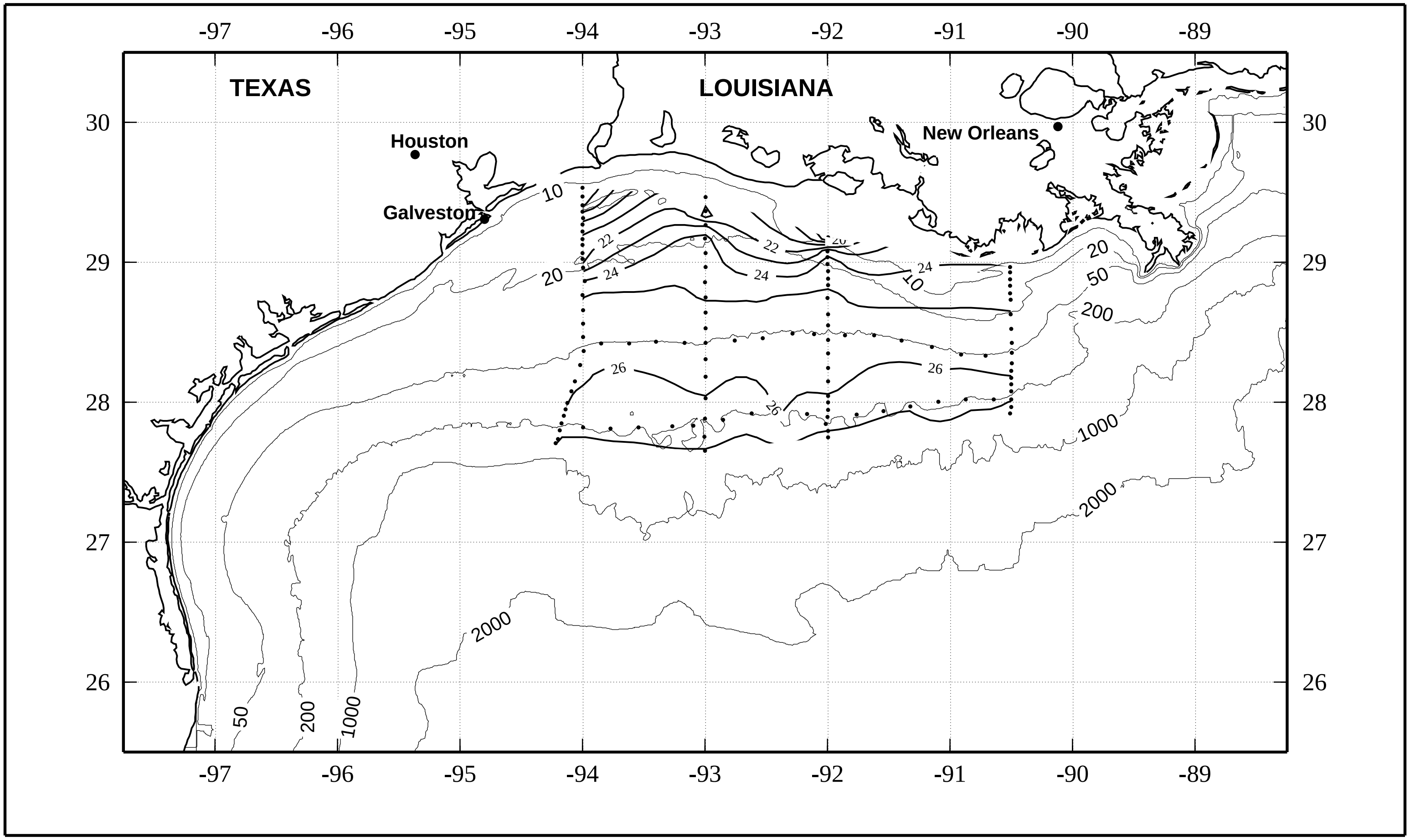


Figure 1.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

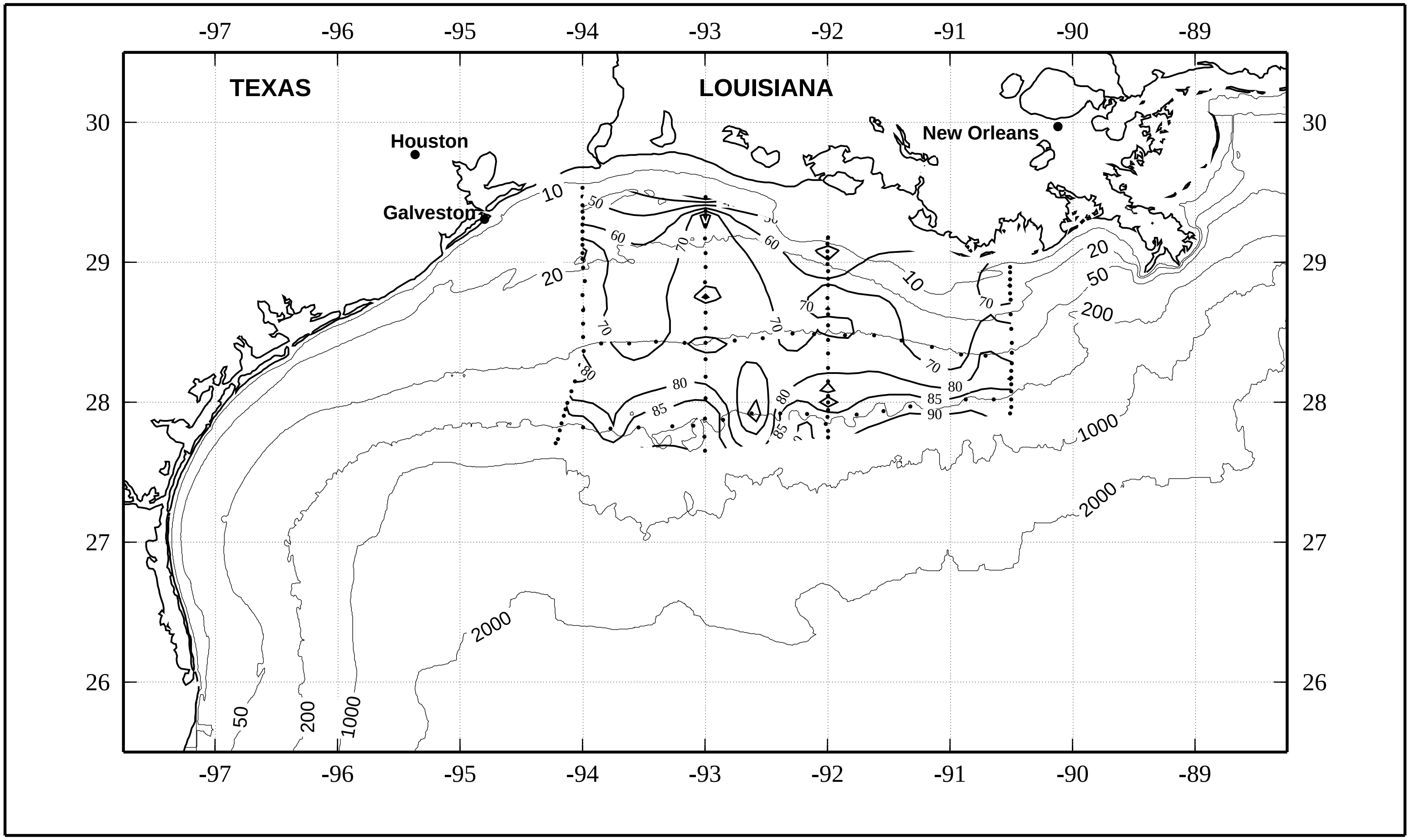


Figure 1.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

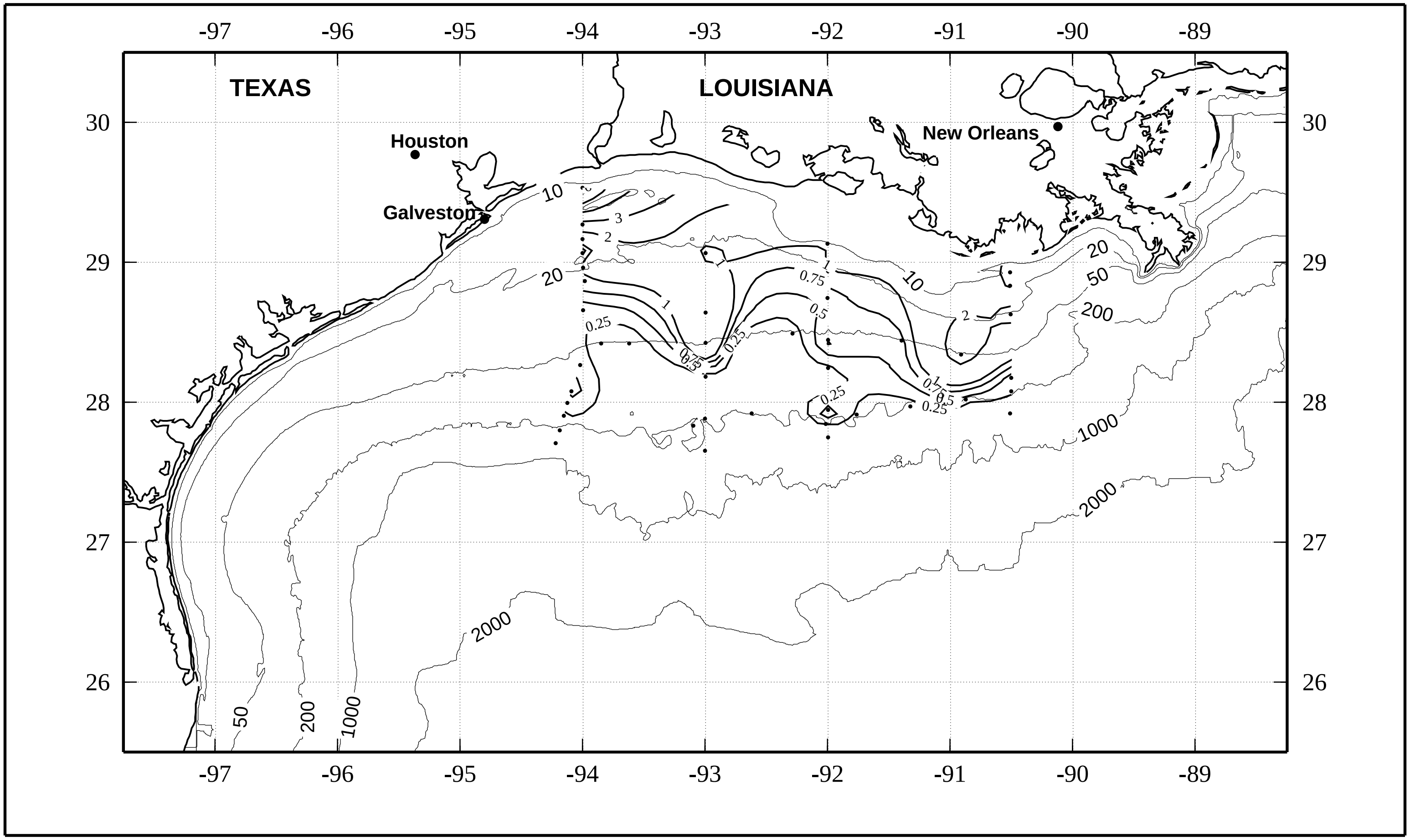


Figure 1.13.5. Suspended particulate material (mg·l^{-1}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

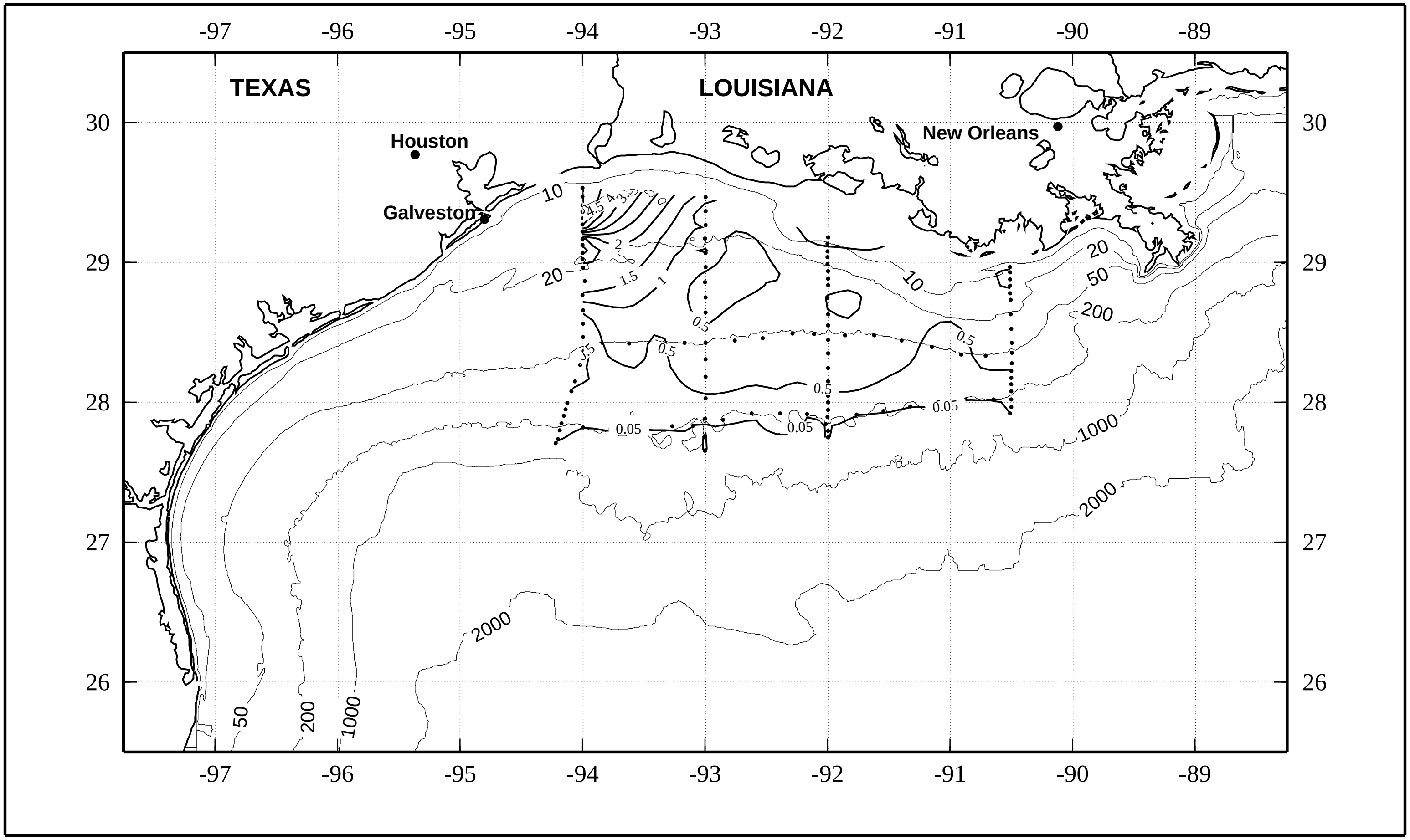


Figure 1.13.7. Relative fluorescence near bottom on LATEX A survey H01, 30 April - 9 May 1992.

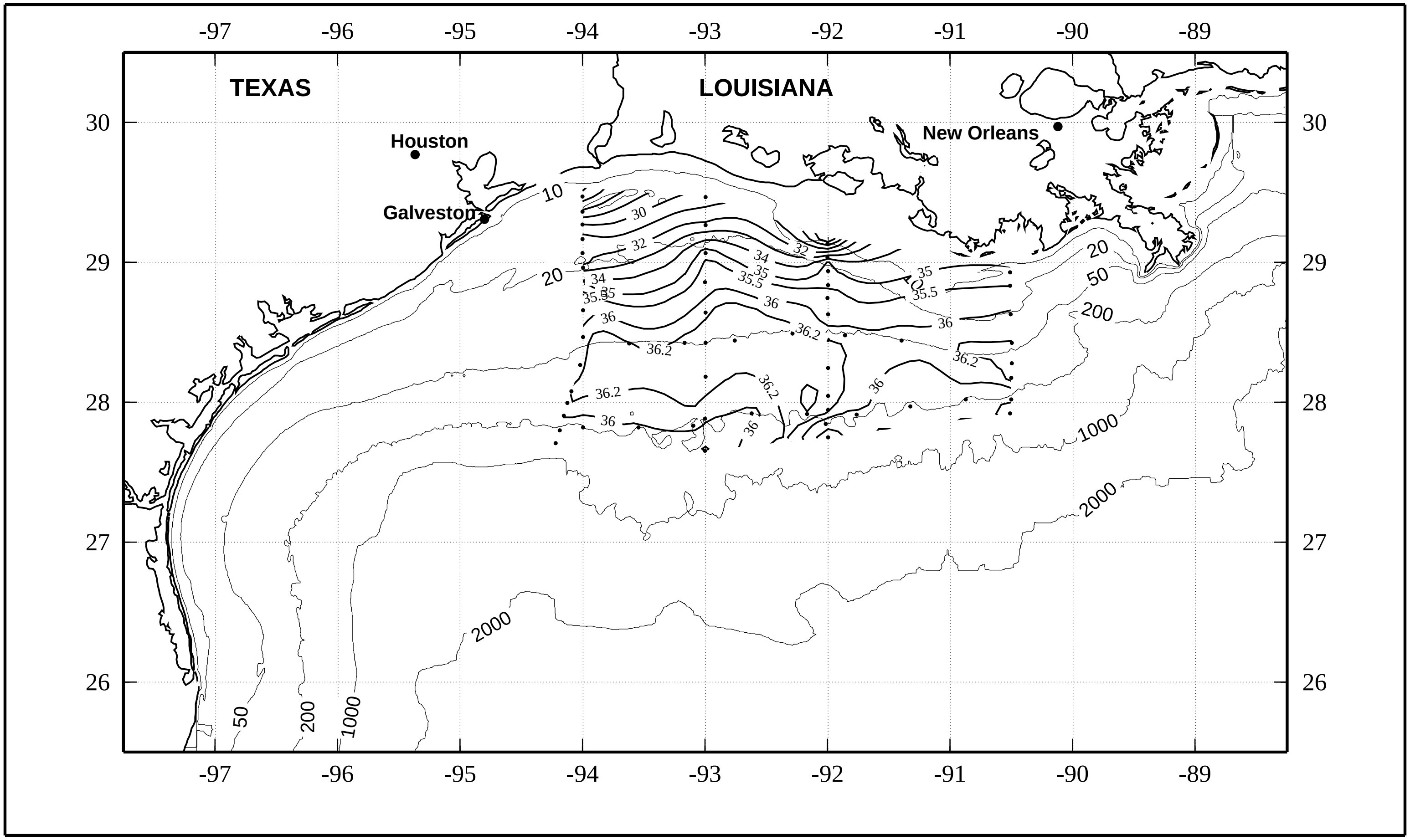


Figure 1.13.8. Bottle salinity near bottom on LATEX A survey H01, 30 April - 9 May 1992.

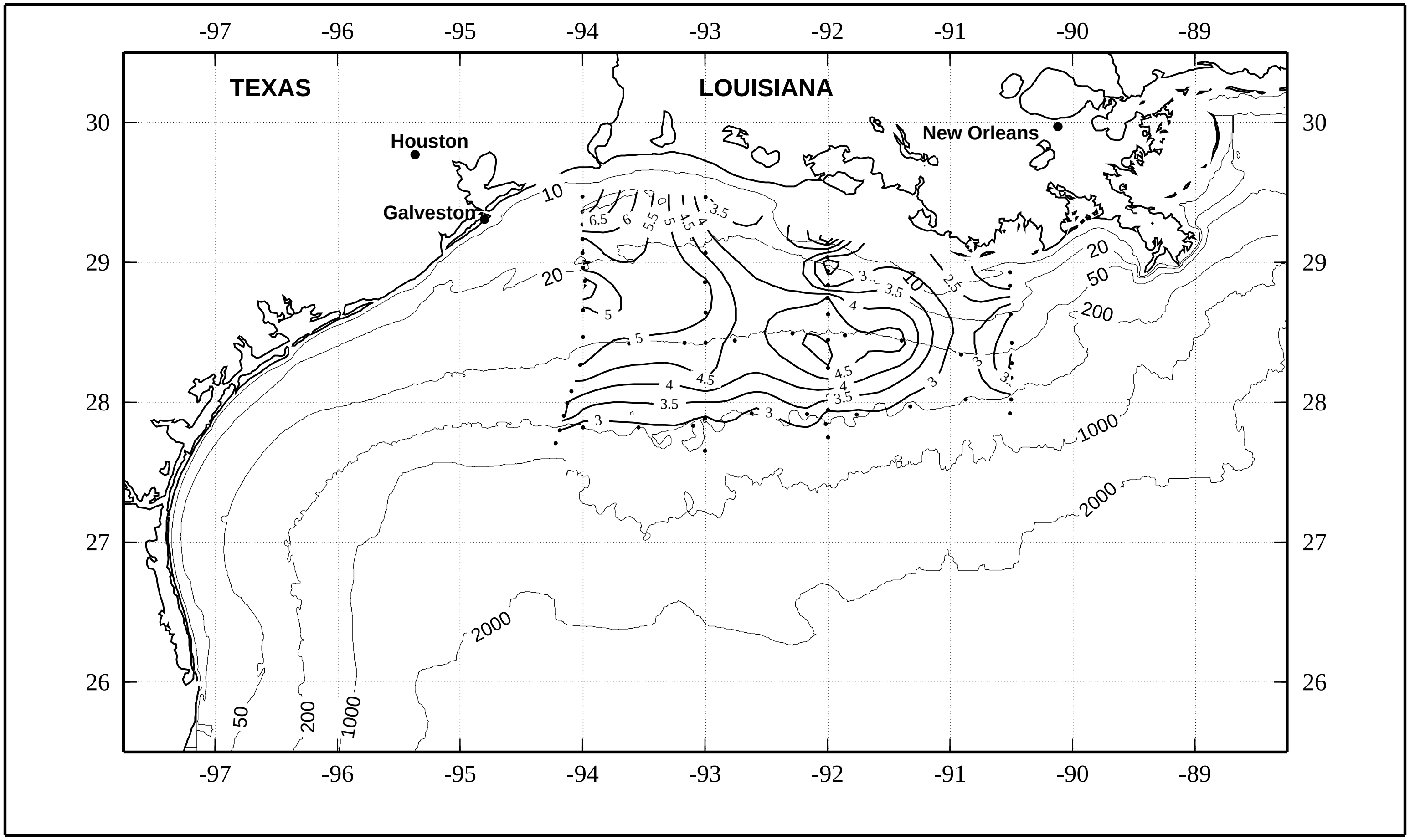


Figure 1.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

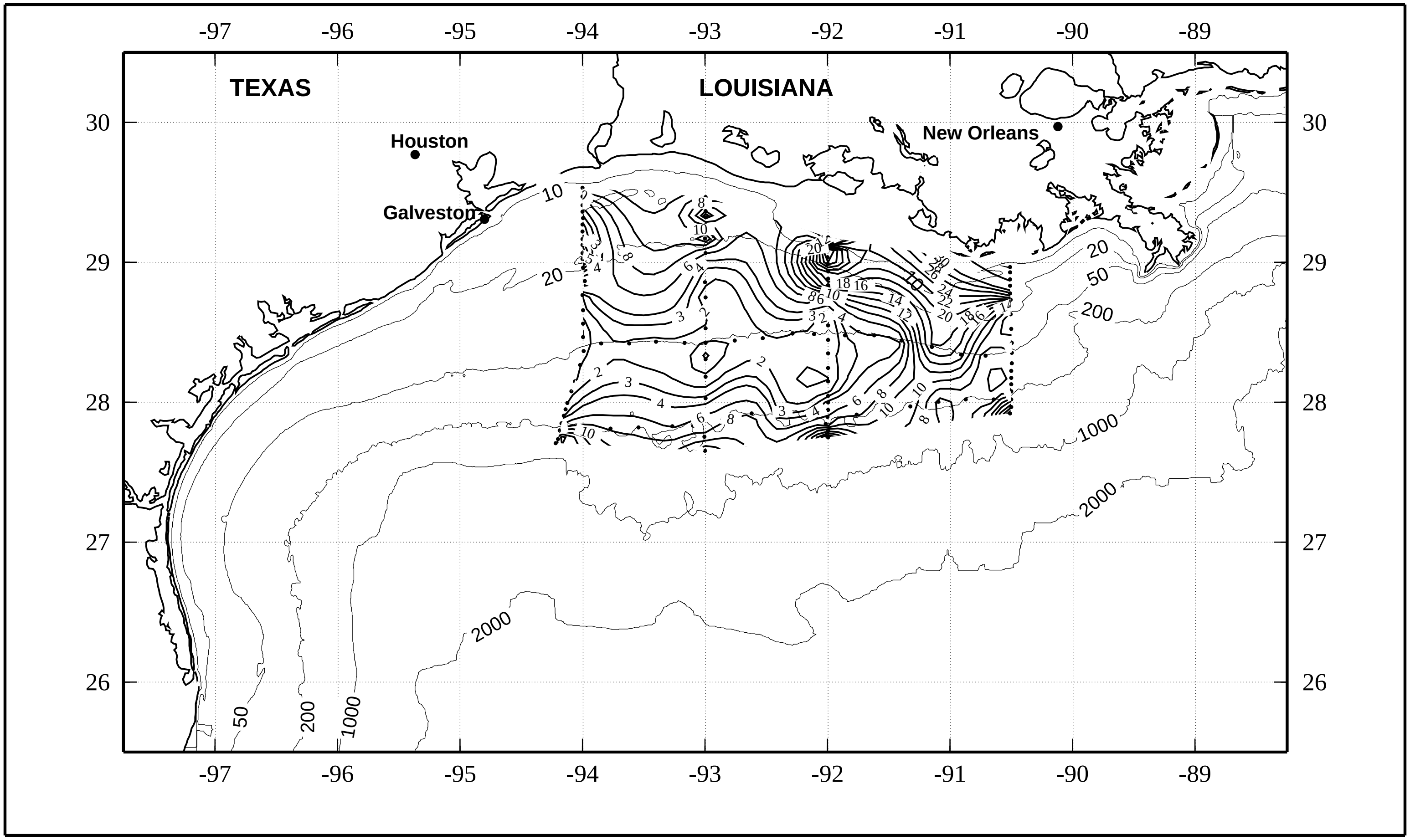


Figure 1.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

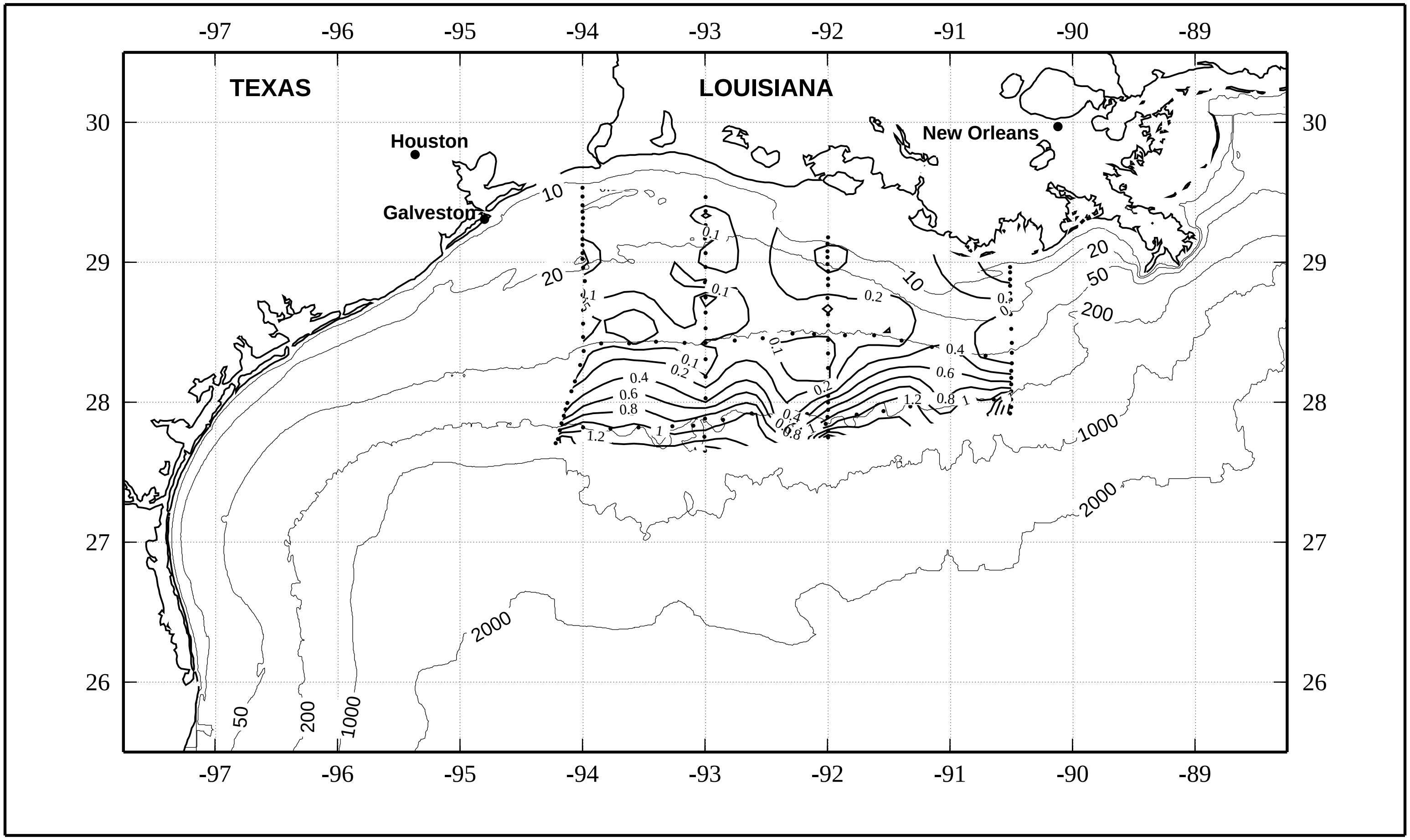


Figure 1.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

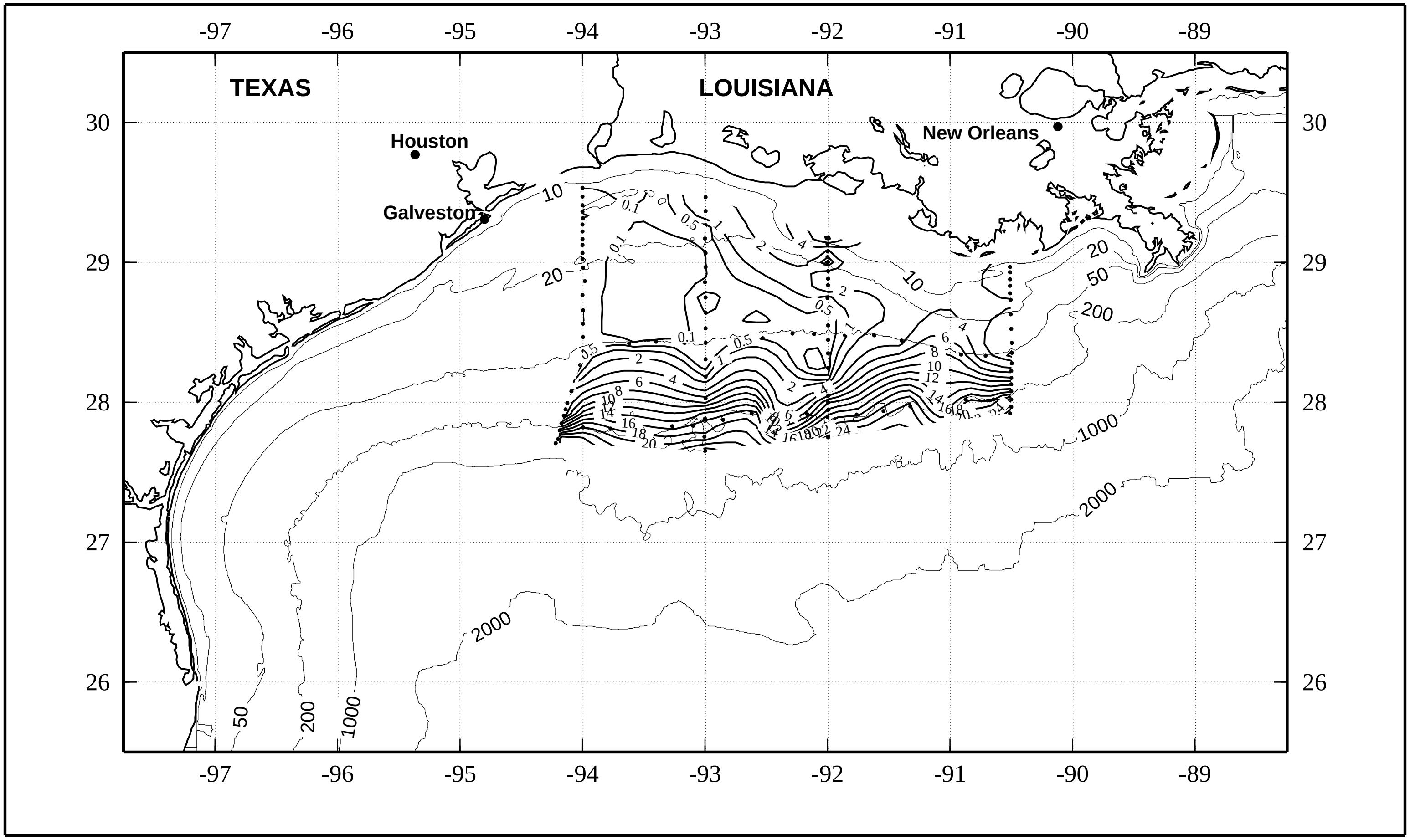


Figure 1.13.12. Nitrate ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

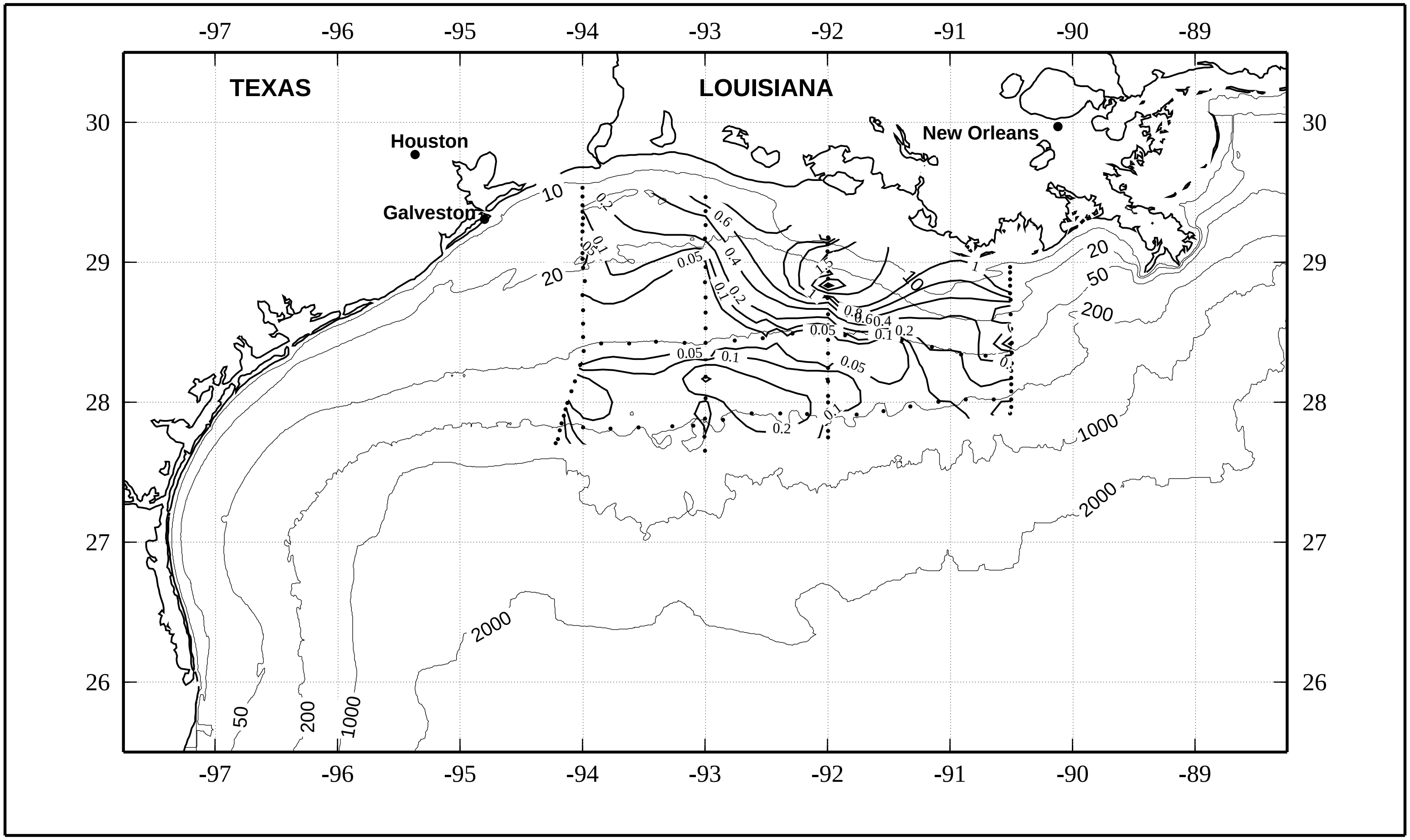


Figure 1.13.13. Nitrite (μmol·l^{-1}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

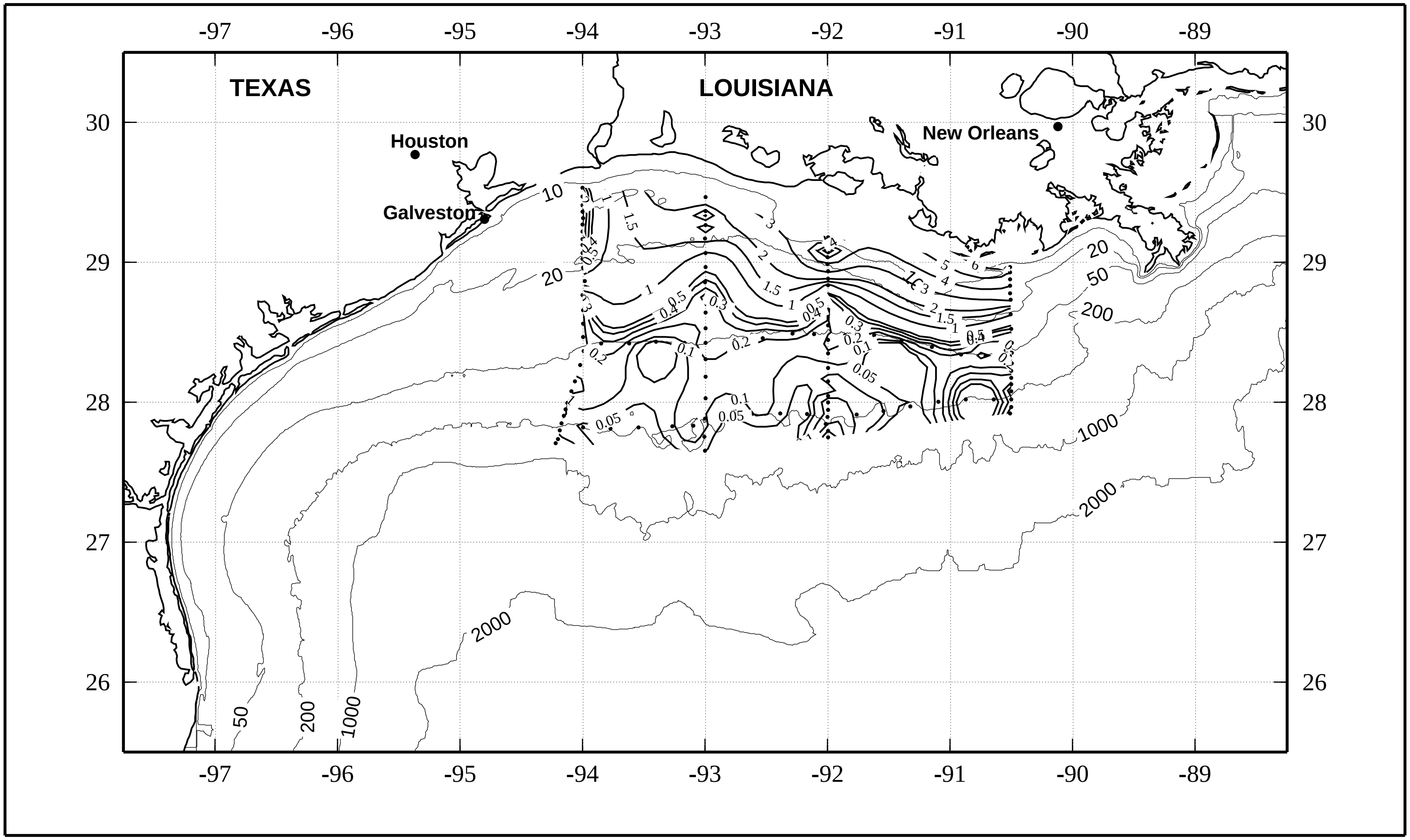


Figure 1.13.14. Ammonium (μmol·l^{-1}) near bottom on LATEX A survey H01, 30 April - 9 May 1992.

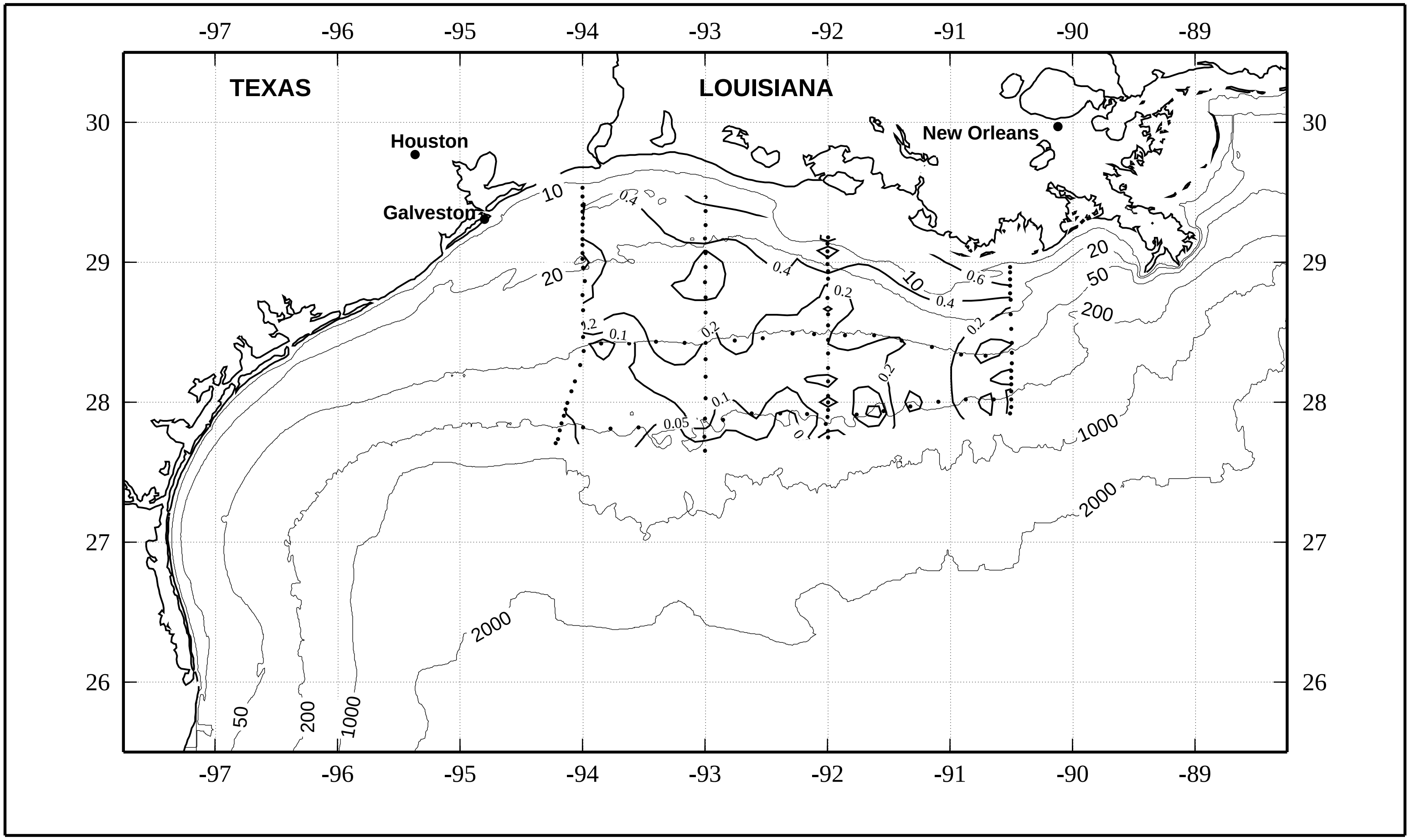


Figure 1.13.15. Urea (μmol·l^{-1}) on LATEX A survey H01, 30 April - 9 May 1992.

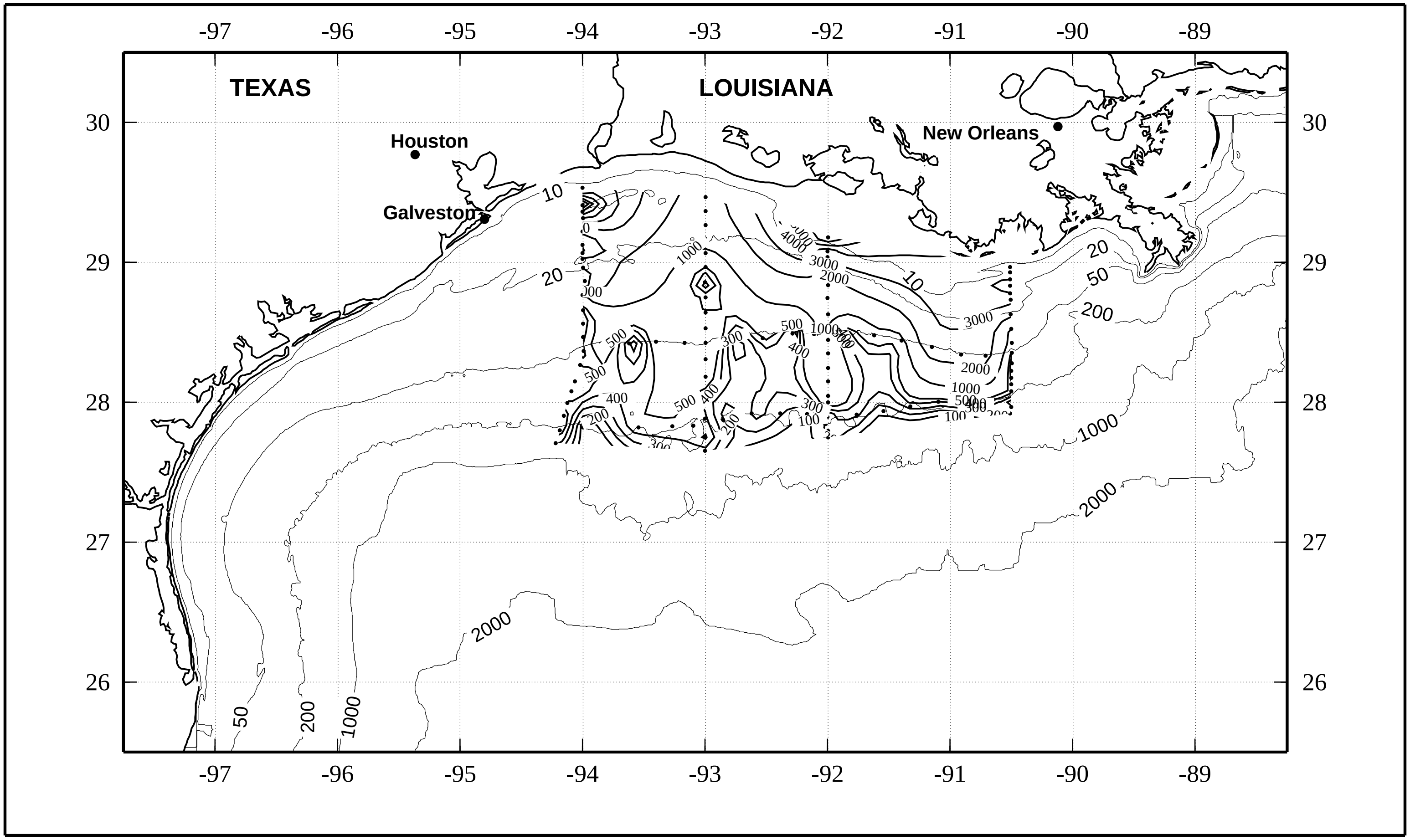


Figure 1.13.16. Chlorophyll a ($ng \cdot l^{-1}$) at the chlorophyll maximum on LATEX A survey H01, April - 11 May 1993.

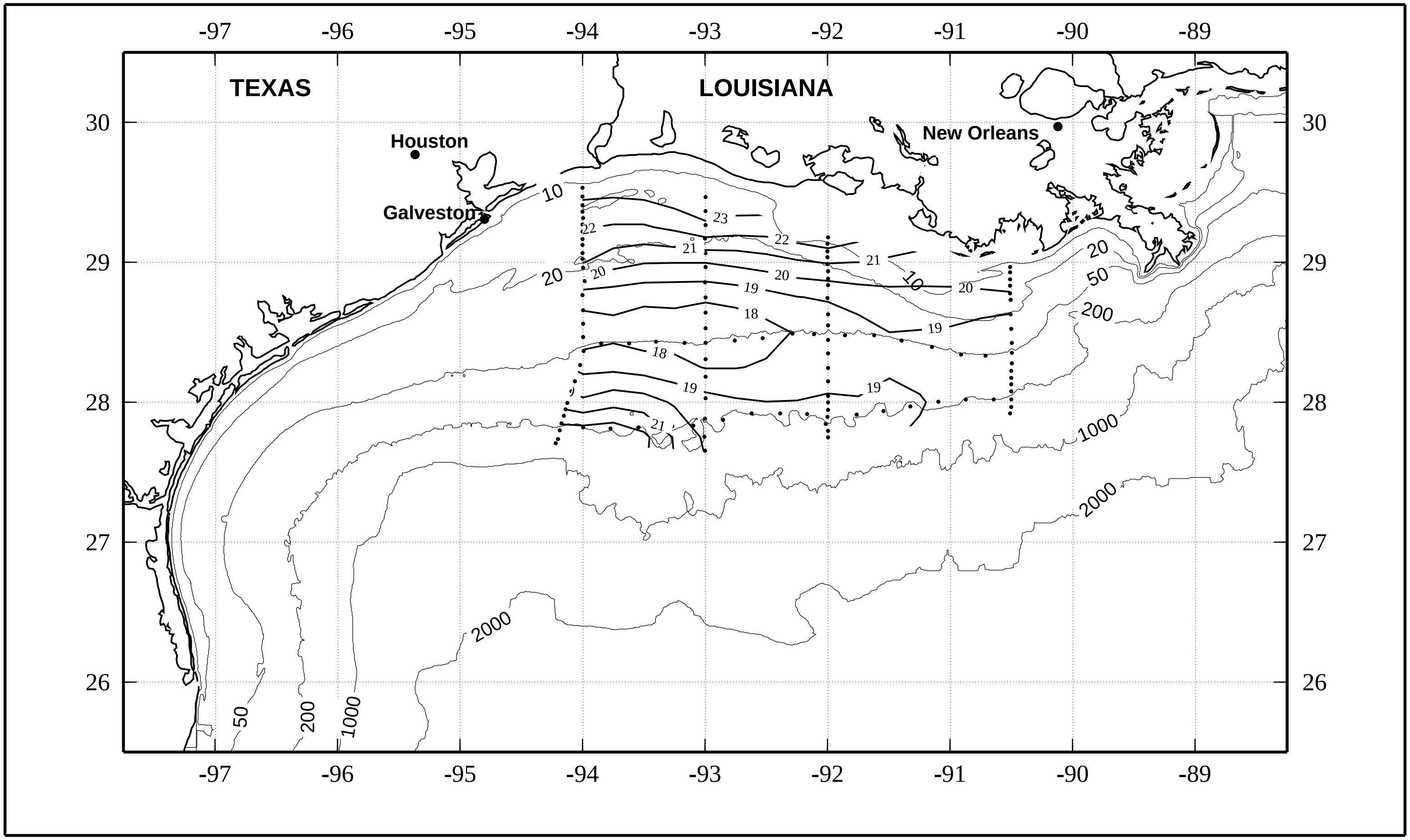


Figure 1.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H01, 30 April - 9 May 1992.

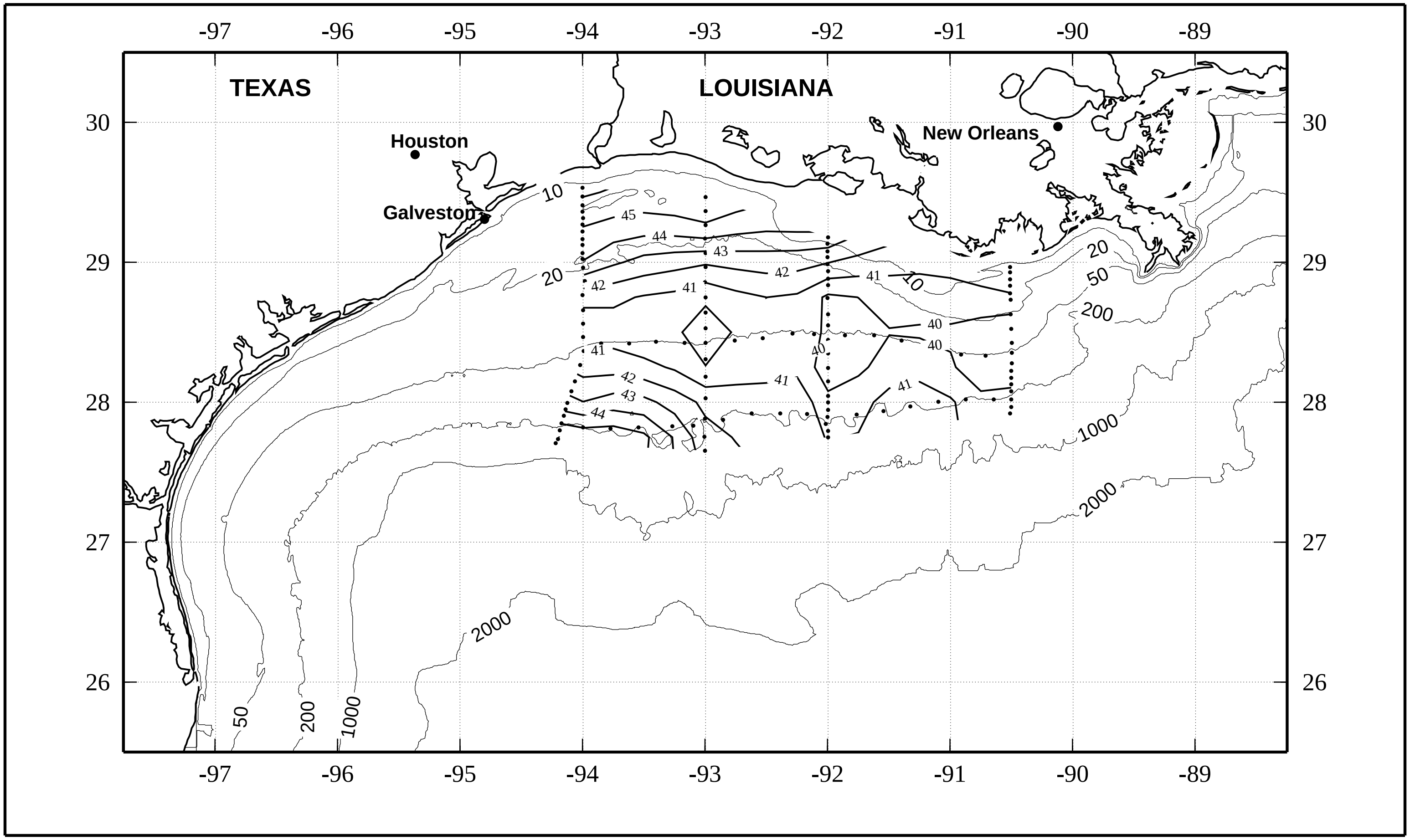


Figure 1.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H01, 30 April - 9 May 1992.

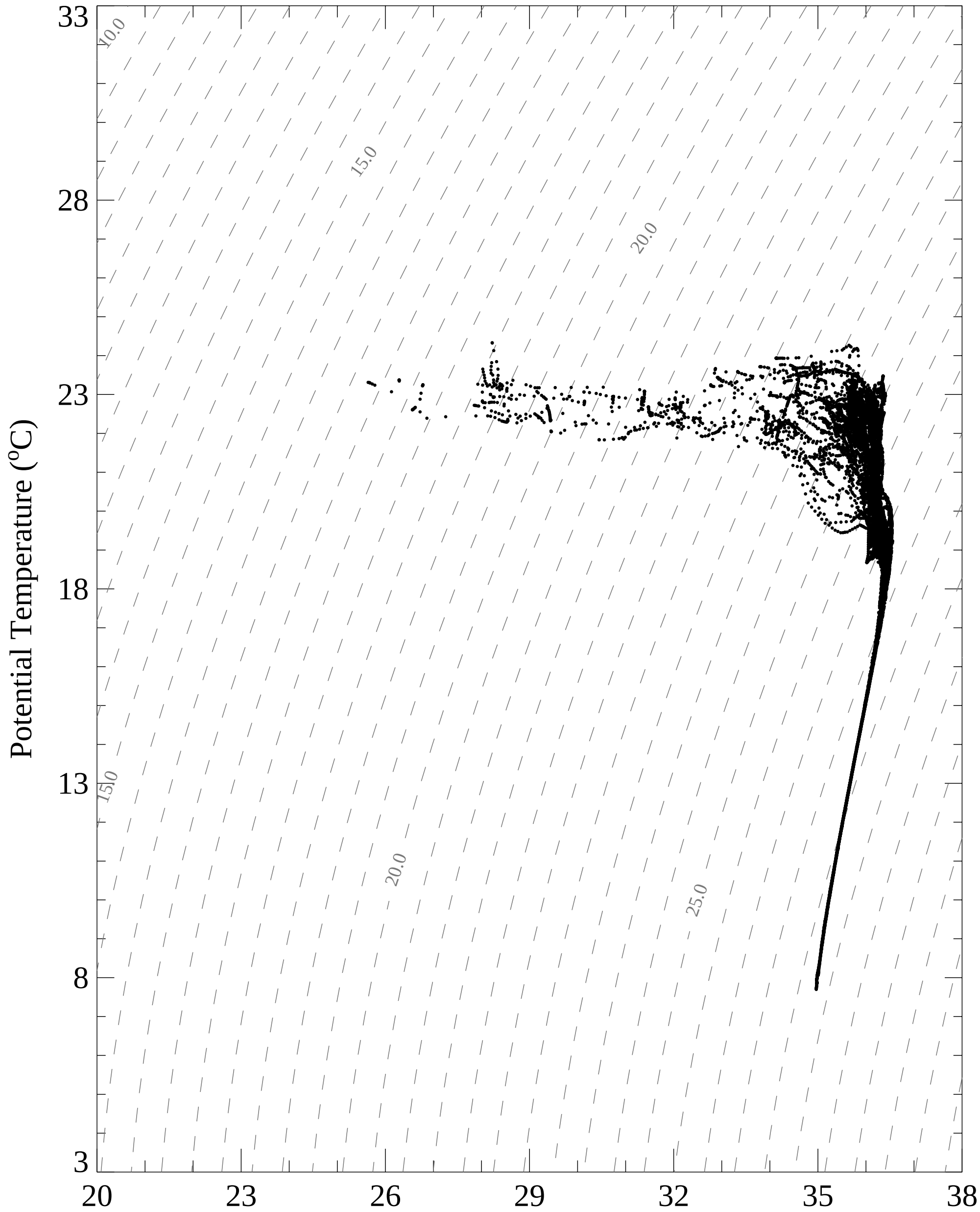


Figure 1.16. Composite potential temperature-salinity diagram for stations from cruise H01, 30 April - 9 May 1992.

LATEX A Hydrographic Survey Data Report

APPENDIX B: Cruise H02
July/August 1992

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Hydrographic Survey H02

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H02, which was conducted 31 July - 9 August 1992 aboard the *R/V Gyre*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 2.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 2.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 2.12.6 or 2.13.6.

Table 2.1. Definitions for "x.y.z" figure numbering scheme for cruise H02.

---

cruise number (x):

2 = hydrographic survey H02

plot type (y):

0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = none for H02
6 = none for H02
7 = none for H02
8 = none for H02
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = none for H02
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 2.1. Definitions for "x.y.z" figure numbering scheme for cruise H02. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

The concentrations of 20 pigments were determined using high performance liquid chromatography (HPLC). Chlorophyll *a* is shown in the plots. Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 2.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H02. Figure 2.0 shows the location map for the stations.

Following Figure 2.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

Bontempi, P. S. 1995. Phytoplankton distributions and species composition across the Texas-Louisiana continental shelf during two flow regimes of the Mississippi River. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 137 pp.

Neuhard, C. A. 1994. Phytoplankton distributions across the Texas-Louisiana shelf in relation to coastal physical processes. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 204 pp.

Smith, W. H. F., and P. Wessel. 1990. Gridding with continuous curvature splines in tension. *Geophysics*, 55:293-305.

Wessel, P., and W. H. F. Smith. 1991. Free software helps map and display data. *EOS Trans. Amer. Geophys. U.* 72: 441, 445-446.

Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 2.2. Station time and position data from LATEX A cruise H02.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	01-AUG-1992	1731	27°42.23'	94°13.42'	280.5	12
2	01-AUG-1992	1912	27°44.31'	94°12.00'	414.0	12
3	01-AUG-1992	2017	27°48.03'	94°11.40'	270.7	12
4	01-AUG-1992	2136	27°51.03'	94°10.29'	120.4	10
5	01-AUG-1992	2232	27°54.18'	94°09.30'	97.0	12
6	01-AUG-1992	2332	27°57.05'	94°08.27'	84.5	8
7	02-AUG-1992	0013	27°59.59'	94°07.50'	81.9	10
8	02-AUG-1992	0112	28°04.65'	94°05.56'	69.6	9
9	02-AUG-1992	0210	28°08.94'	94°03.83'	64.7	8
10	02-AUG-1992	0319	28°15.95'	94°01.36'	58.3	7
11	02-AUG-1992	0420	28°21.94'	93°59.61'	51.7	6
12	02-AUG-1992	0517	28°27.93'	93°59.96'	43.0	6
13	02-AUG-1992	0624	28°33.82'	93°59.85'	35.9	5
14	02-AUG-1992	0721	28°39.63'	93°59.92'	30.3	11
15	02-AUG-1992	0824	28°45.95'	94°00.00'	24.9	4
16	02-AUG-1992	0918	28°51.89'	93°59.98'	24.9	7
17	02-AUG-1992	1017	28°57.92'	94°00.15'	17.2	5
18	02-AUG-1992	1105	29°01.28'	94°00.09'	19.5	5
19	02-AUG-1992	1142	29°03.79'	94°00.14'	18.8	10
20	02-AUG-1992	1254	29°07.36'	94°00.07'	17.8	5
21	02-AUG-1992	1337	29°10.00'	94°00.06'	16.8	5
22	02-AUG-1992	1419	29°13.05'	94°00.20'	14.8	5
23	02-AUG-1992	1458	29°16.19'	94°00.14'	13.5	7
24	02-AUG-1992	1626	29°19.00'	93°59.98'	12.7	5
25	02-AUG-1992	1658	29°21.63'	94°00.06'	10.6	5
26	02-AUG-1992	1739	29°24.59'	93°59.95'	10.4	5
27	02-AUG-1992	1818	29°28.14'	94°00.14'	11.8	6
28	02-AUG-1992	1904	29°32.07'	94°00.15'	10.1	6
29	03-AUG-1992	0958	29°10.91'	91°59.97'	6.8	5
30	03-AUG-1992	1048	29°07.99'	92°00.04'	10.3	10
31	03-AUG-1992	1140	29°04.76'	92°00.12'	13.8	4
32	03-AUG-1992	1224	29°02.29'	92°00.03'	16.2	6
33	03-AUG-1992	1306	28°59.28'	91°59.98'	19.1	5
34	03-AUG-1992	1339	28°56.23'	92°00.00'	21.5	6
35	03-AUG-1992	1426	28°52.96'	92°00.00'	24.0	5
36	03-AUG-1992	1502	28°50.32'	92°00.00'	25.8	12
37	03-AUG-1992	1649	28°44.68'	92°00.10'	31.9	8
38	03-AUG-1992	1752	28°37.71'	91°59.88'	39.8	10
39	03-AUG-1992	1847	28°32.91'	91°59.87'	45.2	8
40	03-AUG-1992	1946	28°26.76'	91°59.80'	55.3	9
41	03-AUG-1992	2053	28°21.14'	91°59.87'	60.7	9
42	03-AUG-1992	2152	28°14.70'	91°59.90'	69.3	12
43	03-AUG-1992	2249	28°08.89'	91°59.94'	83.6	12
44	03-AUG-1992	2349	28°02.64'	91°59.94'	106.7	12

Table 2.2. Station time and position data from LATEX A cruise H02. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.

45	04-AUG-1992	0038	27°59.90'	92°00.01'	121.8	12
46	04-AUG-1992	0118	27°56.80'	92°00.08'	100.3	12
47	04-AUG-1992	0217	27°53.59'	92°00.10'	170.6	12
48	04-AUG-1992	0301	27°50.69'	92°00.01'	201.6	12
49	04-AUG-1992	0408	27°47.58'	92°00.09'	386.7	12
50	04-AUG-1992	0504	27°44.97'	91°59.94'	497.0	12
51	04-AUG-1992	0741	27°54.78'	91°45.87'	172.1	12
52	04-AUG-1992	0924	27°56.72'	91°32.65'	226.9	12
53	04-AUG-1992	1101	27°58.25'	91°19.57'	262.5	12
54	04-AUG-1992	1246	28°00.42'	91°05.83'	135.5	12
55	04-AUG-1992	1432	28°01.35'	90°52.42'	187.9	12
56	04-AUG-1992	1638	28°02.71'	90°38.56'	167.4	12
57	04-AUG-1992	1806	27°55.45'	90°30.35'	500.5	12
58	04-AUG-1992	1906	27°58.01'	90°30.06'	438.4	12
59	04-AUG-1992	2012	28°01.28'	90°30.07'	257.4	12
60	04-AUG-1992	2123	28°04.64'	90°30.17'	151.2	12
61	04-AUG-1992	2213	28°07.66'	90°30.19'	119.9	12
62	04-AUG-1992	2307	28°10.43'	90°30.17'	94.3	12
63	04-AUG-1992	2359	28°13.54'	90°29.99'	77.4	10
64	05-AUG-1992	0041	28°16.81'	90°29.94'	61.9	8
65	05-AUG-1992	0128	28°21.60'	90°29.98'	49.3	7
66	05-AUG-1992	0211	28°25.33'	90°29.98'	43.9	7
67	05-AUG-1992	0303	28°31.33'	90°29.98'	35.8	11
68	05-AUG-1992	0400	28°37.92'	90°30.29'	19.9	5
69	05-AUG-1992	0451	28°43.95'	90°30.39'	18.2	6
70	05-AUG-1992	0532	28°46.63'	90°30.78'	17.7	5
71	05-AUG-1992	0604	28°49.96'	90°30.58'	18.0	10
72	05-AUG-1992	0643	28°52.76'	90°30.61'	17.0	5
73	05-AUG-1992	0717	28°55.75'	90°30.85'	13.7	5
74	05-AUG-1992	0747	28°58.12'	90°30.57'	11.8	5
75	05-AUG-1992	1357	28°20.44'	90°42.55'	48.0	6
76	05-AUG-1992	1528	28°20.41'	90°54.58'	60.7	6
77	05-AUG-1992	1729	28°23.73'	91°08.89'	50.3	6
78	05-AUG-1992	1923	28°26.41'	91°23.97'	50.8	8
79	05-AUG-1992	2108	28°28.77'	91°37.23'	50.5	7
80	05-AUG-1992	2308	28°28.81'	91°51.59'	51.7	7
81	06-AUG-1992	0052	28°29.40'	92°06.59'	51.2	7
82	06-AUG-1992	0200	28°29.34'	92°17.37'	52.2	6
83	06-AUG-1992	0330	28°27.63'	92°31.79'	53.2	7
84	06-AUG-1992	0505	28°26.52'	92°45.65'	52.5	10
85	06-AUG-1992	0743	28°25.37'	93°10.13'	49.4	10
86	06-AUG-1992	1007	28°25.96'	93°23.99'	49.5	6
87	06-AUG-1992	1146	28°25.13'	93°37.23'	50.0	7
88	06-AUG-1992	1325	28°25.18'	93°51.01'	49.8	7

Table 2.2. Station time and position data from LATEX A cruise H02. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	06-AUG-1992	1755	27°49.26'	94°00.02'	200.8	12
90	06-AUG-1992	1937	27°48.39'	93°46.23'	187.3	12
91	06-AUG-1992	2108	27°49.07'	93°32.61'	199.2	12

92	06-AUG-1992	2247	27°49.08'	93°19.14'	151.2	12
93	07-AUG-1992	0024	27°50.12'	93°05.26'	176.7	12
94	07-AUG-1992	0201	27°52.49'	92°51.38'	220.8	12
95	07-AUG-1992	0344	27°55.11'	92°37.46'	193.9	12
96	07-AUG-1992	0522	27°55.13'	92°23.48'	85.1	9
97	07-AUG-1992	0658	27°55.17'	92°09.95'	144.8	12
98	07-AUG-1992	1326	27°15.02'	92°59.99'	940.0	12
99	07-AUG-1992	1507	27°20.98'	93°00.01'	750.0	12
100	07-AUG-1992	1637	27°27.00'	93°00.01'	975.0	12
101	07-AUG-1992	1912	27°33.01'	93°00.07'	675.0	12
102	07-AUG-1992	2046	27°39.38'	92°59.94'	312.8	12
103	07-AUG-1992	2201	27°45.32'	93°00.17'	204.4	12
104	07-AUG-1992	2331	27°52.93'	93°00.04'	188.4	12
105	08-AUG-1992	0105	28°01.81'	92°59.89'	101.0	12
106	08-AUG-1992	0230	28°10.80'	92°59.94'	71.8	7
107	08-AUG-1992	0342	28°18.46'	92°59.91'	53.0	6
108	08-AUG-1992	0442	28°25.41'	92°59.96'	49.5	7
109	08-AUG-1992	0532	28°31.84'	92°59.99'	44.8	6
110	08-AUG-1992	0627	28°38.42'	92°59.93'	34.5	6
111	08-AUG-1992	0729	28°44.95'	92°59.93'	29.7	6
112	08-AUG-1992	0822	28°51.43'	93°00.01'	26.0	6
113	08-AUG-1992	0913	28°57.80'	92°59.99'	23.2	6
114	08-AUG-1992	1003	29°03.97'	92°59.96'	23.0	5
115	08-AUG-1992	1117	29°10.01'	92°59.86'	18.9	8
116	08-AUG-1992	1224	29°15.89'	93°00.01'	17.5	5
117	08-AUG-1992	1317	29°22.00'	92°59.96'	15.3	6
118	08-AUG-1992	1414	29°27.95'	92°59.97'	13.0	5
119	08-AUG-1992	1505	29°31.97'	92°59.96'	12.0	0
120	08-AUG-1992	1615	29°31.00'	93°09.01'	11.0	0
121	08-AUG-1992	1719	29°31.98'	93°18.15'	11.0	0
122	08-AUG-1992	1949	29°31.98'	93°26.90'	11.0	0
123	08-AUG-1992	2144	29°32.01'	93°44.98'	10.0	0
124	08-AUG-1992	2324	29°32.03'	94°00.07'	10.7	0

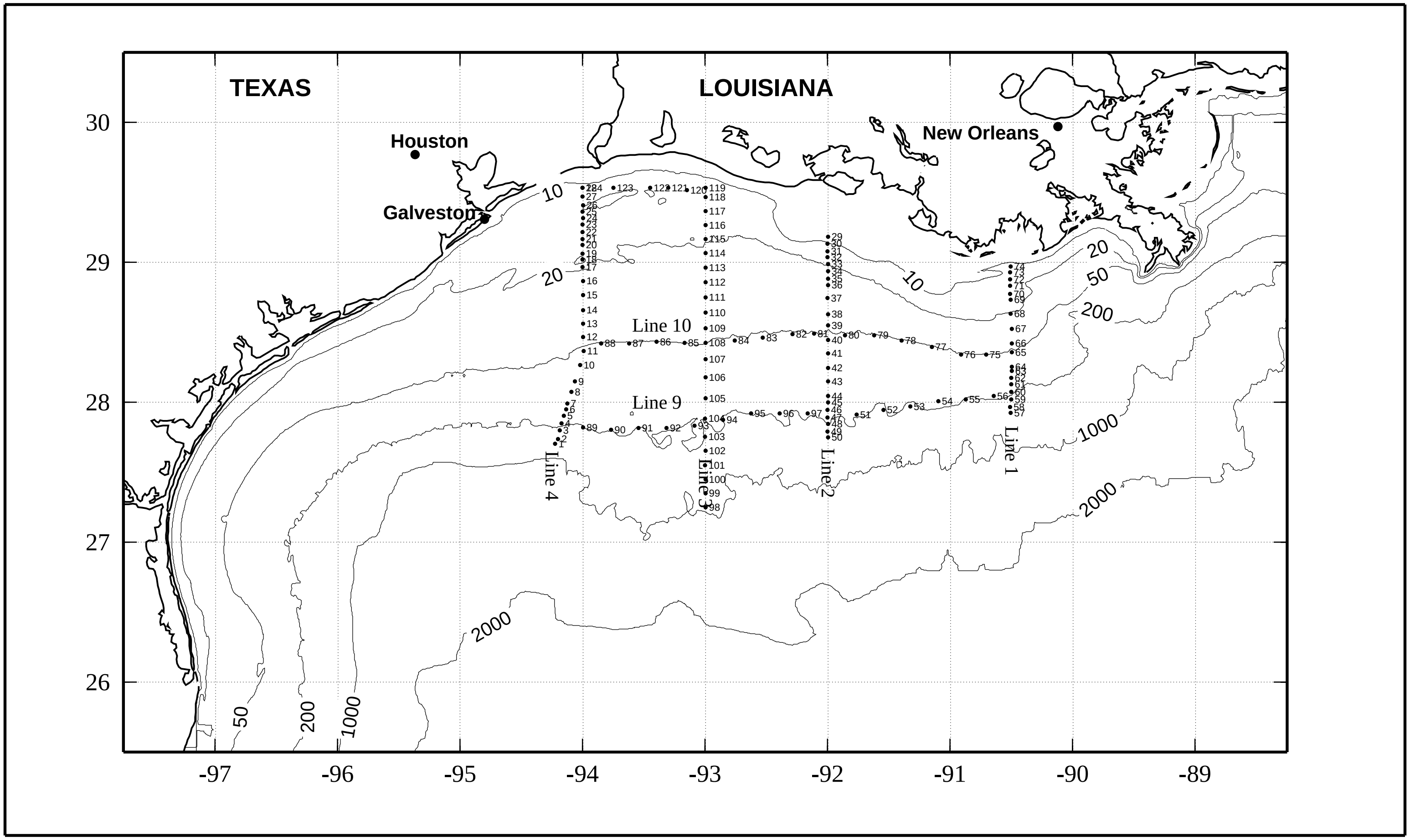

Figure 2.0. Cruise track and station locations for LATEX A Hydrographic Survey H02, 31 July - 9 August 1992.

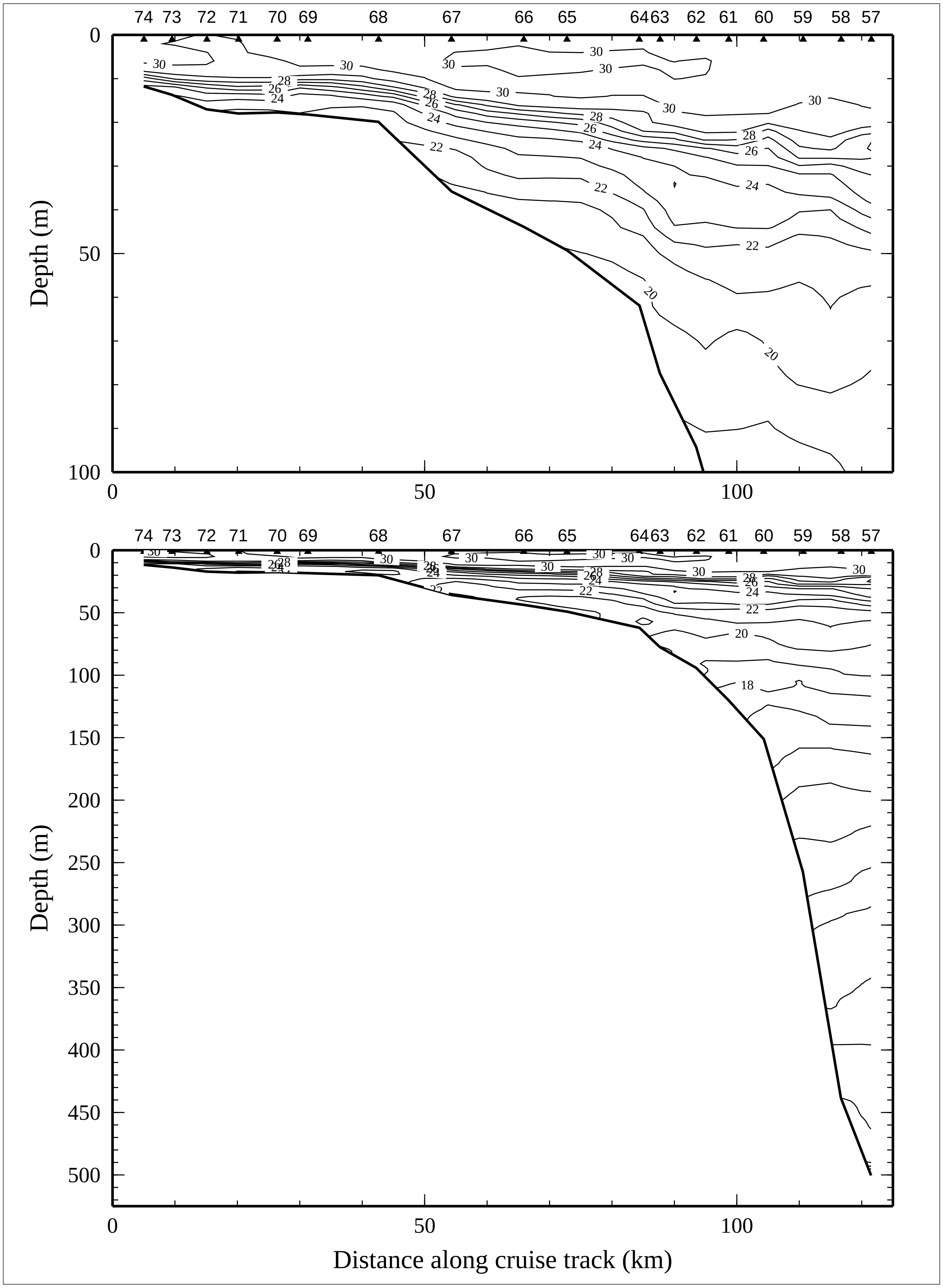

Figure 2.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

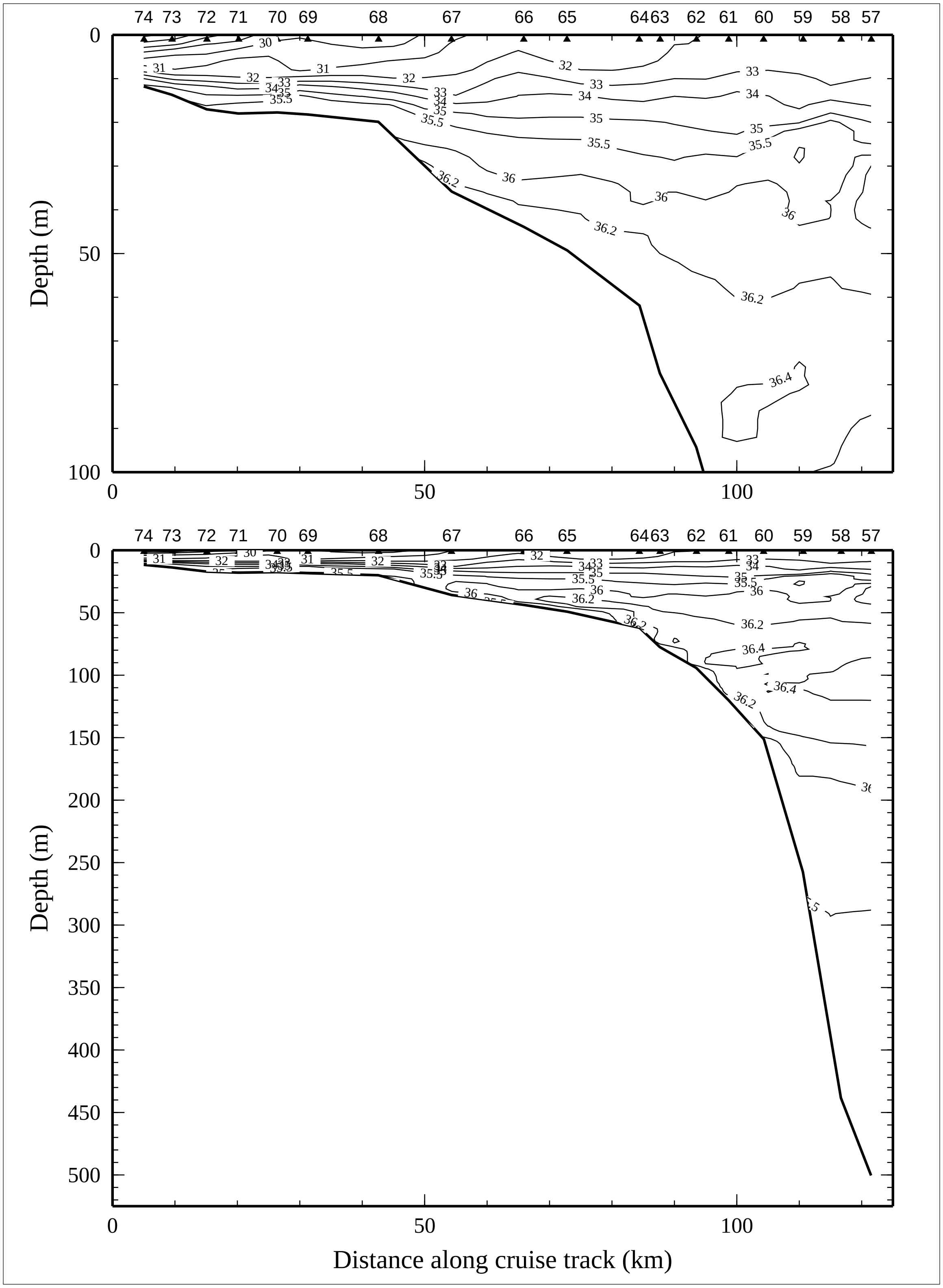

Figure 2.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

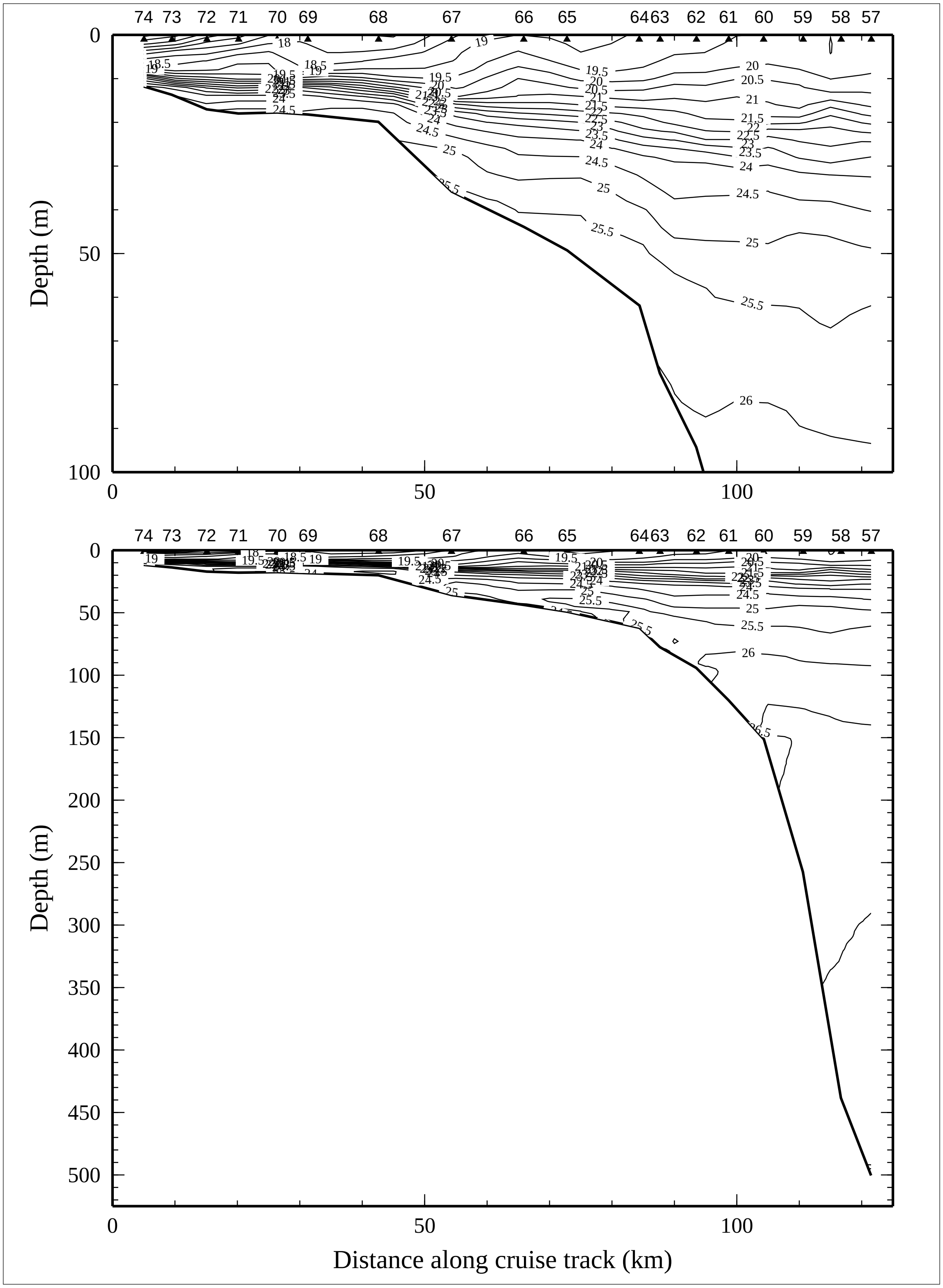

Figure 2.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

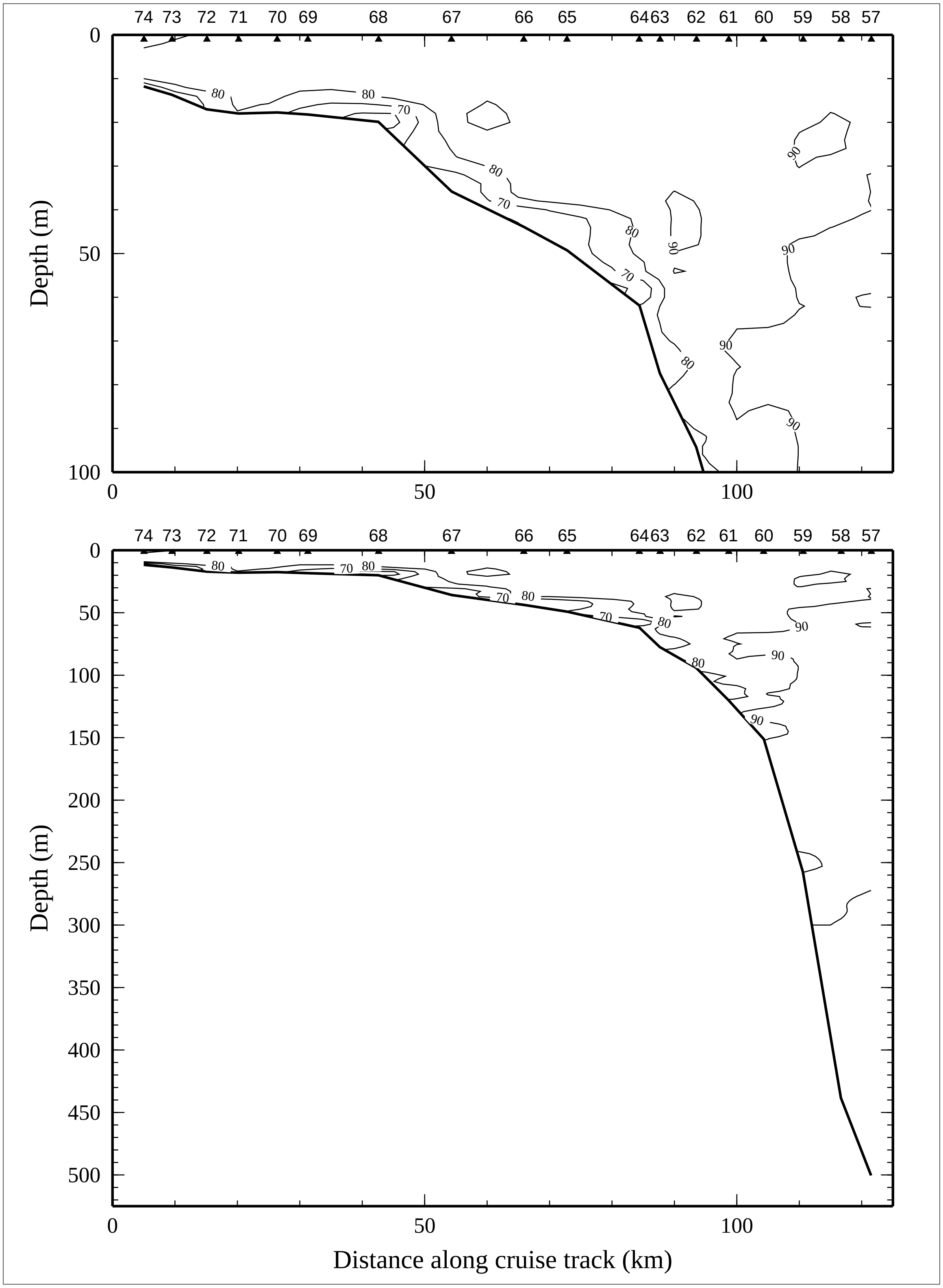

Figure 2.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

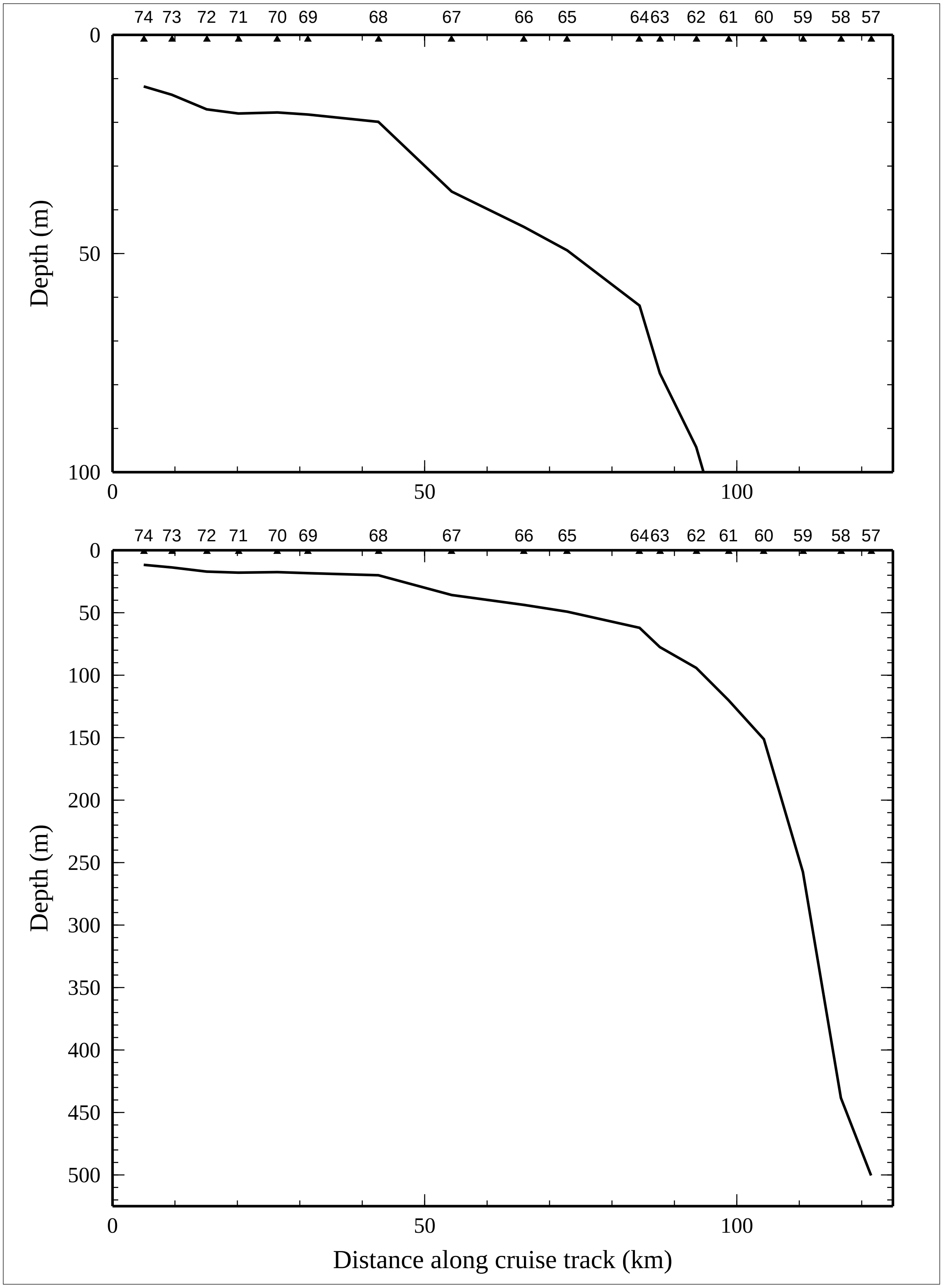

Figure 2.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H02, 31 July - 9 August 1992. Values were less than 0.05.

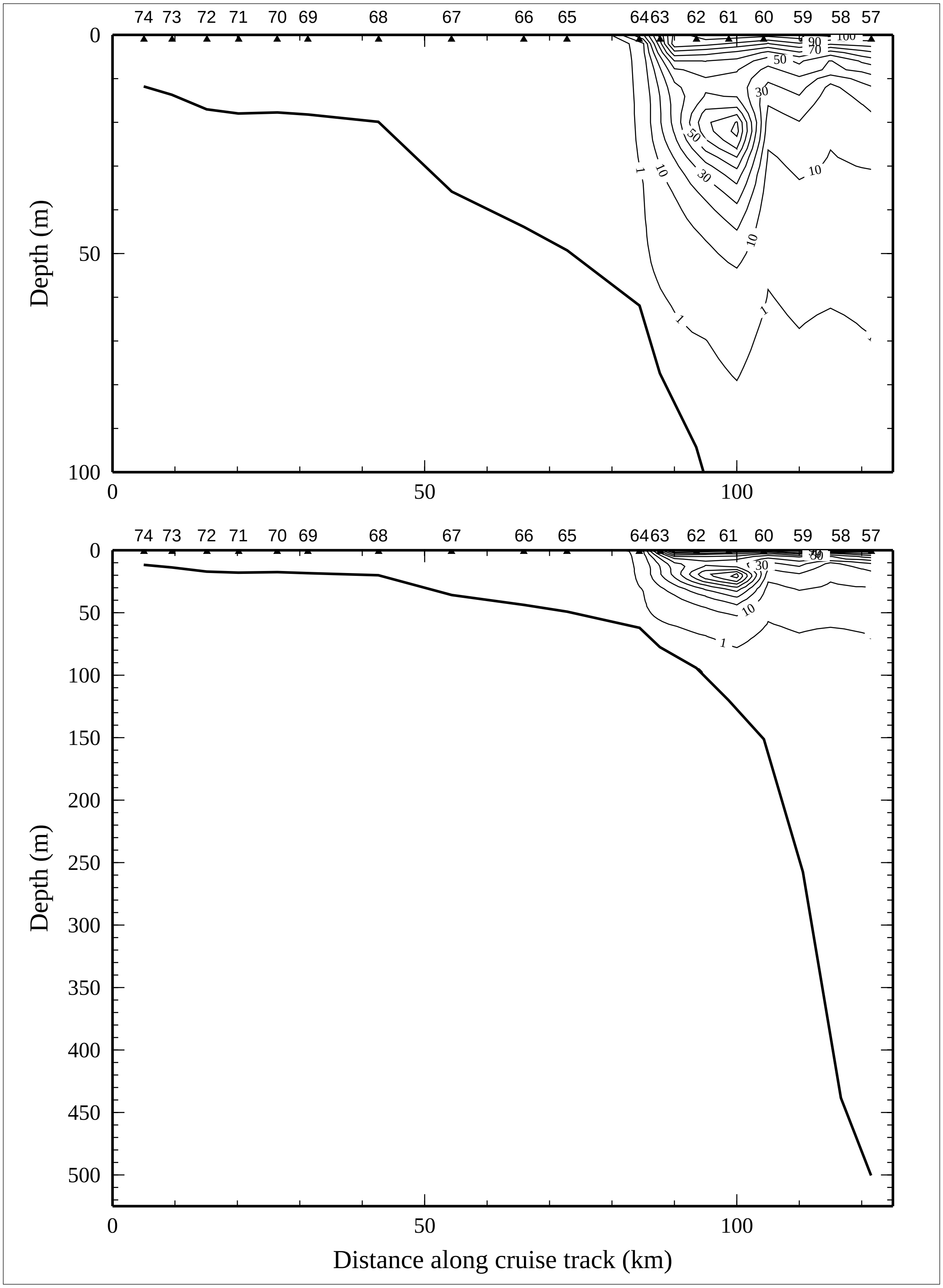

Figure 2.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

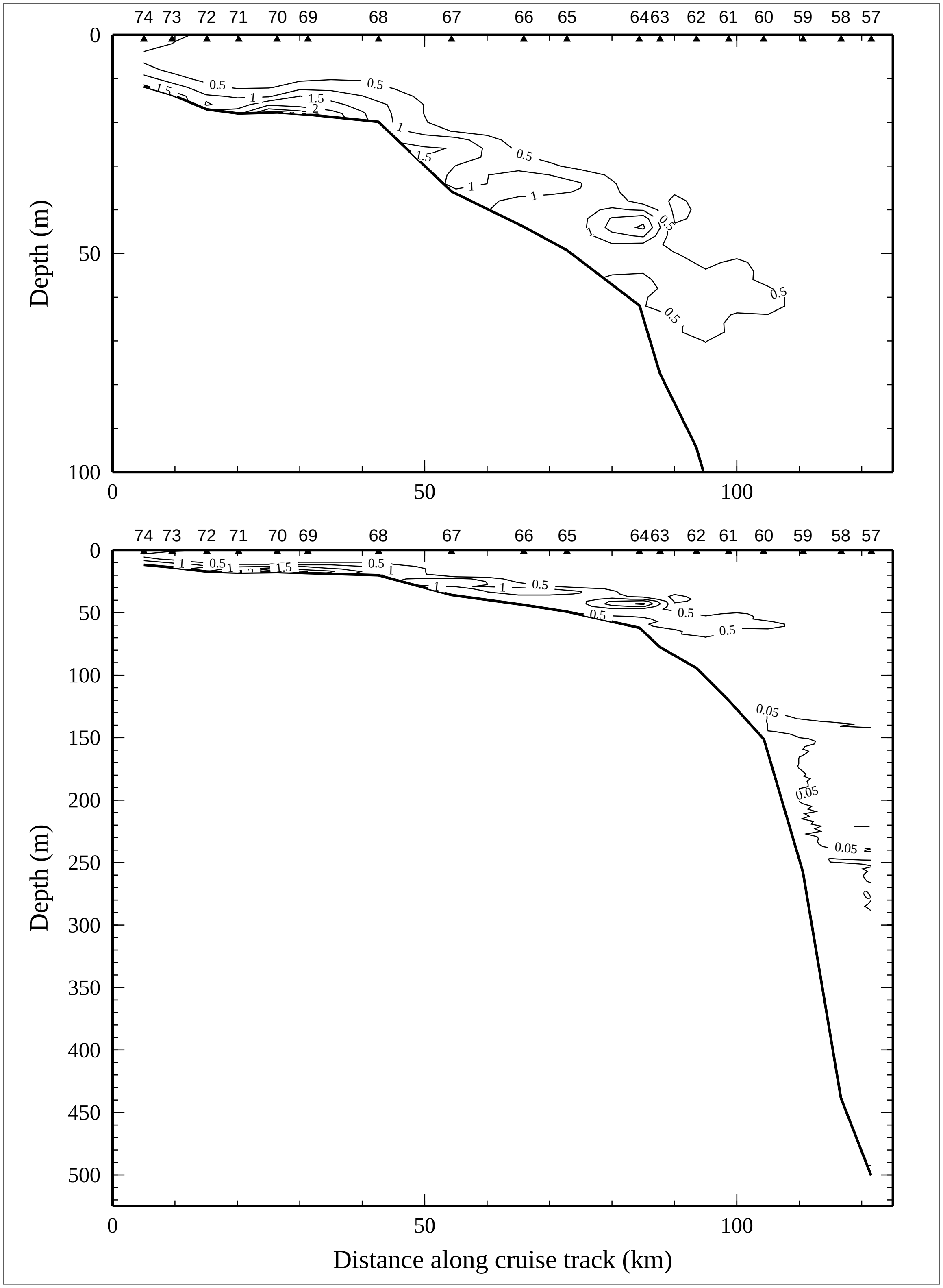

Figure 2.1.7. Relative fluorescence on line 1 of LATEX A survey H02,
31 July - 9 August 1992.

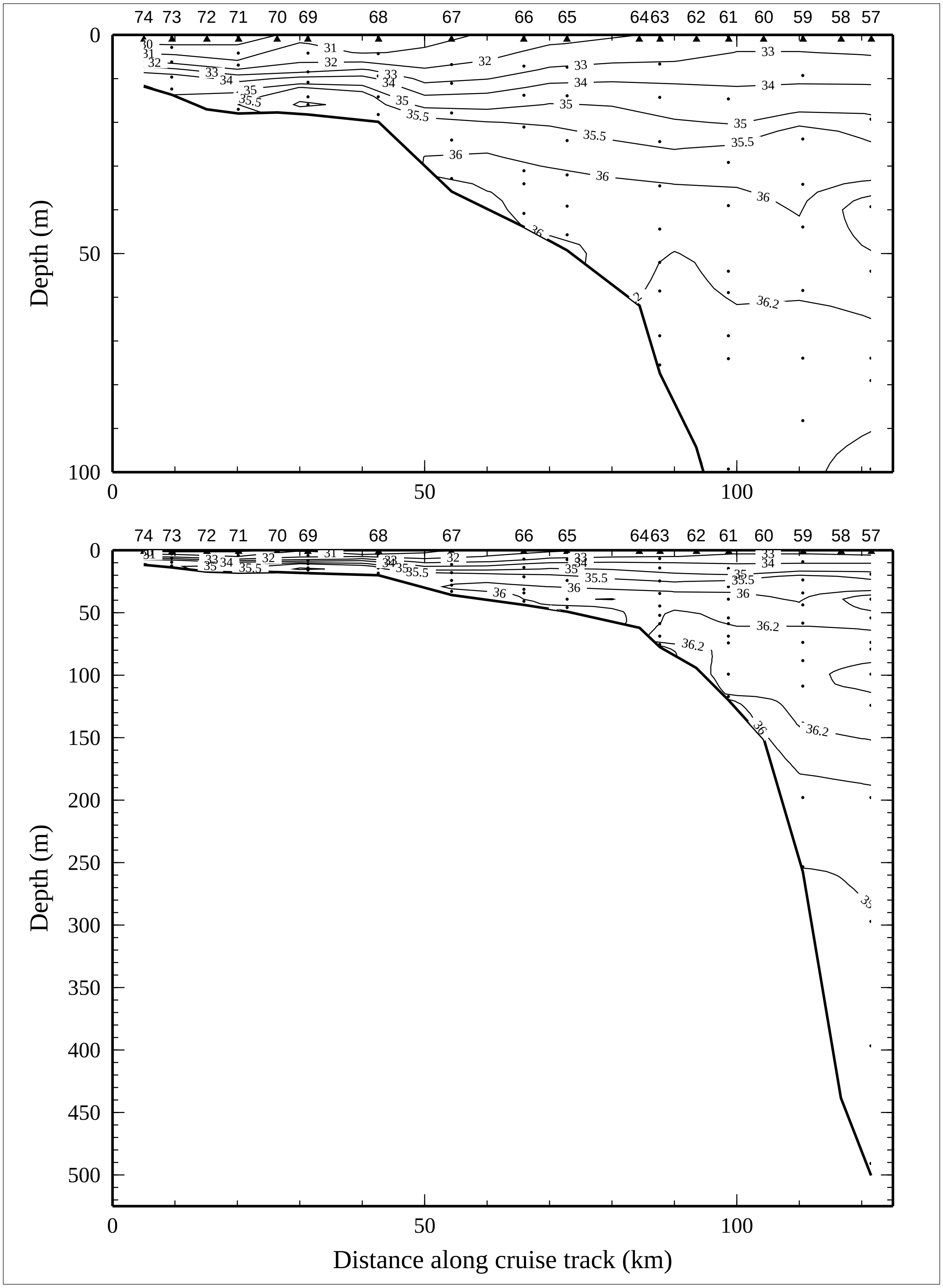

Figure 2.1.8. Bottle salinity on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

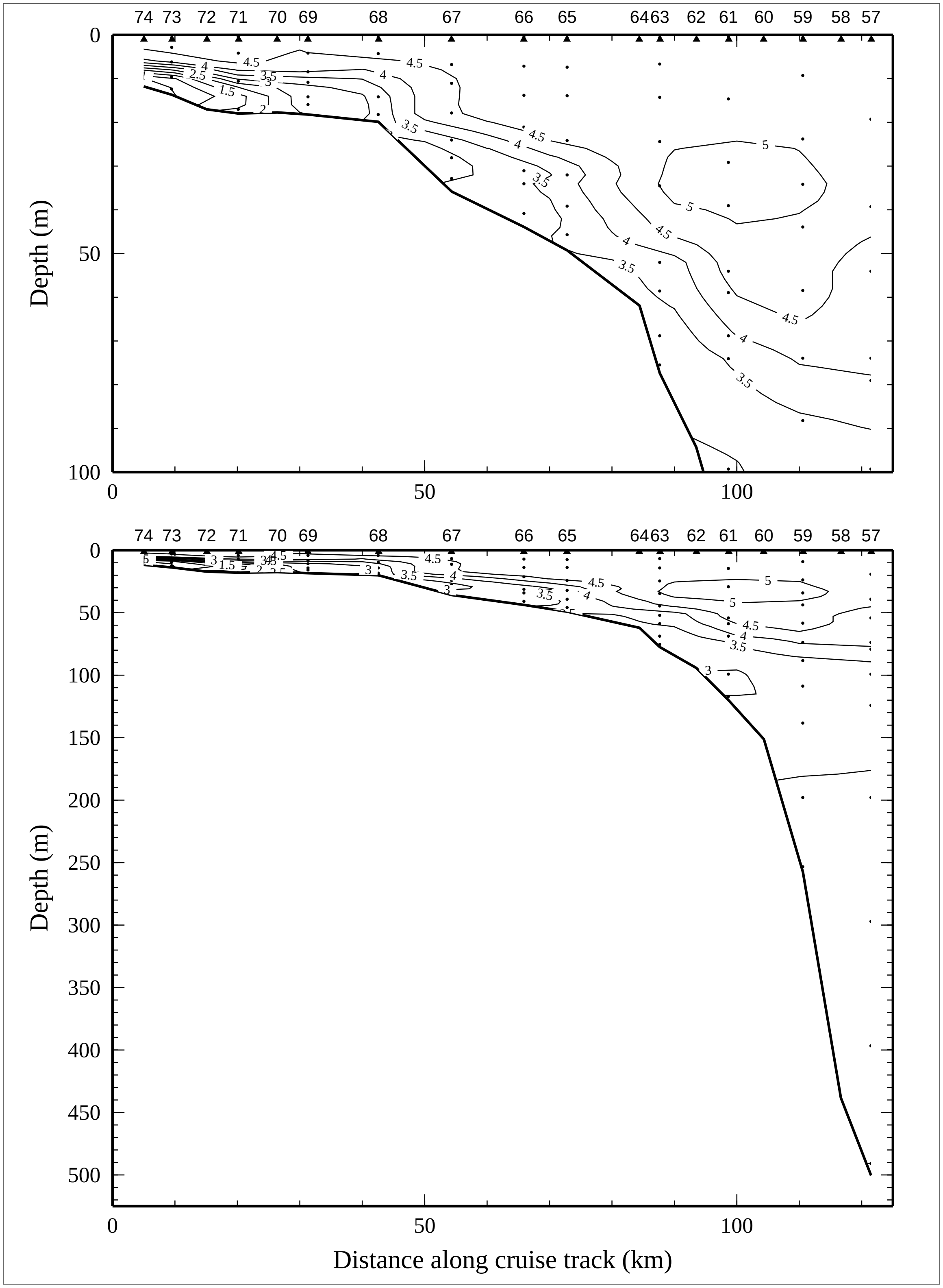

Figure 2.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

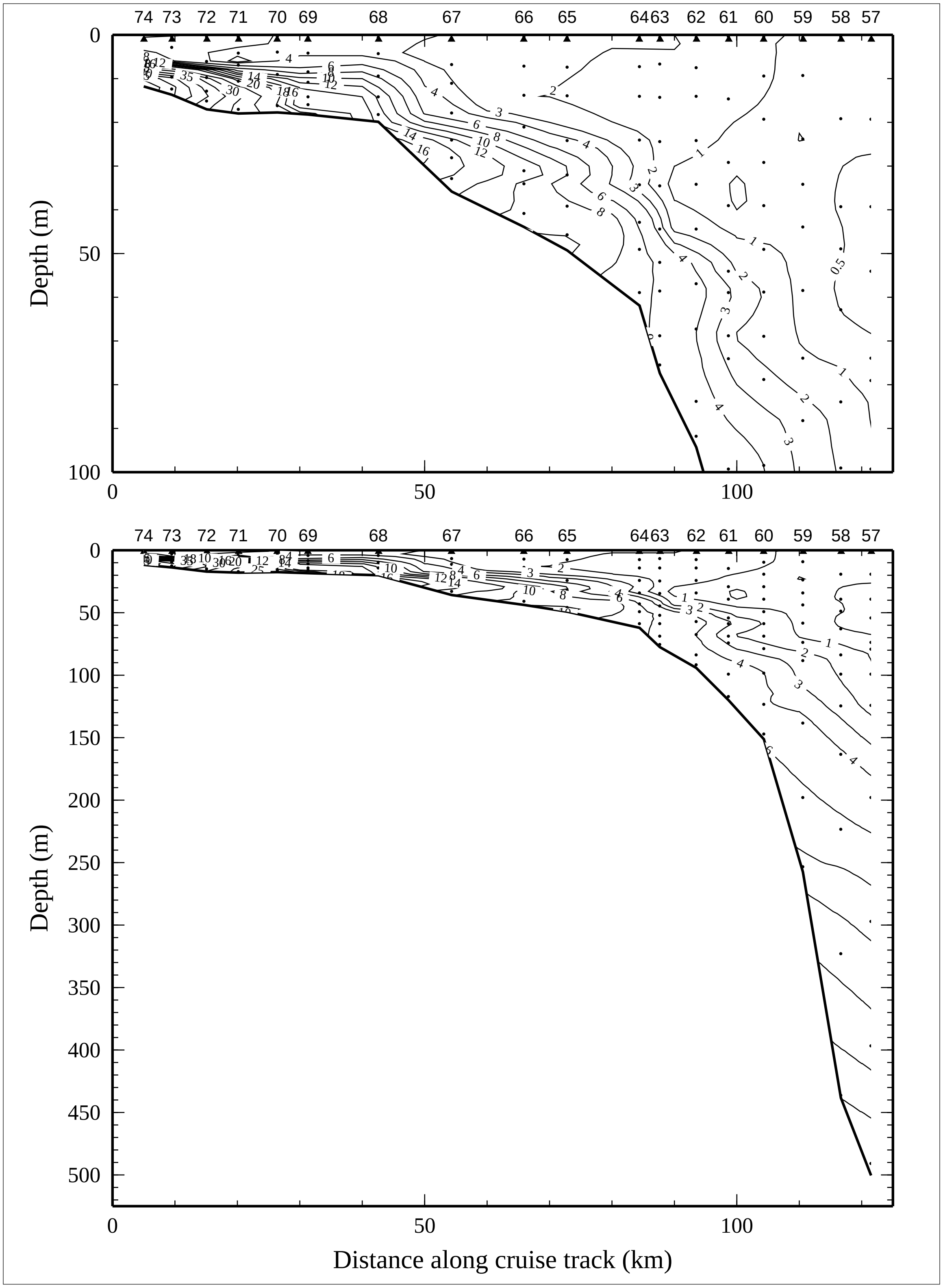

Figure 2.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

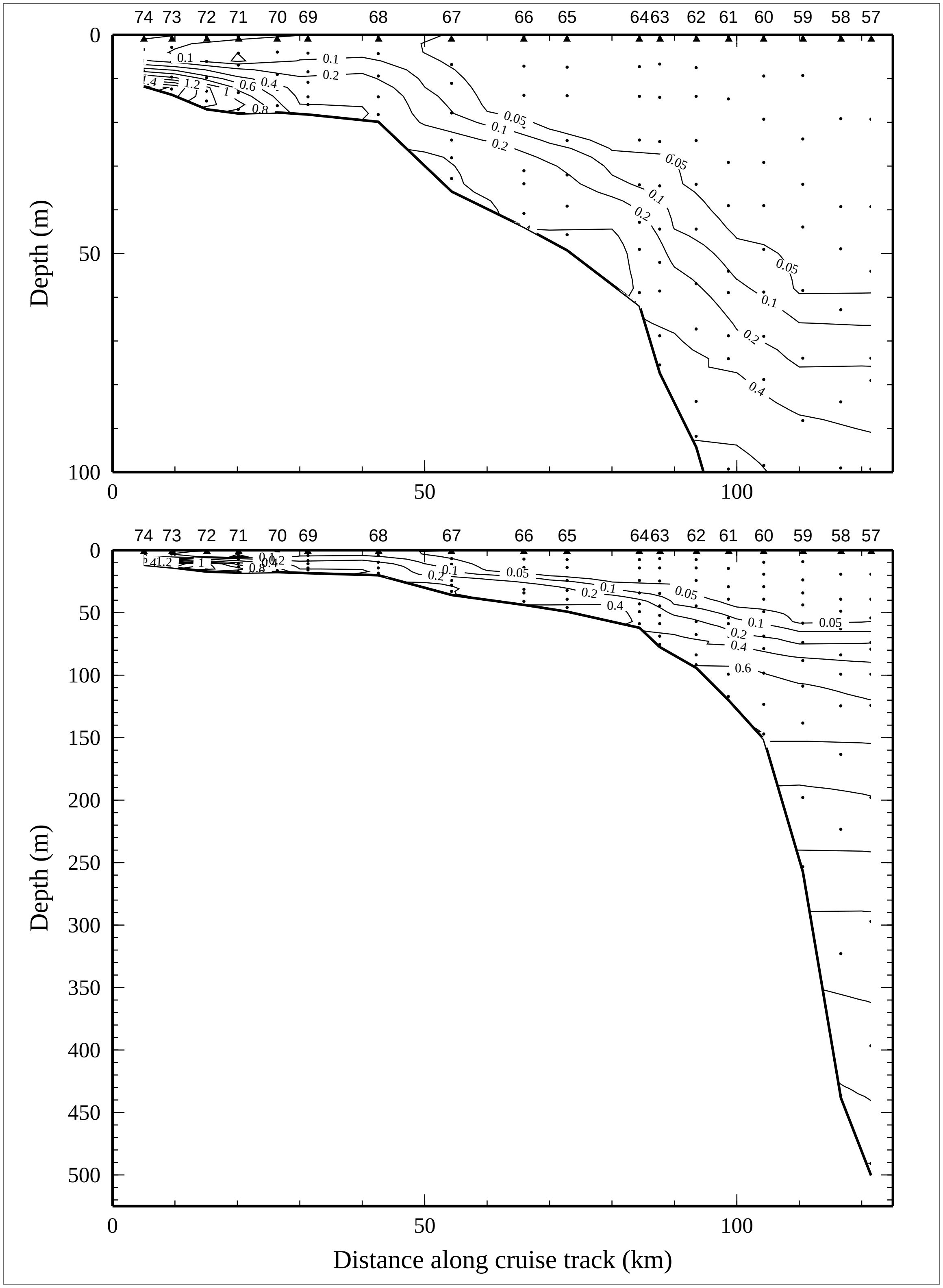

Figure 2.1.11. Phosphate (μmol·l^{-1}) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

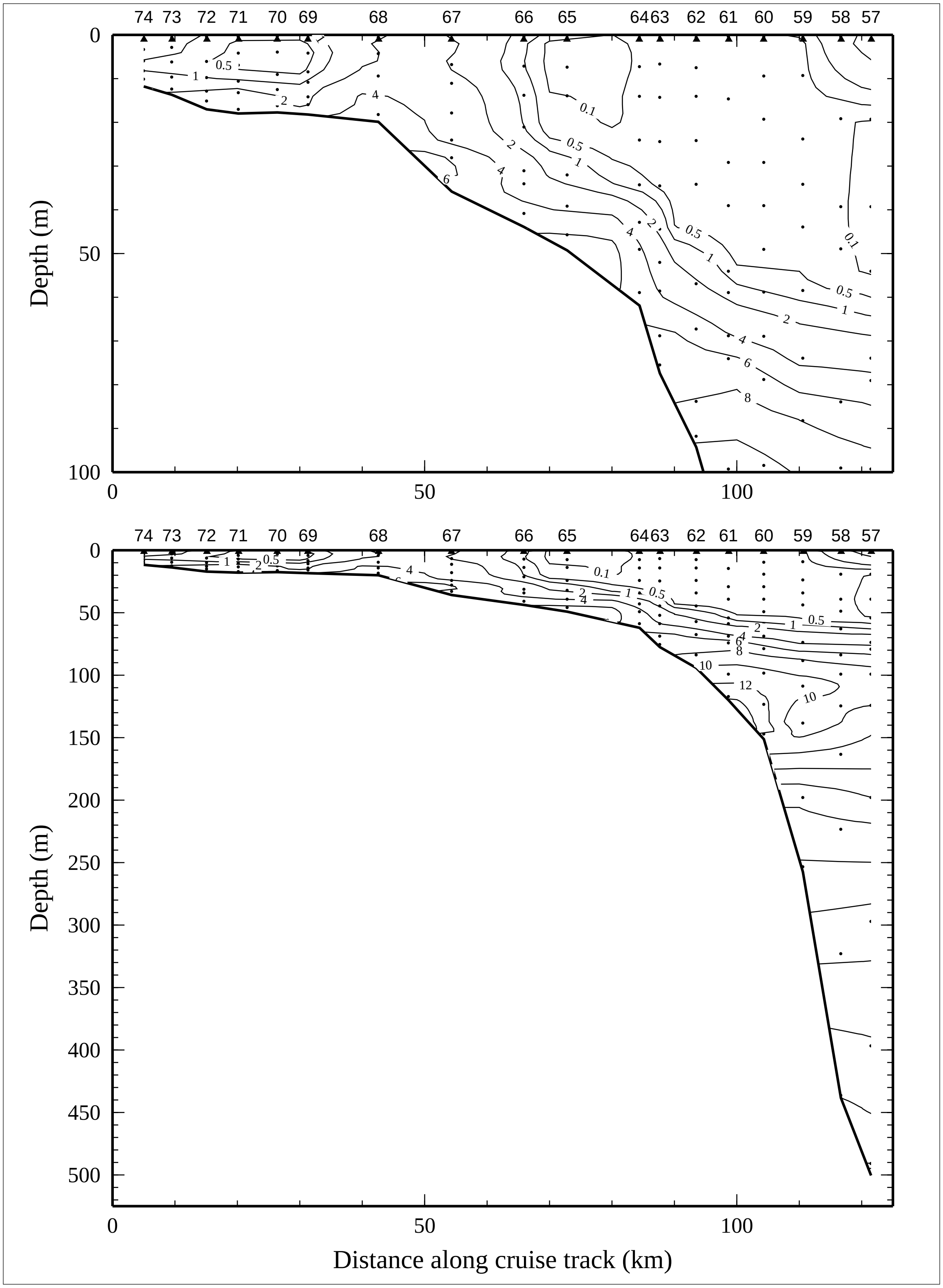

Figure 2.1.12. Nitrate (μmol·l^{-1}) on line 1 of LATEX A survey H02,
31 July - 9 August 1992.

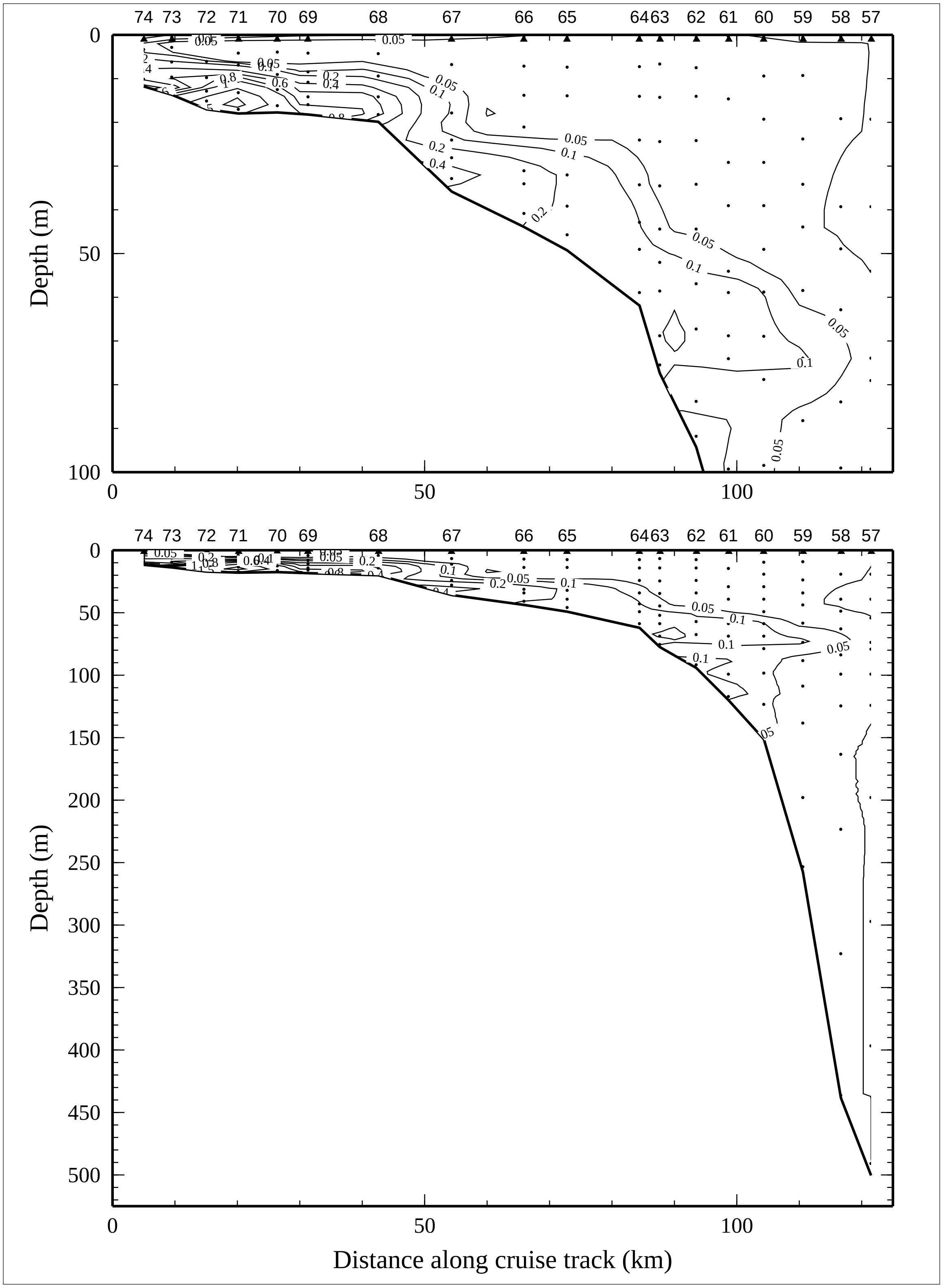

Figure 2.1.13. Nitrite (µmol·l^{-1}) on line 1 of LATEX A survey H02,
31 July - 9 August 1992.

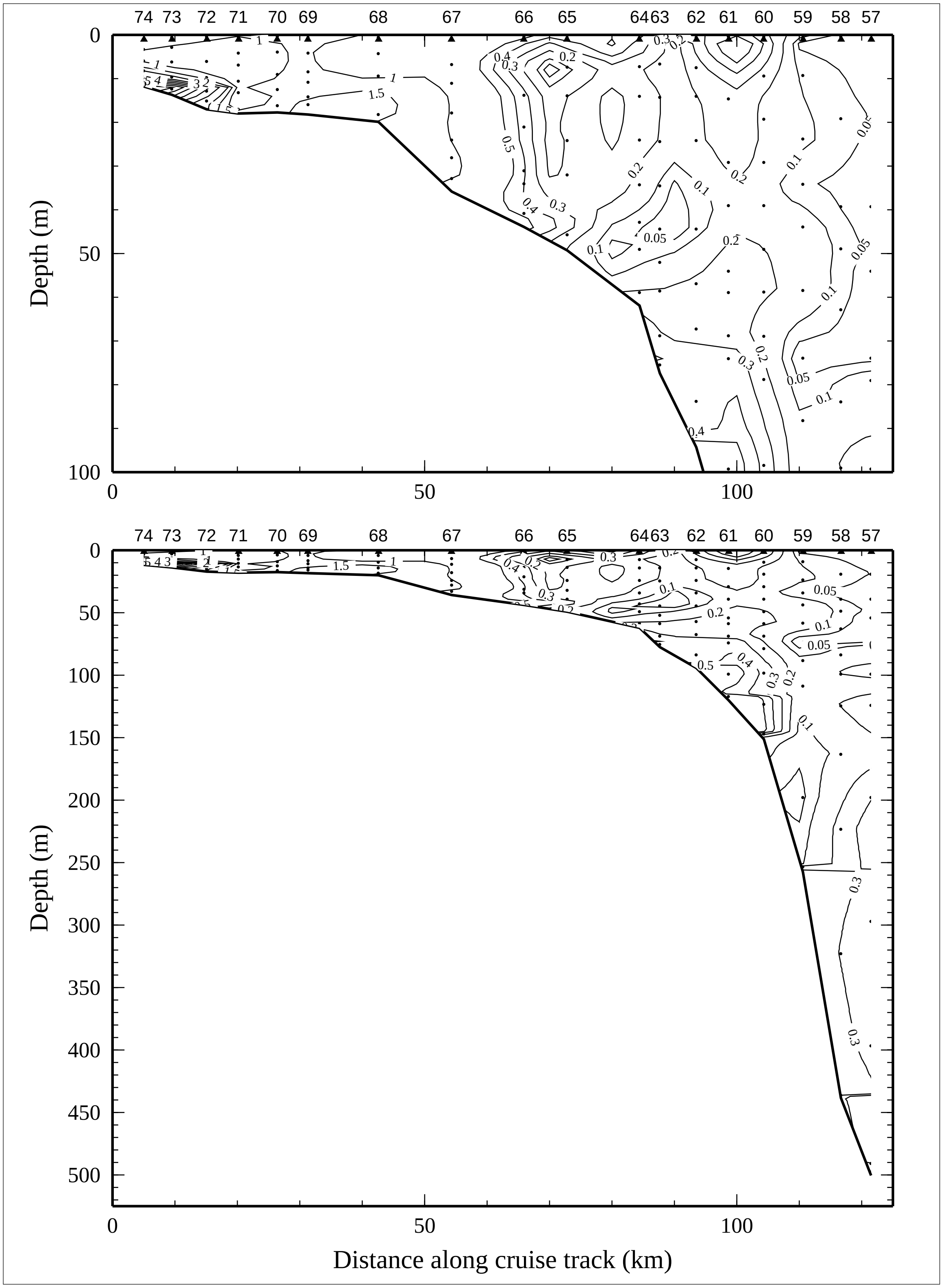

Figure 2.1.14. Ammonium (μmol·l^{-1}) on line 1 of LATEX A survey H02,
31 July - 9 August 1992.

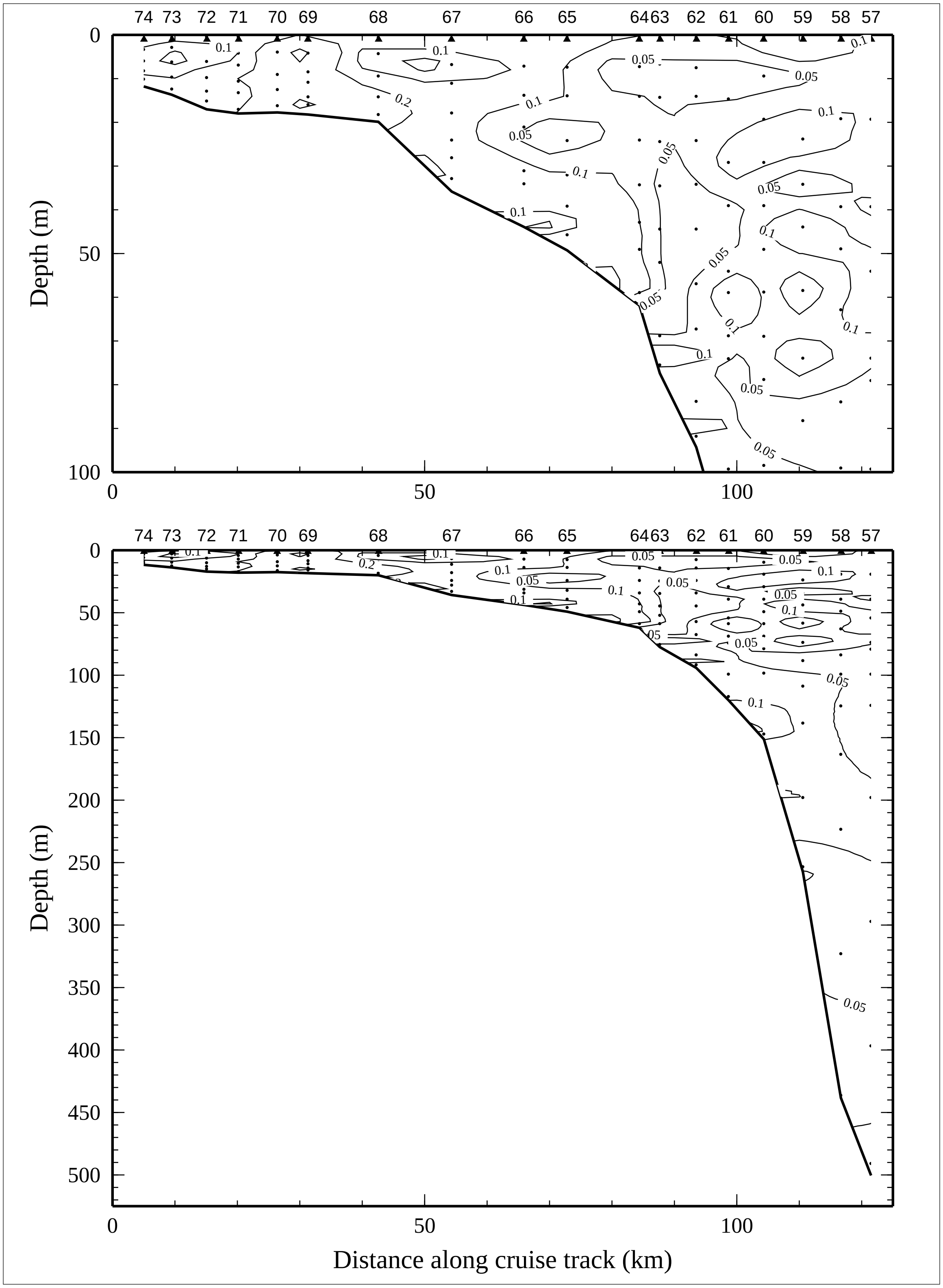

Figure 2.1.15. Urea (µmol·l^{-1}) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

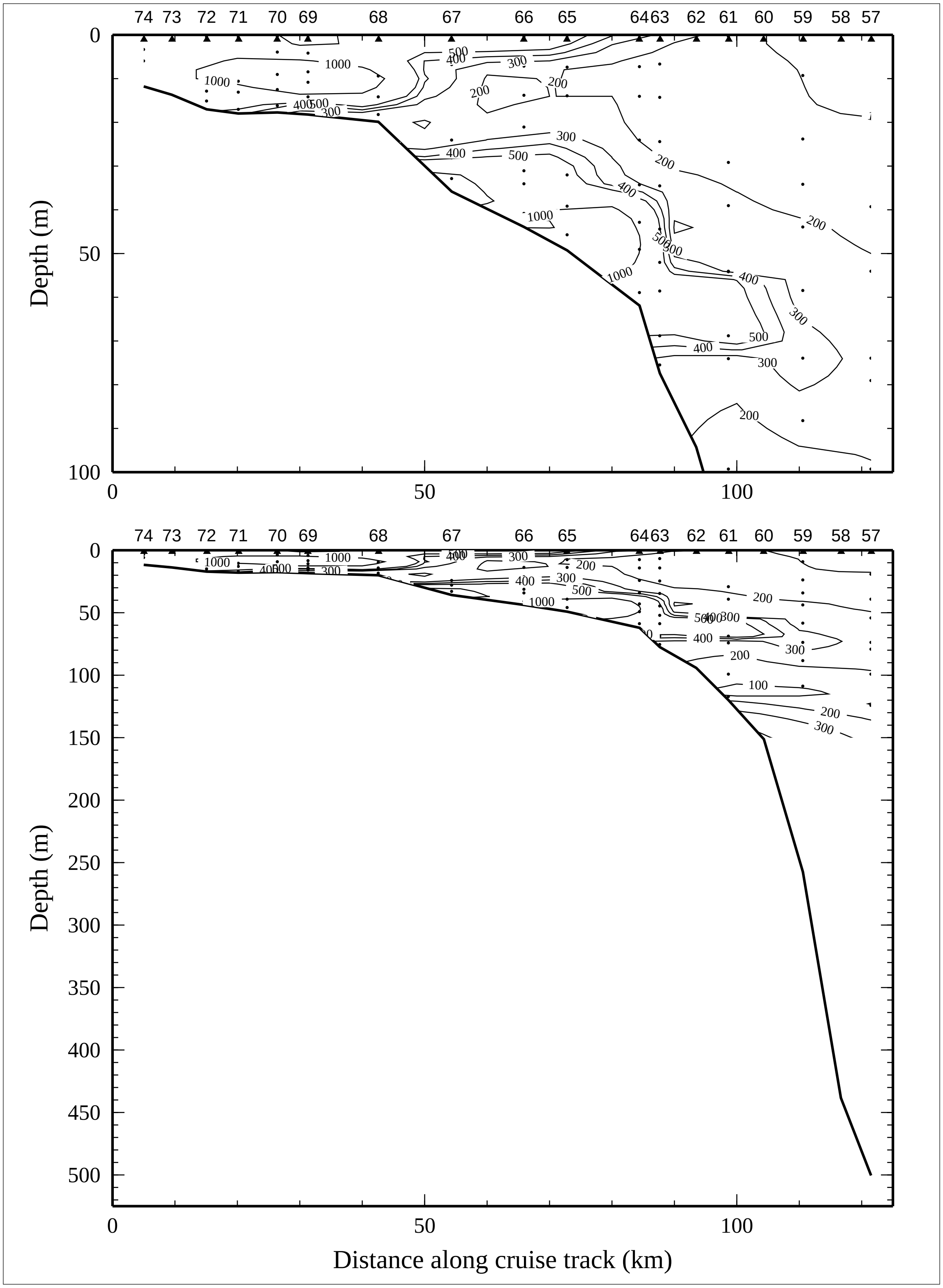

Figure 2.1.16. Chlorophyll a (ng·l-1) on line 1 of LATEX A survey H02, 31 July - 9 August 1992.

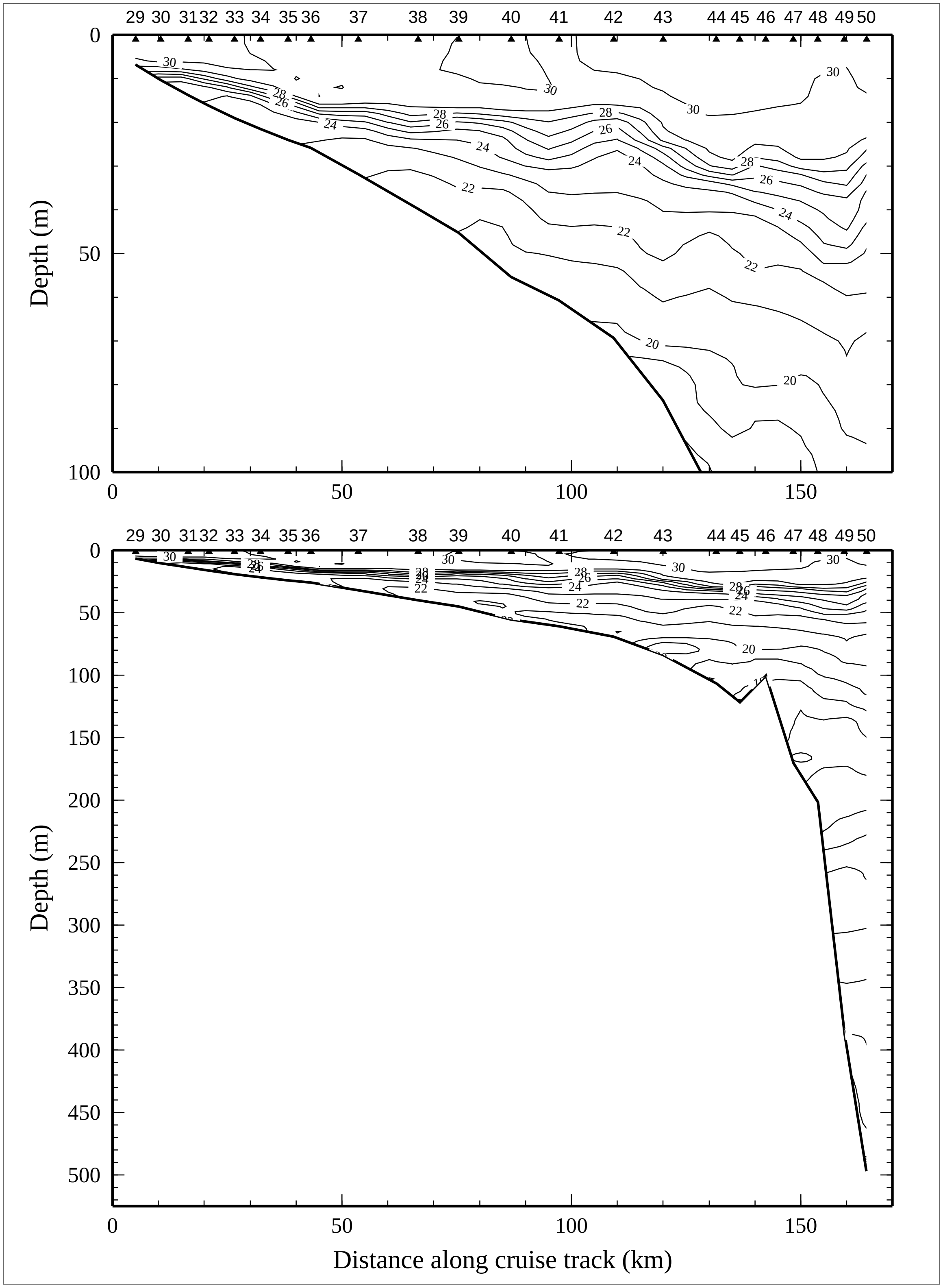

Figure 2.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H02,
31 July - 9 August 1992.

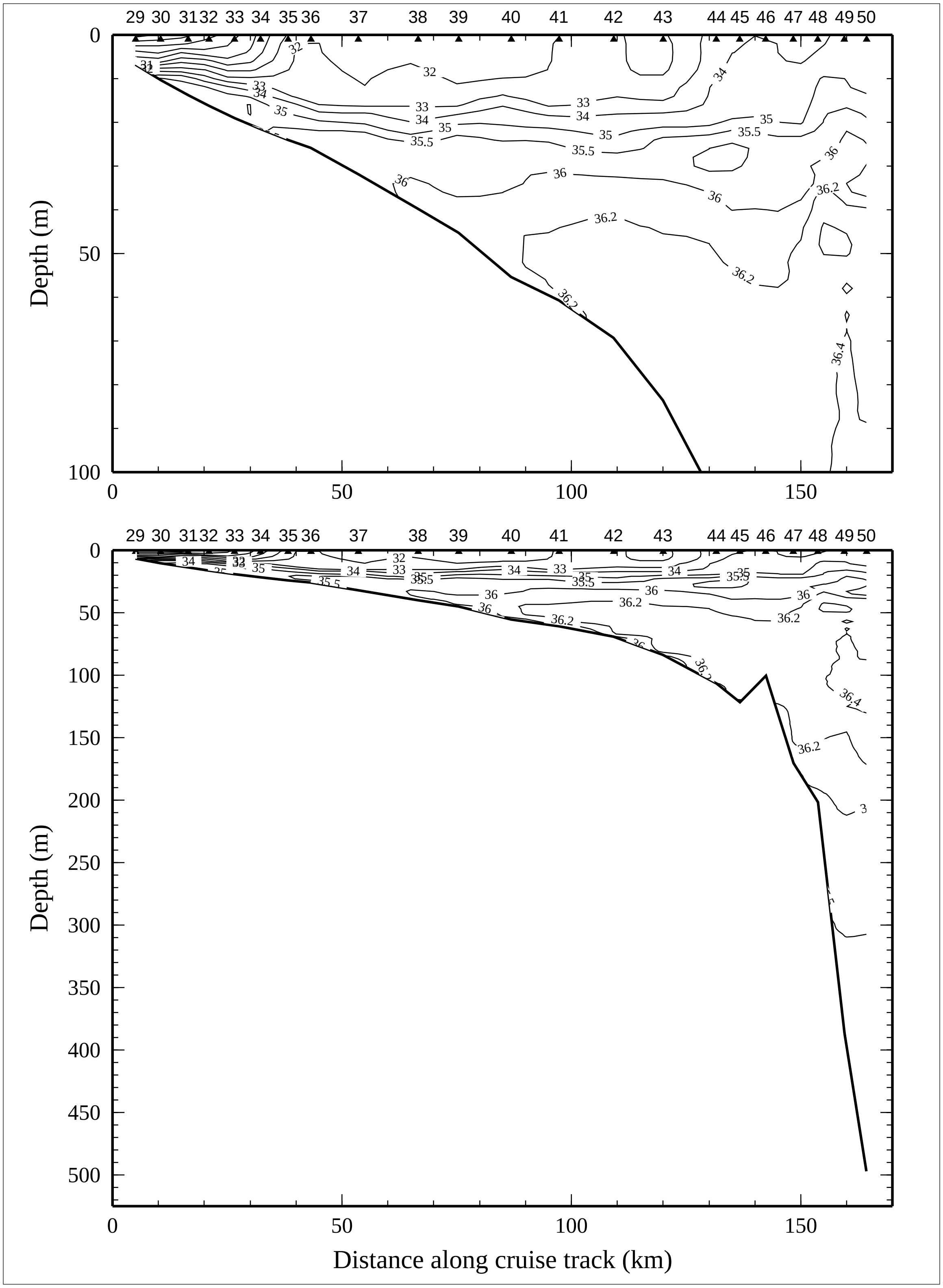

Figure 2.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

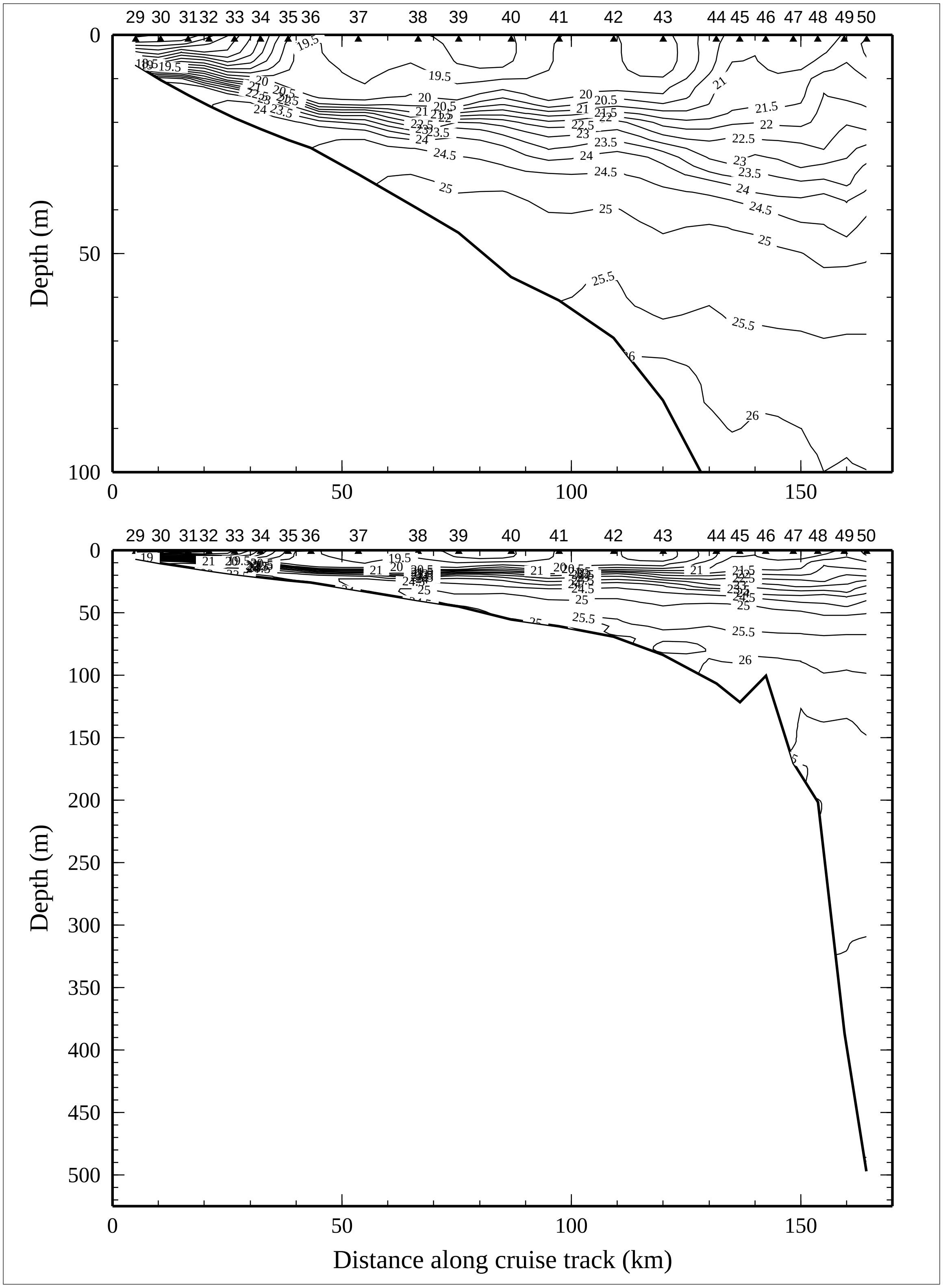

Figure 2.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

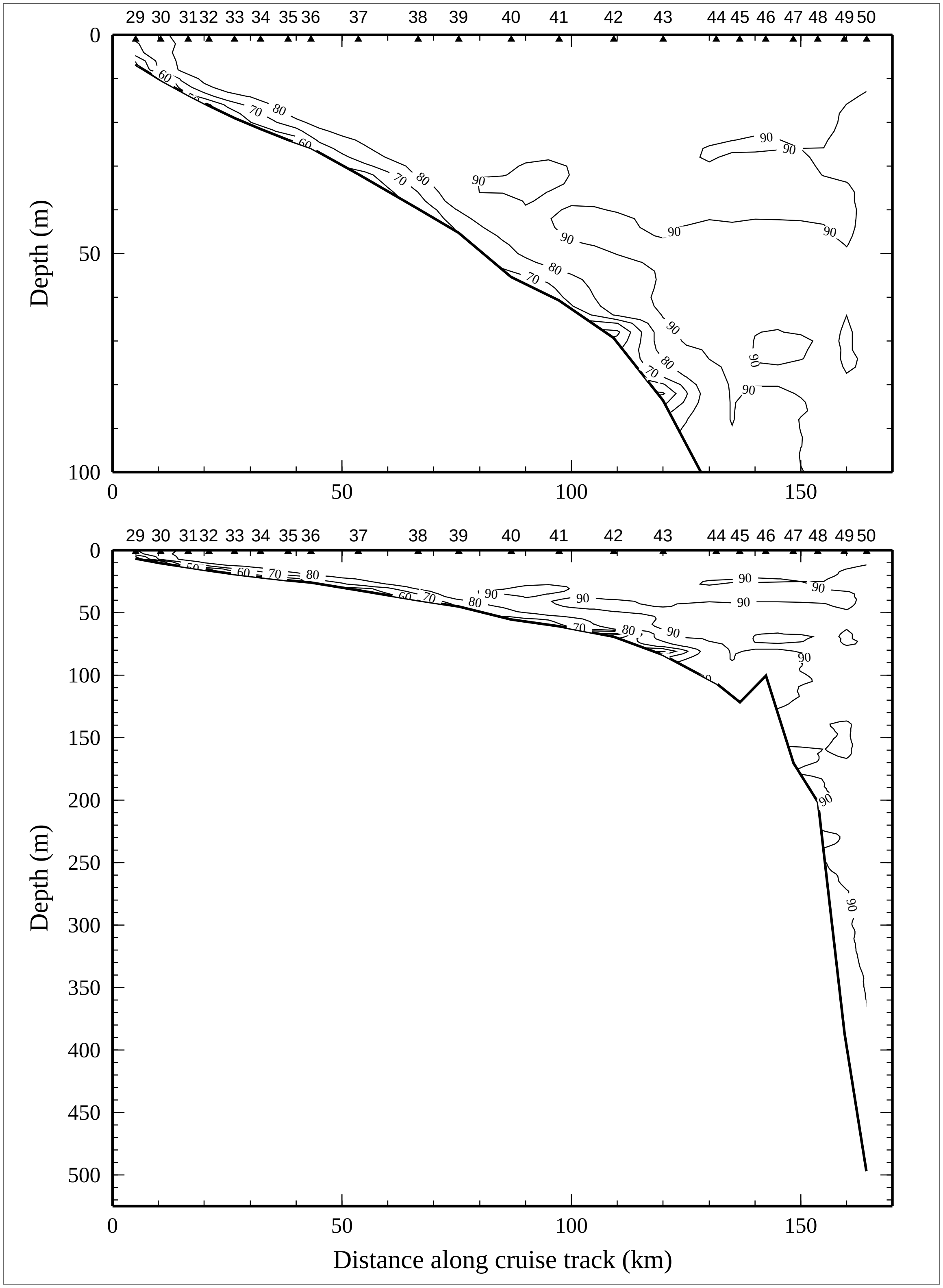

Figure 2.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

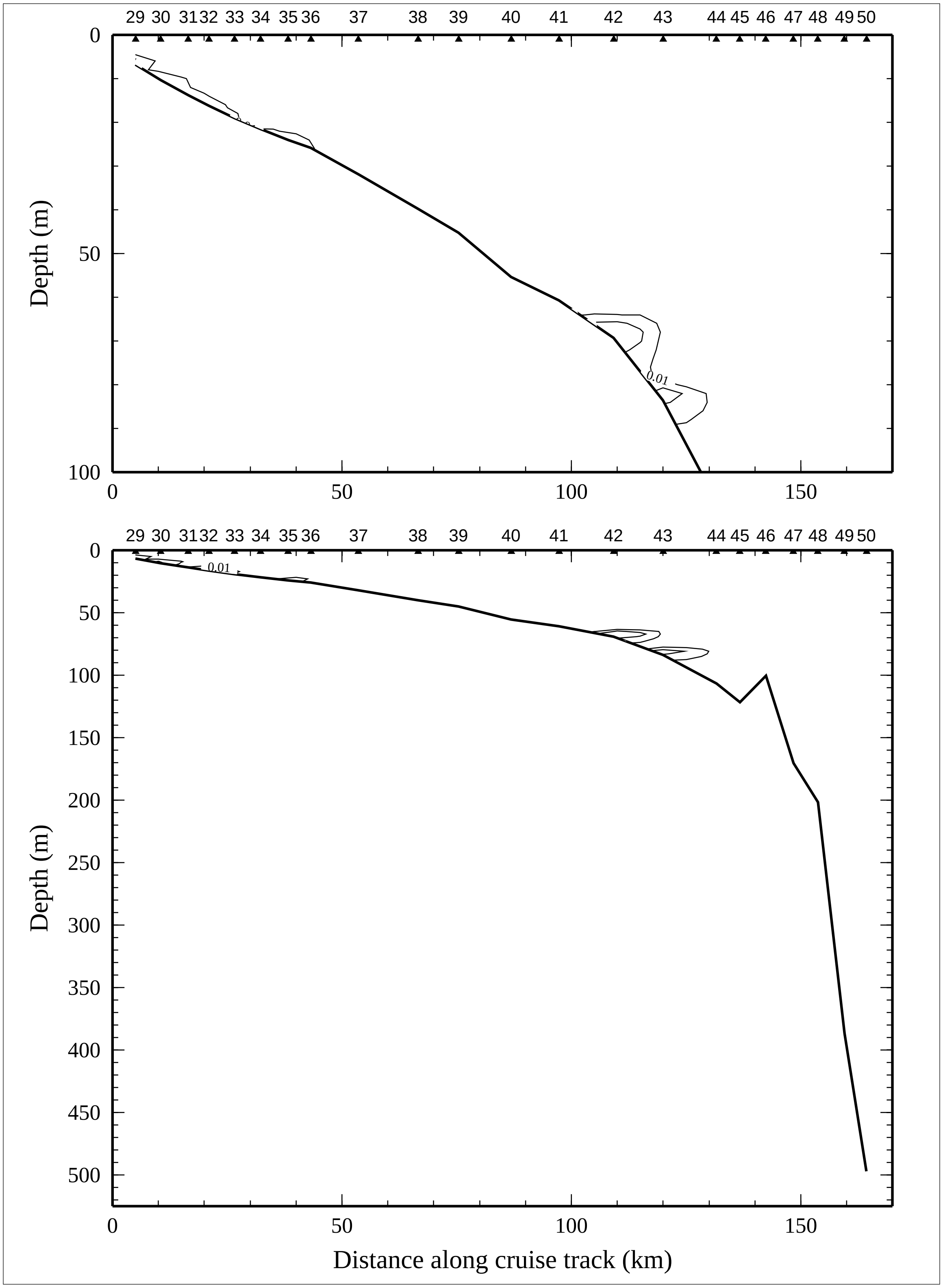

Figure 2.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

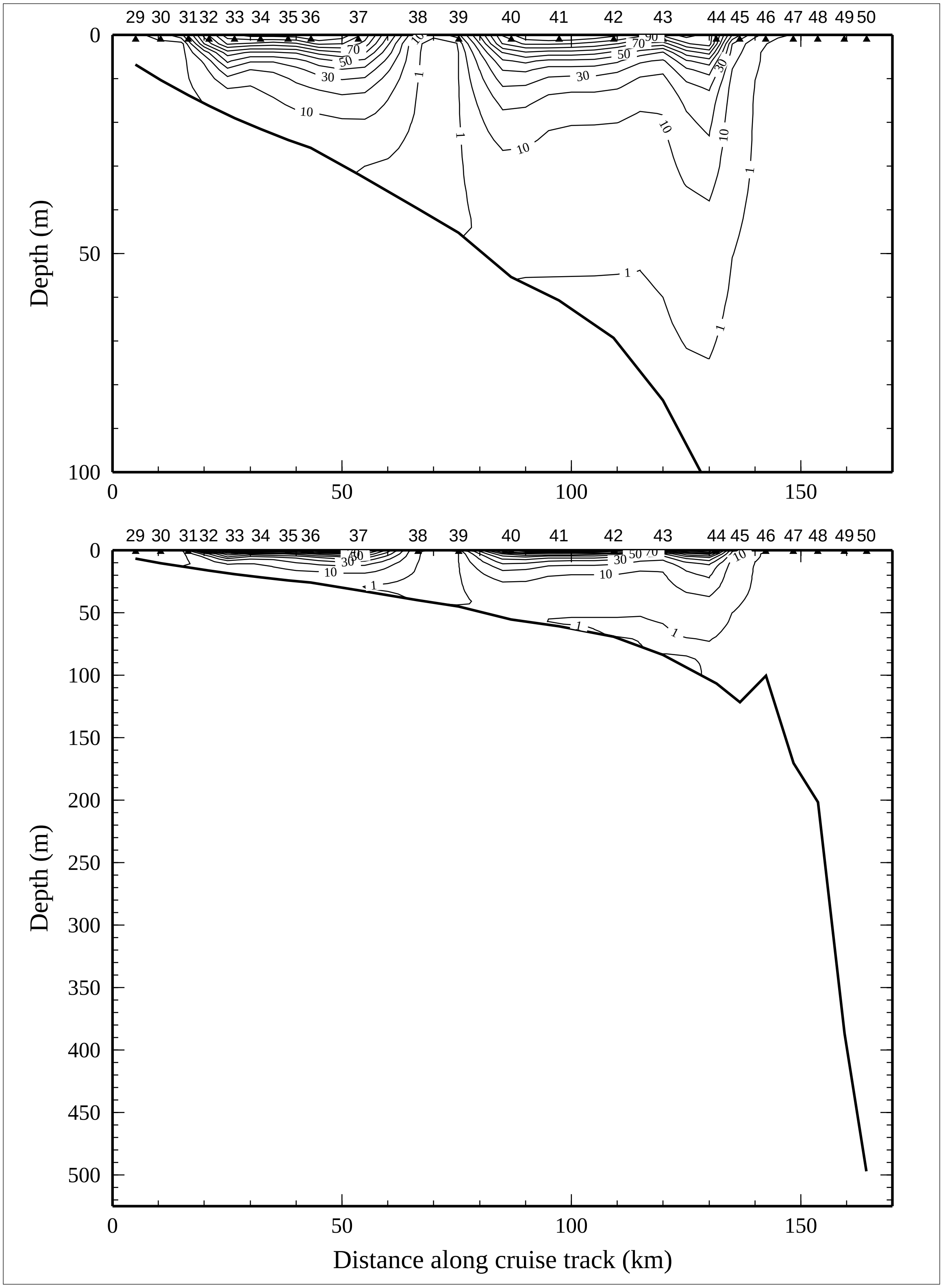

Figure 2.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

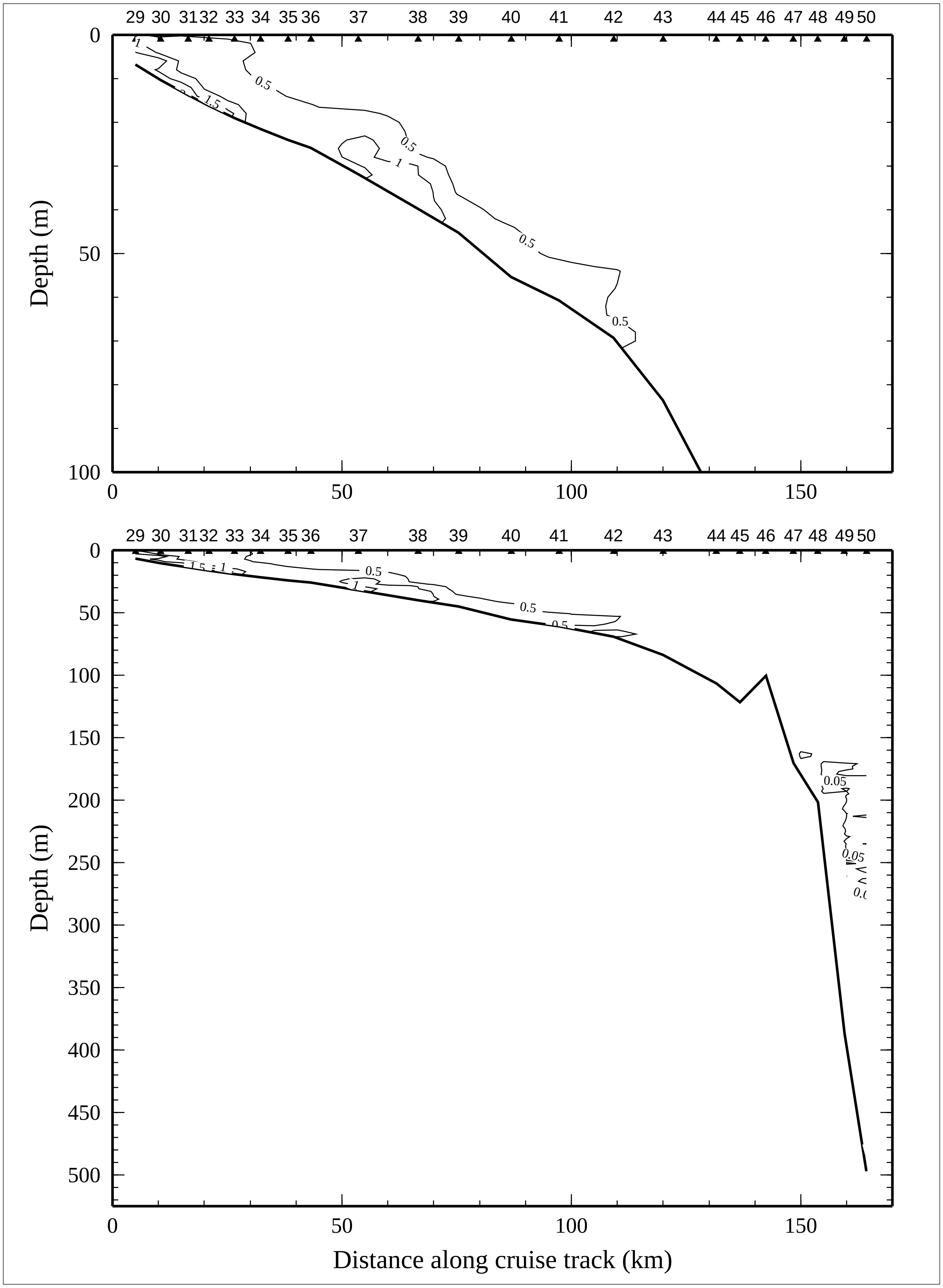

Figure 2.2.7. Relative fluorescence on line 2 of LATEX A survey H02,
31 July - 9 August 1992.

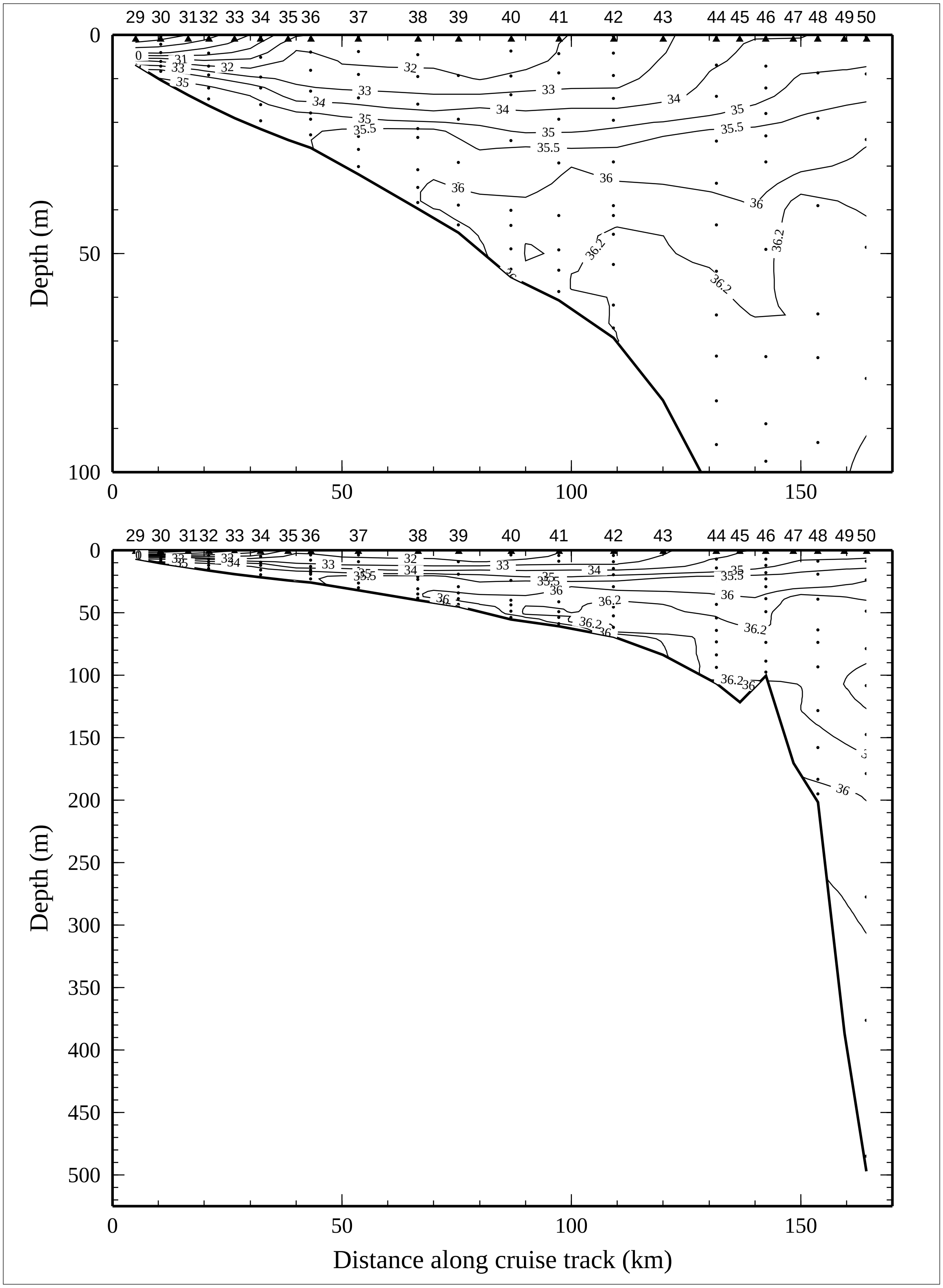

Figure 2.2.8. Bottle salinity on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

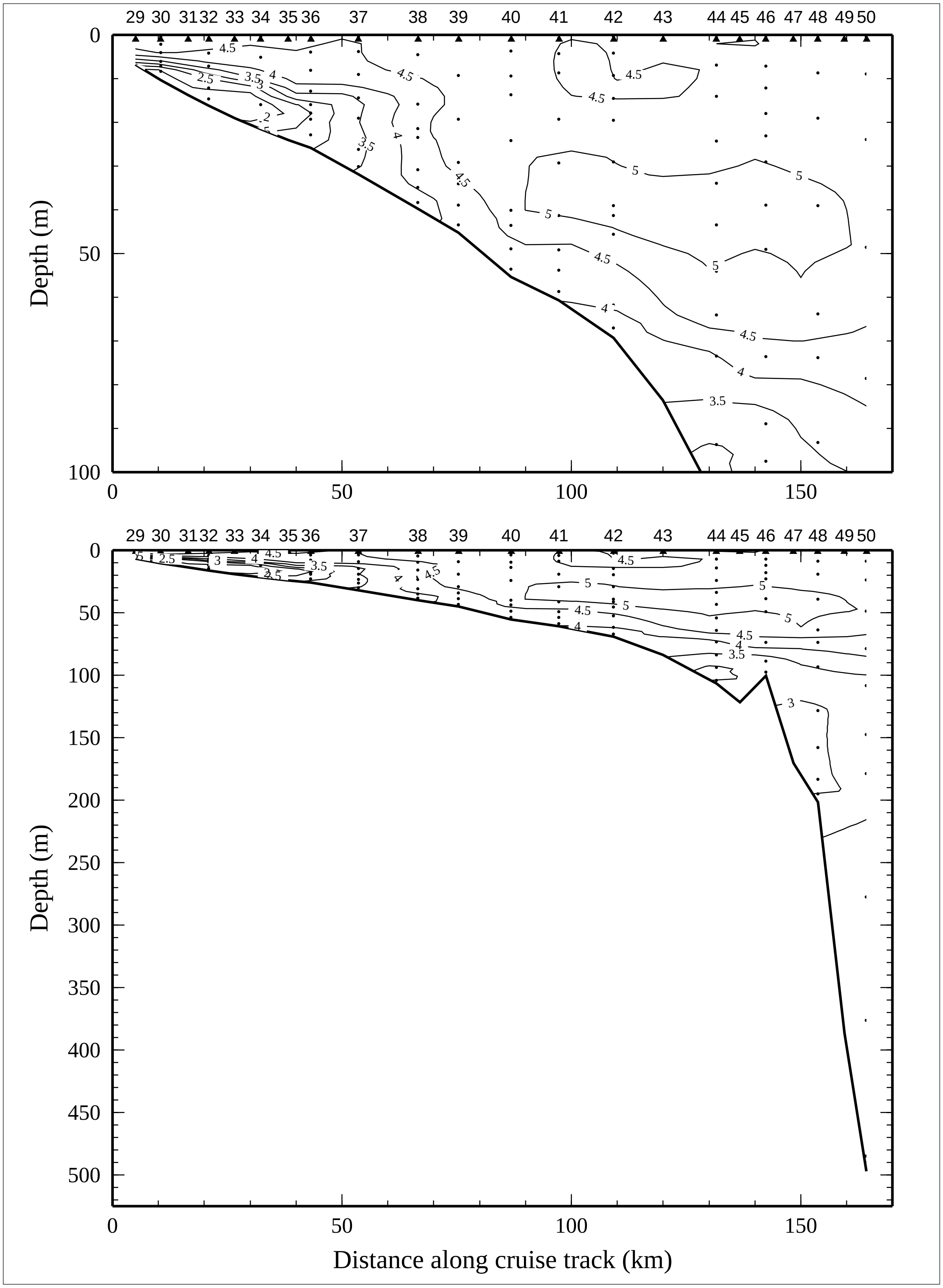

Figure 2.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

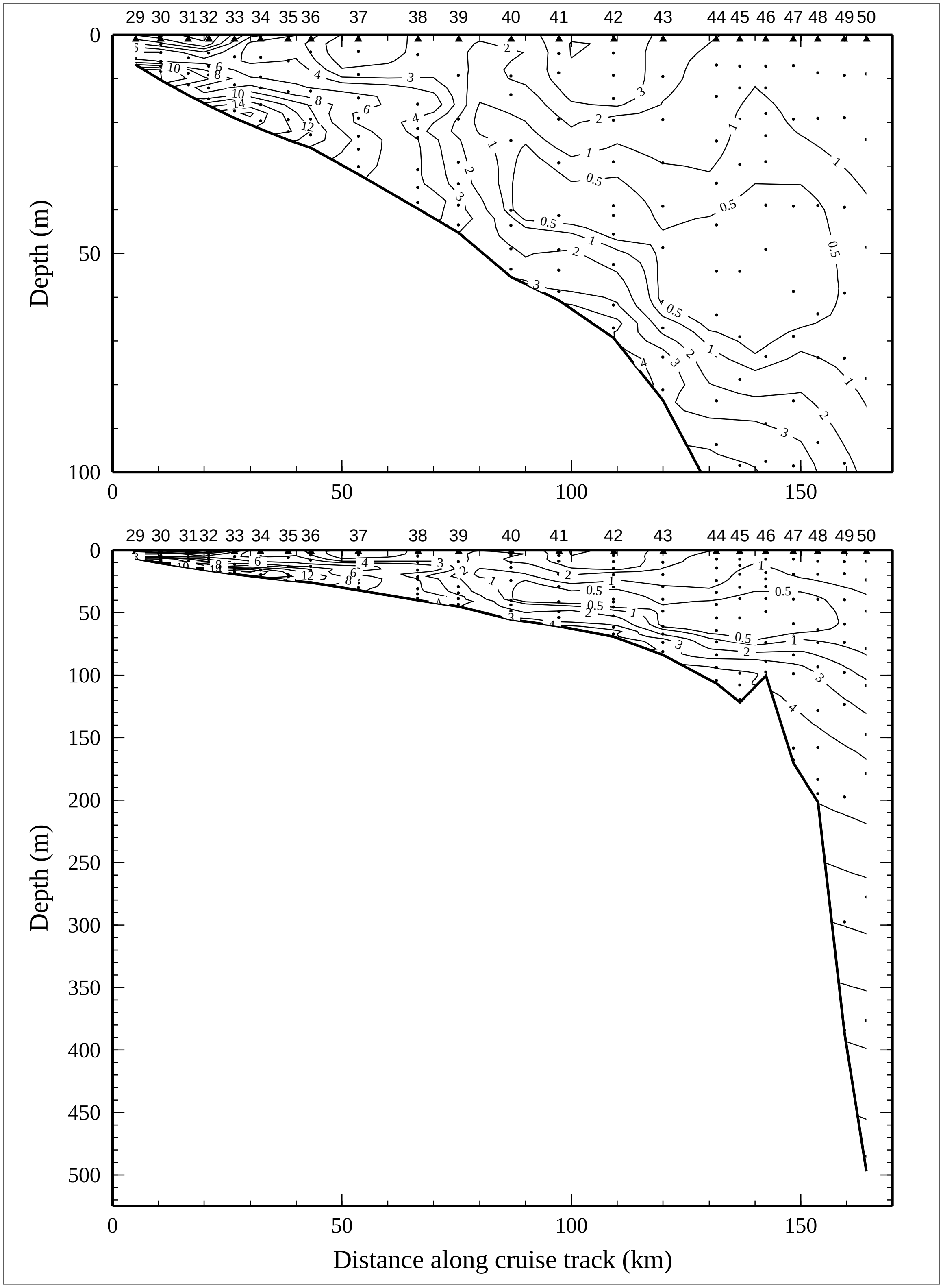

Figure 2.2.10. Silicate (μmol·l[-1]) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

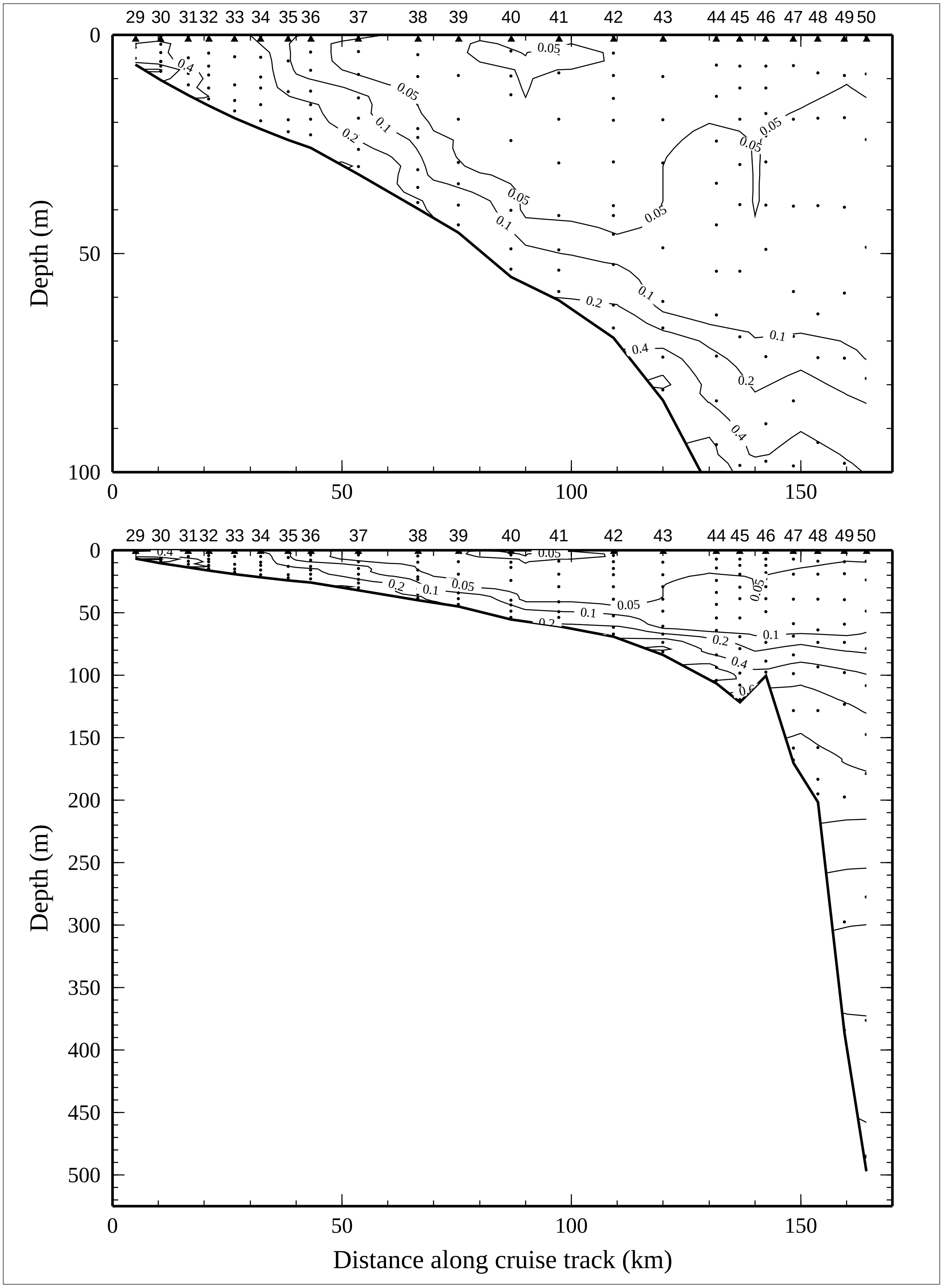

Figure 2.2.11. Phosphate (µmol·l⁻¹) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

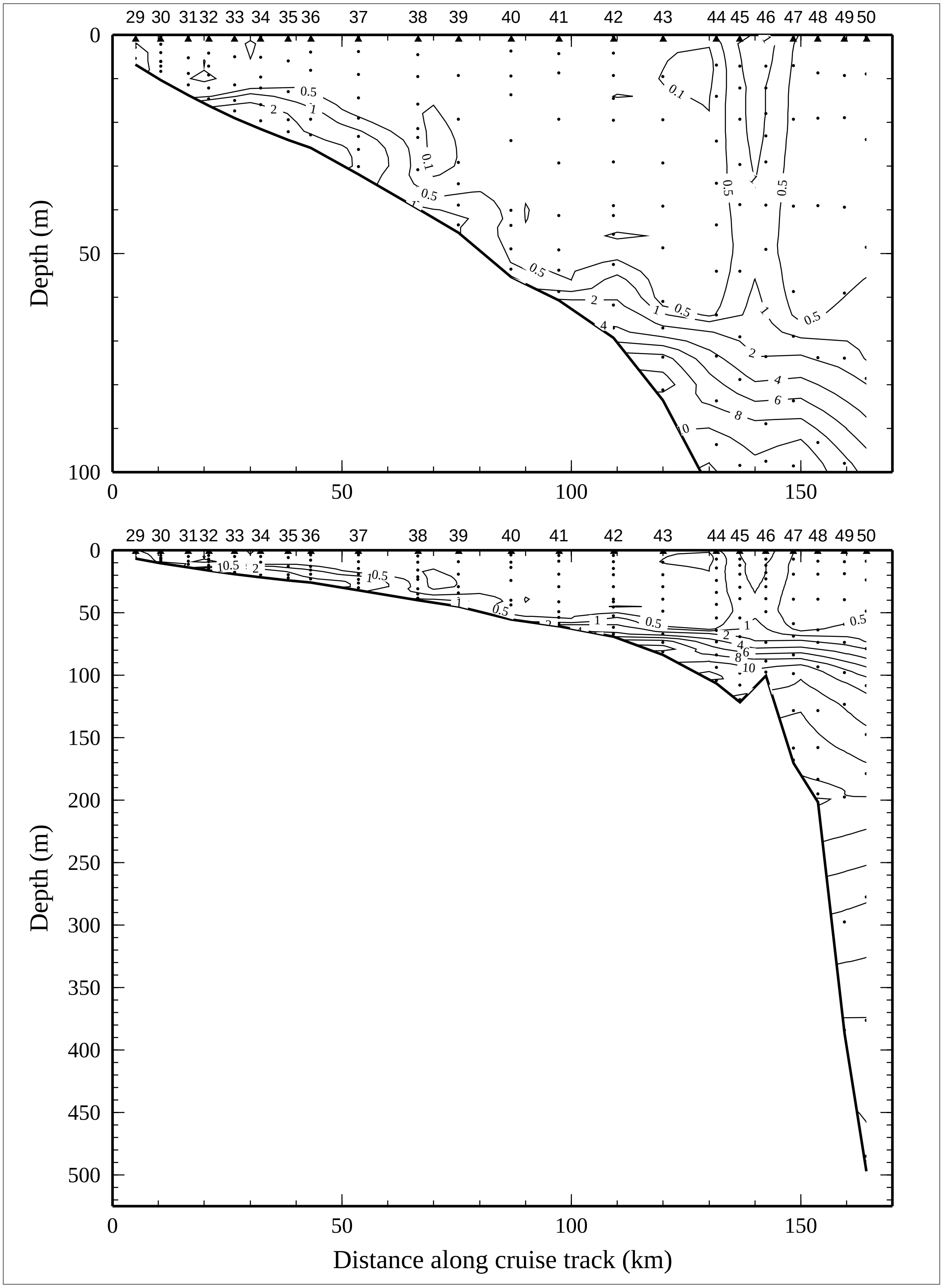

Figure 2.2.12. Nitrate (μmol·l⁻¹) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

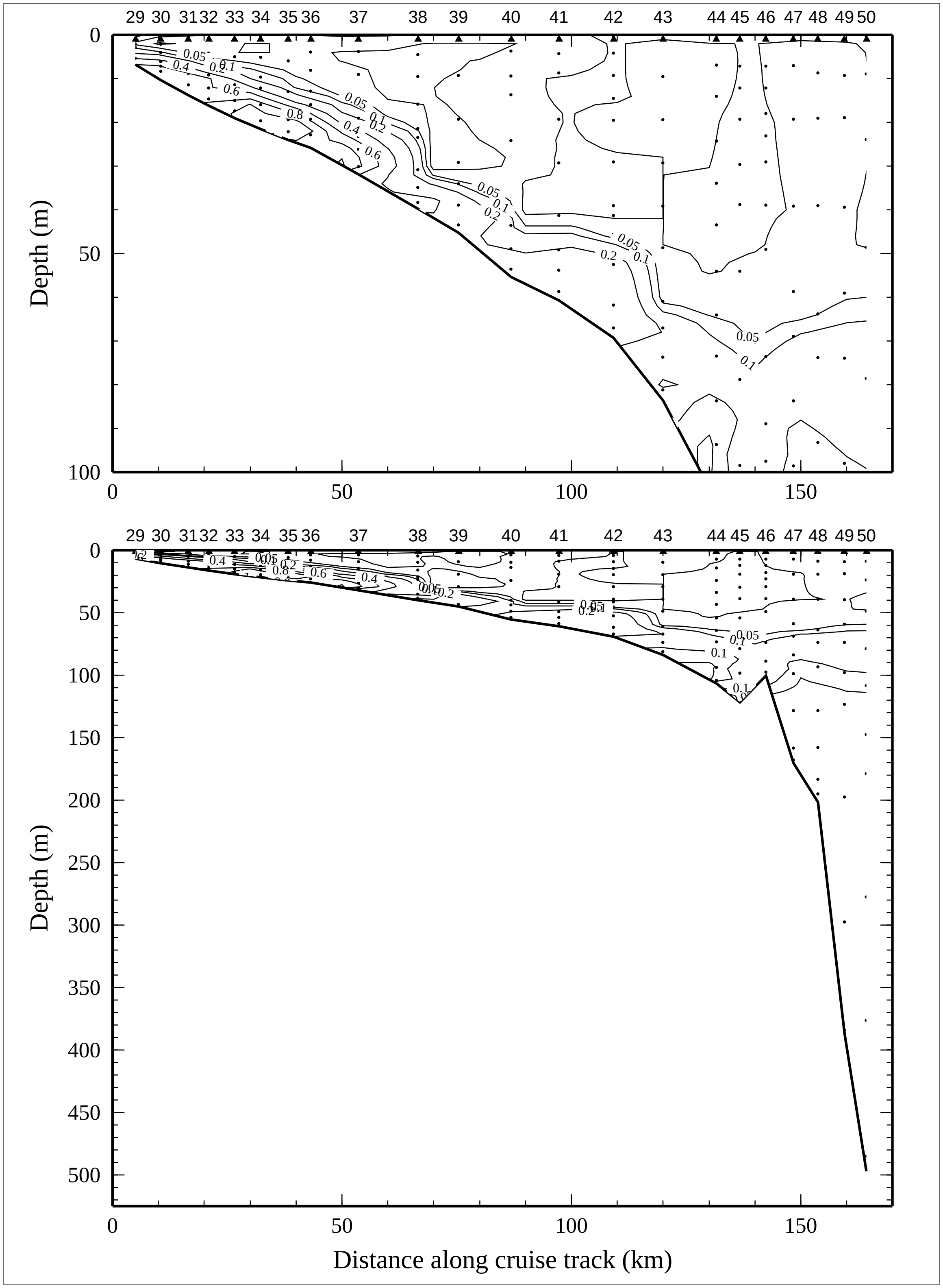

Figure 2.2.13. Nitrite (μmol·l[-1]) on line 2 of LATEX A survey H02,
31 July - 9 August 1992.

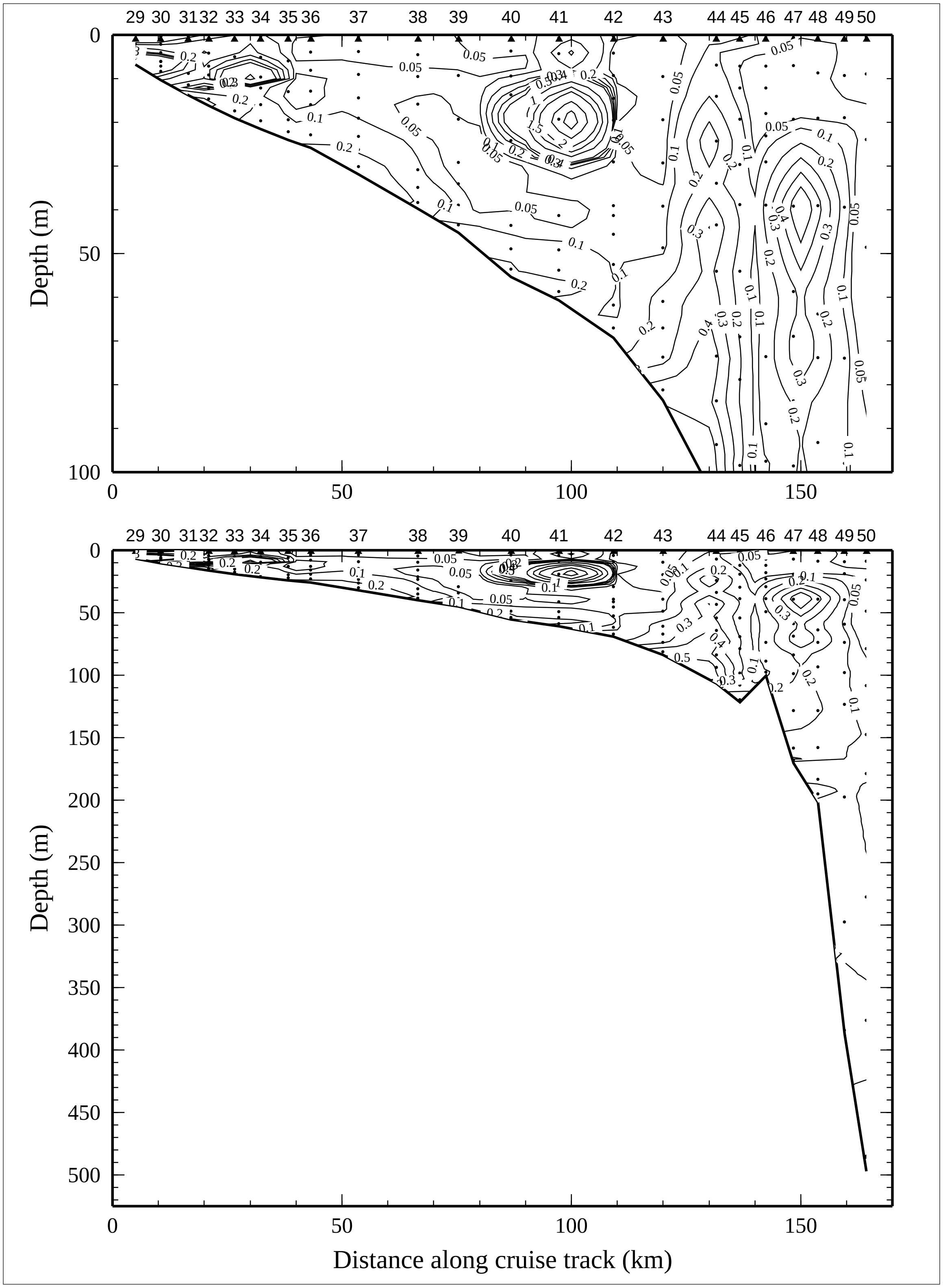

Figure 2.2.14. Ammonium (μmol·l^{-1}) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

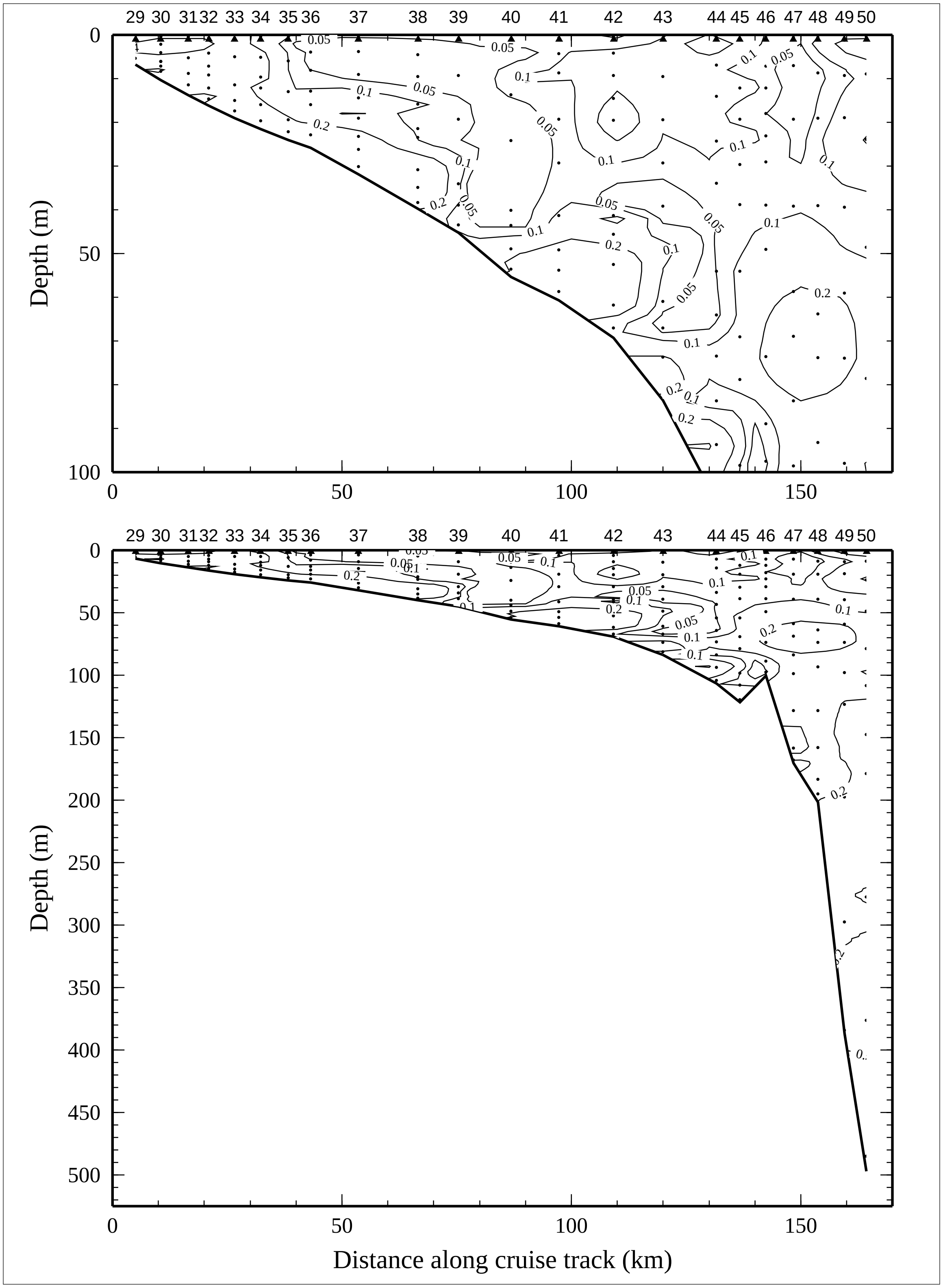

Figure 2.2.15. Urea (µmol·l^{-1}) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

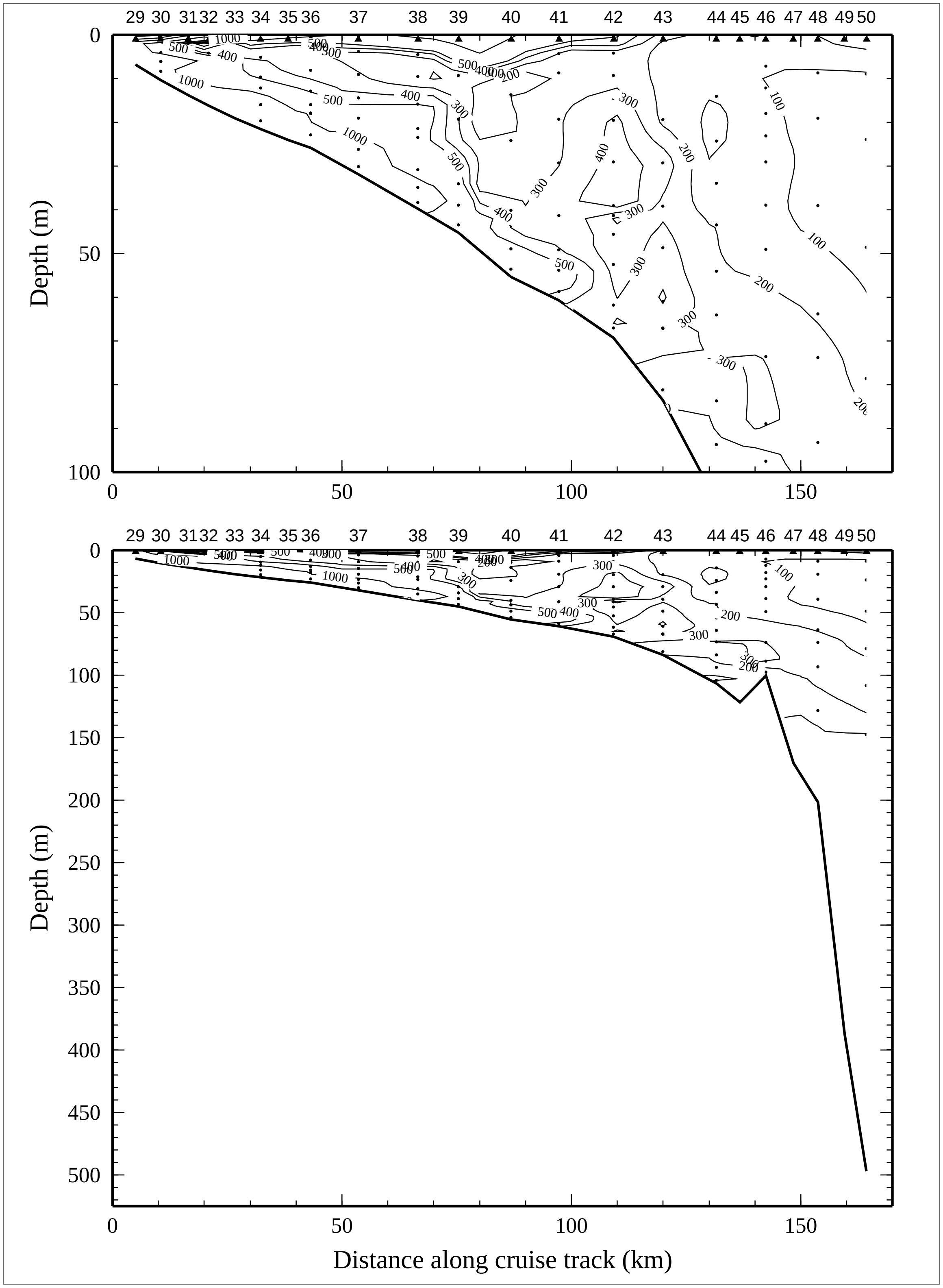

Figure 2.2.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 2 of LATEX A survey H02, 31 July - 9 August 1992.

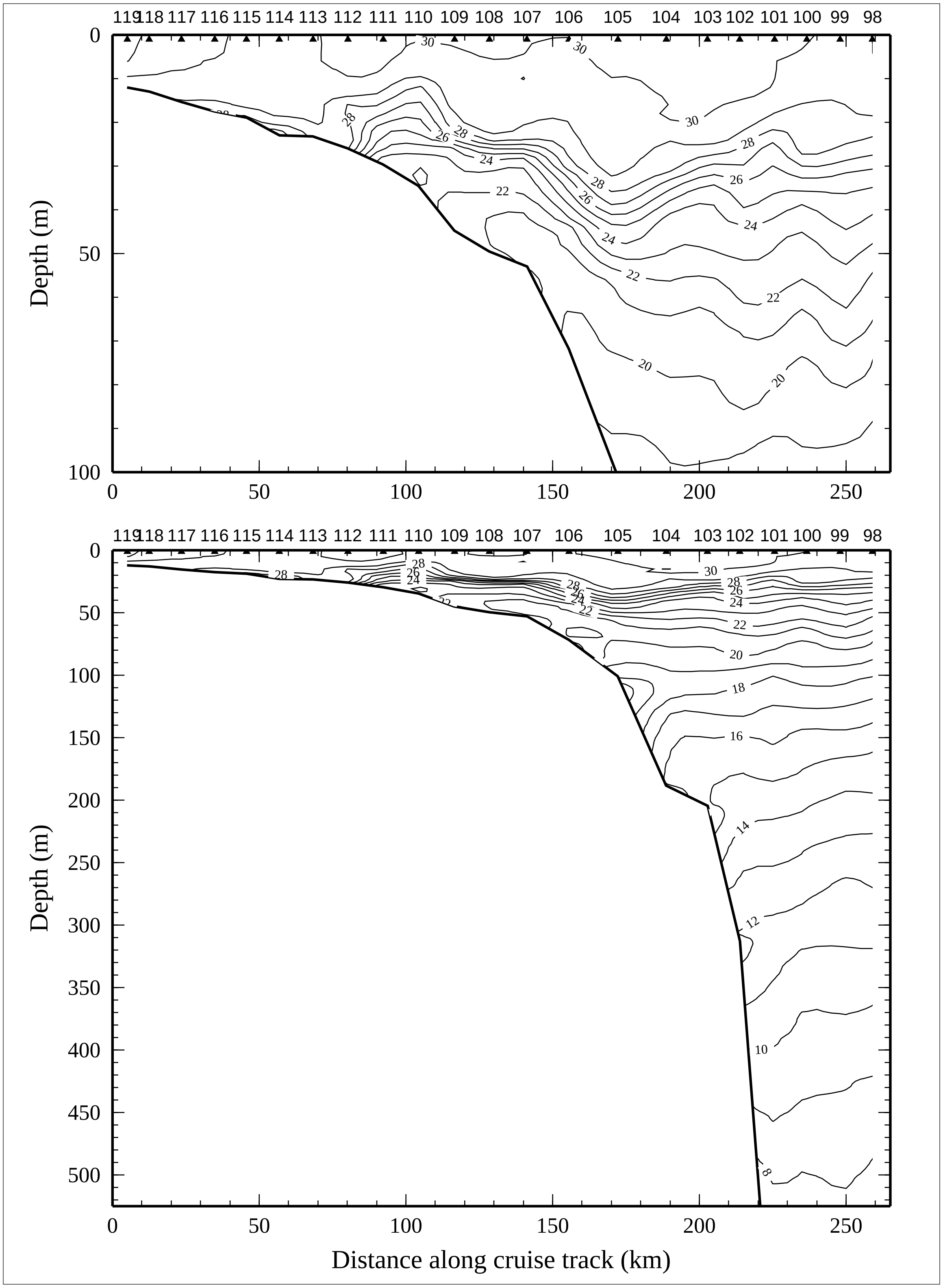

Figure 2.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H02,
31 July - 9 August 1992.

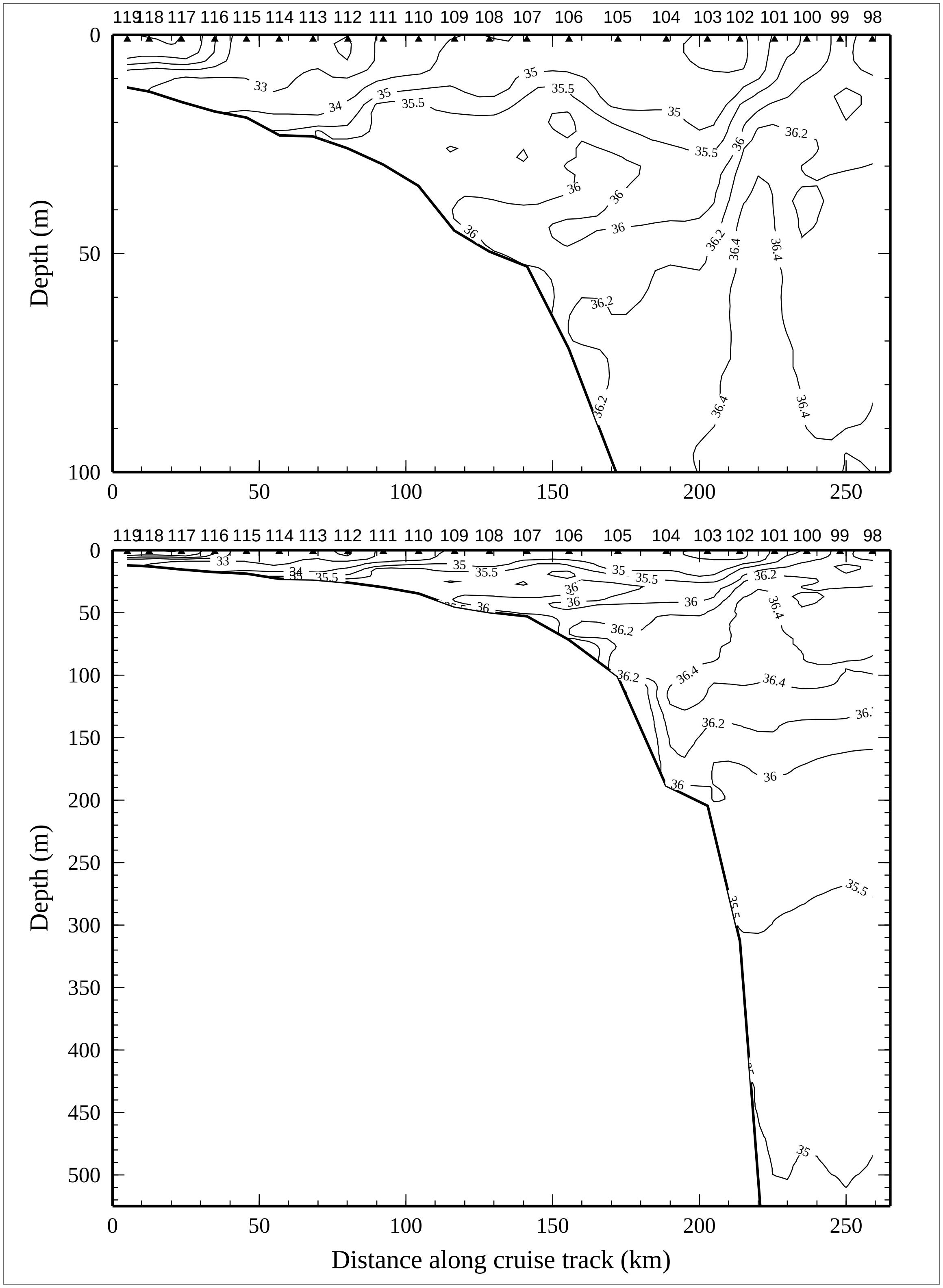

Figure 2.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

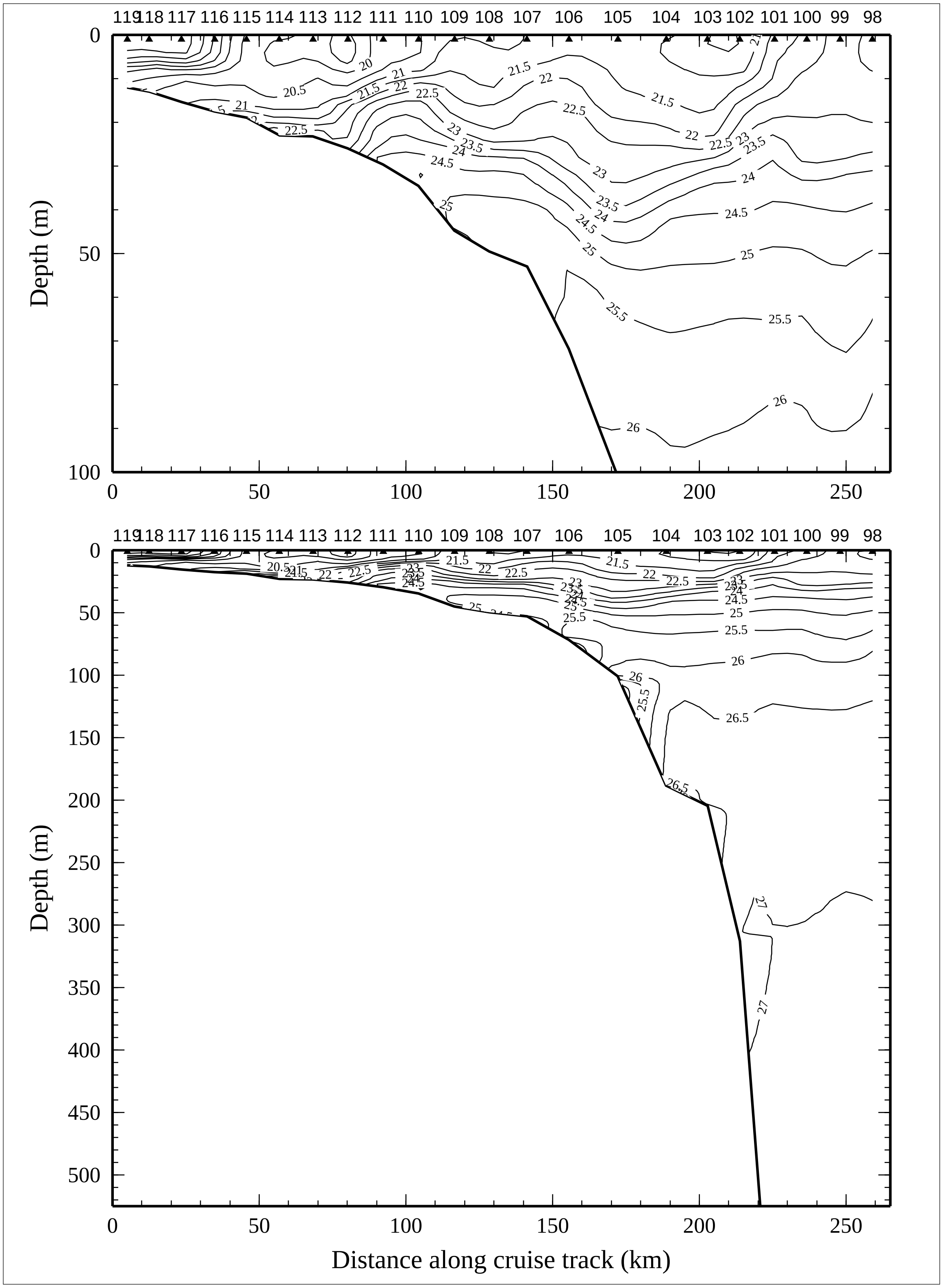

Figure 2.3.3. Density anomaly (σ_θ in kg·m^{-3}) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

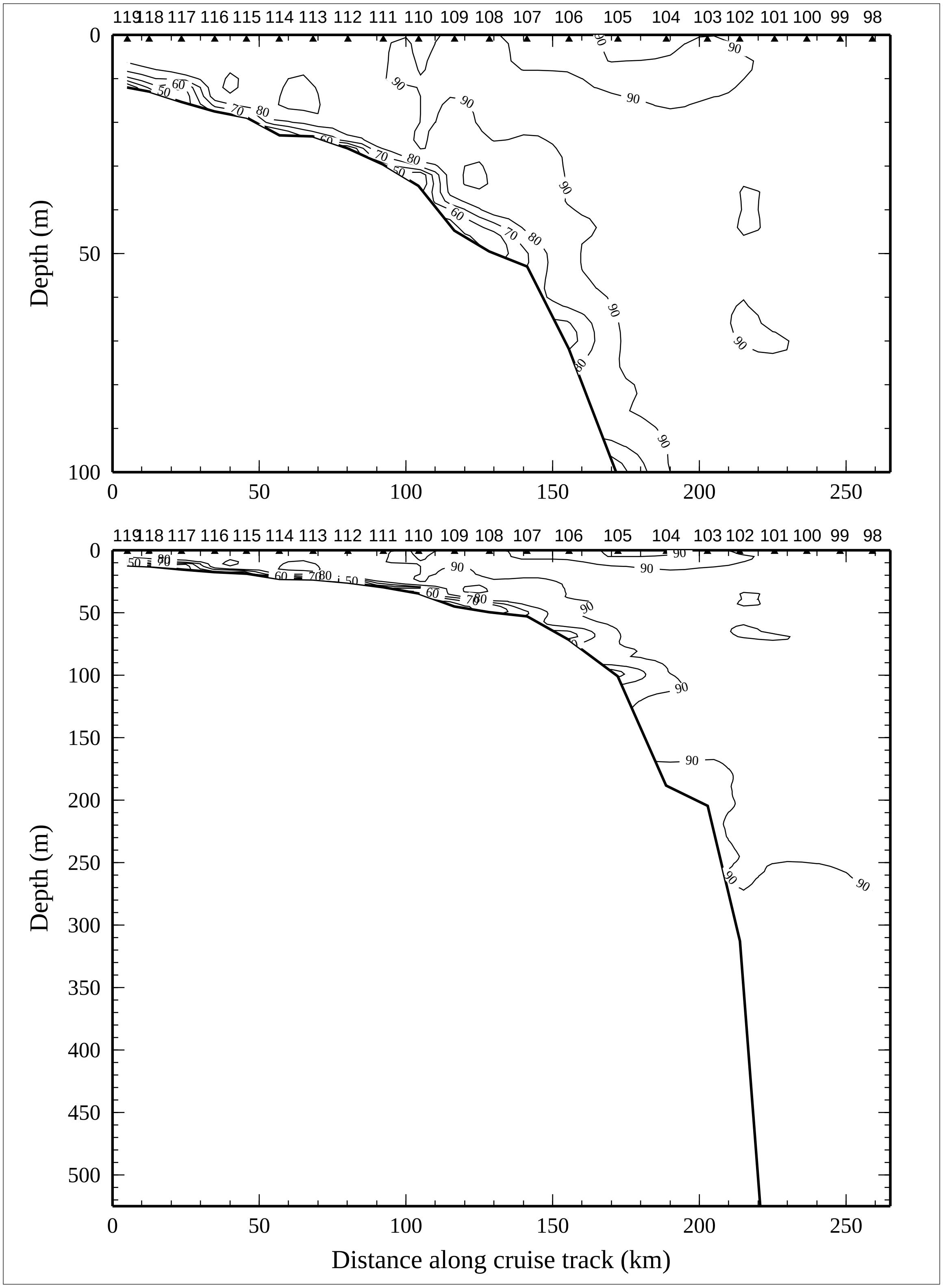

Figure 2.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

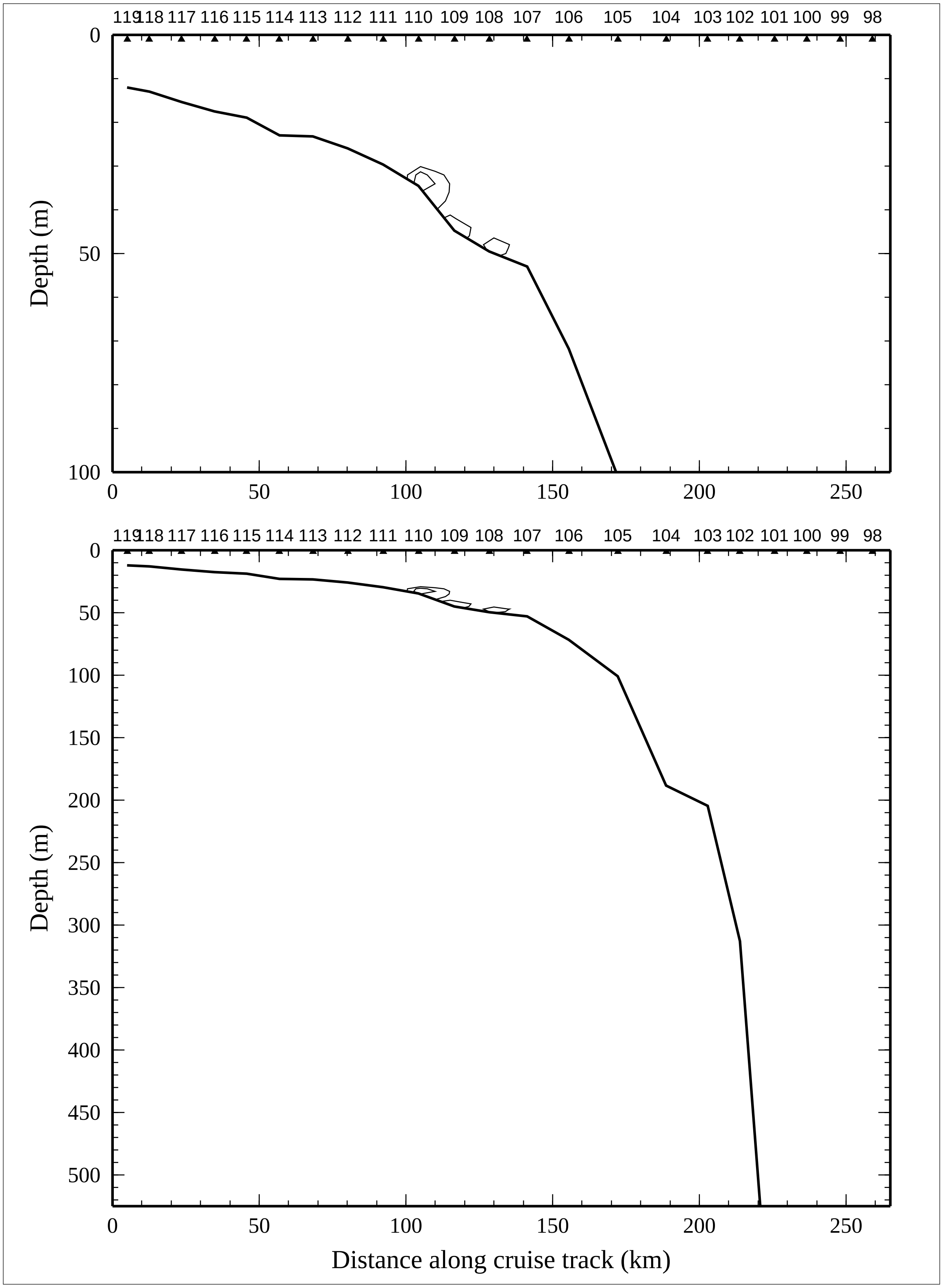

Figure 2.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

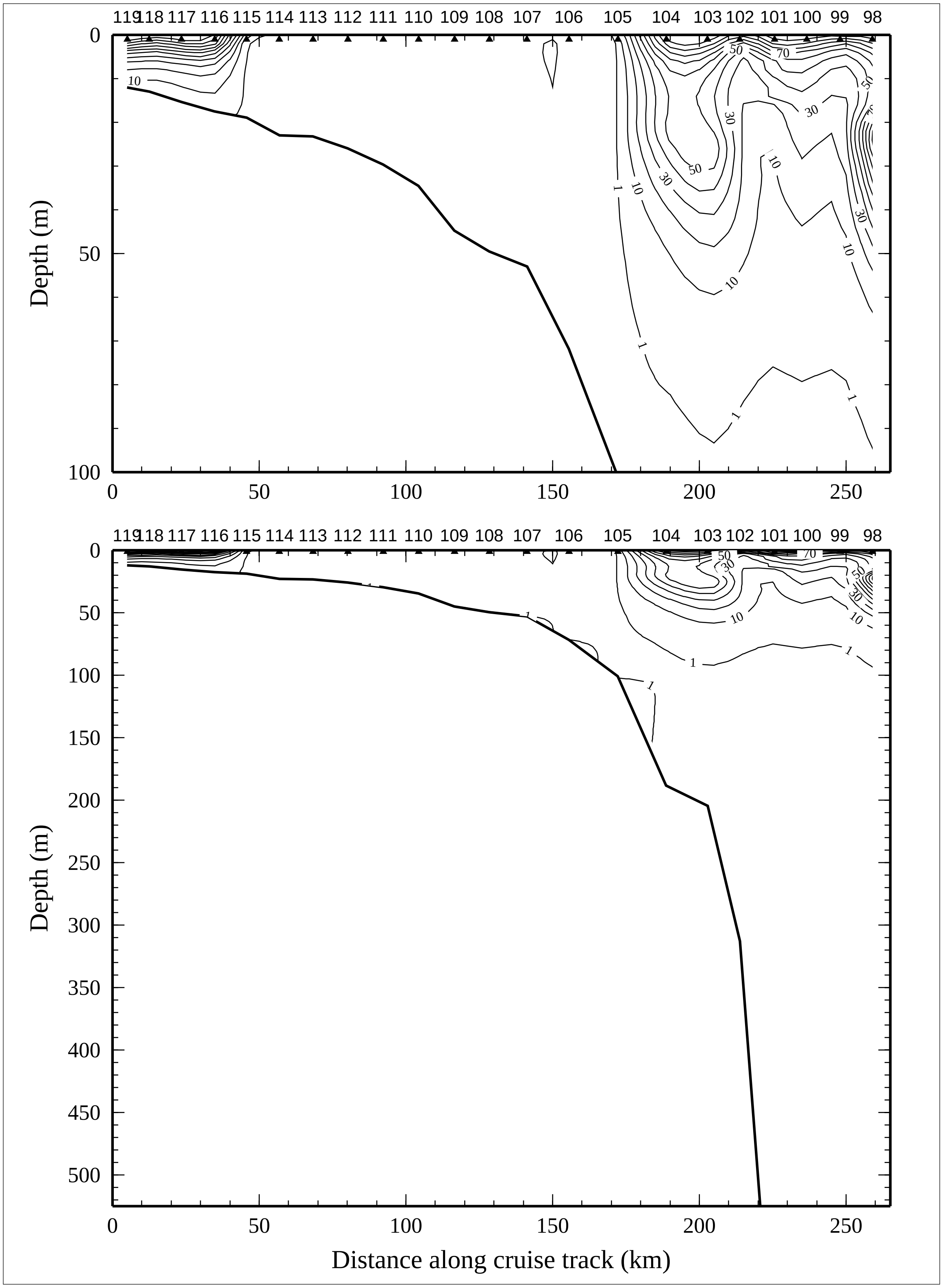

Figure 2.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

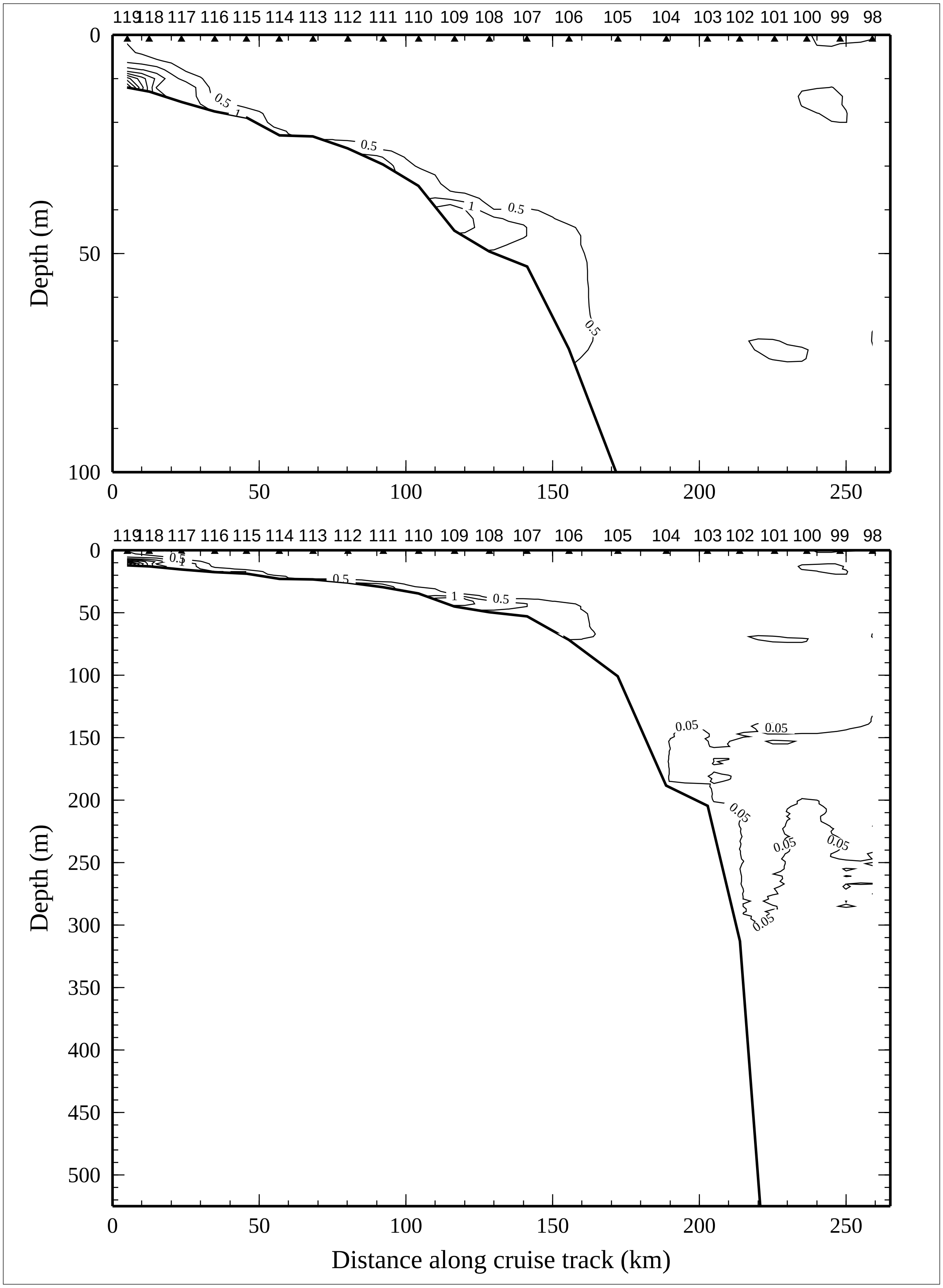

Figure 2.3.7. Relative fluorescence on line 3 of LATEX A survey H02,
31 July - 9 August 1992.

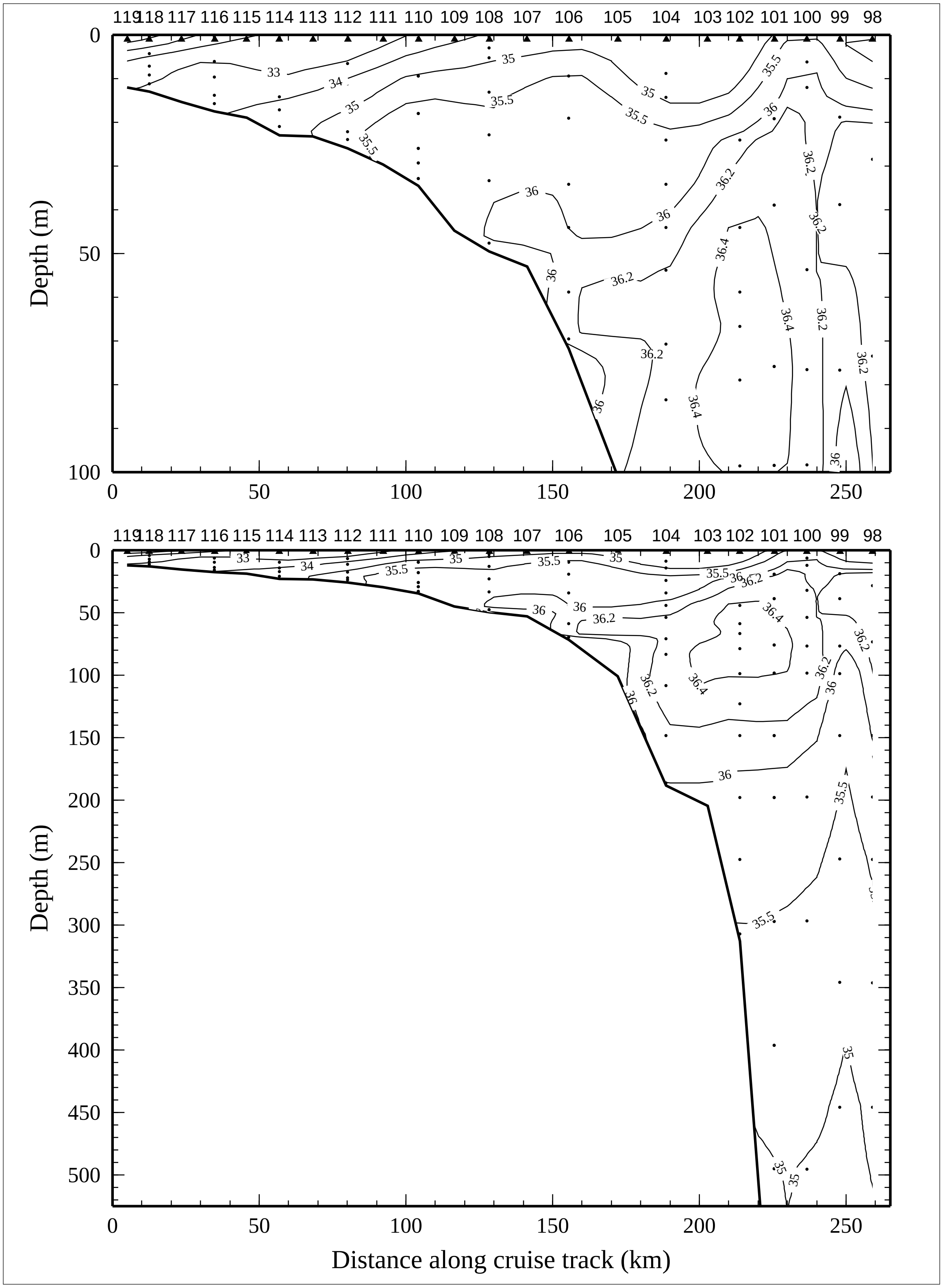

Figure 2.3.8. Bottle salinity on line 3 of LATEX A survey H02,
31 July - 9 August 1992.

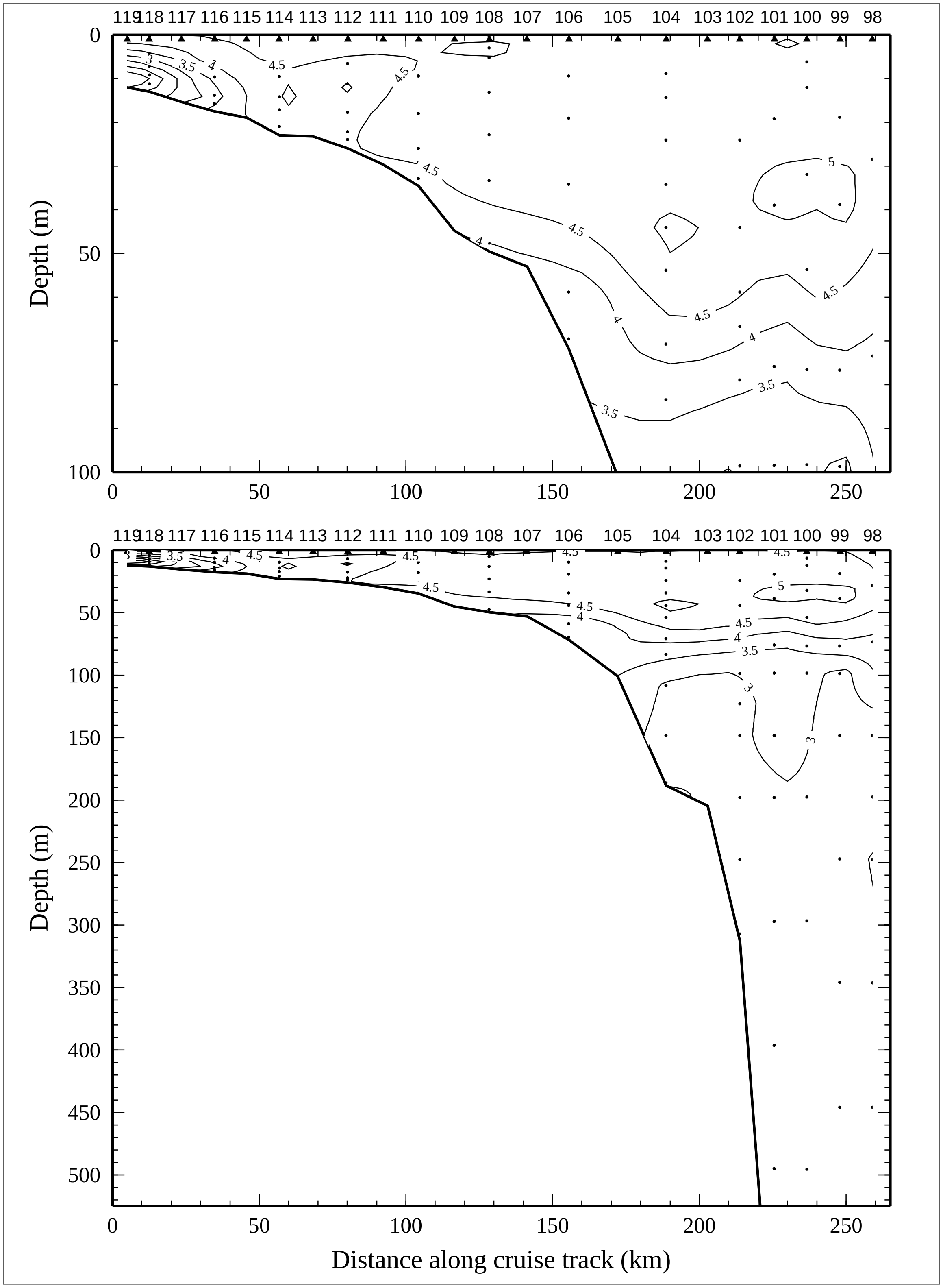

Figure 2.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

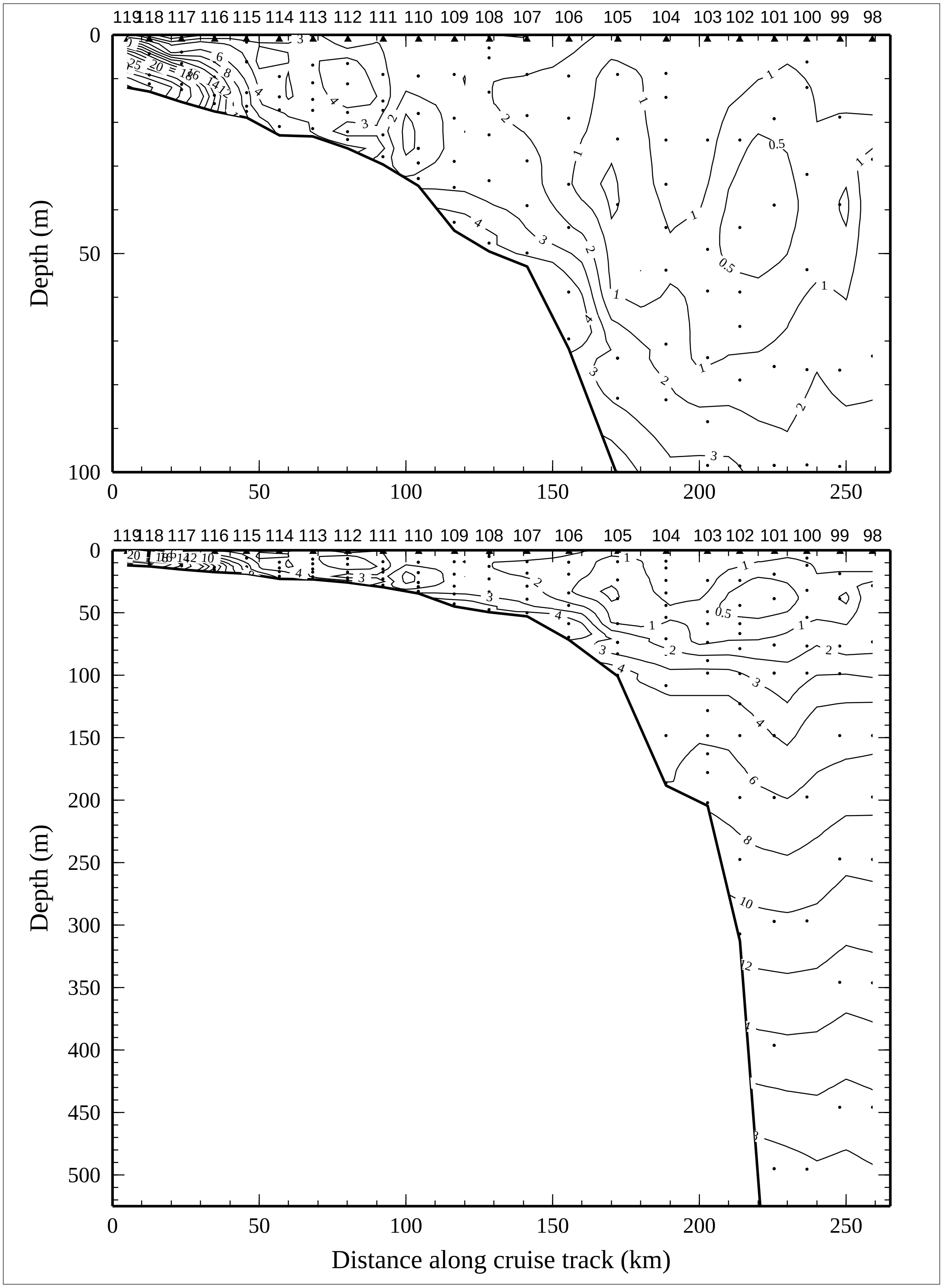

Figure 2.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

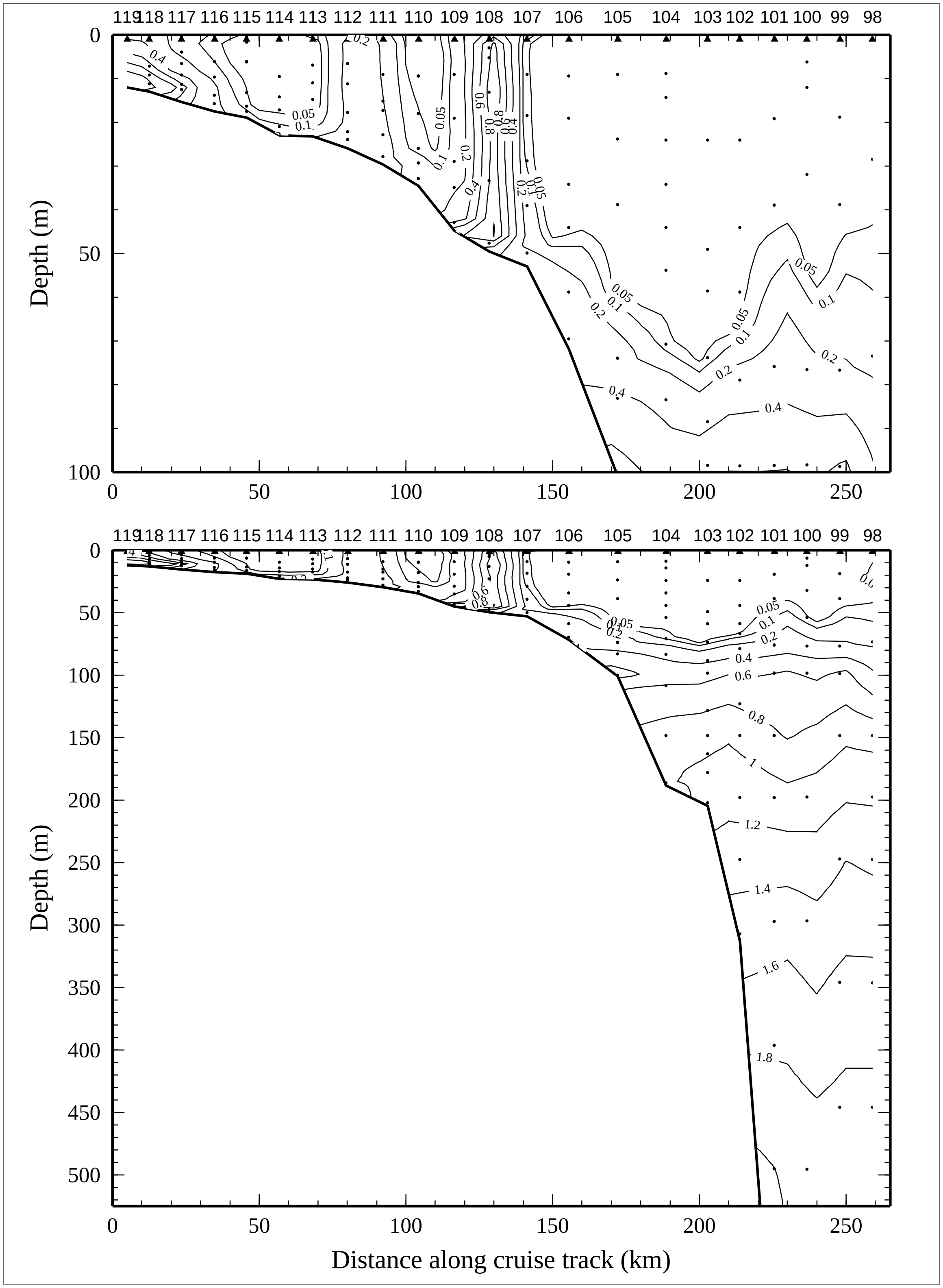

Figure 2.3.11. Phosphate (μmol·l-1) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

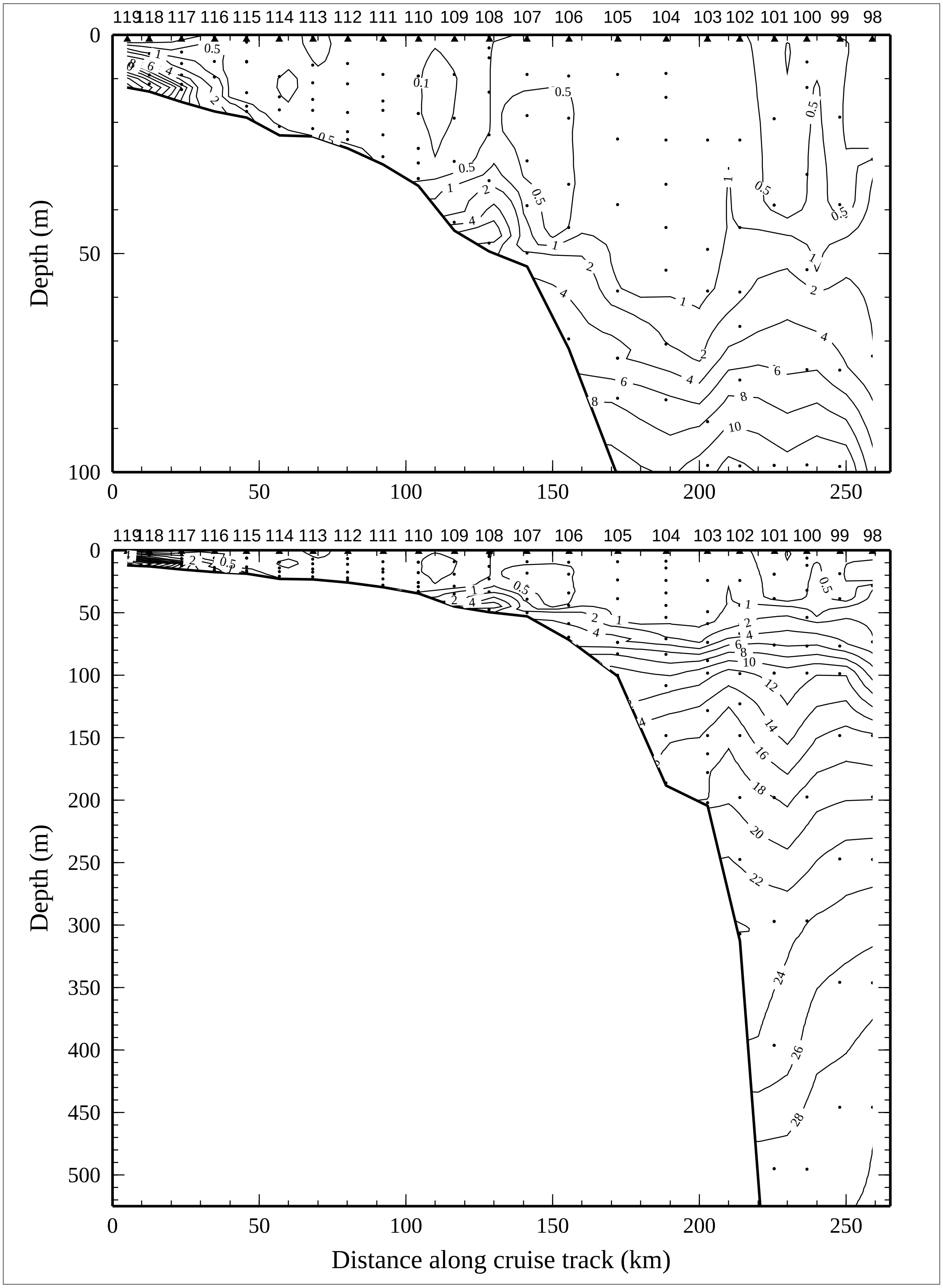

Figure 2.3.12. Nitrate (μmol·l-1) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

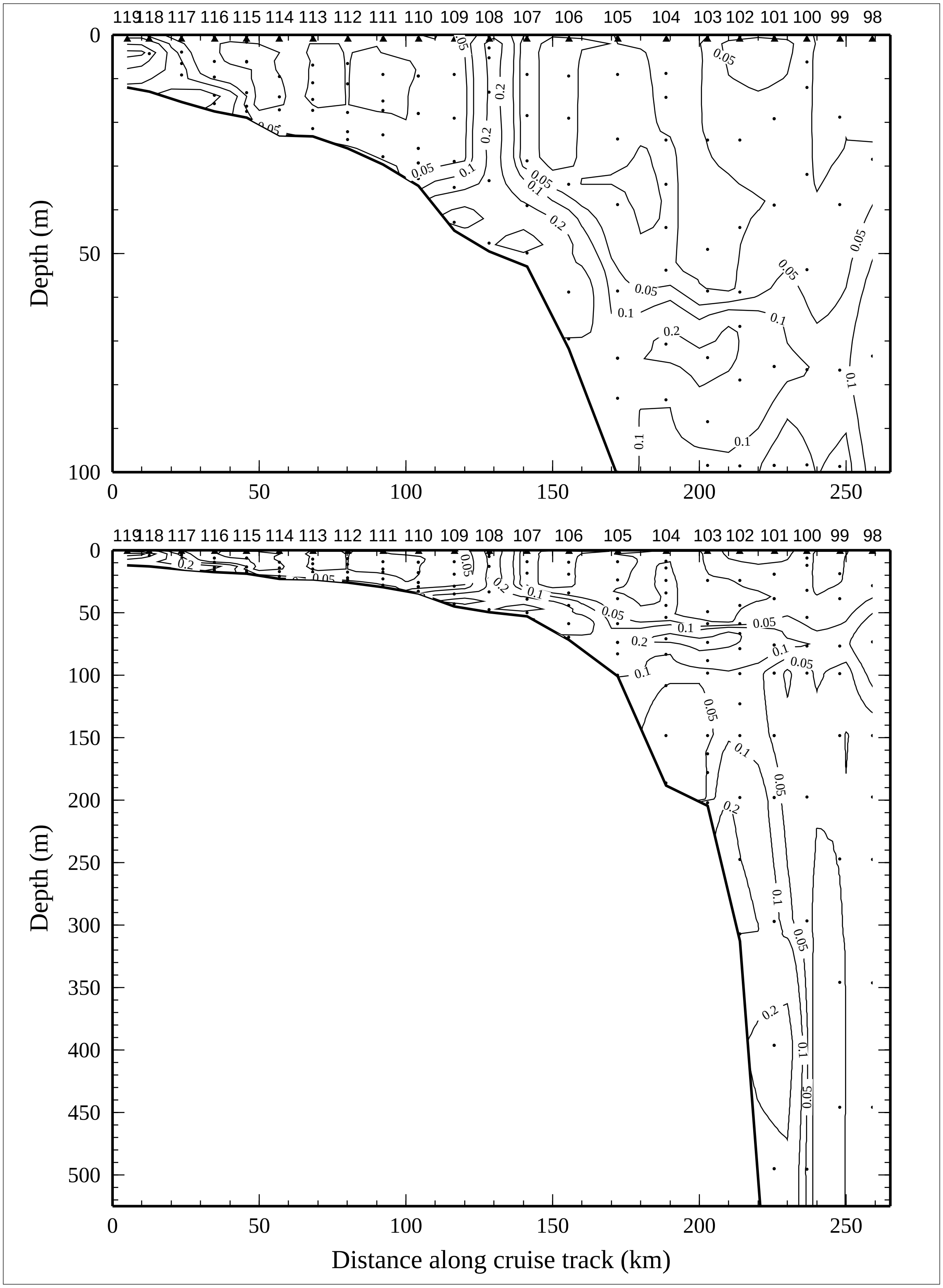

Figure 2.3.13. Nitrite (μmol·l^{-1}) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

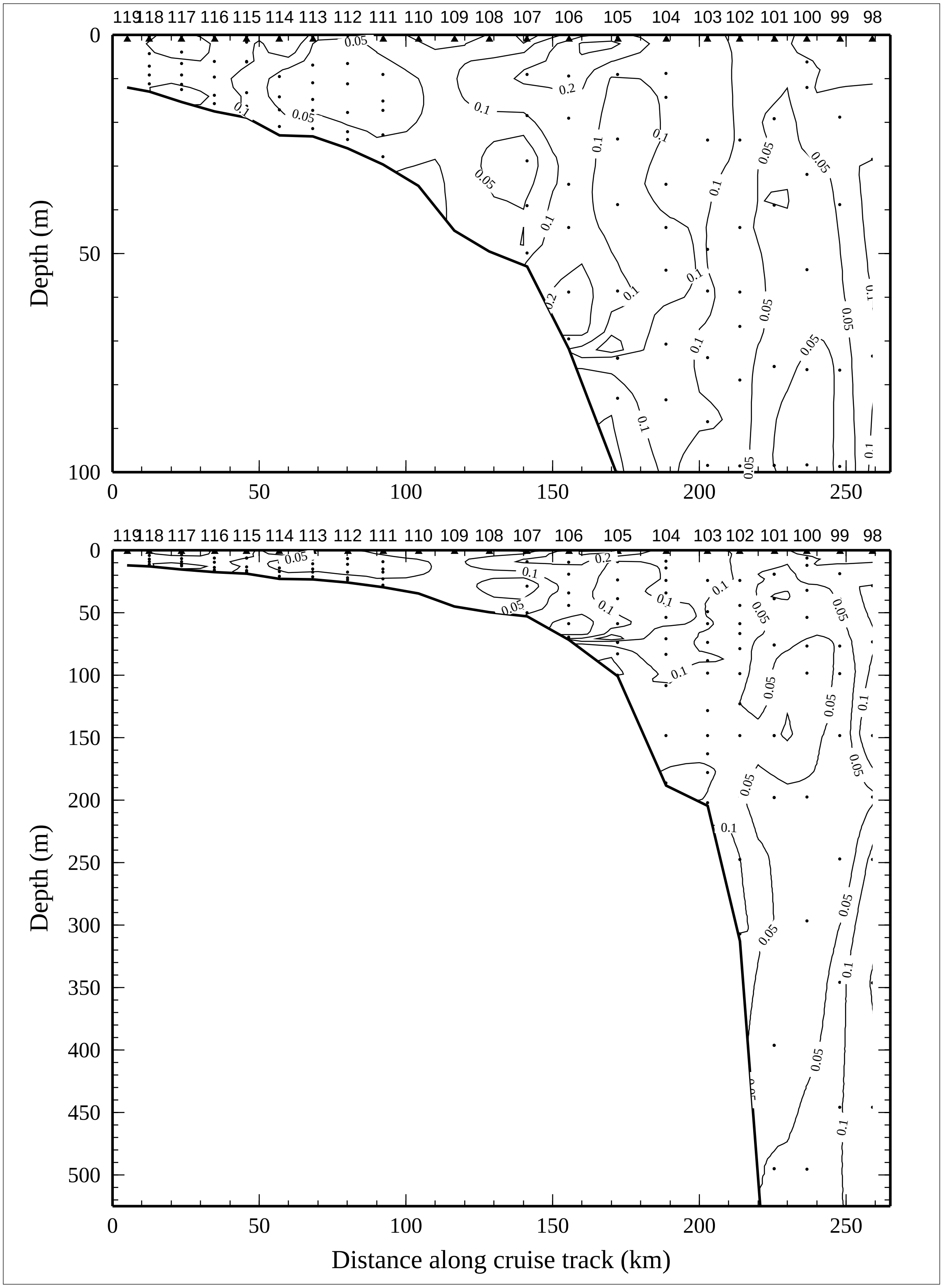

Figure 2.3.14. Ammonium (μmol·l-1) on line 3 of LATEX A survey H02,
31 July - 9 August 1992.

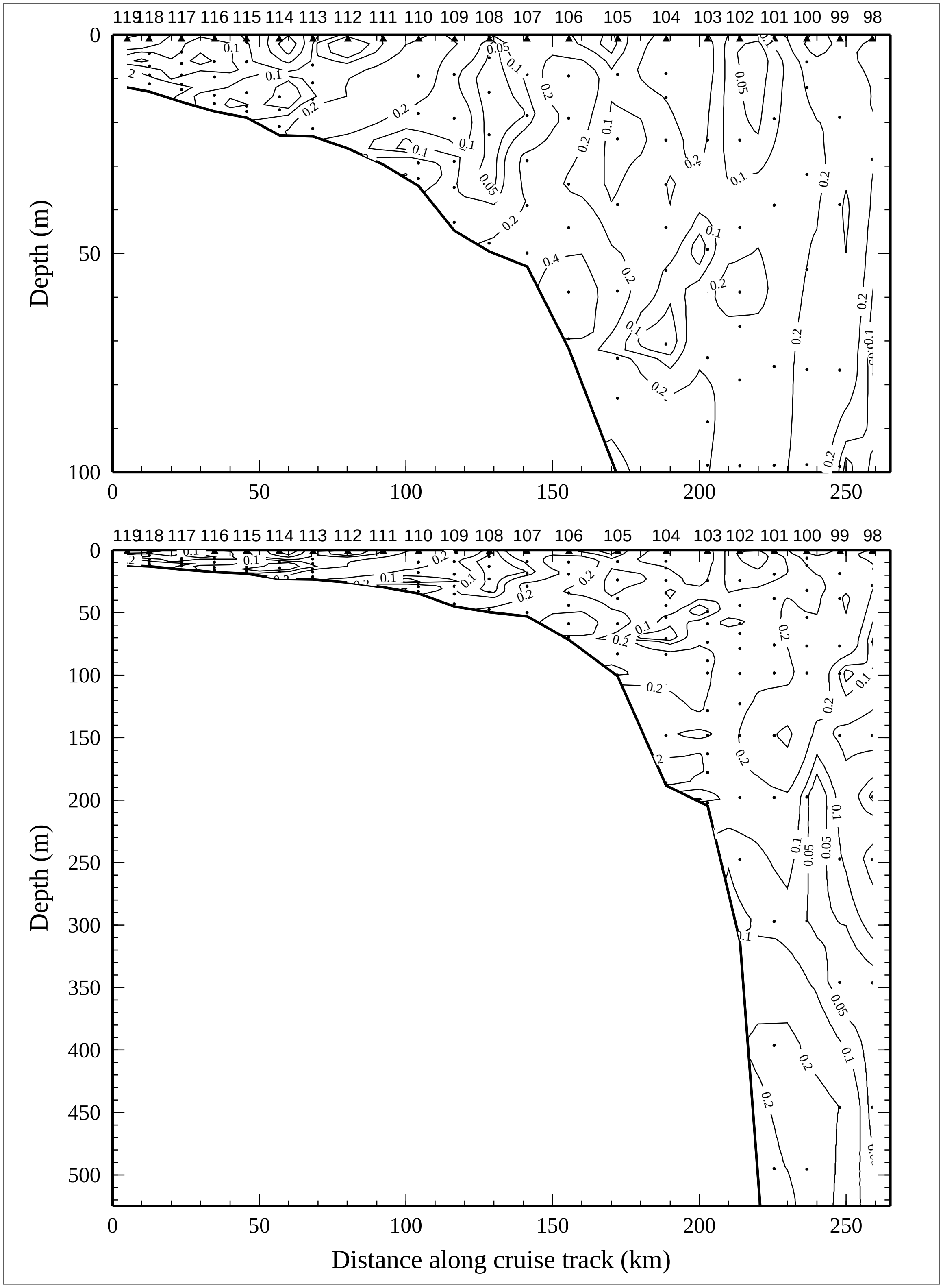

Figure 2.3.15. Urea (μmol·l^{-1}) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

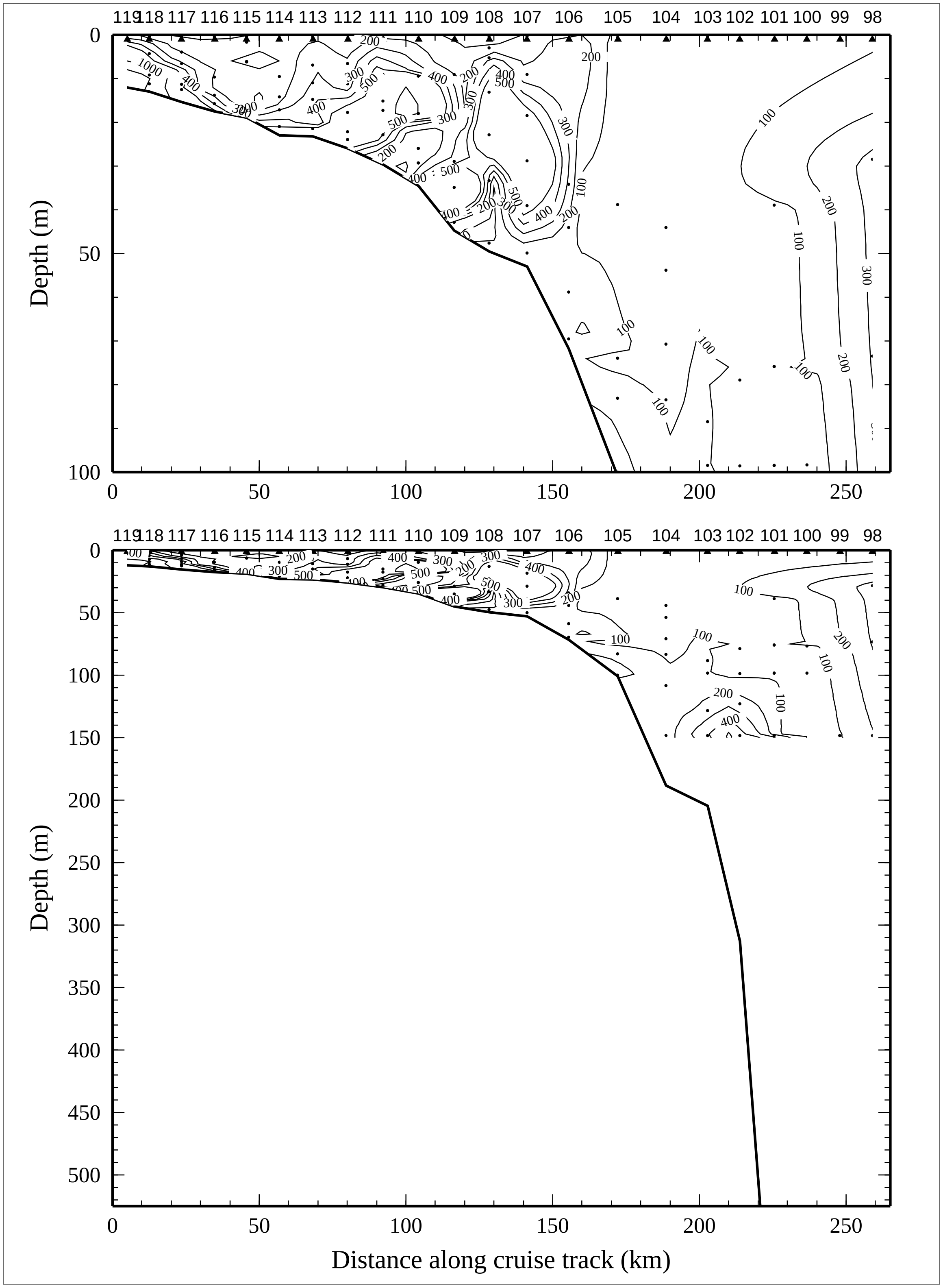

Figure 2.3.16. Chlorophyll a (ng·l^{-1}) on line 3 of LATEX A survey H02, 31 July - 9 August 1992.

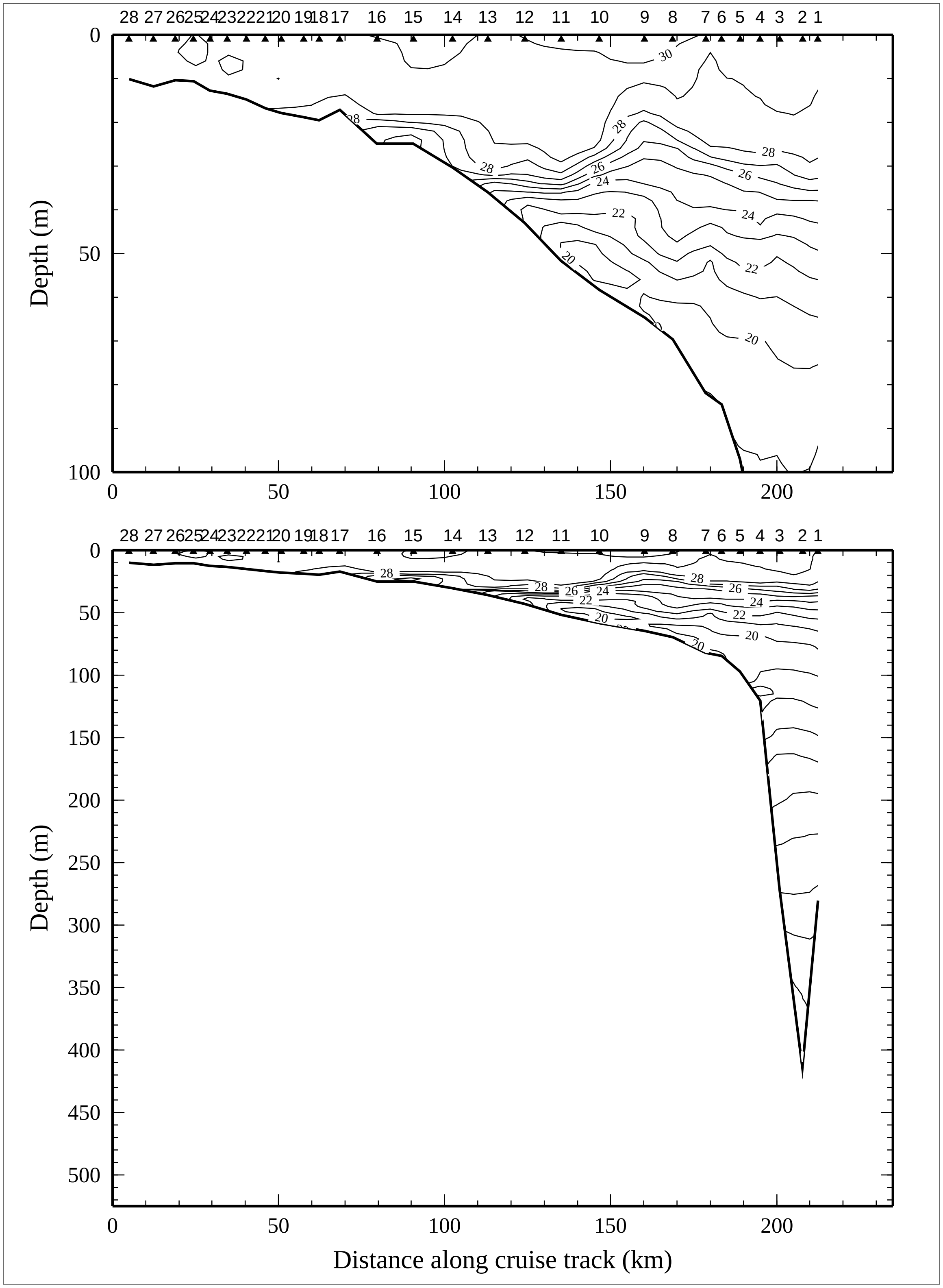

Figure 2.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

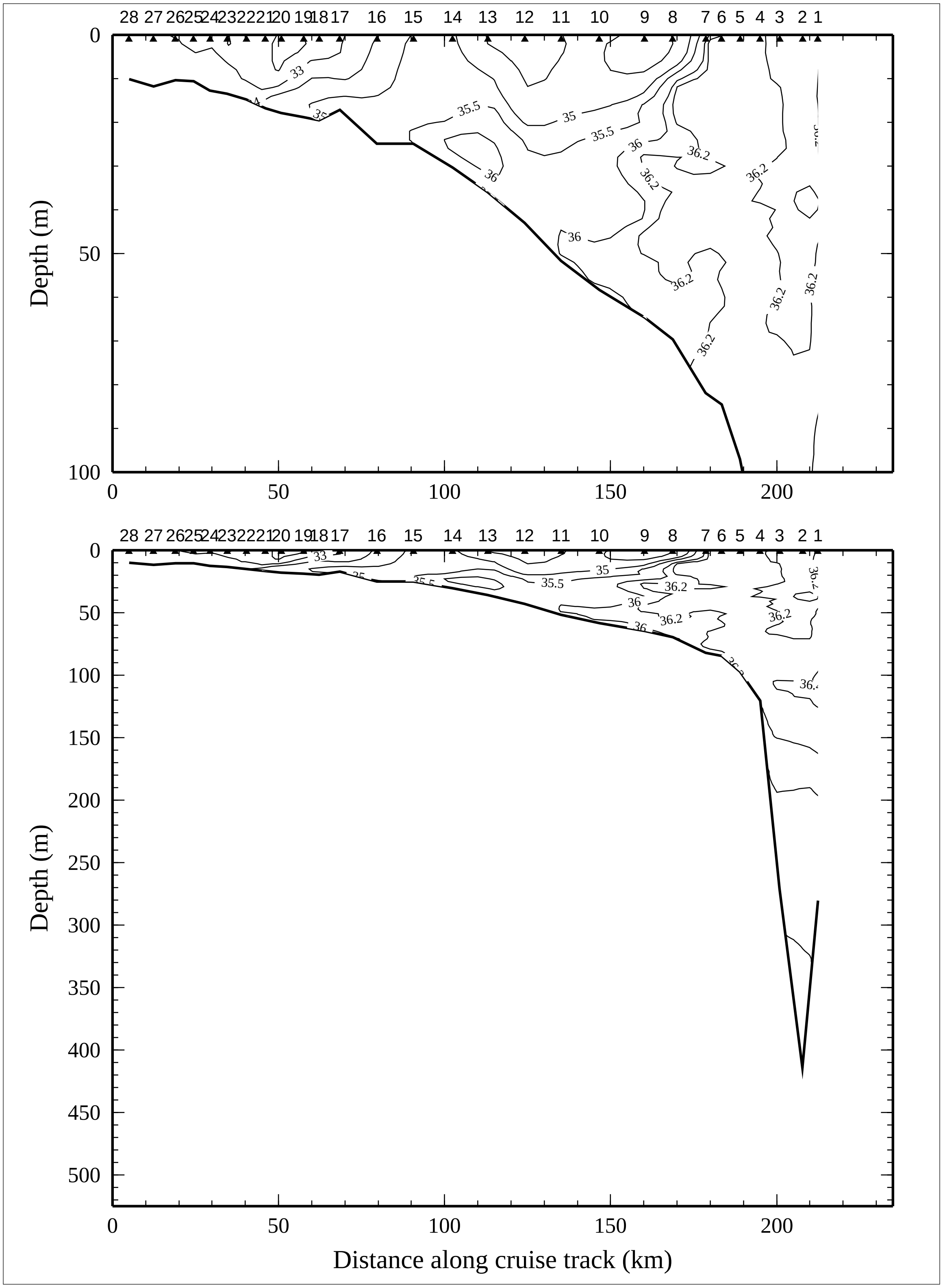

Figure 2.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

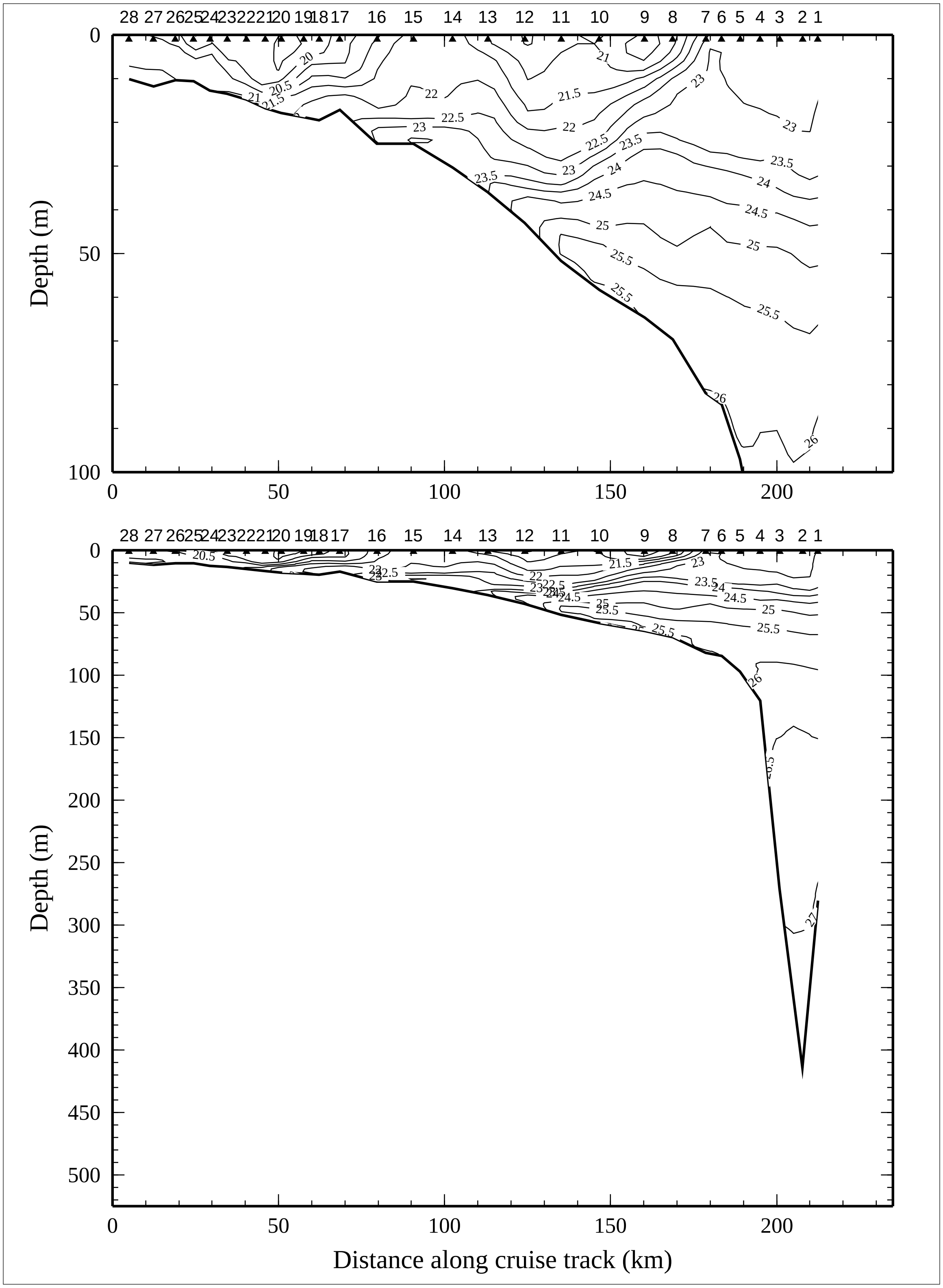

Figure 2.4.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

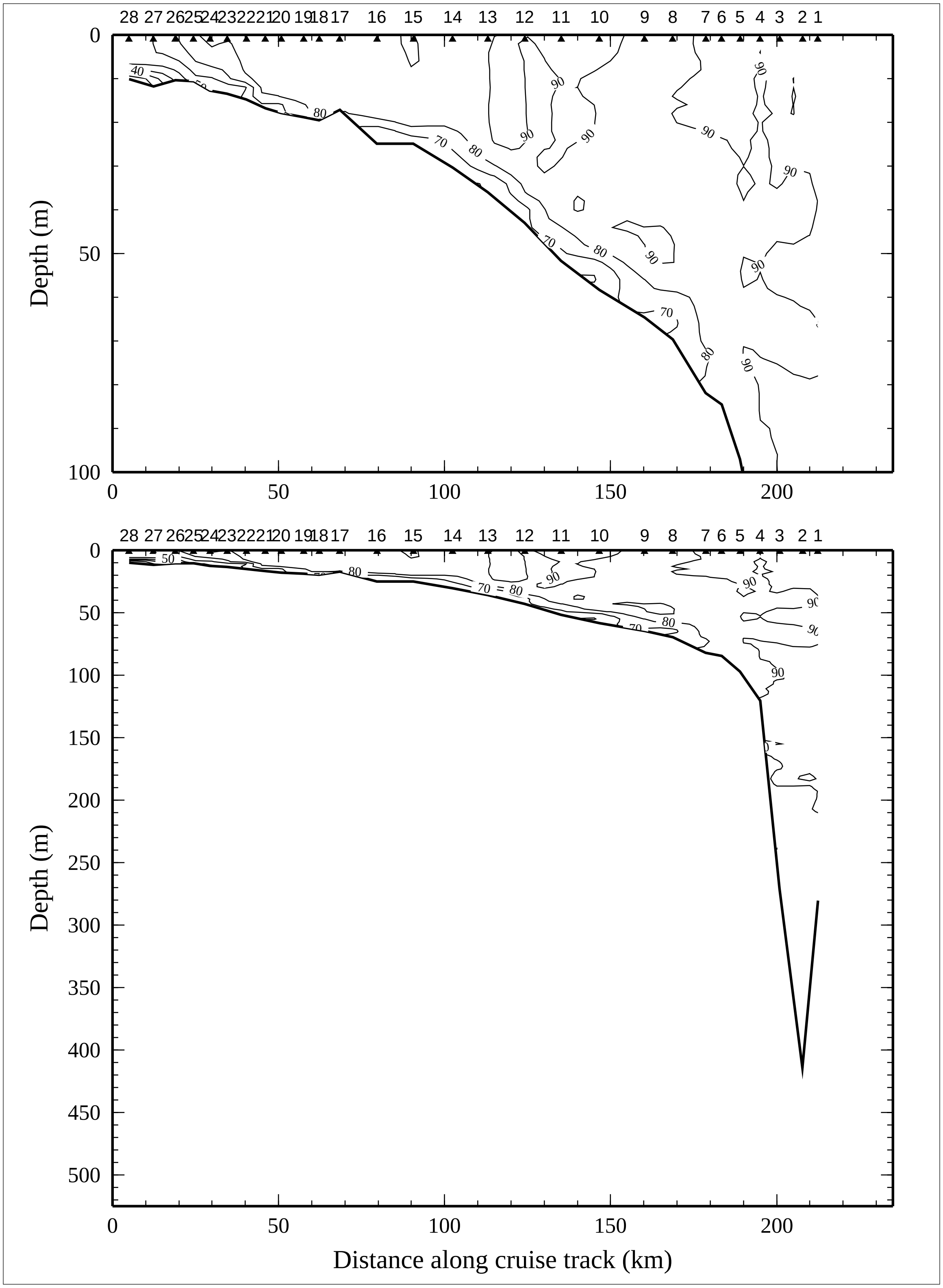

Figure 2.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

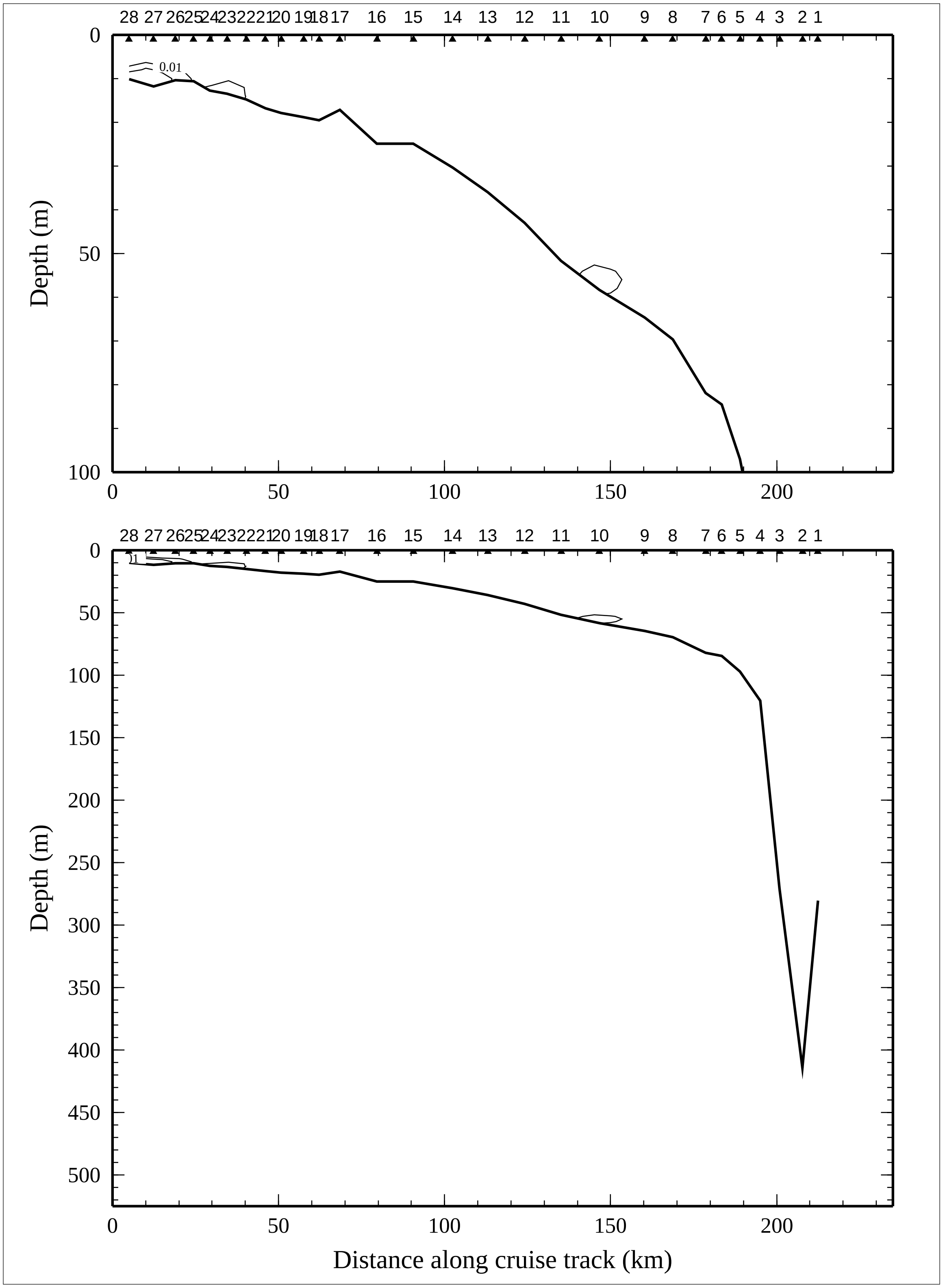

Figure 2.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

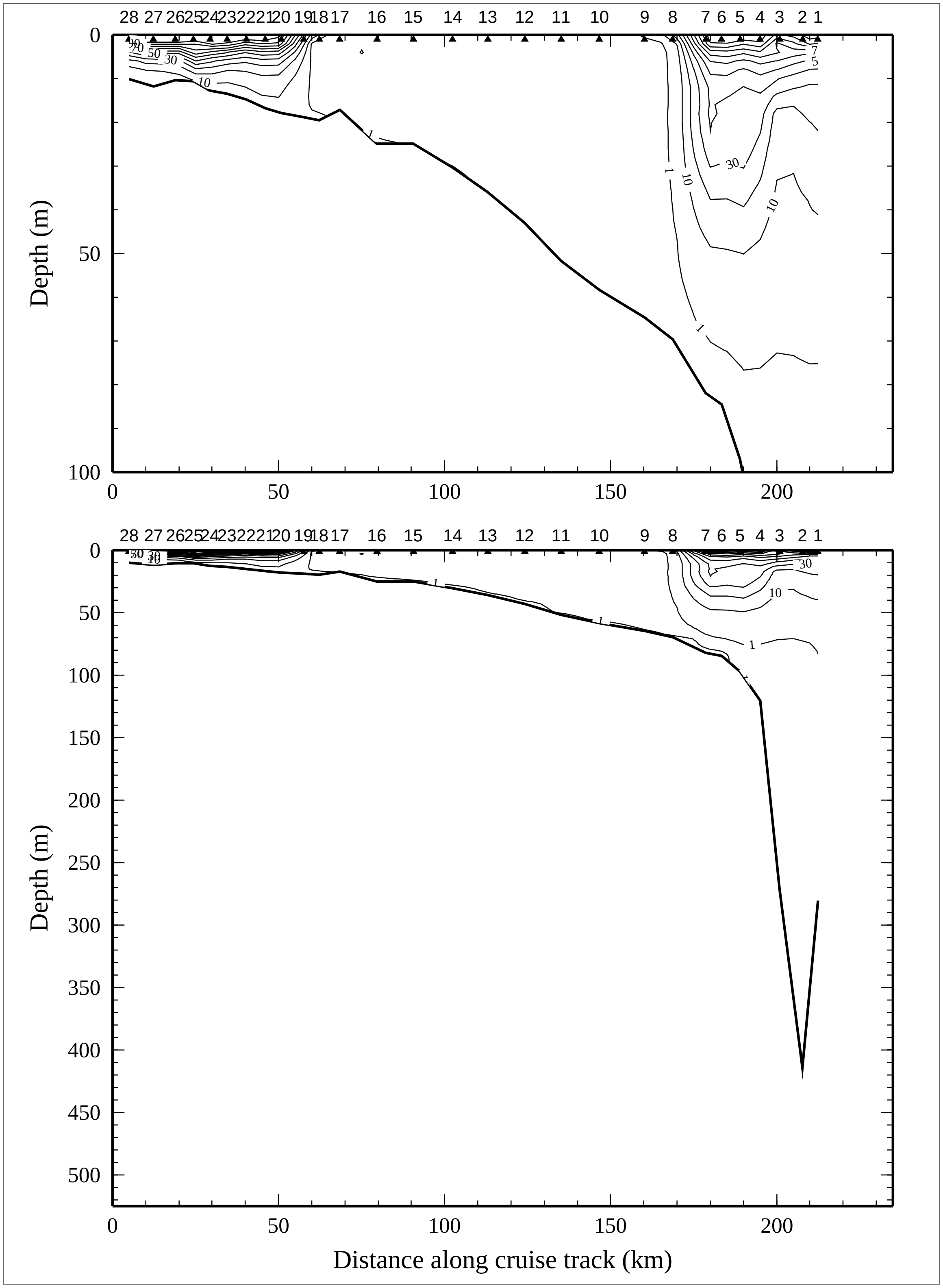

Figure 2.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

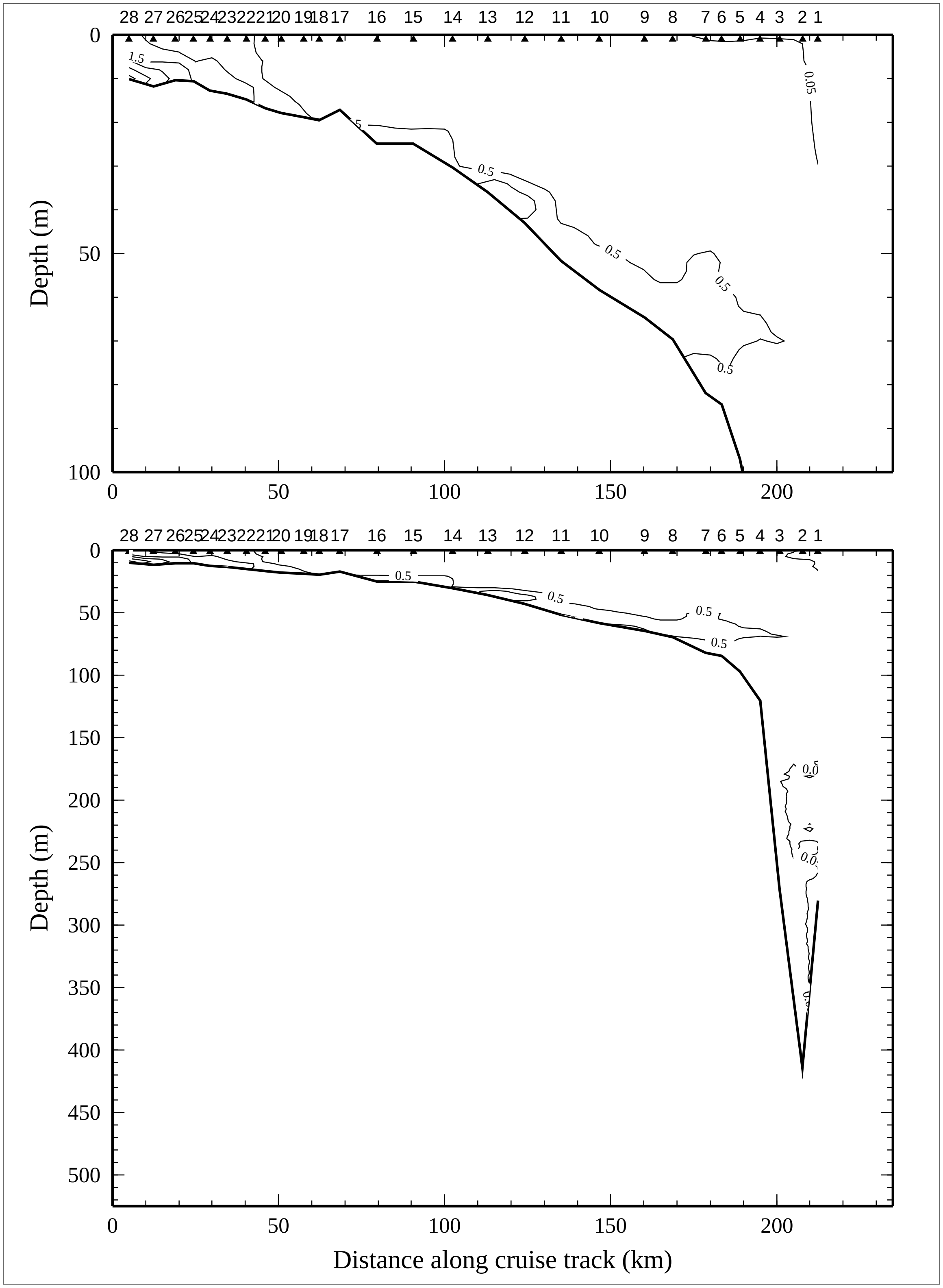

Figure 2.4.7. Relative fluorescence on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

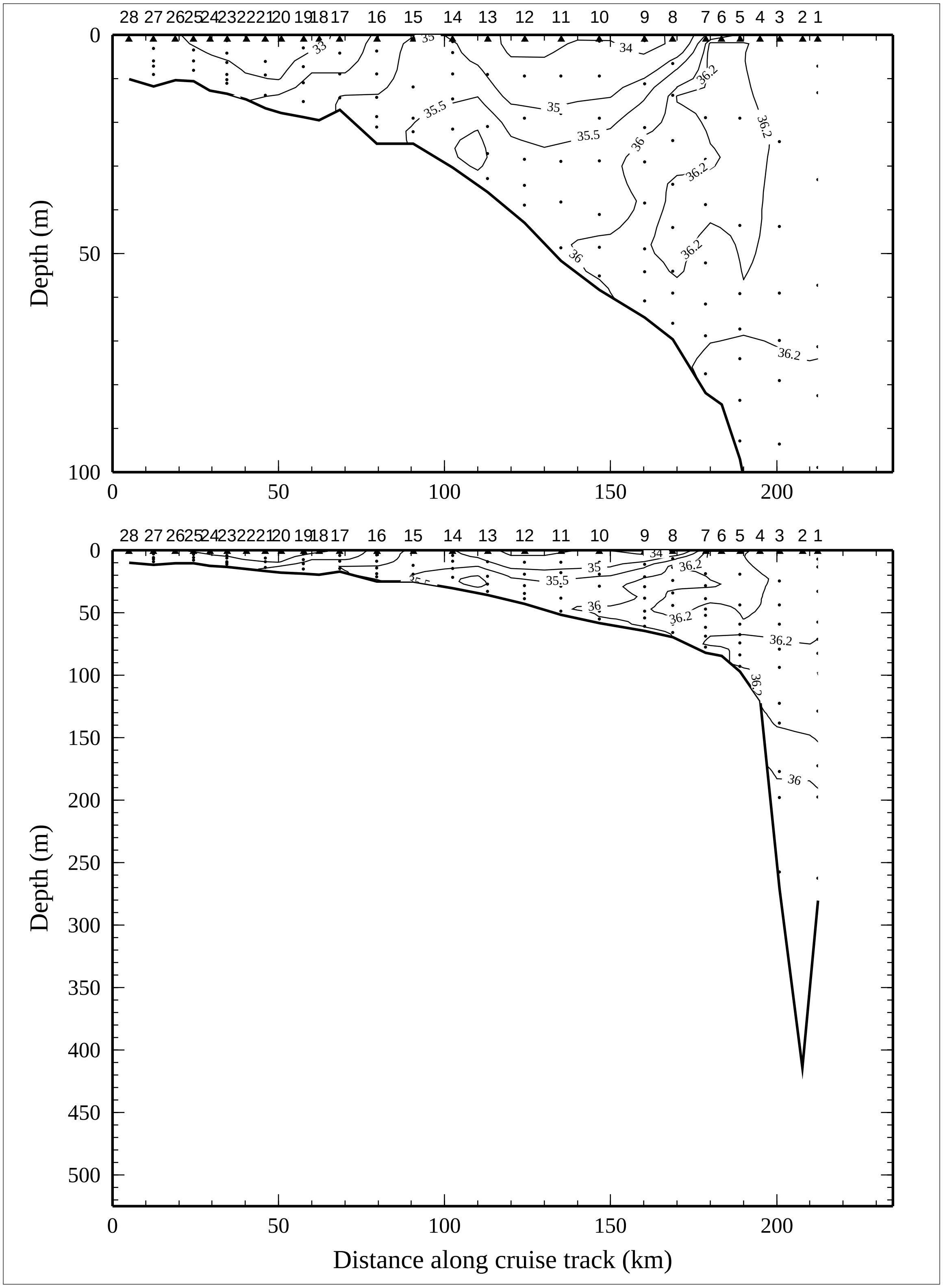

Figure 2.4.8. Bottle salinity on line 4 of LATEX A survey H02,
31 July - 9 August 1992.

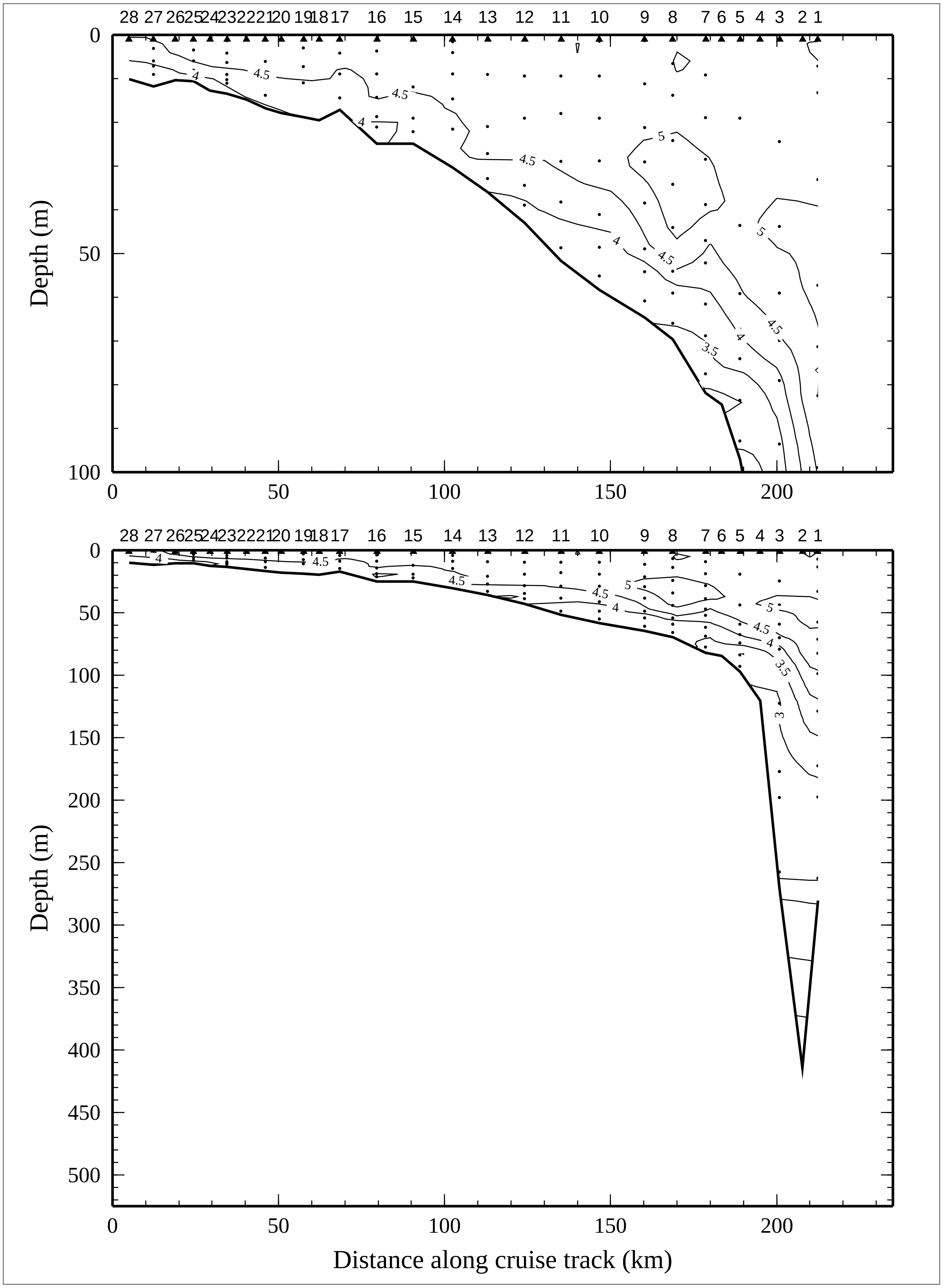

Figure 2.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

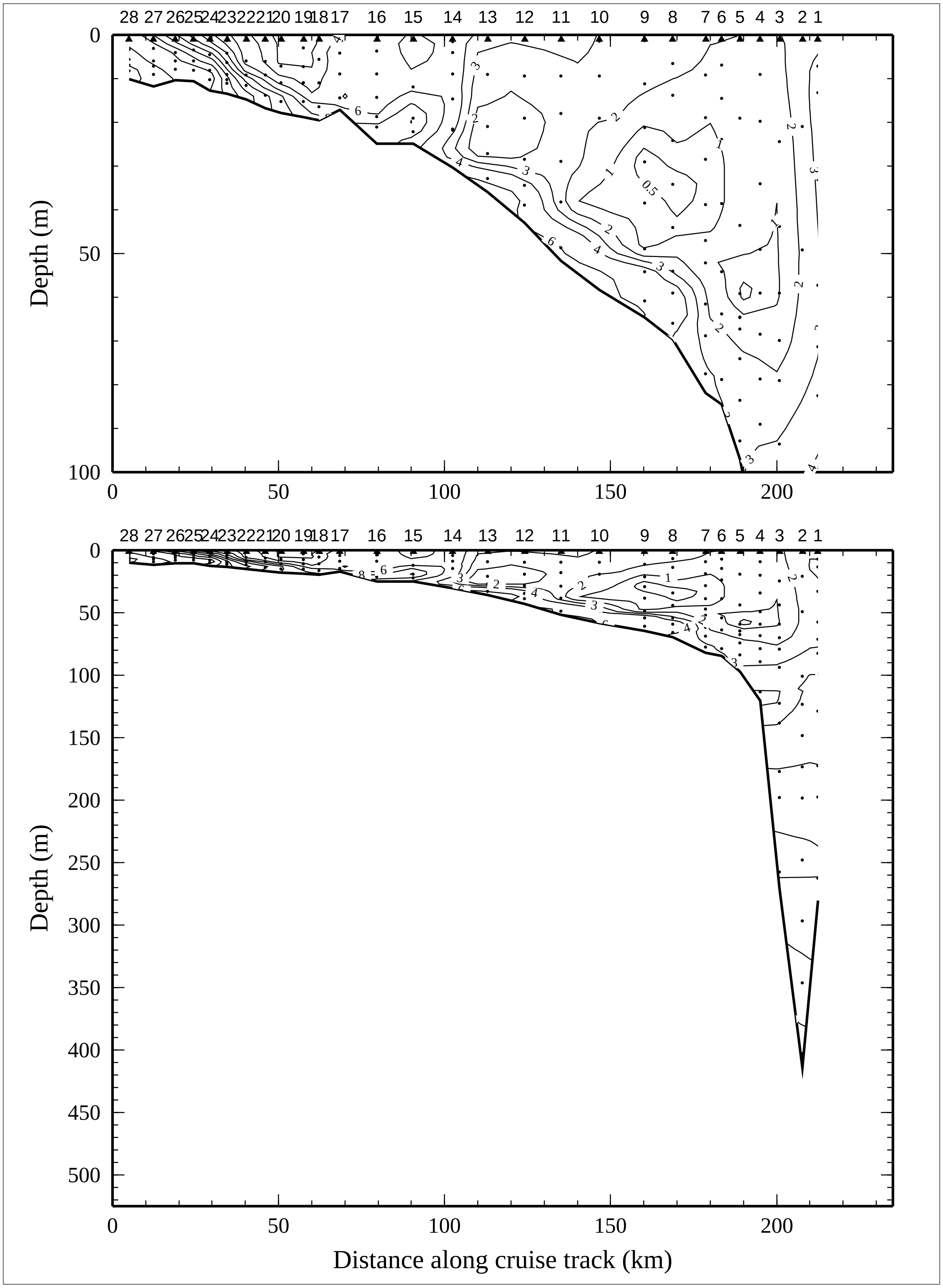

Figure 2.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H02,
31 July - 9 August 1992.

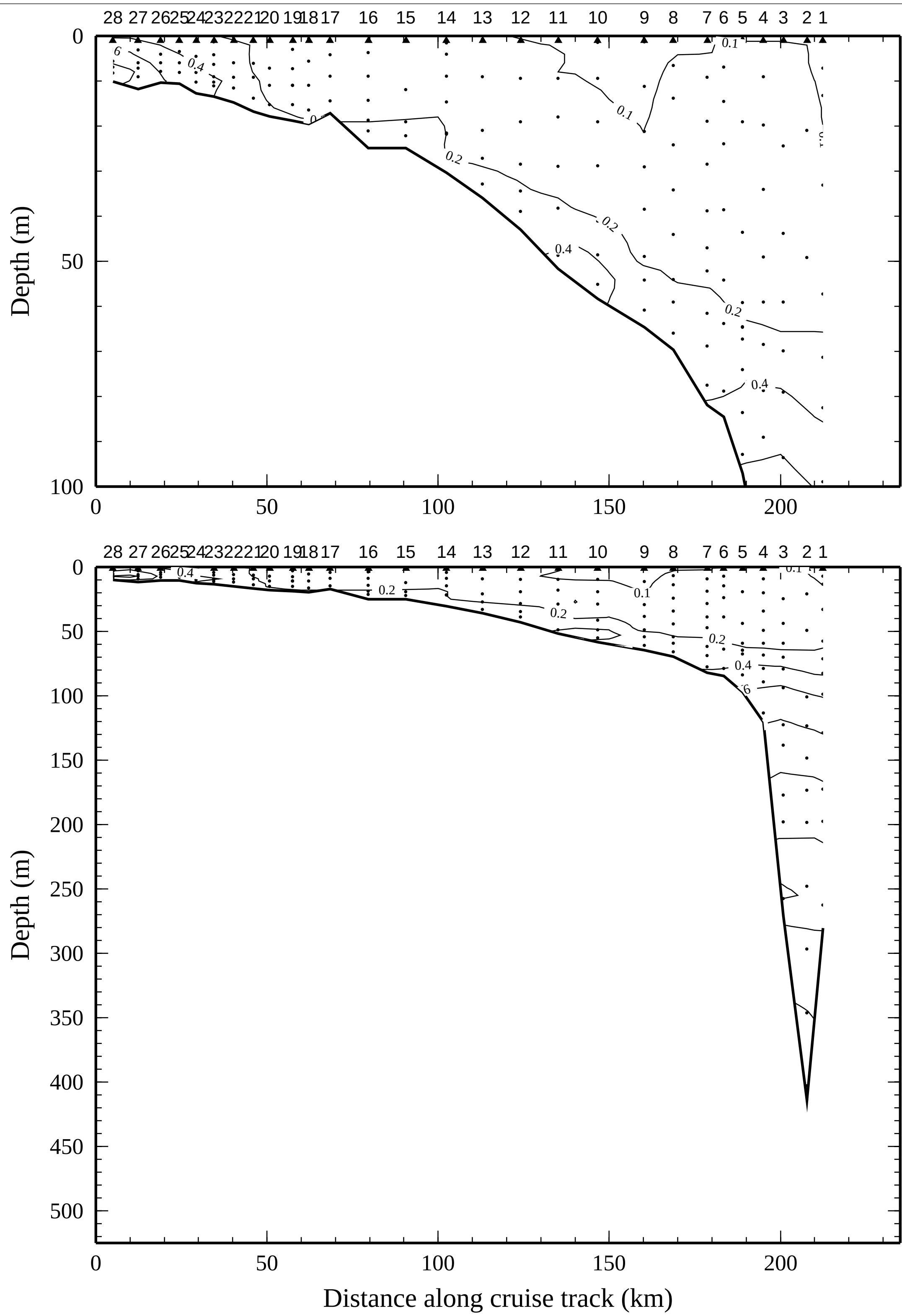

Figure 2.4.11. Phosphate (μmol·l⁻¹) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

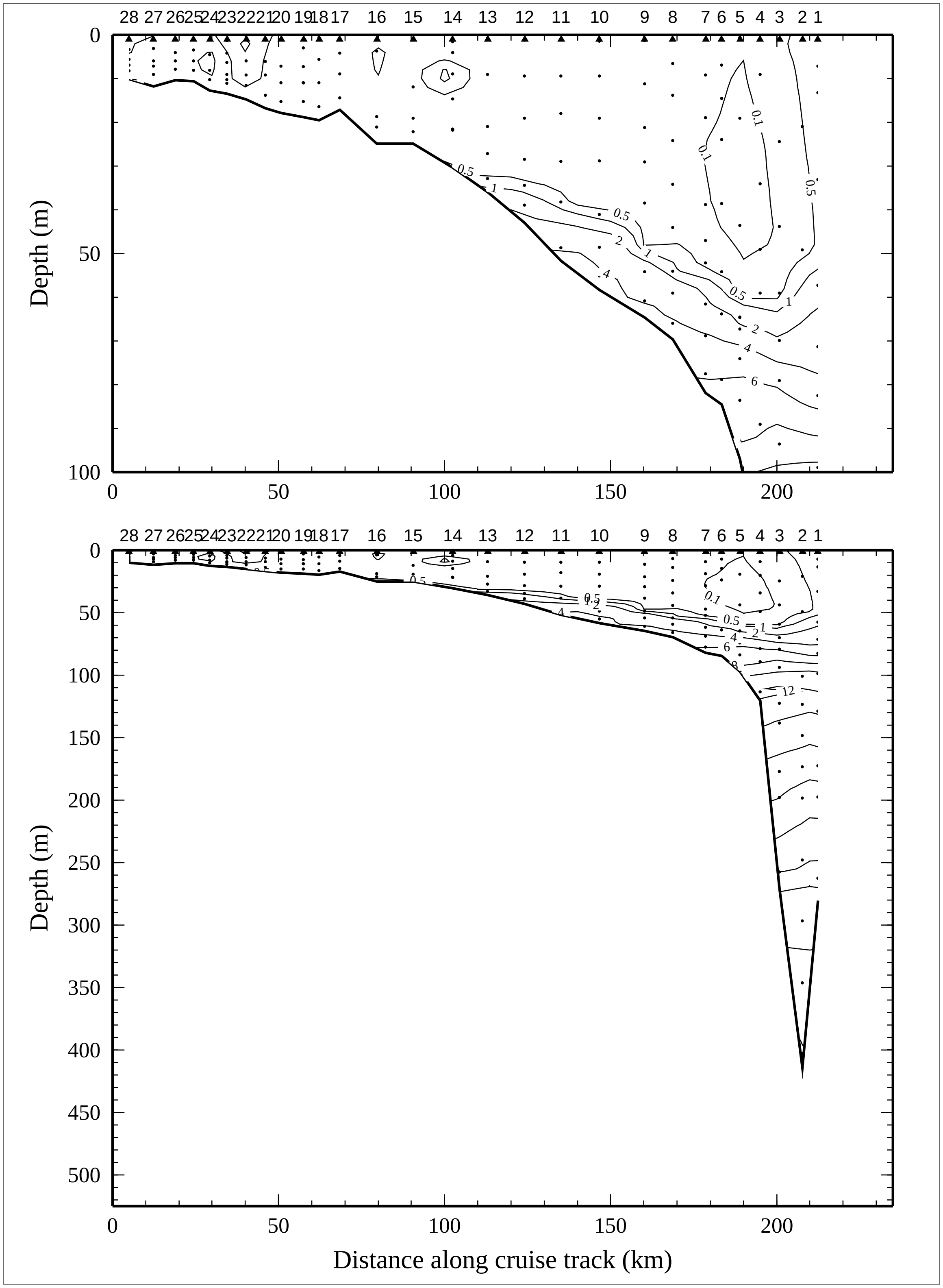

Figure 2.4.12. Nitrate ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H02,
31 July - 9 August 1992.

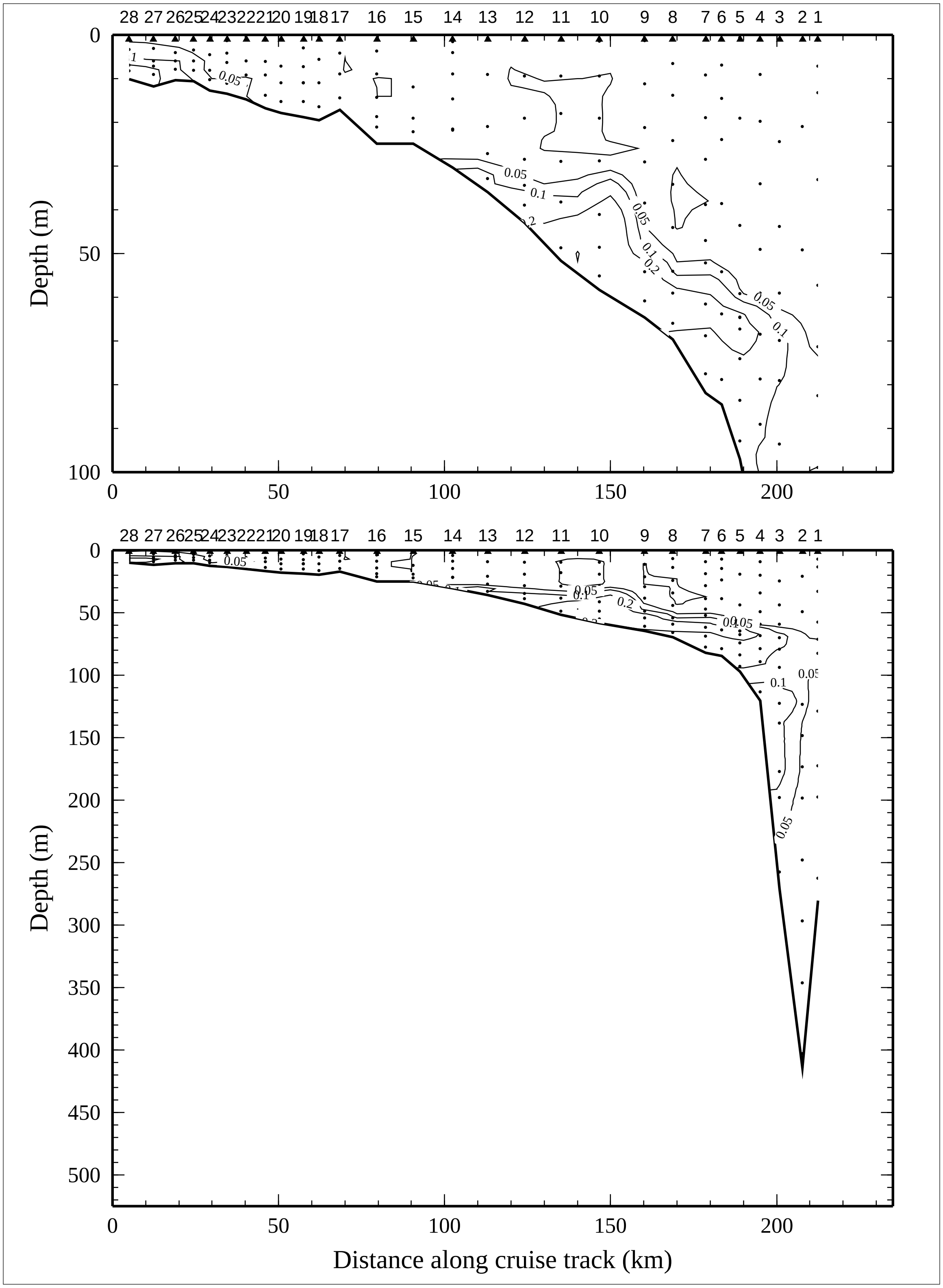

Figure 2.4.13. Nitrite (μmol·l^{-1}) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

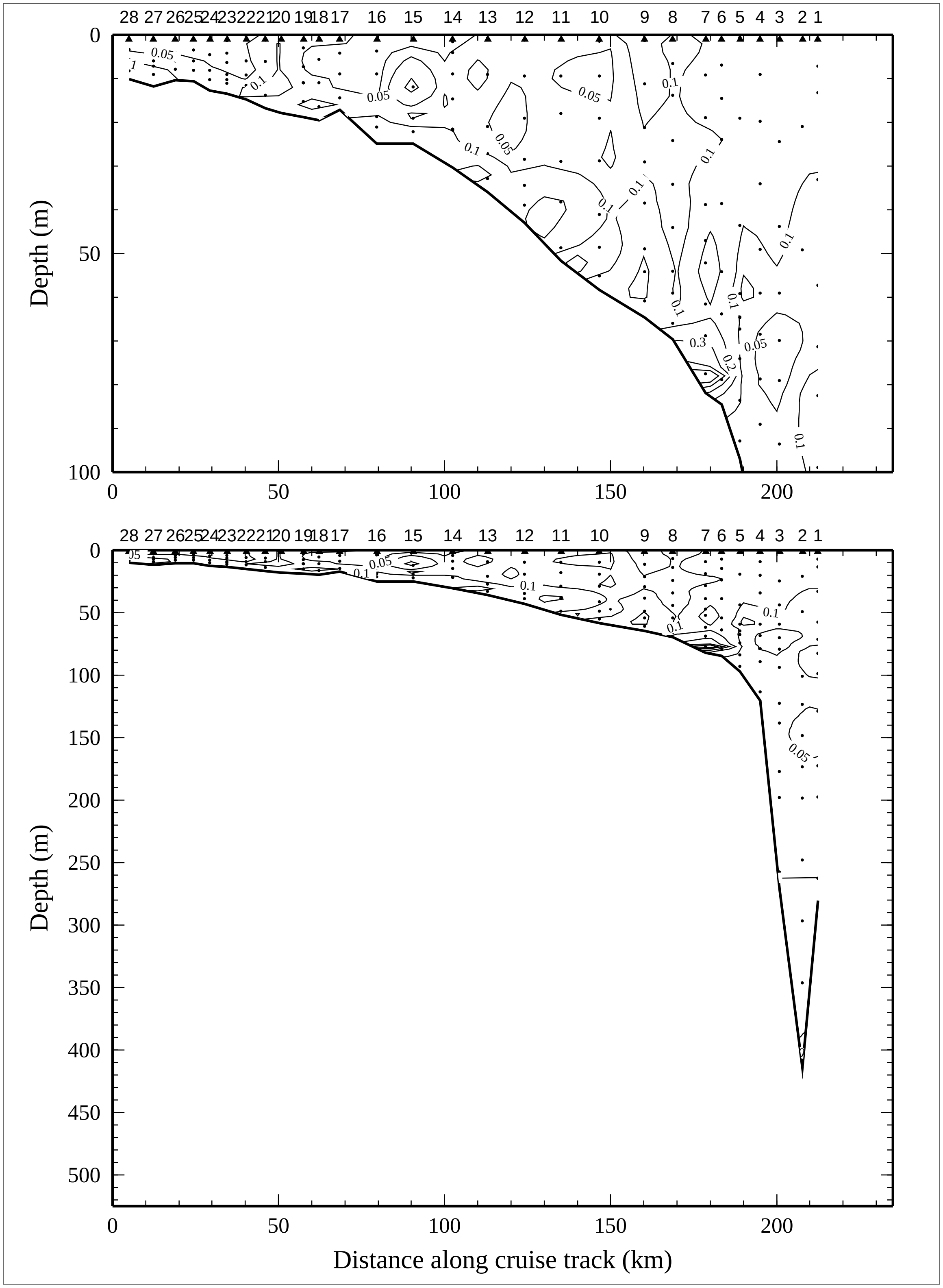

Figure 2.4.14. Ammonium (μmol·l^{-1}) on line 4 of LATEX A survey H02,
31 July - 9 August 1992.

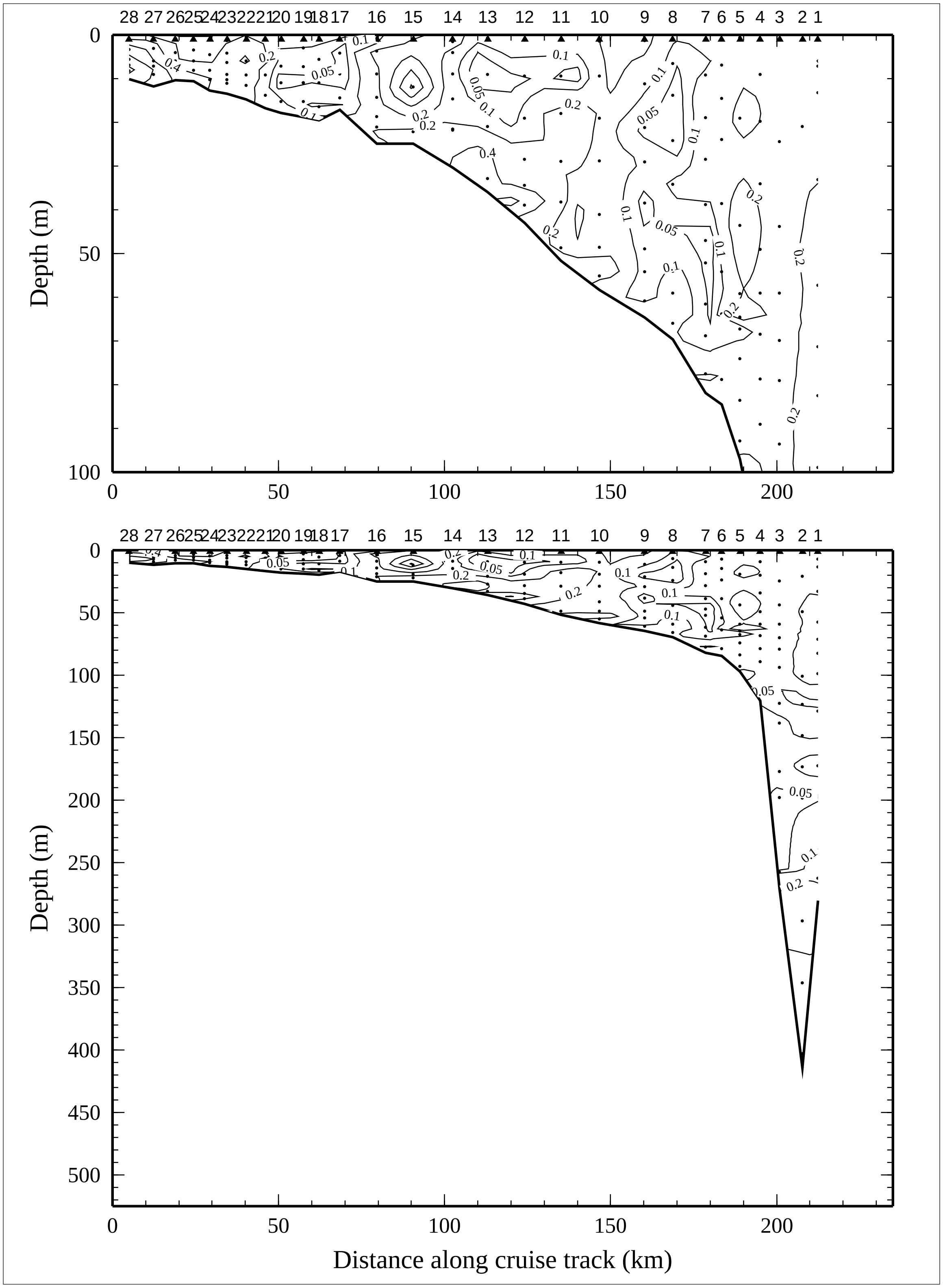

Figure 2.4.15. Urea (μmol·l⁻¹) on line 4 of LATEX A survey H02,
31 July - 9 August 1992.

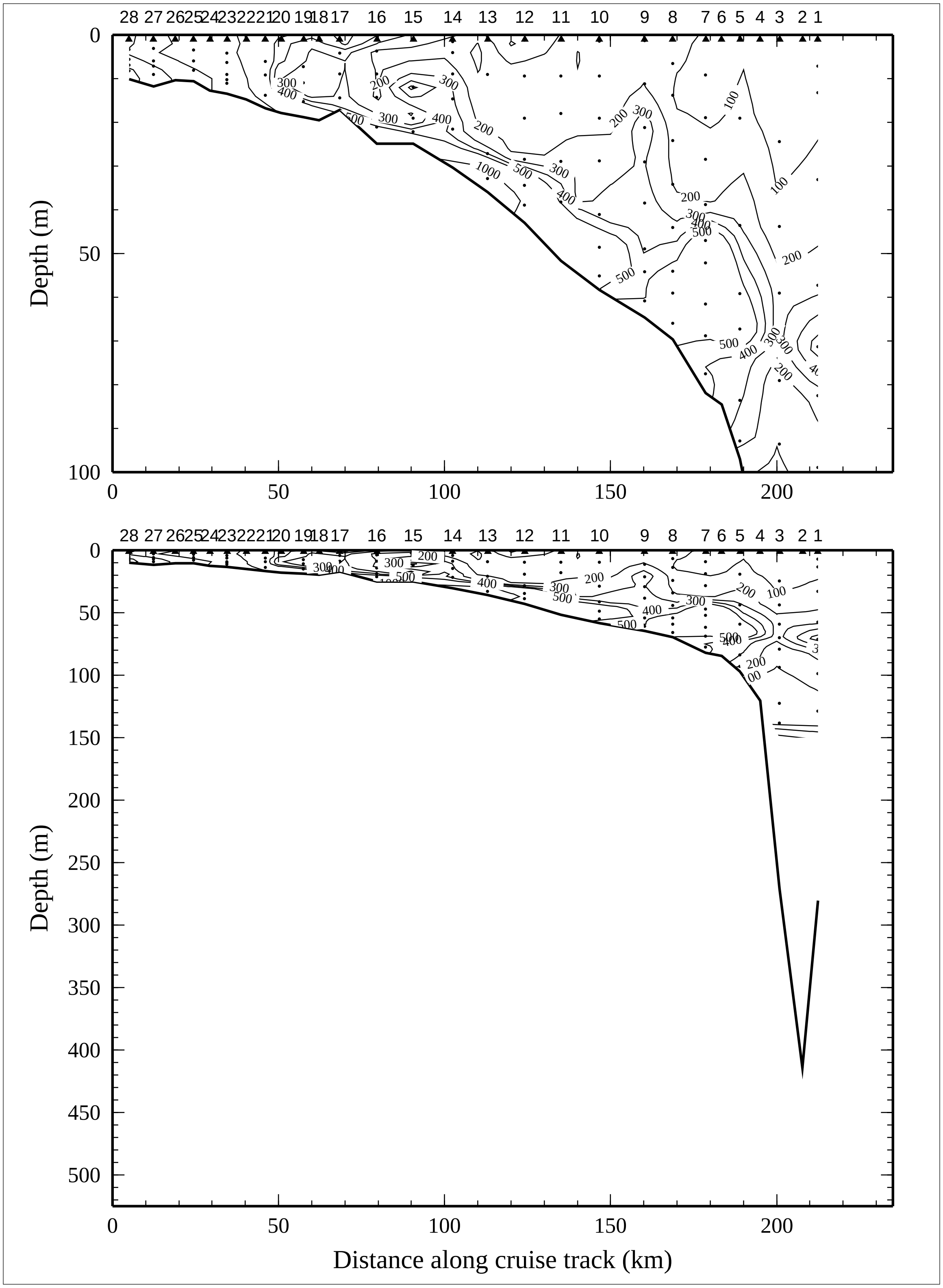

Figure 2.4.16. Chlorophyll a (ng·l^{-1}) on line 4 of LATEX A survey H02, 31 July - 9 August 1992.

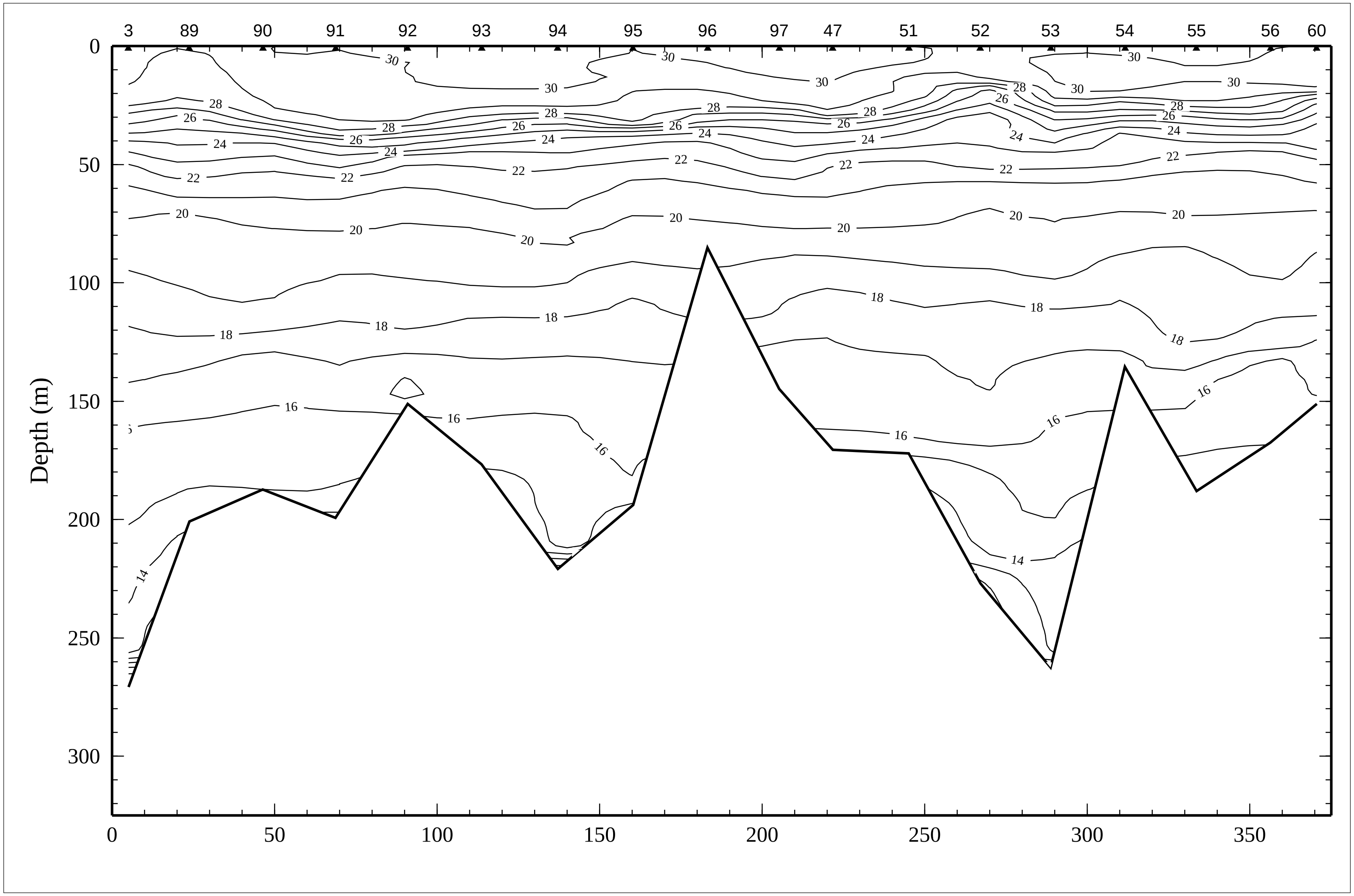

Figure 2.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

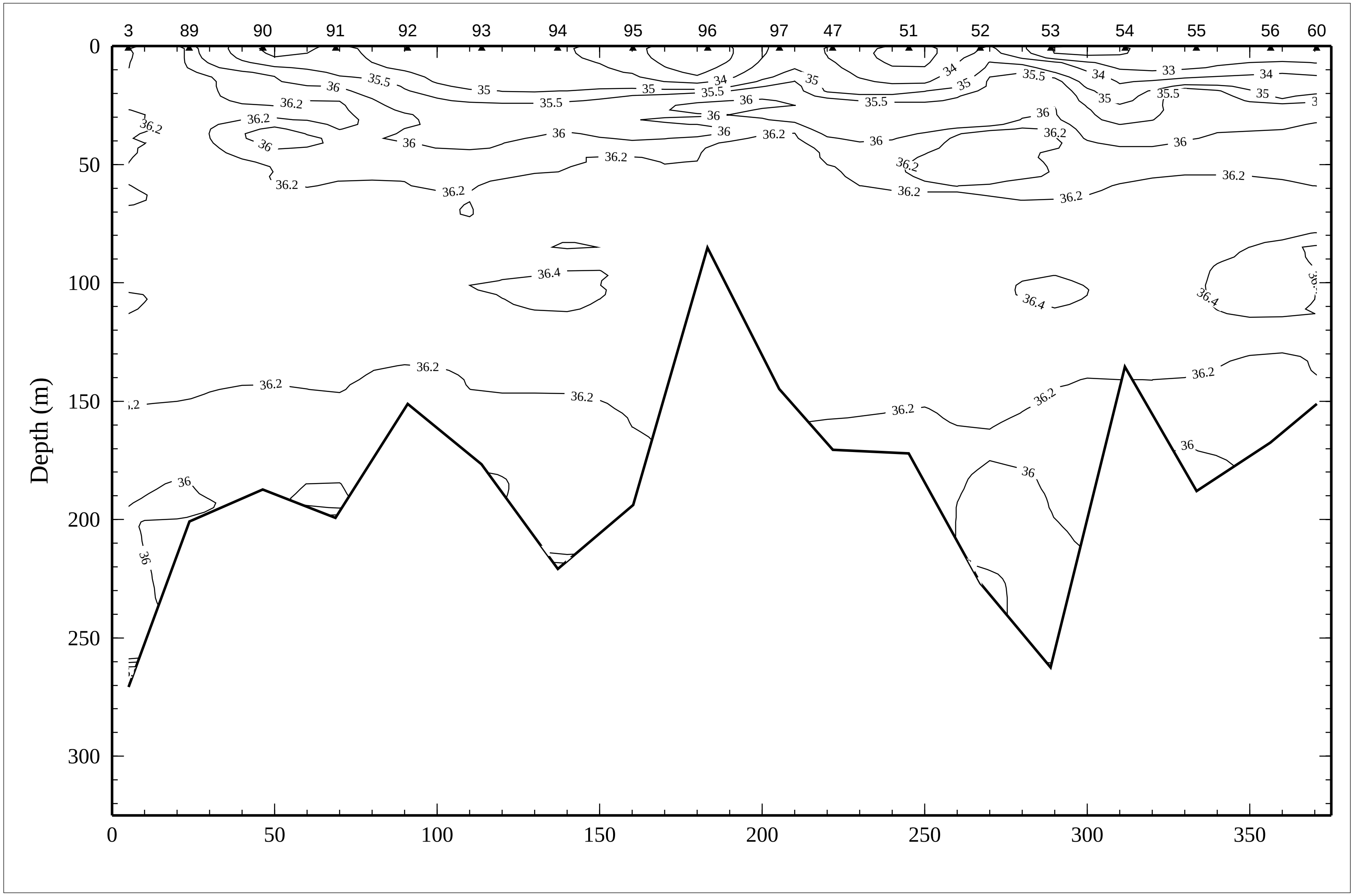

Figure 2.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

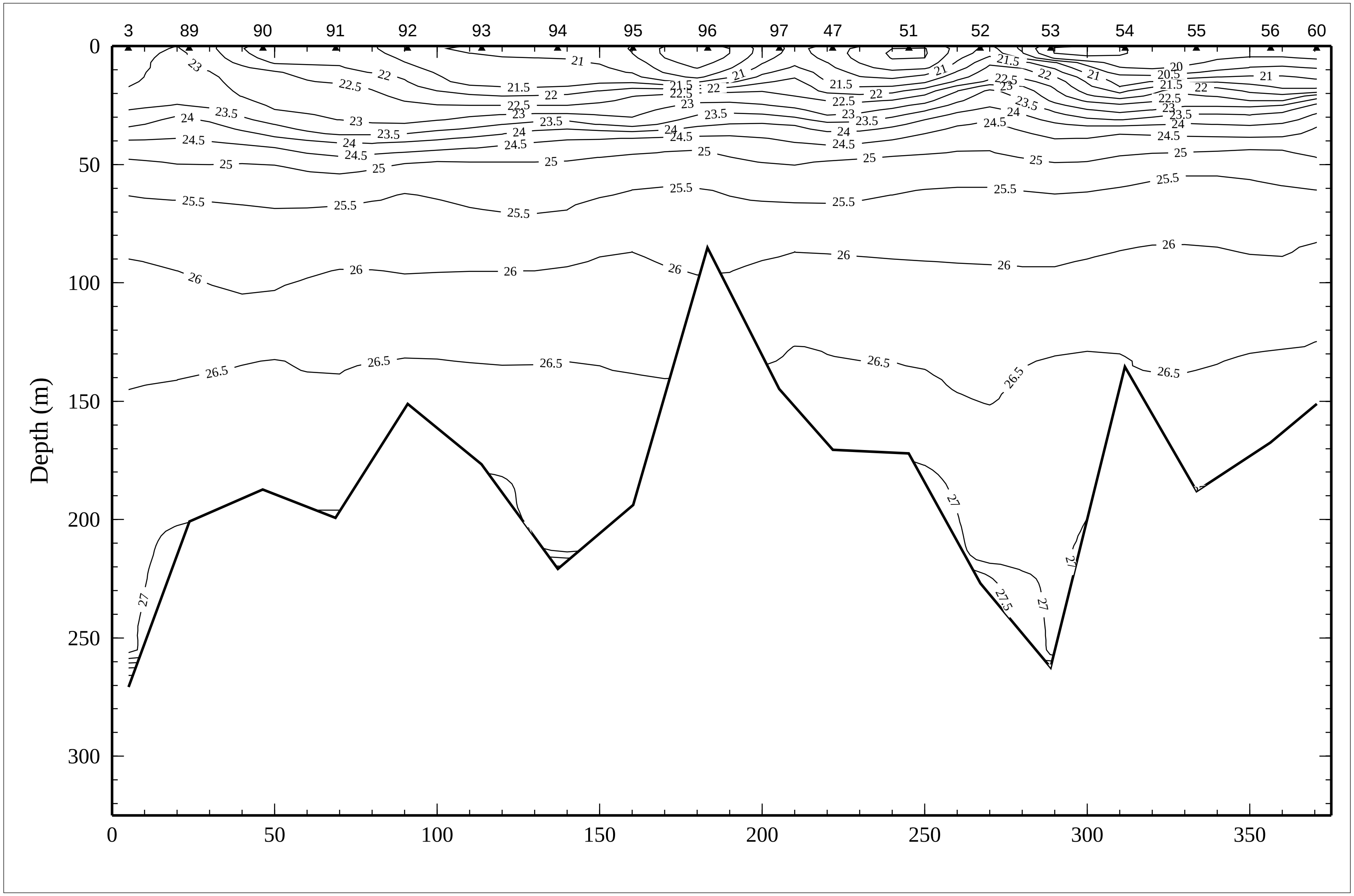

Figure 2.9.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

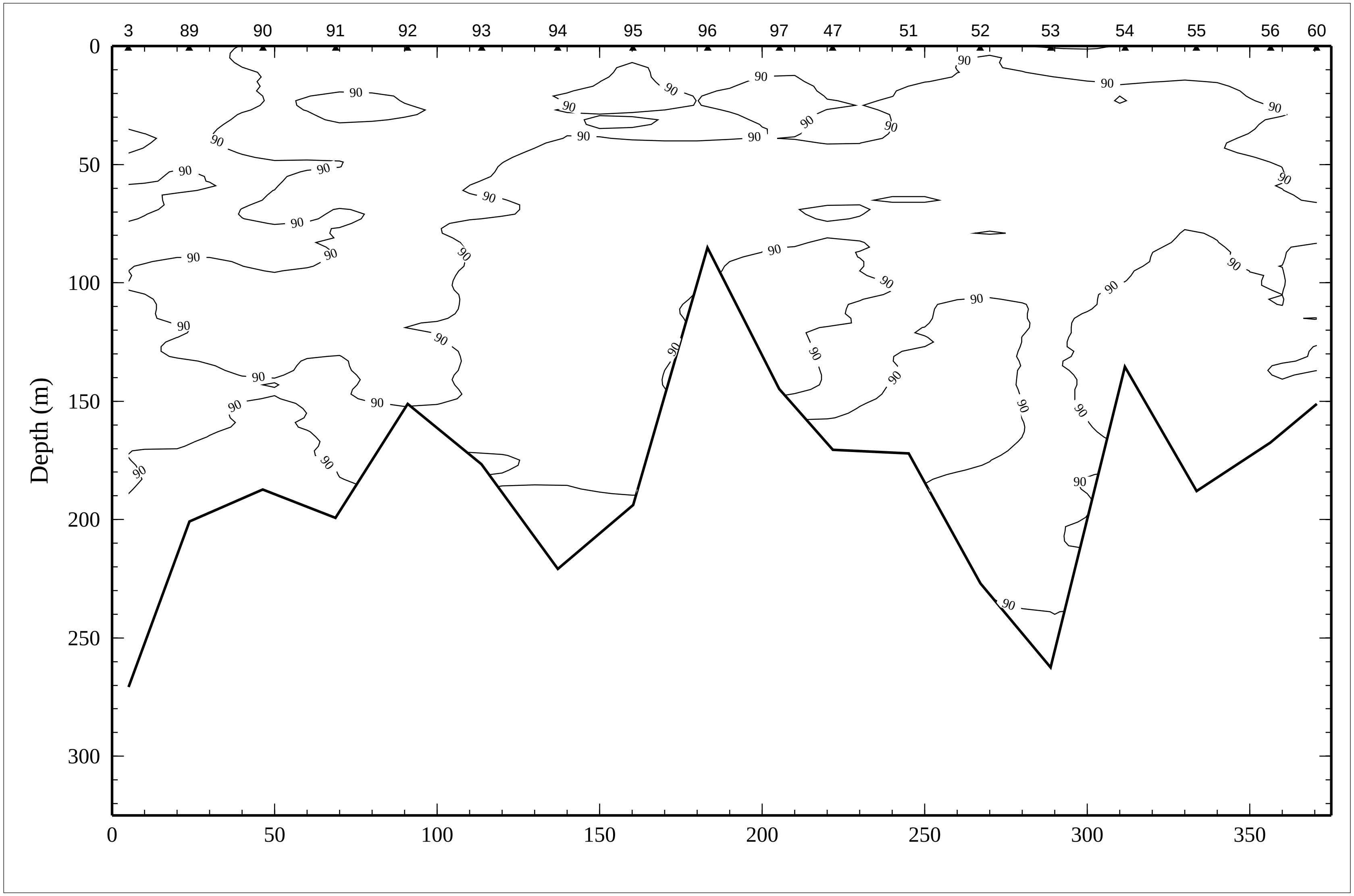

Figure 2.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

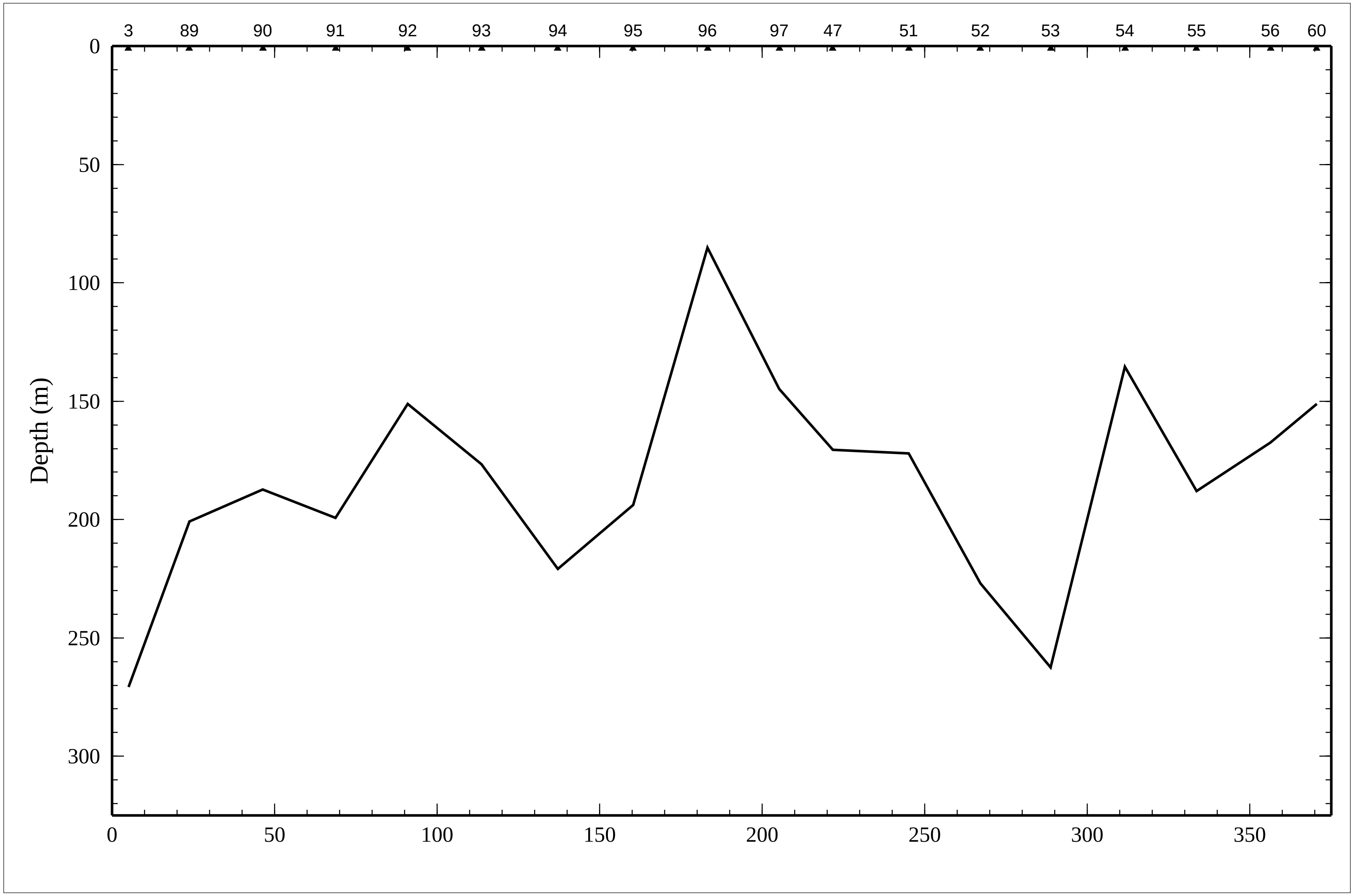

Figure 2.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H02, 31 July - 9 August 1992. Values were less than 0.05.

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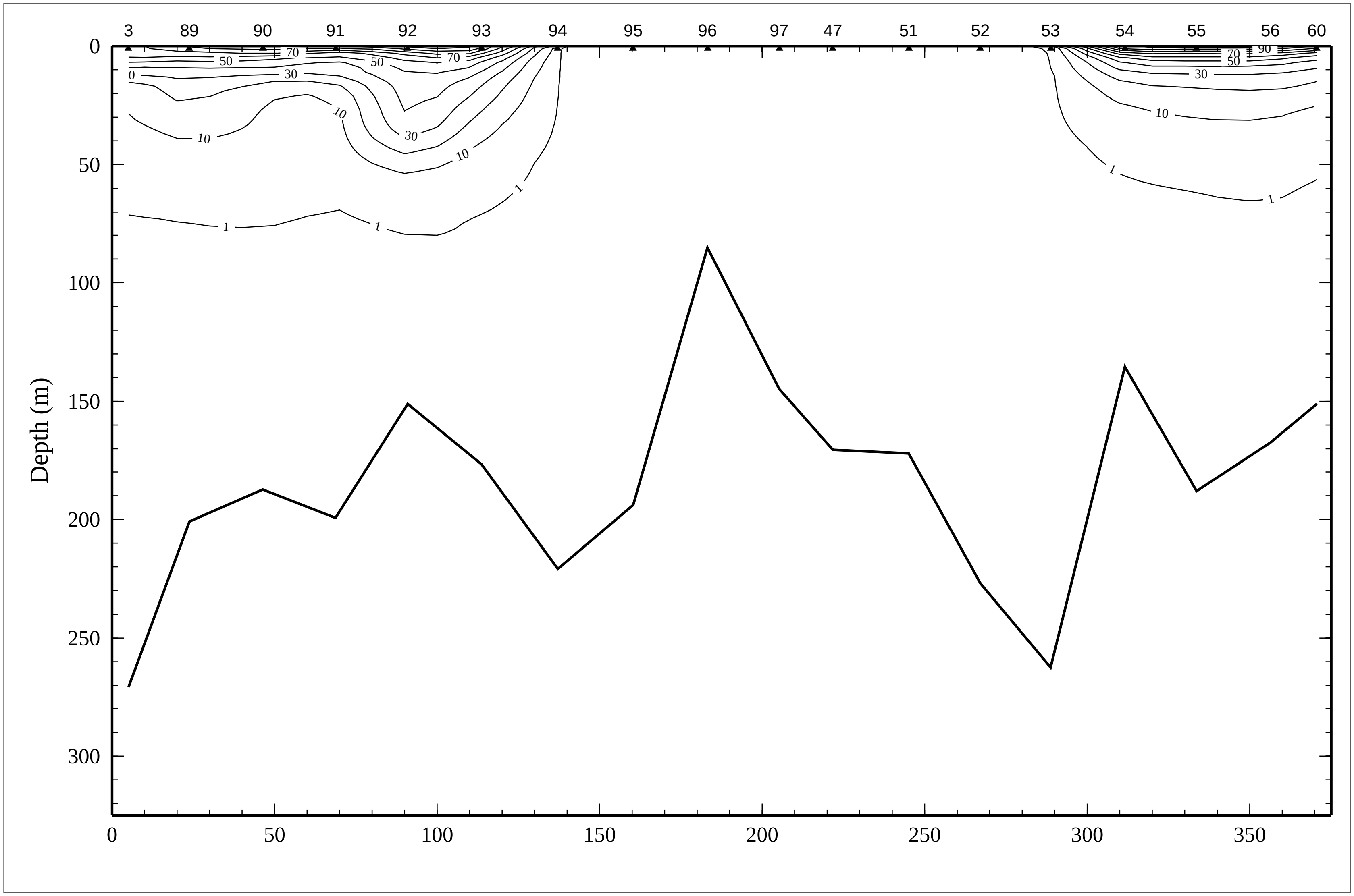

Figure 2.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

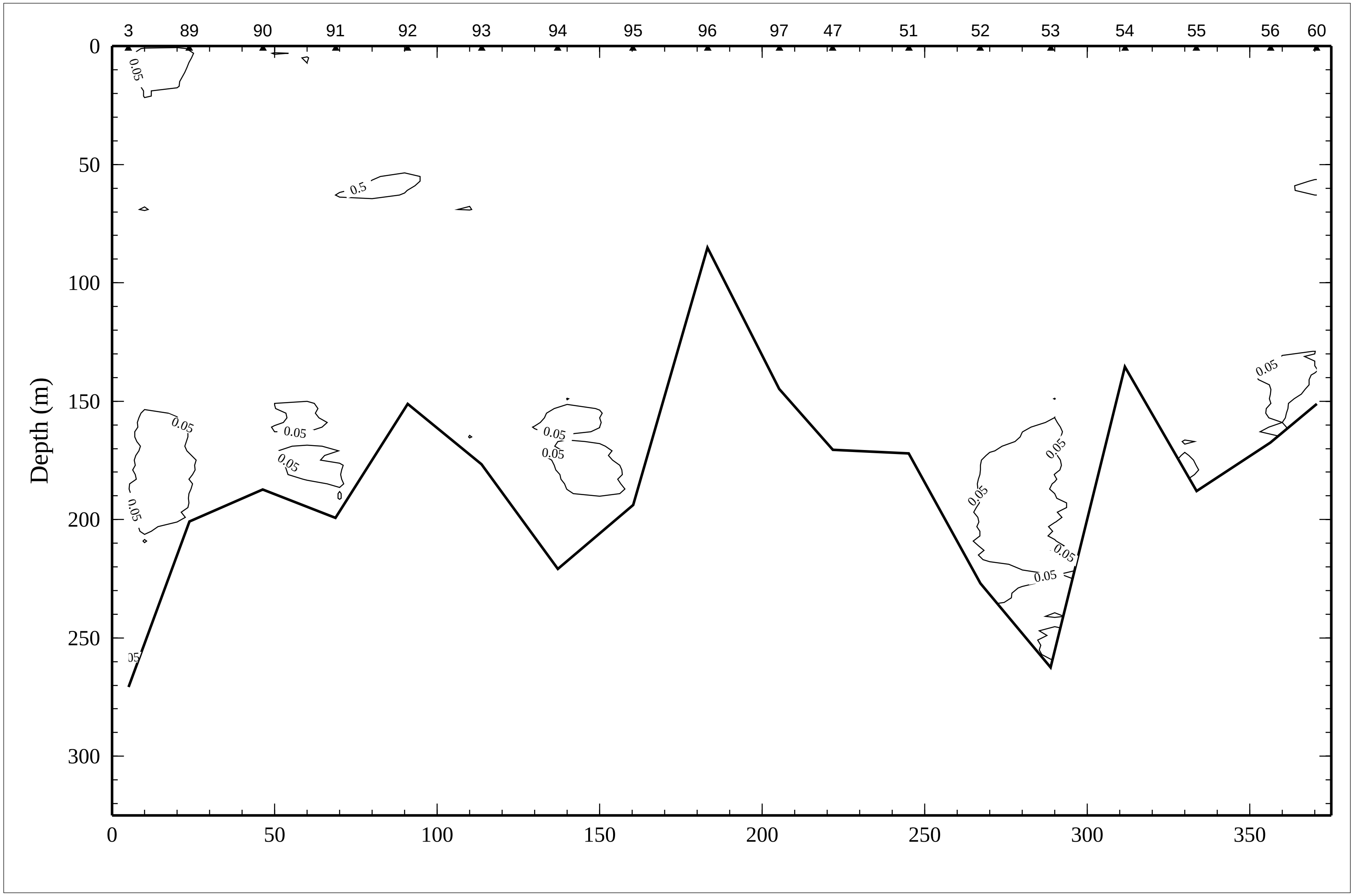

Figure 2.9.7. Relative fluorescence on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

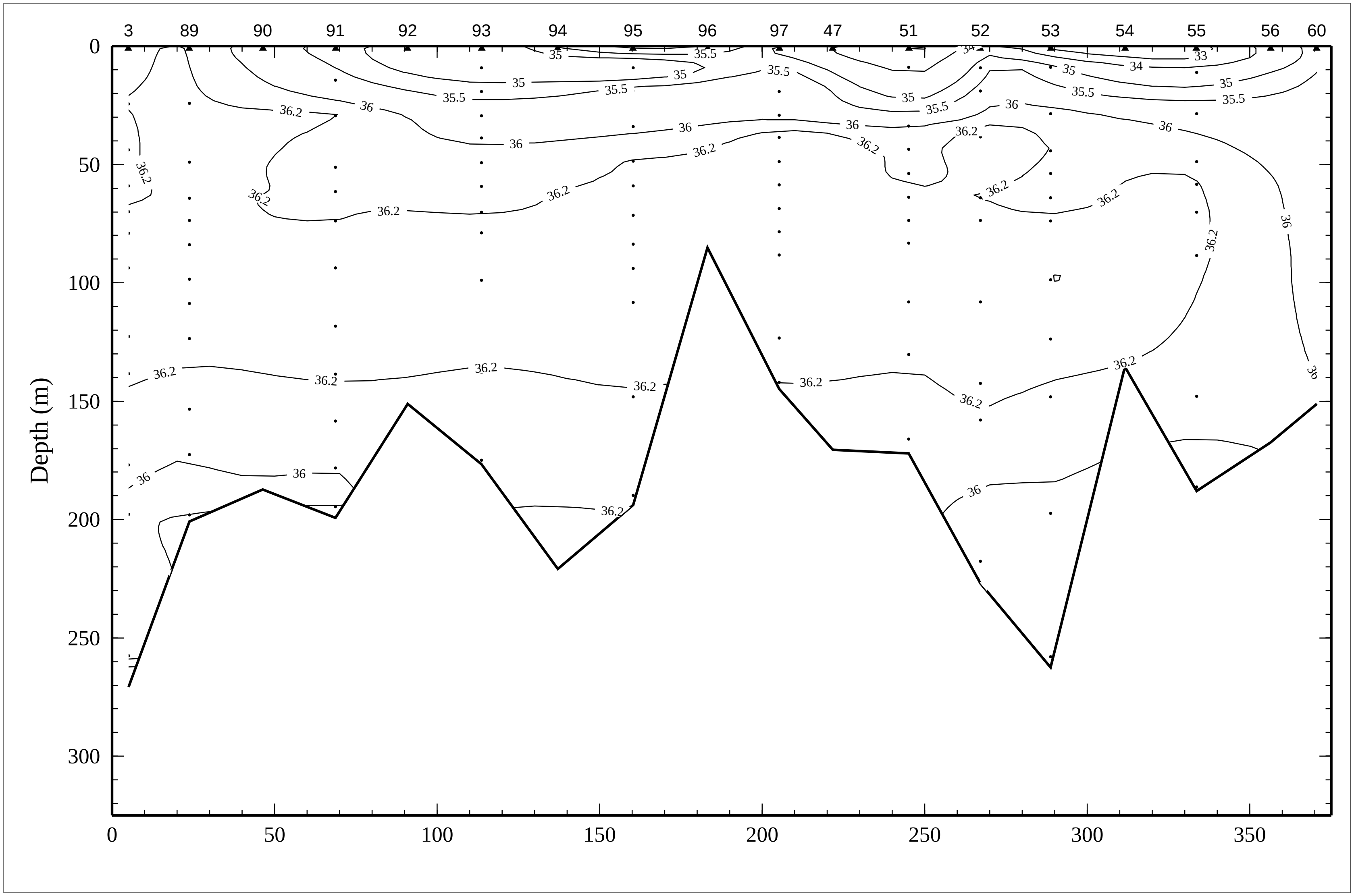

Figure 2.9.8. Bottle salinity on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

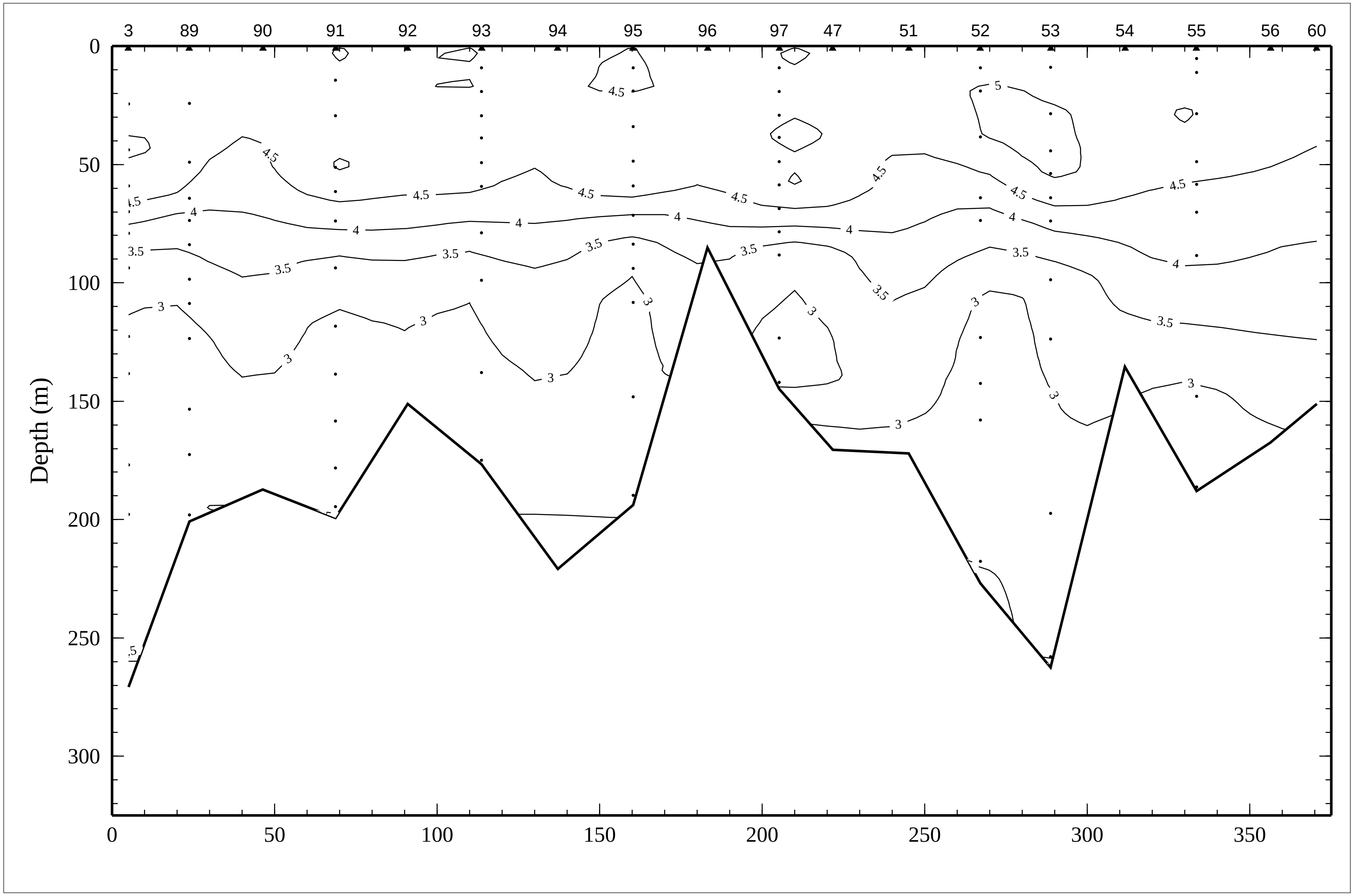

Figure 2.9.9. Dissolved oxygen (ml·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

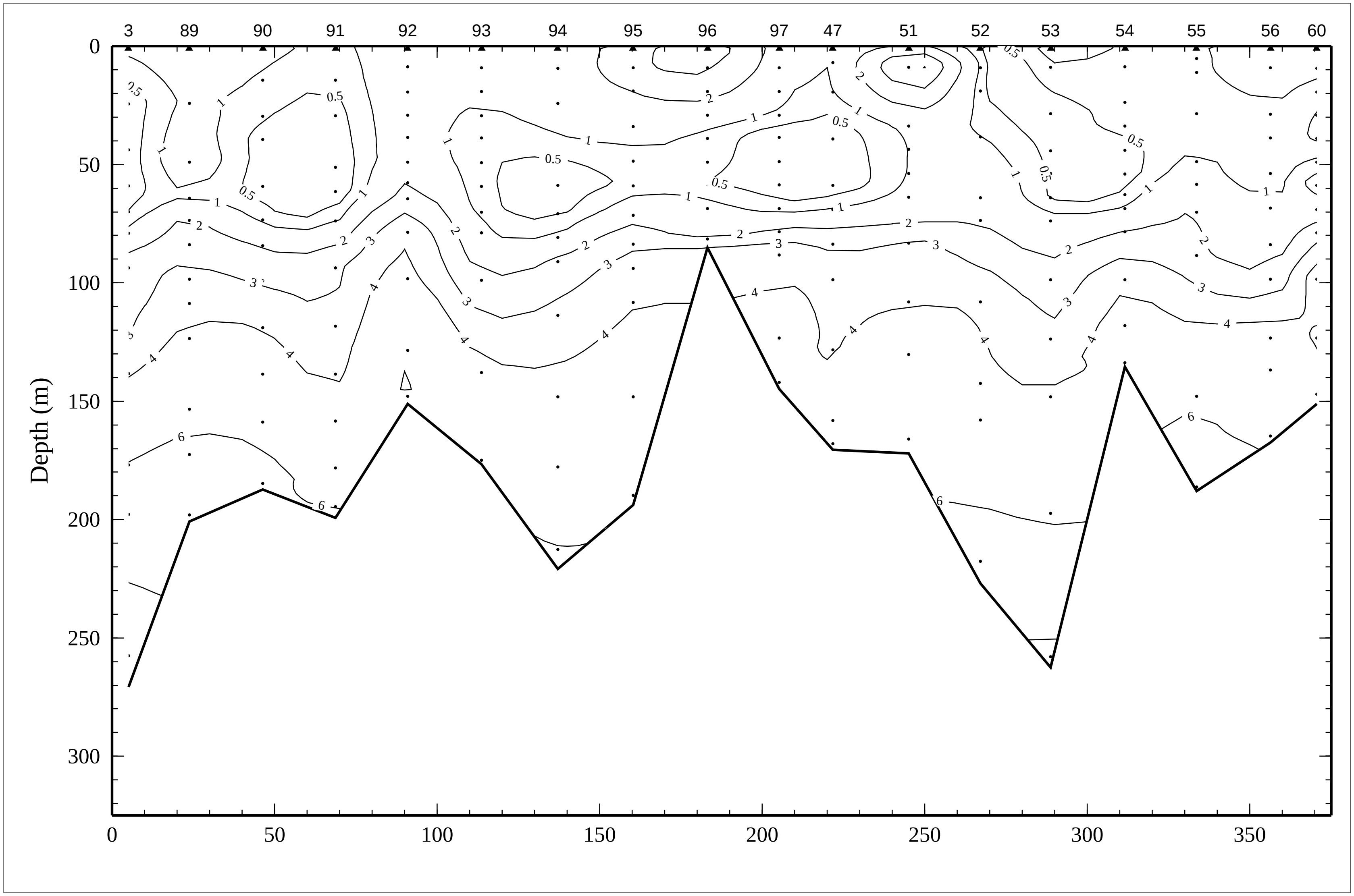

Figure 2.9.10. Silicate (μmol·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

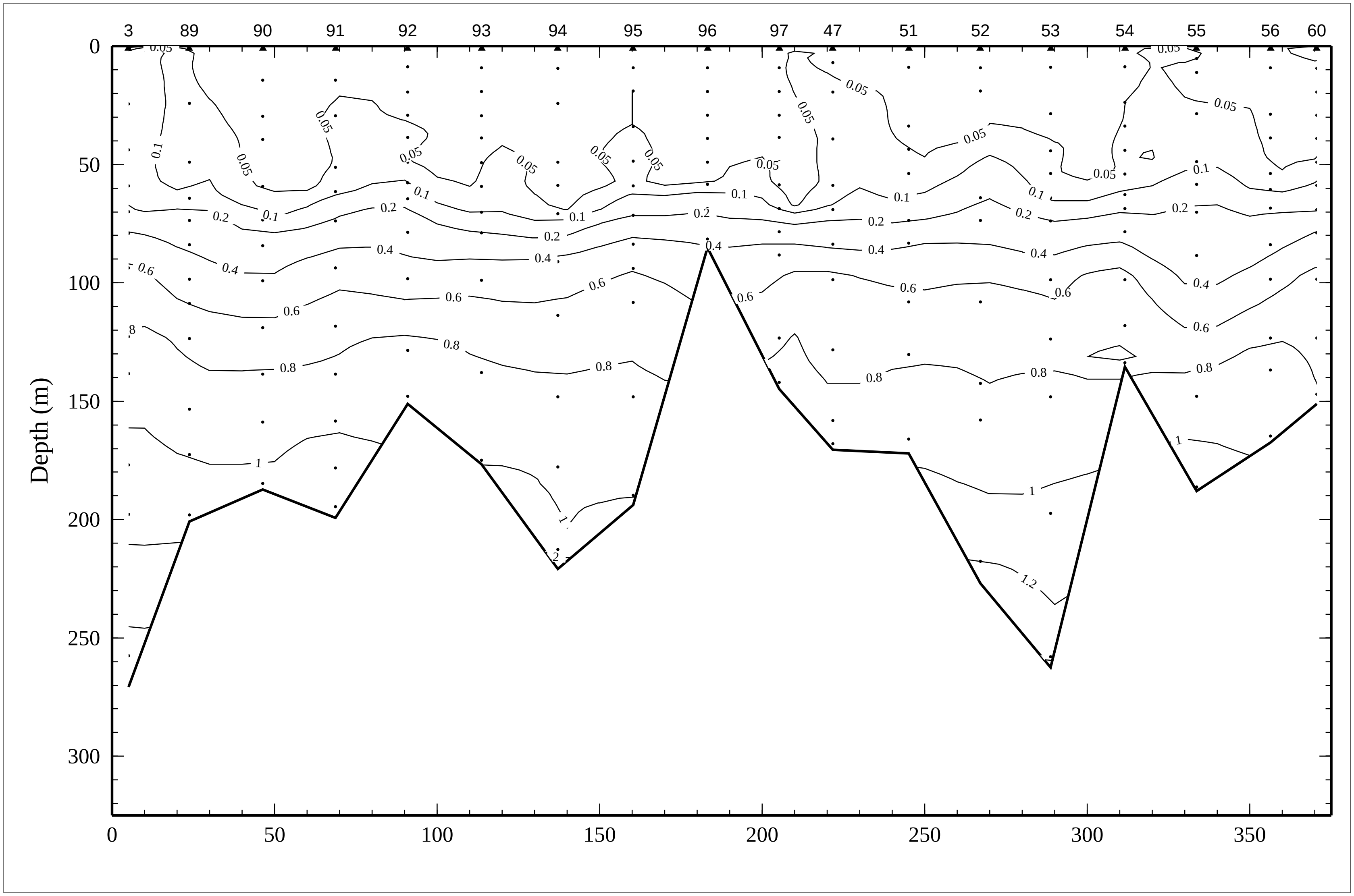

Figure 2.9.11. Phosphate (μmol·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

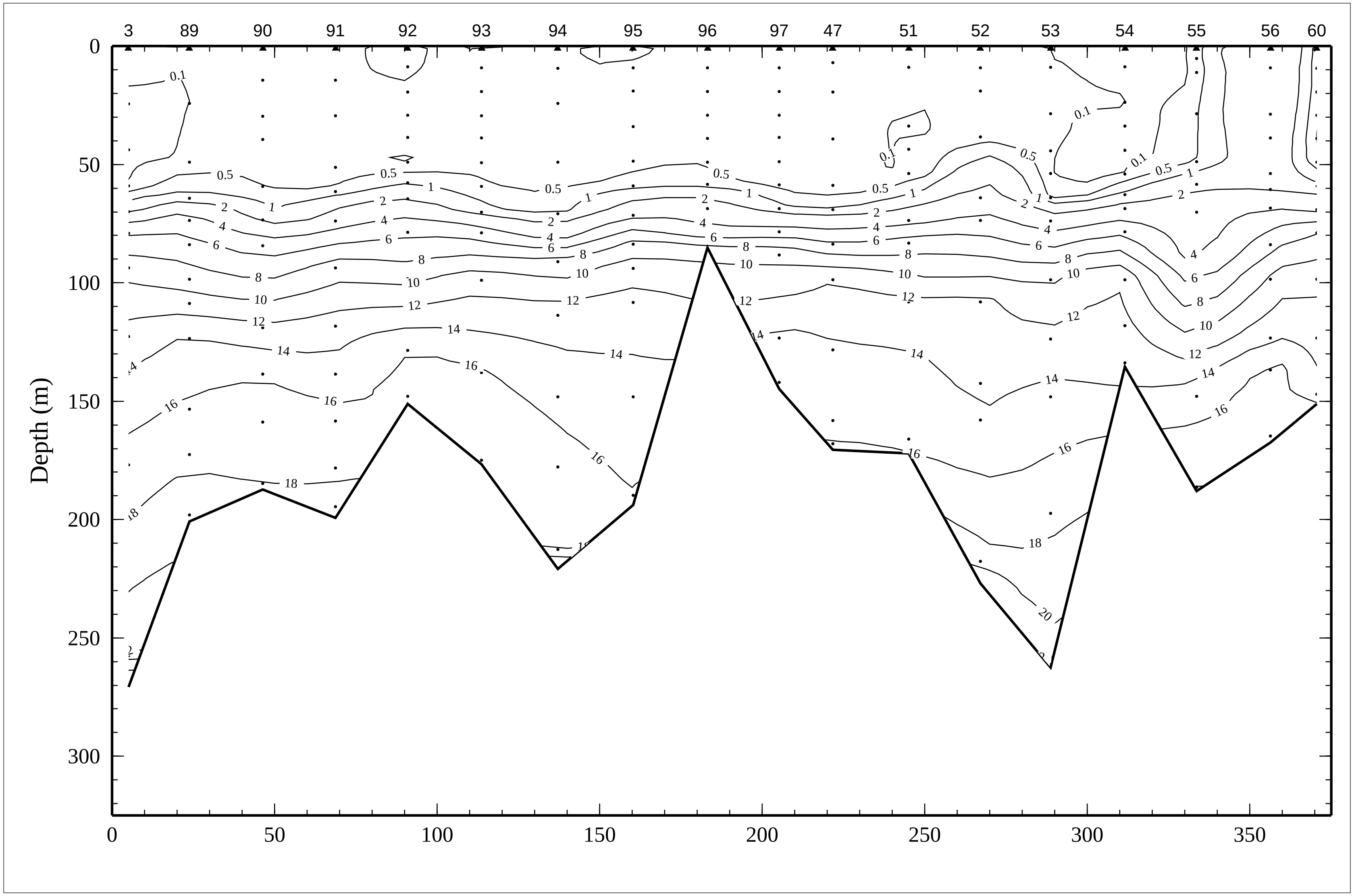

Figure 2.9.12. Nitrate (µmol·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

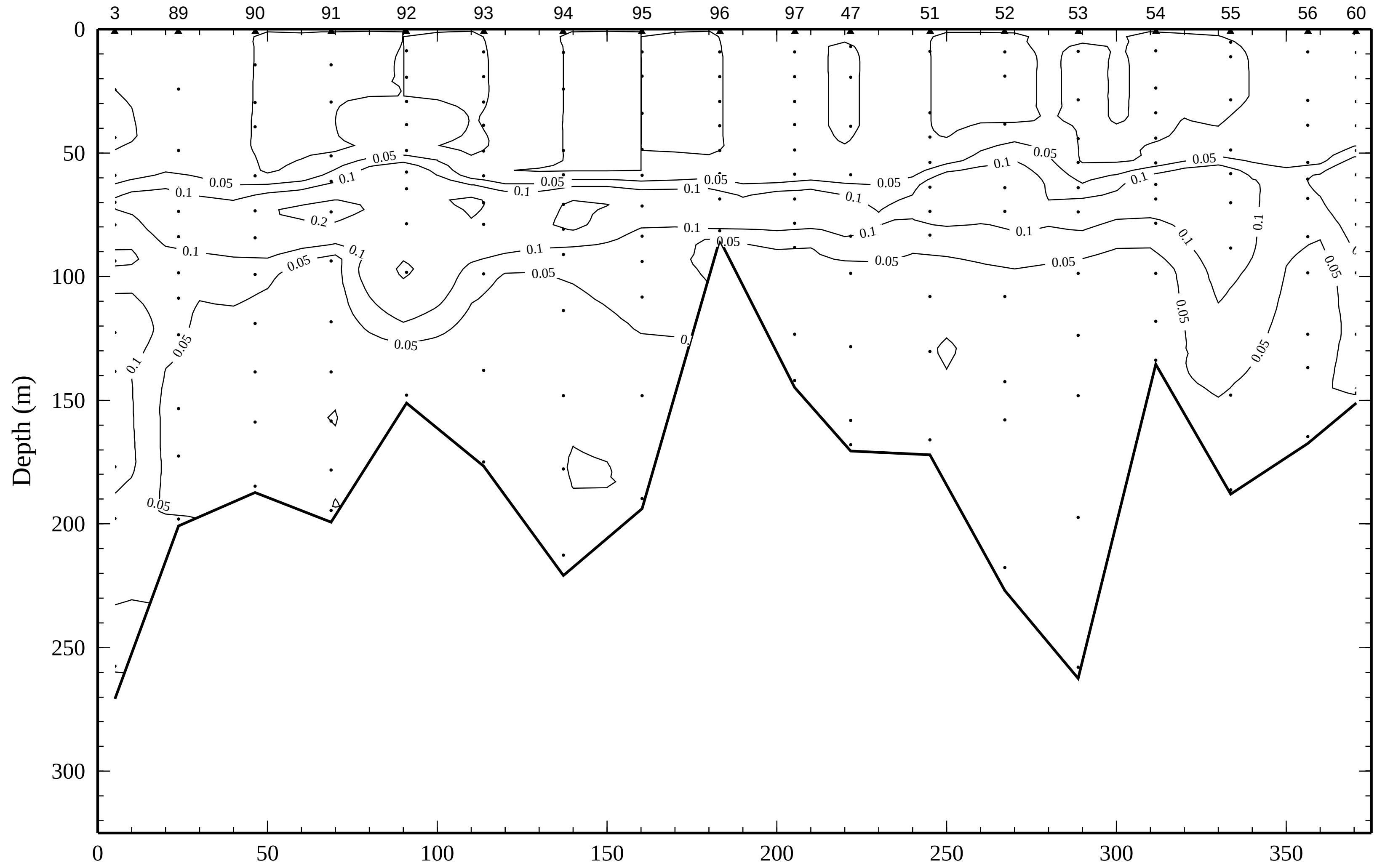

Figure 2.9.13. Nitrite (µmol·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

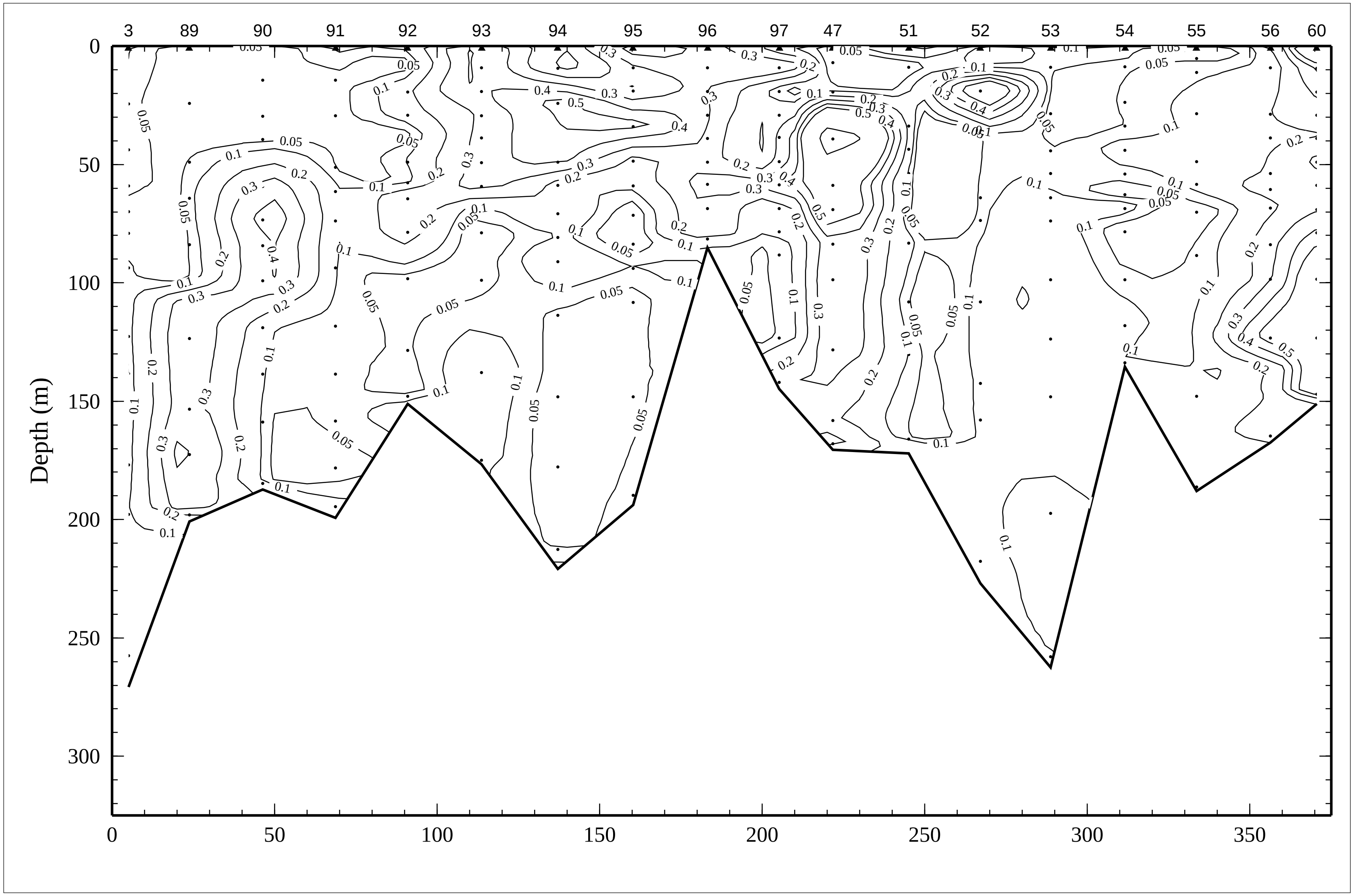

Figure 2.9.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

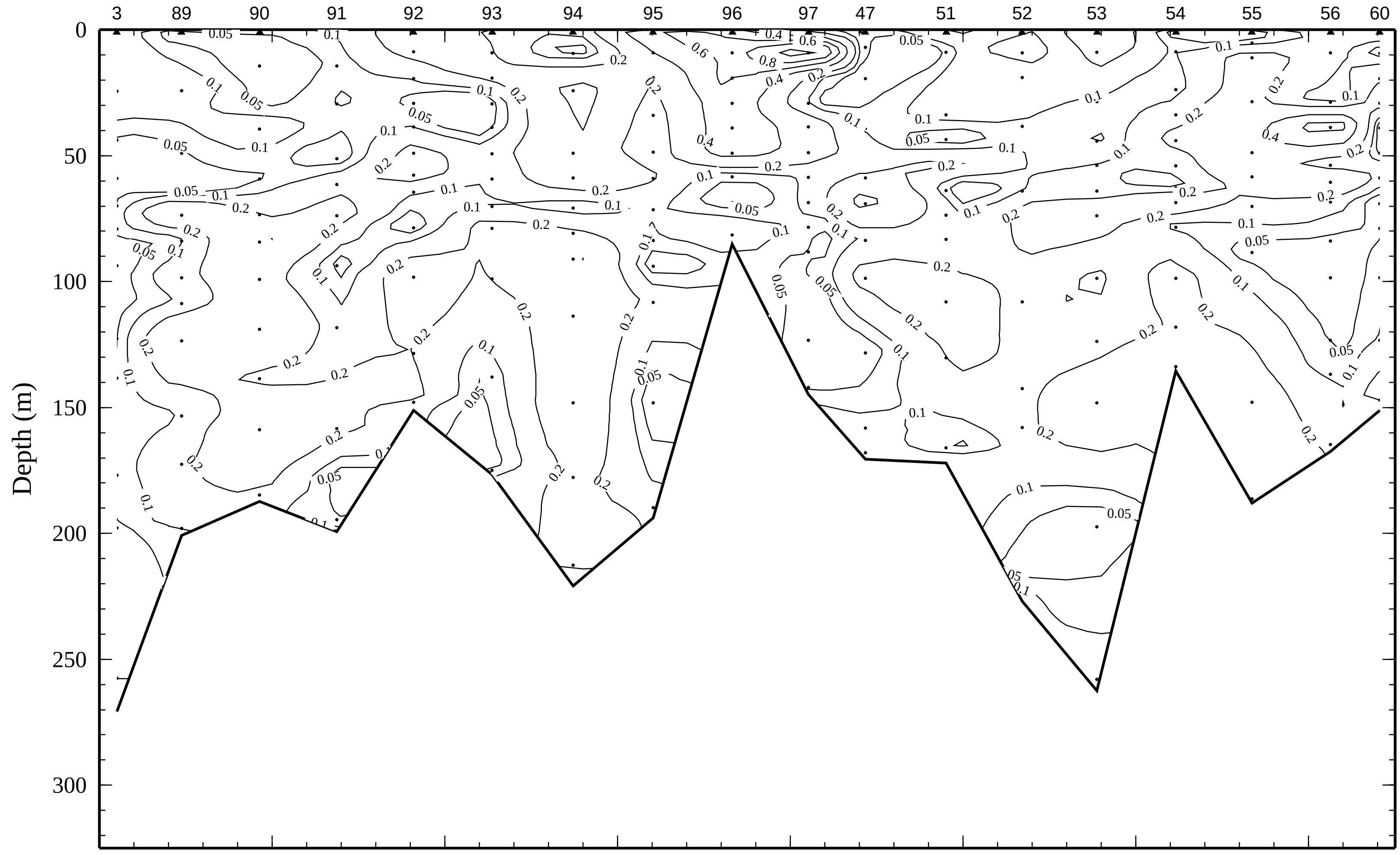

Figure 2.9.15. Urea (μmol·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

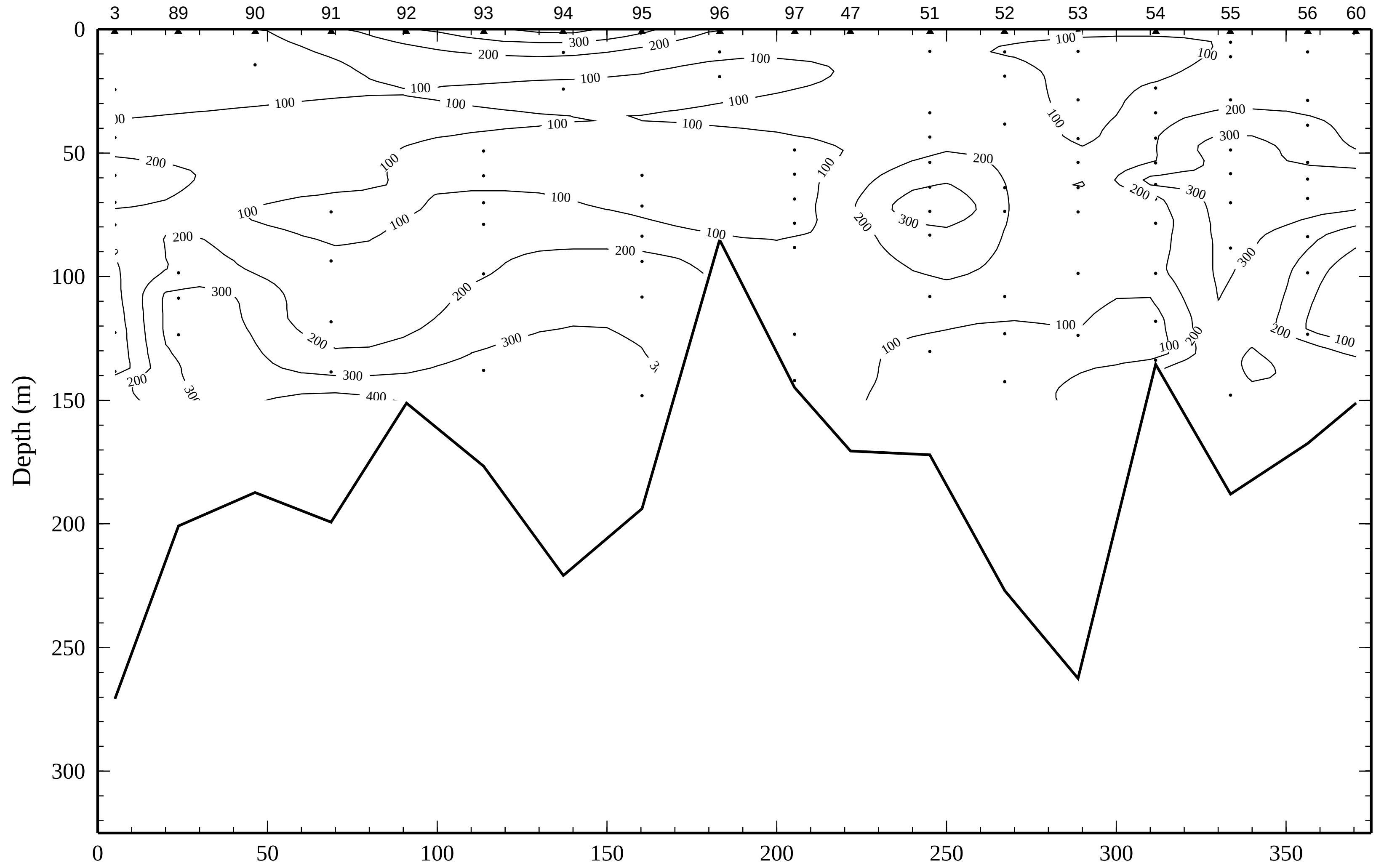

Figure 2.9.16. Chlorophyll a (ng·l^{-1}) on line 9 of LATEX A survey H02, 31 July - 9 August 1992.

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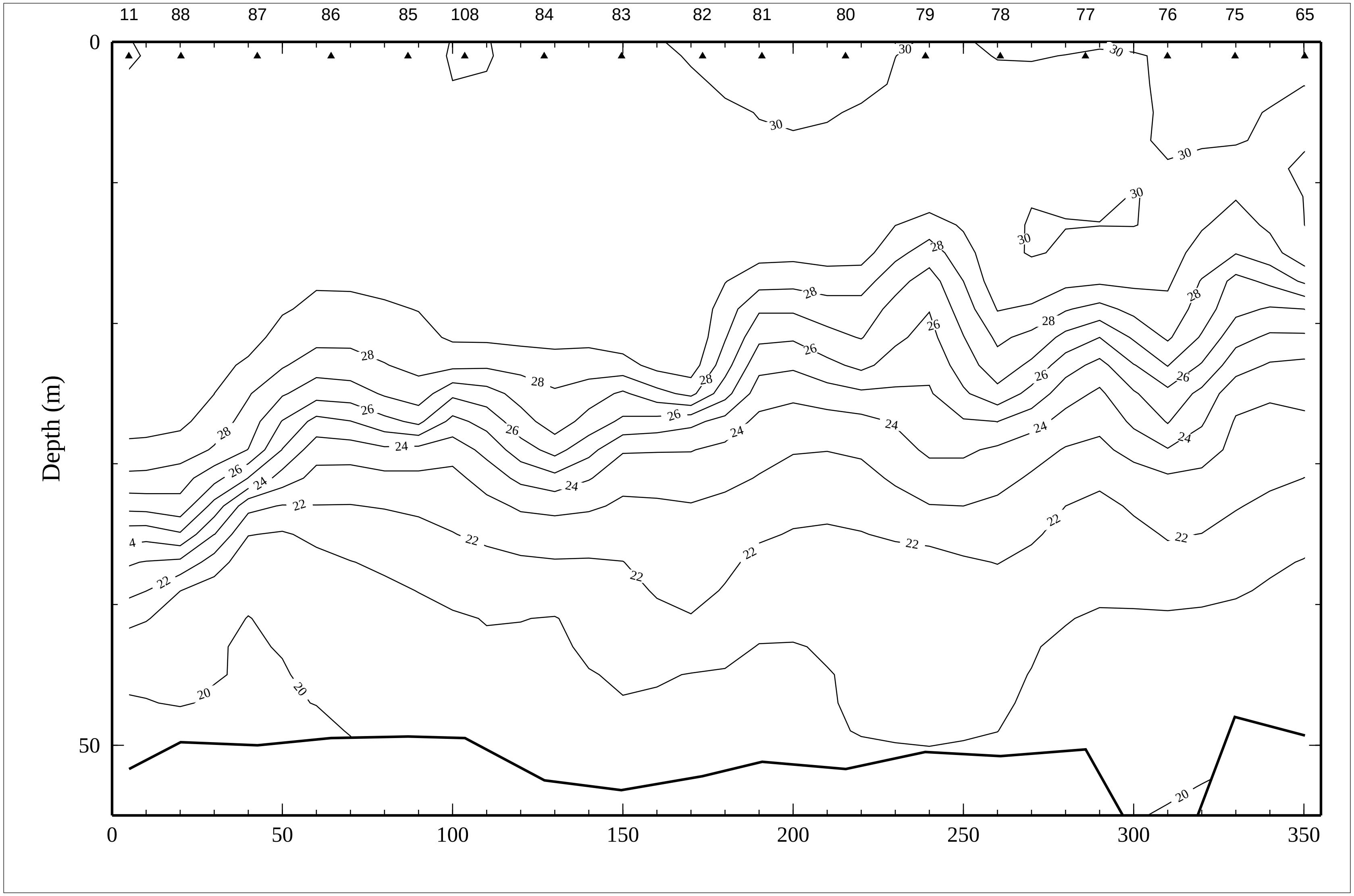

Figure 2.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

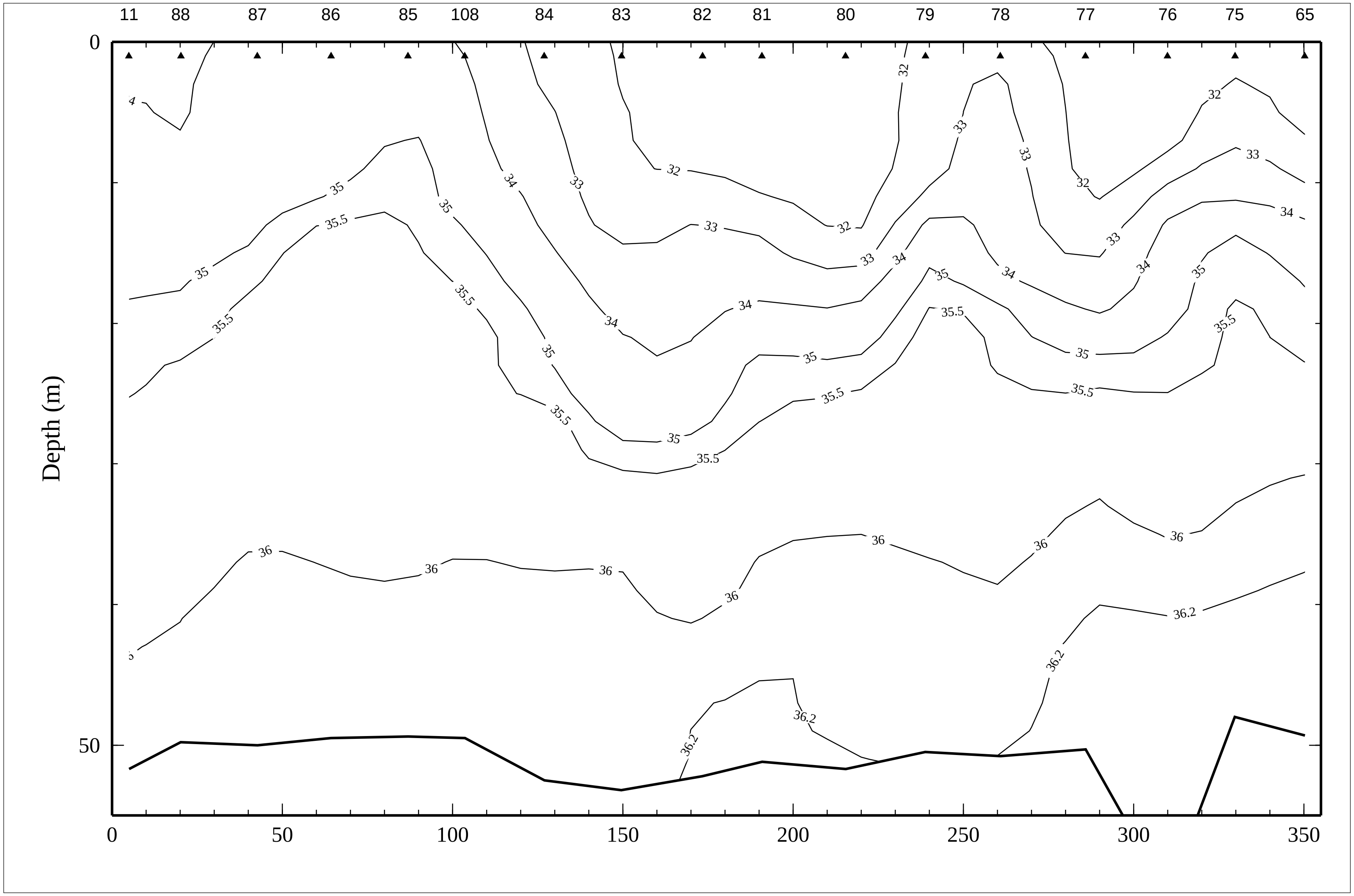

Figure 2.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

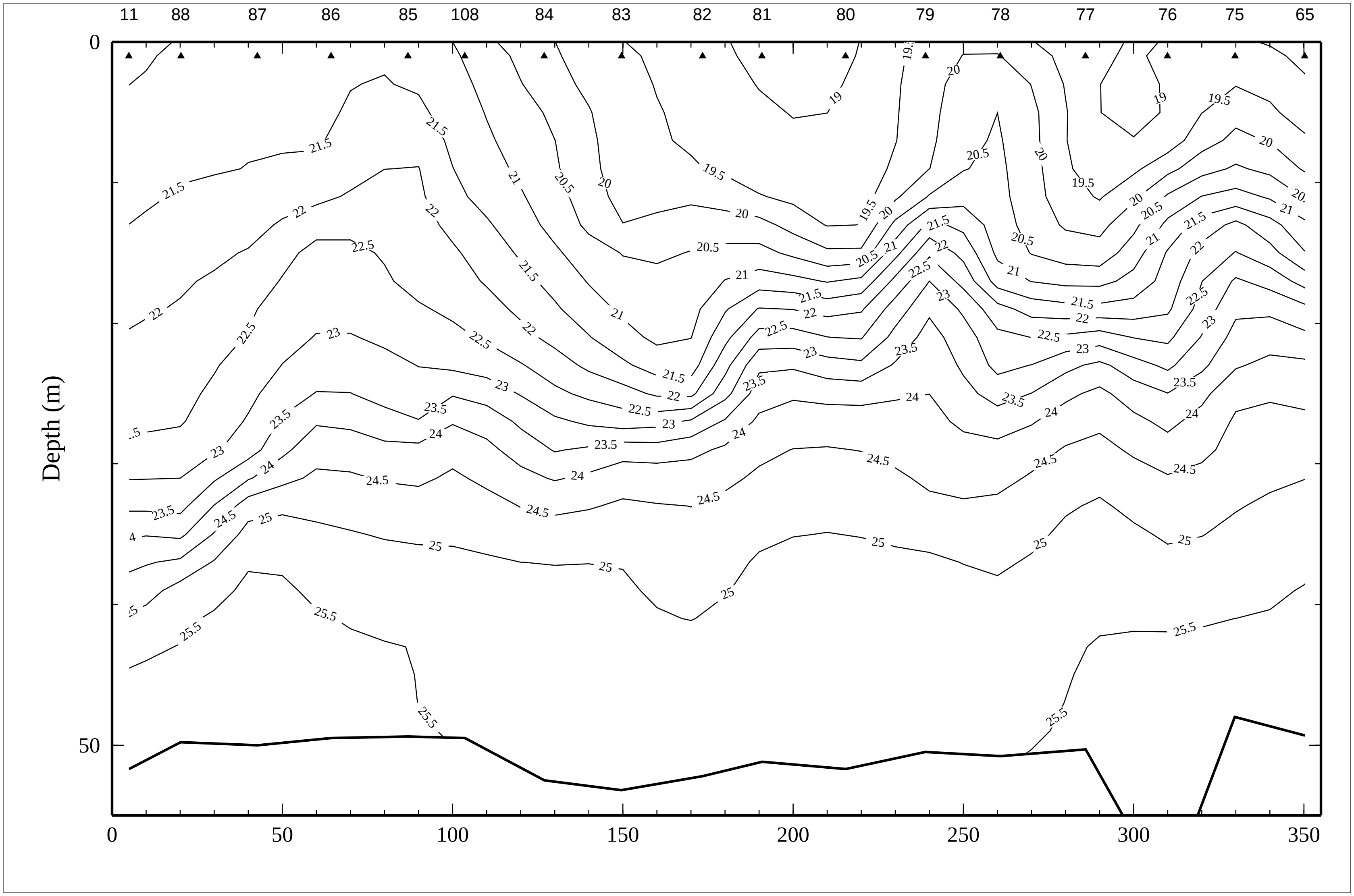

Figure 2.10.3. Density anomaly (σ_θ in kg·m^{-3}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

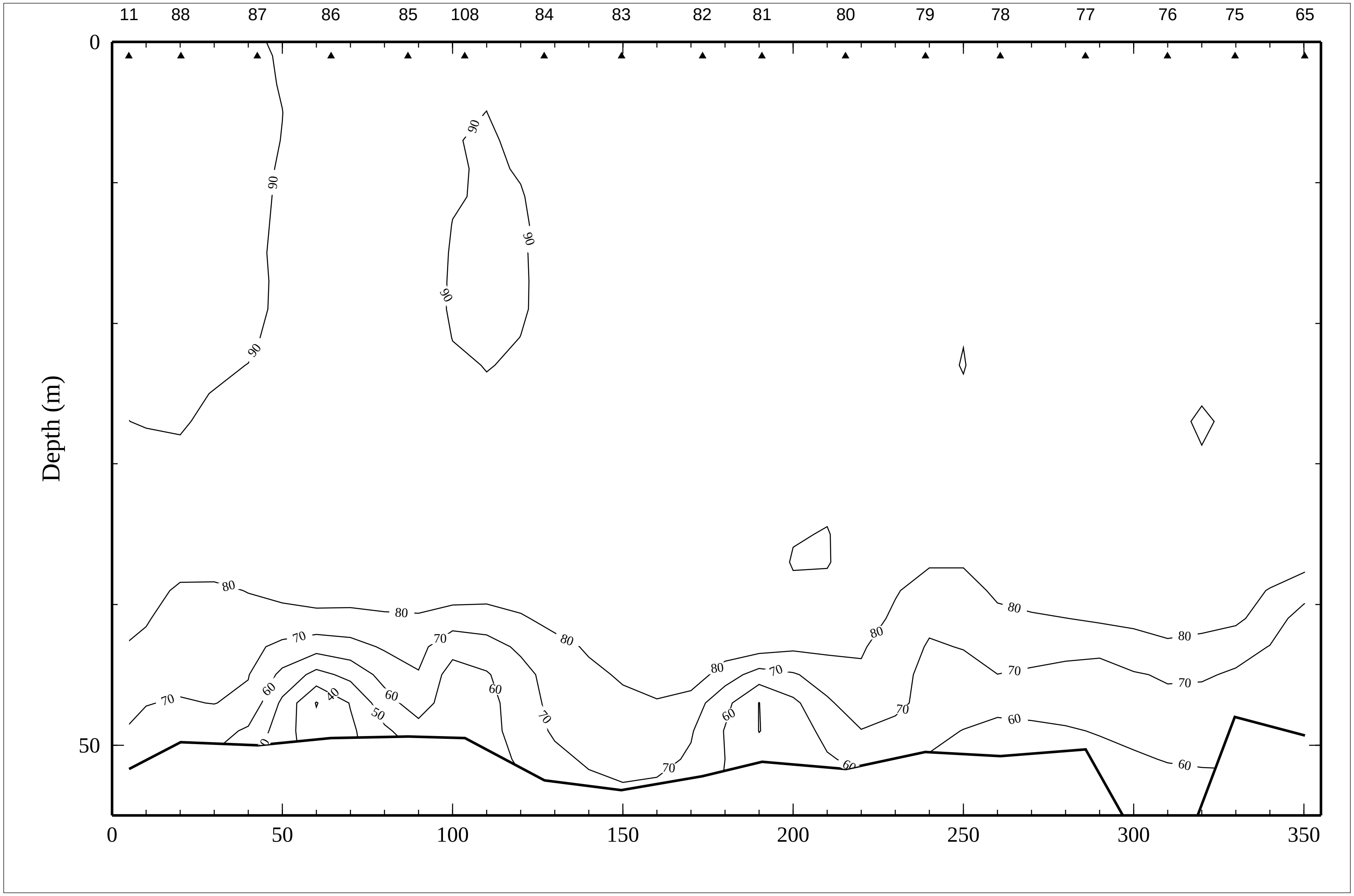

Figure 2.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

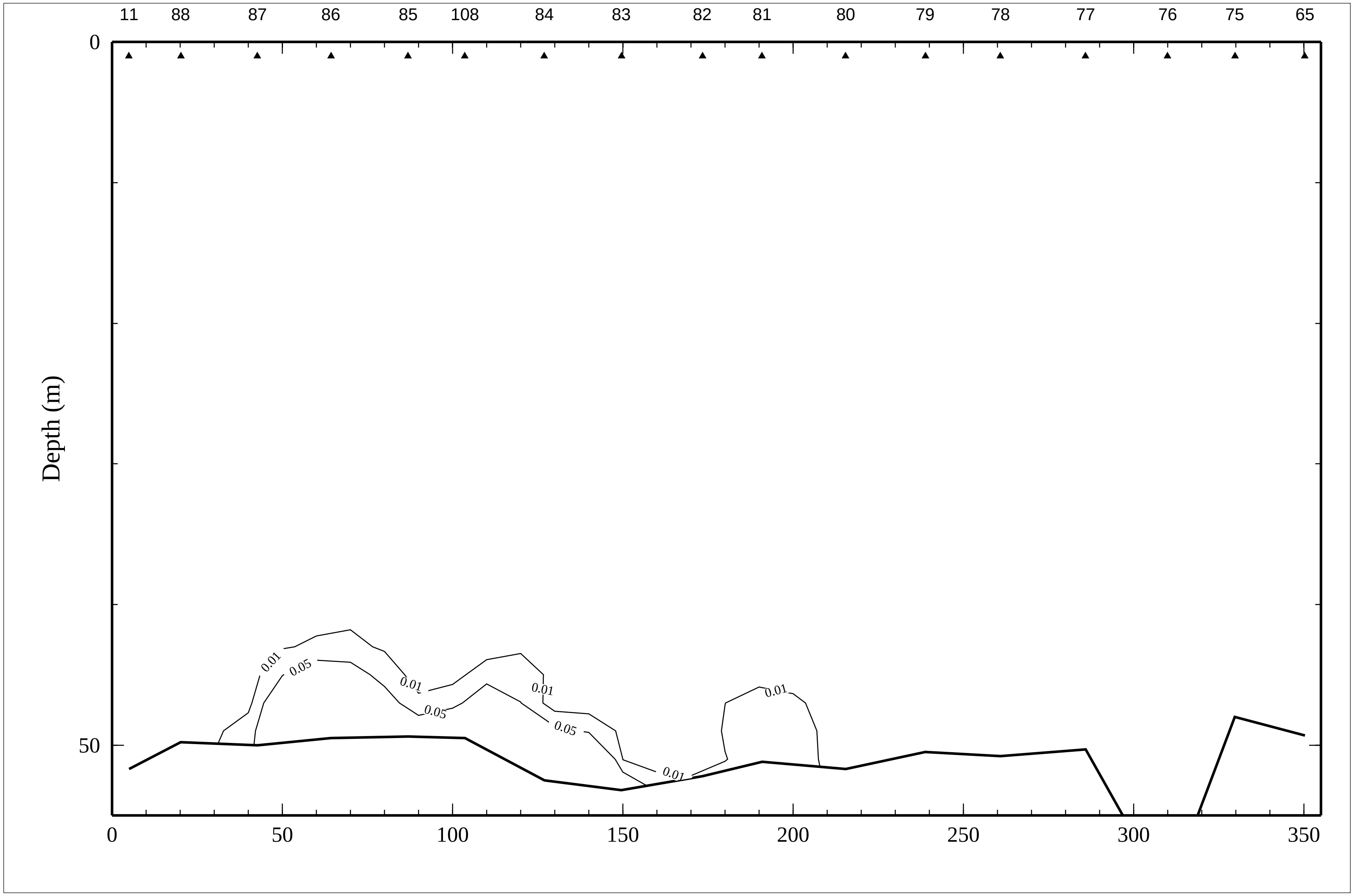

Figure 2.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

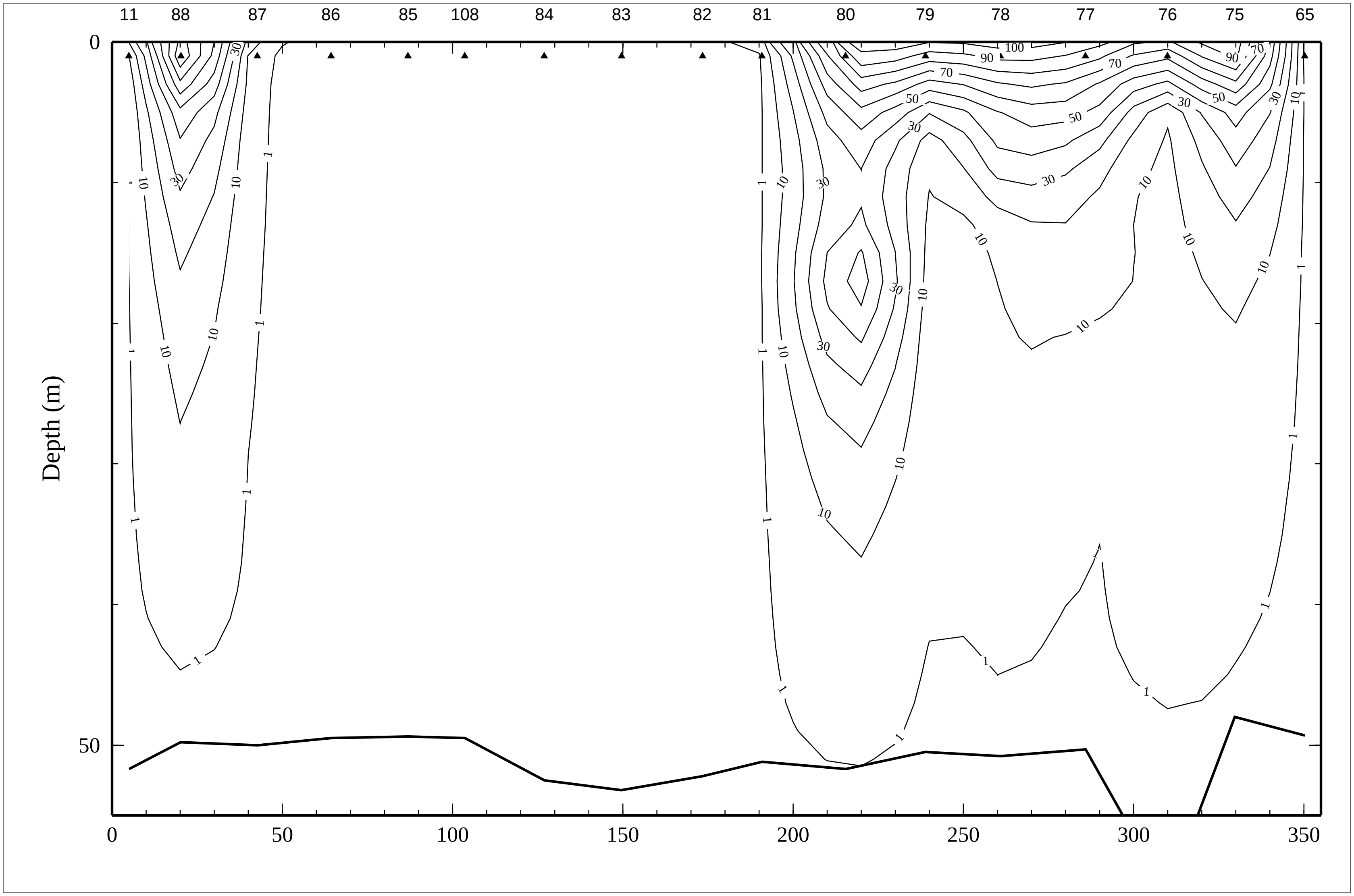

Figure 2.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

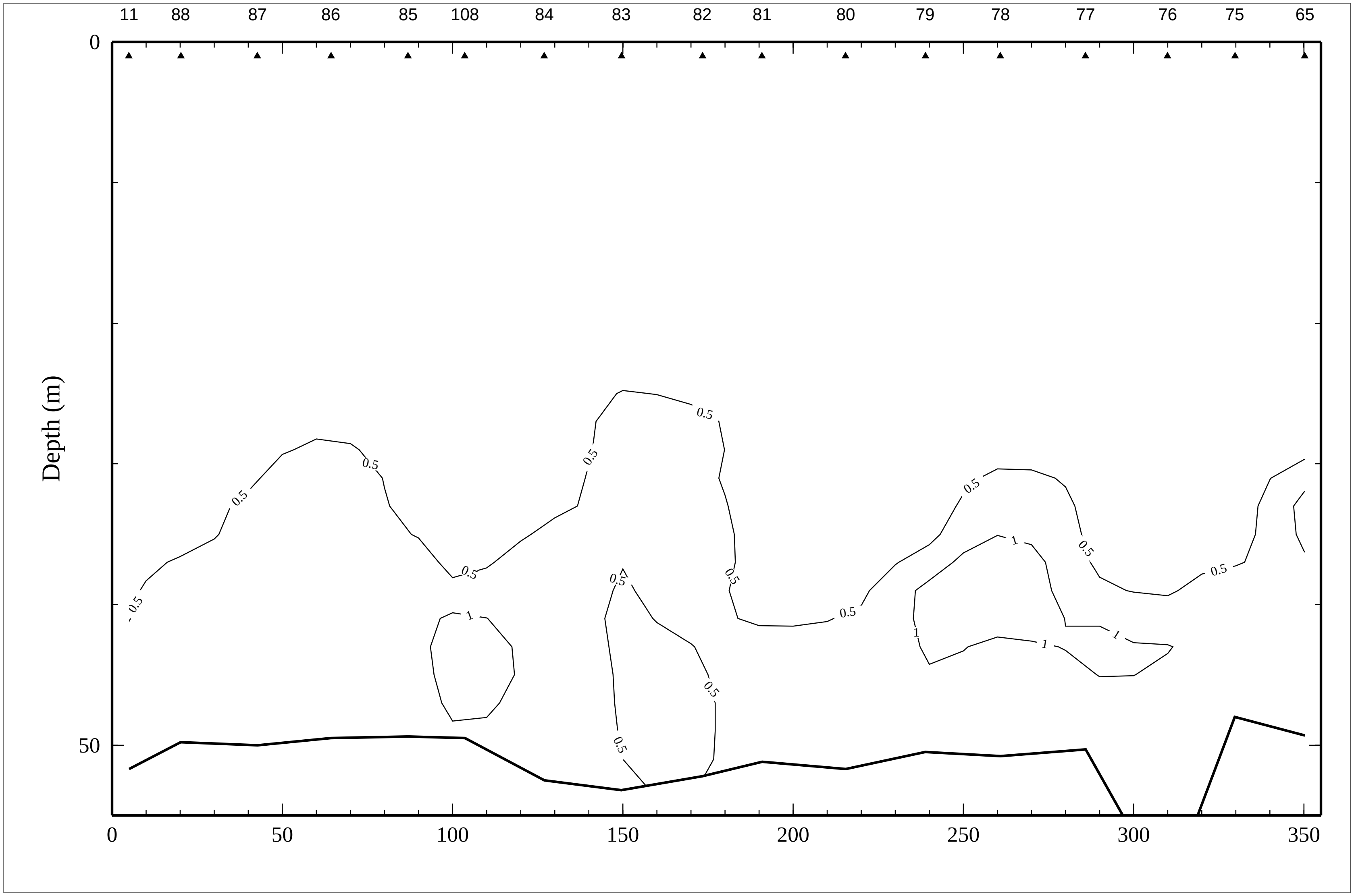

Figure 2.10.7. Relative fluorescence on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

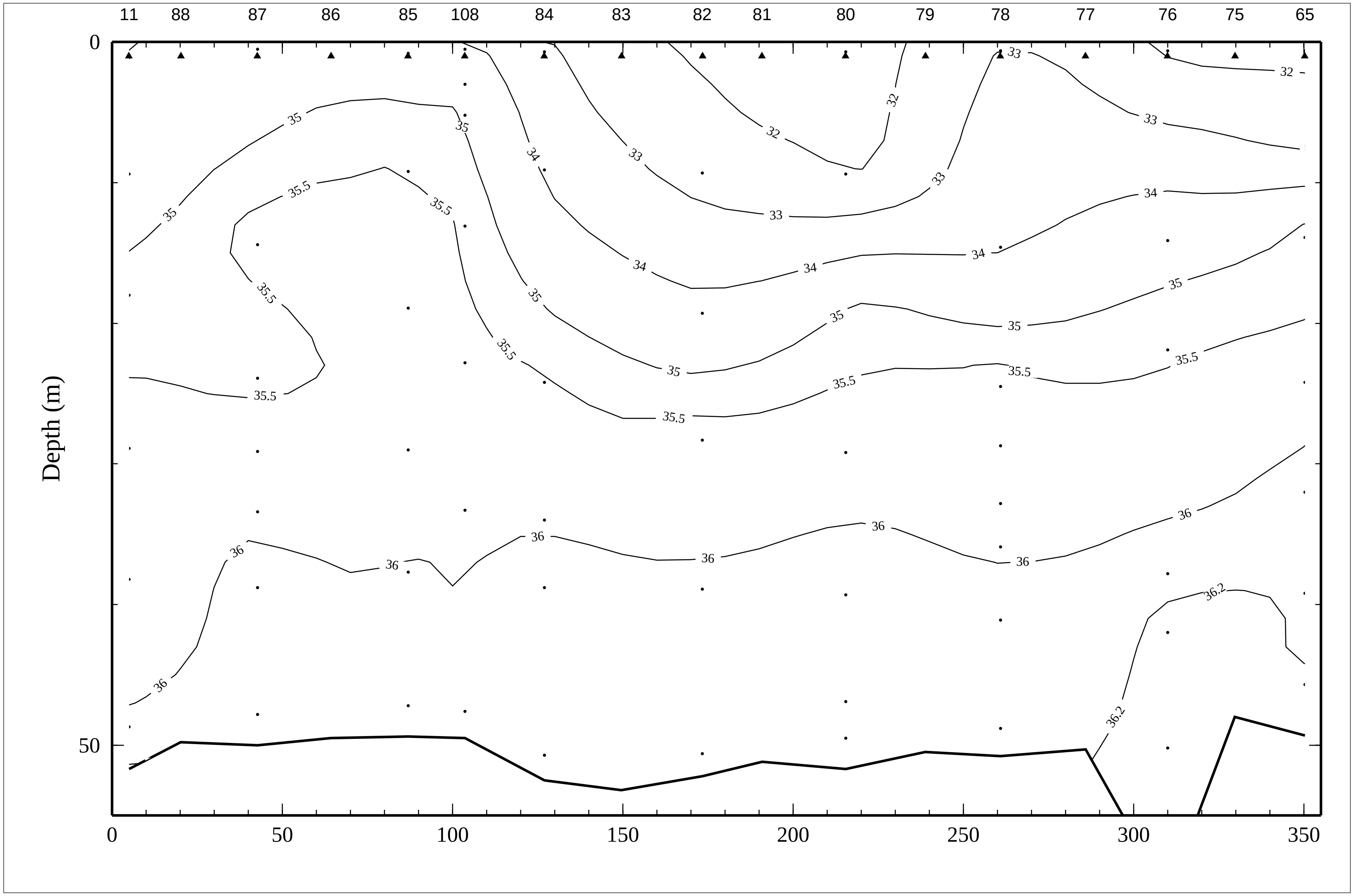

Figure 2.10.8. Bottle salinity on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

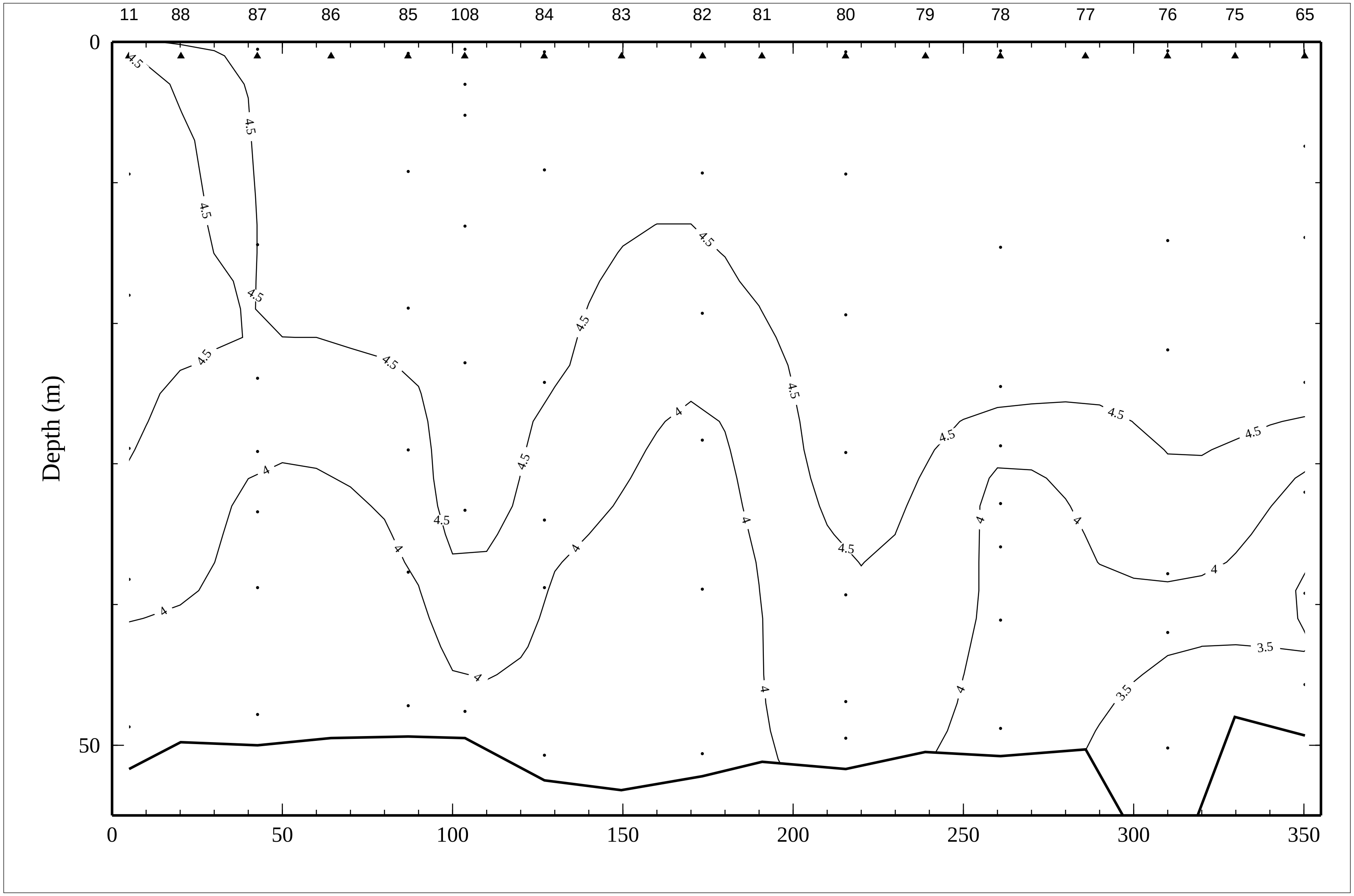

Figure 2.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

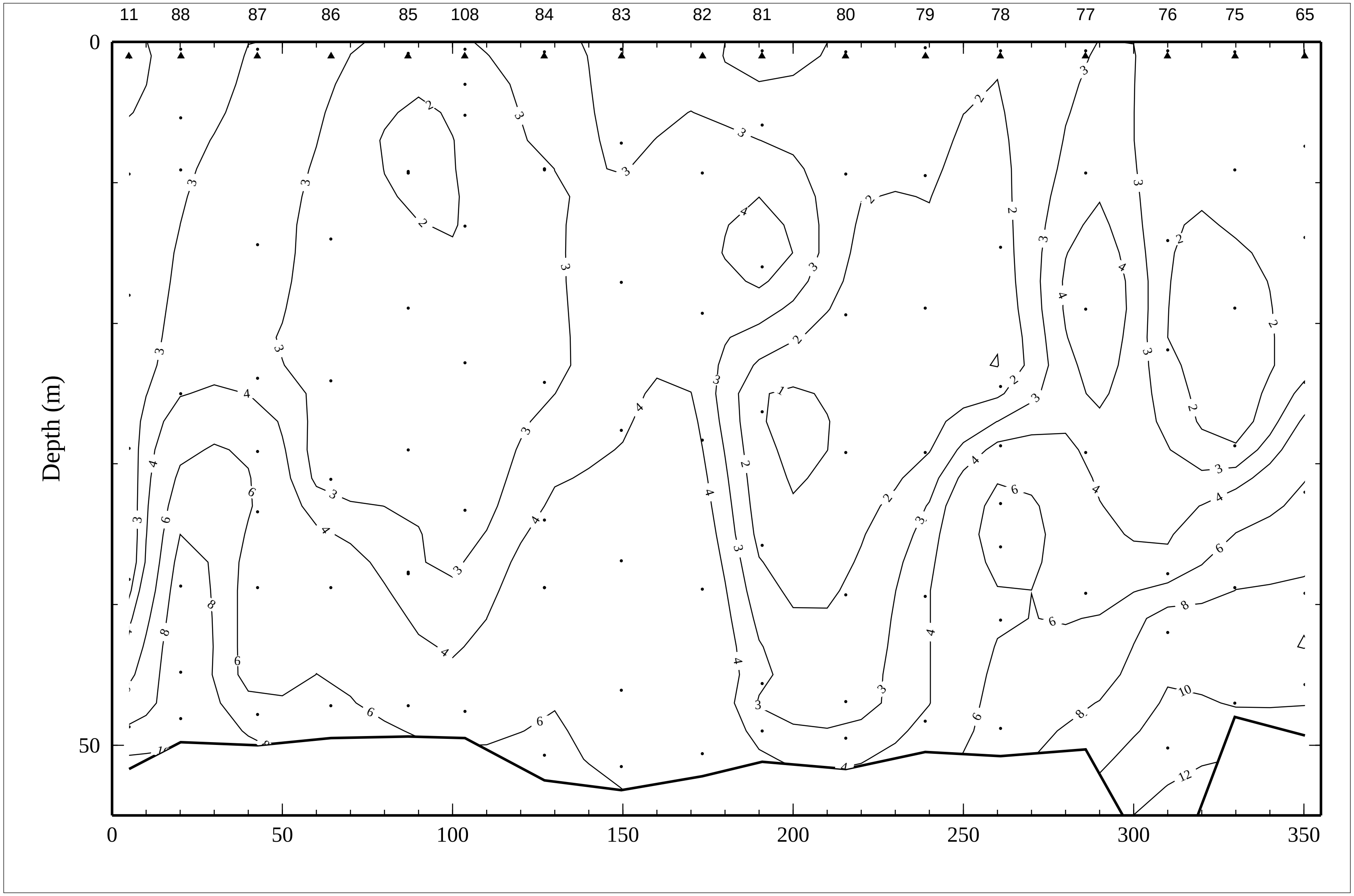

Figure 2.10.10. Silicate (μmol·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

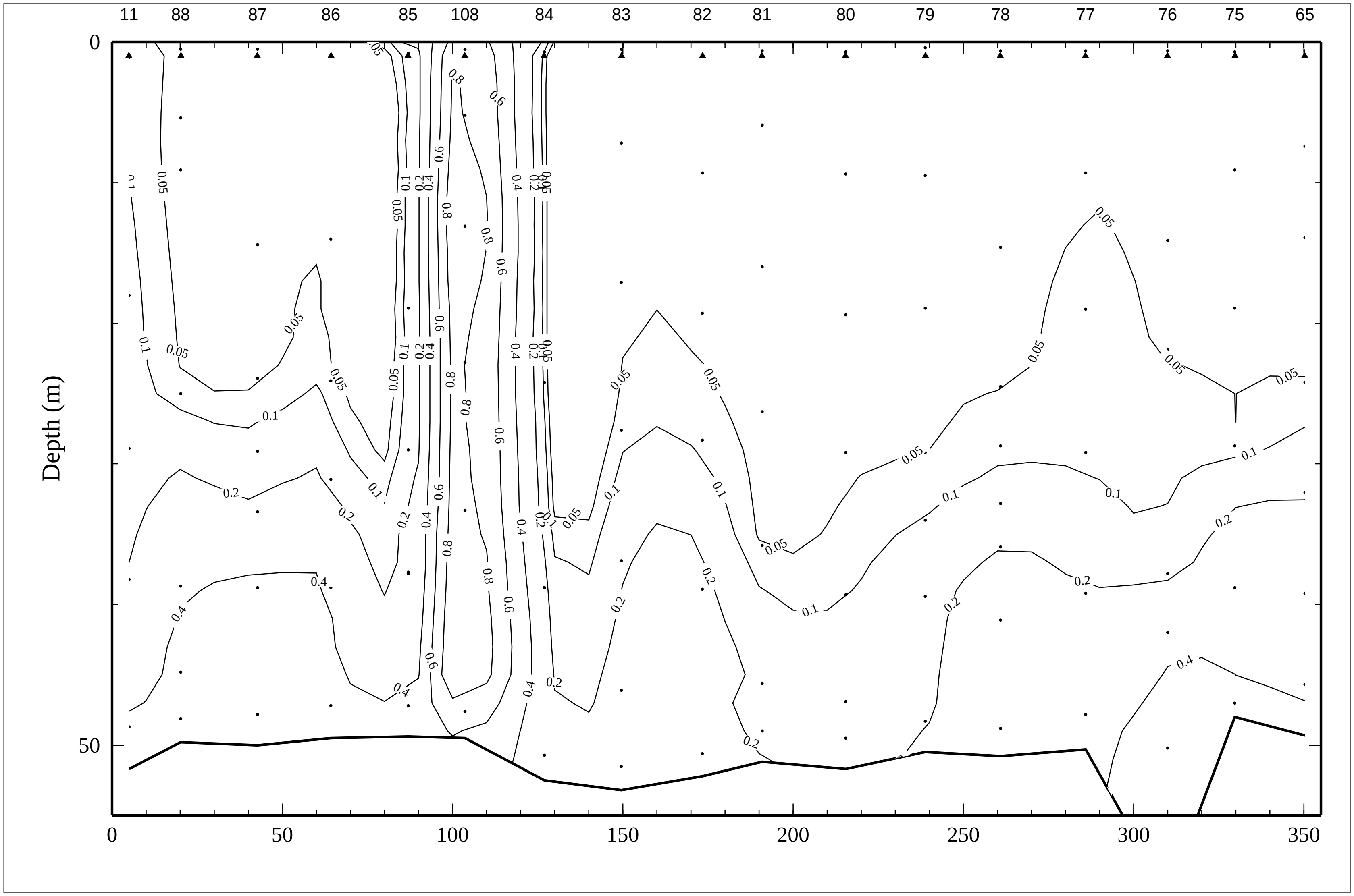

Figure 2.10.11. Phosphate (μmol·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

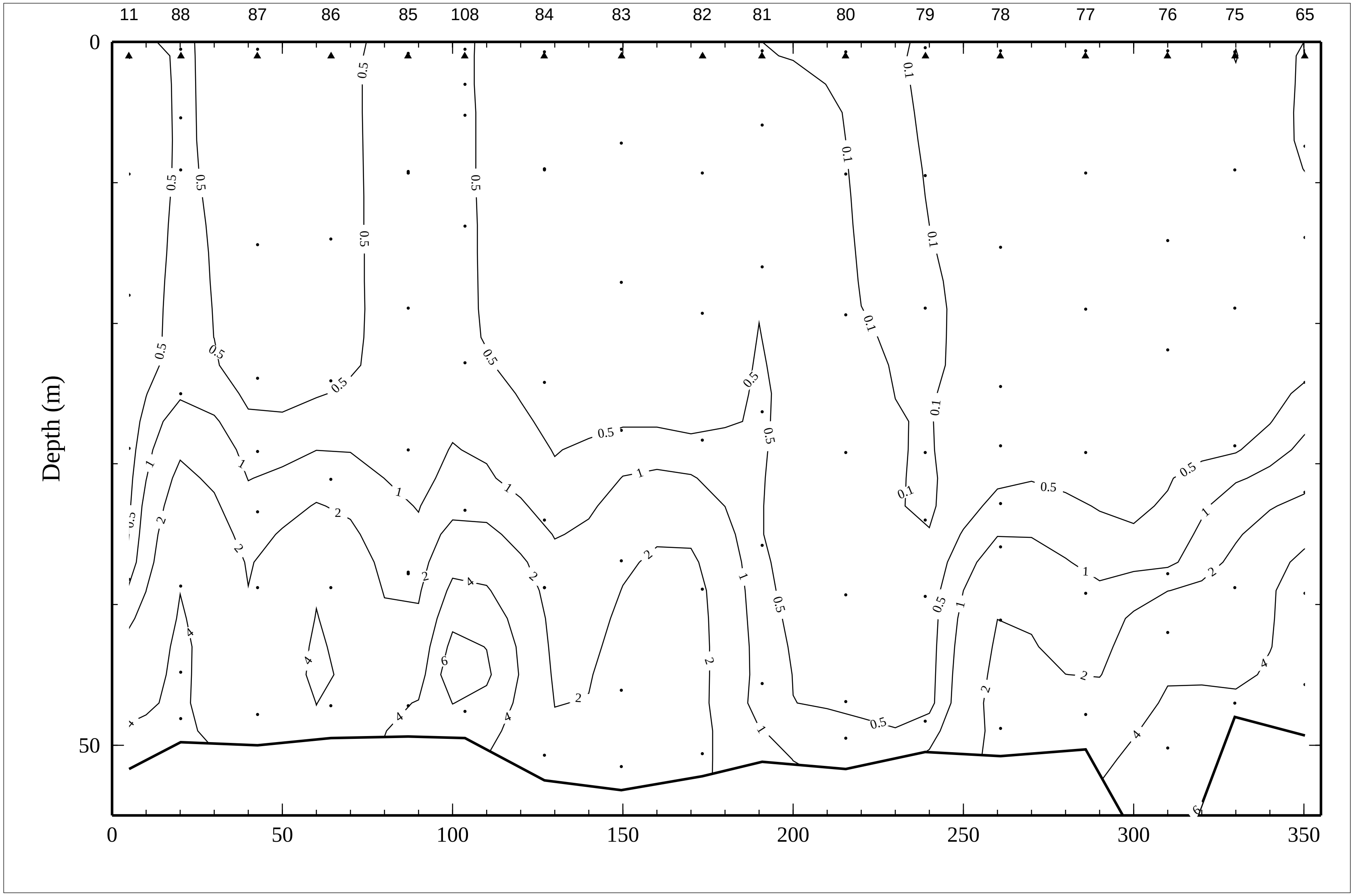

Figure 2.10.12. Nitrate (μmol·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

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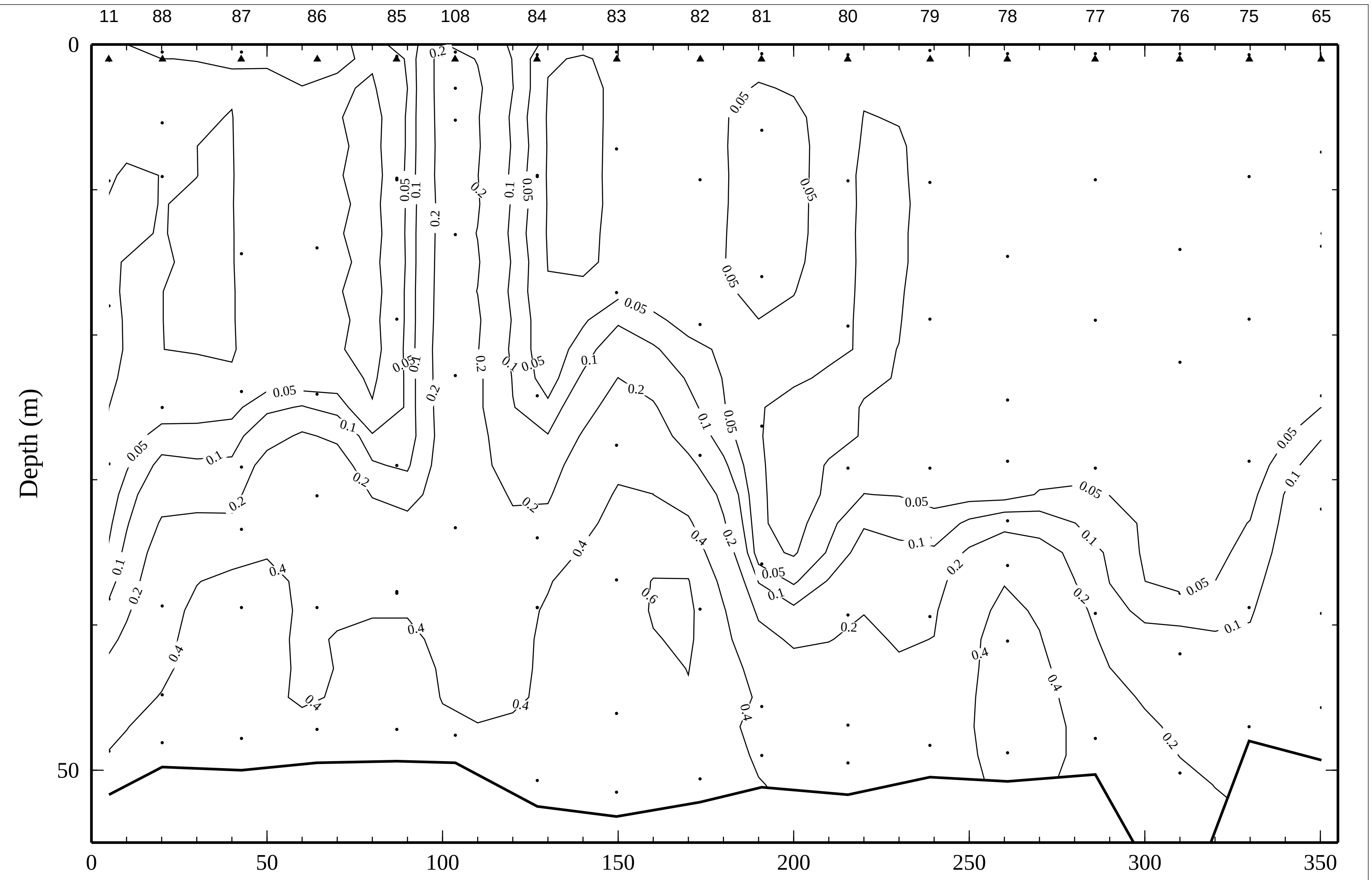

Figure 2.10.13. Nitrite (µmol·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

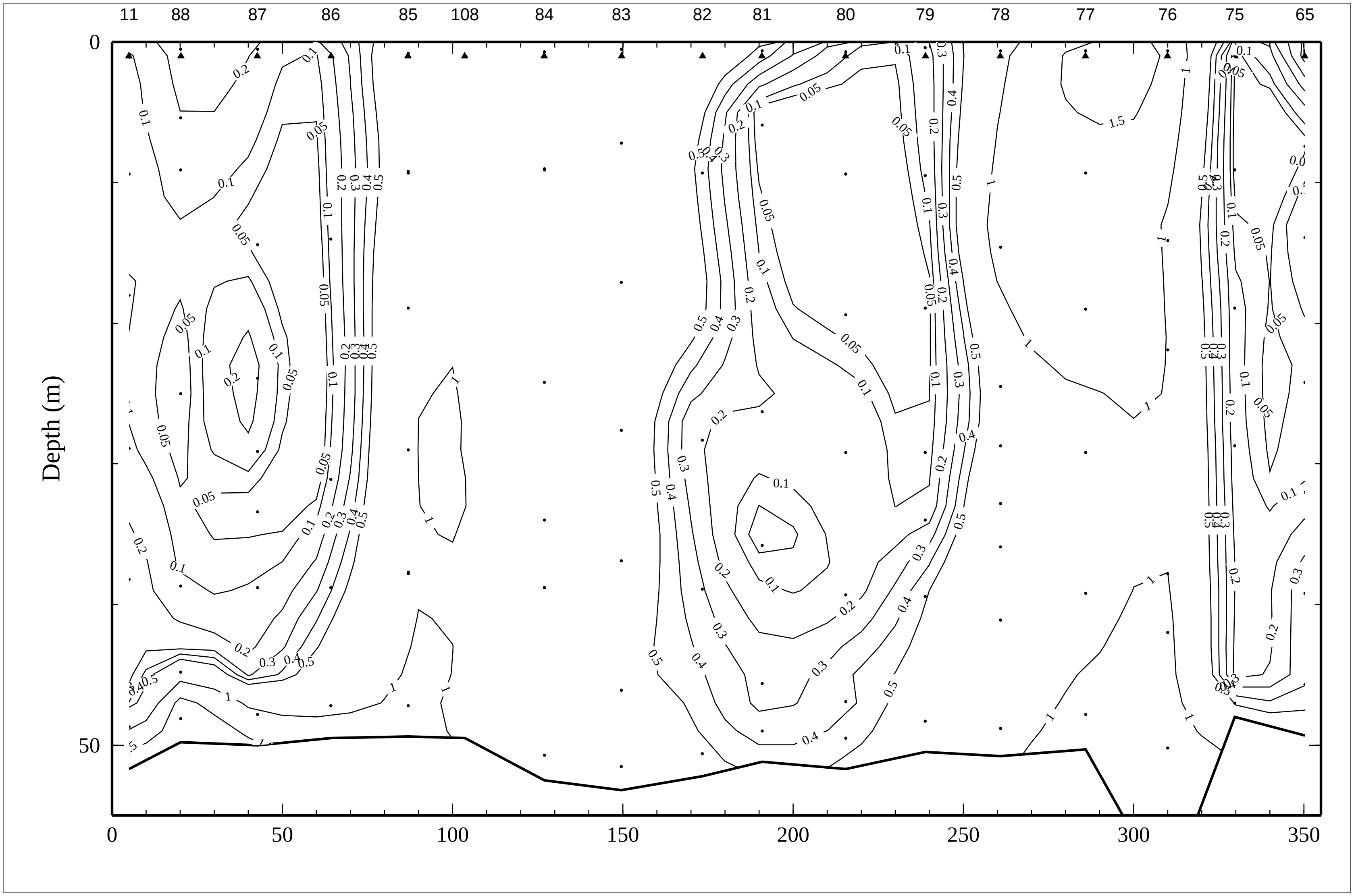

Figure 2.10.14. Ammonium (μmol·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

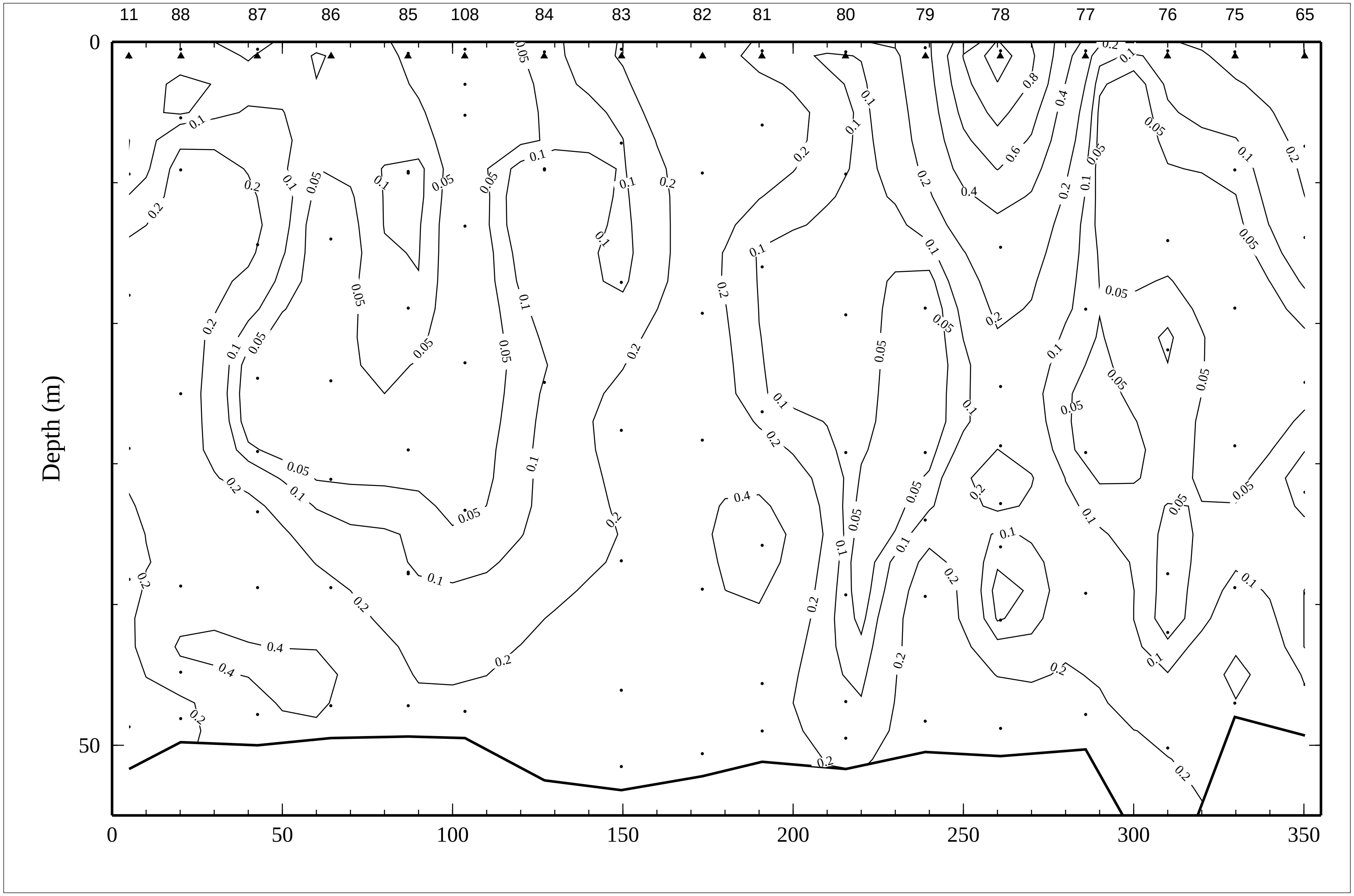

Figure 2.10.15. Urea (µmol·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

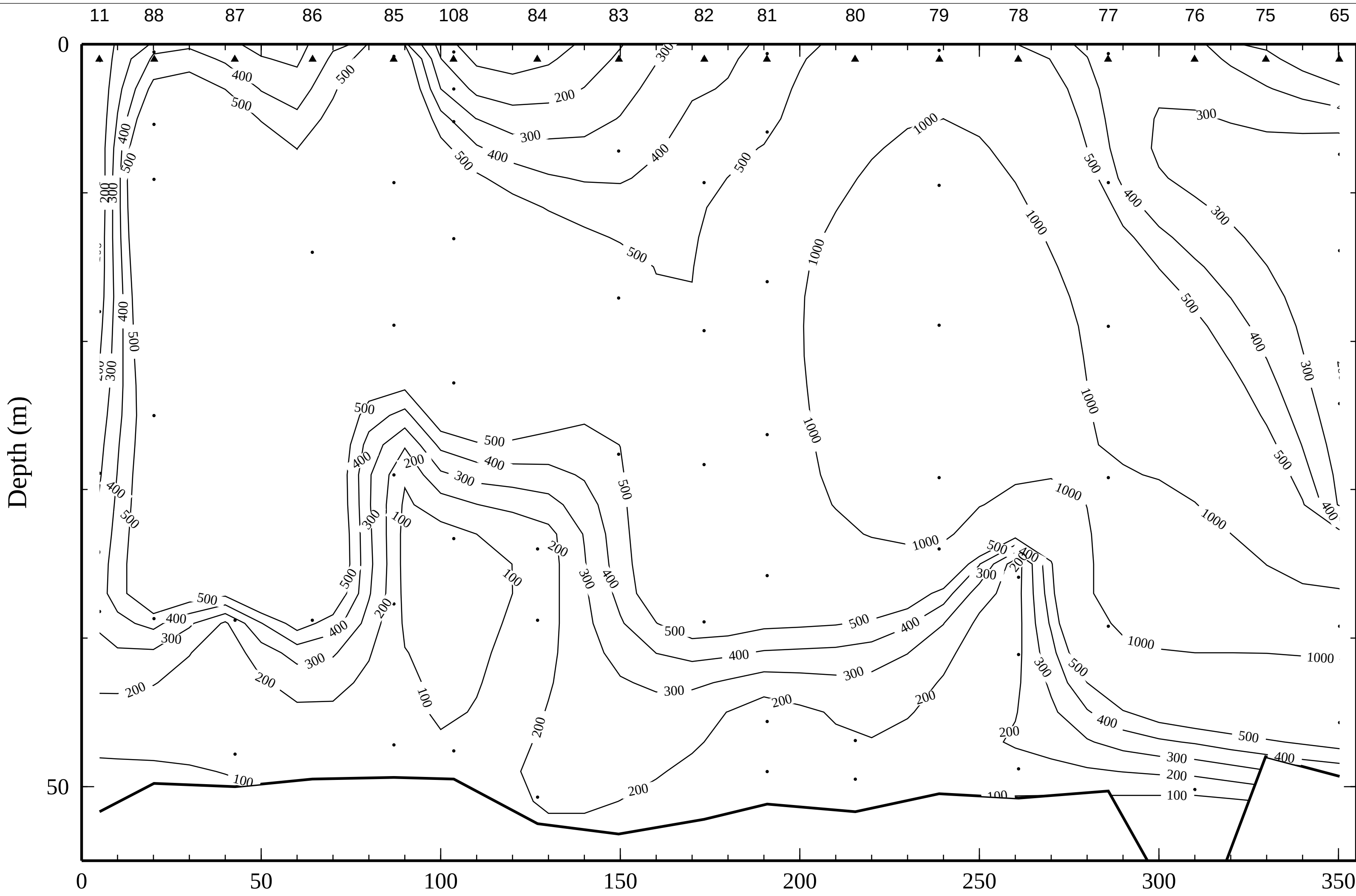

Figure 2.10.16. Chlorophyll a (ng·l^{-1}) on line 10 of LATEX A survey H02, 31 July - 9 August 1992.

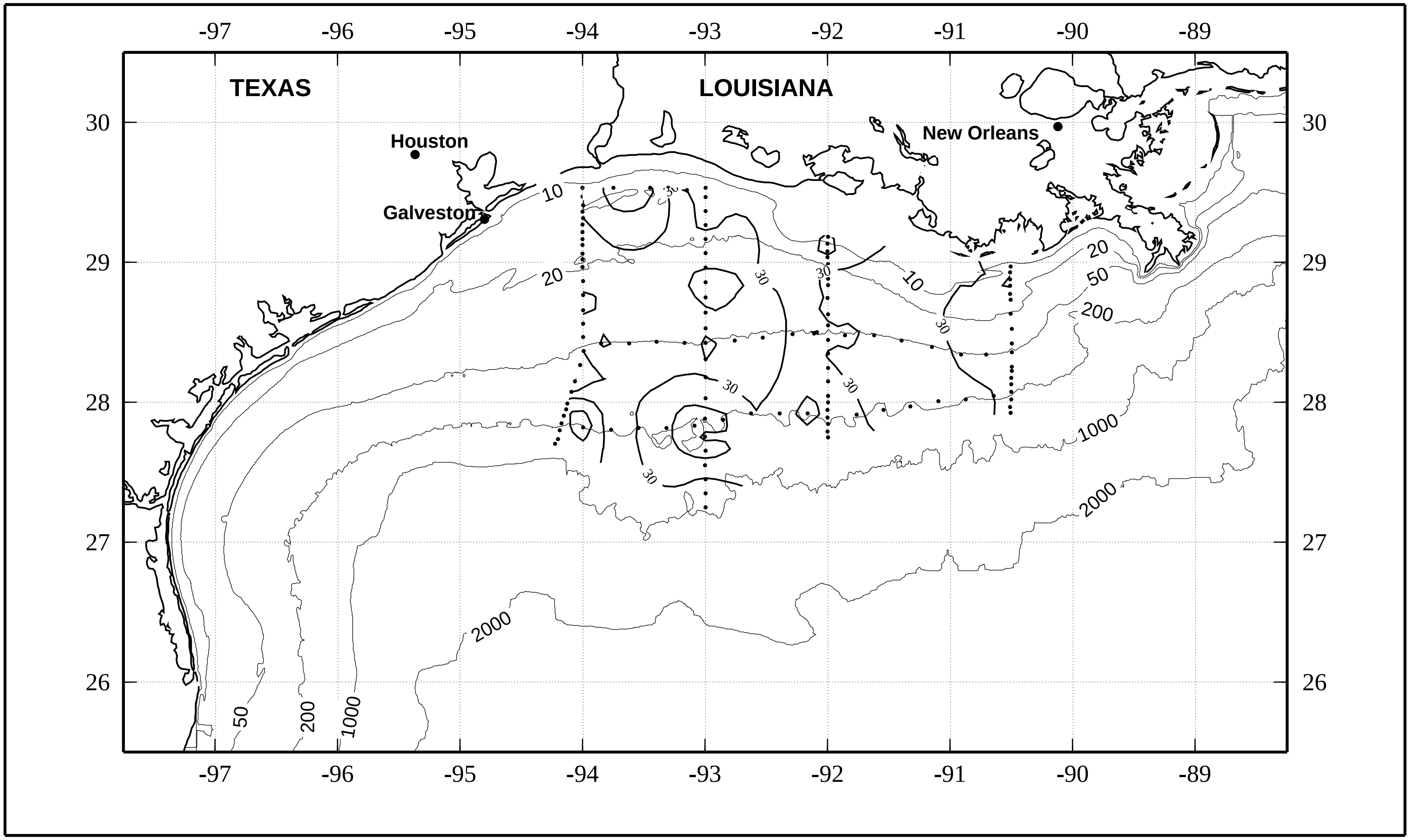

Figure 2.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

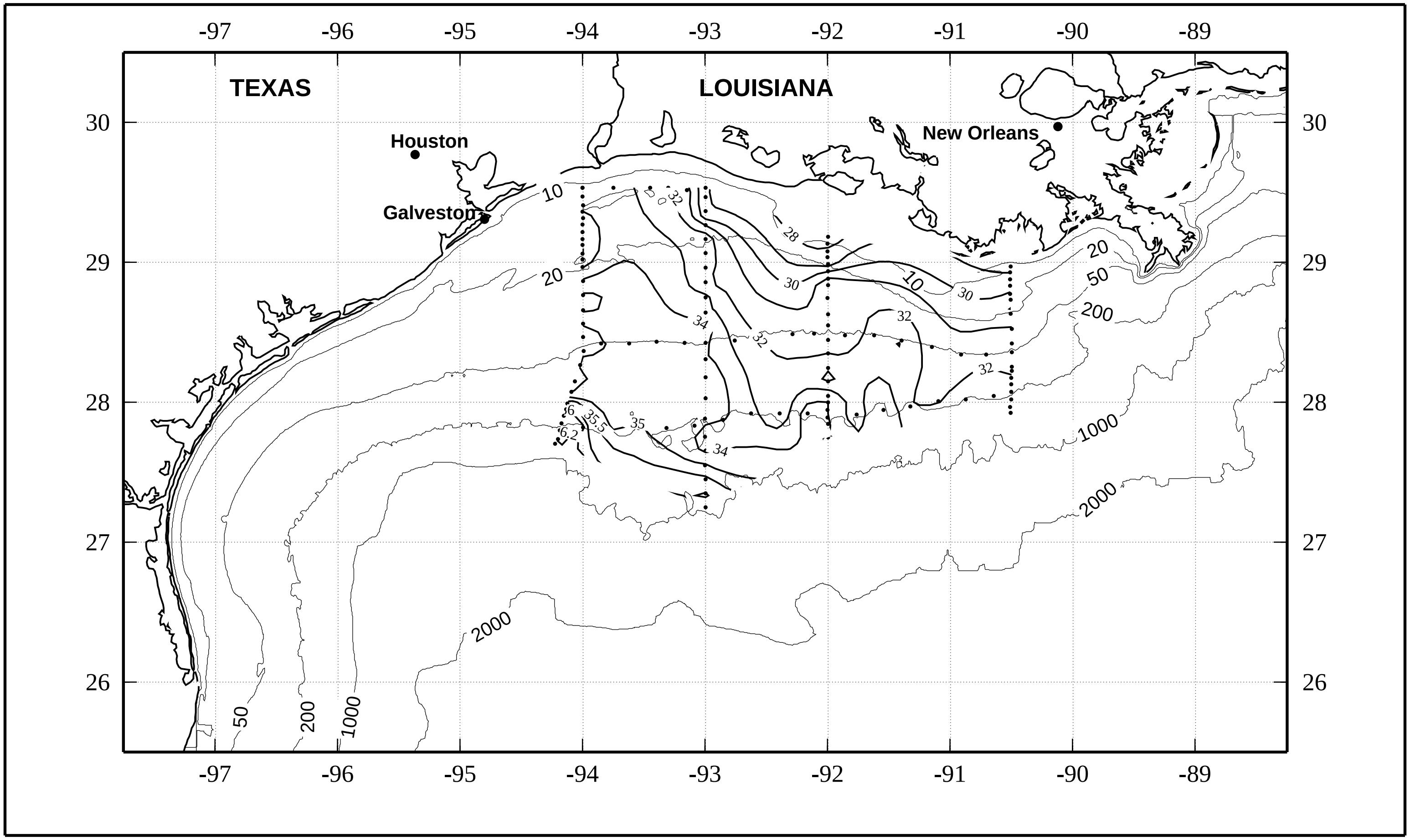

Figure 2.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

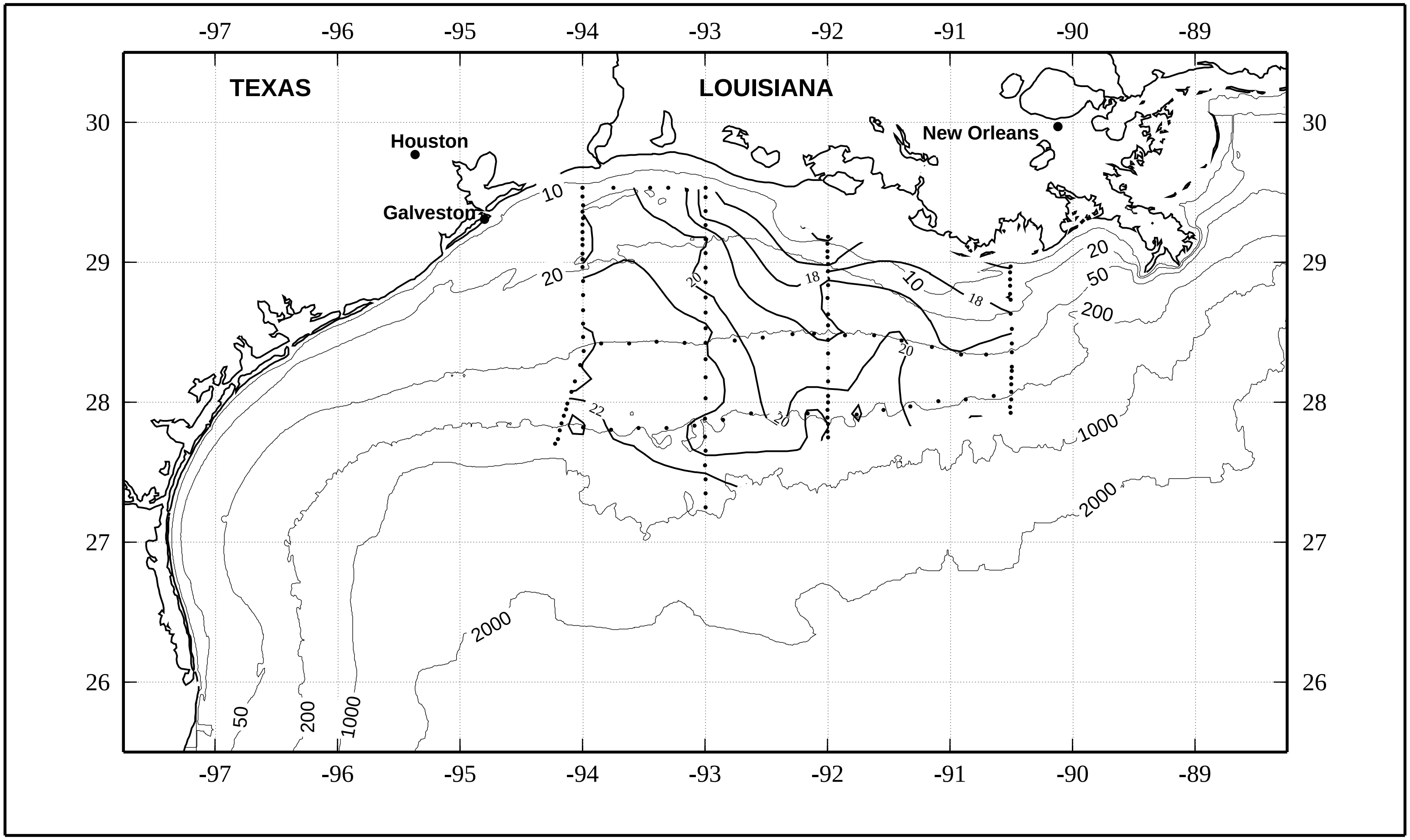

Figure 2.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

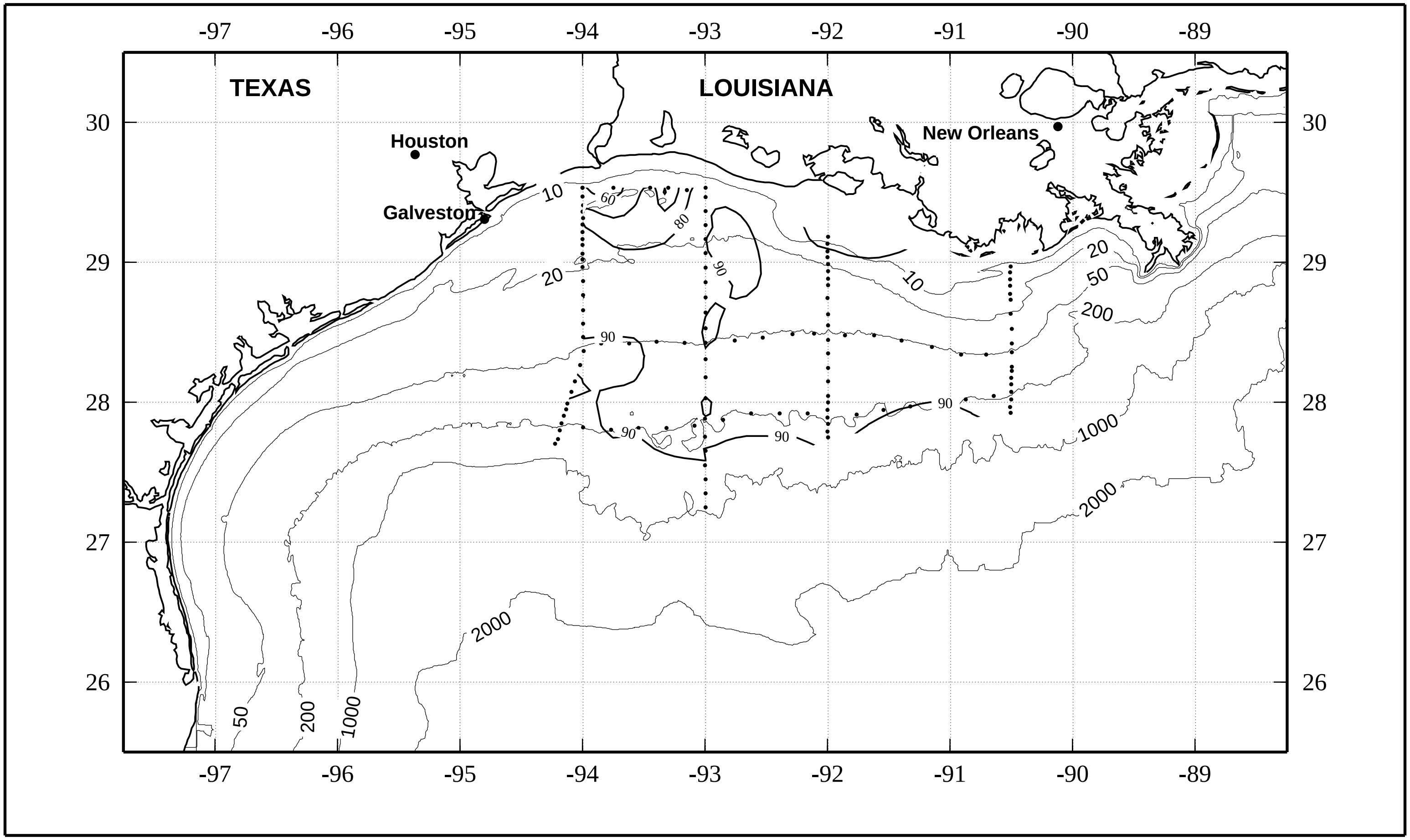

Figure 2.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

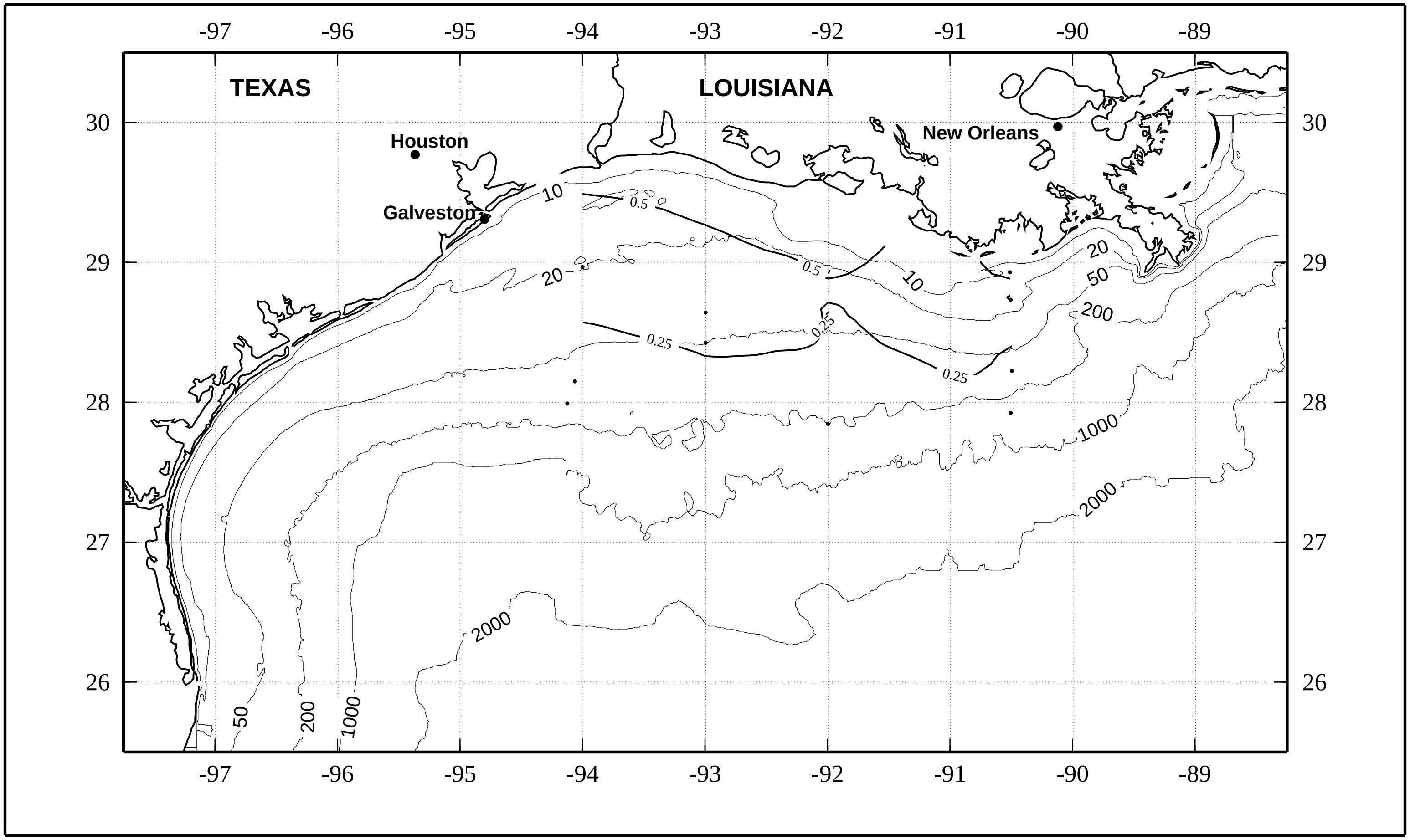

Figure 2.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

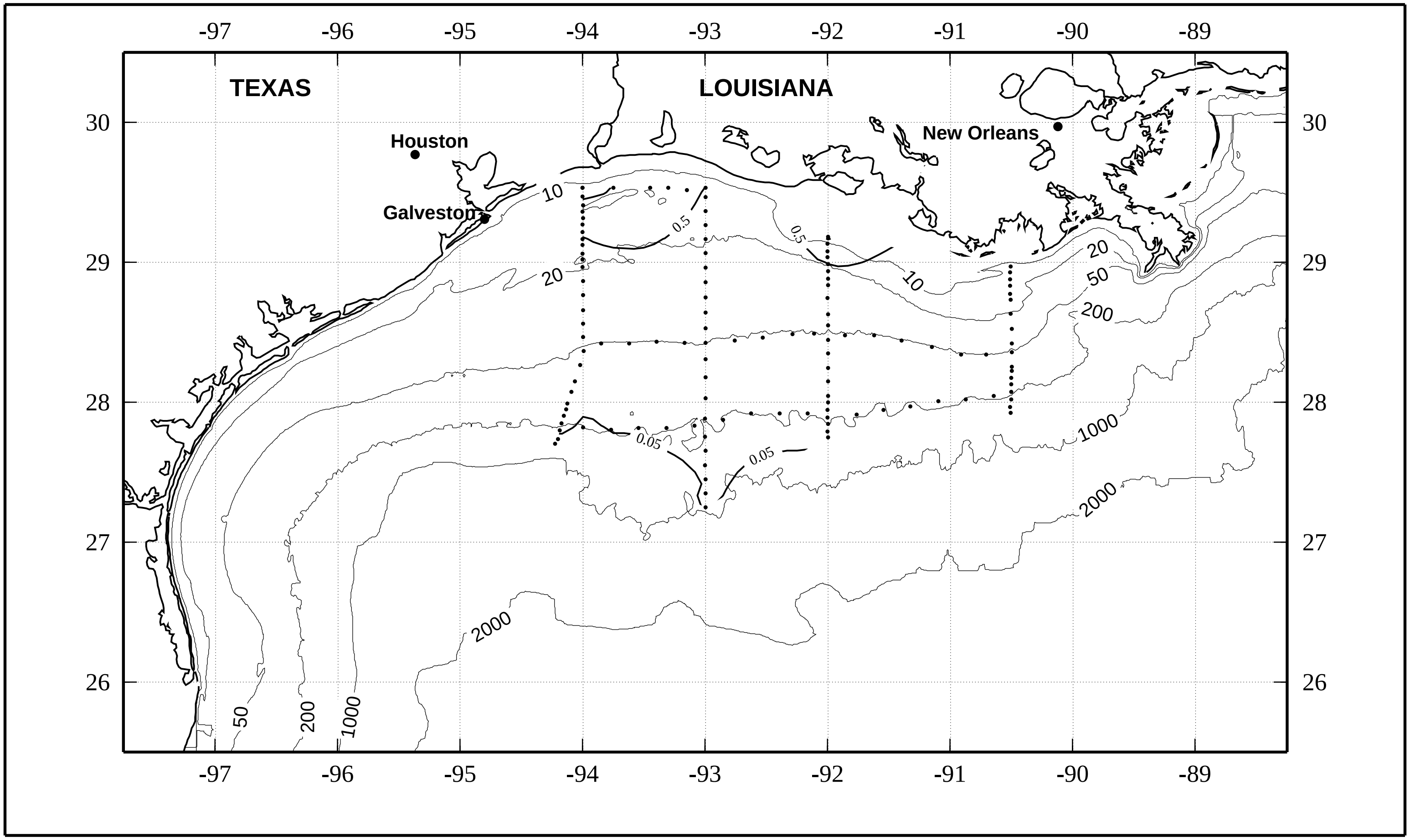

Figure 2.12.7. Relative fluorescence at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

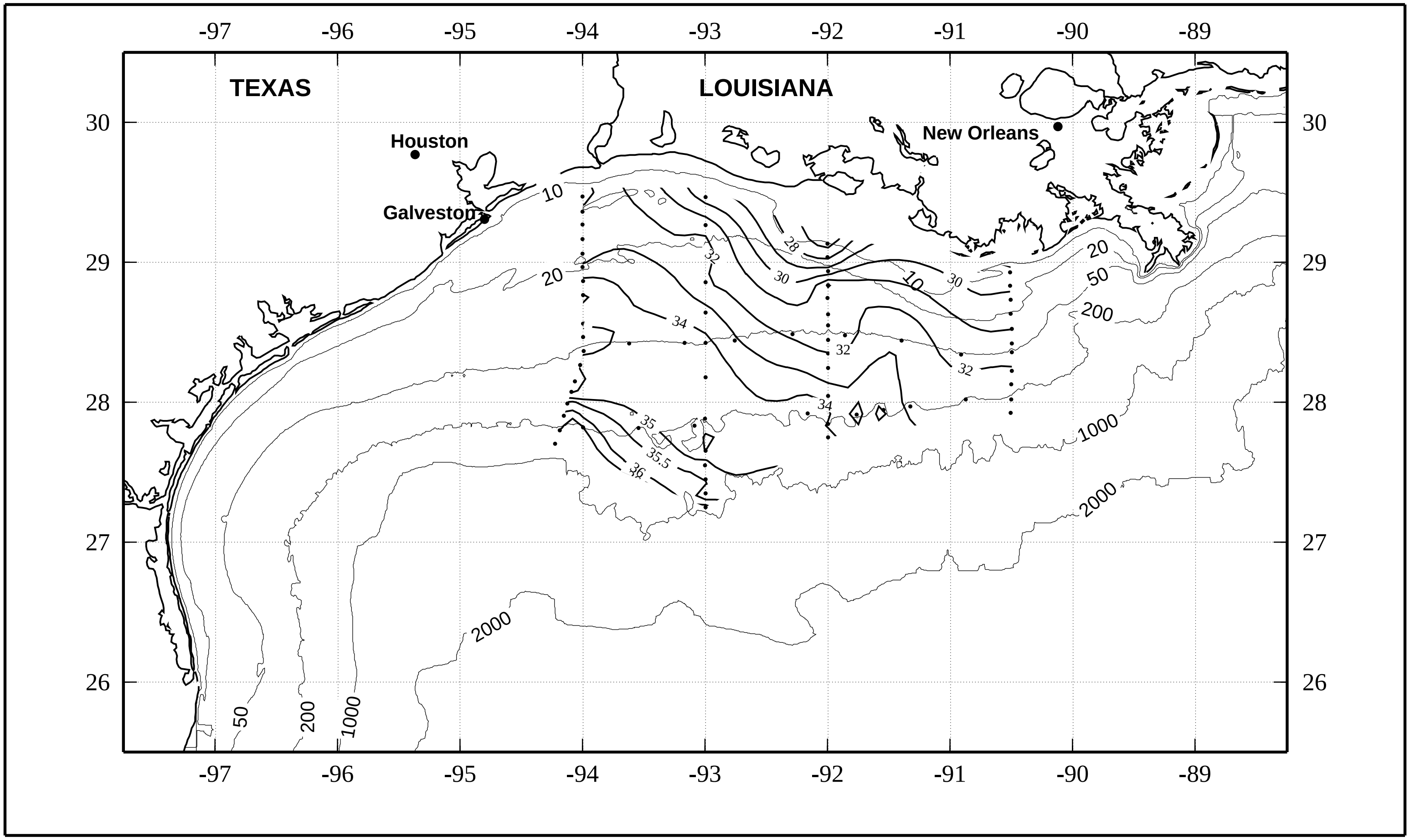

Figure 2.12.8. Bottle salinity at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

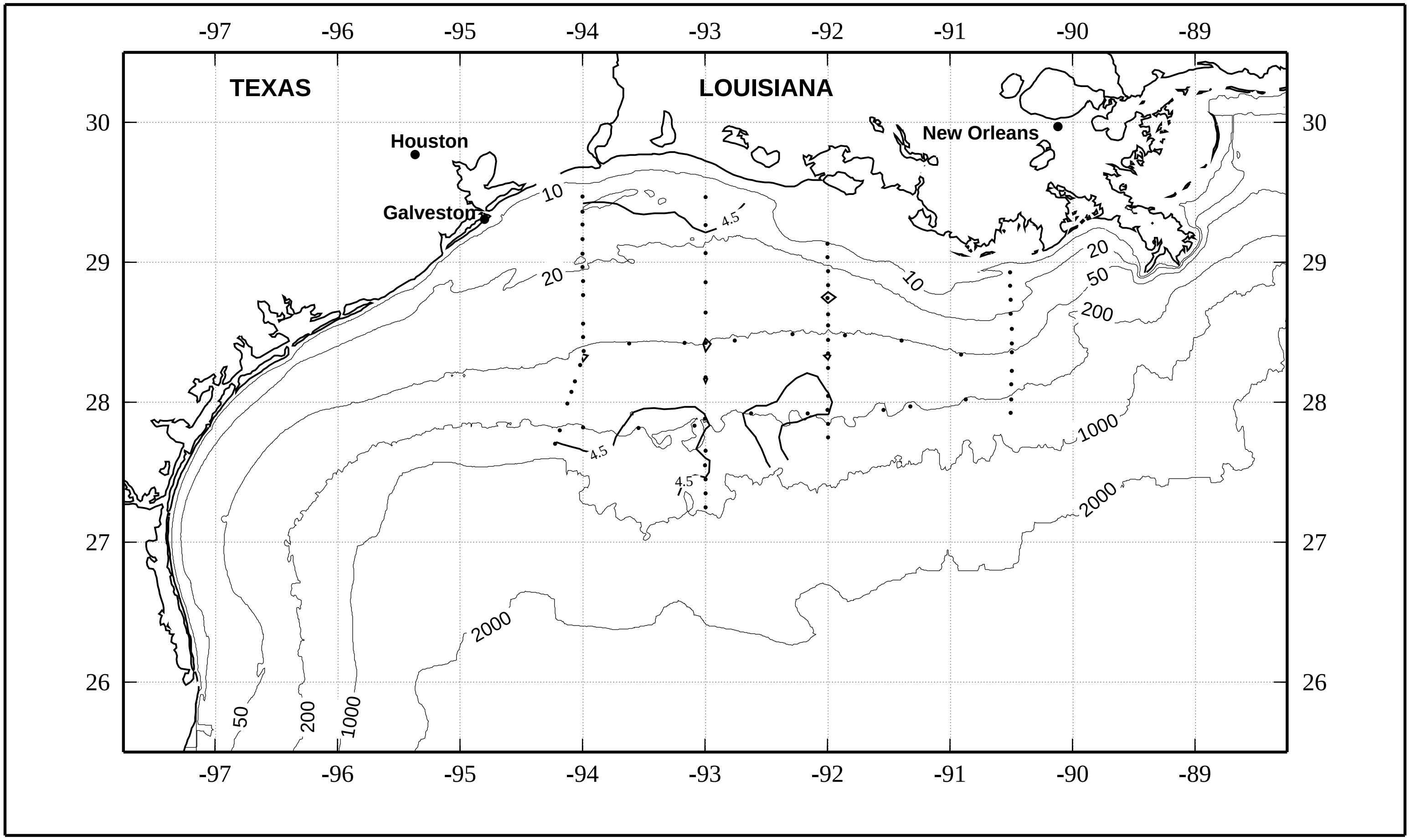

Figure 2.12.9. Dissolved oxygen (ml·l^{-1}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

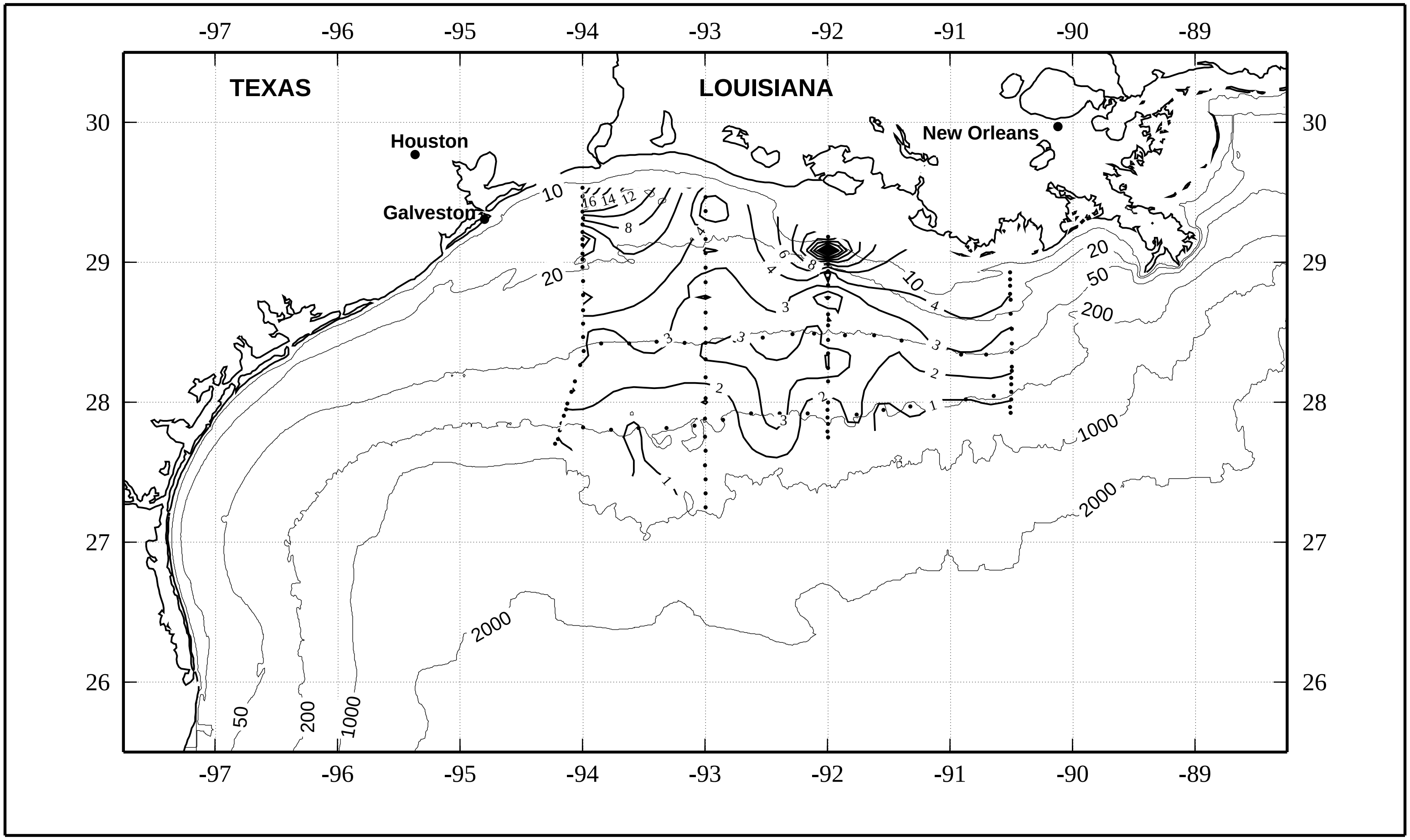

Figure 2.12.10. Silicate (μmol·l^{-1}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

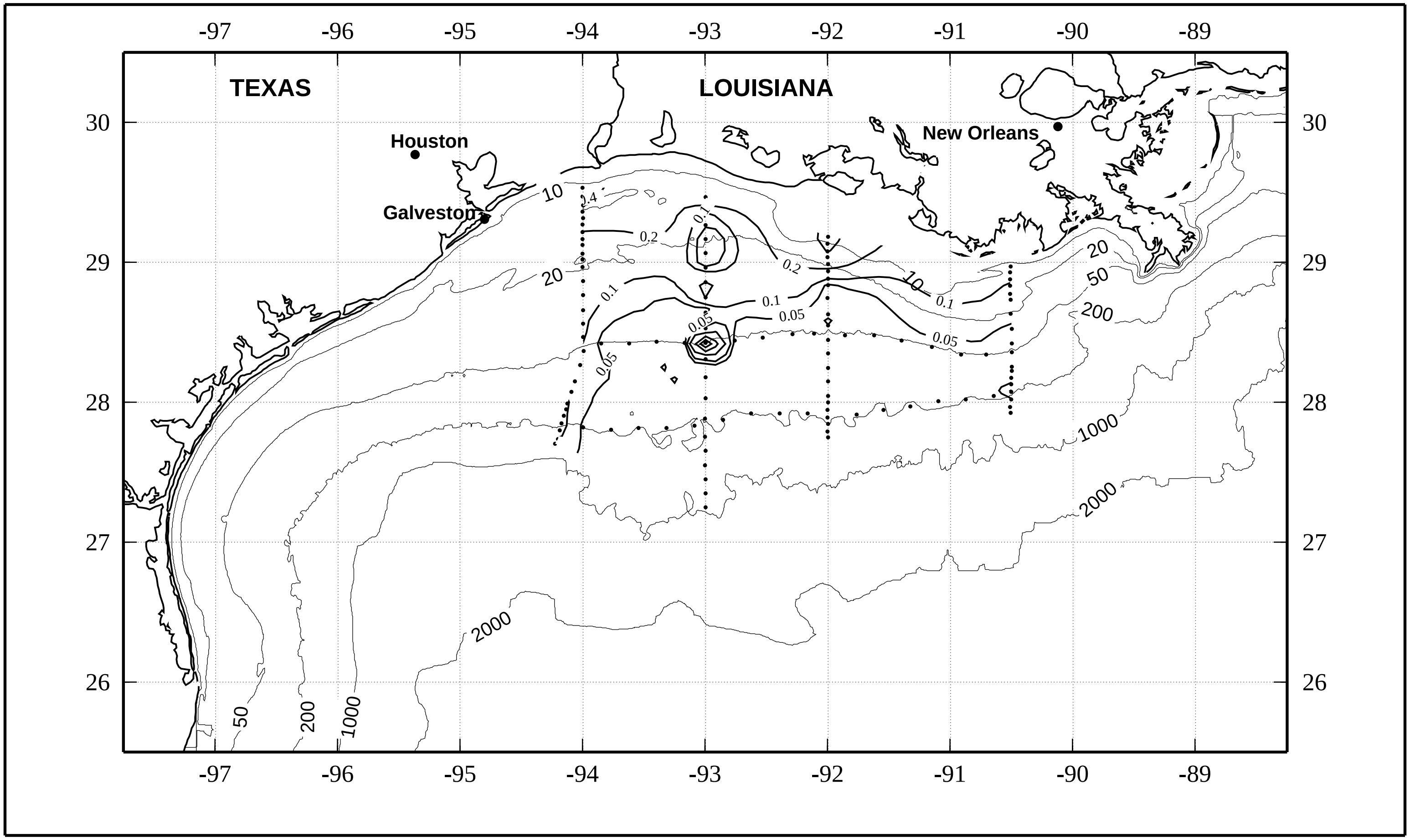

Figure 2.12.11. Phosphate (μmol·l^{-1}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

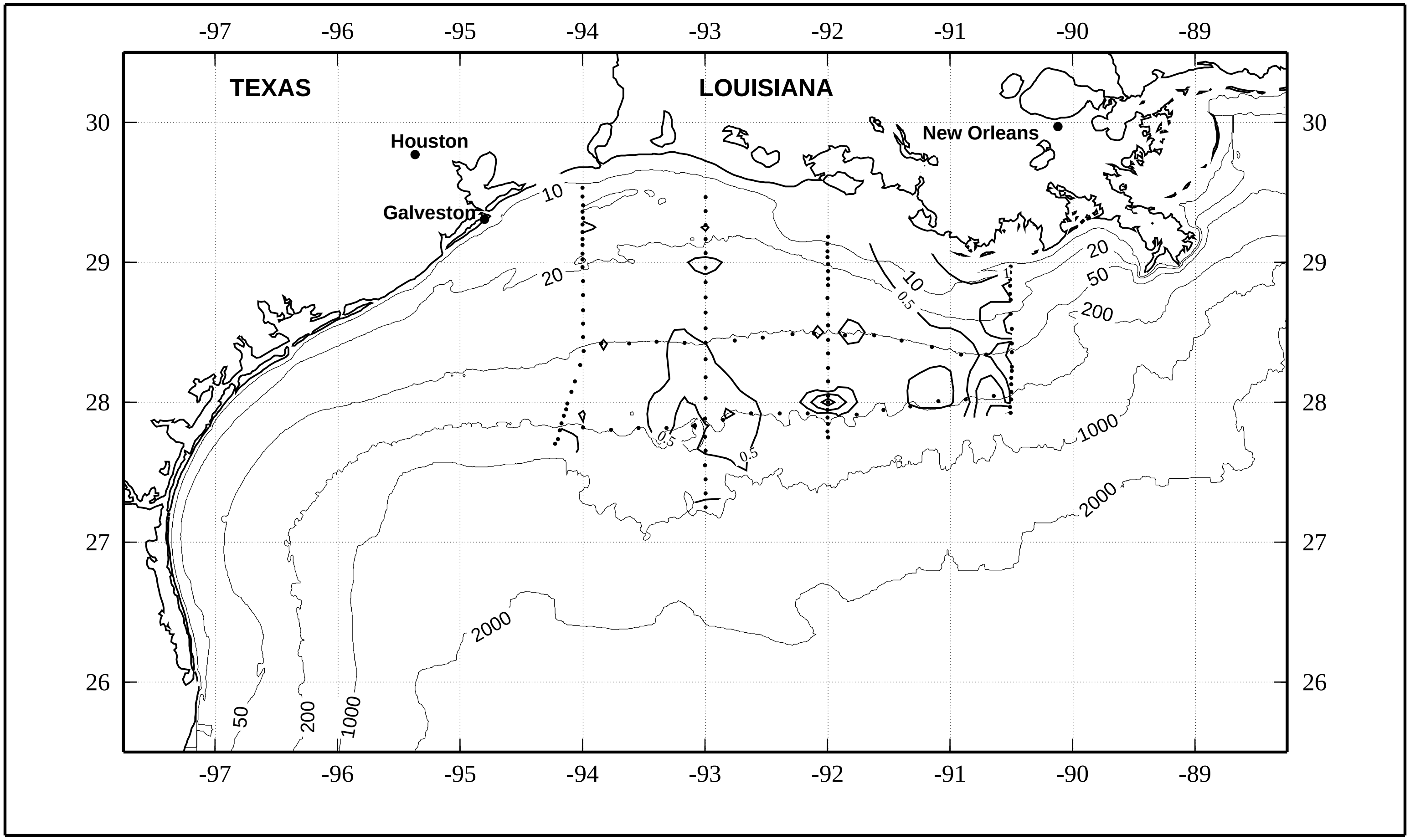

Figure 2.12.12. Nitrate (µmol·l-1) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

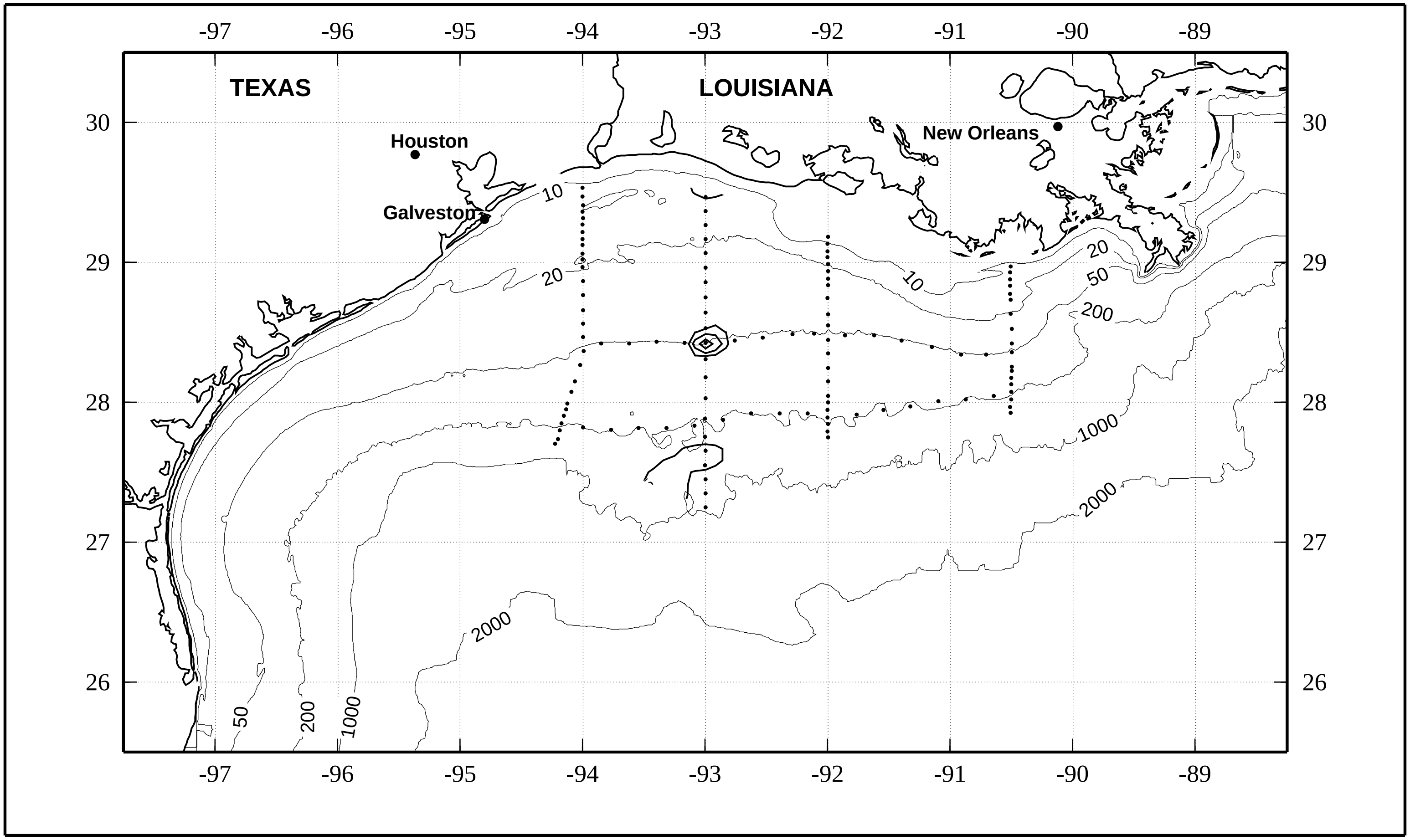

Figure 2.12.13. Nitrite (µmol·l^{-1}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

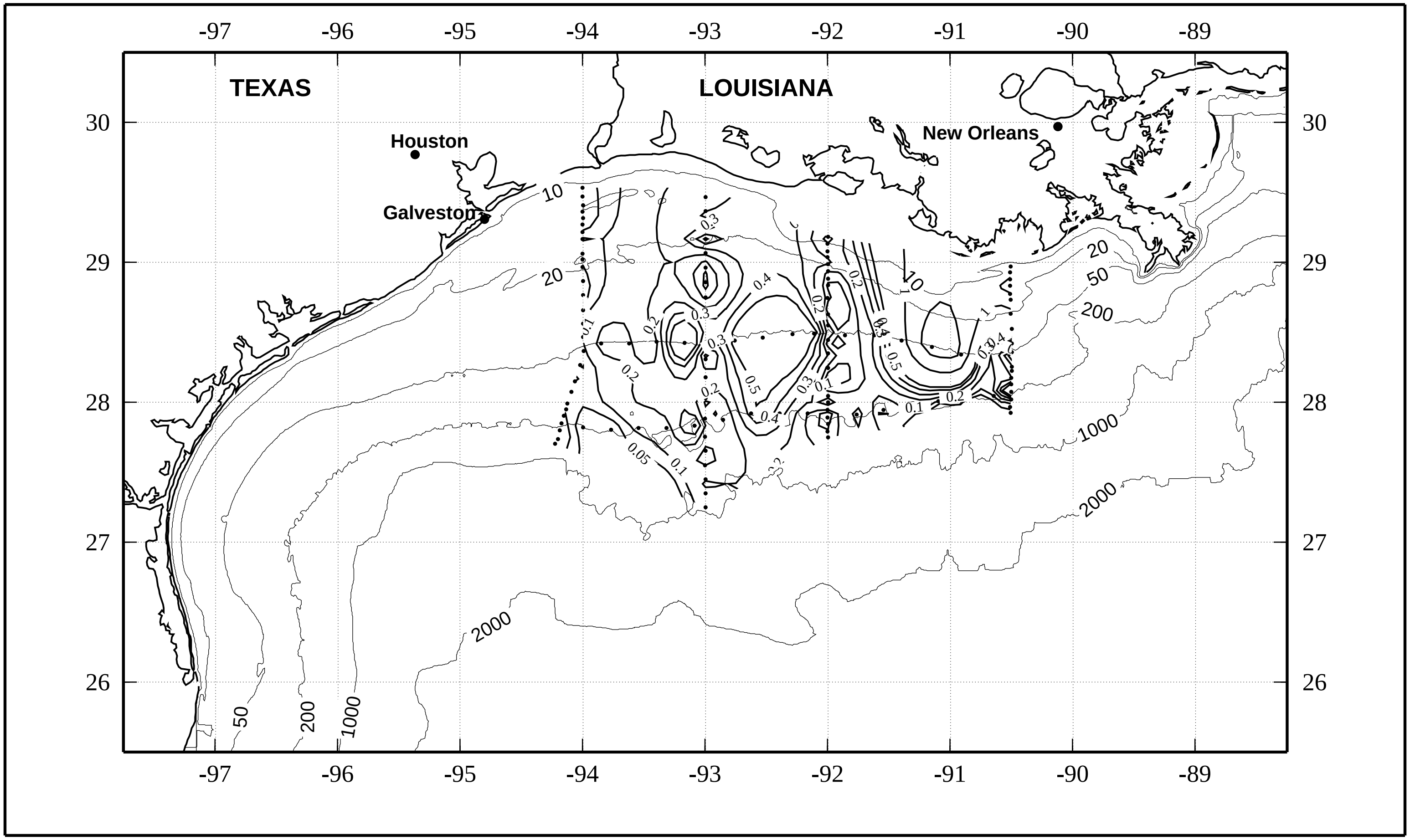

Figure 2.12.14. Ammonium (μmol·l^{-1}) at 3 m on LATEX A survey H02, 31 July - 9 August 1992.

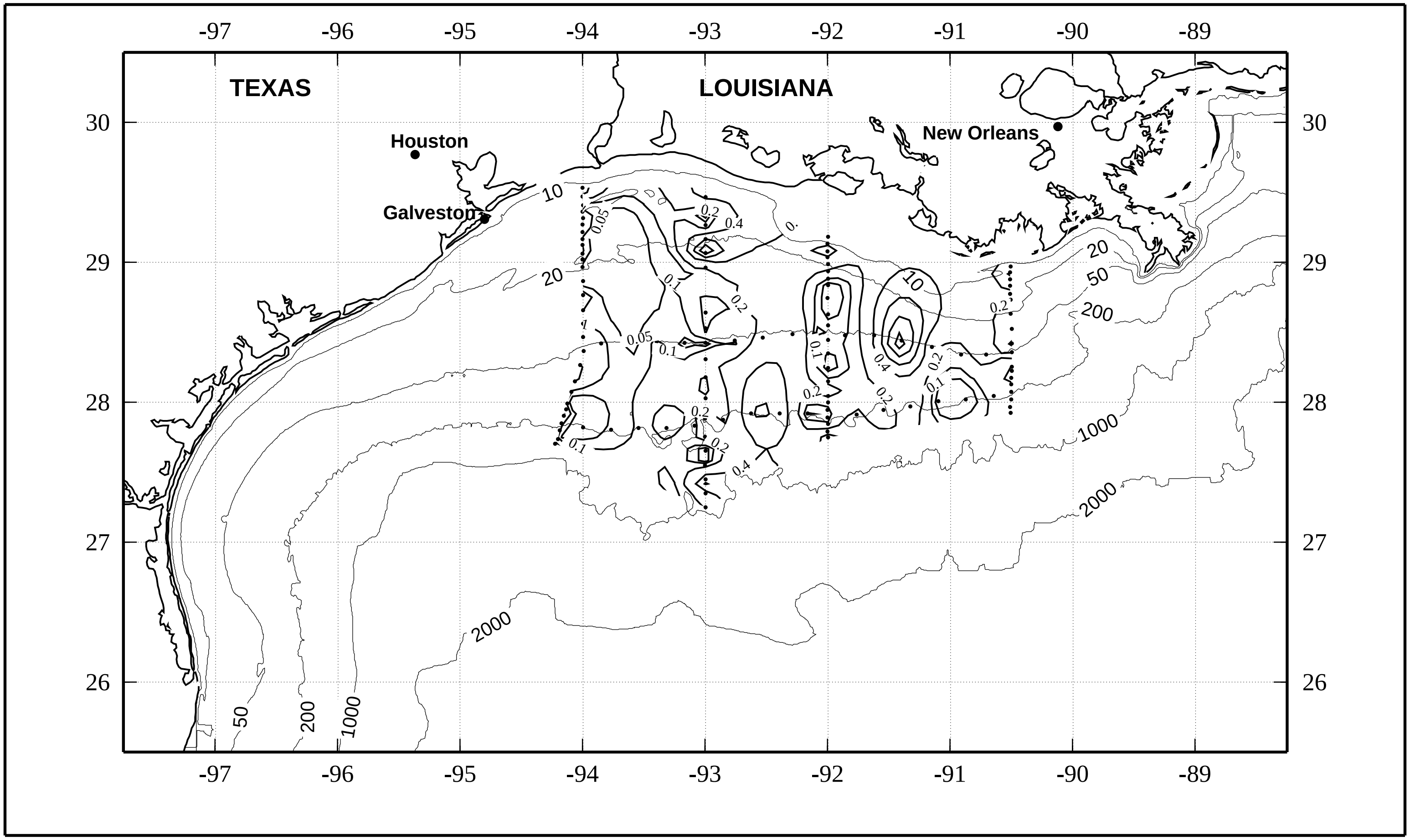

Figure 2.12.15. Urea (μmol·l^{-1}) on LATEX A survey H02, 31 July - 9 August 1992.

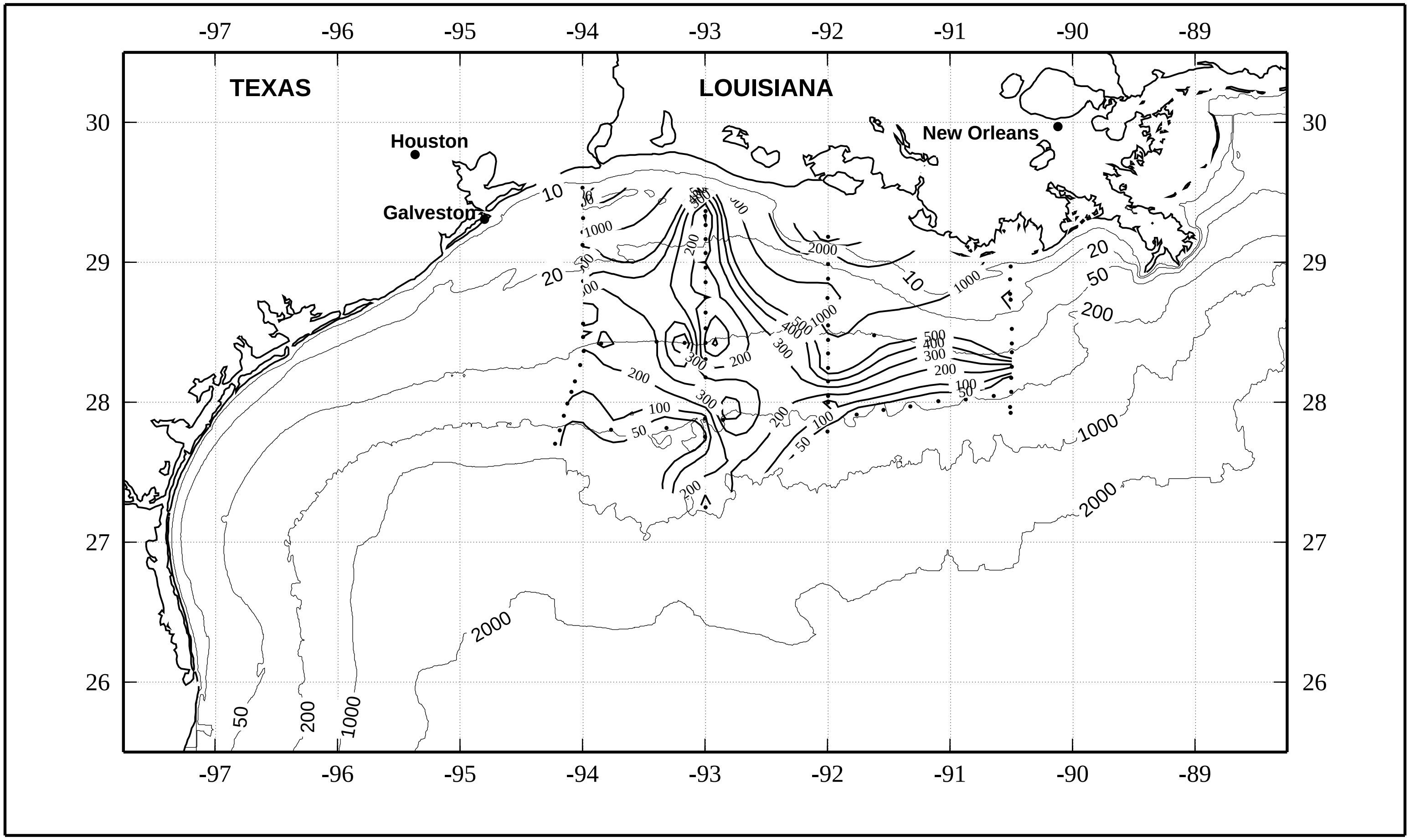

Figure 2.12.16. Chlorophyll a ($ng \cdot l^{-1}$) at maximum on LATEX A survey H02, 31 July - 9 August 1992.

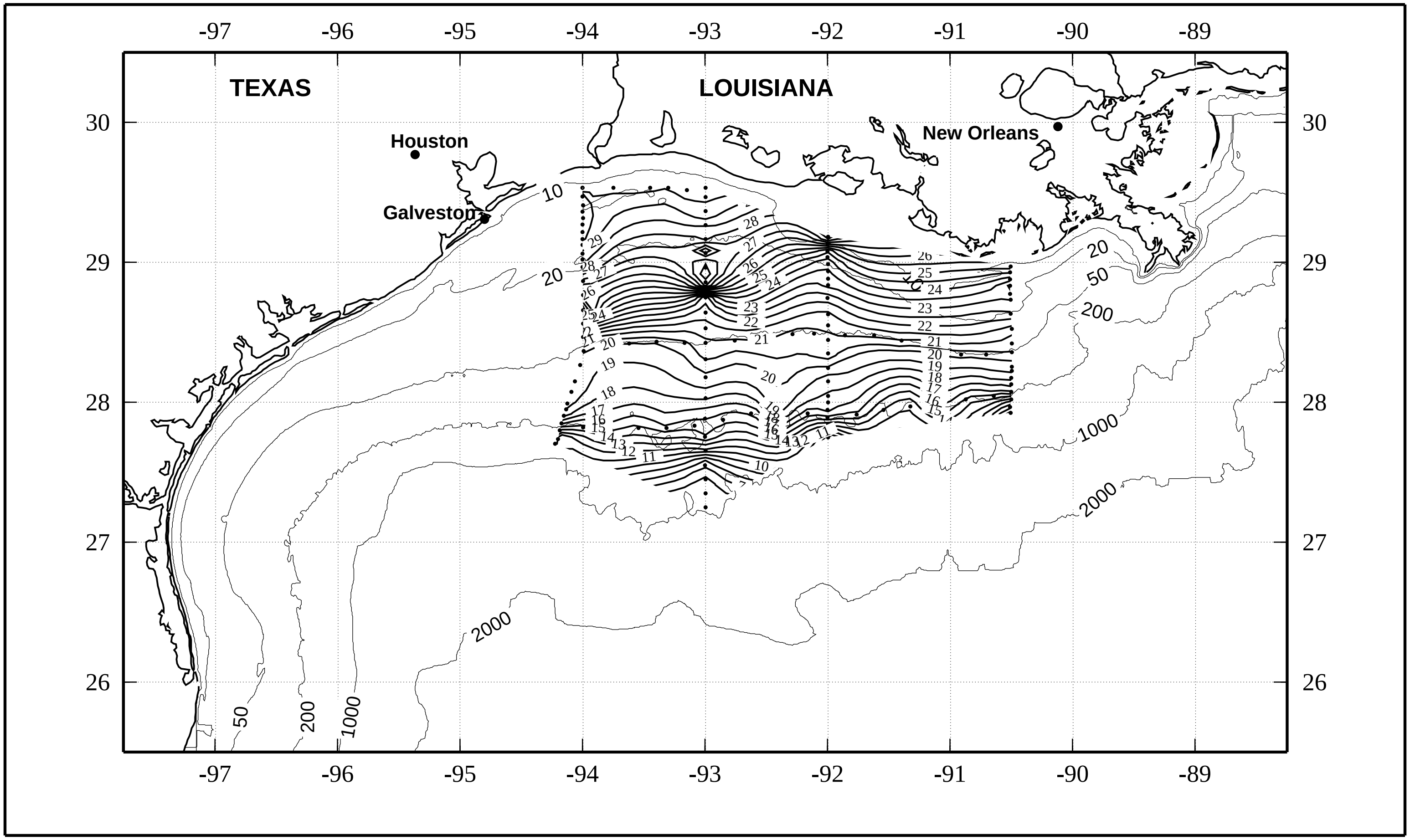

Figure 2.13.1. Potential temperature (˚C) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

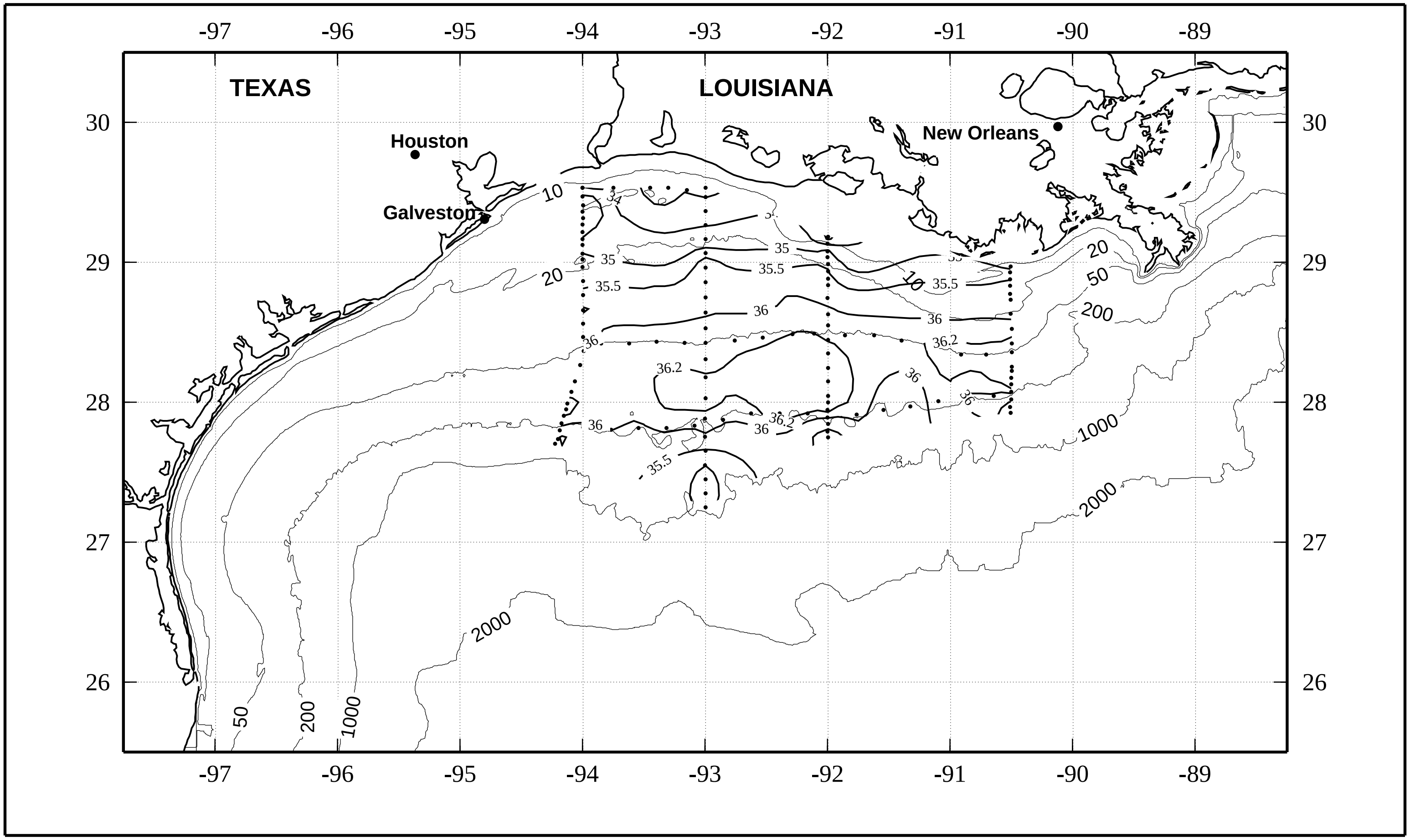

Figure 2.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H02, 31 July - 9 August 1992.

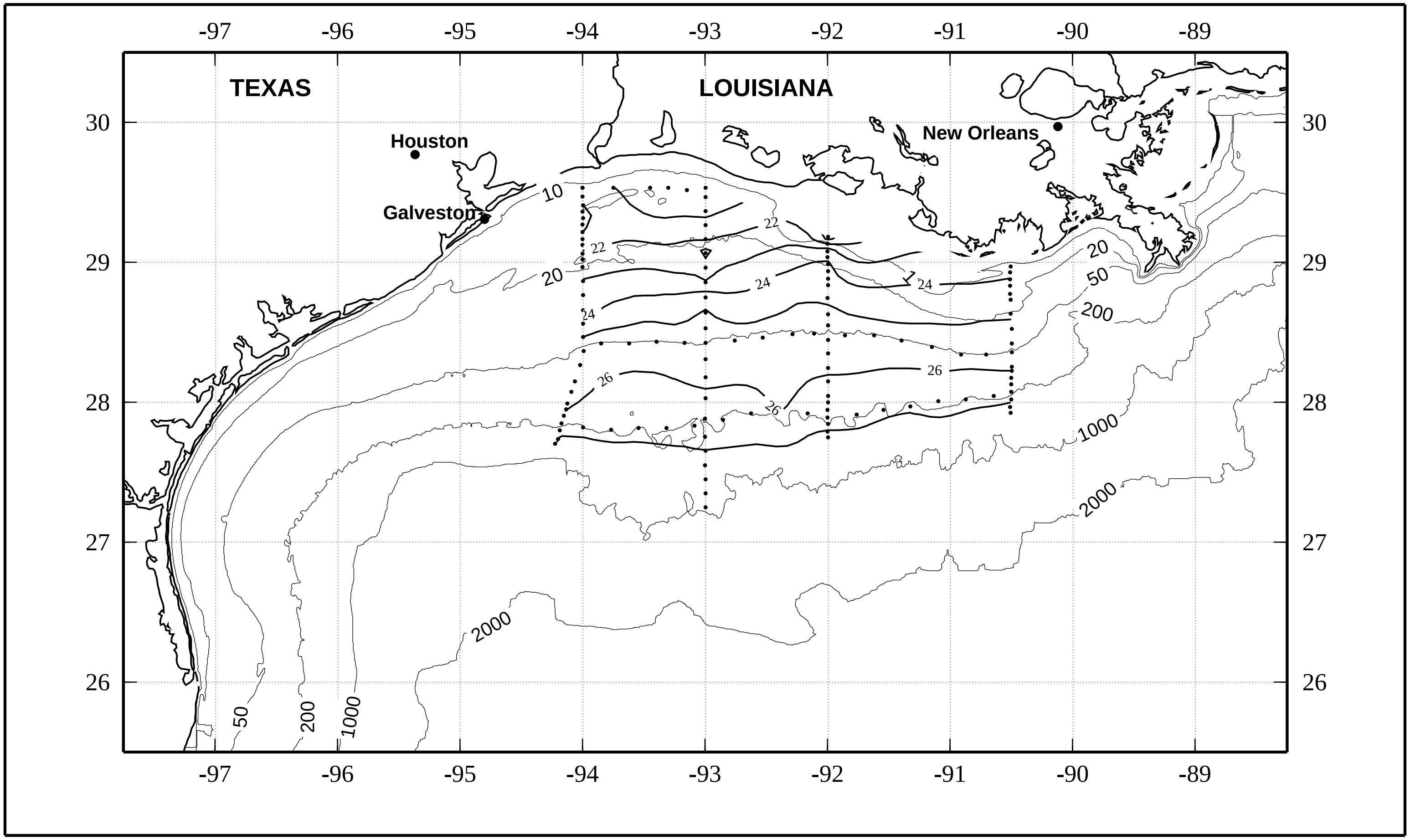

Figure 2.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

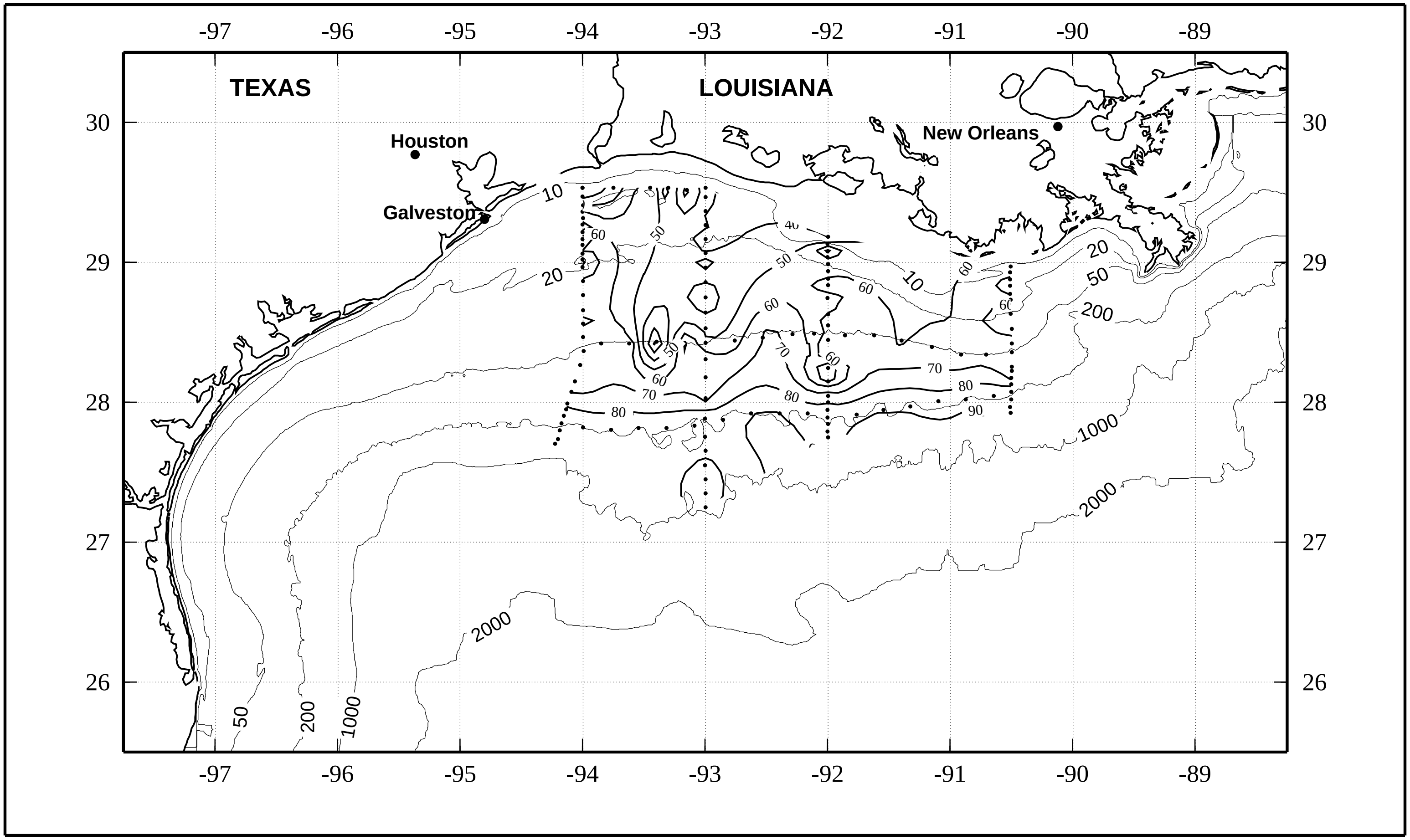

Figure 2.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

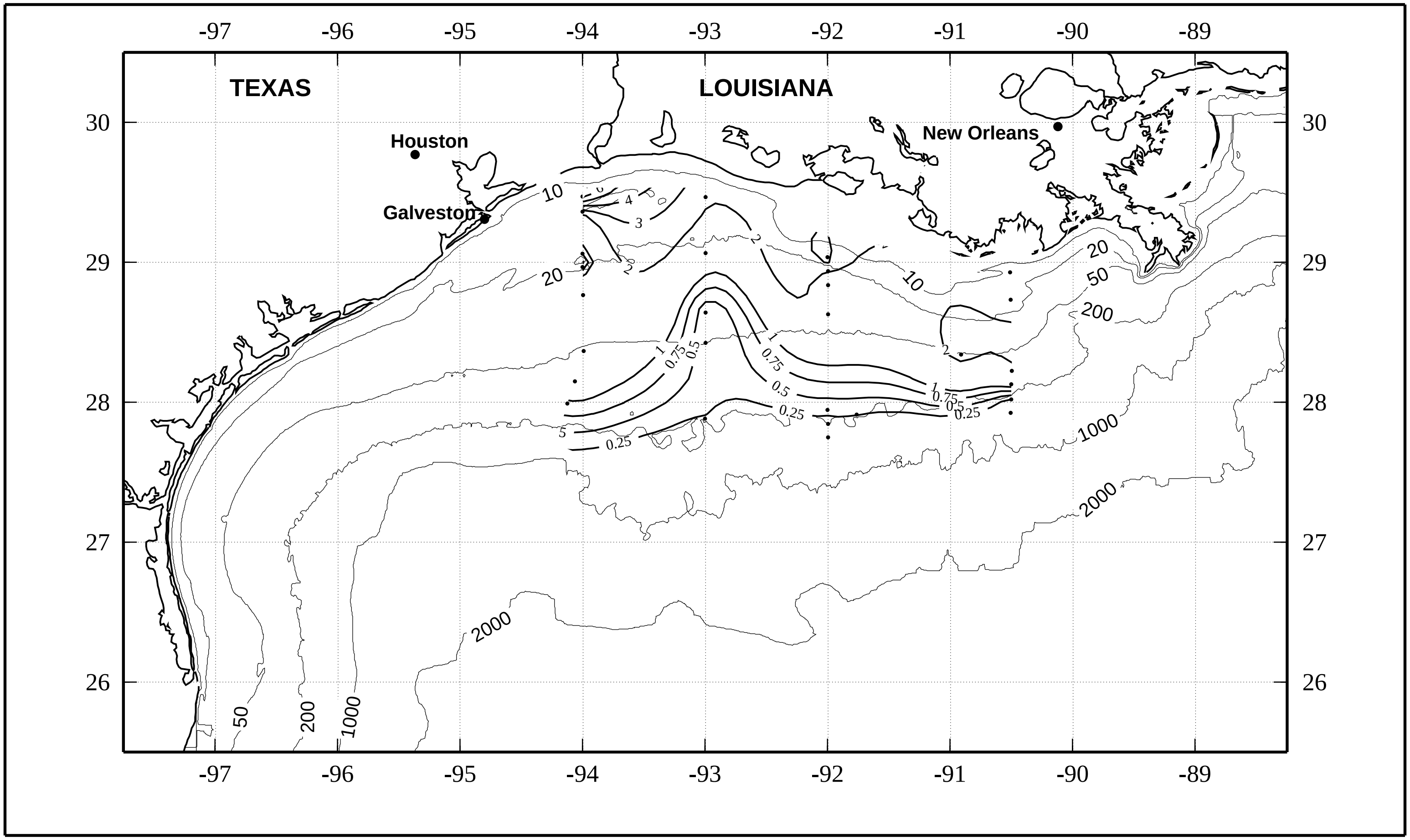

Figure 2.13.5. Suspended particulate material (mg·l⁻¹) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

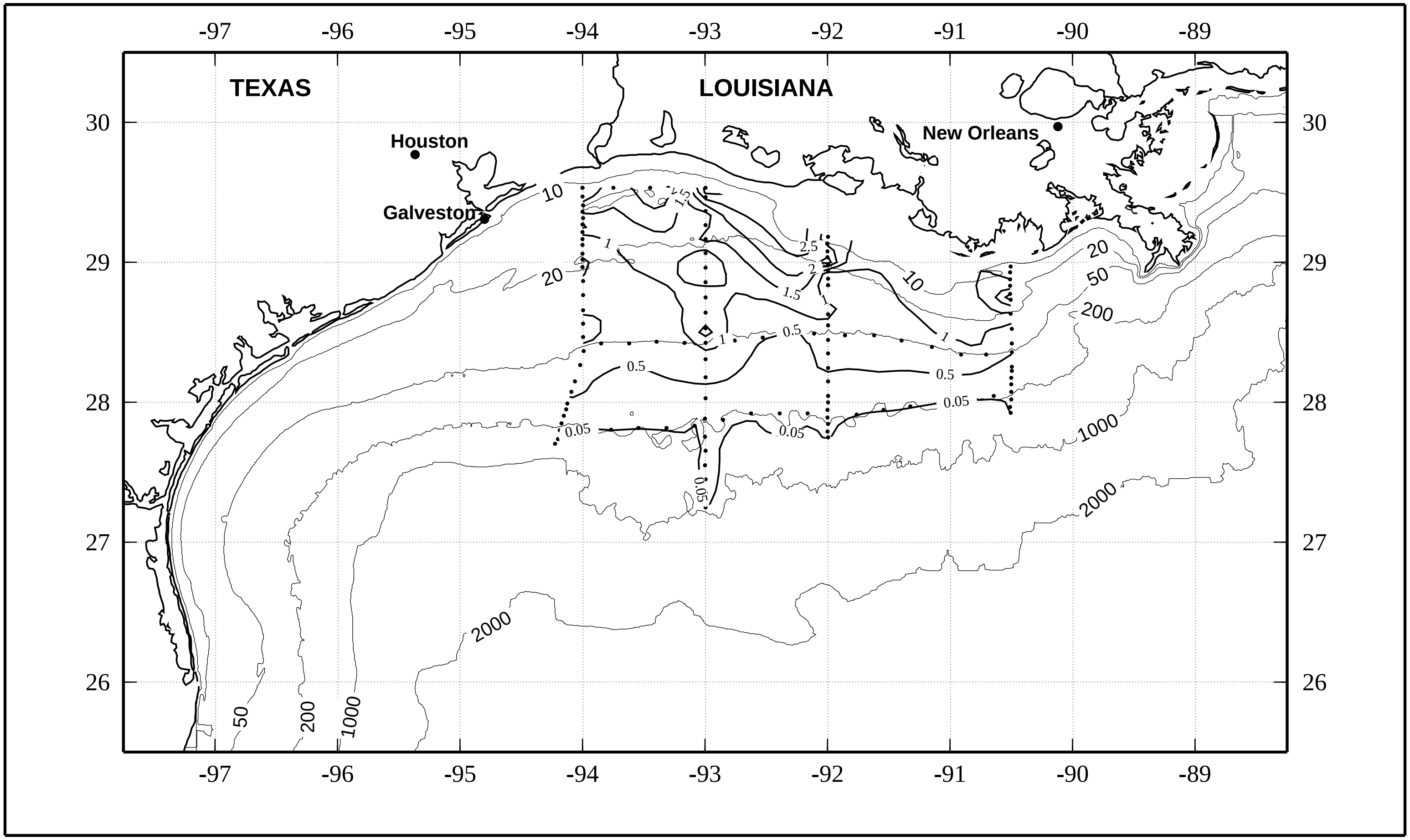

Figure 2.13.7. Relative fluorescence near bottom on LATEX A survey H02, 31 July - 9 August 1992.

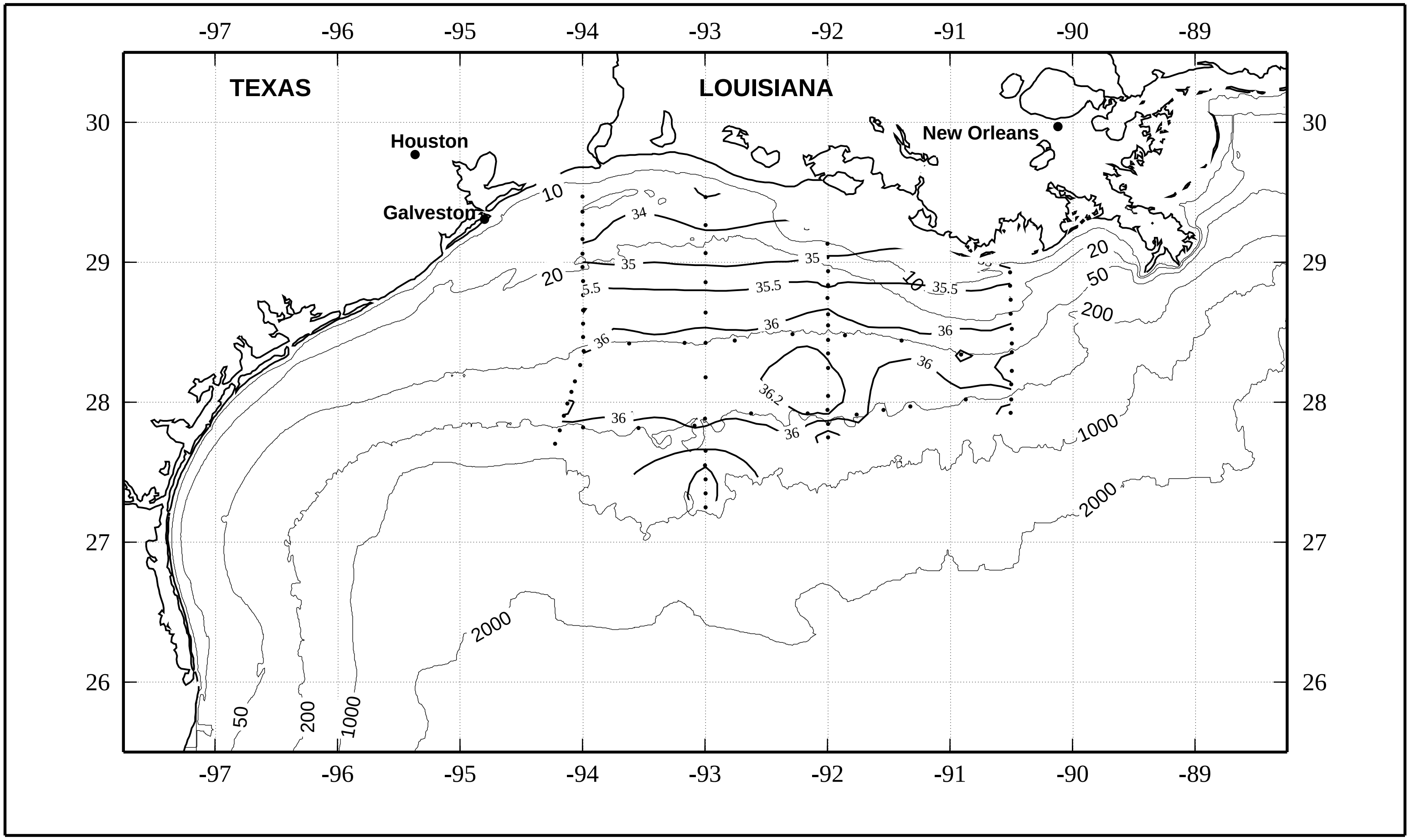

Figure 2.13.8. Bottle salinity near bottom on LATEX A survey H02, 31 July - 9 August 1992.

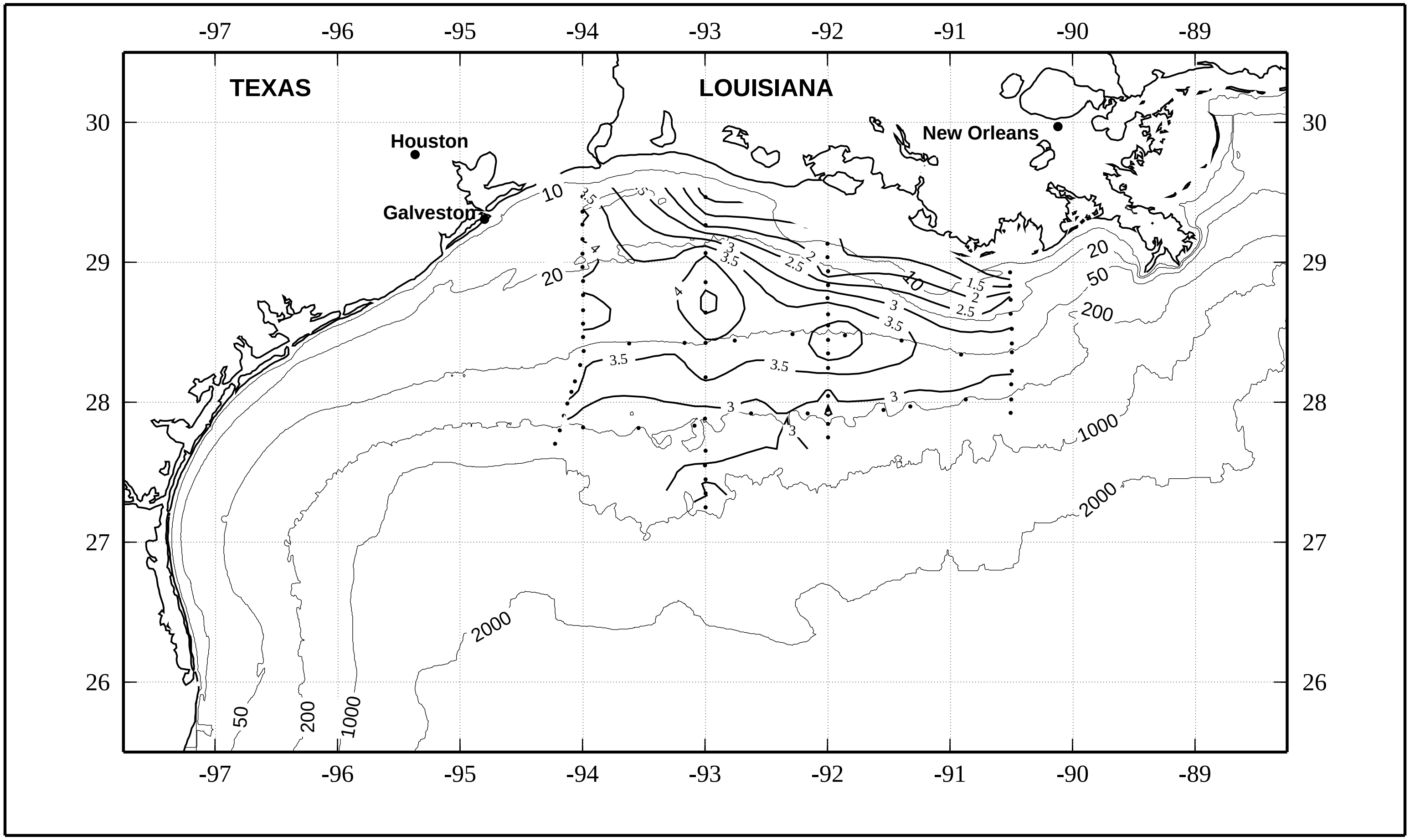

Figure 2.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

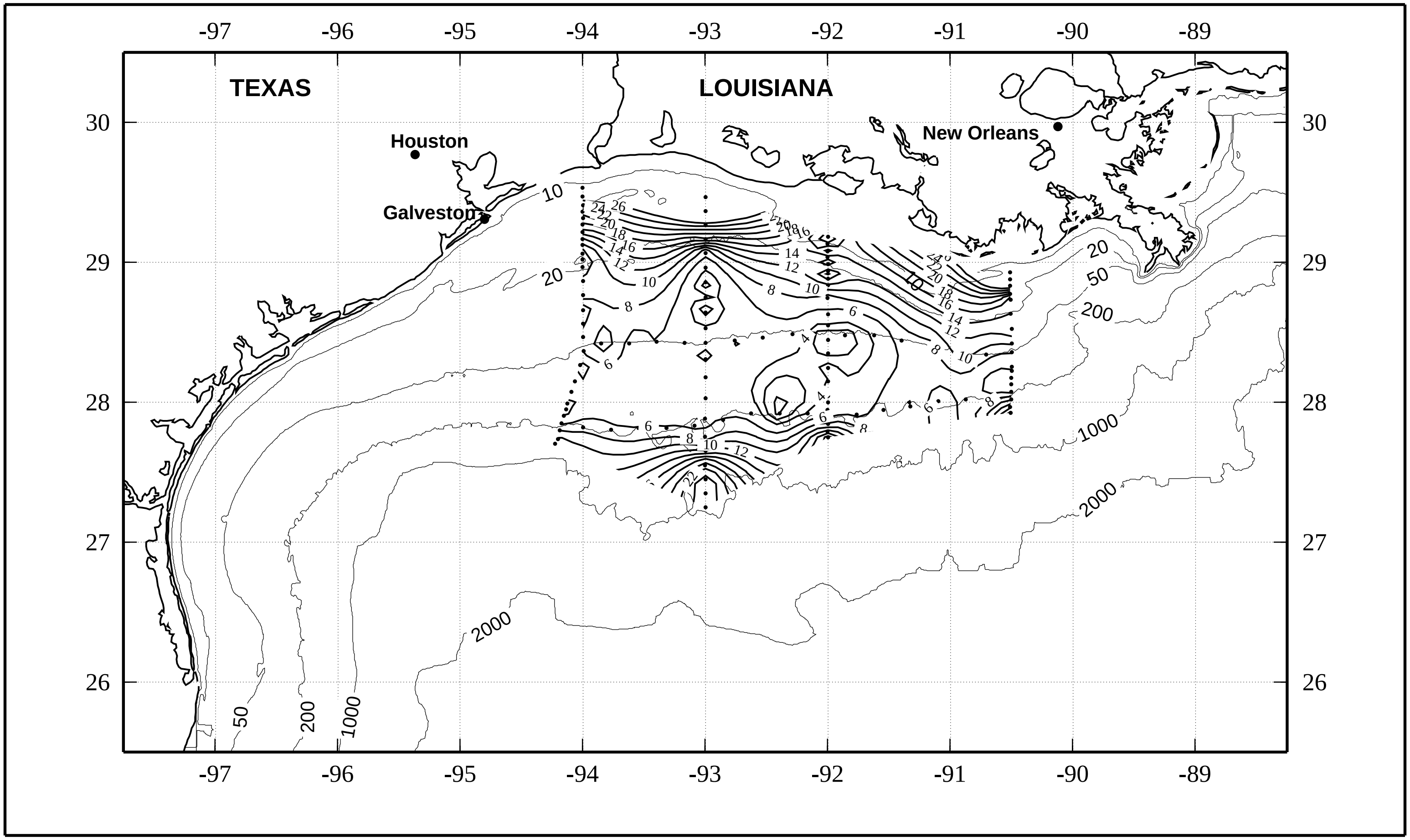

Figure 2.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

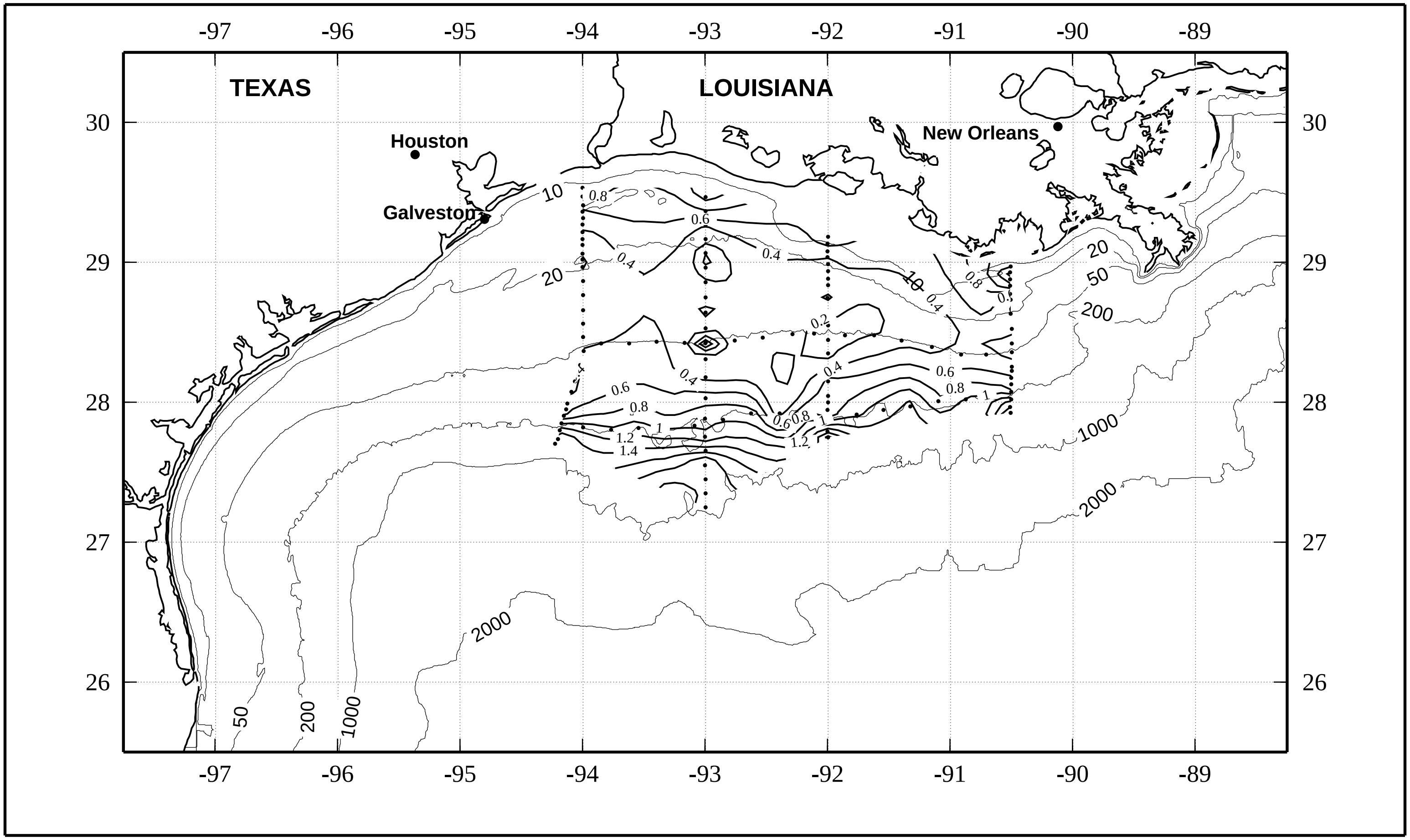

Figure 2.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

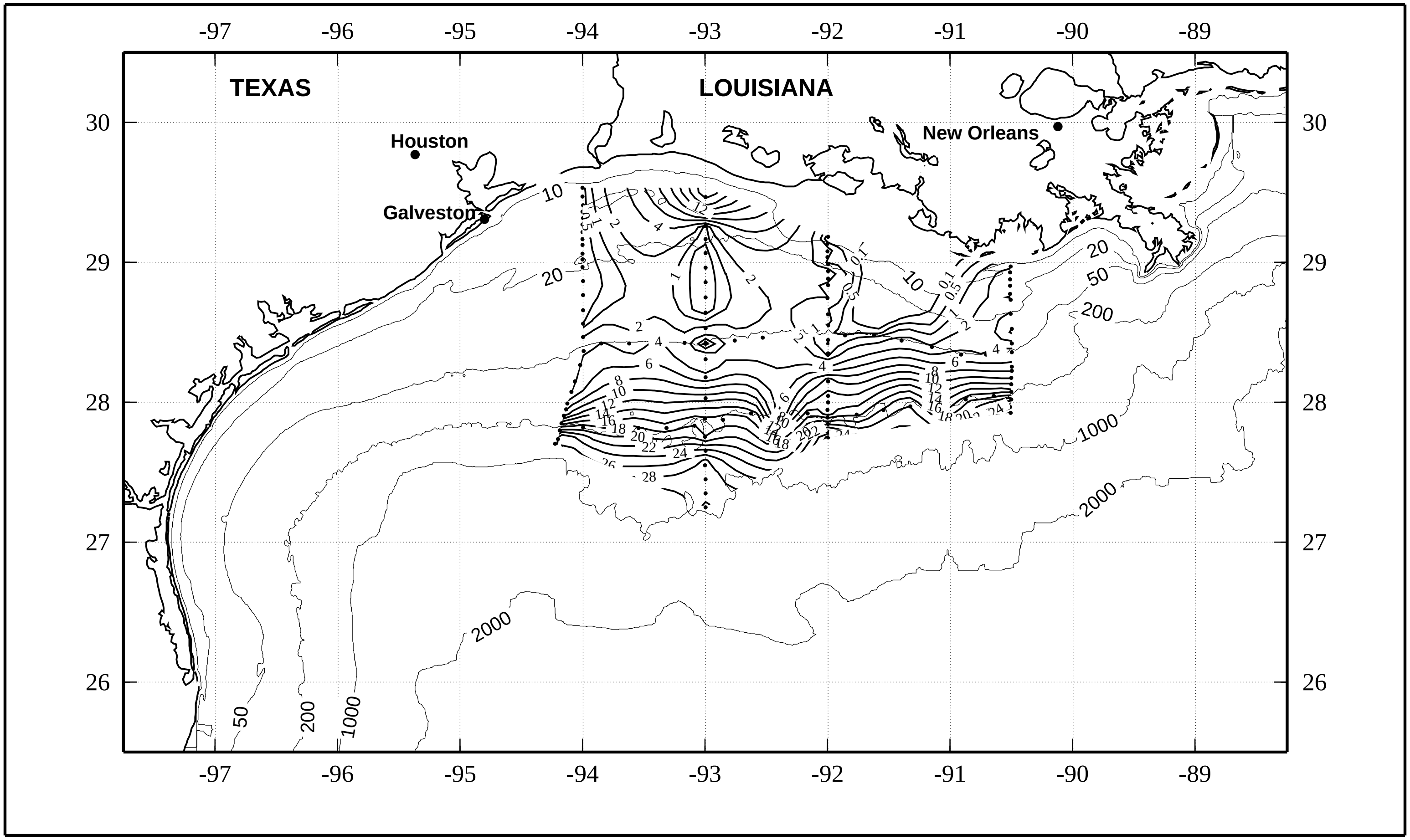

Figure 2.13.12. Nitrate (μmol·l-1) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

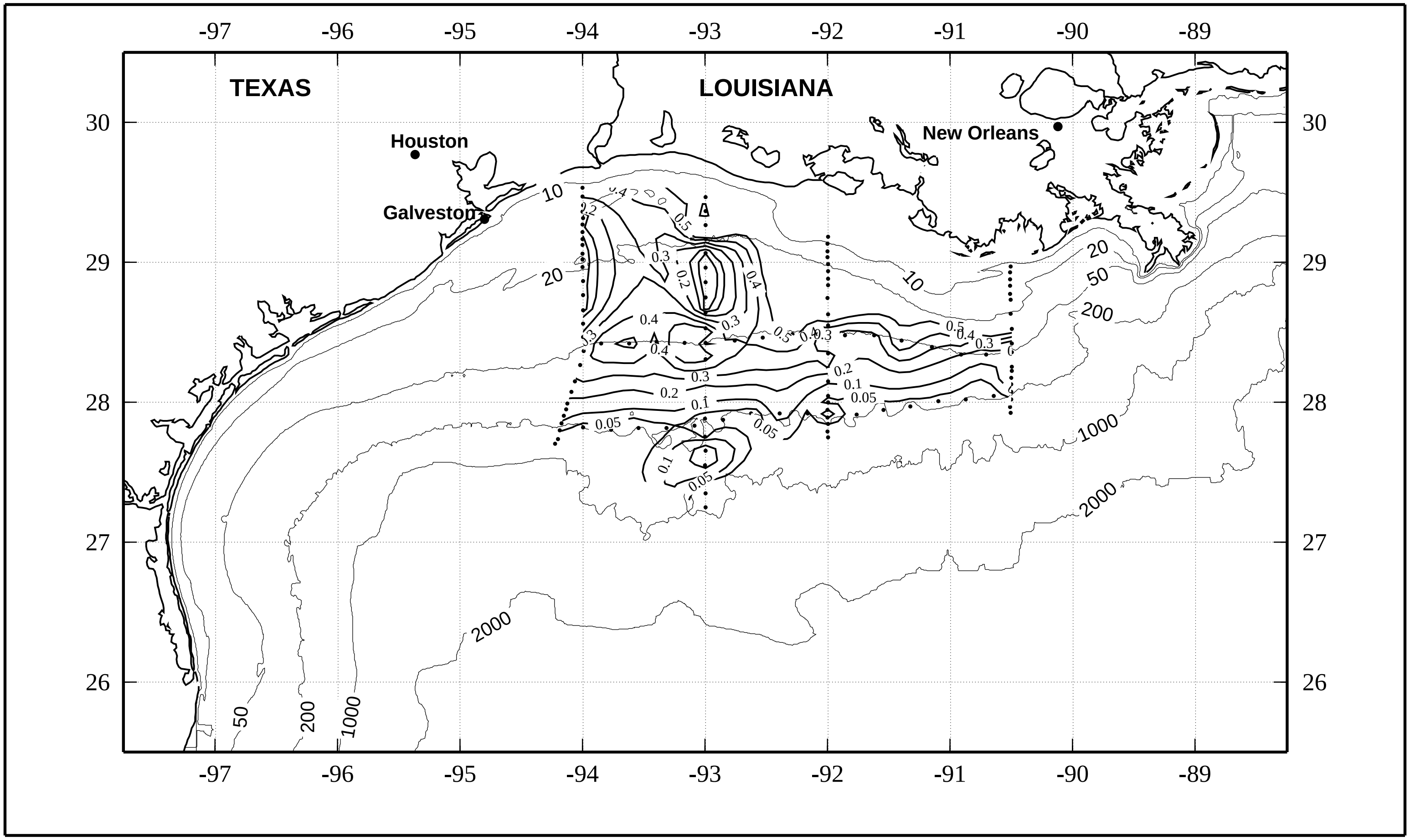

Figure 2.13.13. Nitrite ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

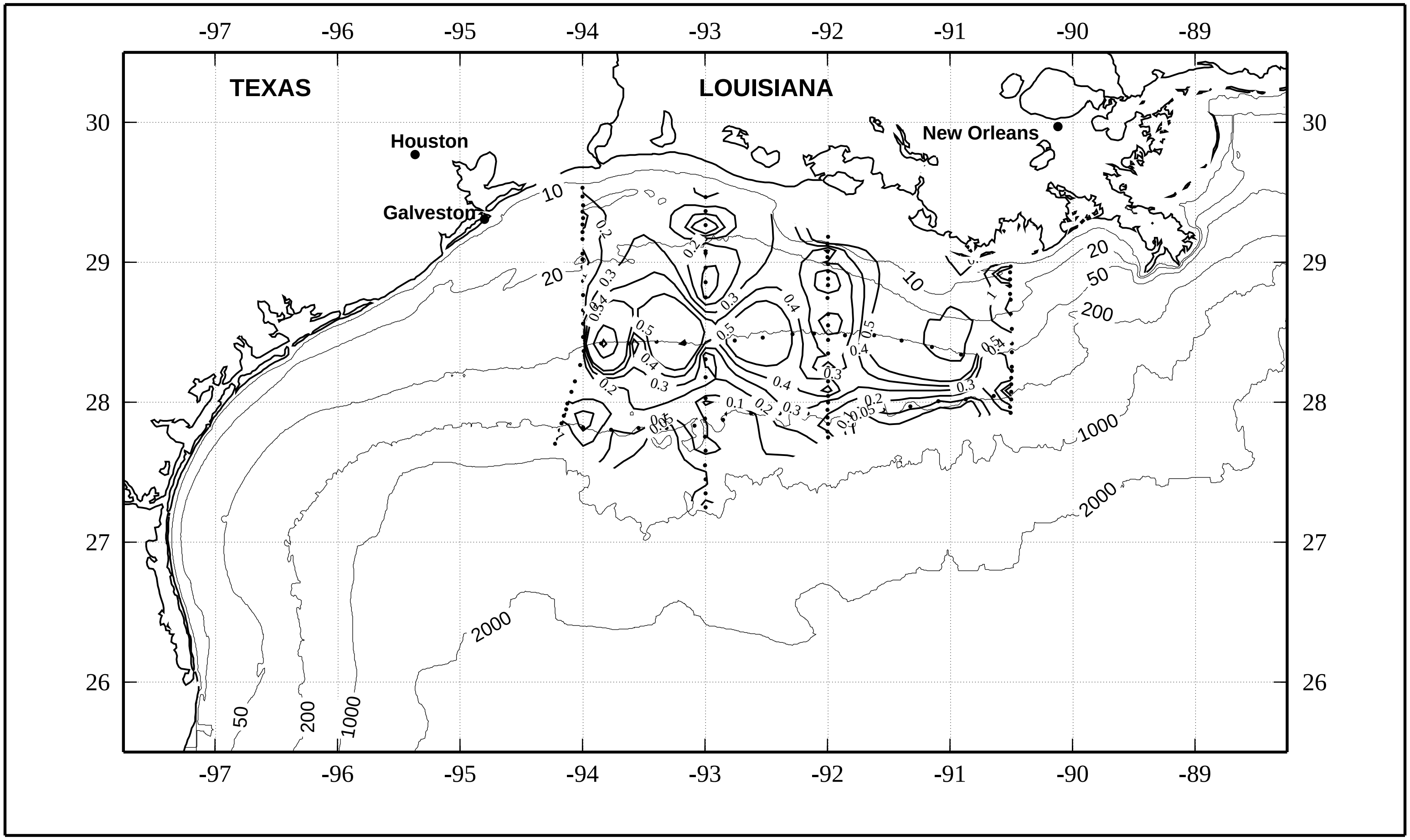

Figure 2.13.14. Ammonium (μmol·l-1) near bottom on LATEX A survey H02, 31 July - 9 August 1992.

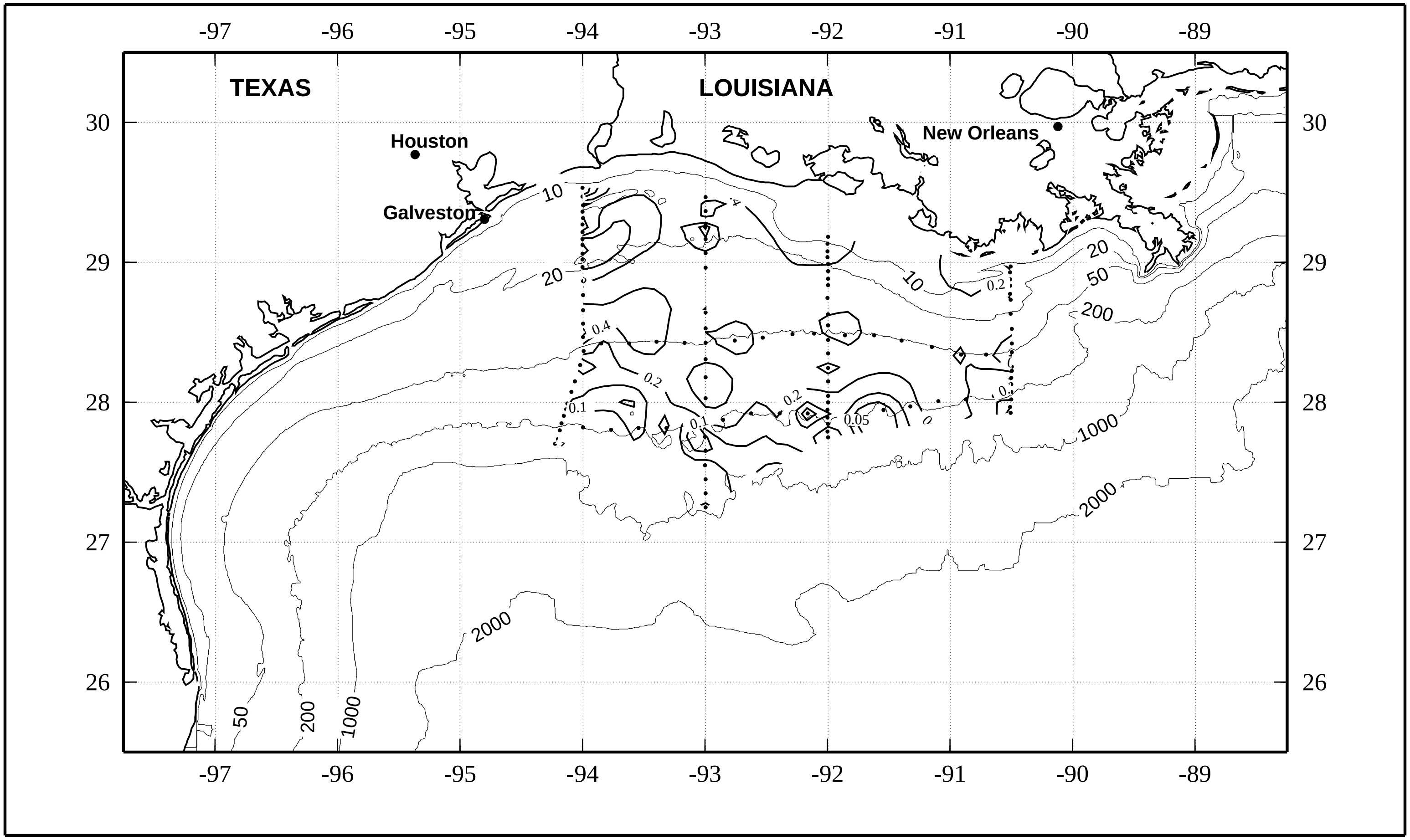

Figure 2.13.15. Urea ($\mu mol \cdot l^{-1}$) on LATEX A survey H02, 31 July - 9 August 1992.

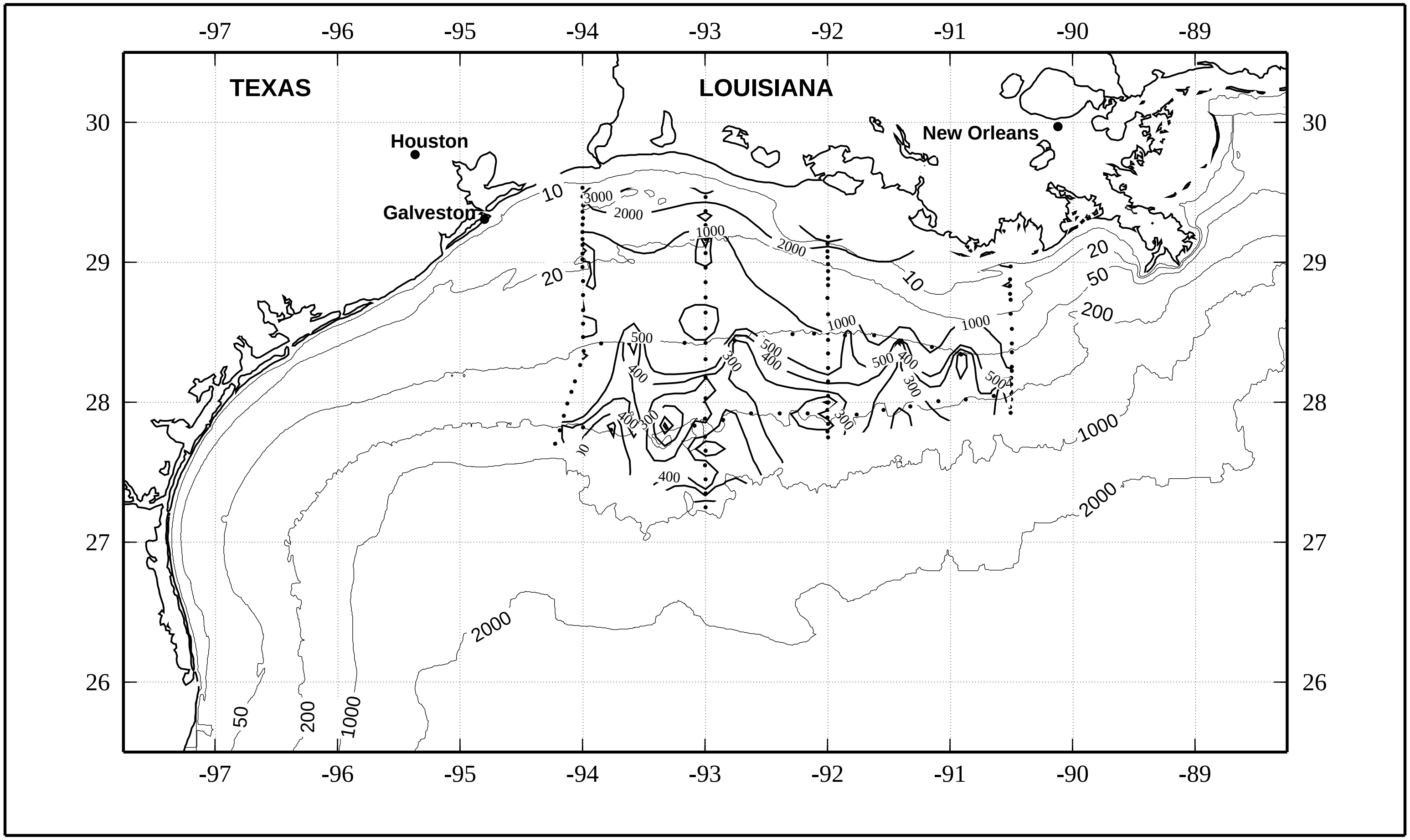

Figure 2.13.16. Chlorophyll a (ng·l^{-1}) at the chlorophyll maximum on LATEX A survey H02, 31 July - 9 August 1992.

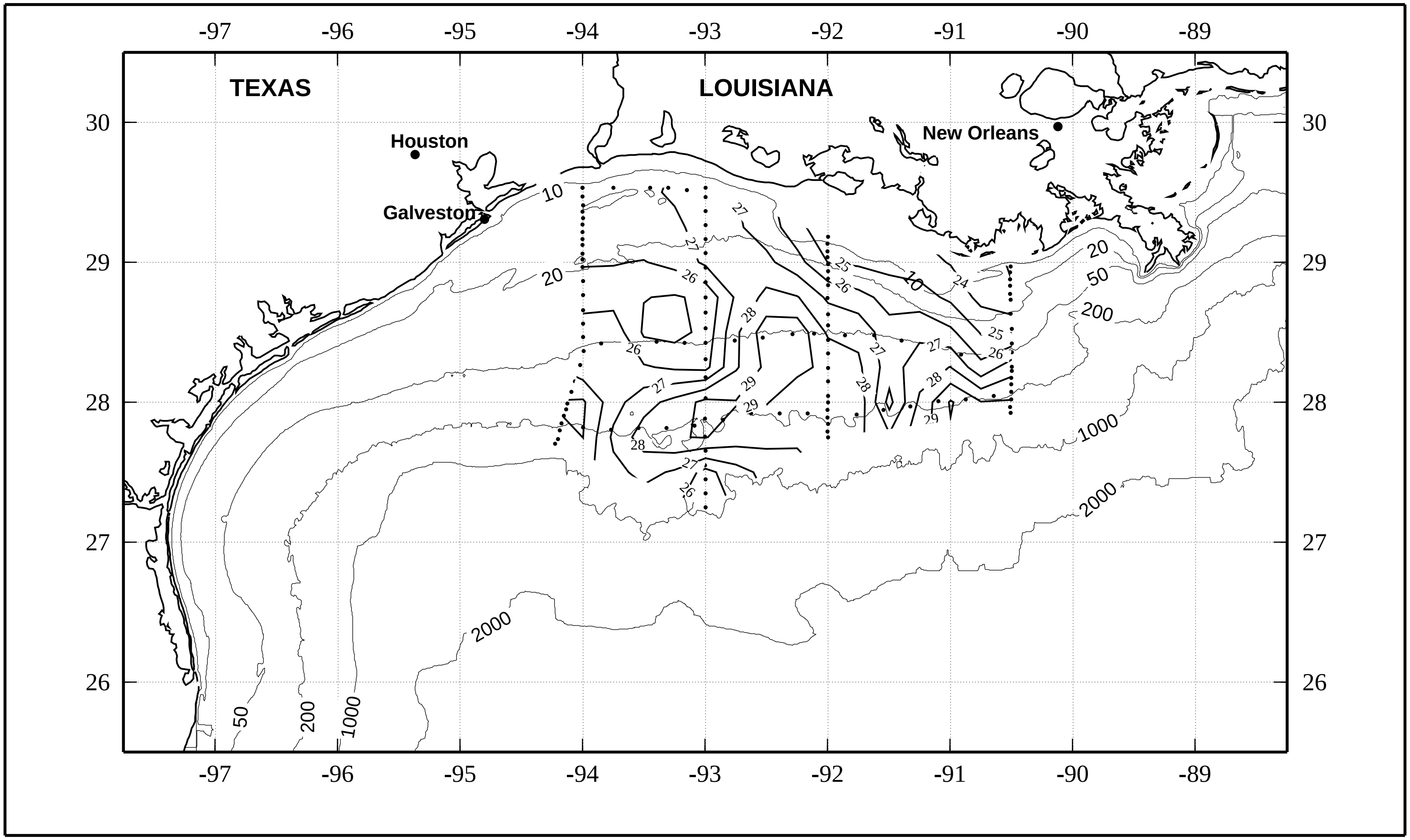

Figure 2.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H02, 31 July - 9 August 1992.

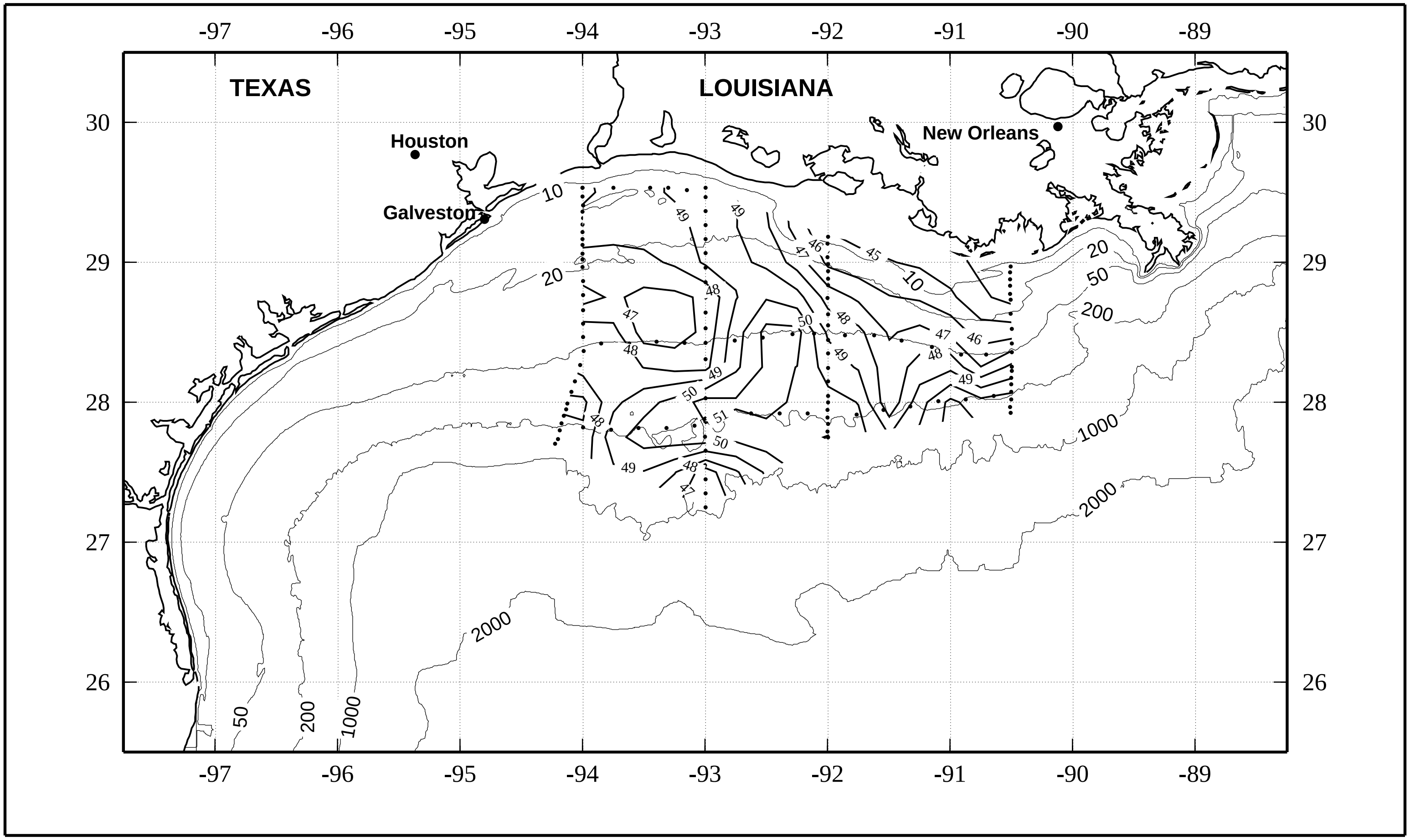

Figure 2.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H02, 31 July - 9 August 1992.

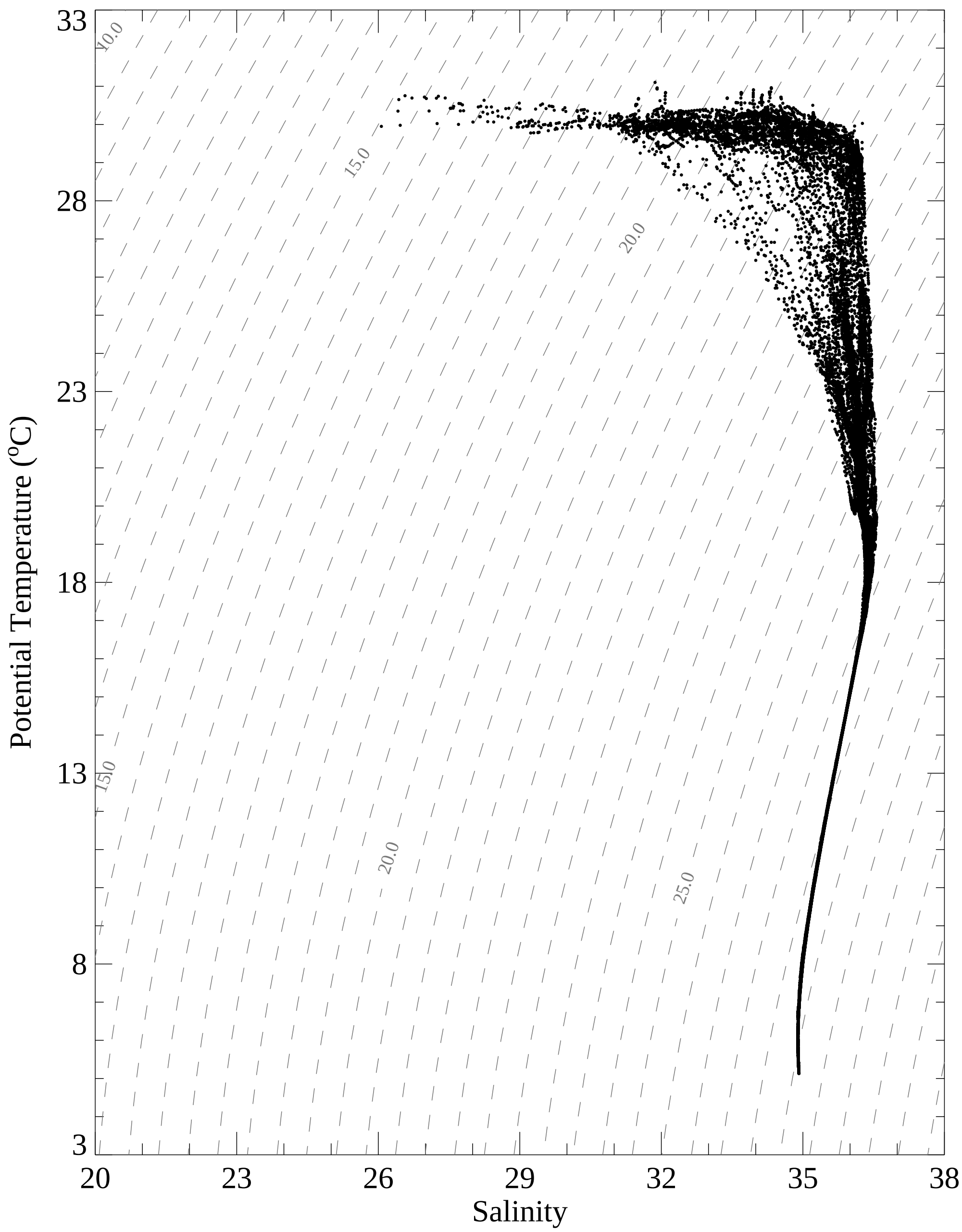

Figure 2.16. Composite potential temperature-salinity diagram for stations from cruise H02, 31 July - 9 August 1992.

LATEX A Hydrographic Survey Data Report

APPENDIX C: Cruise H03
November 1992

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Technical Report No. 96-6-T
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Hydrographic Survey H03

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H03, which was conducted 4 - 13 November 1992 aboard the *R/V J. W. Powell*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 3.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 3.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 3.12.6 or 3.13.6.

Table 3.1. Definitions for "x.y.z" figure numbering scheme for cruise H03.

cruise number (x):

3 = hydrographic survey H03

plot type (y):

0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = none for H03
6 = none for H03
7 = none for H03
8 = none for H03
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = none for H03
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 3.1. Definitions for "x.y.z" figure numbering scheme for cruise H03. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

The concentrations of 20 pigments were determined using high performance liquid chromatography (HPLC). Chlorophyll *a* is shown in the plots. Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 3.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H03. Figure 3.0 shows the location map for the stations.

Following Figure 3.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

Bontempi, P. S. 1995. Phytoplankton distributions and species composition across the Texas-Louisiana continental shelf during two flow regimes of the Mississippi River. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 137 pp.

Neuhard, C. A. 1994. Phytoplankton distributions across the Texas-Louisiana shelf in relation to coastal physical processes. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 204 pp.

Smith, W. H. F., and P. Wessel. 1990. Gridding with continuous curvature splines in tension. *Geophysics*, 55:293-305.

Wessel, P., and W. H. F. Smith. 1991. Free software helps map and display data. *EOS Trans. Amer. Geophys. U.* 72: 441, 445-446.

Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 3.2. Station time and position data from LATEX A cruise H03.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	05-NOV-1992	1841	27°39.64'	94°13.46'	443.8	12
2	05-NOV-1992	2047	27°44.29'	94°12.27'	430.0	12
3	05-NOV-1992	2223	27°48.01'	94°11.44'	265.0	12
4	06-NOV-1992	0043	27°50.98'	94°10.32'	120.4	10
5	06-NOV-1992	0201	27°54.19'	94°09.31'	97.3	12
6	06-NOV-1992	0321	27°57.08'	94°08.30'	87.5	8
7	06-NOV-1992	0421	27°59.54'	94°07.50'	78.5	8
8	06-NOV-1992	0548	28°04.67'	94°05.51'	70.5	8
9	06-NOV-1992	0712	28°08.86'	94°03.86'	66.5	8
10	06-NOV-1992	0855	28°15.96'	94°01.30'	59.8	7
11	06-NOV-1992	1018	28°21.93'	93°59.64'	53.0	6
12	06-NOV-1992	1150	28°27.95'	93°59.98'	44.4	6
13	06-NOV-1992	1306	28°33.82'	93°59.94'	38.4	5
14	06-NOV-1992	1420	28°39.51'	93°59.99'	30.5	11
15	06-NOV-1992	1538	28°45.96'	94°00.09'	26.8	7
16	06-NOV-1992	1659	28°51.86'	94°00.02'	26.8	6
17	06-NOV-1992	1810	28°57.94'	94°00.17'	19.0	5
18	06-NOV-1992	1909	29°01.25'	94°00.52'	20.6	5
19	06-NOV-1992	1955	29°03.83'	94°00.15'	20.5	9
20	06-NOV-1992	2053	29°07.36'	94°00.08'	18.6	5
21	06-NOV-1992	2132	29°09.98'	94°00.08'	18.1	5
22	06-NOV-1992	2223	29°13.02'	94°00.14'	16.5	4
23	06-NOV-1992	2358	29°16.18'	94°00.11'	14.9	6
24	07-NOV-1992	0042	29°18.99'	93°59.95'	12.6	5
25	07-NOV-1992	0115	29°21.62'	94°00.11'	11.8	5
26	07-NOV-1992	0155	29°24.56'	94°00.03'	7.6	4
27	07-NOV-1992	0232	29°28.15'	94°00.15'	12.3	5
28	07-NOV-1992	0317	29°32.06'	94°00.16'	11.6	5
29	07-NOV-1992	1507	29°10.88'	91°59.99'	7.5	4
30	07-NOV-1992	1546	29°07.97'	92°00.06'	10.5	8
31	07-NOV-1992	1633	29°04.91'	92°00.15'	14.2	5
32	07-NOV-1992	1707	29°02.27'	92°00.07'	18.3	8
33	07-NOV-1992	1756	28°59.31'	92°00.09'	20.3	5
34	07-NOV-1992	1836	28°56.25'	92°00.04'	22.6	6
35	07-NOV-1992	1943	28°52.93'	92°00.01'	26.1	5
36	07-NOV-1992	2021	28°50.28'	92°00.02'	27.4	11
37	07-NOV-1992	2151	28°44.70'	92°00.15'	33.9	8
38	07-NOV-1992	2320	28°37.72'	91°59.90'	41.6	6
39	08-NOV-1992	0042	28°33.02'	91°59.88'	46.1	6
40	08-NOV-1992	0206	28°26.75'	91°59.85'	56.5	8
41	08-NOV-1992	0329	28°21.06'	91°59.87'	60.0	7
42	08-NOV-1992	0500	28°14.69'	91°59.87'	71.1	8
43	08-NOV-1992	0630	28°08.88'	91°59.99'	84.7	10
44	08-NOV-1992	0802	28°02.75'	91°59.96'	106.5	11

Table 3.2. Station time and position data from LATEX A cruise H03. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	08-NOV-1992	0923	27°59.92'	92°00.07'	122.0	12
46	08-NOV-1992	1029	27°56.74'	92°00.06'	102.1	10
47	08-NOV-1992	1139	27°53.54'	92°00.11'	171.7	12
48	08-NOV-1992	1411	27°50.67'	91°59.97'	201.0	12
49	08-NOV-1992	1538	27°47.53'	91°59.99'	390.8	12
50	08-NOV-1992	1650	27°44.96'	91°59.88'	490.0	12
51	08-NOV-1992	1949	27°54.79'	91°45.89'	172.5	12
52	08-NOV-1992	2226	27°56.69'	91°32.67'	228.8	12
53	09-NOV-1992	0040	27°58.24'	91°19.55'	266.6	12
54	09-NOV-1992	0300	28°00.40'	91°05.86'	137.8	12
55	09-NOV-1992	0504	28°01.42'	90°52.40'	187.1	12
56	09-NOV-1992	0730	28°02.74'	90°38.64'	165.8	12
57	09-NOV-1992	0945	27°55.45'	90°30.48'	501.0	12
58	09-NOV-1992	1115	27°58.05'	90°30.05'	439.4	12
59	09-NOV-1992	1233	28°01.30'	90°30.07'	255.0	12
60	09-NOV-1992	1351	28°04.68'	90°30.23'	151.0	12
61	09-NOV-1992	1502	28°07.64'	90°30.11'	119.7	12
62	09-NOV-1992	1611	28°10.43'	90°30.15'	97.2	12
63	09-NOV-1992	1717	28°13.56'	90°29.99'	77.4	12
64	09-NOV-1992	1836	28°16.84'	90°29.99'	64.5	8
65	09-NOV-1992	1932	28°21.64'	90°29.94'	51.6	8
66	09-NOV-1992	2034	28°25.42'	90°29.95'	45.5	7
67	09-NOV-1992	2212	28°31.63'	90°30.14'	36.2	10
68	09-NOV-1992	2358	28°37.93'	90°30.30'	22.7	5
69	10-NOV-1992	0126	28°43.99'	90°30.41'	19.3	4
70	10-NOV-1992	0210	28°46.79'	90°30.71'	19.0	4
71	10-NOV-1992	0244	28°49.98'	90°30.60'	19.7	8
72	10-NOV-1992	0330	28°52.70'	90°30.61'	18.2	4
73	10-NOV-1992	0400	28°55.79'	90°30.86'	15.1	4
74	10-NOV-1992	0445	28°58.09'	90°30.61'	12.9	4
75	10-NOV-1992	1049	28°20.41'	90°42.60'	49.6	8
76	10-NOV-1992	1219	28°20.41'	90°54.56'	52.5	7
77	10-NOV-1992	1401	28°23.77'	91°08.98'	51.1	7
78	10-NOV-1992	1539	28°26.51'	91°24.27'	52.6	7
79	10-NOV-1992	1716	28°28.75'	91°37.21'	52.3	6
80	10-NOV-1992	1850	28°28.79'	91°51.59'	53.8	7
81	10-NOV-1992	2037	28°29.42'	92°06.59'	51.8	8
82	10-NOV-1992	2202	28°29.41'	92°17.37'	53.3	6
83	10-NOV-1992	2345	28°27.65'	92°31.81'	55.1	7
84	11-NOV-1992	0132	28°26.45'	92°45.60'	54.1	6
85	11-NOV-1992	0404	28°25.33'	93°10.17'	51.2	10
86	11-NOV-1992	0543	28°25.95'	93°23.99'	50.8	6
87	11-NOV-1992	0710	28°25.15'	93°37.37'	51.1	6
88	11-NOV-1992	0844	28°25.25'	93°51.18'	50.1	6

Table 3.2. Station time and position data from LATEX A cruise H03. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	11-NOV-1992	1412	27°49.30'	94°00.10'	202.6	12
90	11-NOV-1992	1611	27°48.51'	93°46.21'	186.6	12
91	11-NOV-1992	1746	27°49.02'	93°32.65'	199.0	12
92	11-NOV-1992	1938	27°49.84'	93°19.16'	154.3	12
93	11-NOV-1992	2124	27°50.08'	93°05.31'	174.0	12
94	12-NOV-1992	0002	27°52.50'	92°51.38'	224.3	12
95	12-NOV-1992	0155	27°55.15'	92°37.44'	192.5	12
96	12-NOV-1992	0326	27°55.12'	92°23.40'	81.9	9
97	12-NOV-1992	0452	27°55.12'	92°09.97'	148.9	12
98	12-NOV-1992	1007	27°39.35'	92°59.92'	320.7	12
99	12-NOV-1992	1112	27°45.34'	93°00.17'	208.7	12
100	12-NOV-1992	1225	27°52.98'	93°00.09'	190.2	9
101	12-NOV-1992	1341	28°01.86'	92°59.86'	102.1	9
102	12-NOV-1992	1555	28°10.82'	92°59.98'	72.5	8
103	12-NOV-1992	1719	28°18.46'	92°59.89'	55.7	8
104	12-NOV-1992	1900	28°25.42'	92°59.98'	51.1	7
105	12-NOV-1992	2012	28°31.89'	92°59.99'	44.8	7
106	12-NOV-1992	2120	28°38.43'	92°59.94'	35.9	6
107	12-NOV-1992	2225	28°44.96'	92°59.95'	31.2	6
108	12-NOV-1992	2327	28°51.44'	93°00.00'	26.8	6
109	13-NOV-1992	0035	28°57.81'	92°59.99'	24.2	5
110	13-NOV-1992	0155	29°03.95'	92°59.94'	24.2	5
111	13-NOV-1992	0304	29°10.05'	93°00.03'	18.8	4
112	13-NOV-1992	0412	29°15.88'	93°00.00'	18.0	4
113	13-NOV-1992	0514	29°22.01'	92°59.98'	14.8	4
114	13-NOV-1992	0612	29°27.92'	92°59.95'	14.0	4

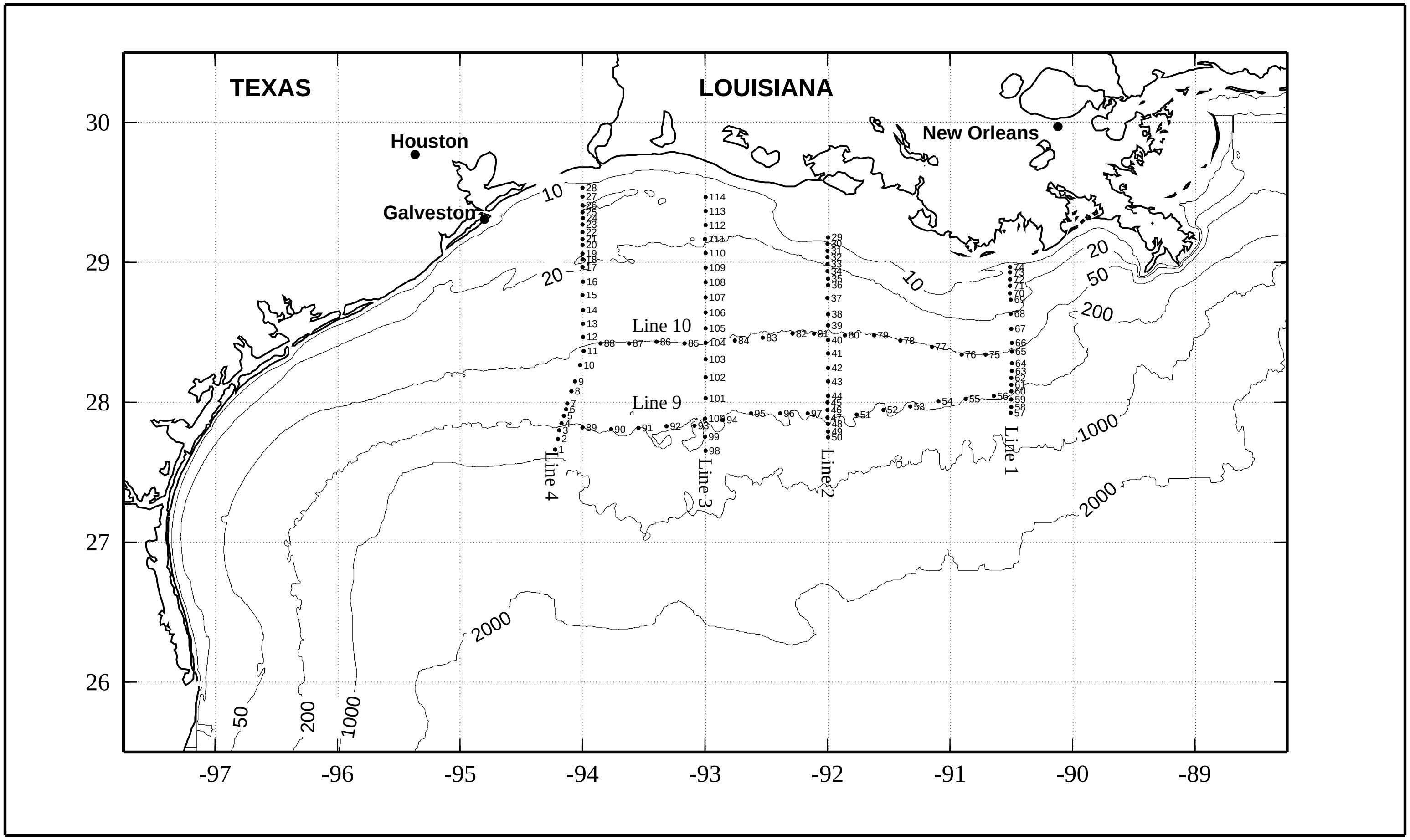

Figure 3.0. Cruise track and station locations for LATEX A Hydrographic Survey H03, 4 - 13 November 1992.

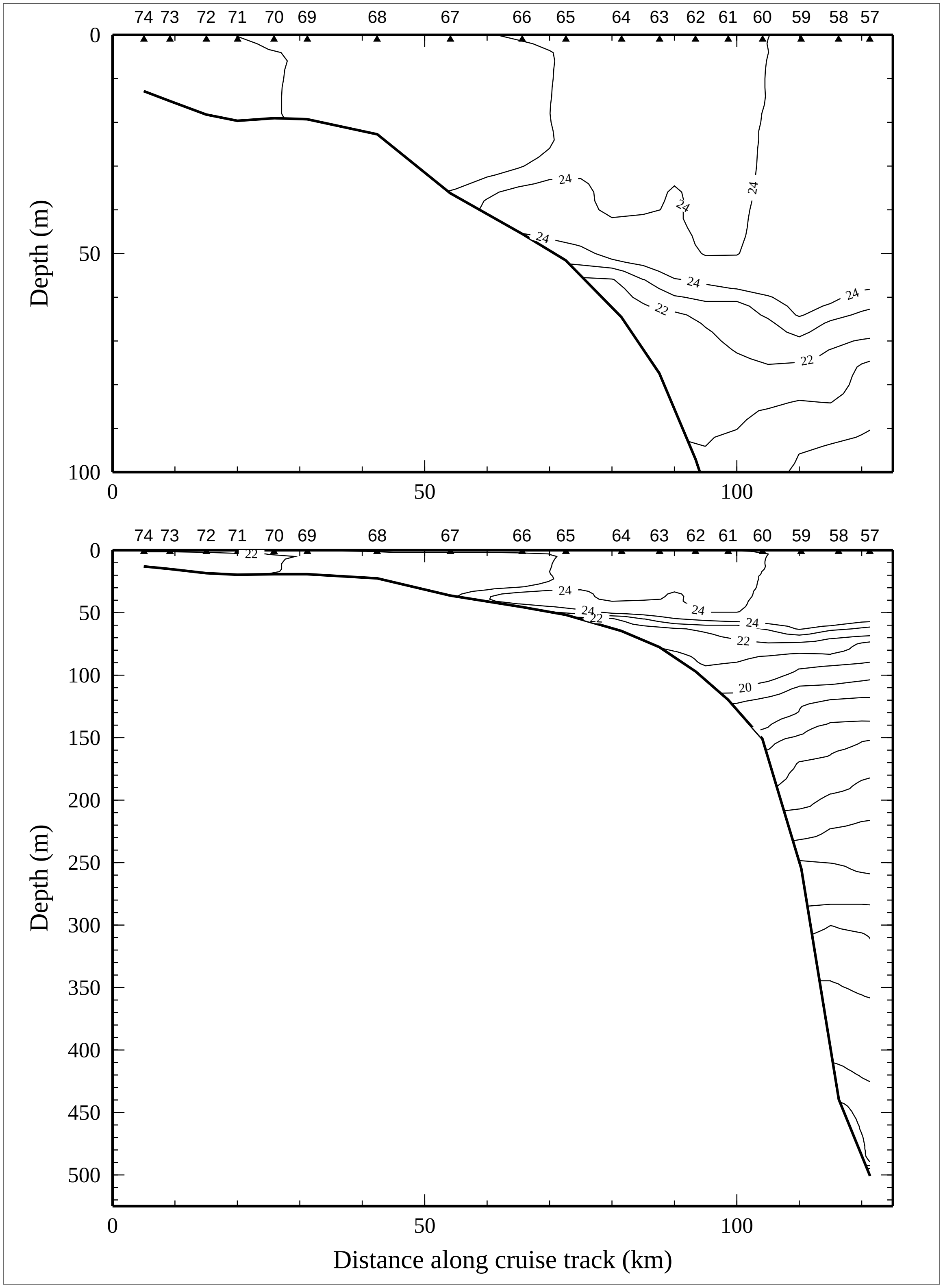

Figure 3.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H03, 4-13 November 1992.

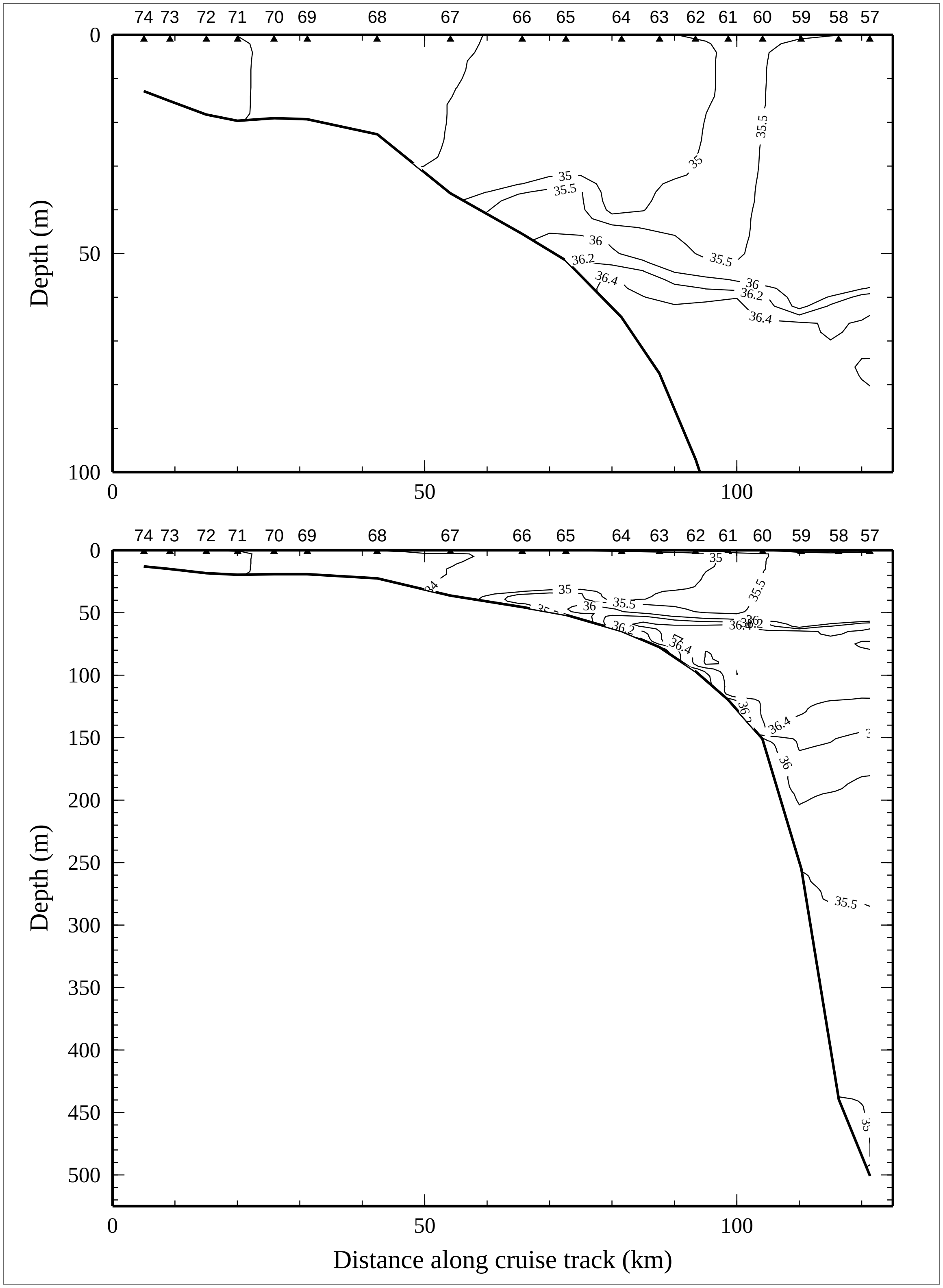

Figure 3.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H03, 4-13 November 1992.

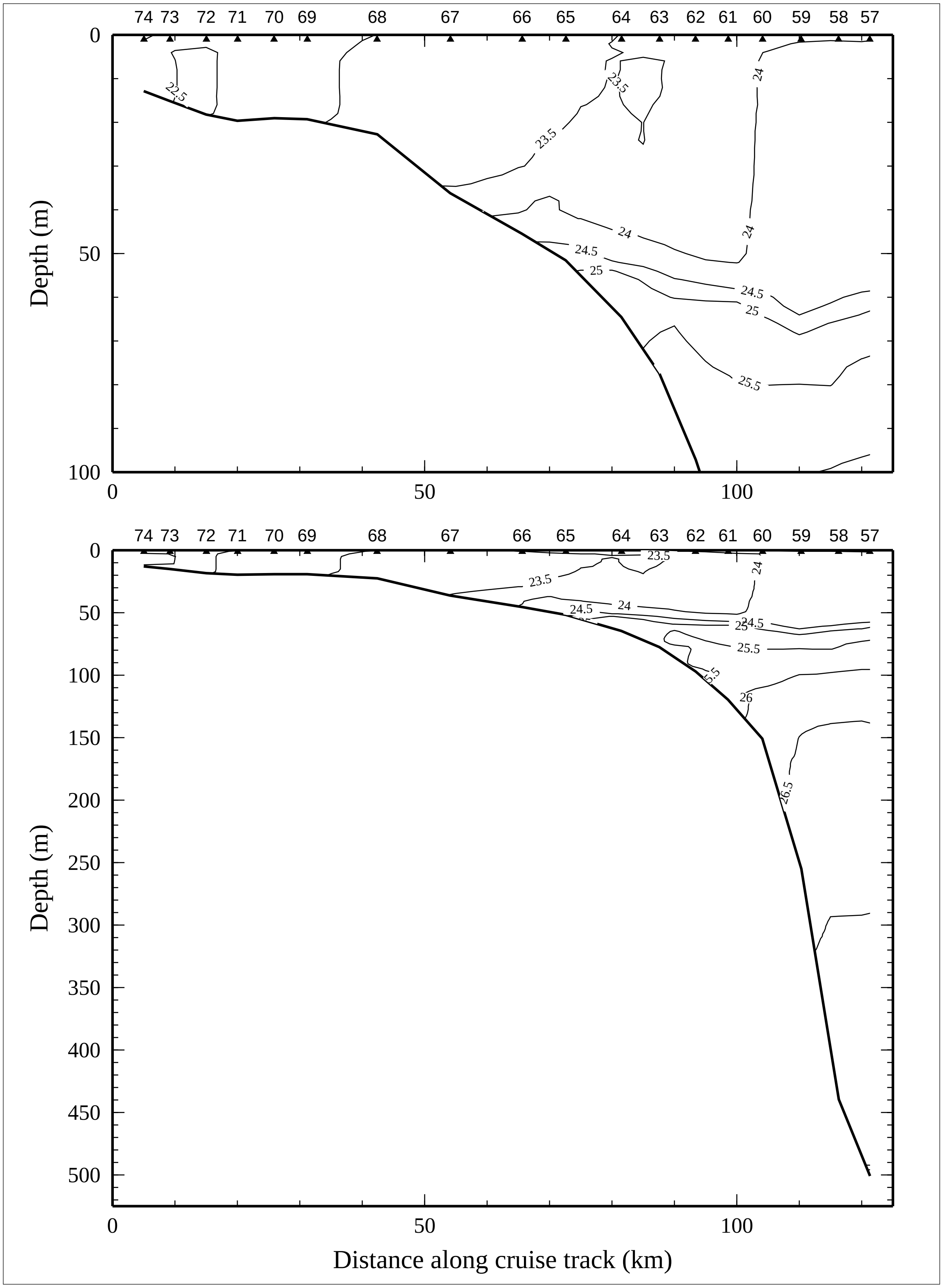

Figure 3.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H03, 4-13 November 1992.

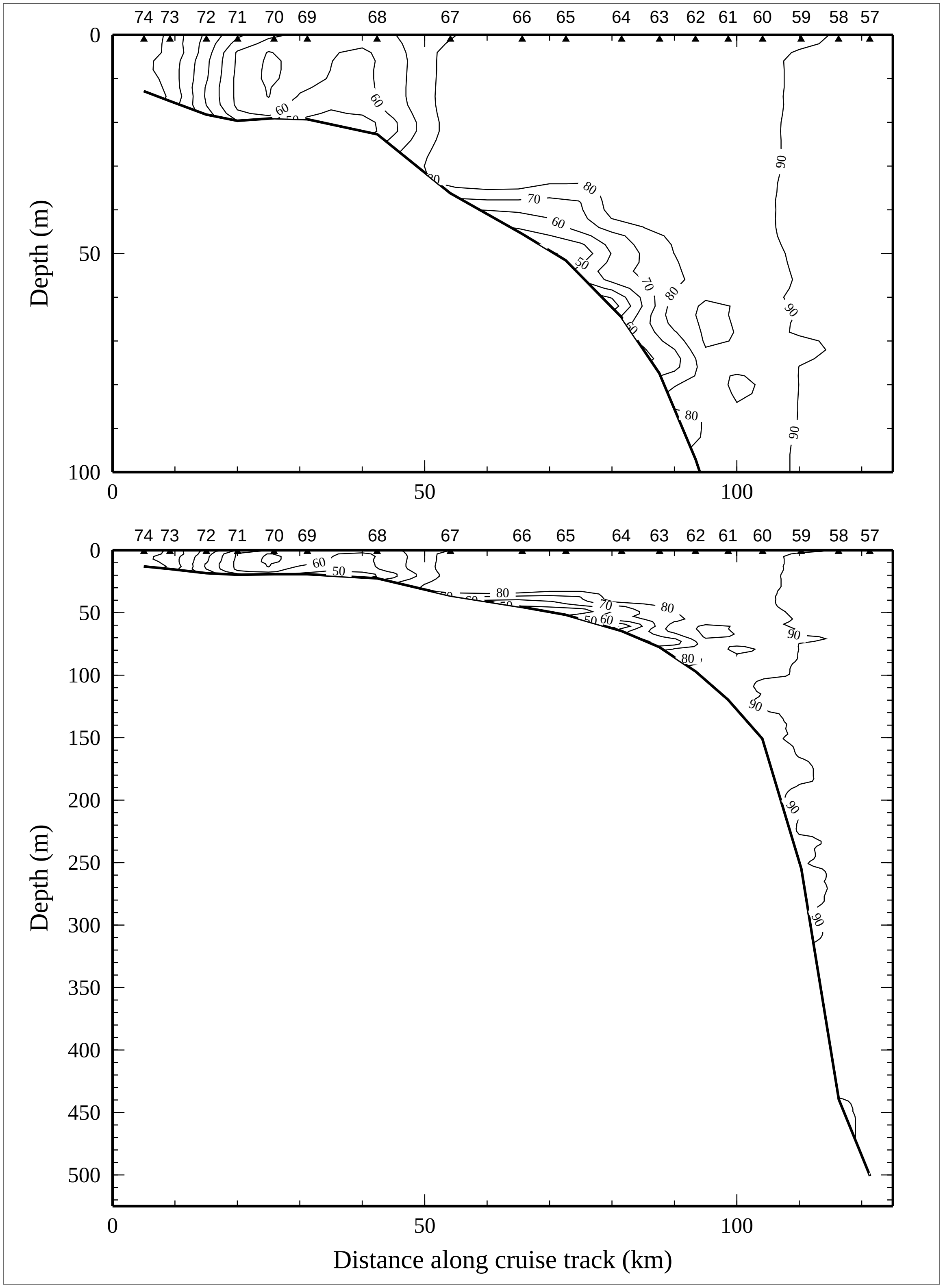

Figure 3.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H03, 4-13 November 1992.

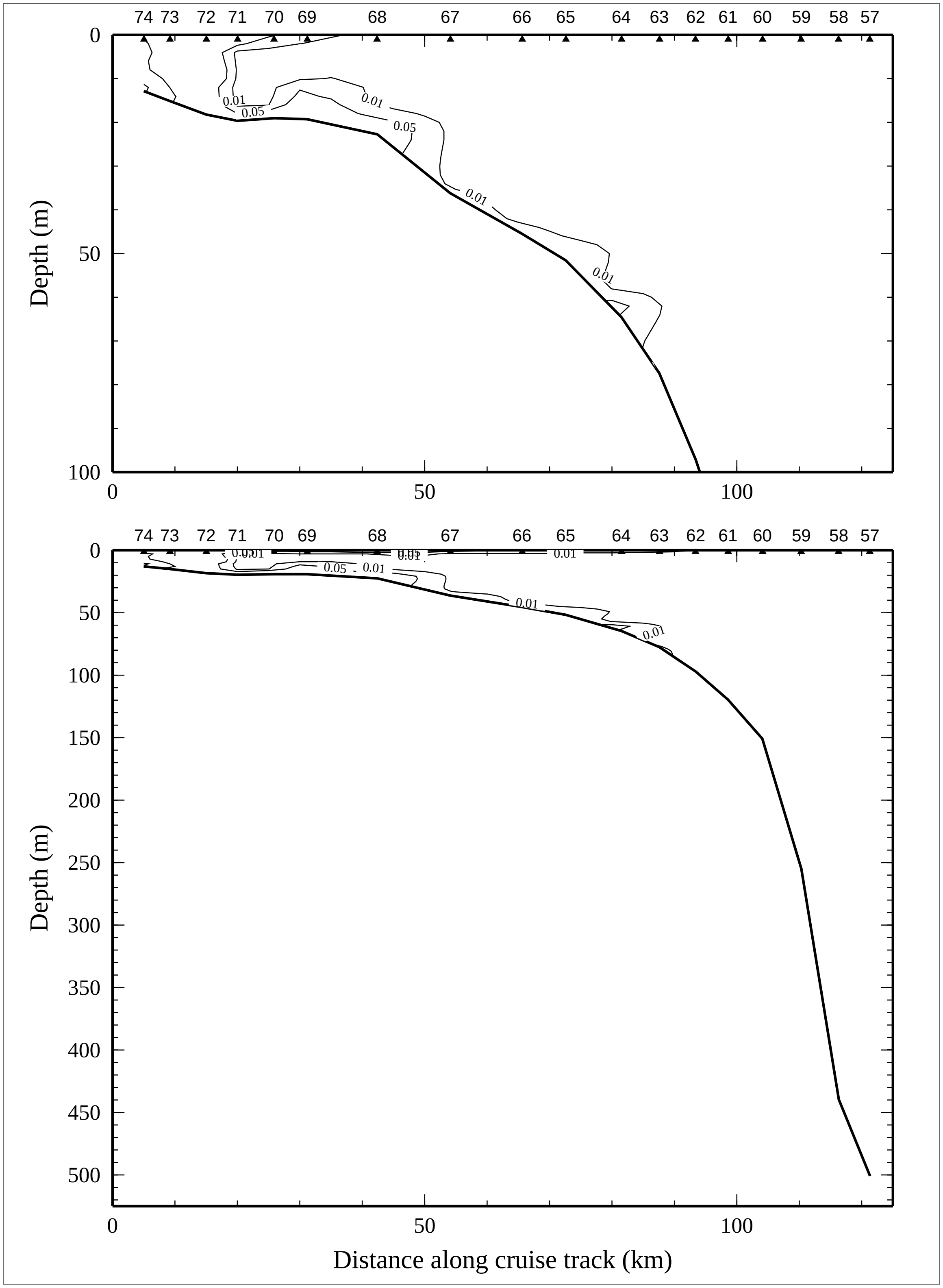

Figure 3.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H03, 4-13 November 1992.

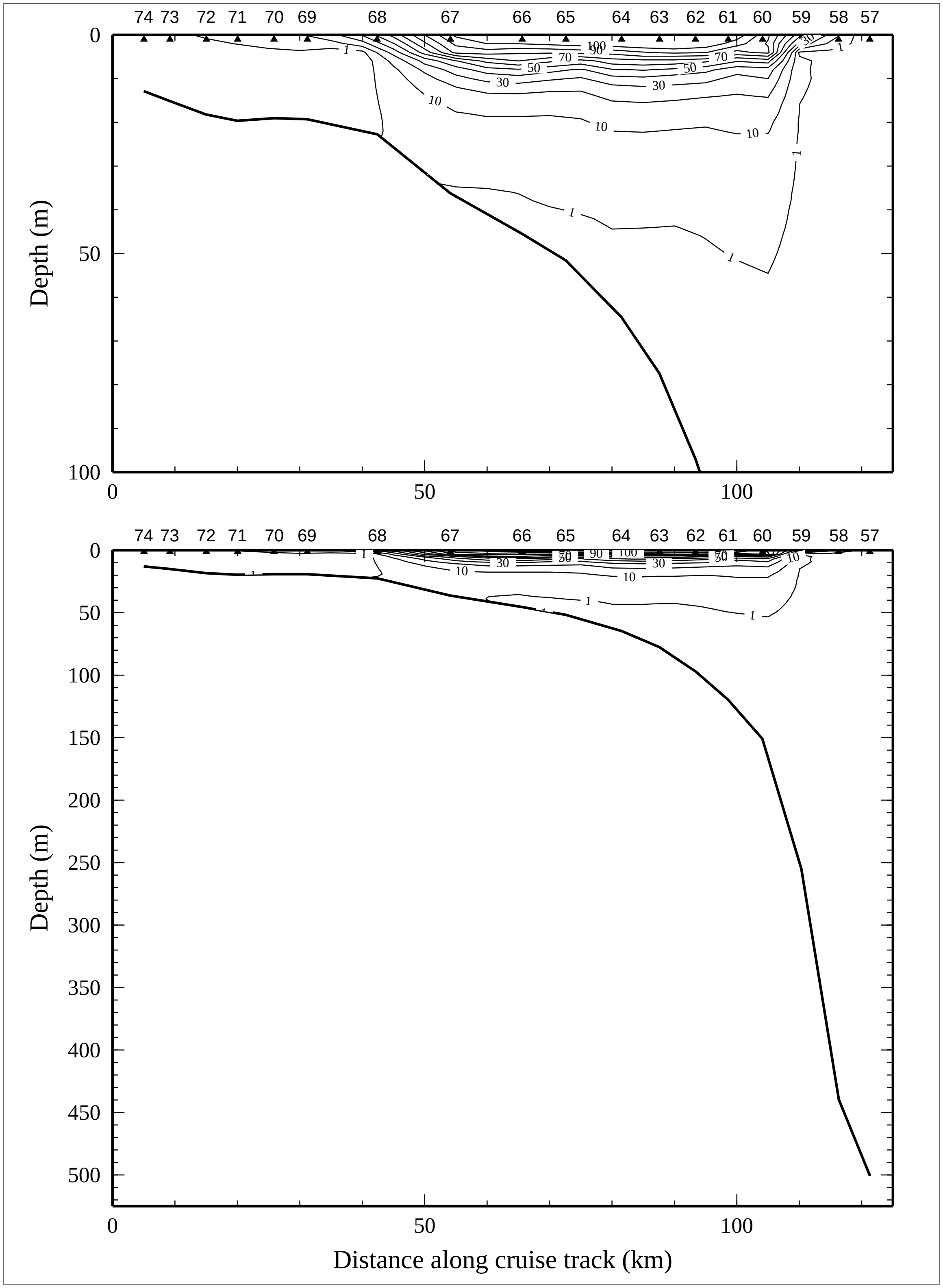

Figure 3.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H03, 4-13 November 1992.

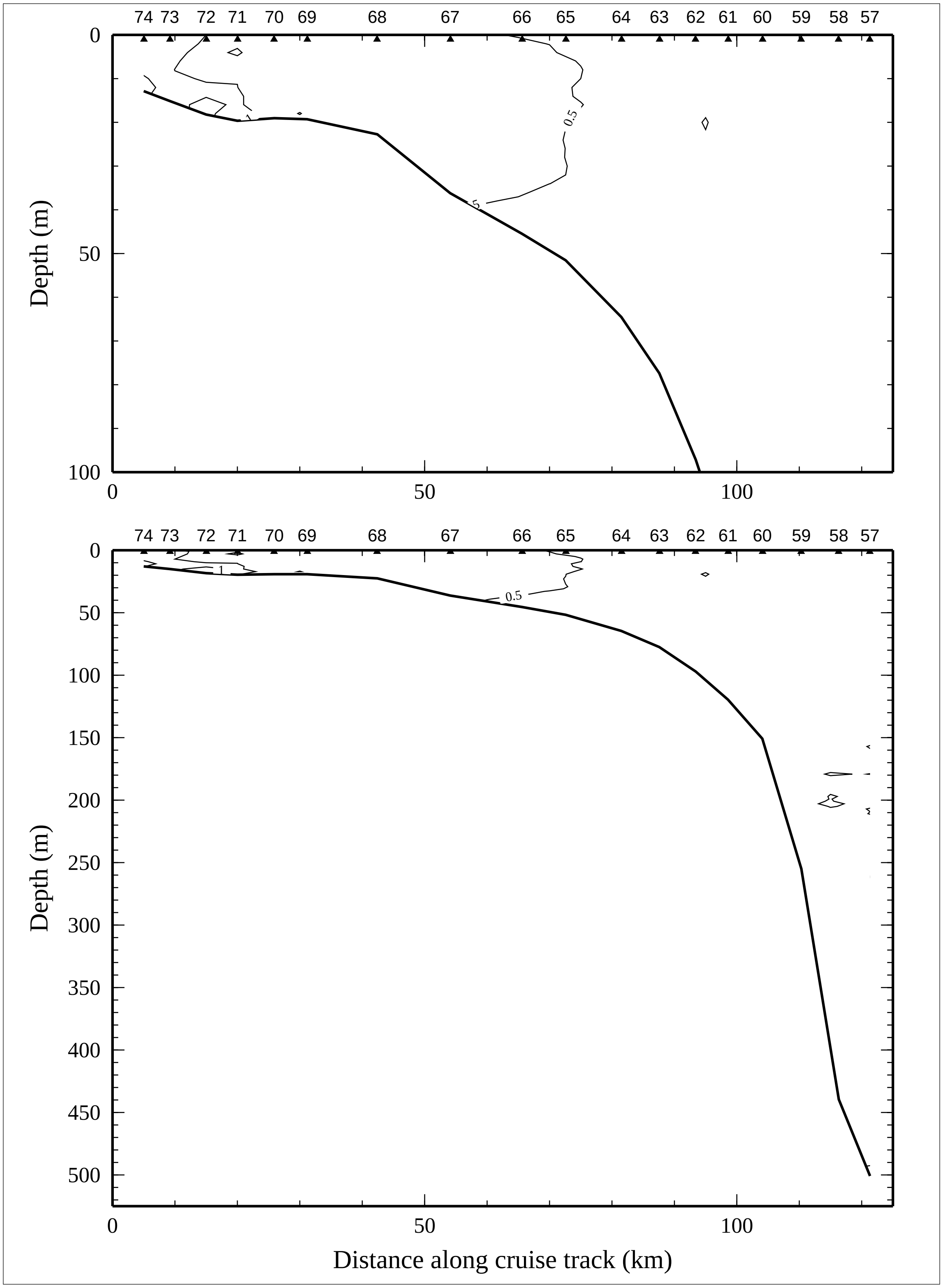

Figure 3.1.7. Relative fluorescence on line 1 of LATEX A survey H03,
4-13 November 1992.

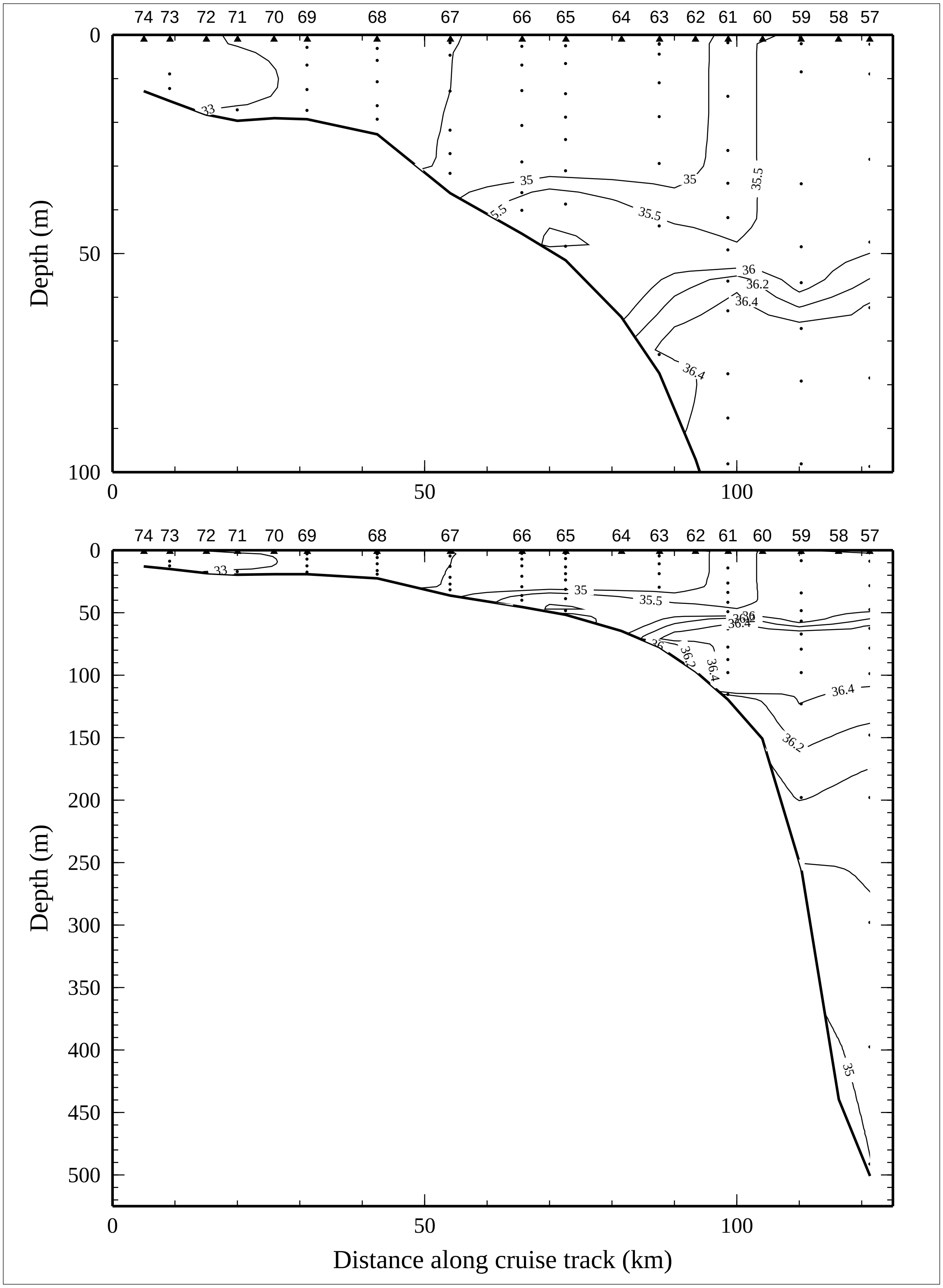

Figure 3.1.8. Bottle salinity on line 1 of LATEX A survey H03, 4-13 November 1992.

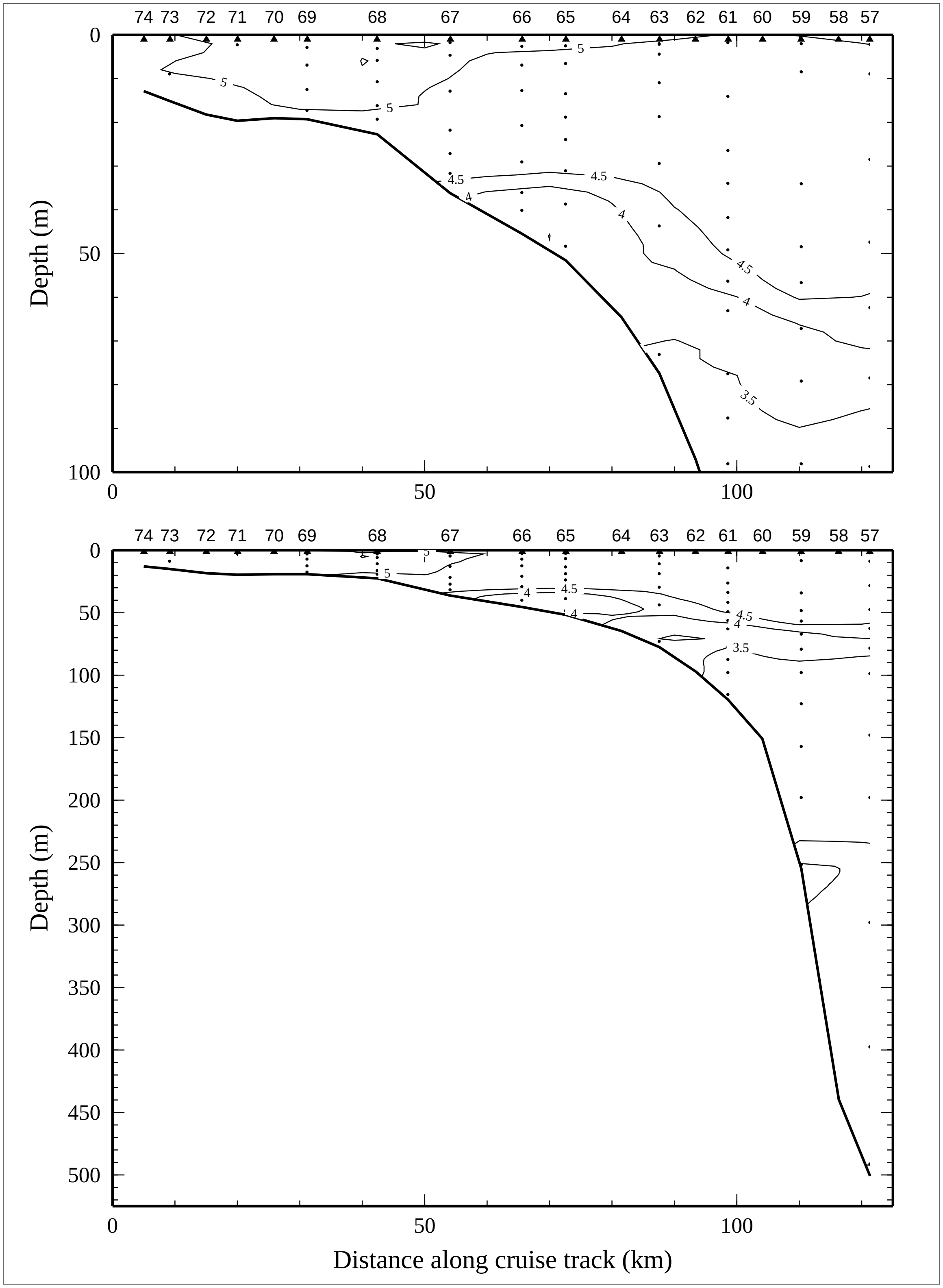

Figure 3.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H03, 4-13 November 1992.

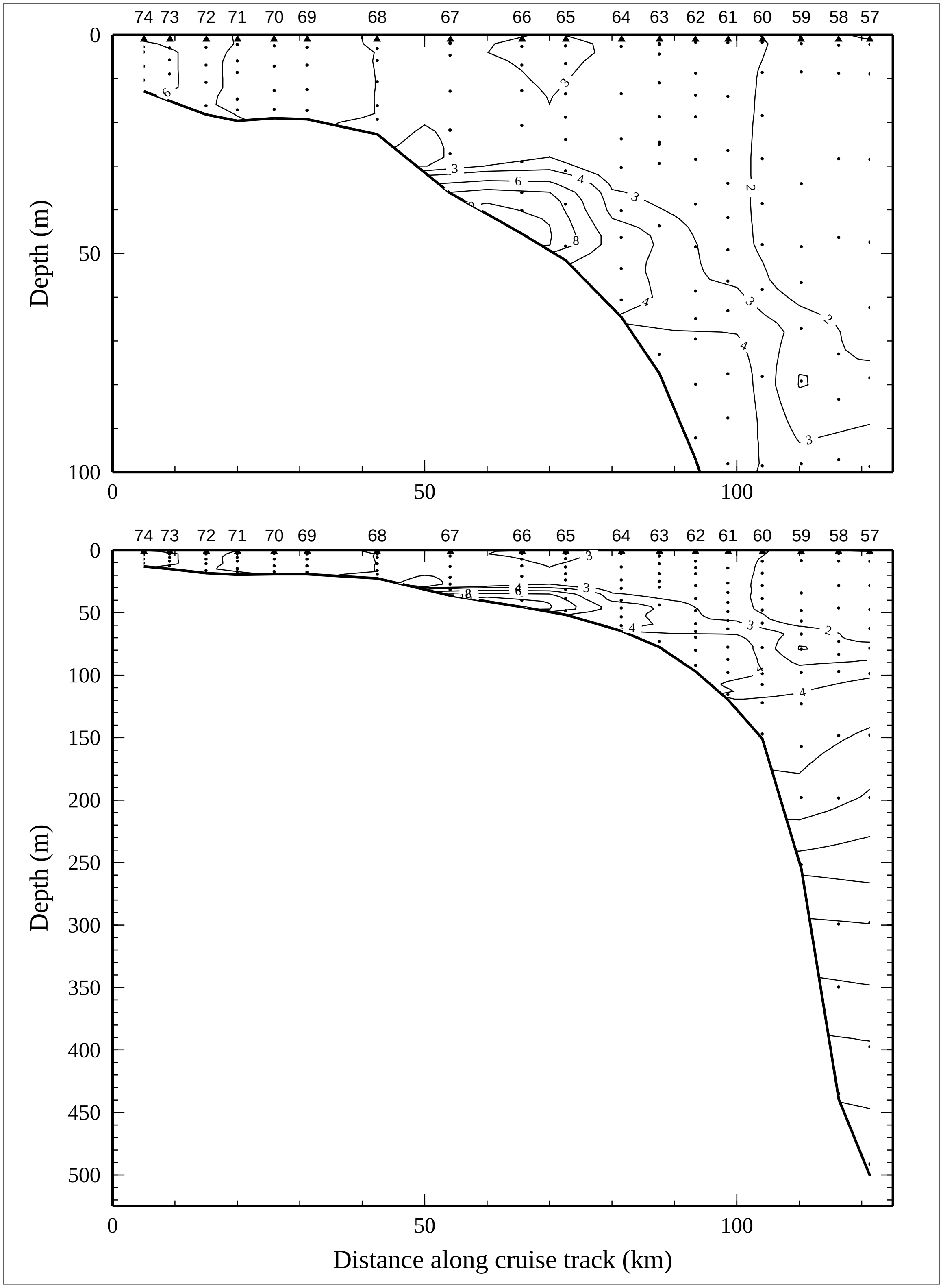

Figure 3.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H03,
4-13 November 1992.

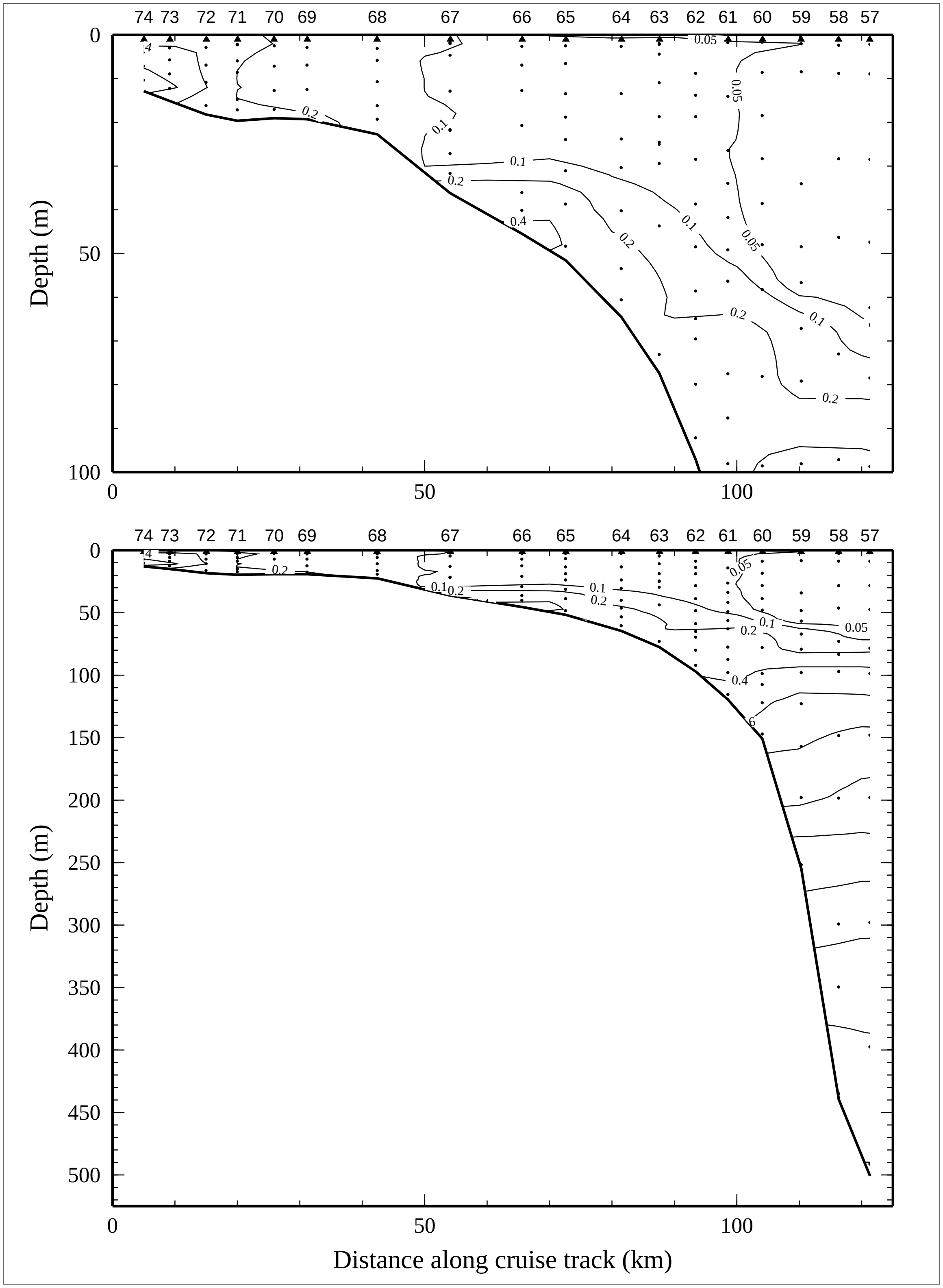

Figure 3.1.11. Phosphate (μmol·l^{-1}) on line 1 of LATEX A survey H03, 4-13 November 1992.

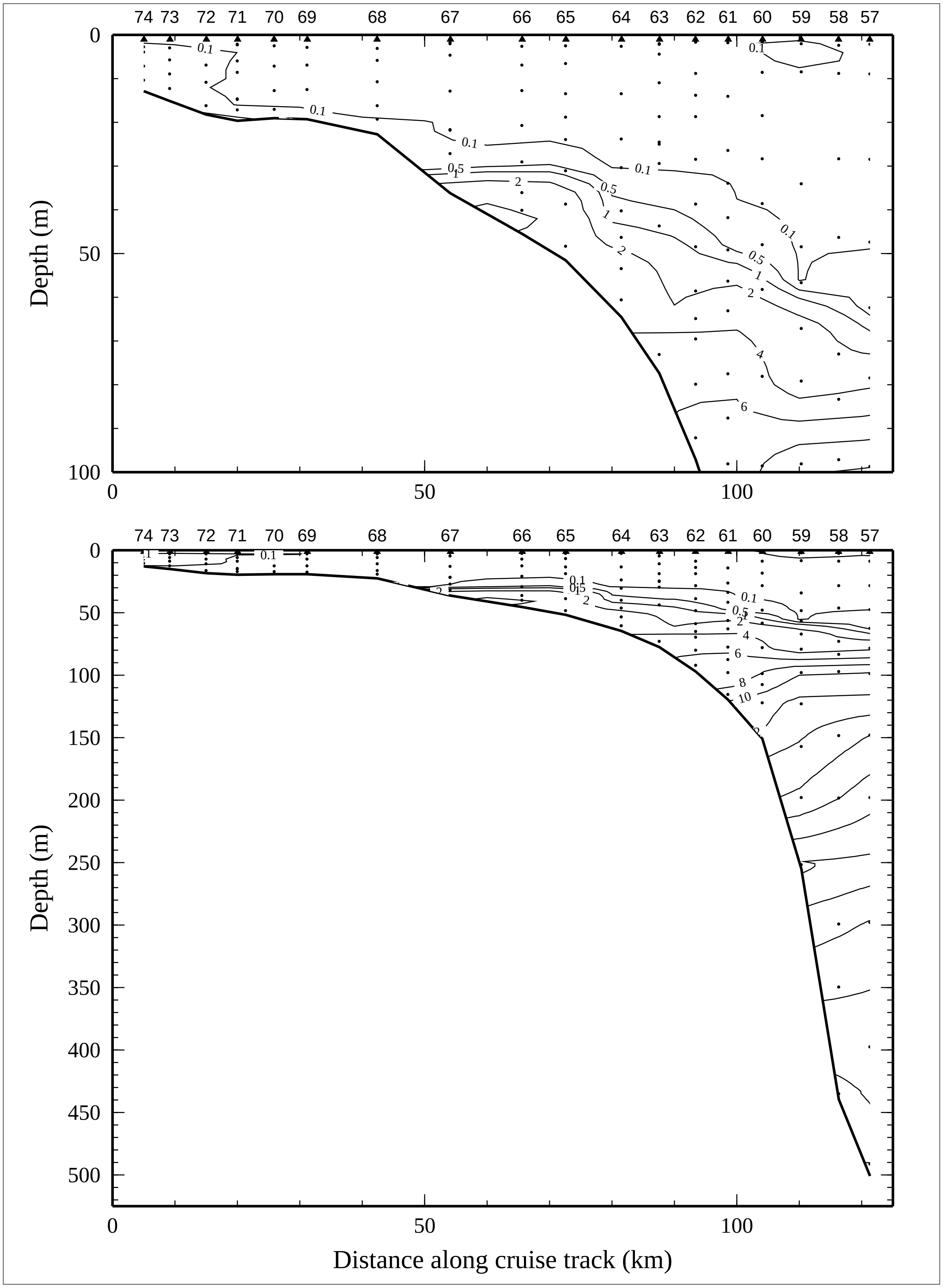

Figure 3.1.12. Nitrate (μmol·l^{-1}) on line 1 of LATEX A survey H03, 4-13 November 1992.

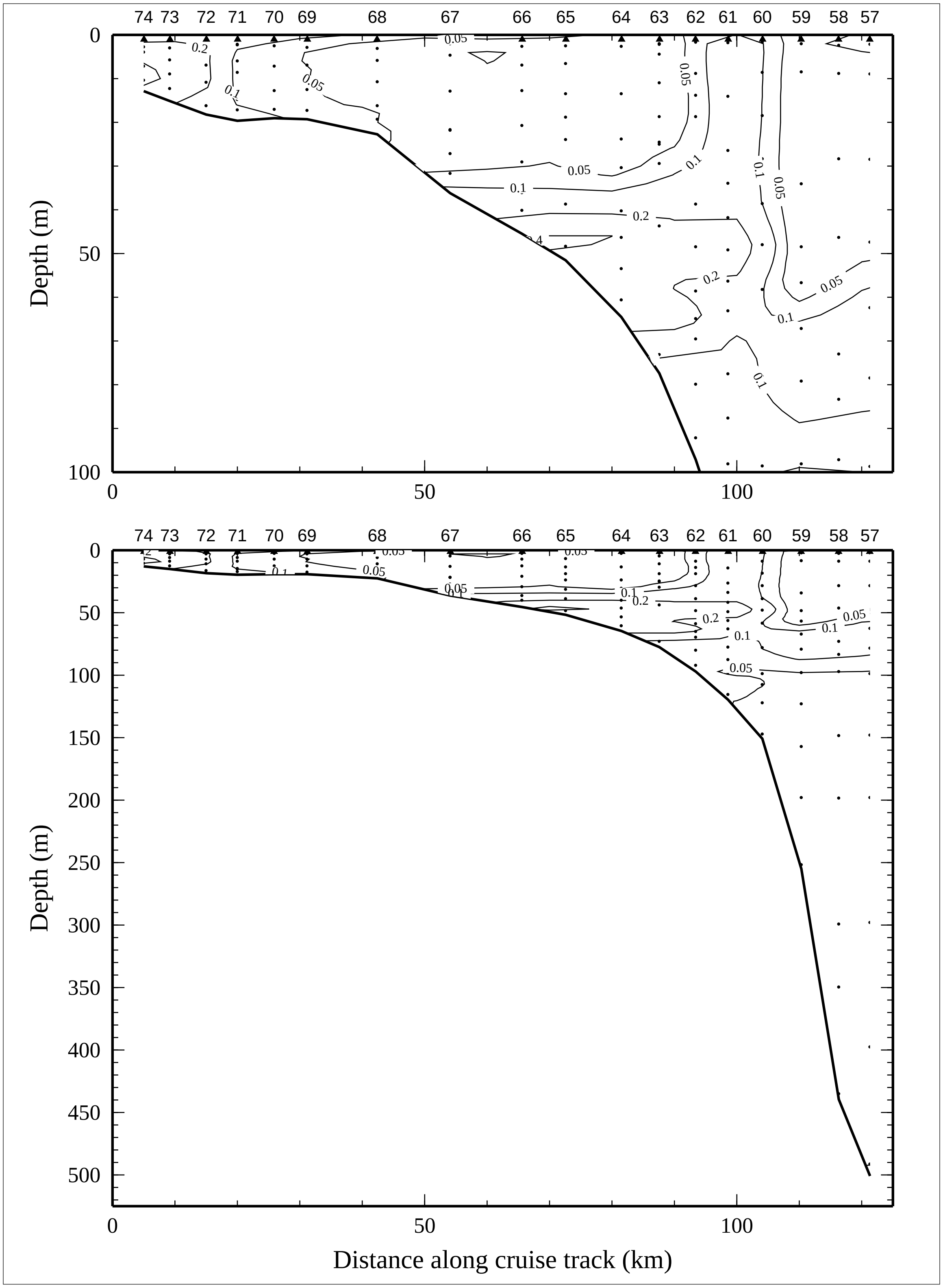

Figure 3.1.13. Nitrite (μmol·l^{-1}) on line 1 of LATEX A survey H03,
4-13 November 1992.

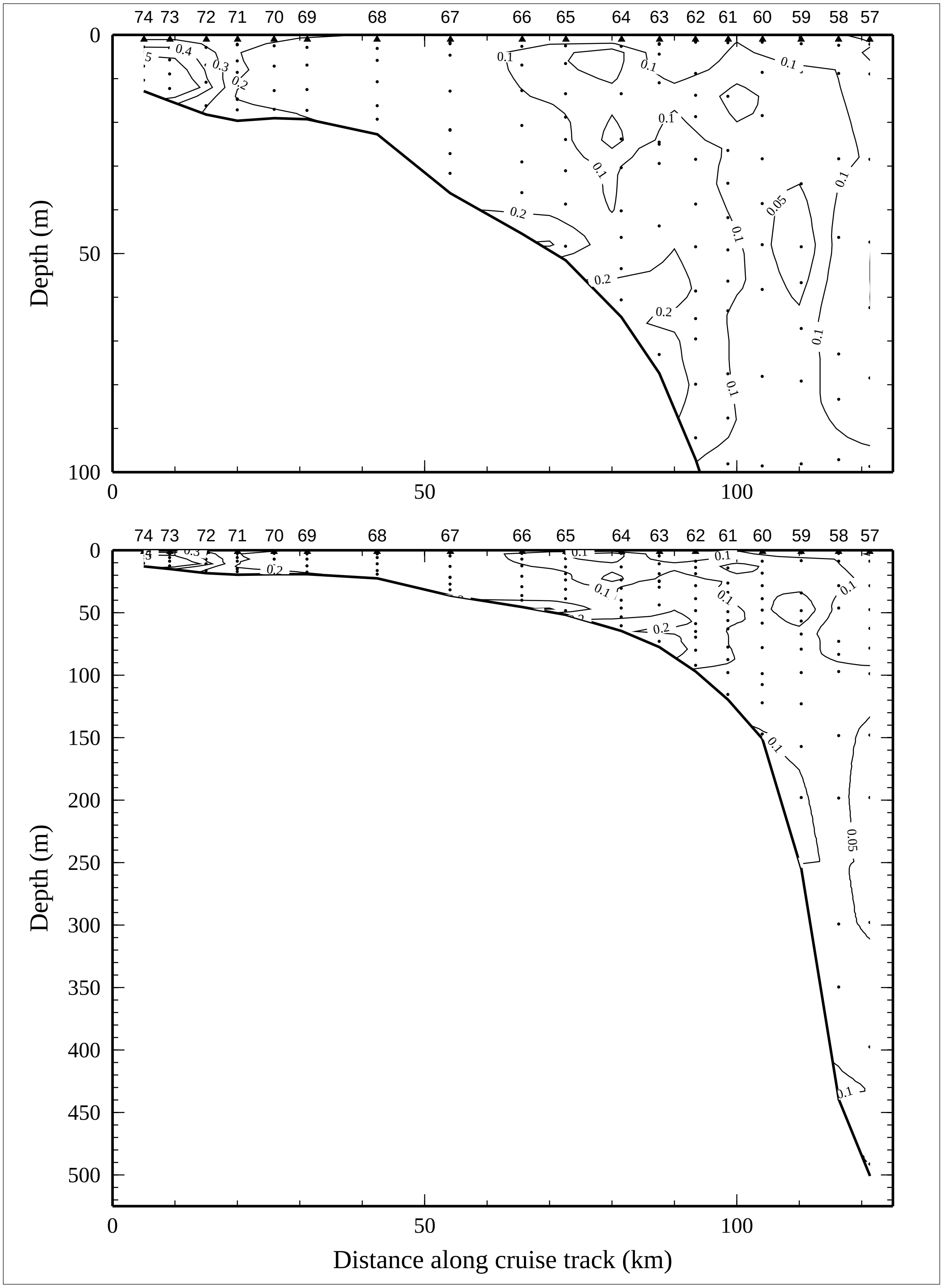

Figure 3.1.14. Ammonium (μmol·l^{-1}) on line 1 of LATEX A survey H03, 4-13 November 1992.

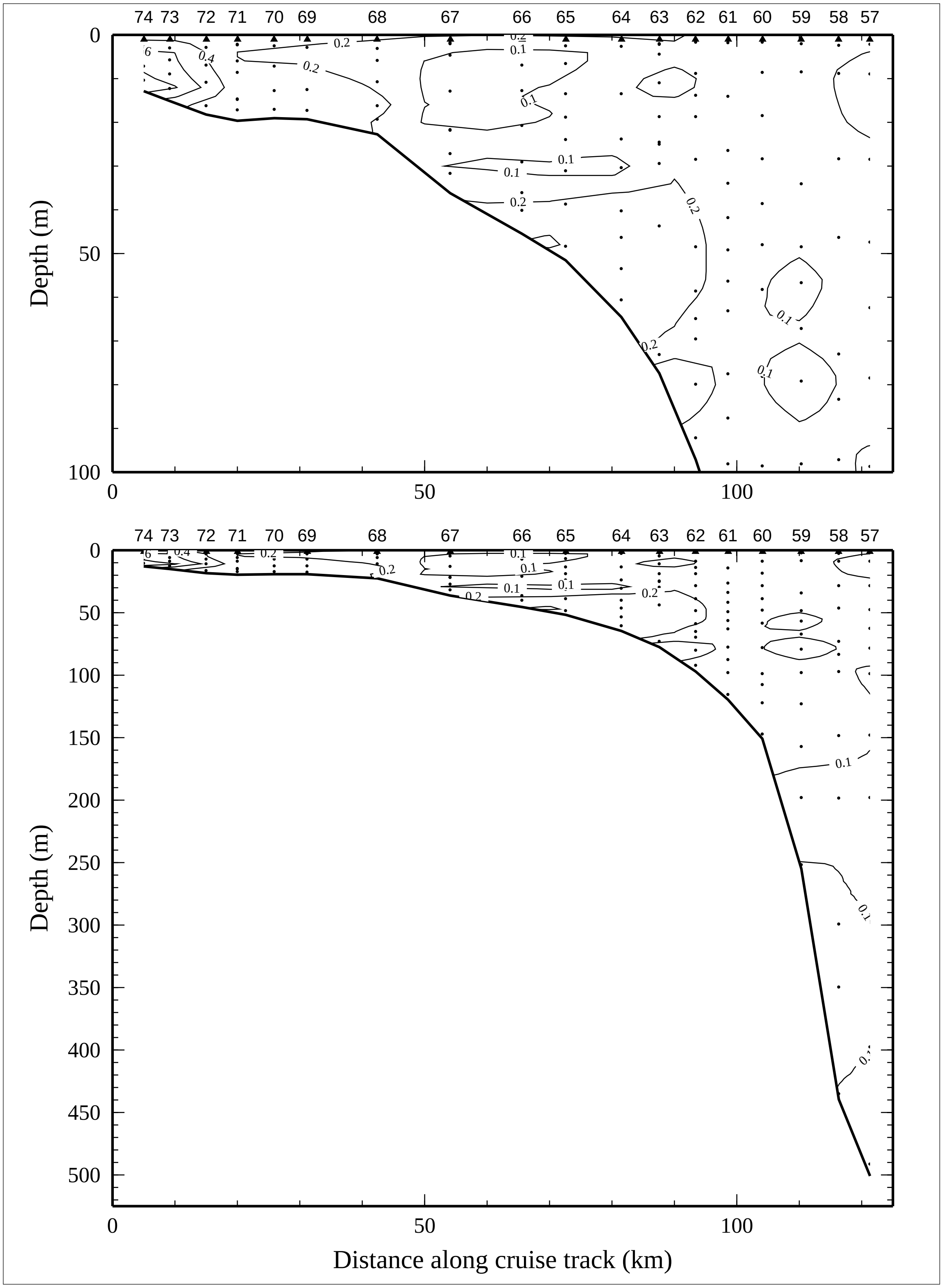

Figure 3.1.15. Urea (μmol·l^{-1}) on line 1 of LATEX A survey H03, 4-13 November 1992.

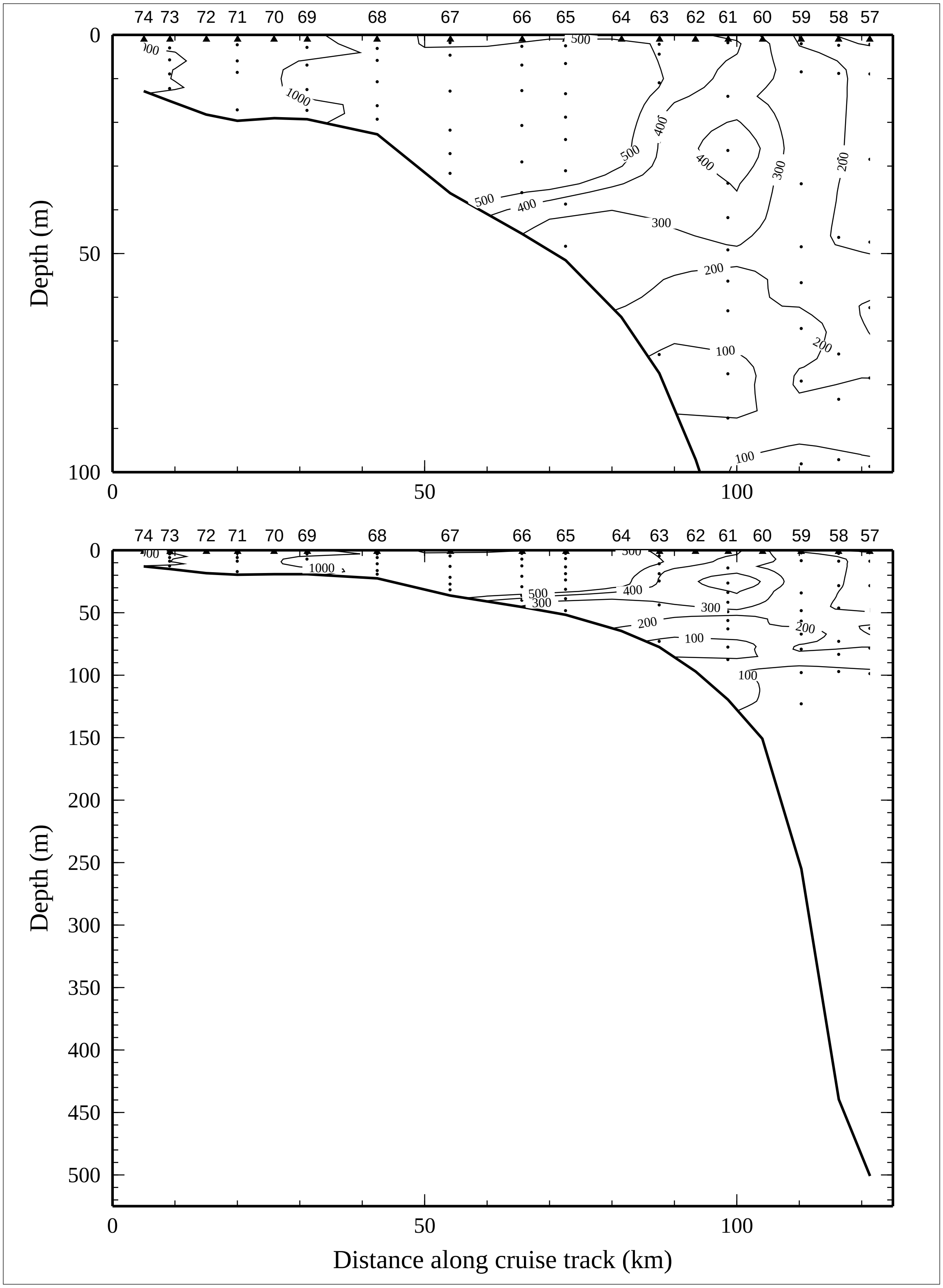

Figure 3.1.16. Chlorophyll a (ng·l[-1]) on line 1 of LATEX A survey H03, 4-13 November 1992.

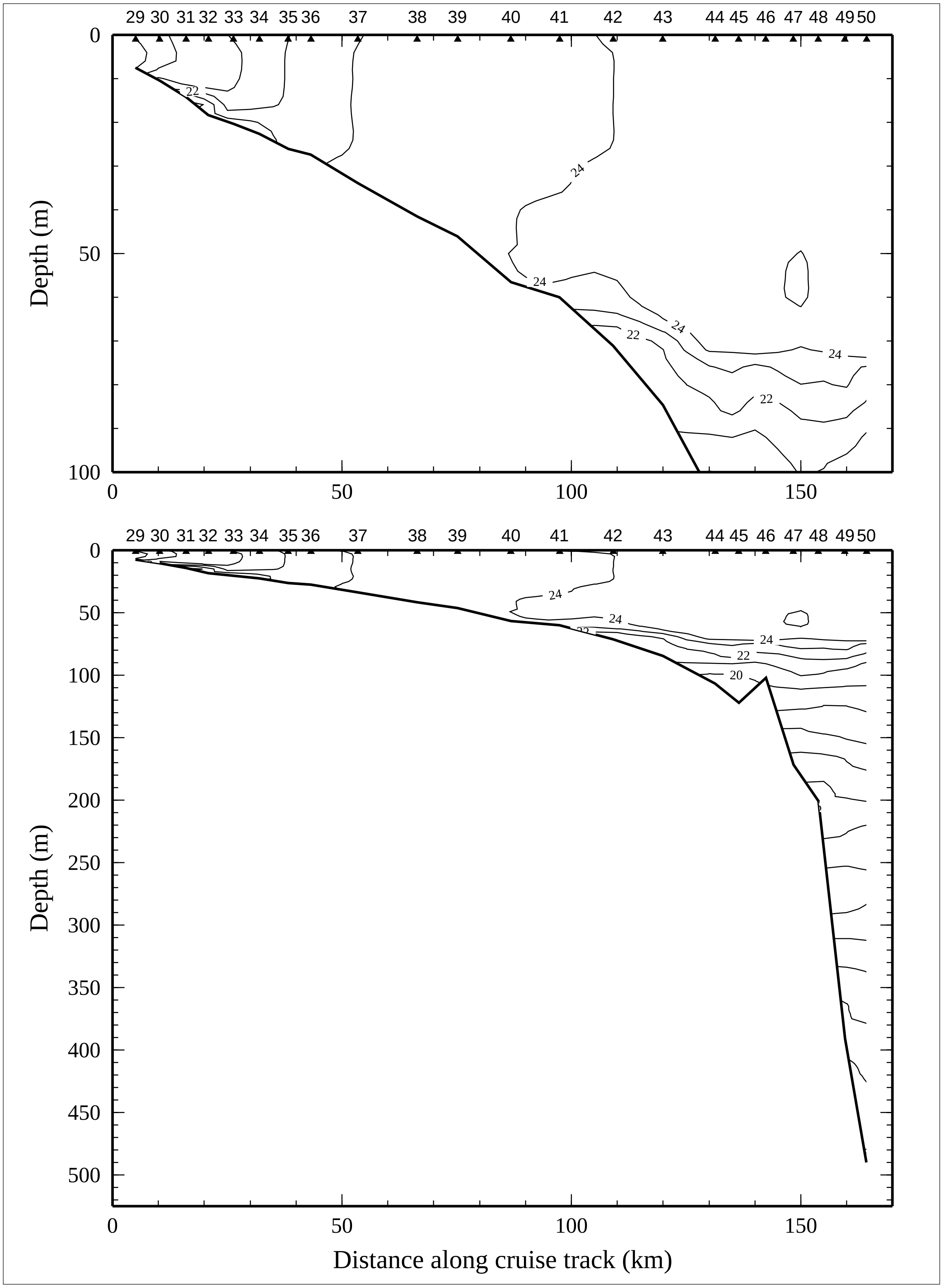

Figure 3.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H03, 4-13 November 1992.

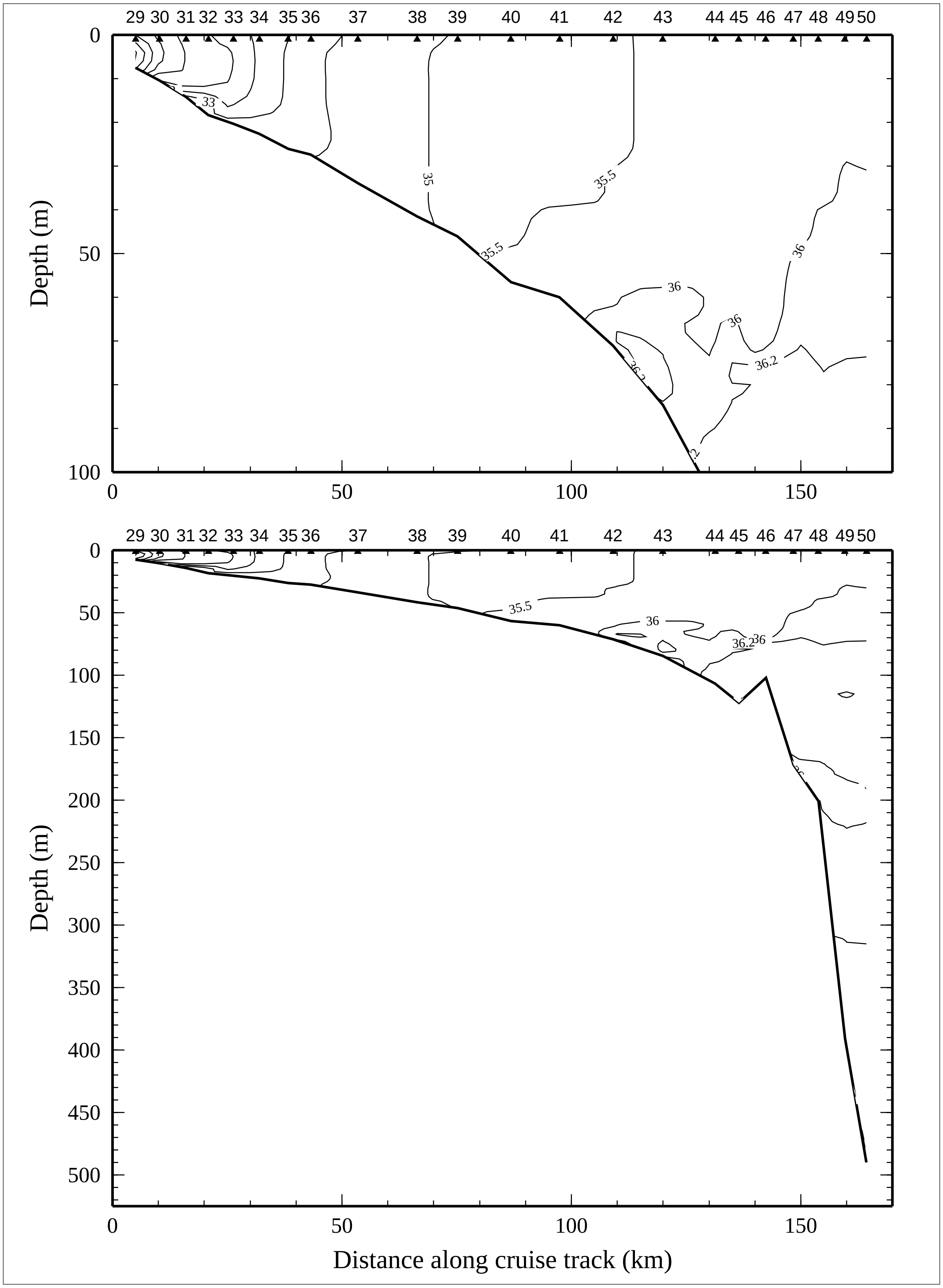

Figure 3.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H03, 4-13 November 1992.

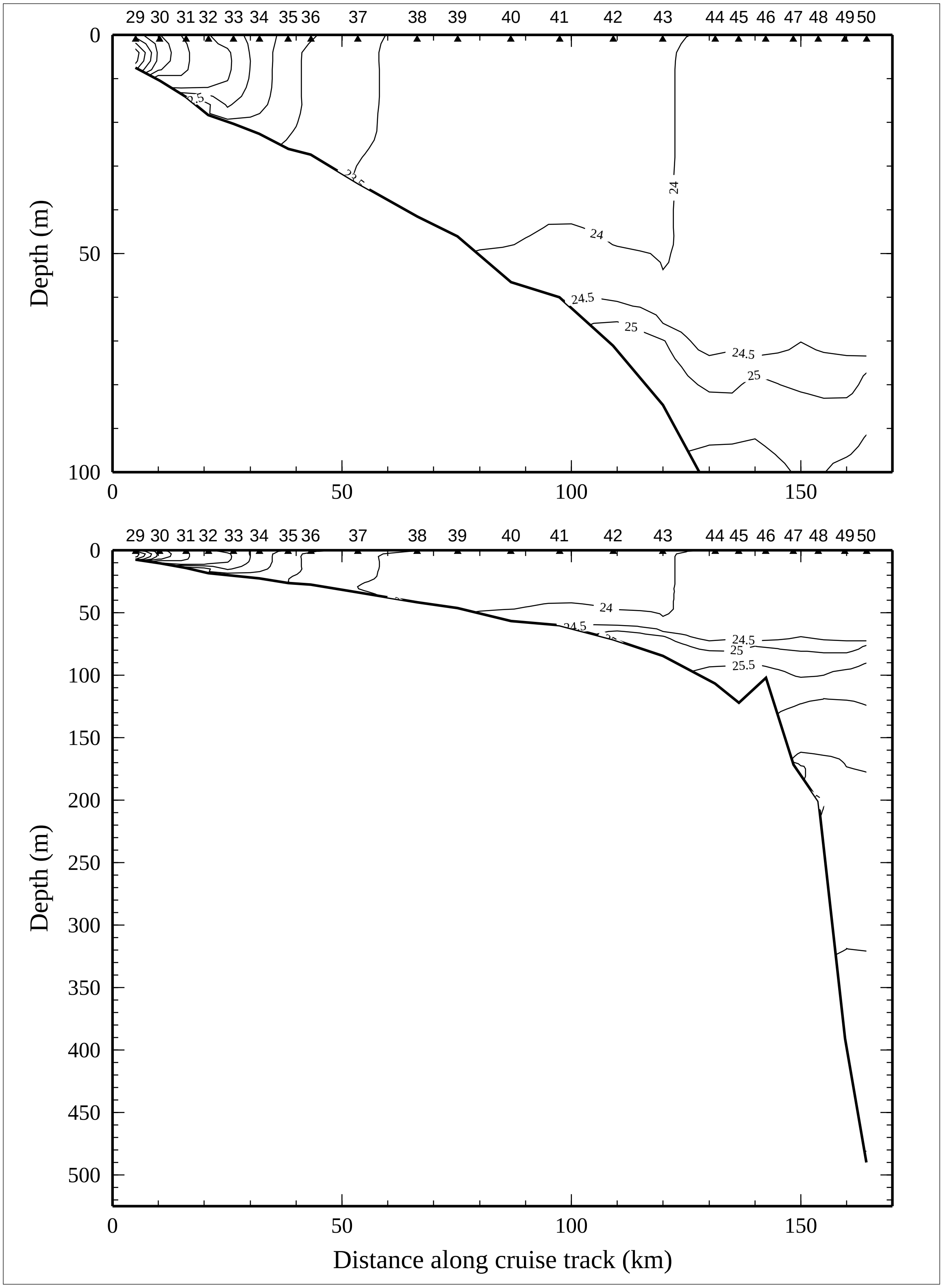

Figure 3.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H03, 4-13 November 1992.

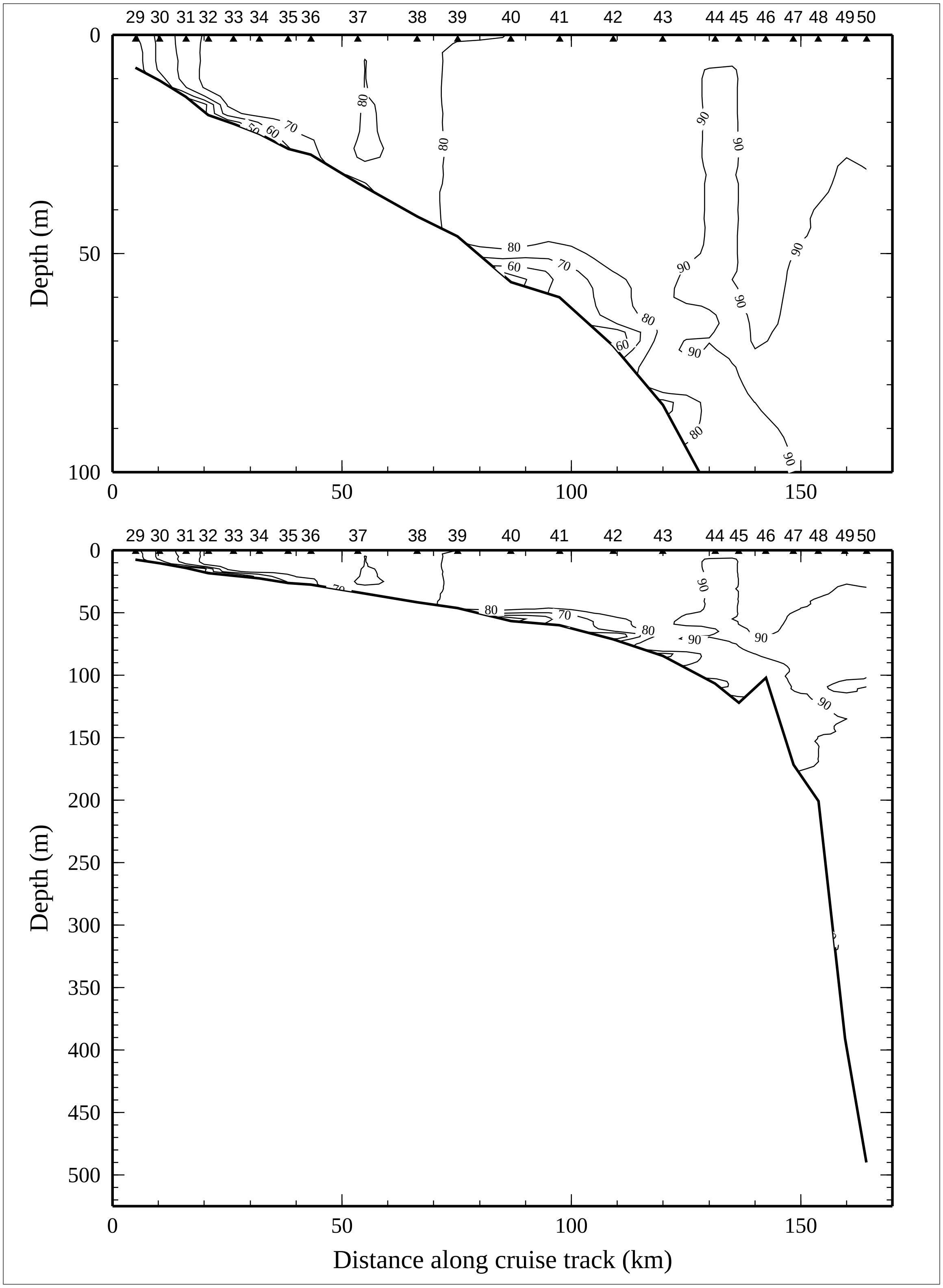

Figure 3.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H03, 4-13 November 1992.

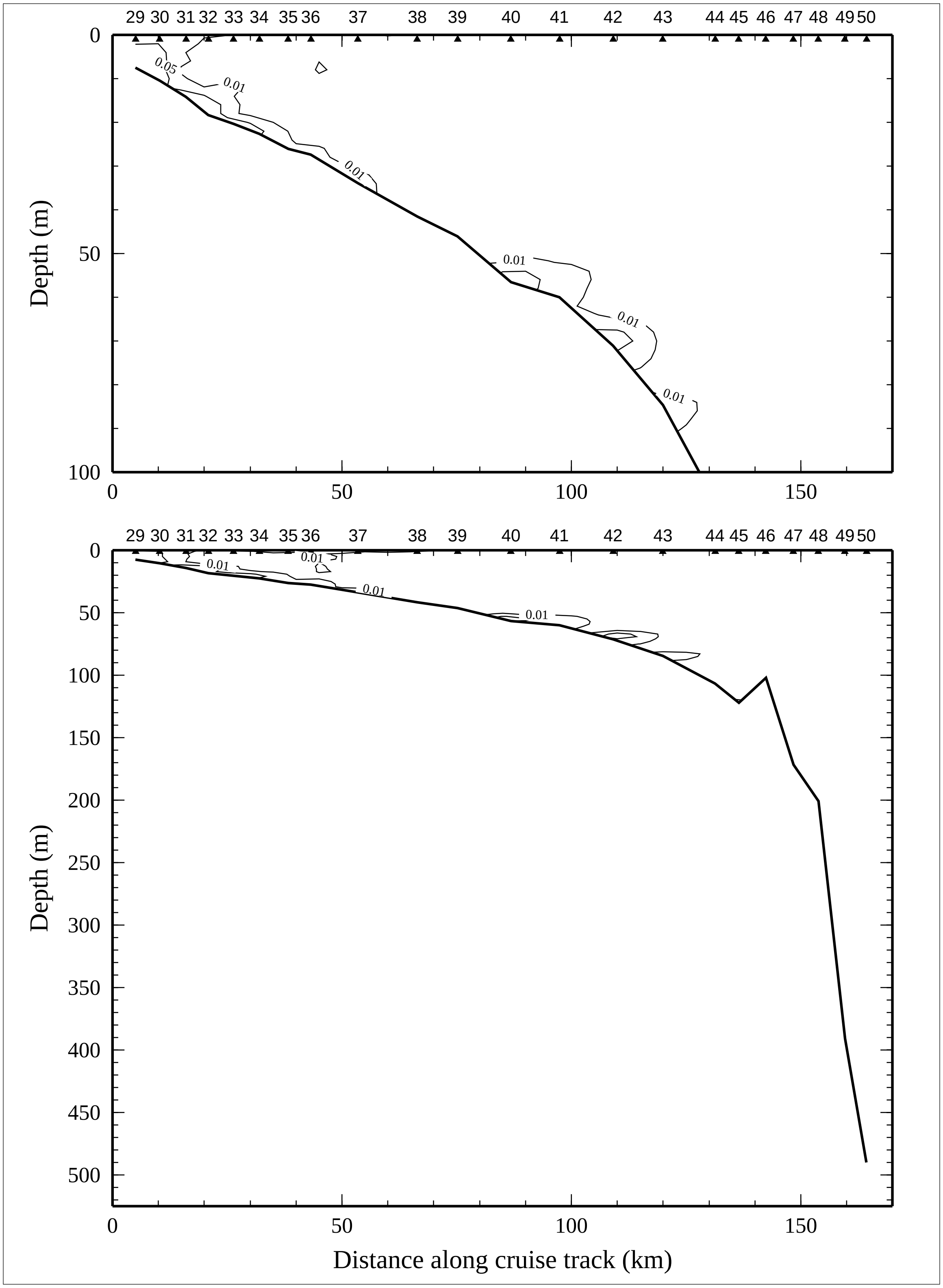

Figure 3.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H03, 4-13 November 1992.

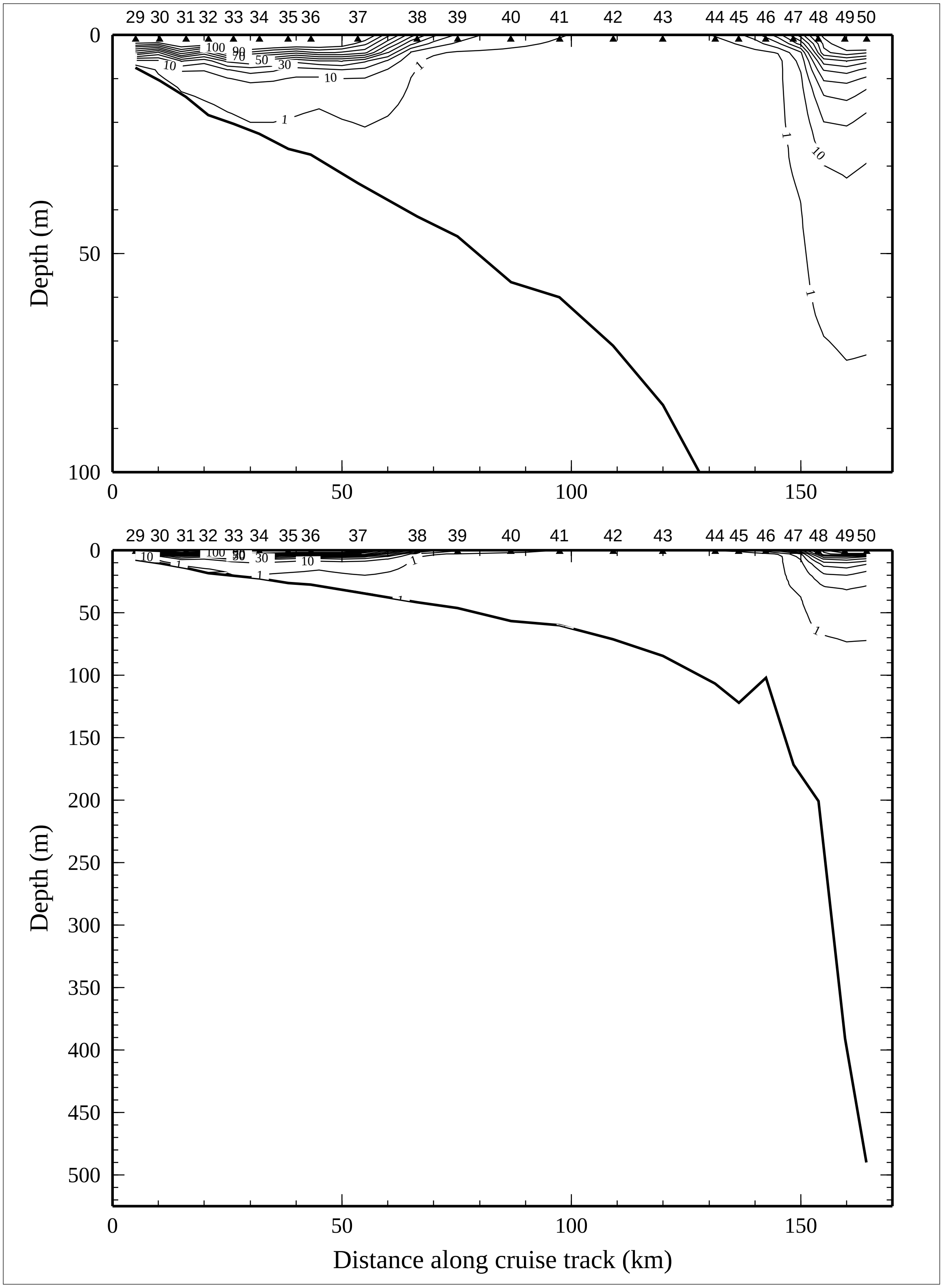

Figure 3.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H03, 4-13 November 1992.

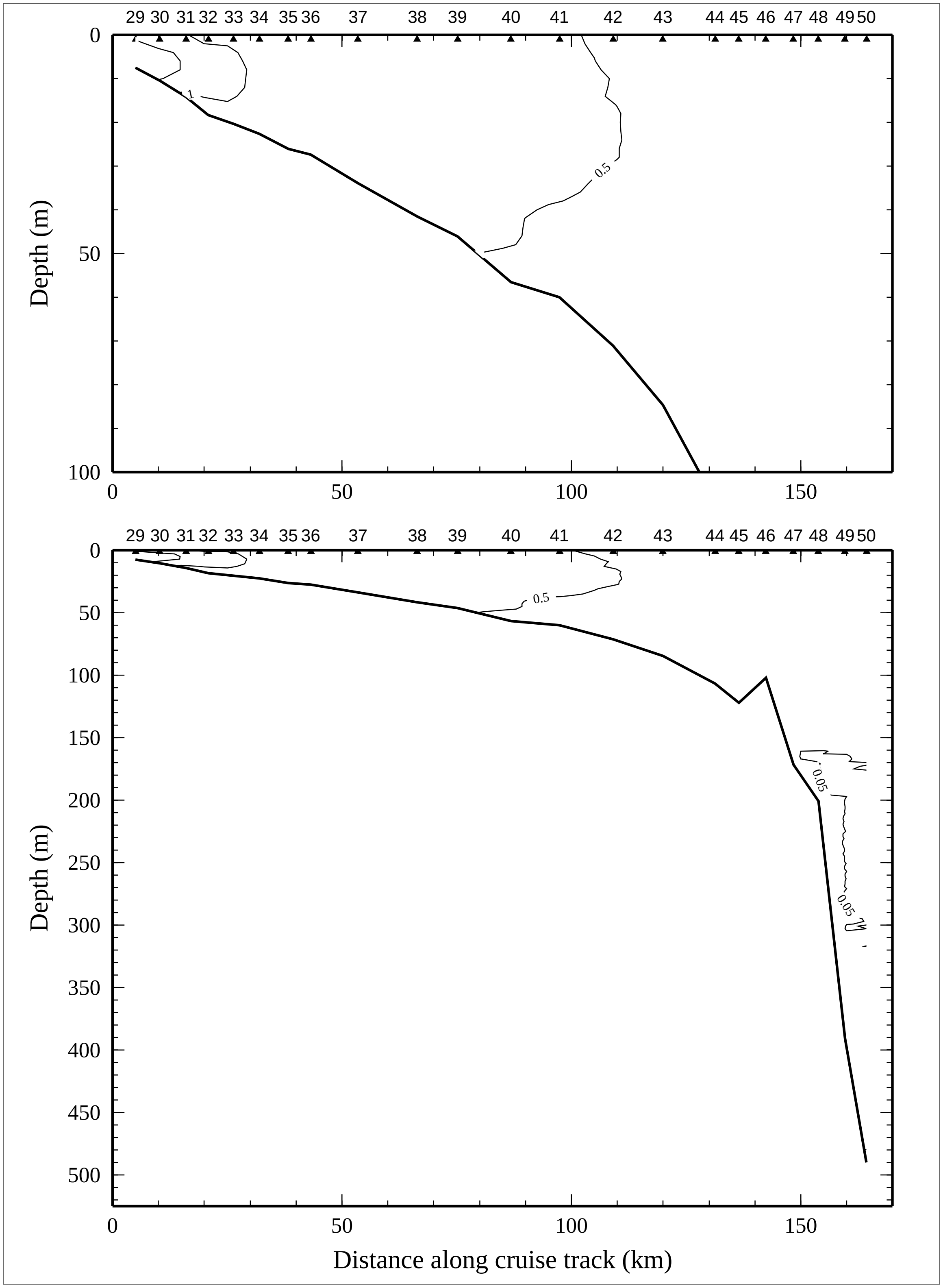

Figure 3.2.7. Relative fluorescence on line 2 of LATEX A survey H03, 4-13 November 1992.

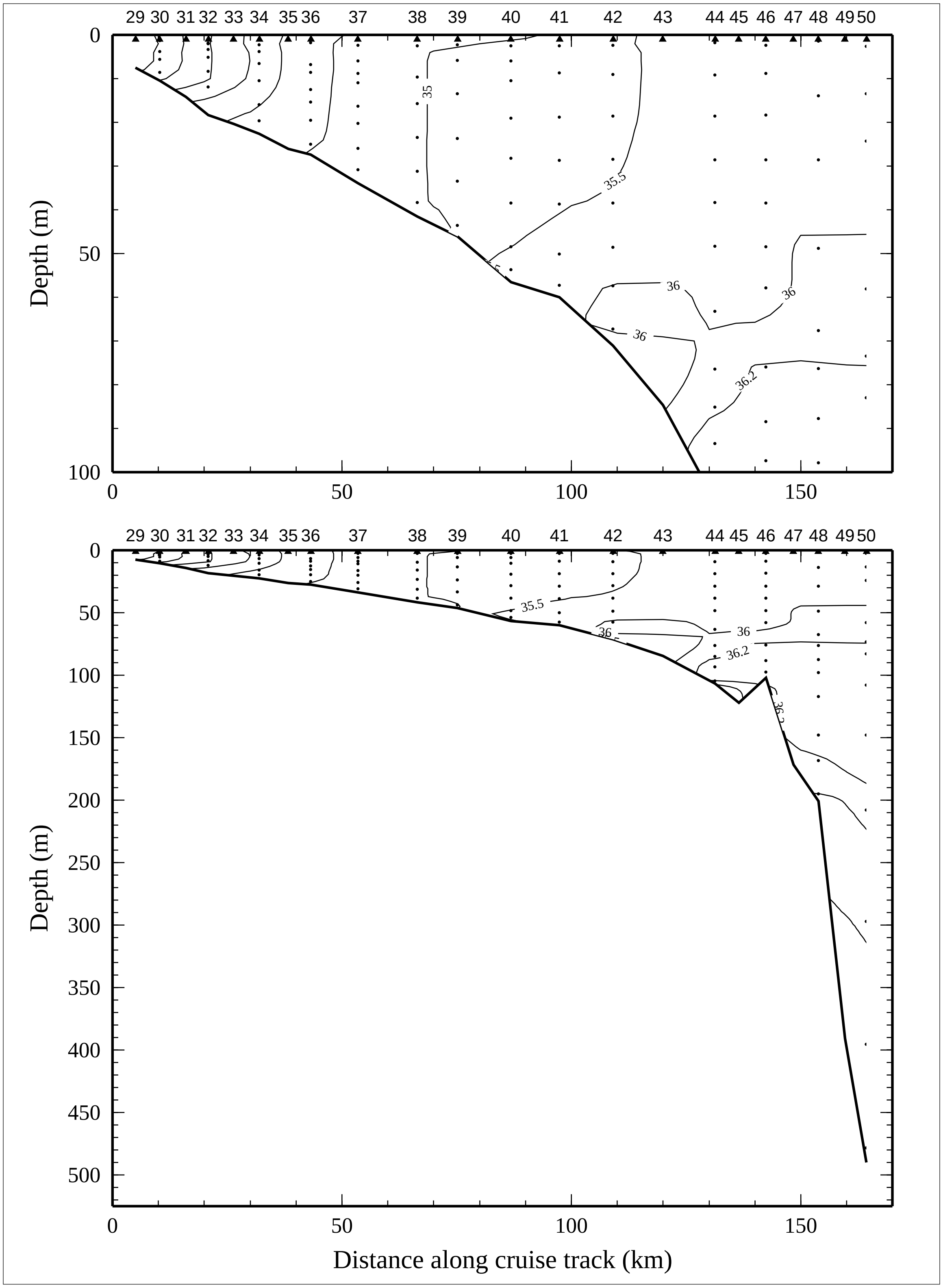

Figure 3.2.8. Bottle salinity on line 2 of LATEX A survey H03,
4-13 November 1992.

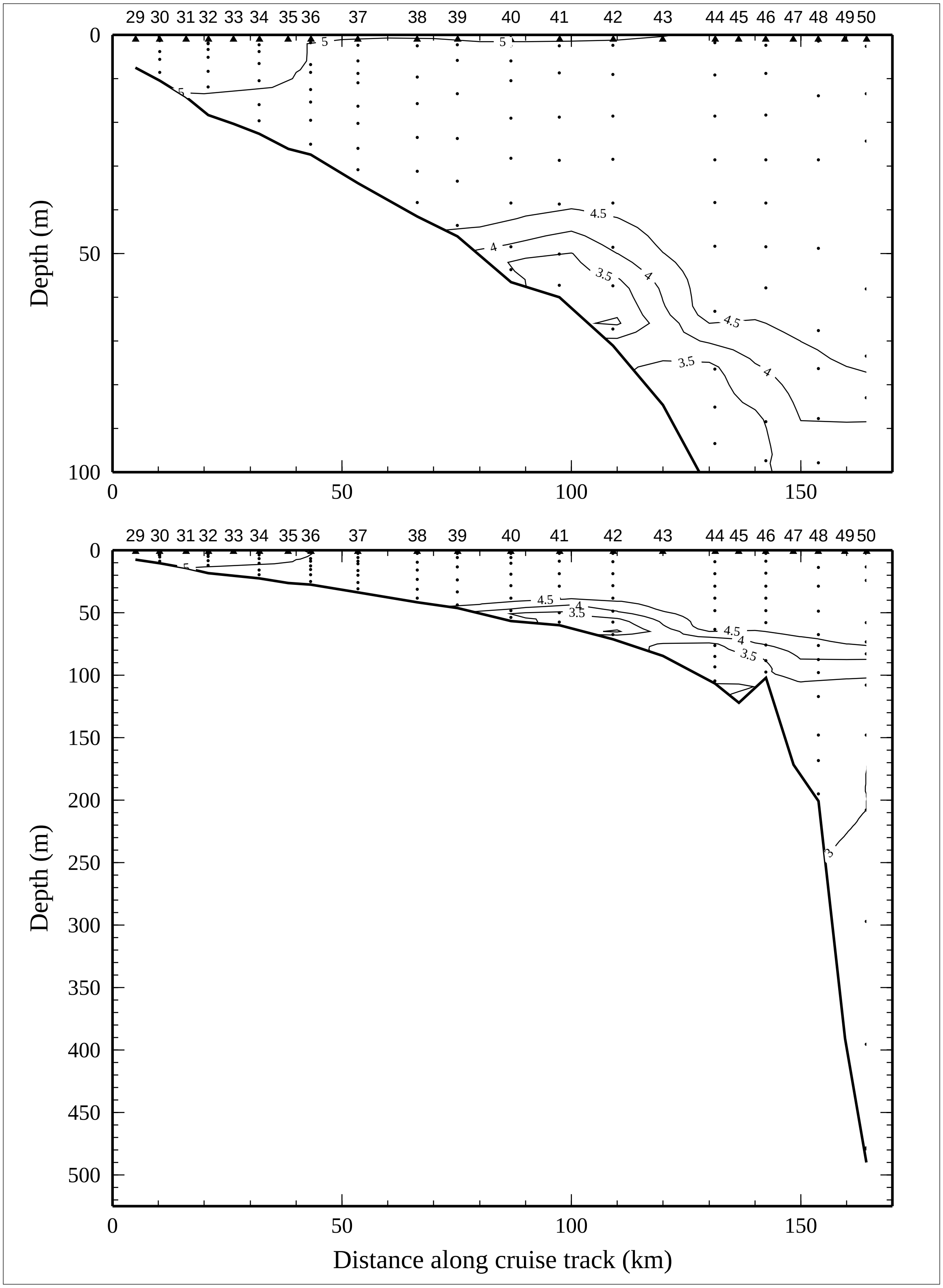

Figure 3.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H03, 4-13 November 1992.

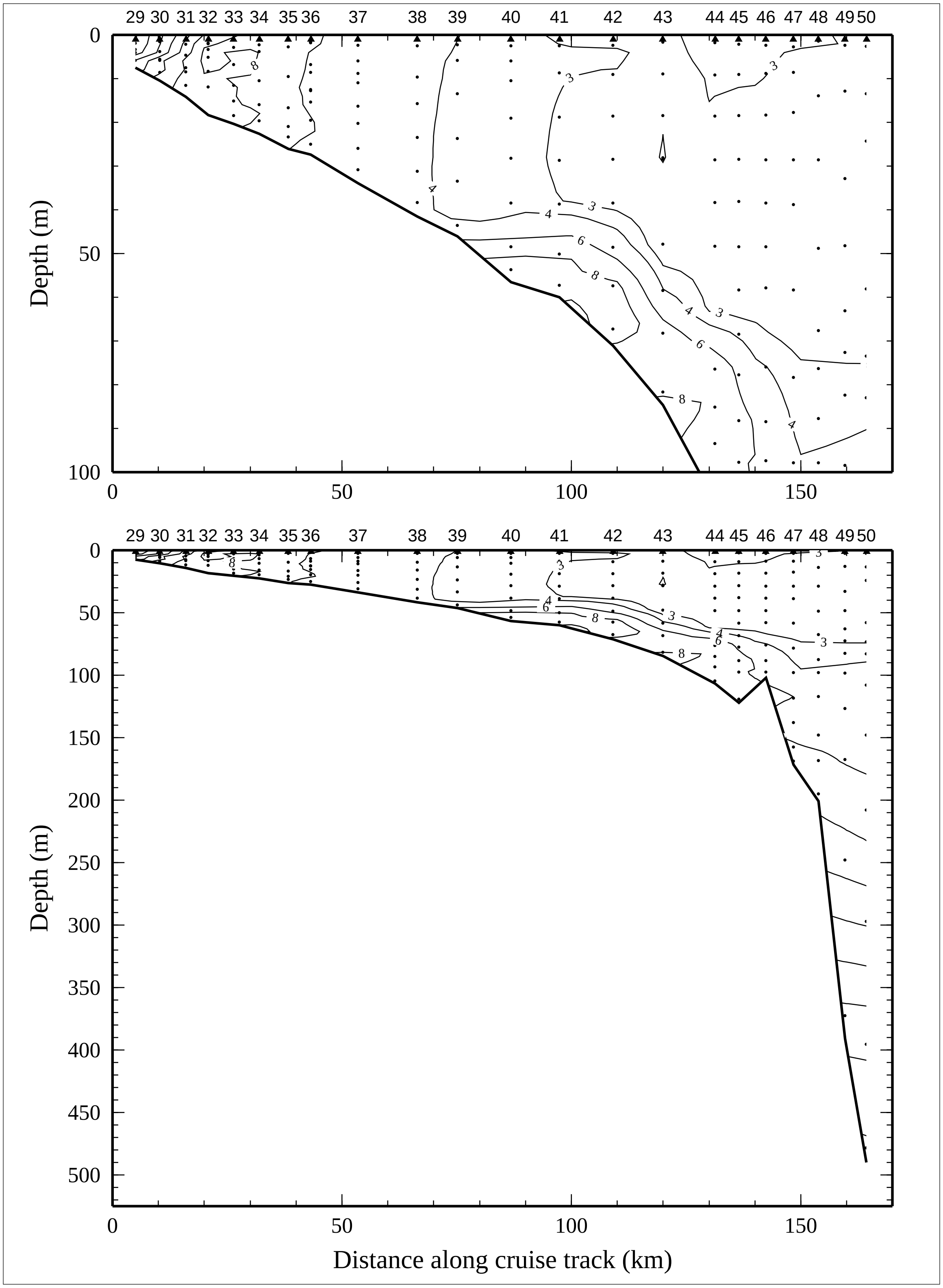

Figure 3.2.10. Silicate (μmol·l-1) on line 2 of LATEX A survey H03,
4-13 November 1992.

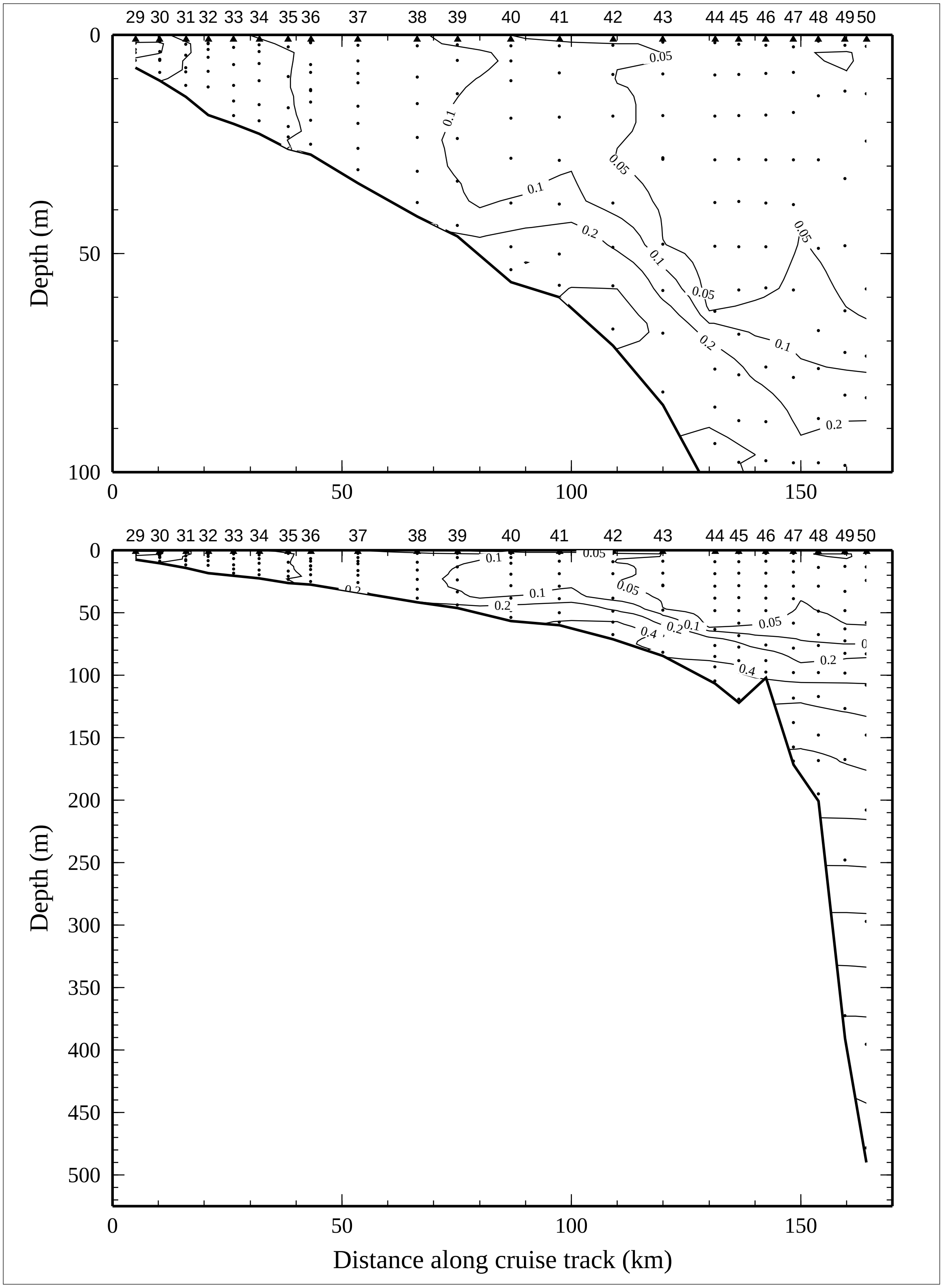

Figure 3.2.11. Phosphate (μmol·l⁻¹) on line 2 of LATEX A survey H03, 4-13 November 1992.

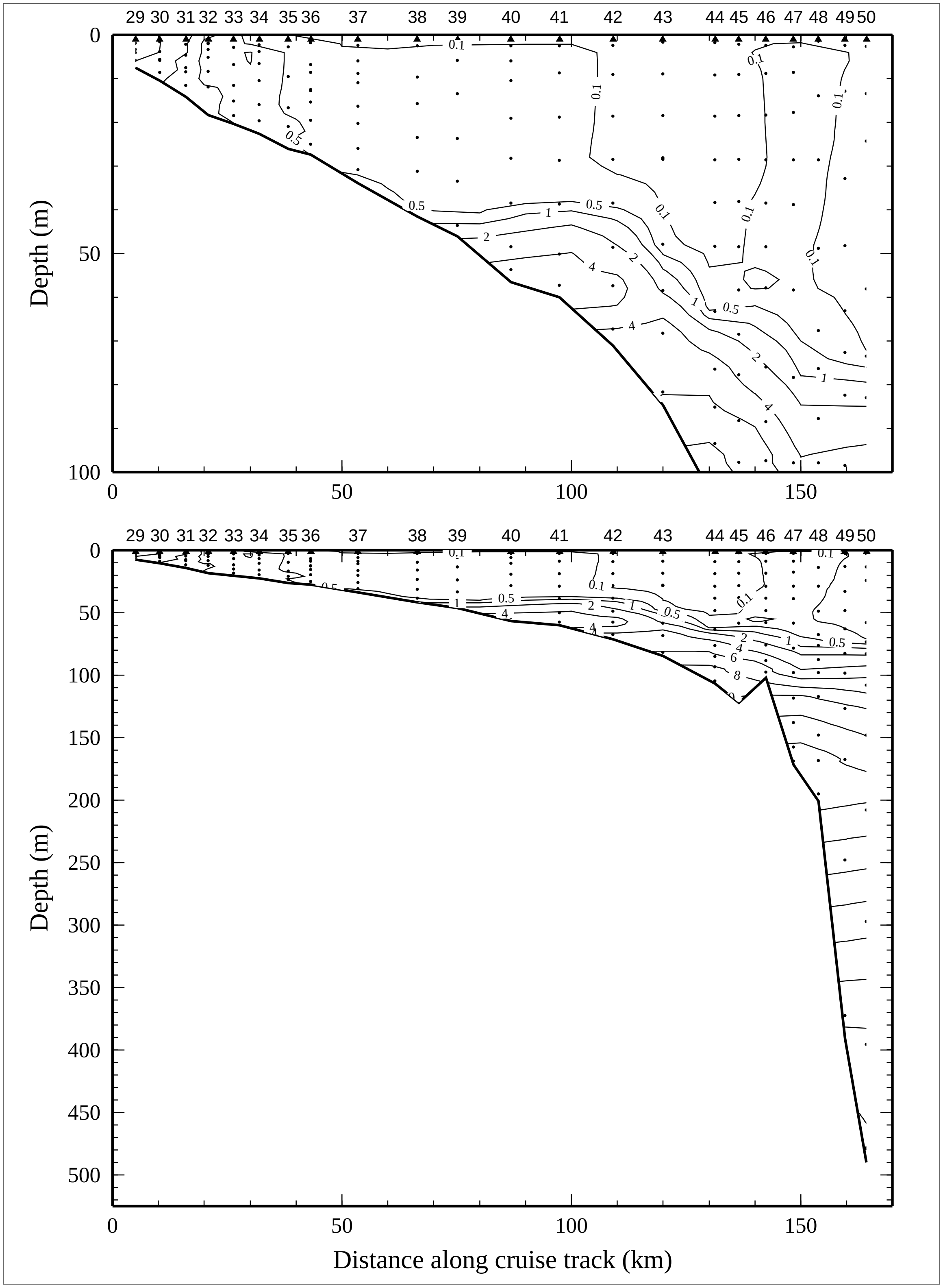

Figure 3.2.12. Nitrate (μmol·l-1) on line 2 of LATEX A survey H03, 4-13 November 1992.

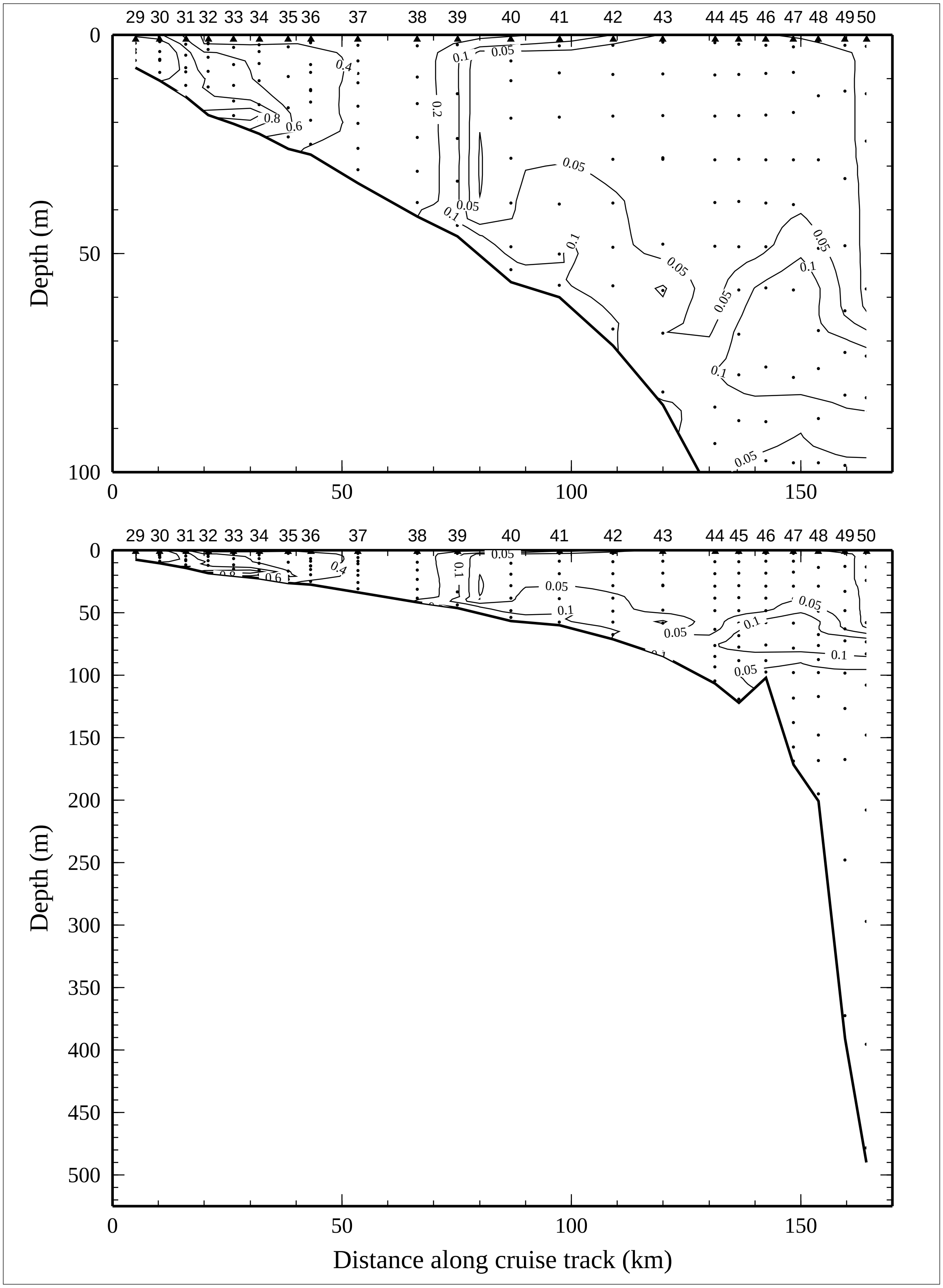

Figure 3.2.13. Nitrite (µmol·l⁻¹) on line 2 of LATEX A survey H03, 4-13 November 1992.

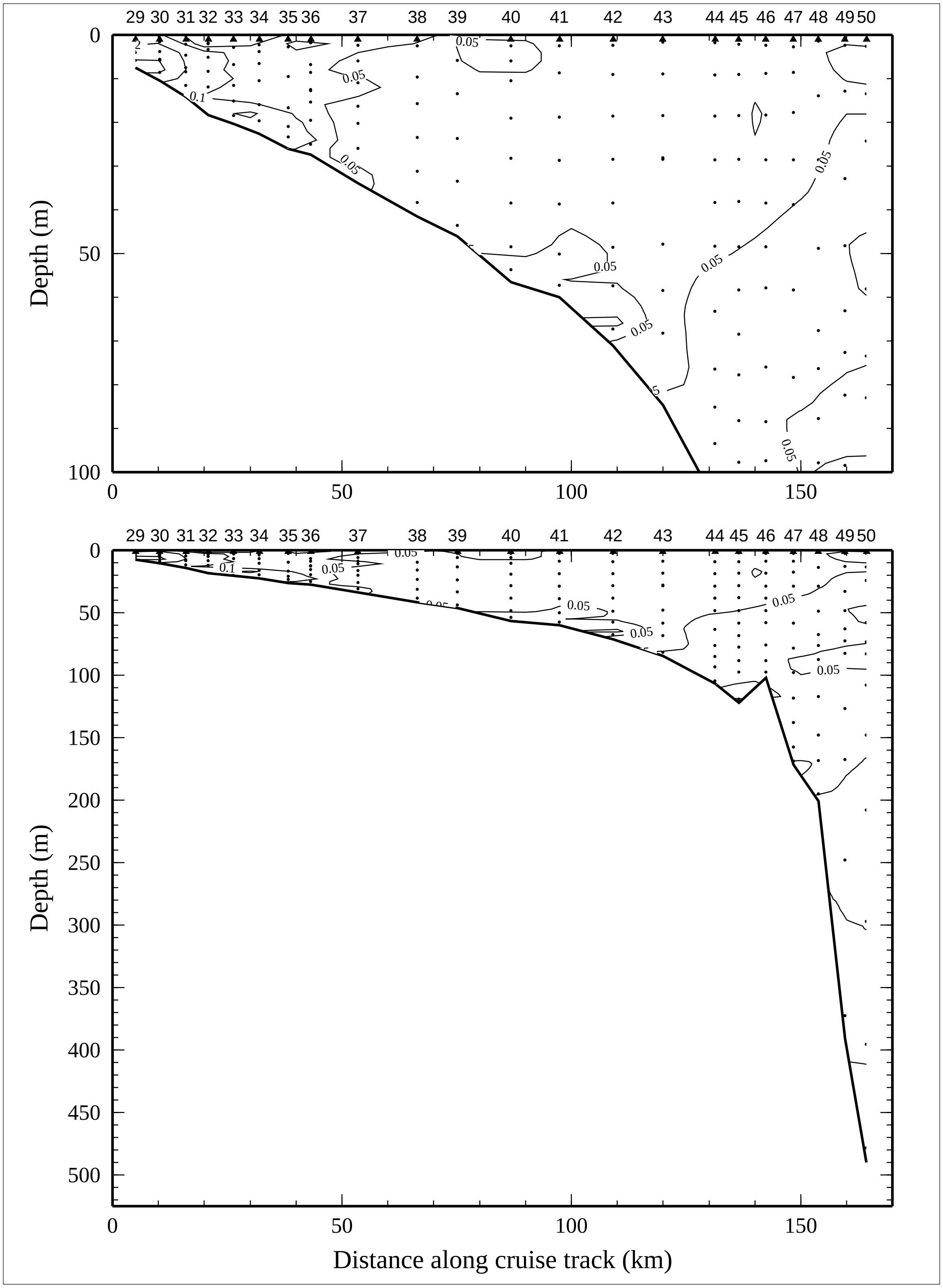

Figure 3.2.14. Ammonium (μmol·l^{-1}) on line 2 of LATEX A survey H03,
4-13 November 1992.

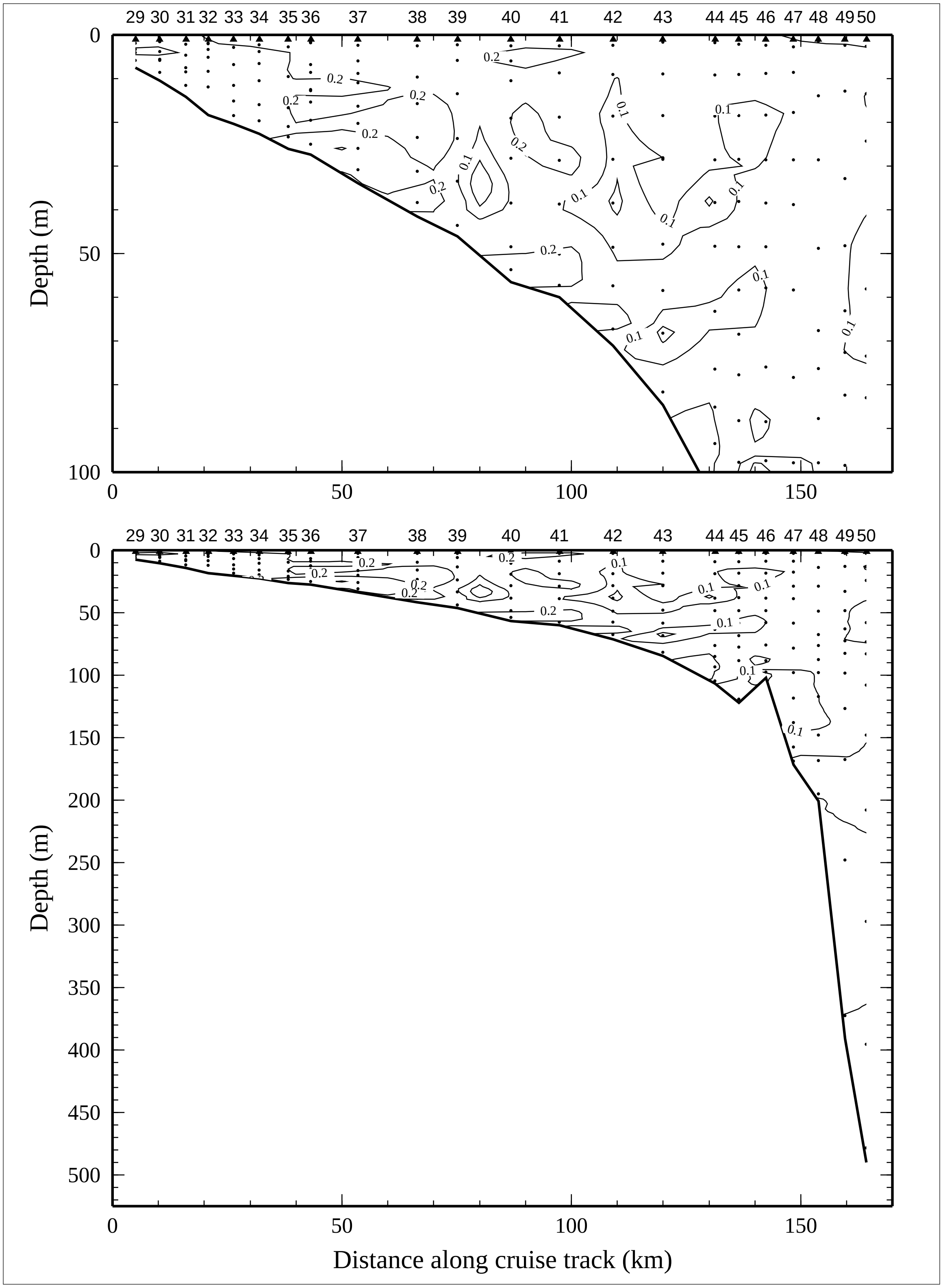

Figure 3.2.15. Urea (µmol·l-1) on line 2 of LATEX A survey H03, 4-13 November 1992.

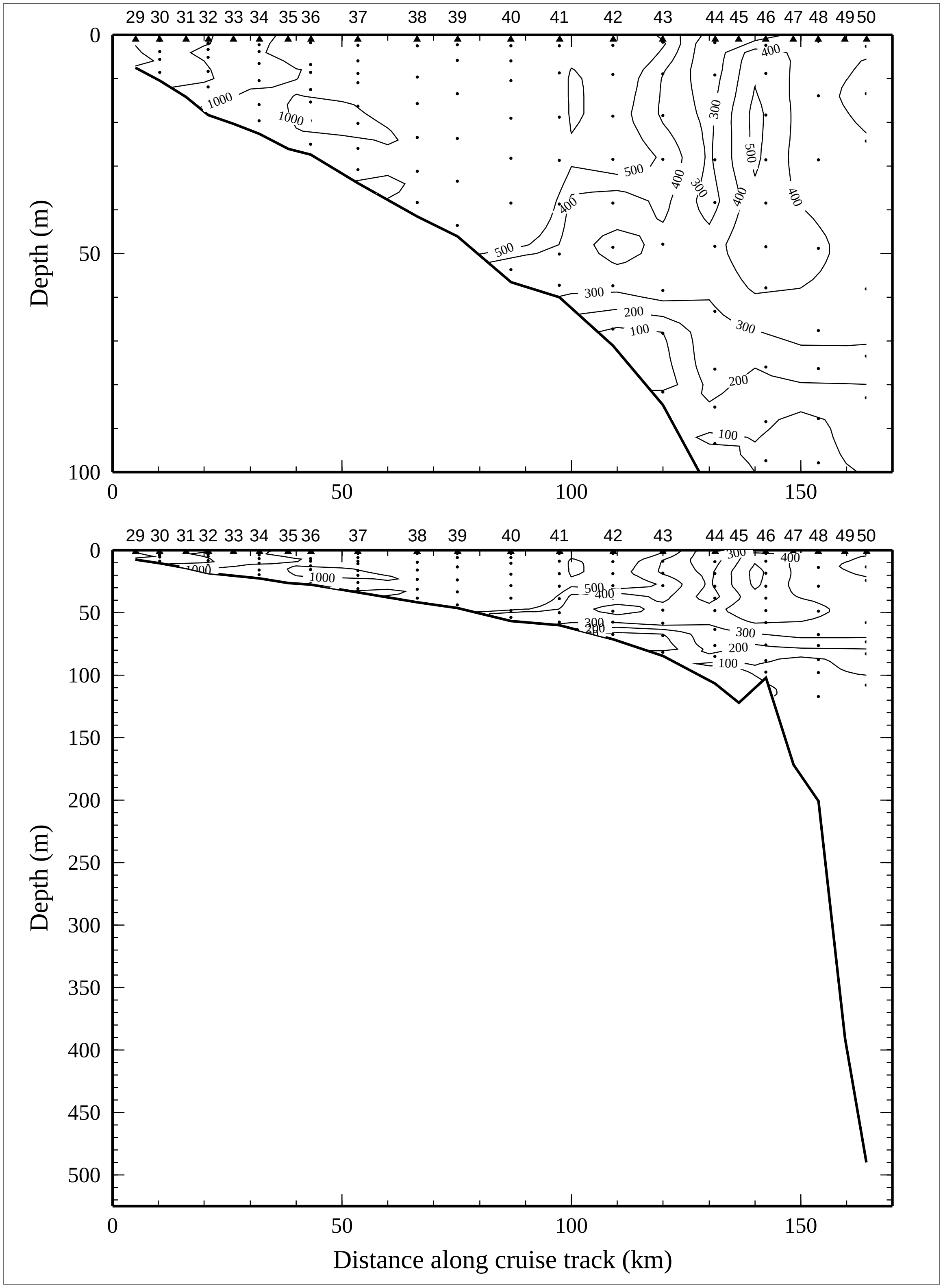

Figure 3.2.16. Chlorophyll a (ng·l^{-1}) on line 2 of LATEX A survey H03, 4-13 November 1992.

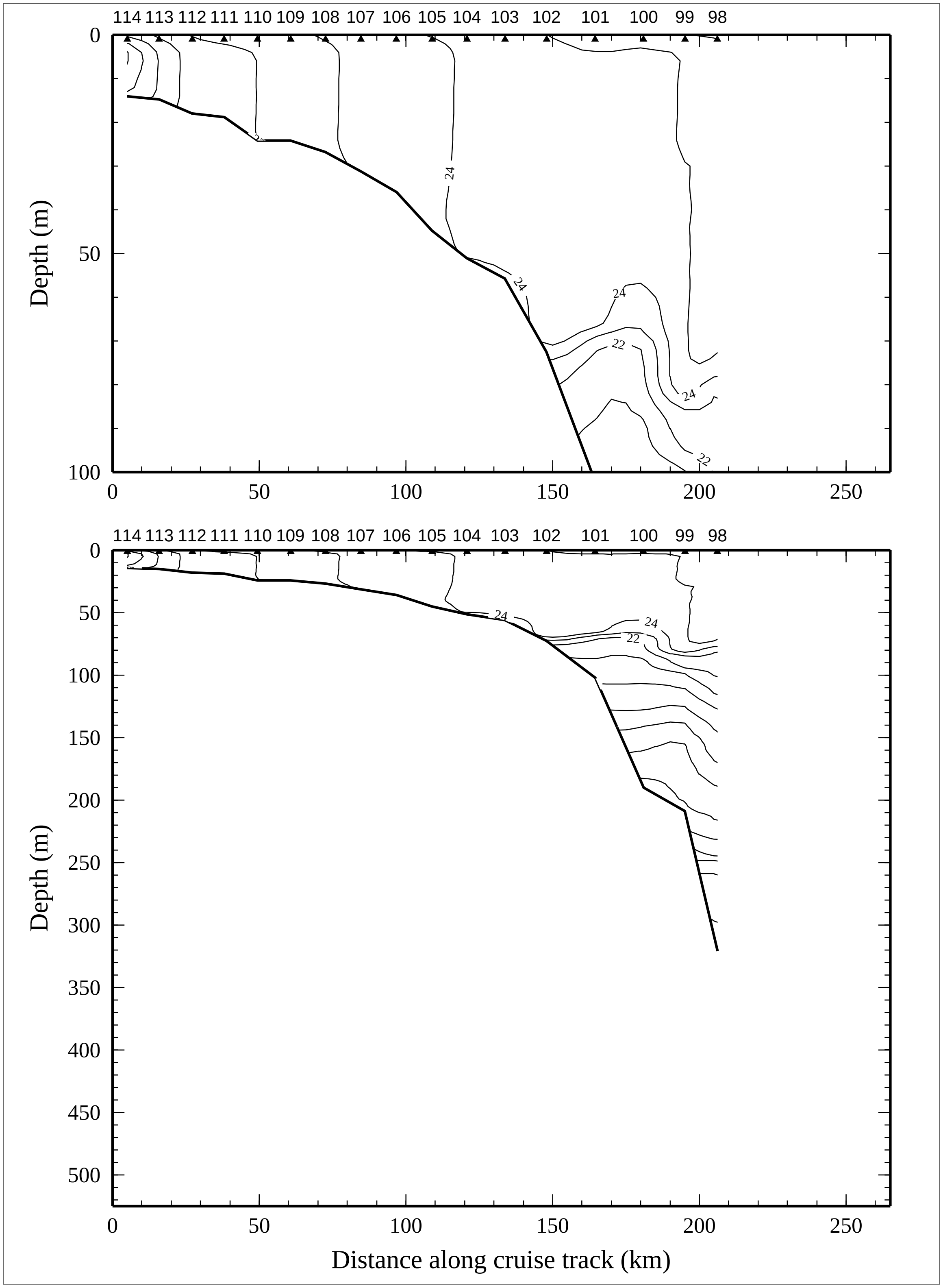

Figure 3.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H03, 4-13 November 1992.

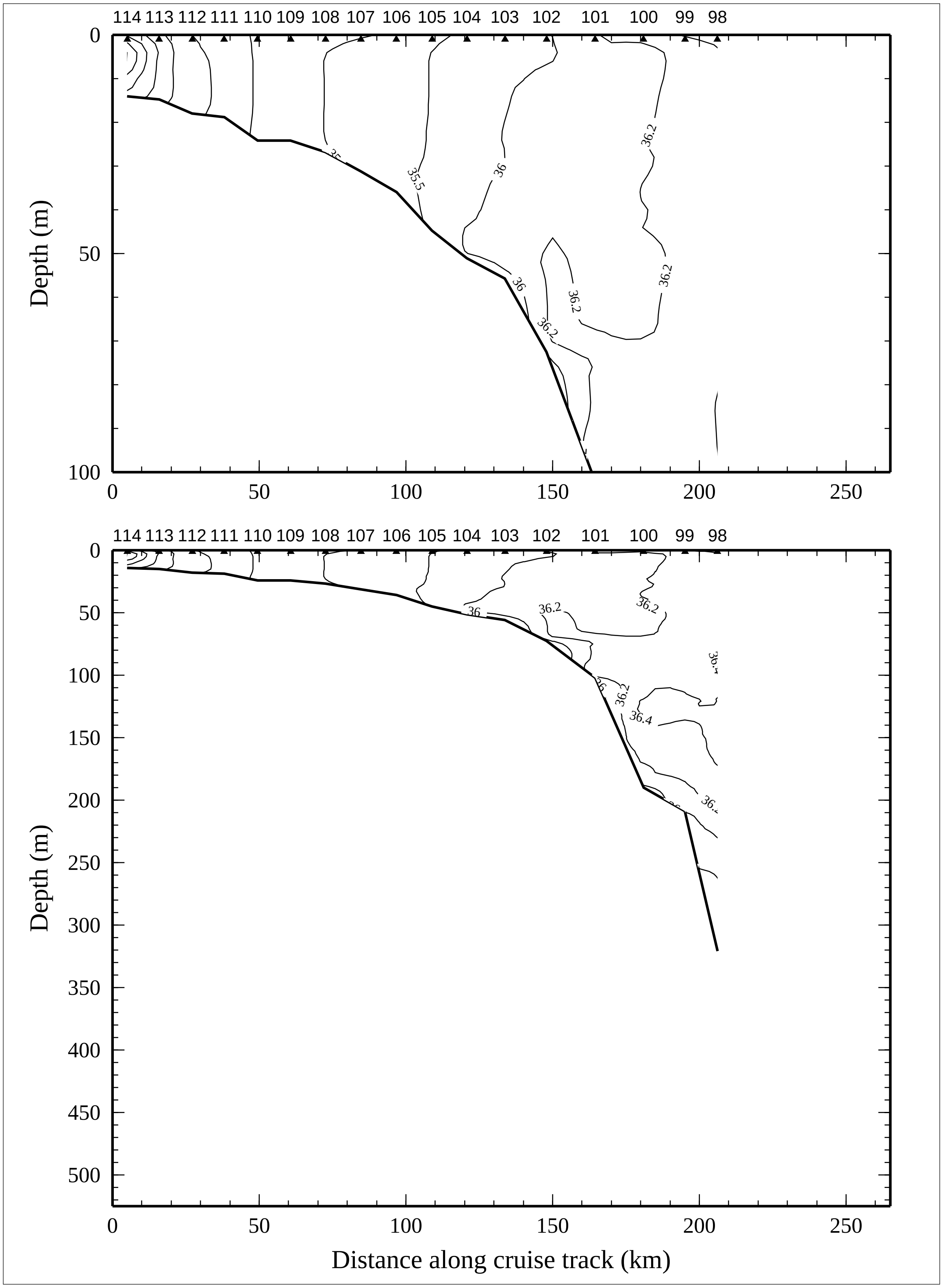

Figure 3.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H03, 4-13 November 1992.

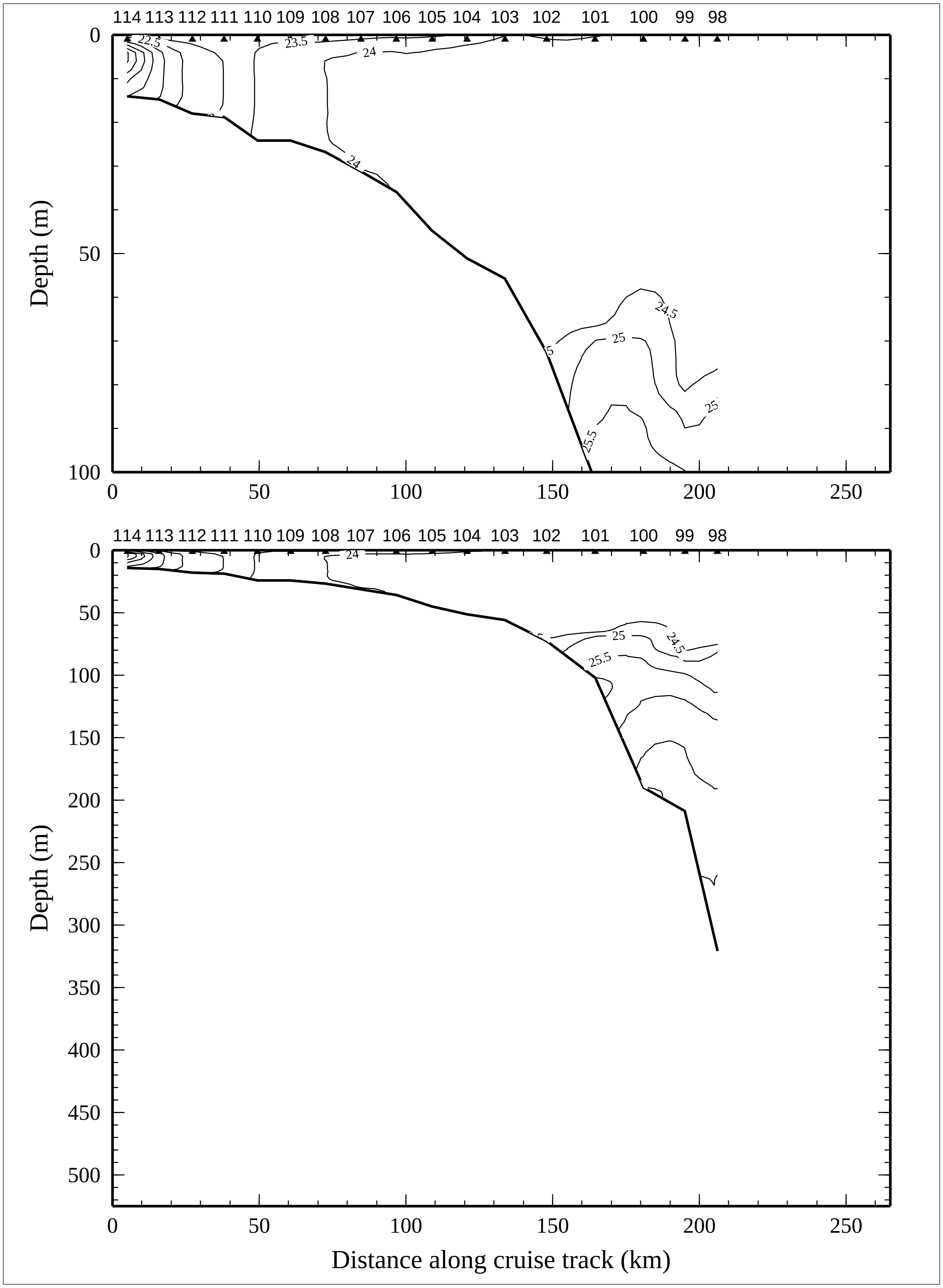

Figure 3.3.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 3 of LATEX A survey H03, 4-13 November 1992.

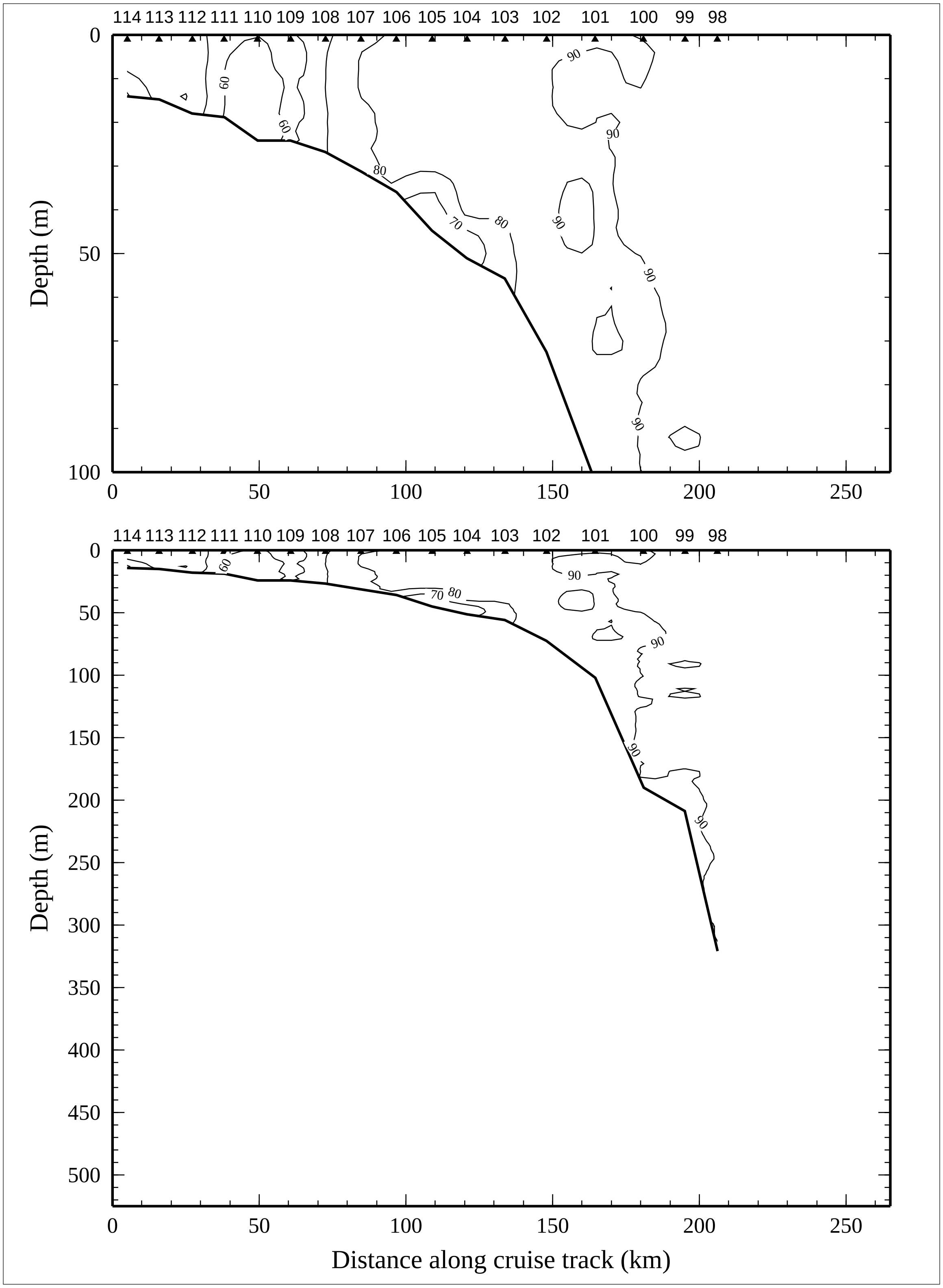

Figure 3.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H03, 4-13 November 1992.

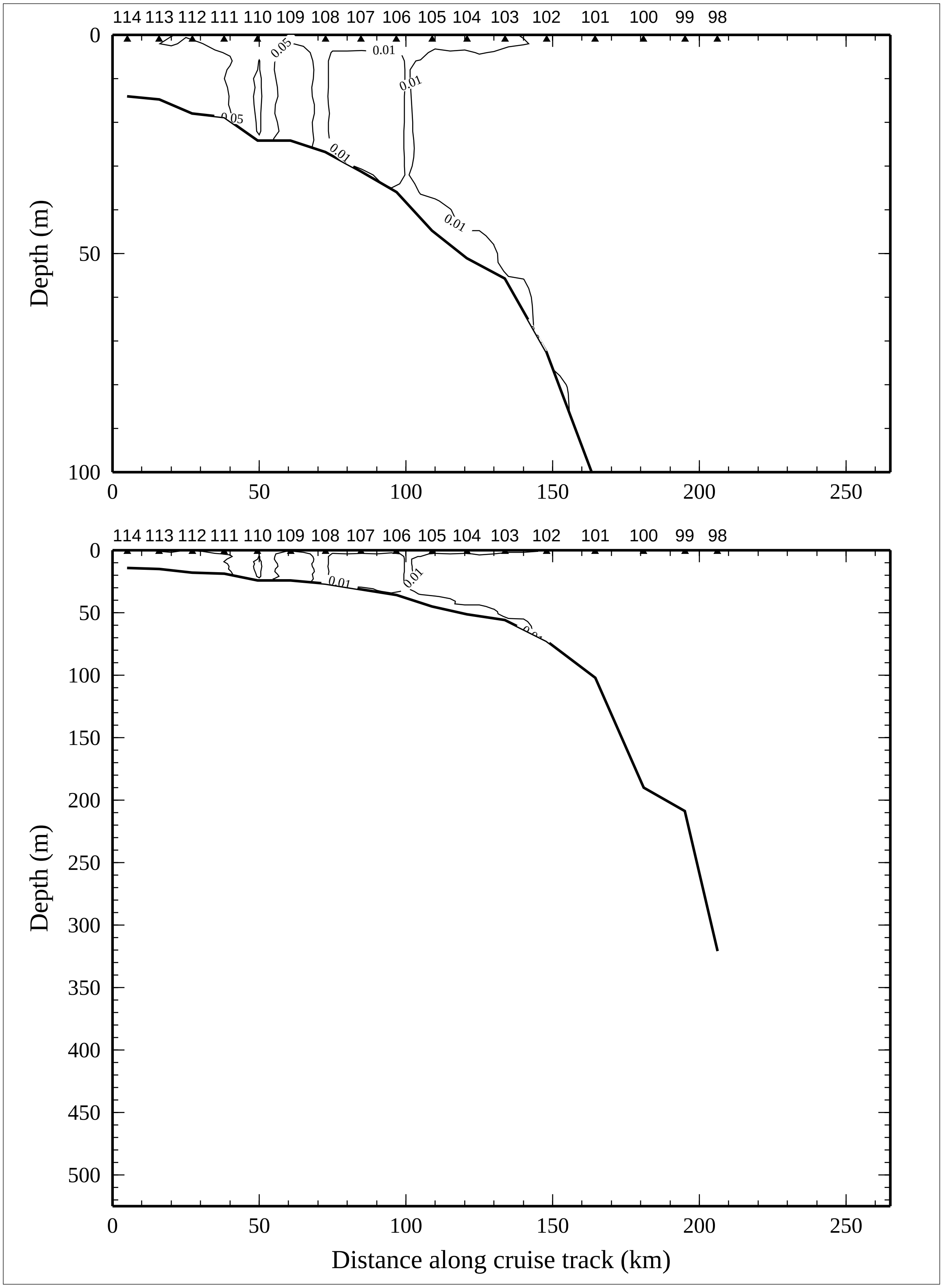

Figure 3.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H03, 4-13 November 1992.

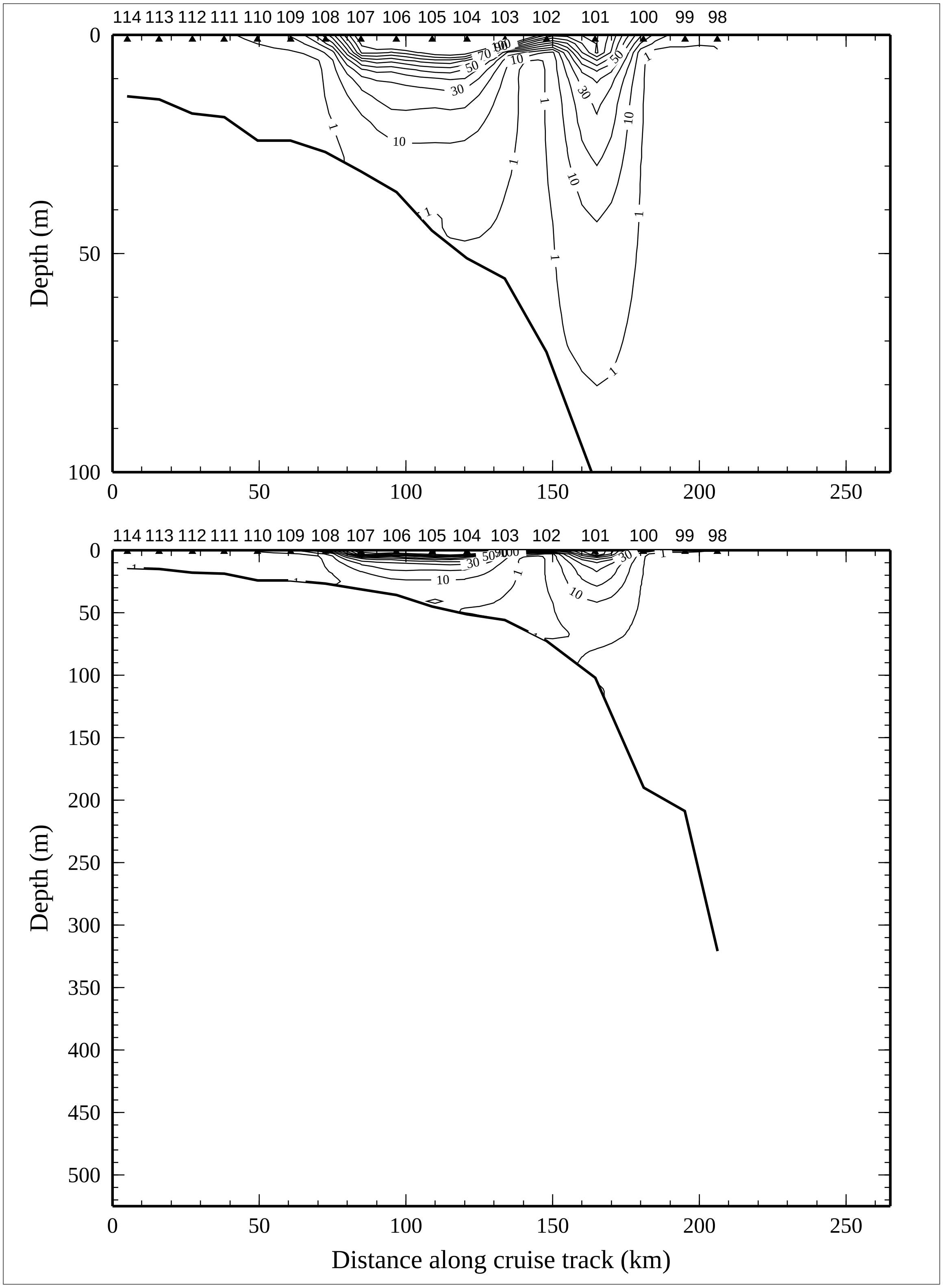

Figure 3.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H03, 4-13 November 1992.

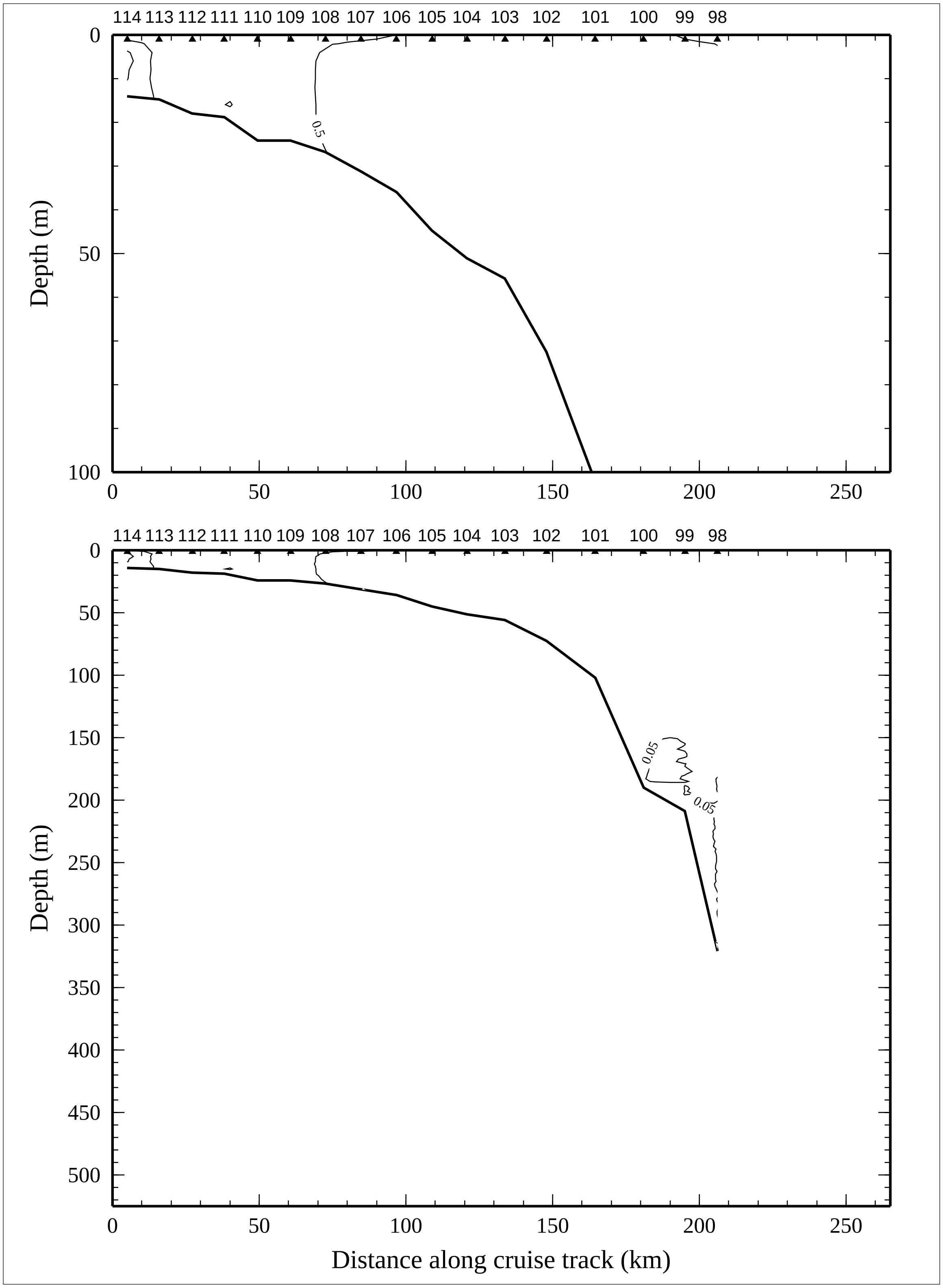

Figure 3.3.7. Relative fluorescence on line 3 of LATEX A survey H03, 4-13 November 1992.

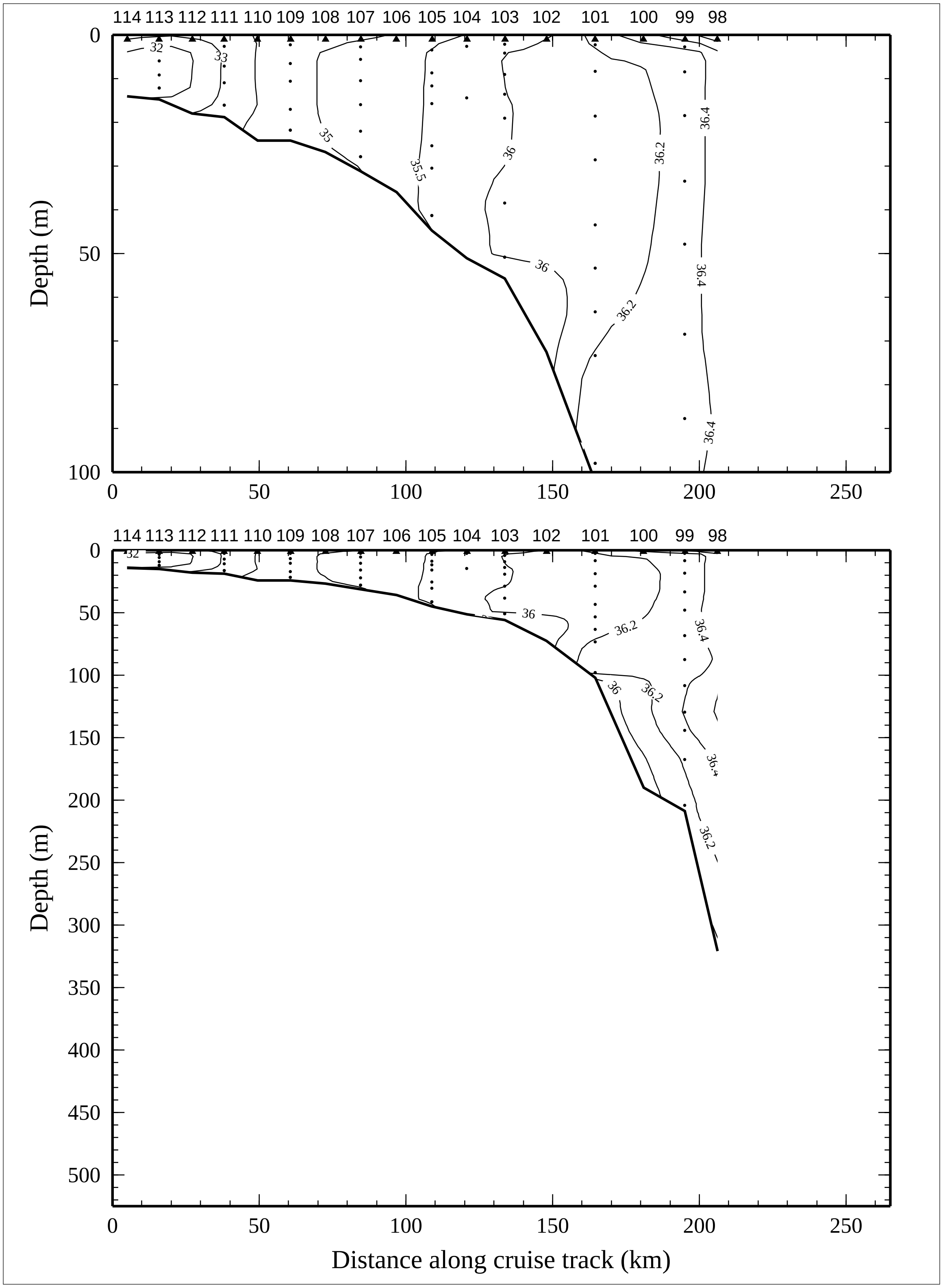

Figure 3.3.8. Bottle salinity on line 3 of LATEX A survey H03, 4-13 November 1992.

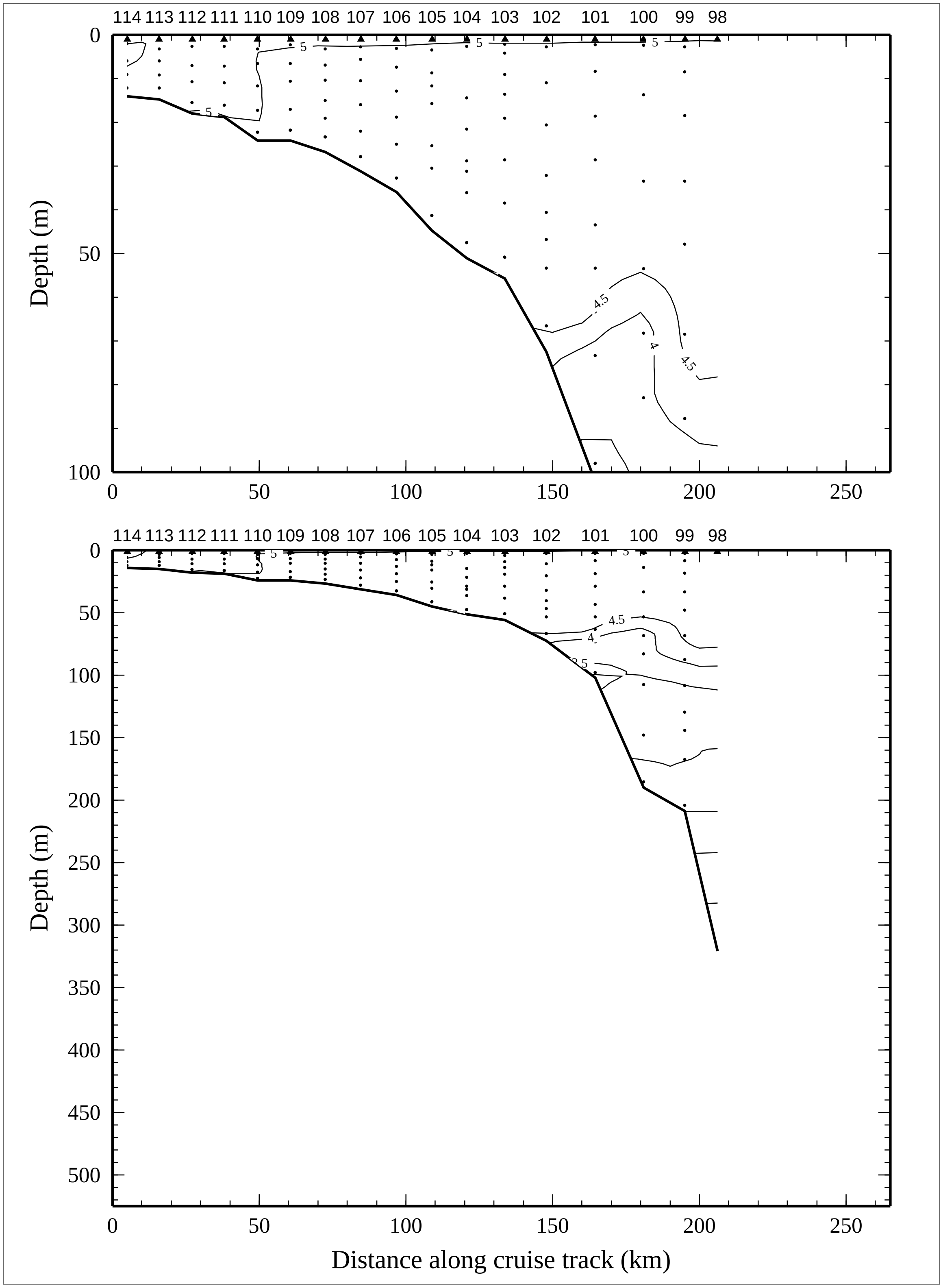

Figure 3.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H03, 4-13 November 1992.

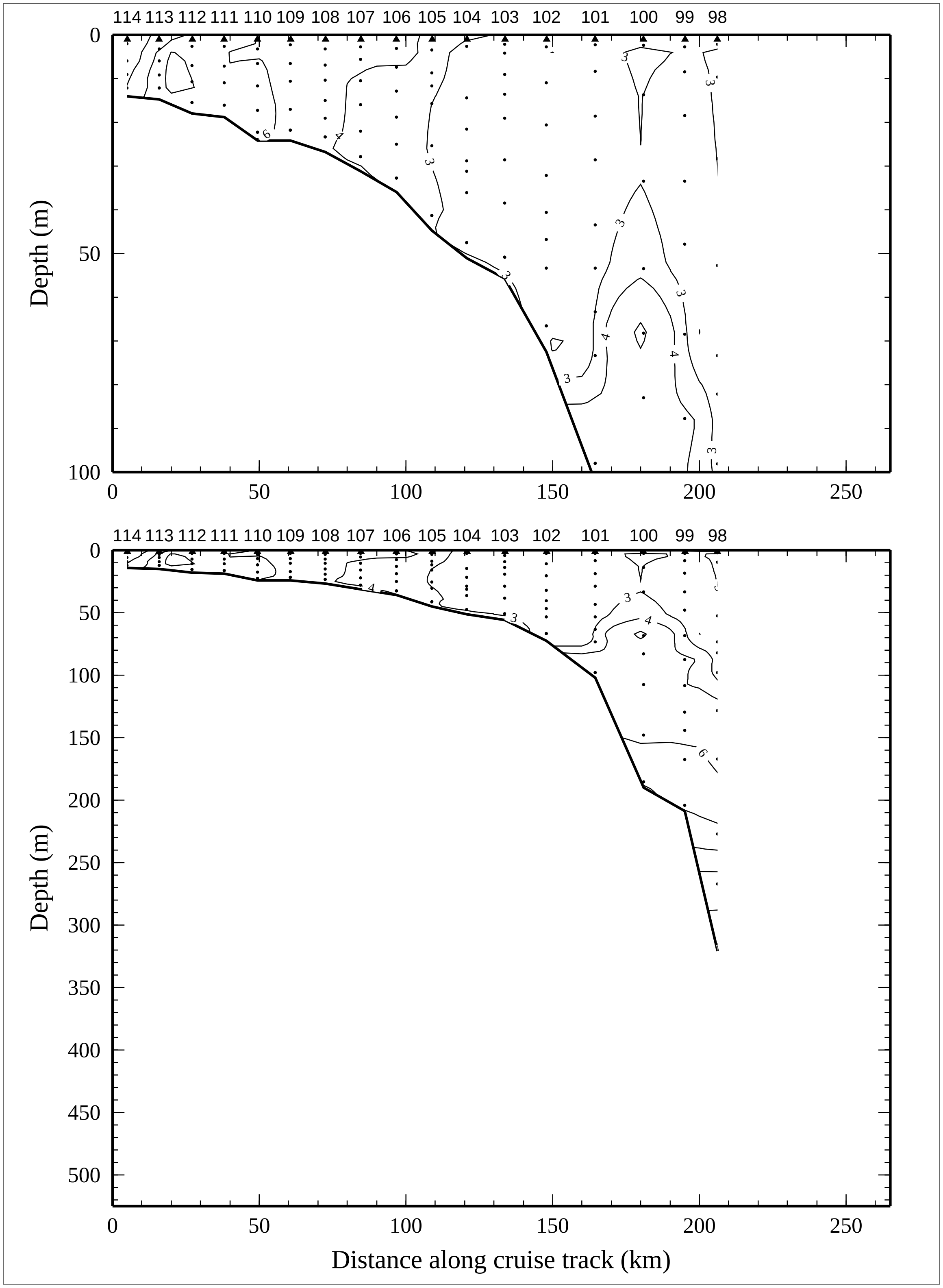

Figure 3.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H03, 4-13 November 1992.

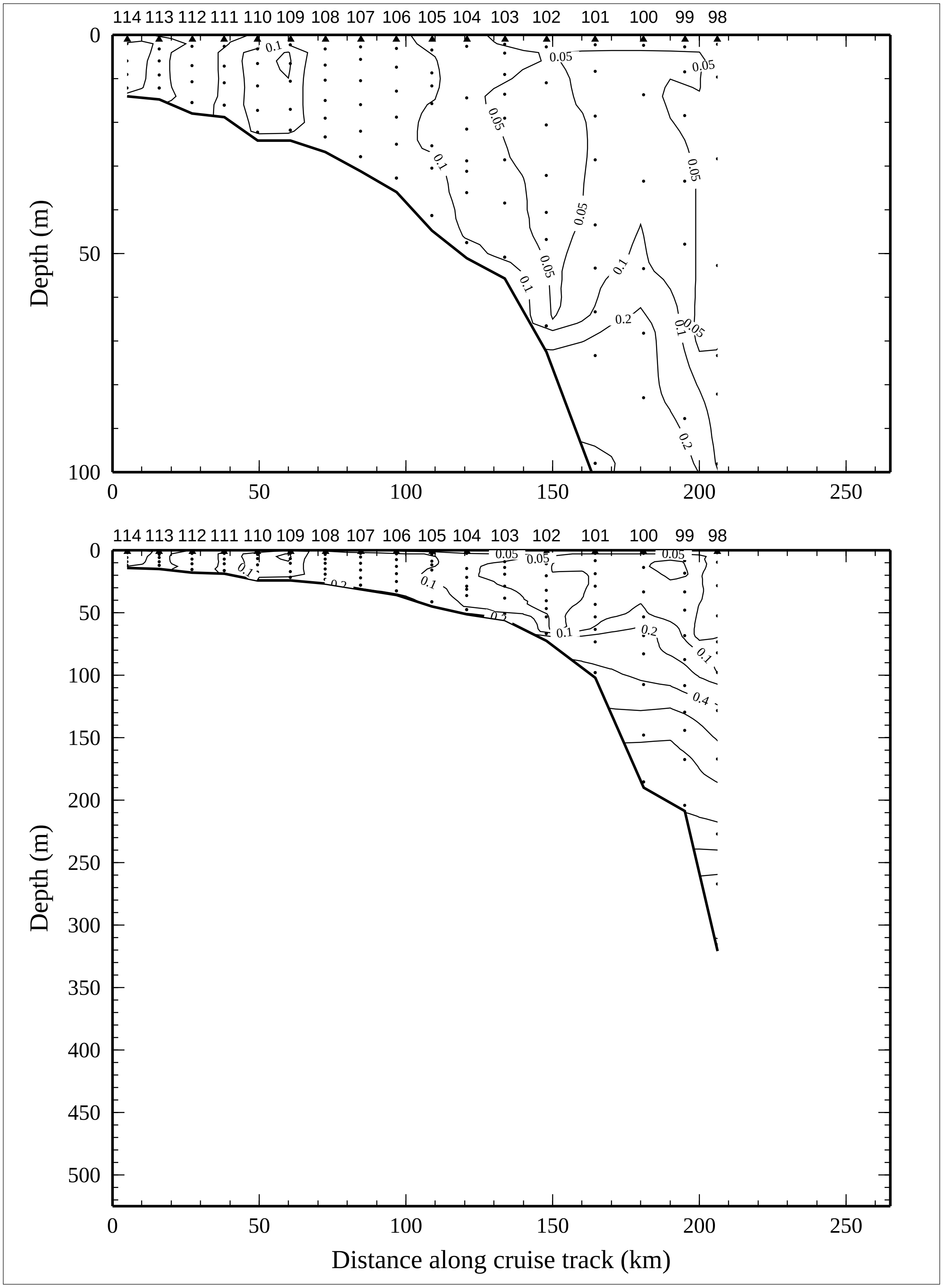

Figure 3.3.11. Phosphate (μmol·l⁻¹) on line 3 of LATEX A survey H03, 4-13 November 1992.

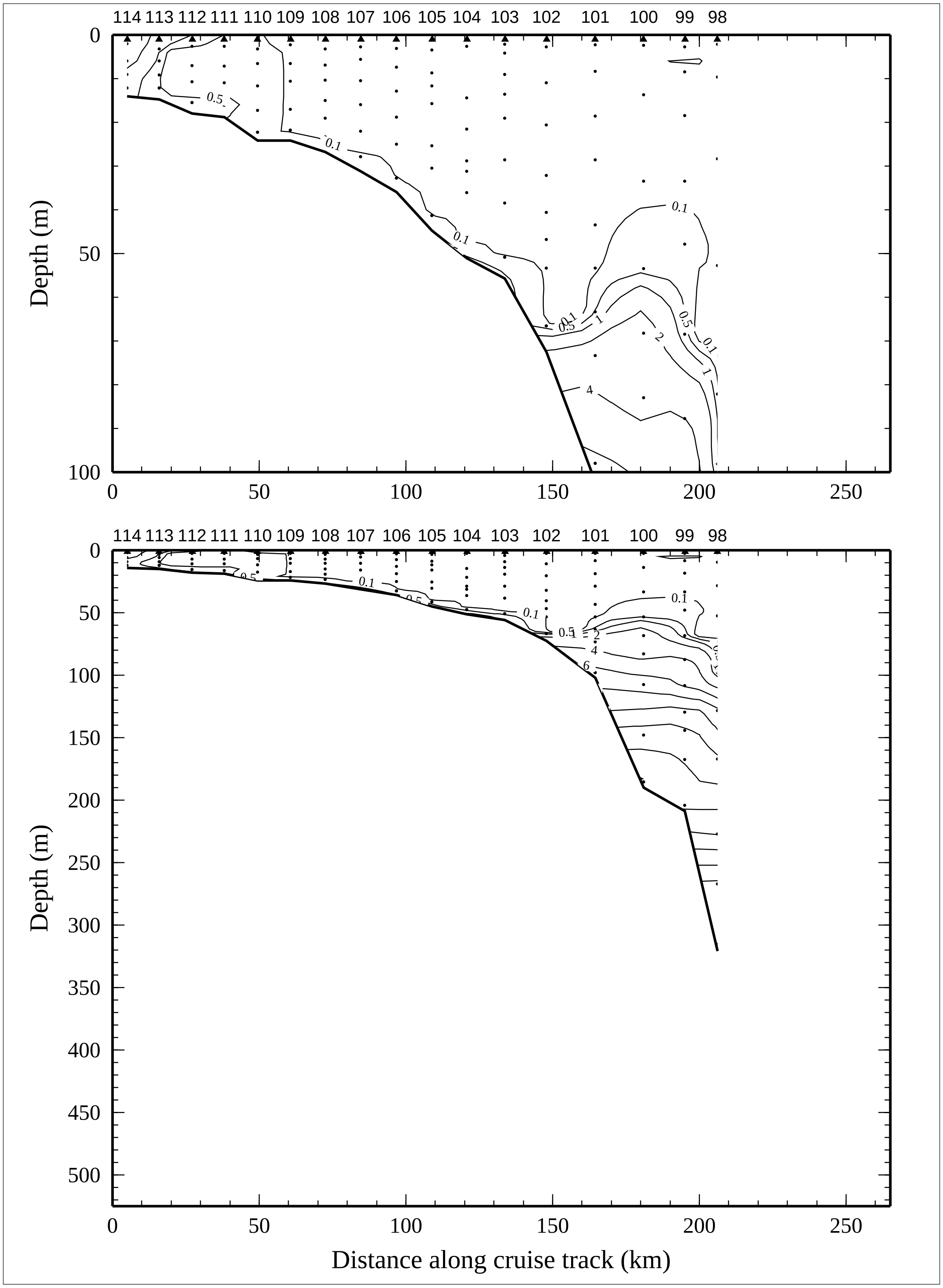

Figure 3.3.12. Nitrate (μmol·l-1) on line 3 of LATEX A survey H03, 4-13 November 1992.

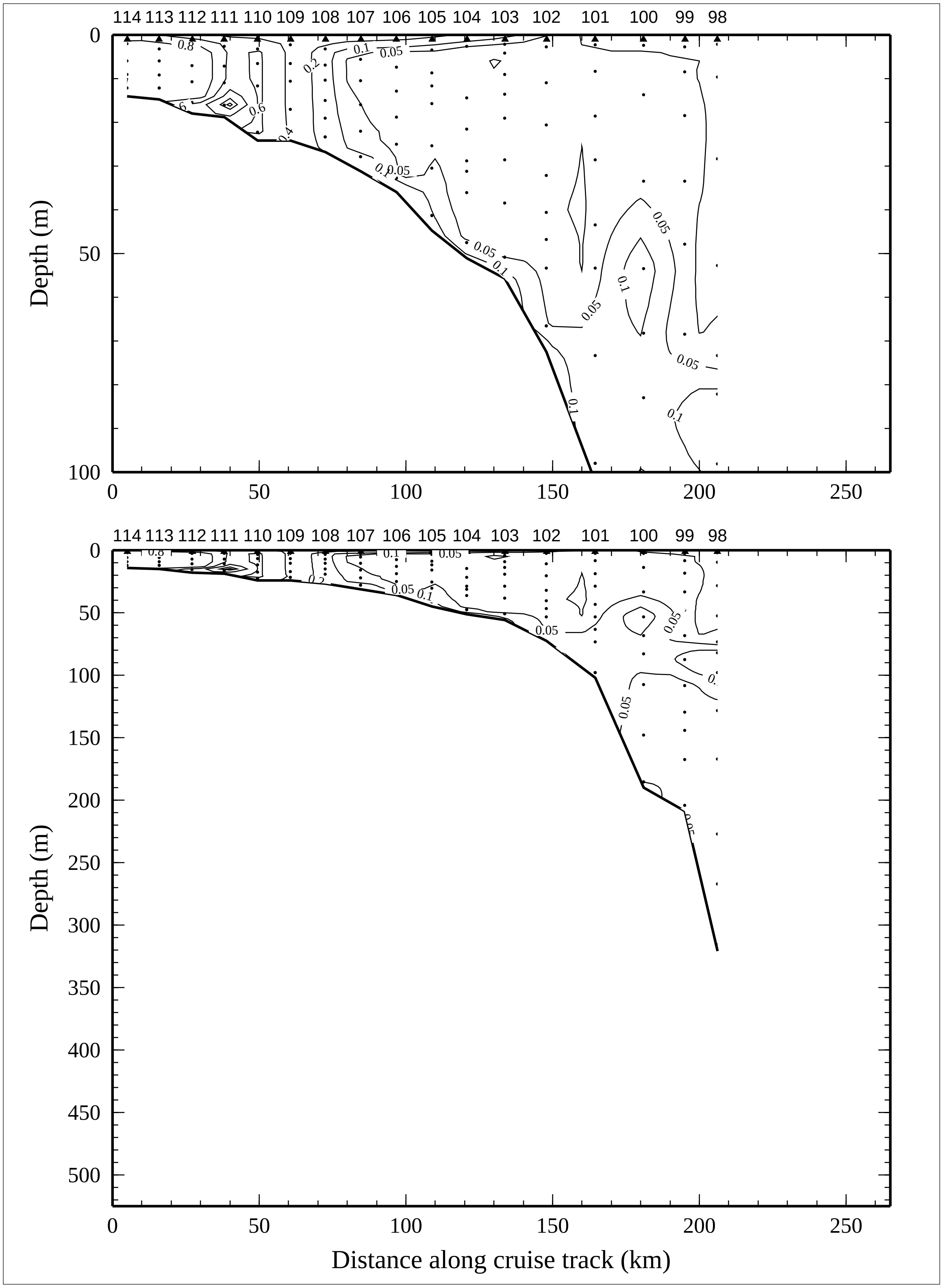

Figure 3.3.13. Nitrite (μmol·l^{-1}) on line 3 of LATEX A survey H03, 4-13 November 1992.

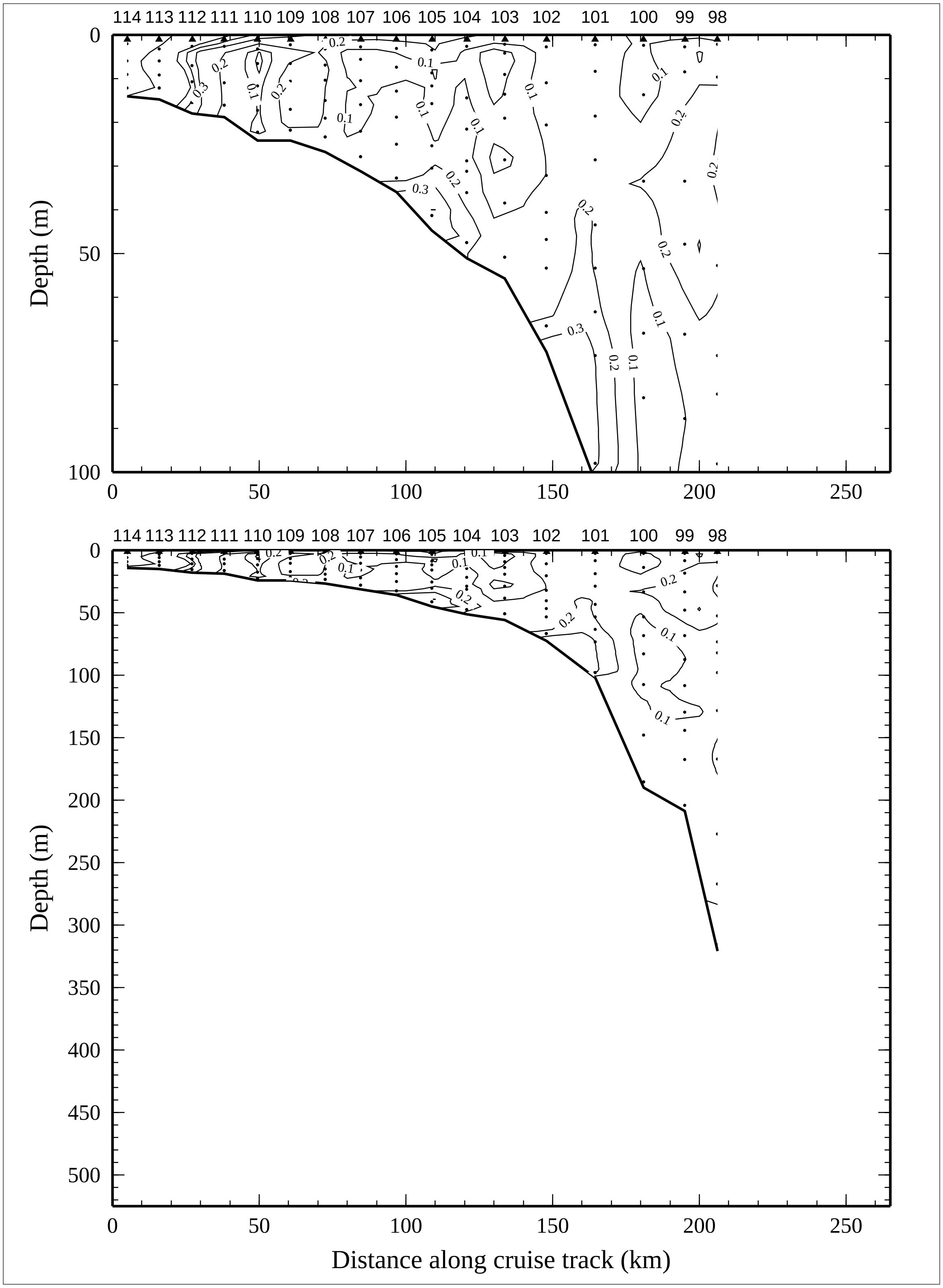

Figure 3.3.14. Ammonium (µmol·l-1) on line 3 of LATEX A survey H03,
4-13 November 1992.

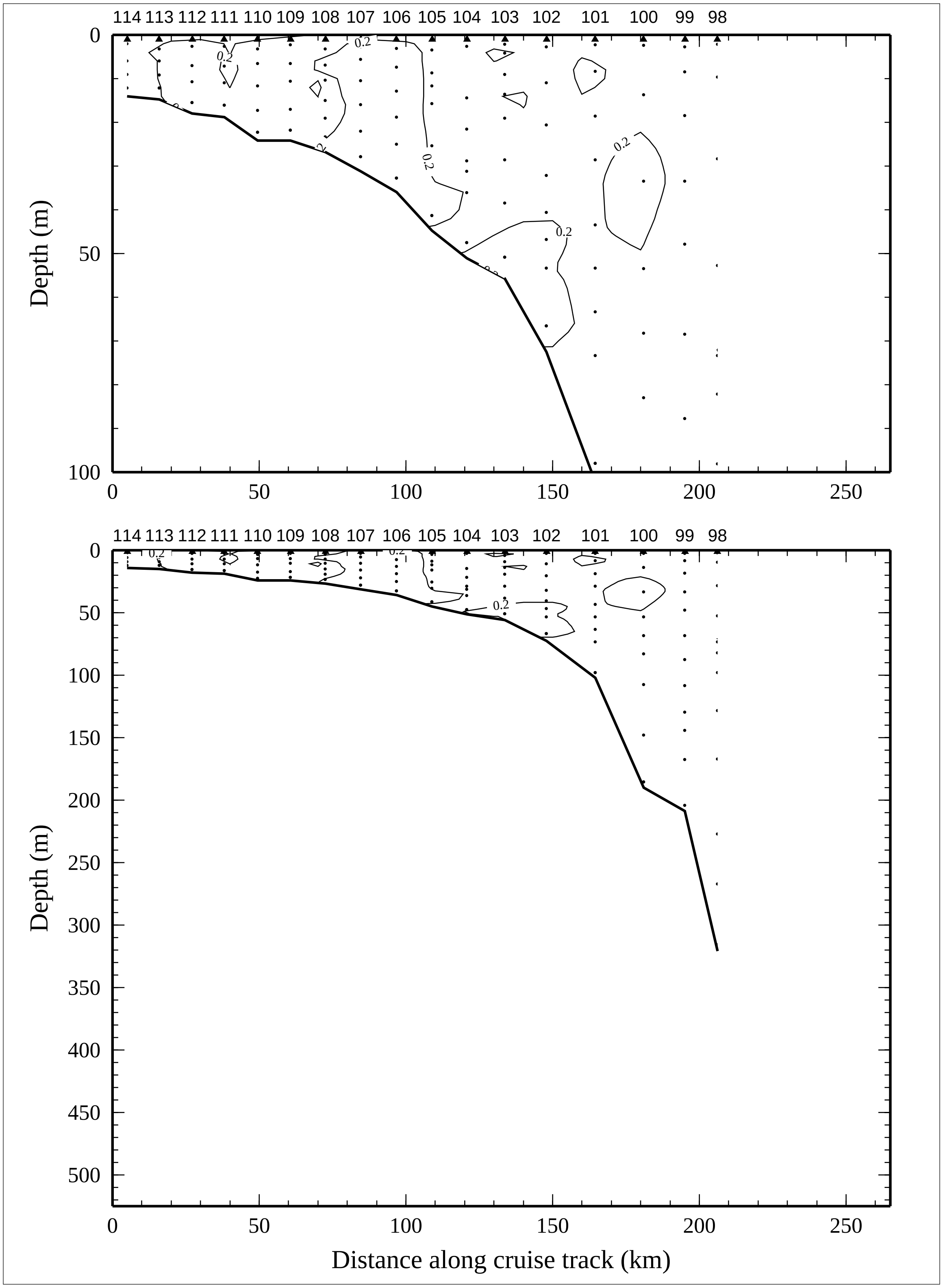

Figure 3.3.15. Urea (μmol·l^{-1}) on line 3 of LATEX A survey H03, 4-13 November 1992.

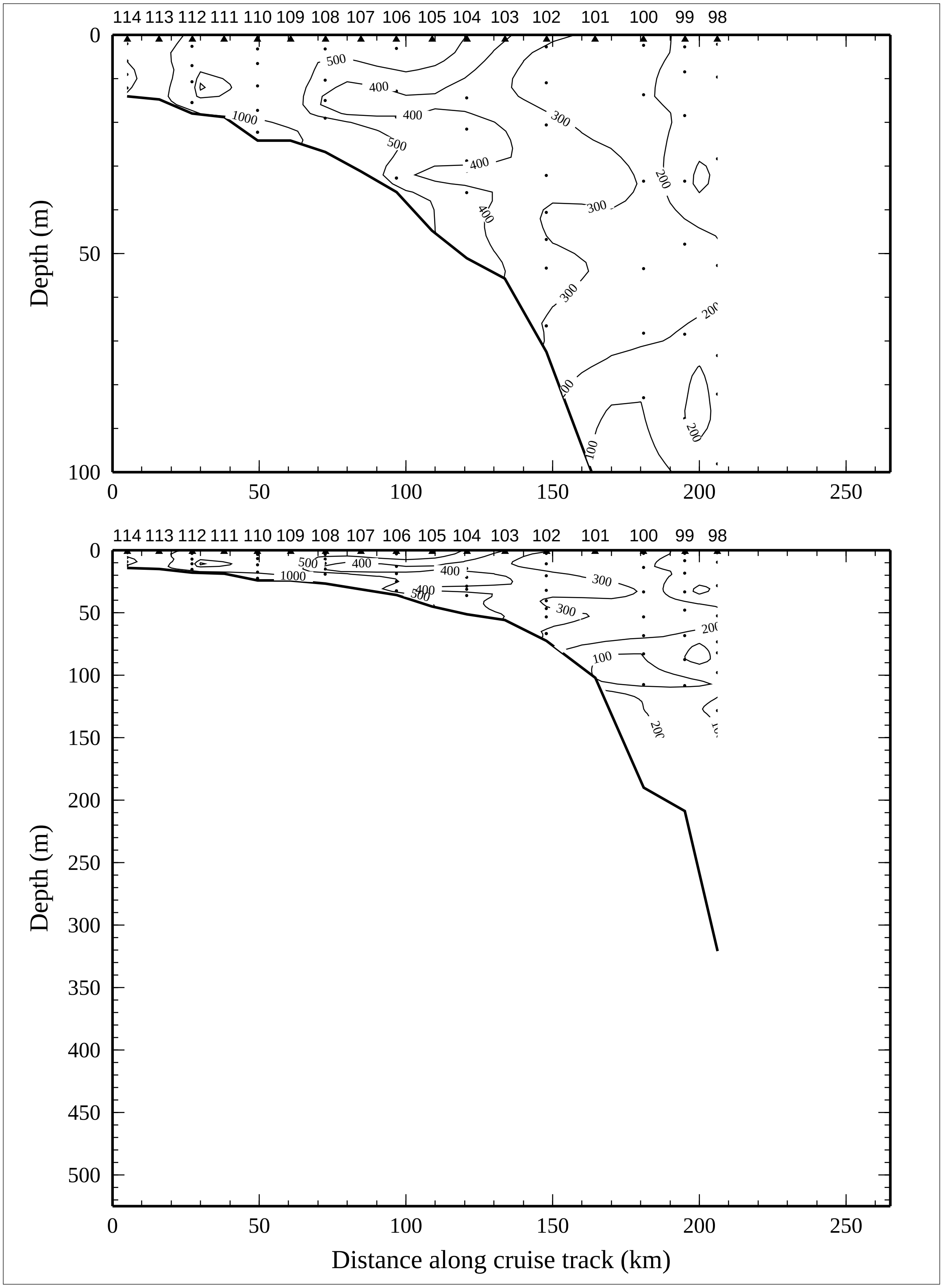

Figure 3.3.16. Chlorophyll a (ng·l^{-1}) on line 3 of LATEX A survey H03, 4-13 November 1992.

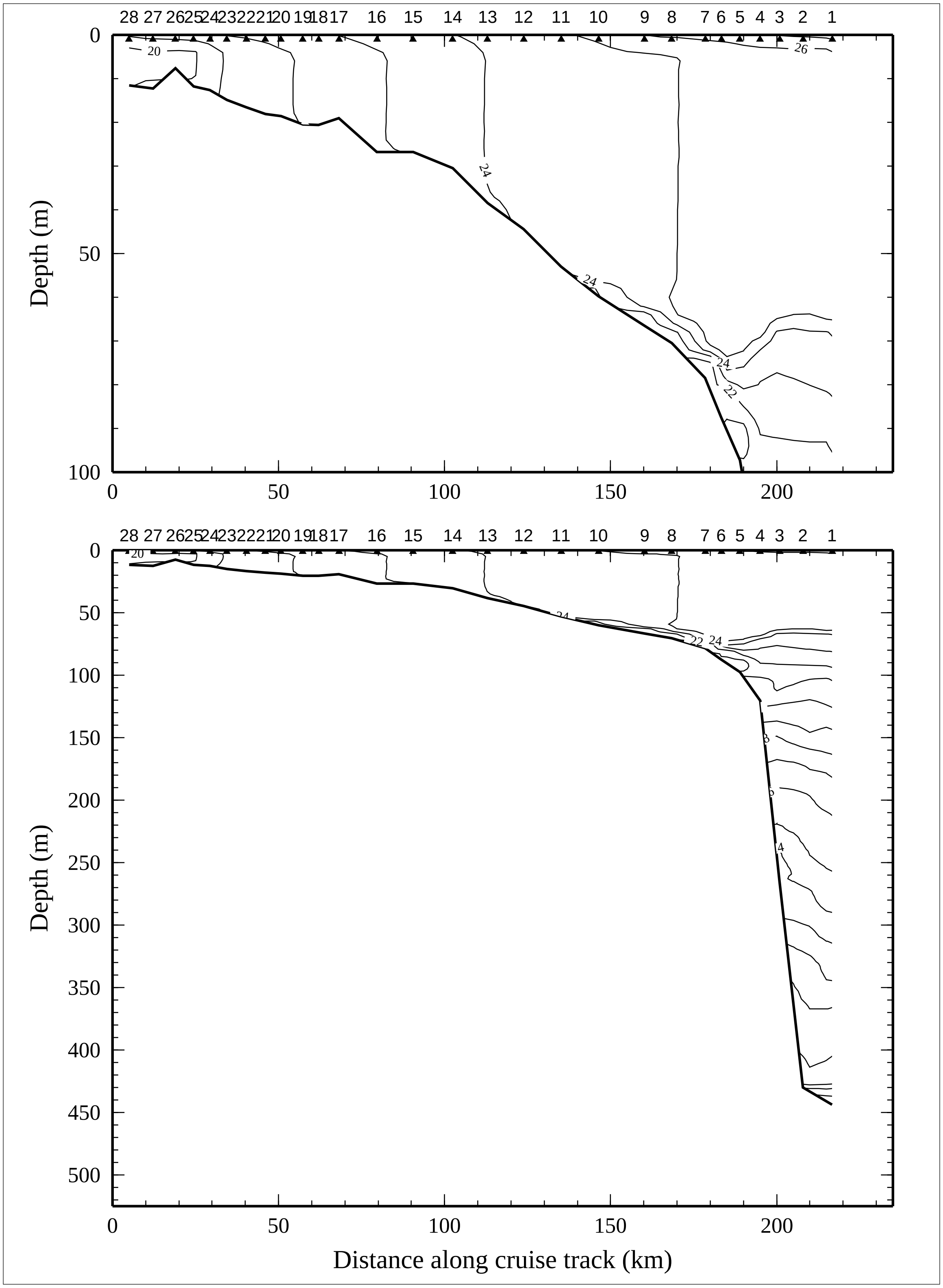

Figure 3.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H03, 4-13 November 1992.

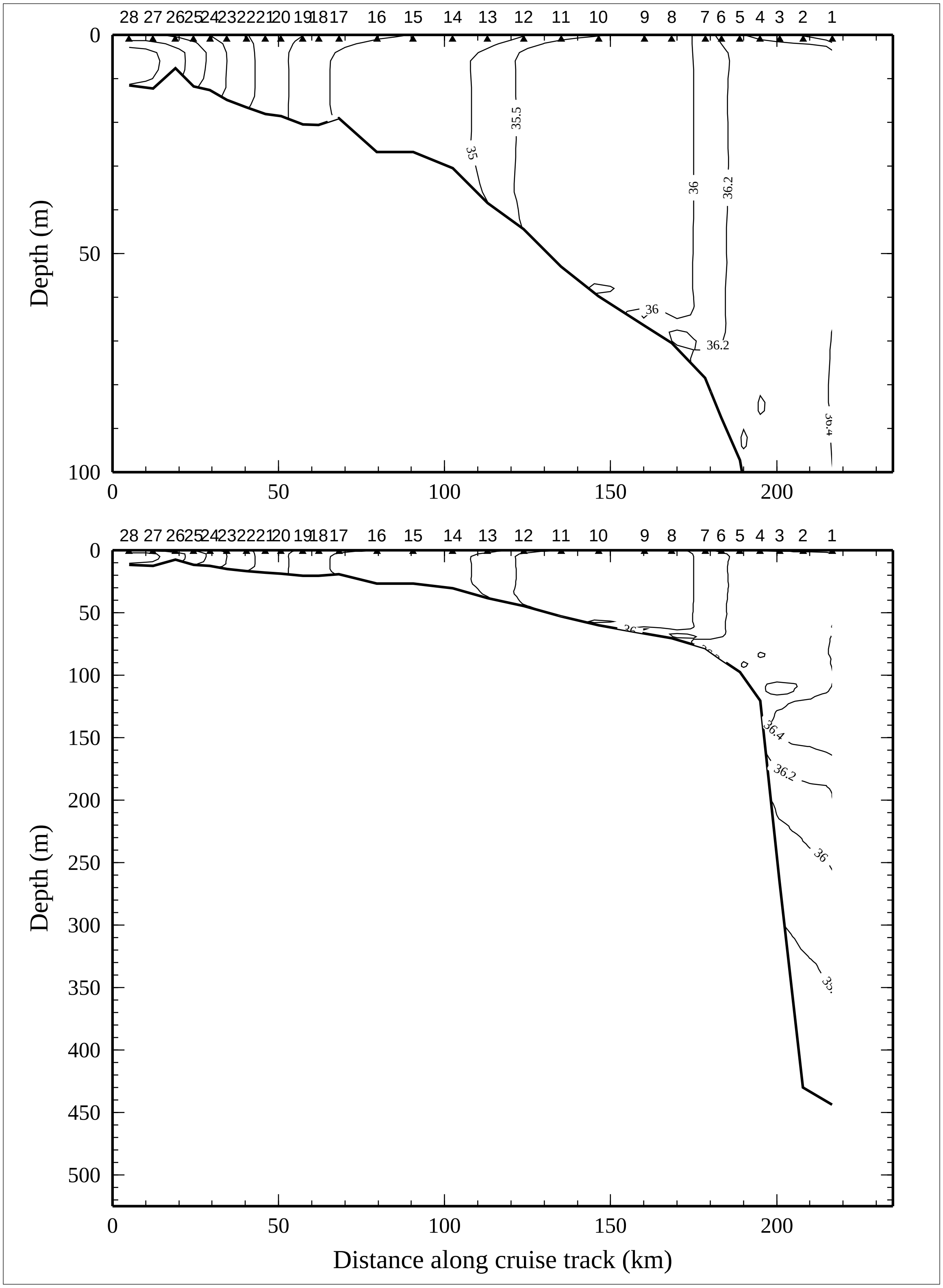

Figure 3.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H03, 4-13 November 1992.

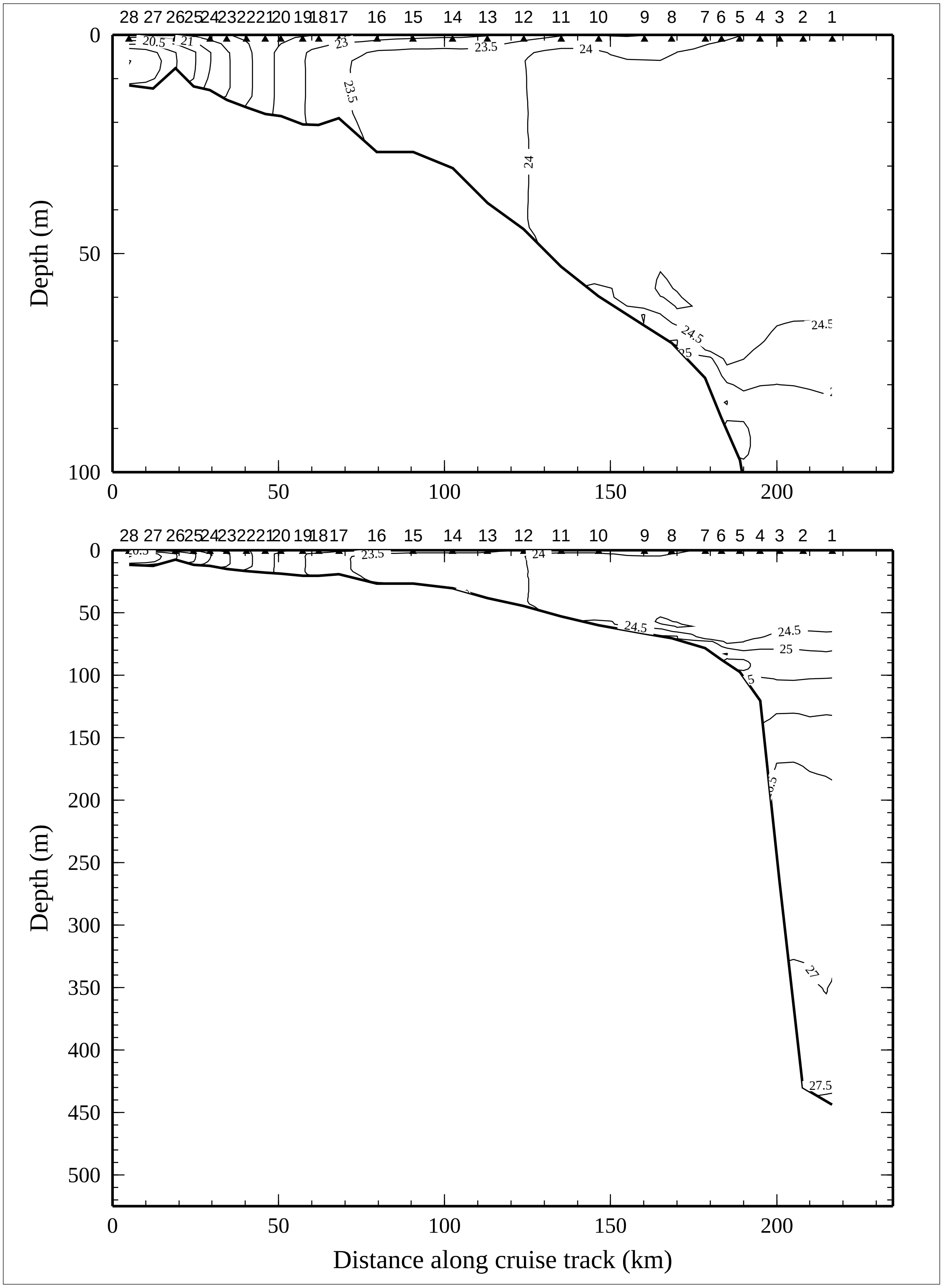

Figure 3.4.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 4 of LATEX A survey H03, 4-13 November 1992.

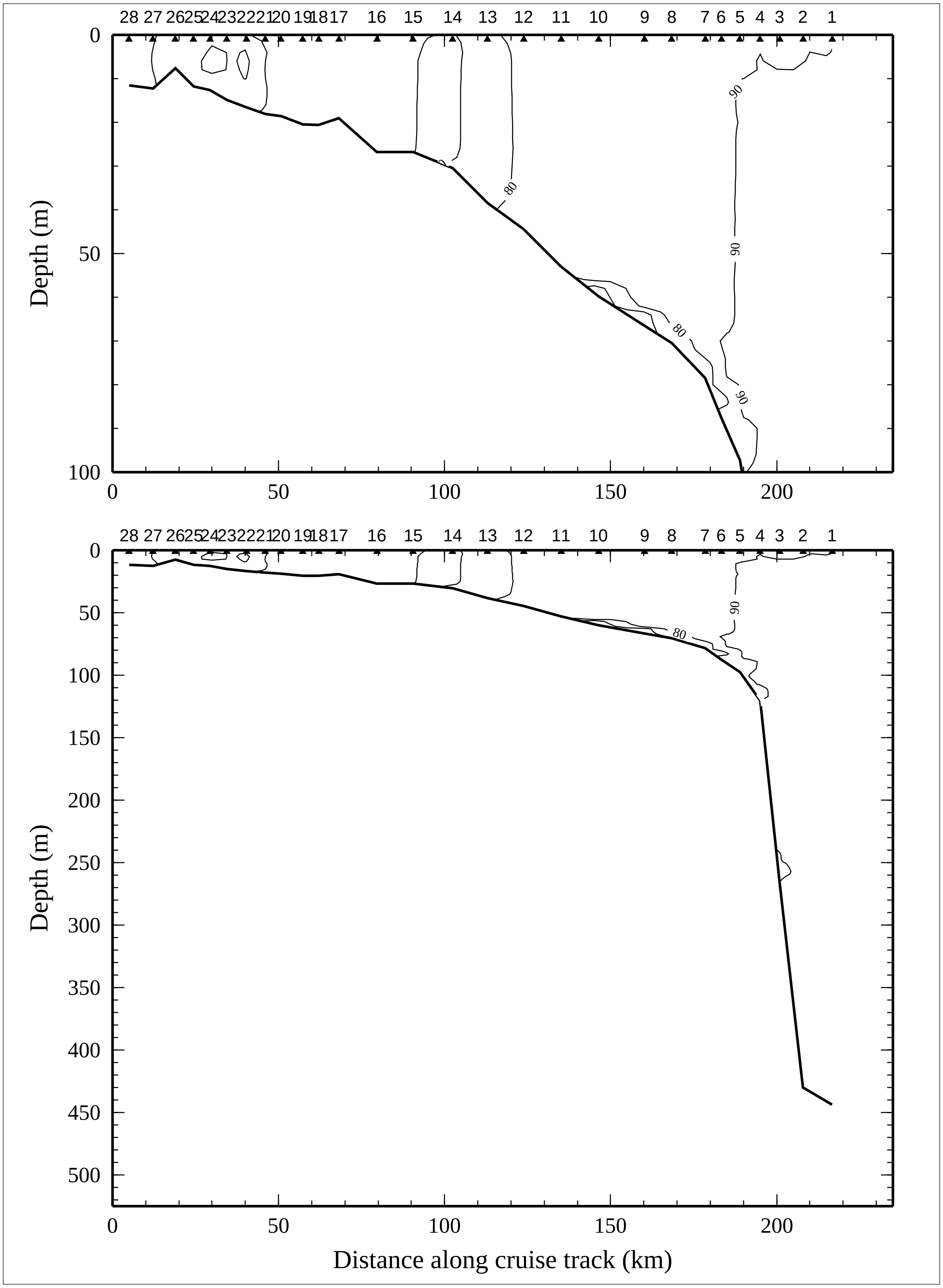

Figure 3.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H03, 4-13 November 1992.

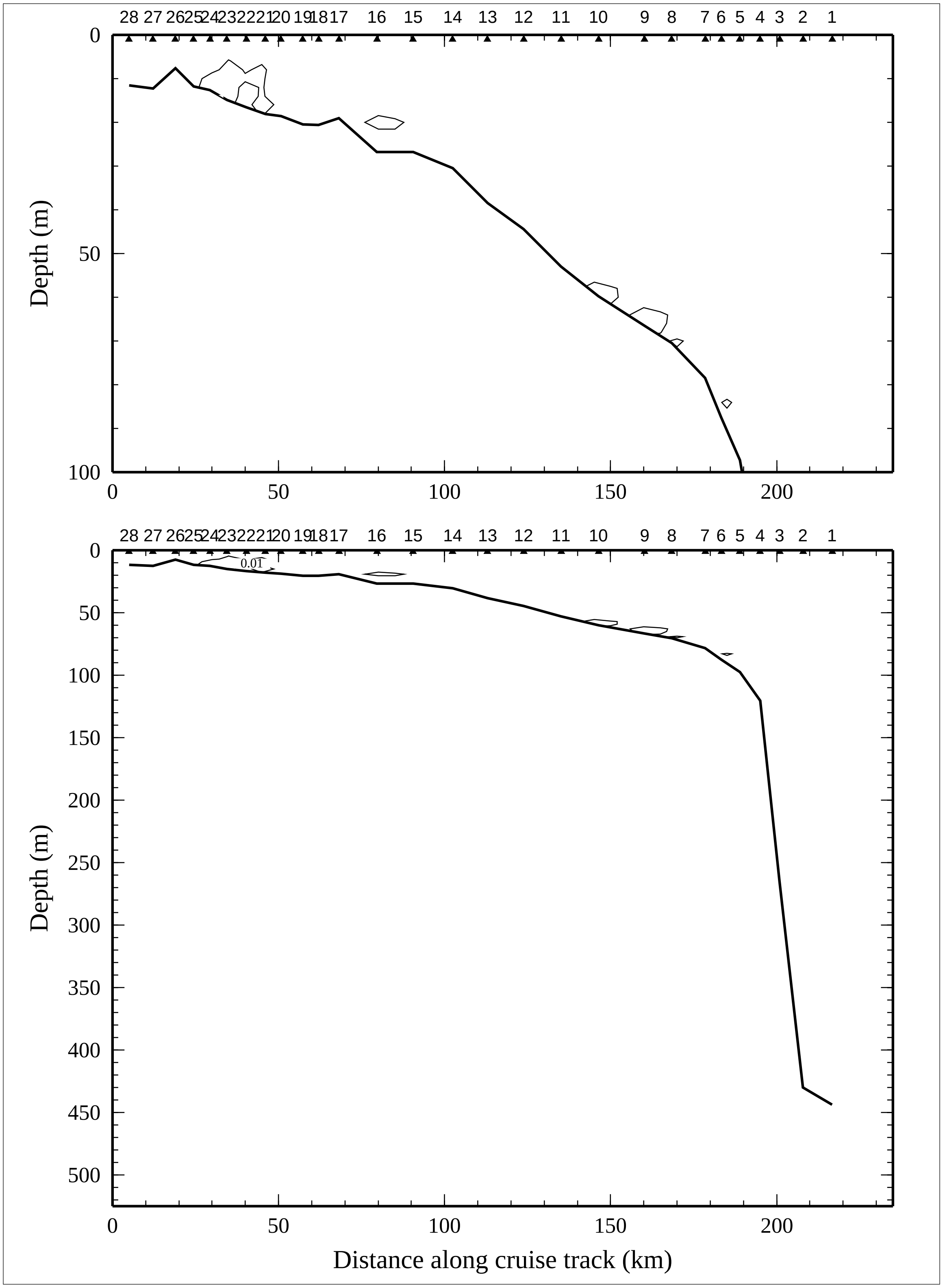

Figure 3.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H03, 4-13 November 1992.

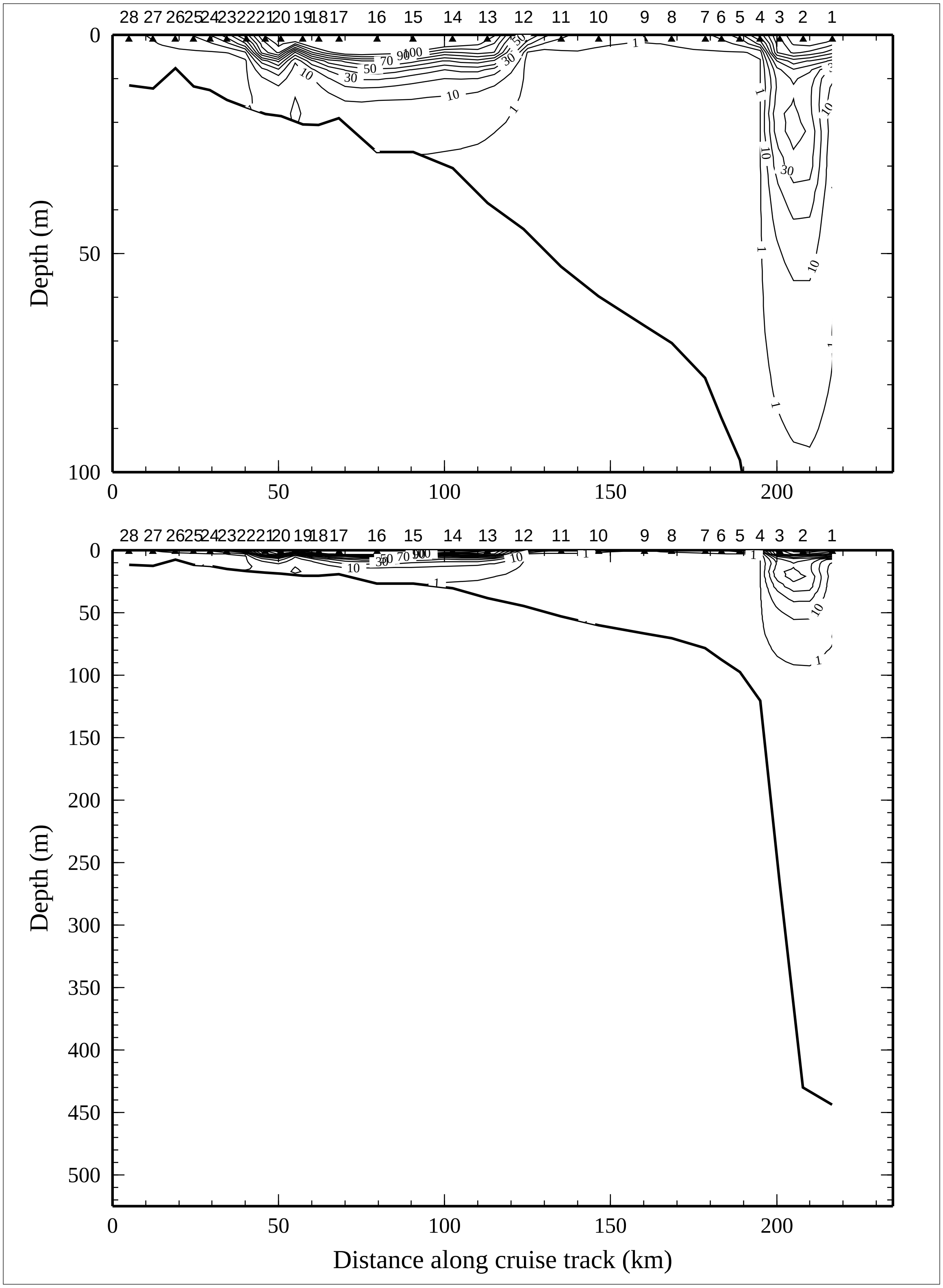

Figure 3.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H03, 4-13 November 1992.

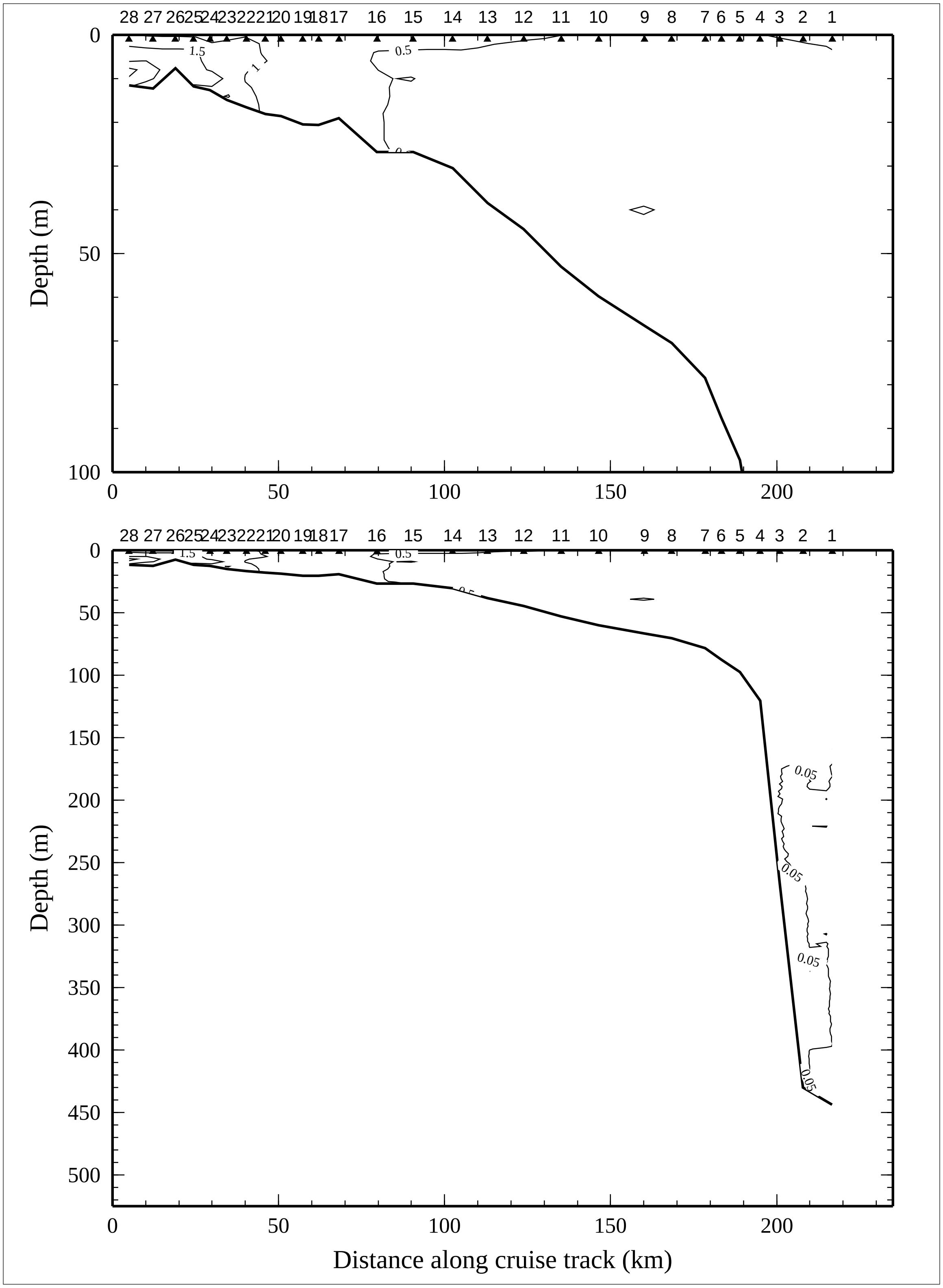

Figure 3.4.7. Relative fluorescence on line 4 of LATEX A survey H03,
4-13 November 1992.

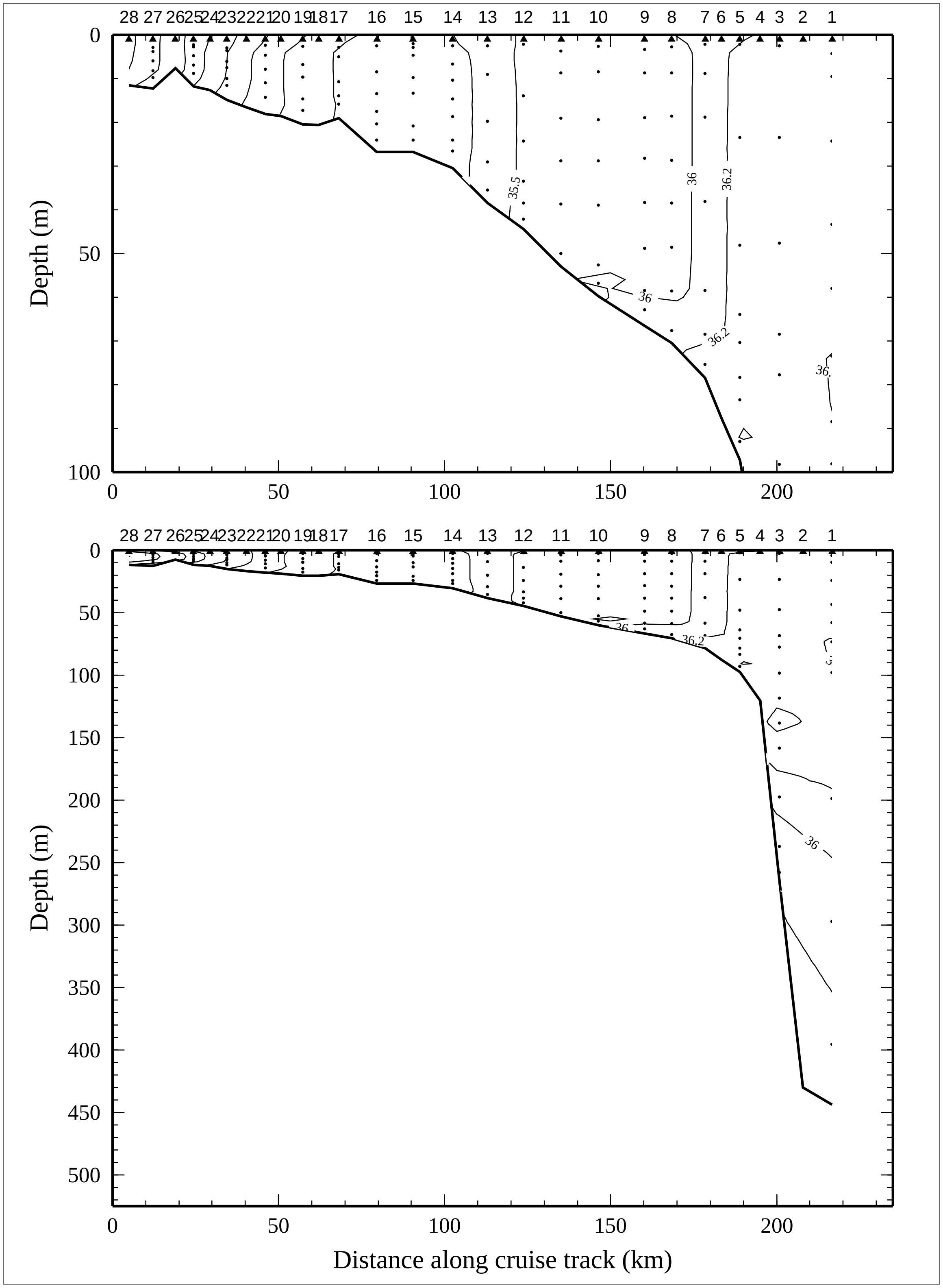

Figure 3.4.8. Bottle salinity on line 4 of LATEX A survey H03,
4-13 November 1992.

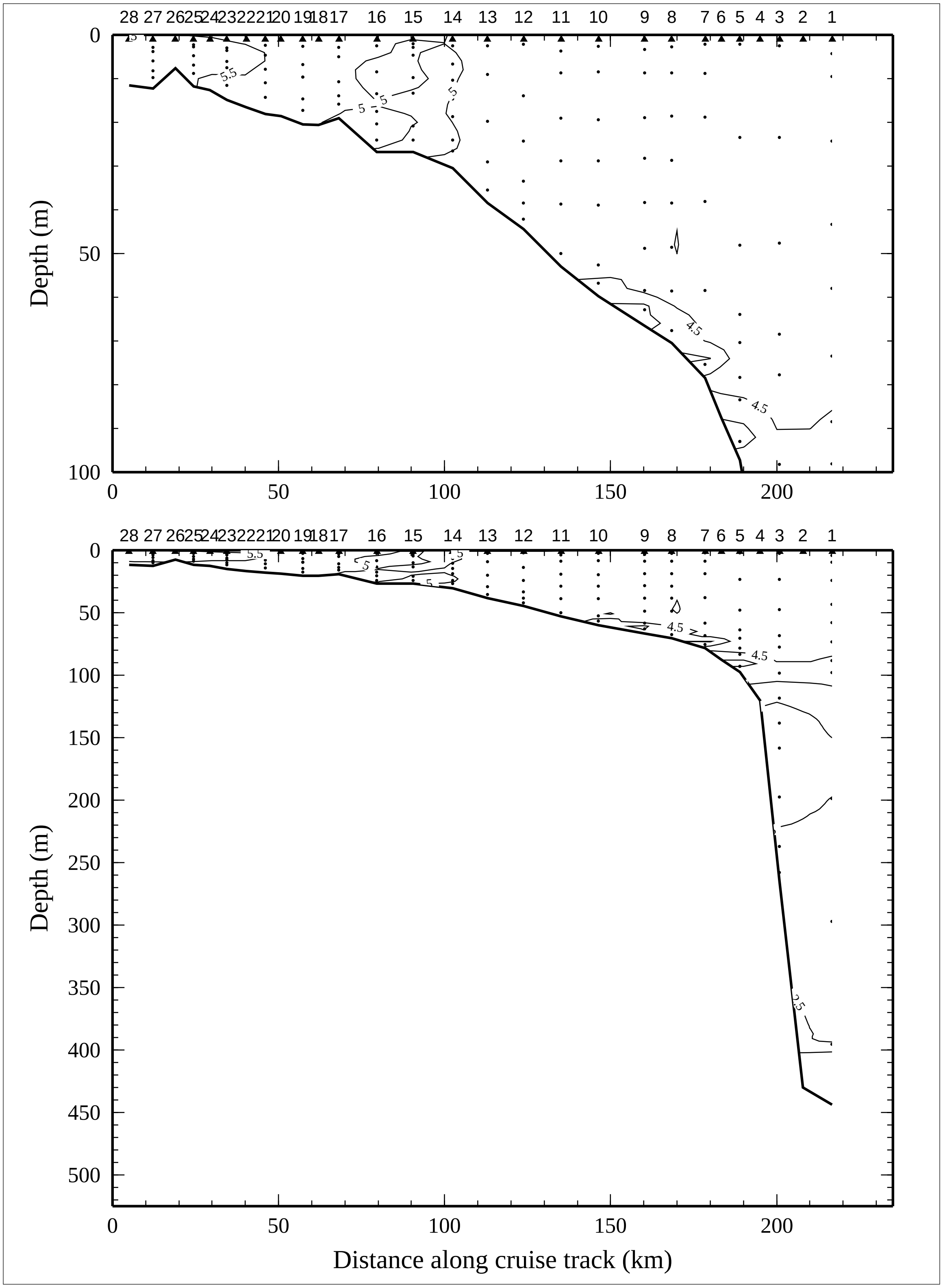

Figure 3.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H03, 4-13 November 1992.

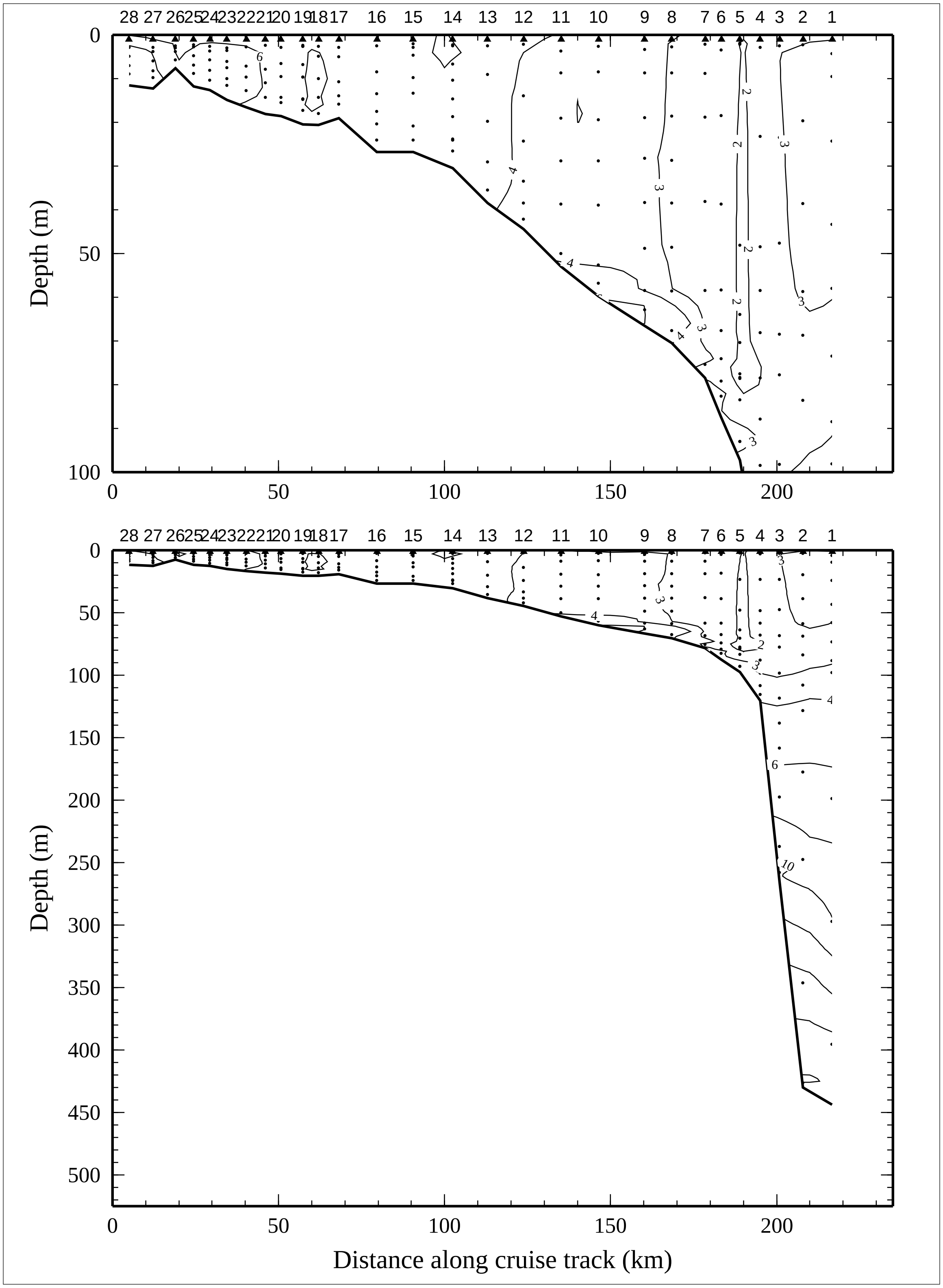

Figure 3.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H03, 4-13 November 1992.

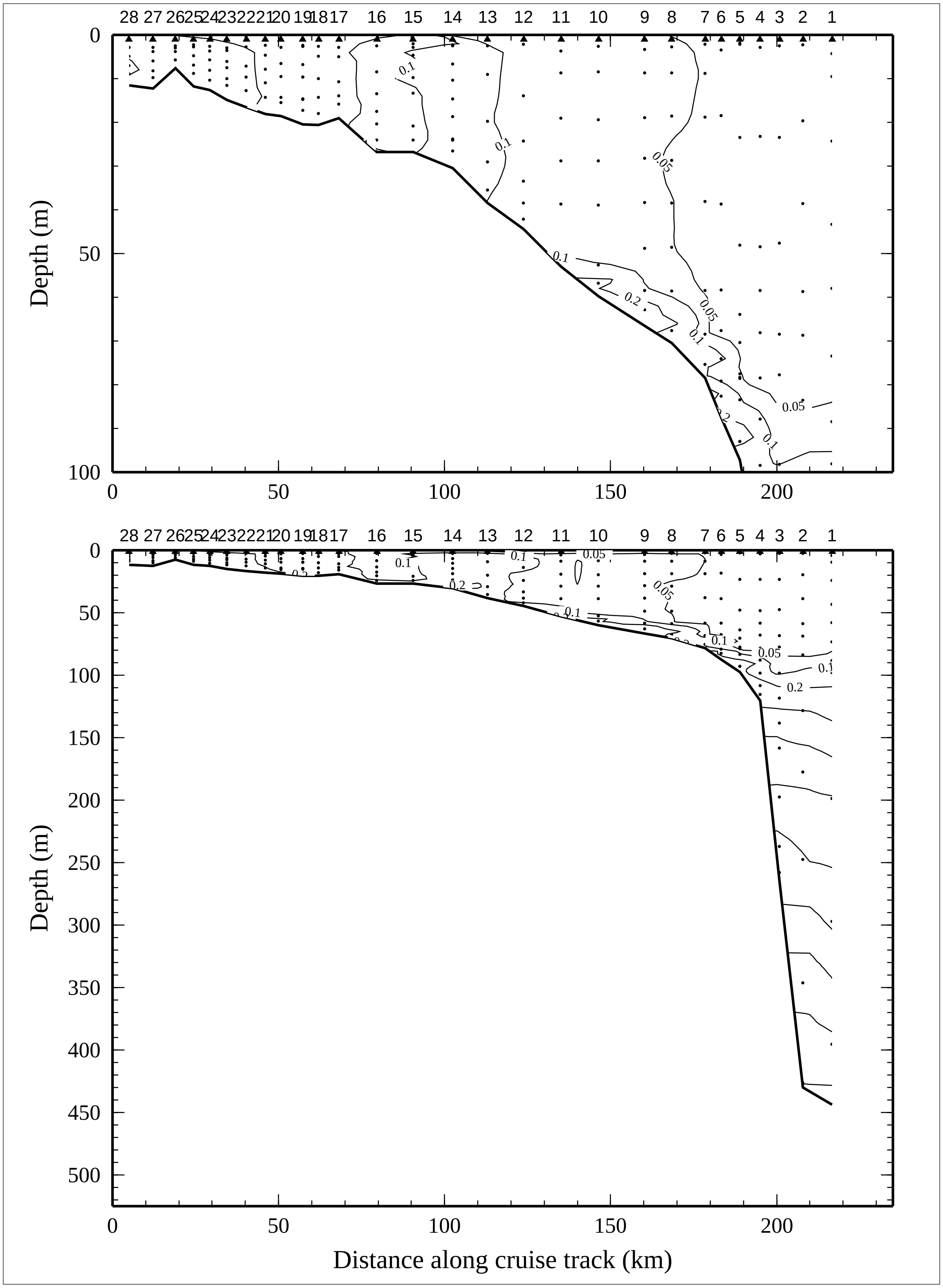

Figure 3.4.11. Phosphate (μmol·l^{-1}) on line 4 of LATEX A survey H03, 4-13 November 1992.

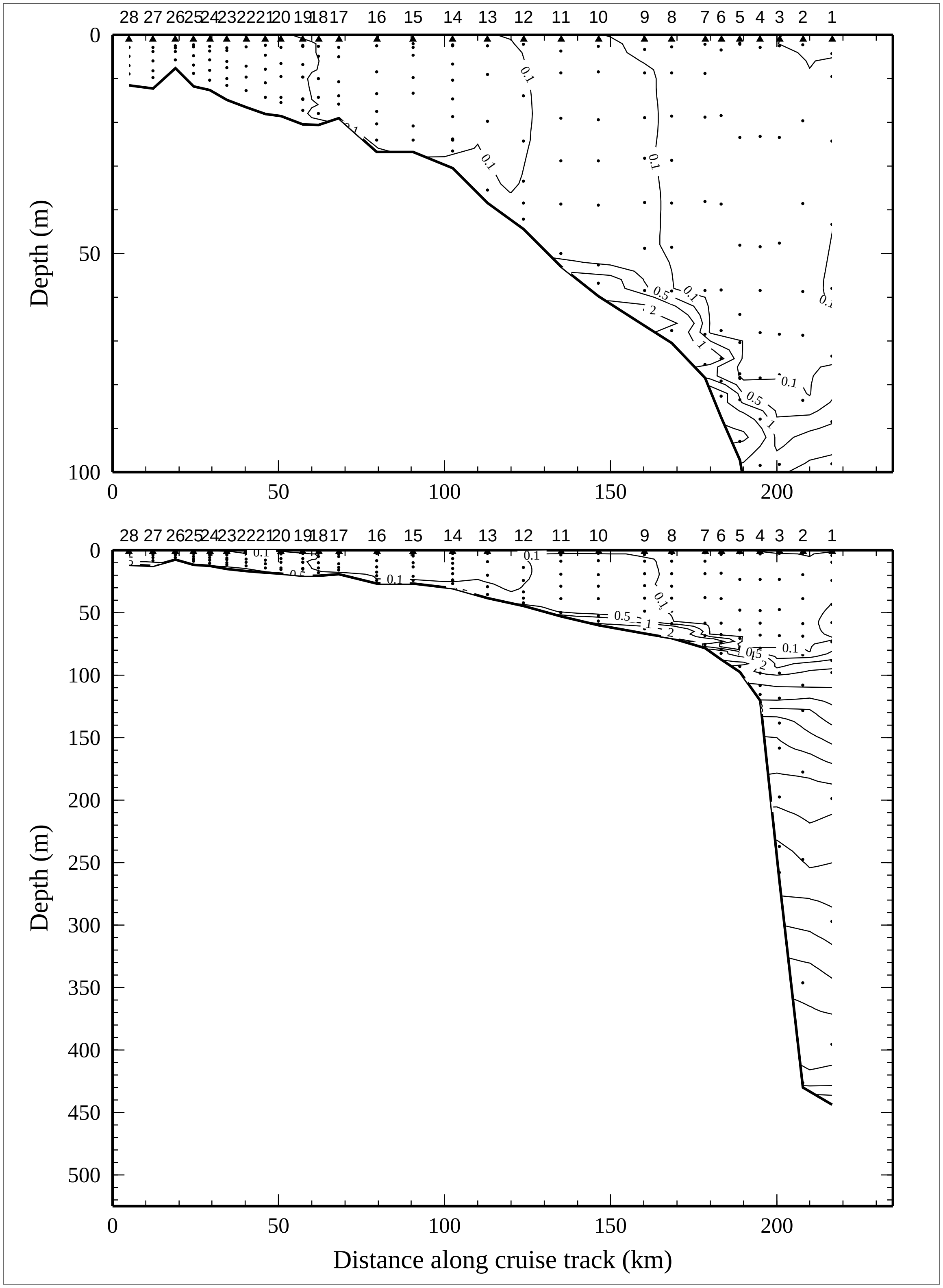

Figure 3.4.12. Nitrate ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H03, 4-13 November 1992.

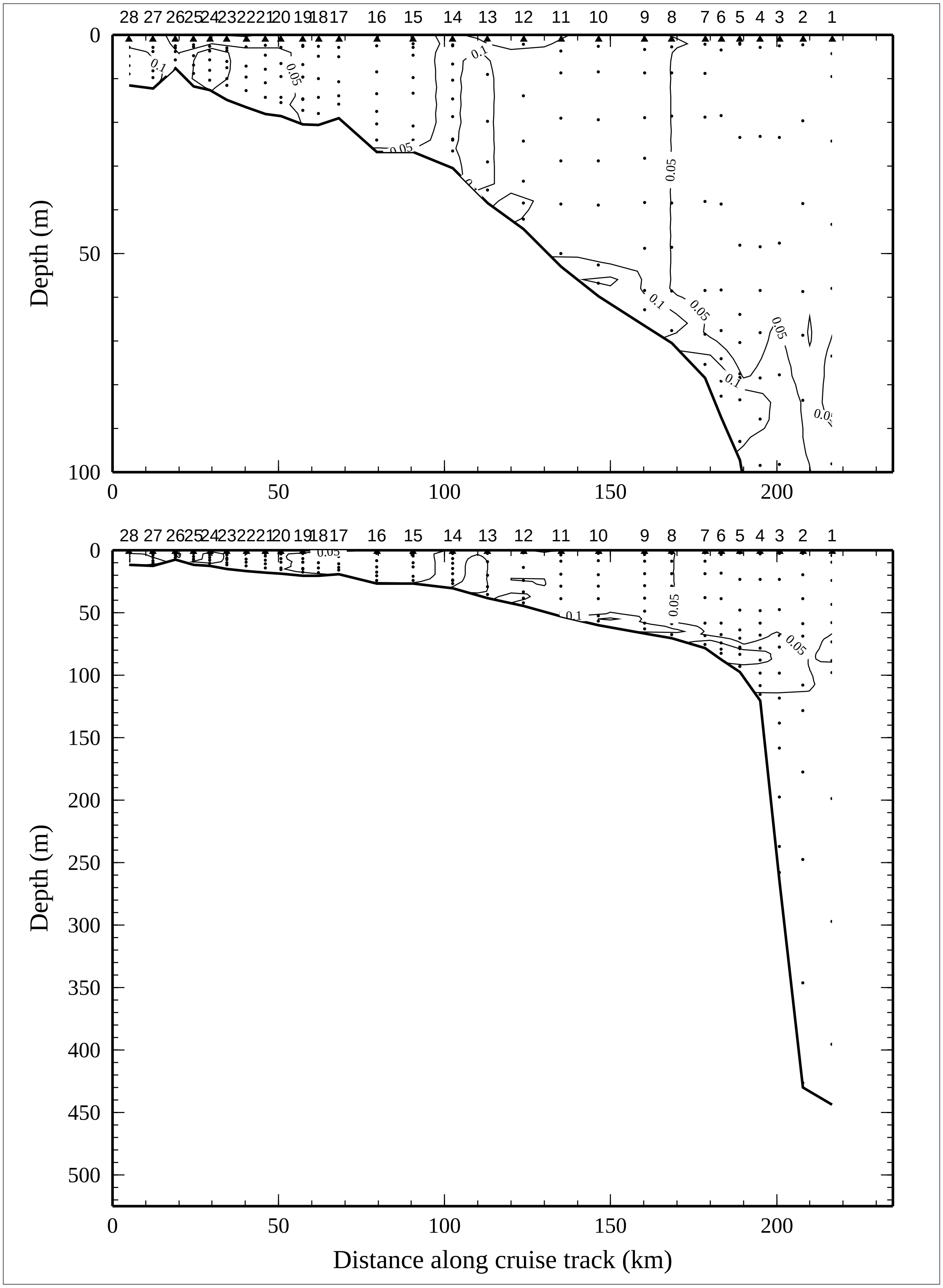

Figure 3.4.13. Nitrite (μmol·l-1) on line 4 of LATEX A survey H03,
4-13 November 1992.

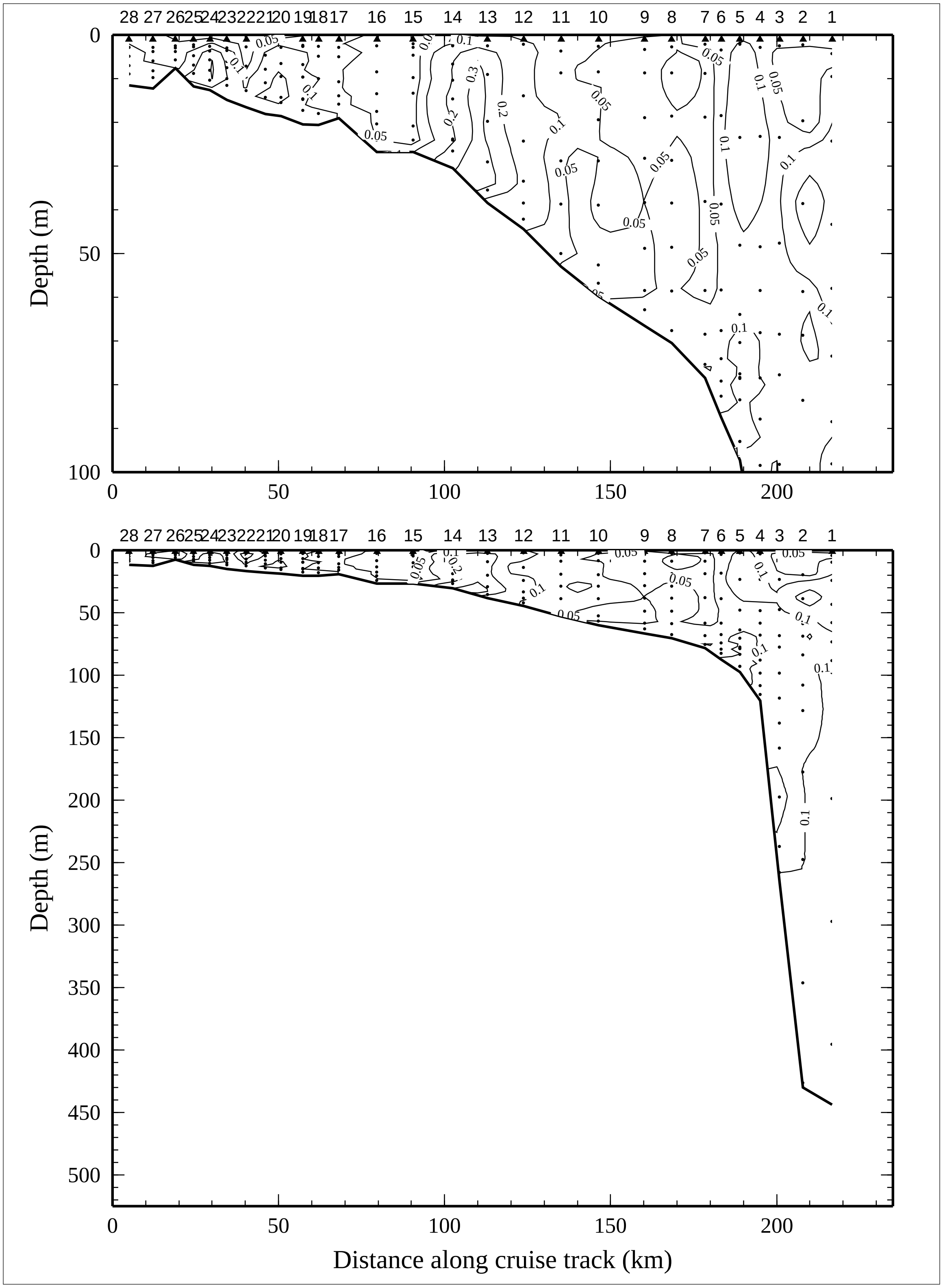

Figure 3.4.14. Ammonium (µmol·l^{-1}) on line 4 of LATEX A survey H03, 4-13 November 1992.

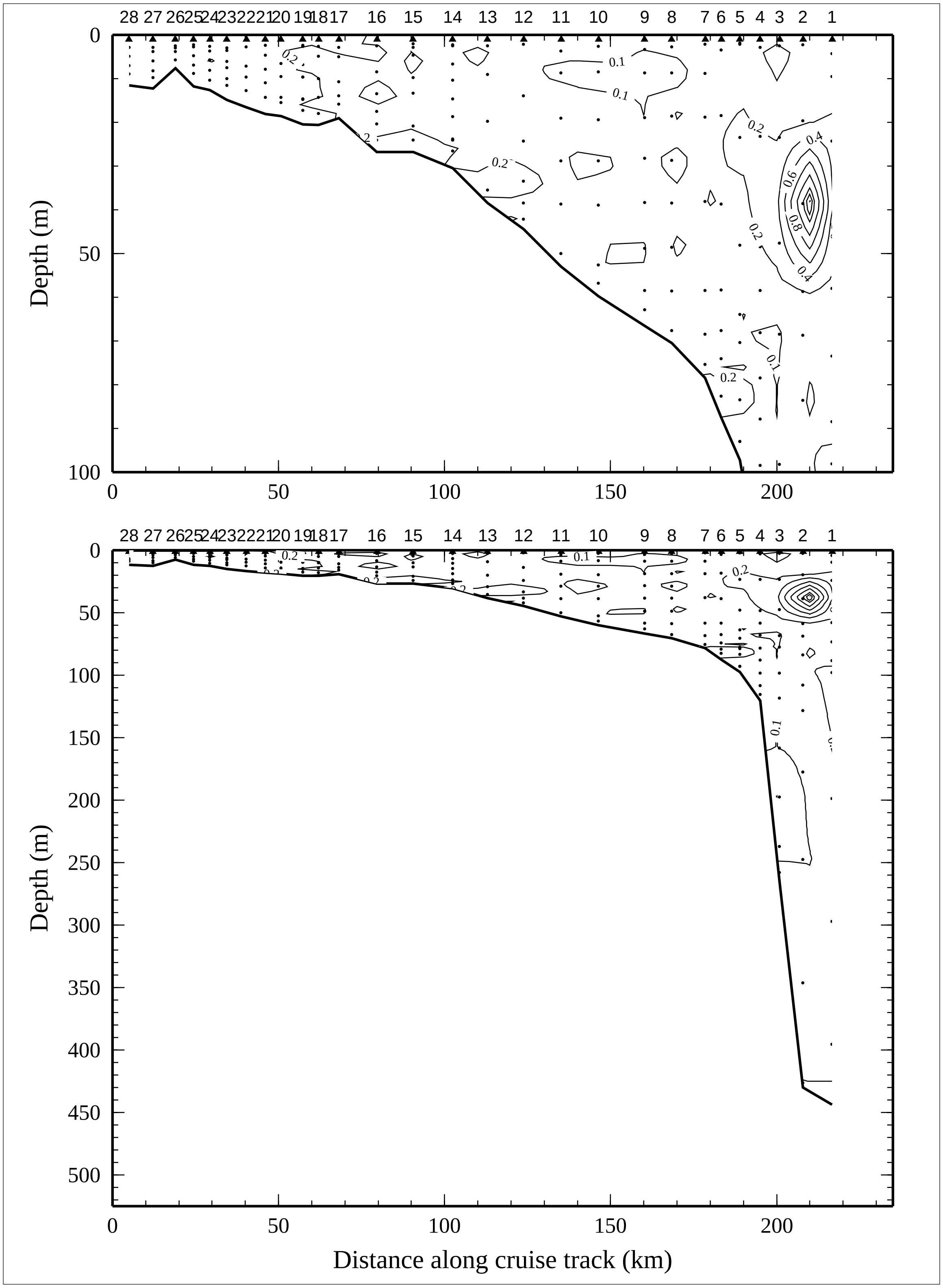

Figure 3.4.15. Urea (μmol·l^{-1}) on line 4 of LATEX A survey H03, 4-13 November 1992.

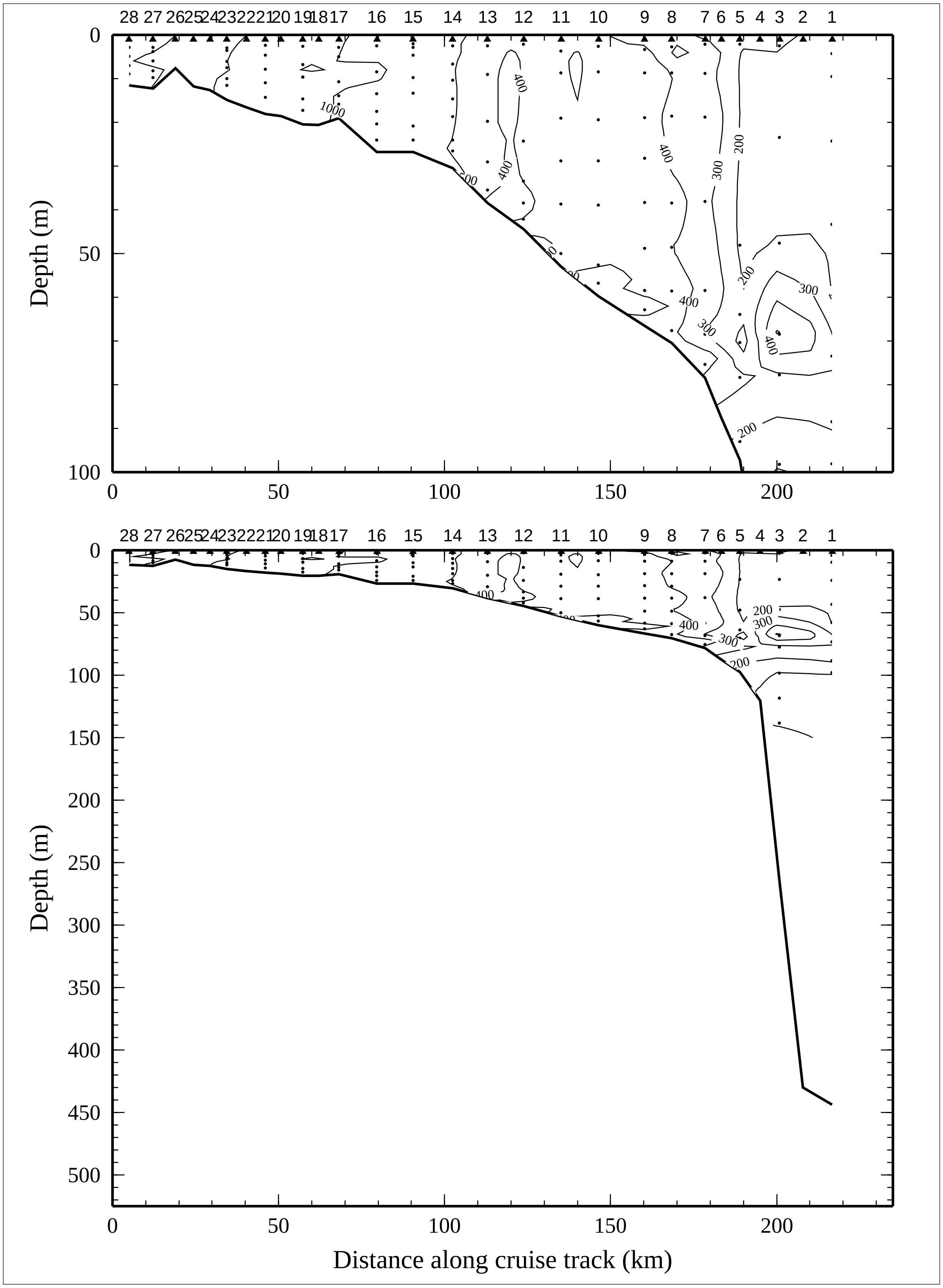

Figure 3.4.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 4 of LATEX A survey H03, 4-13 November 1992.

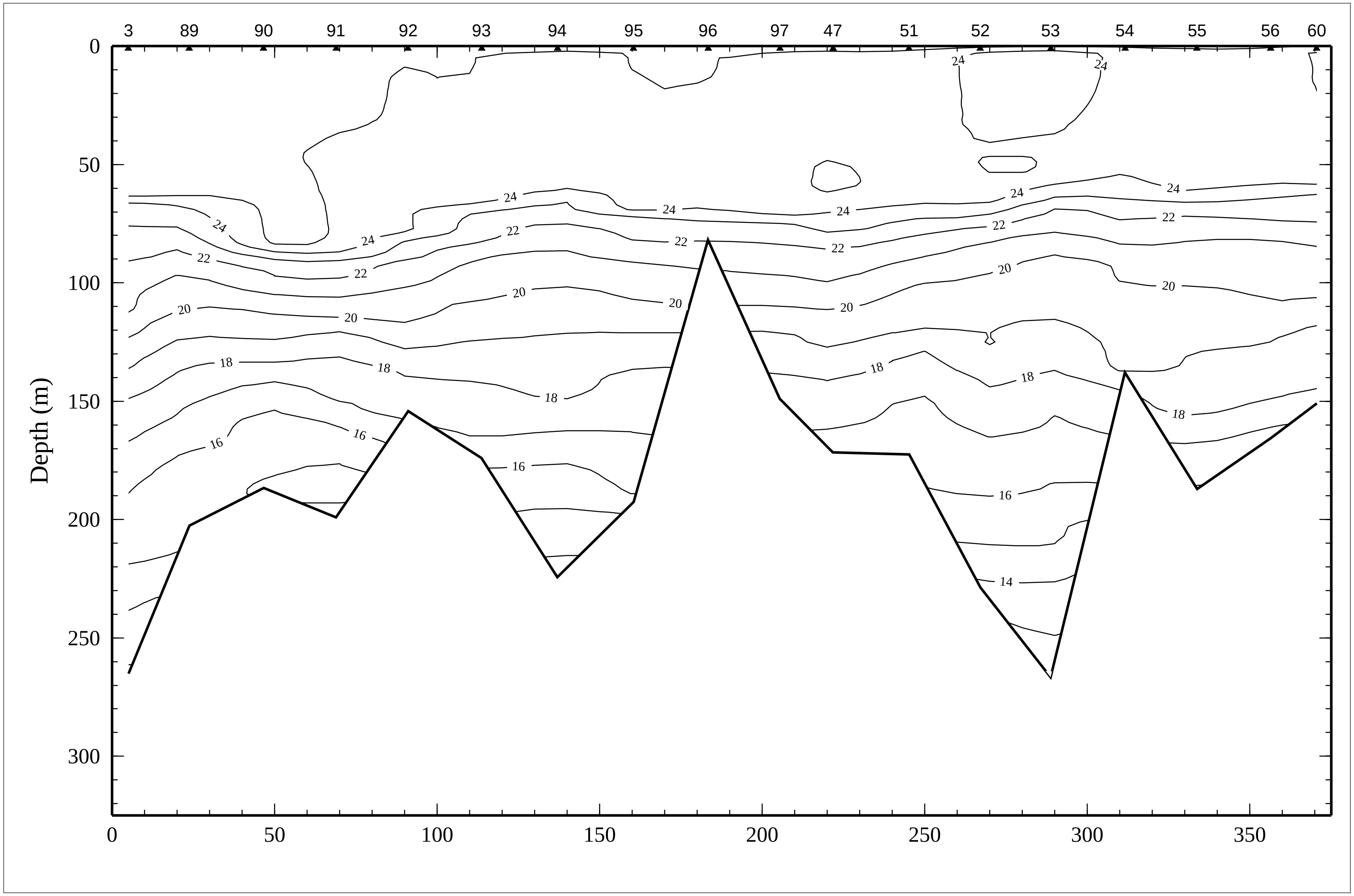

Figure 3.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H03, 4-13 November 1992.

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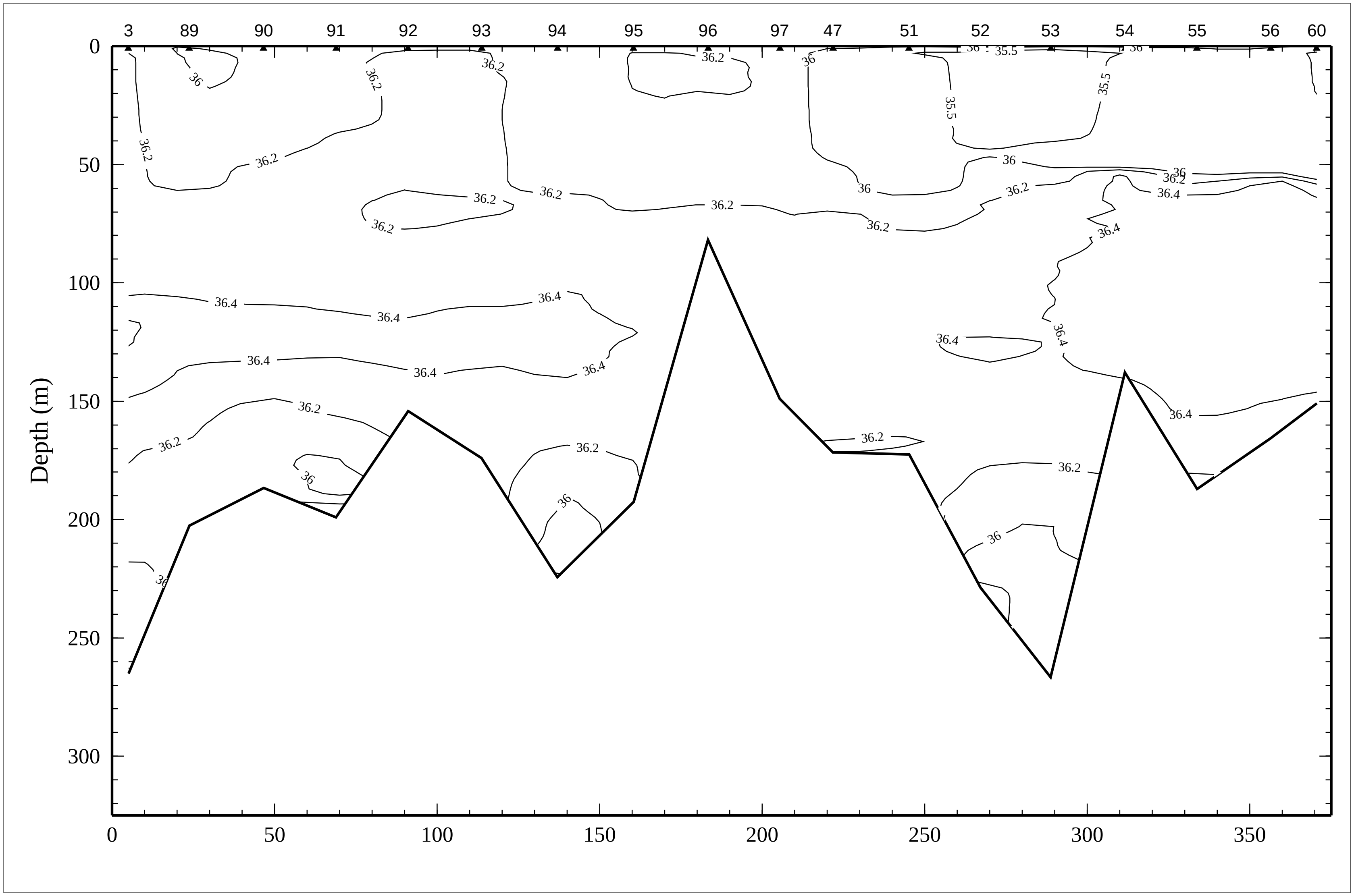

Figure 3.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H03, 4-13 November 1992.

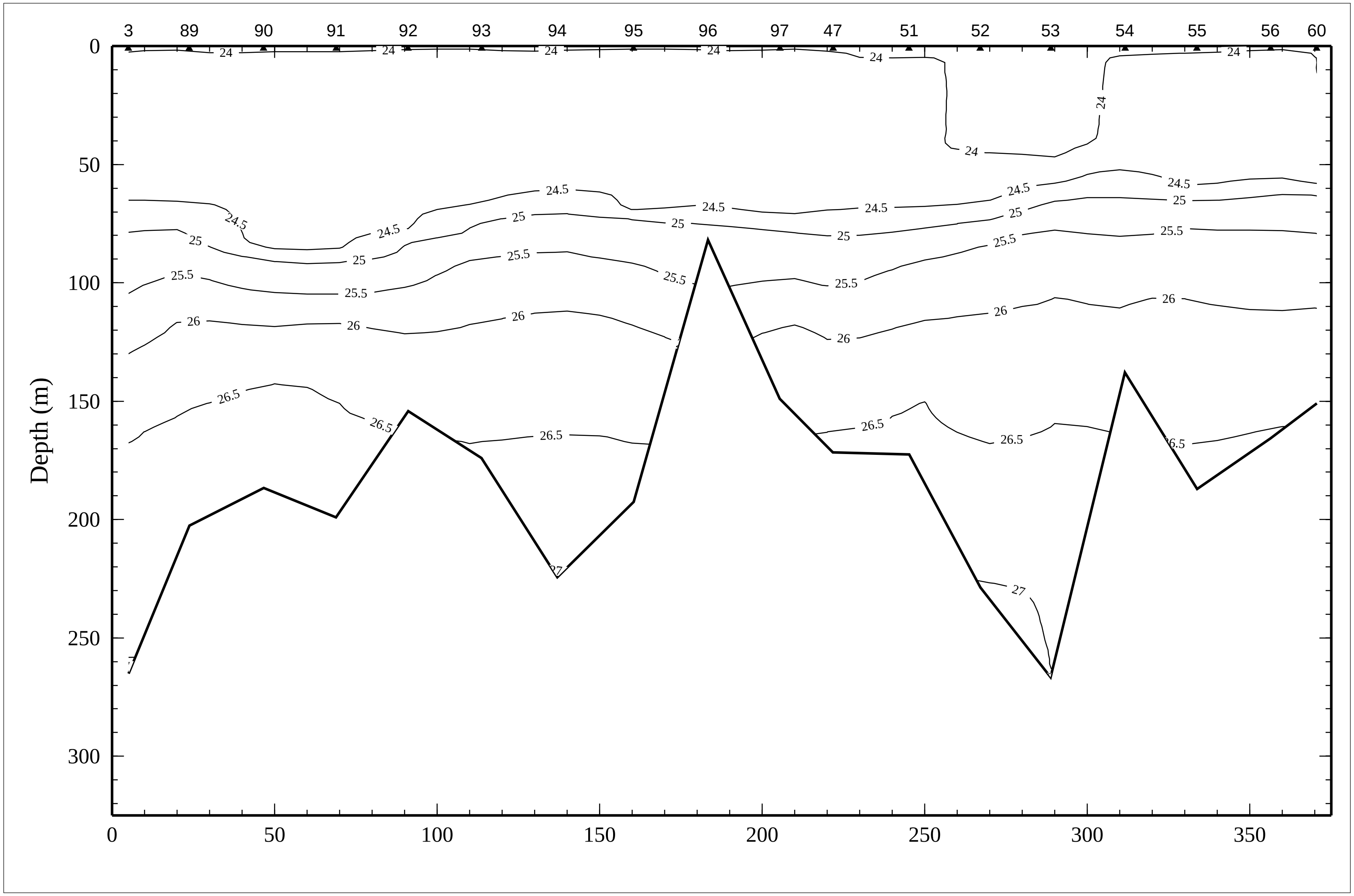

Figure 3.9.3. Density anomaly (σ_θ in kg·m^{-3}) on line 9 of LATEX A survey H03, 4-13 November 1992.

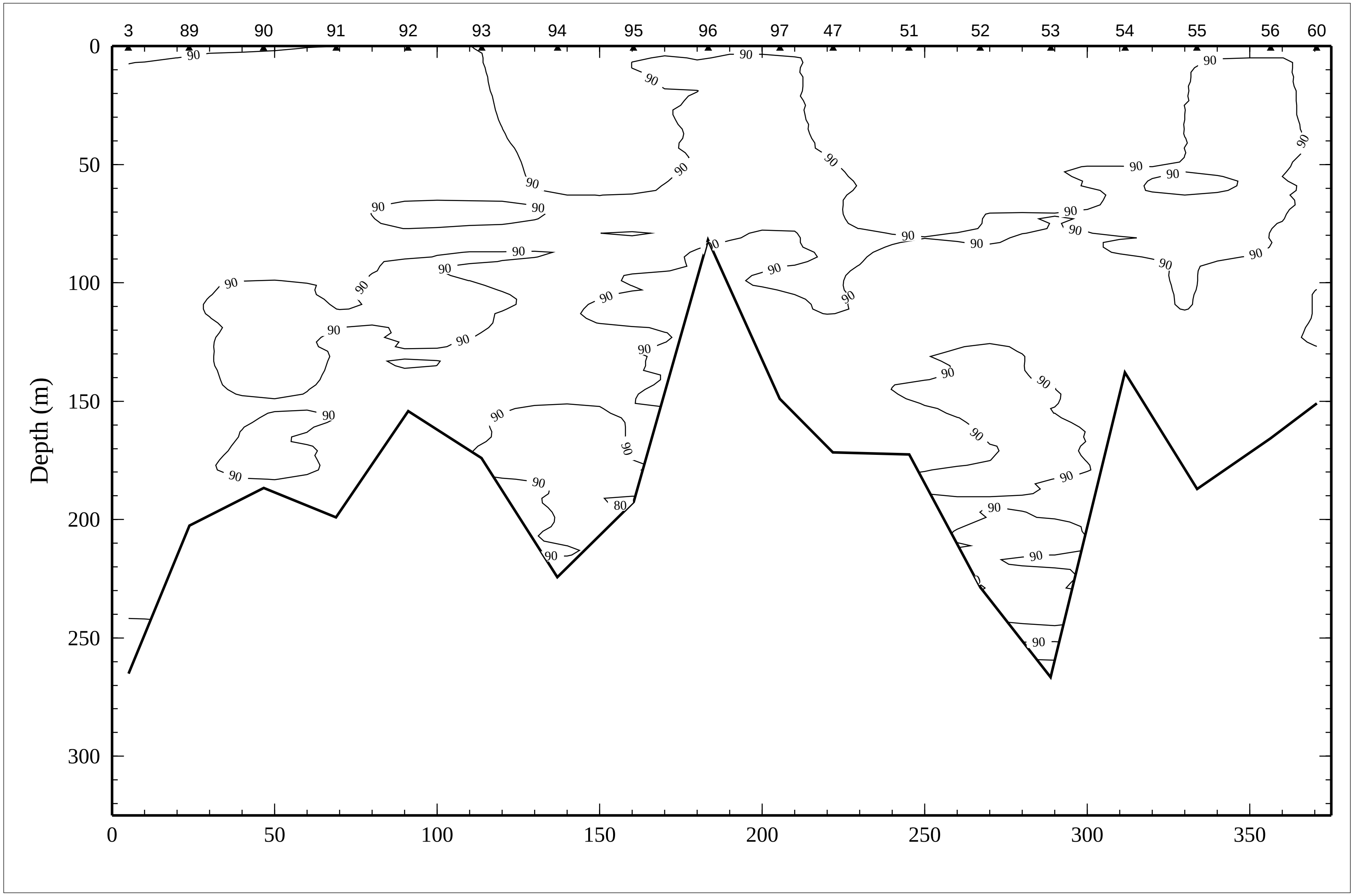

Figure 3.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H03, 4-13 November 1992.

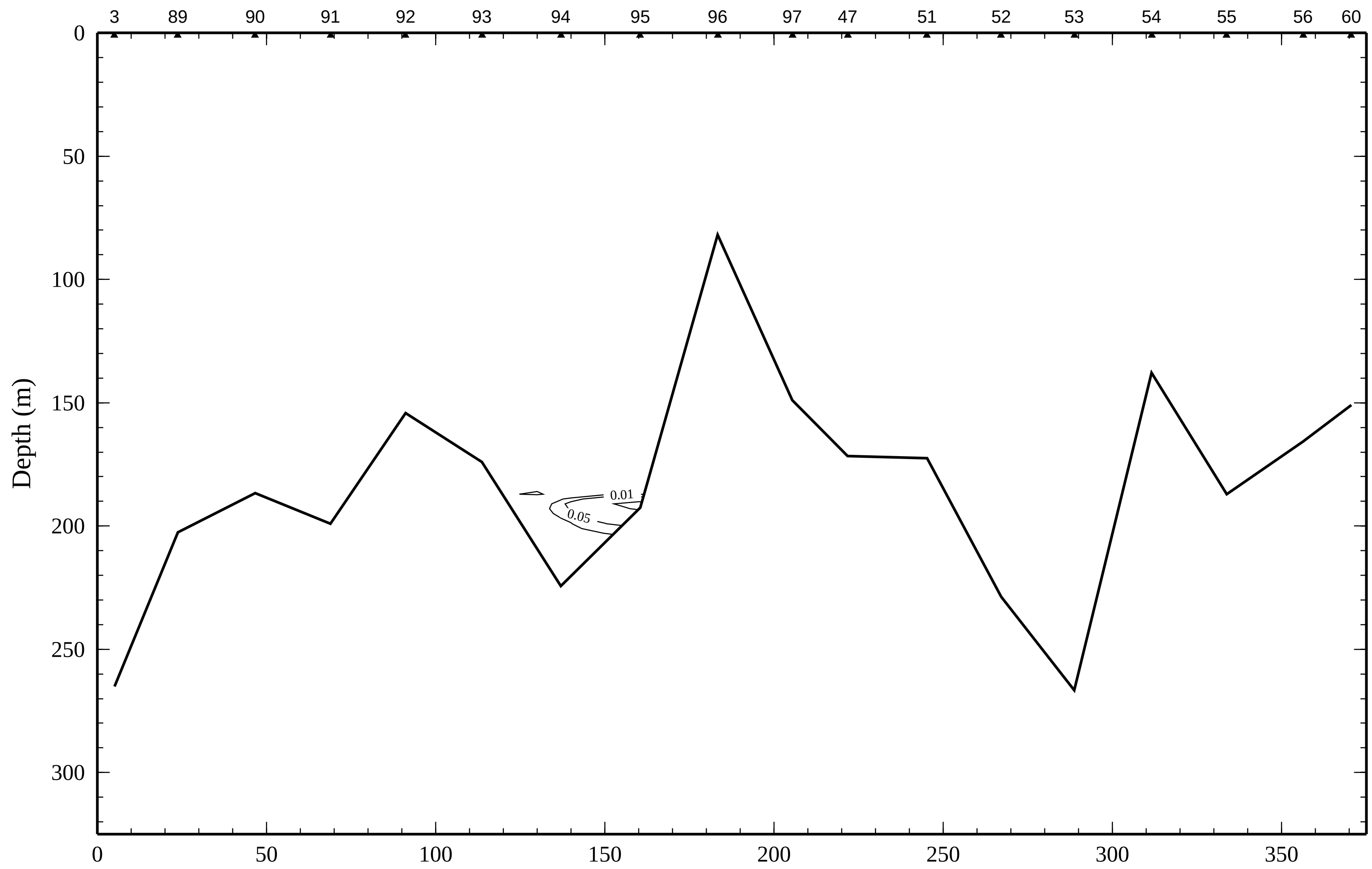

Figure 3.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H03, 4-13 November 1992.
Values were less than 0.05.

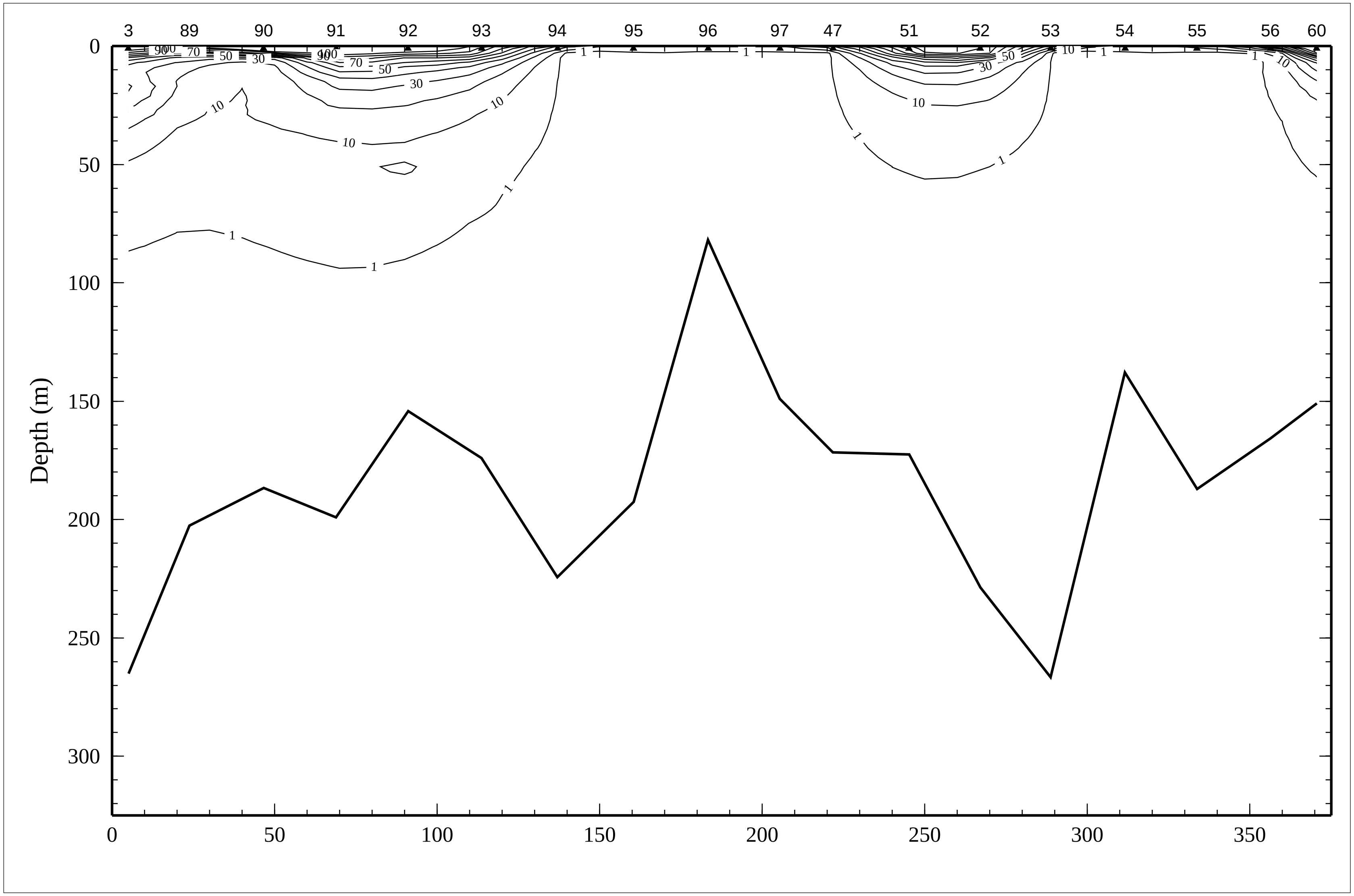

Figure 3.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H03, 4-13 November 1992.

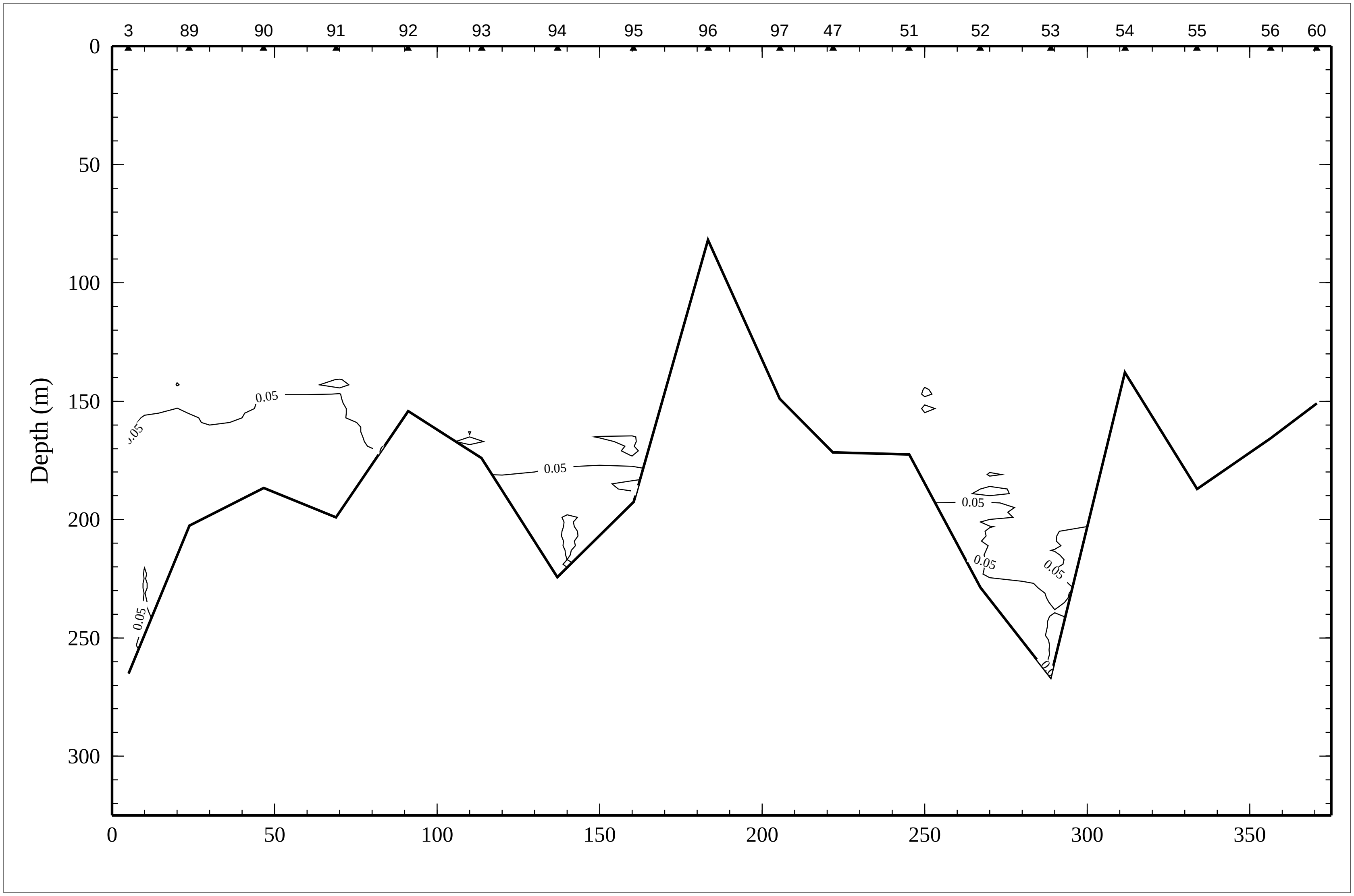

Figure 3.9.7. Relative fluorescence on line 9 of LATEX A survey H03, 4-13 November 1992.

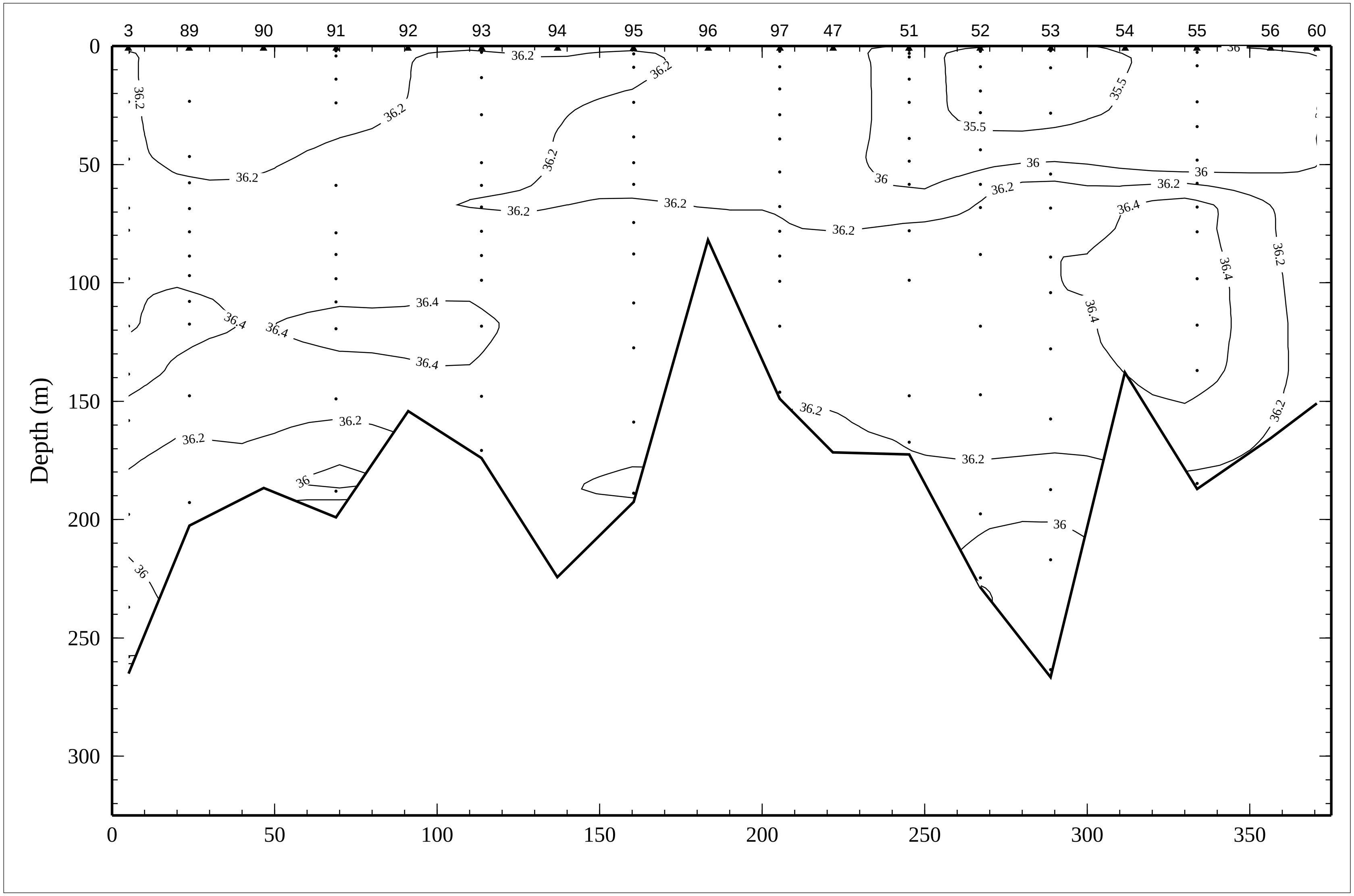

Figure 3.9.8. Bottle salinity on line 9 of LATEX A survey H03, 4-13 November 1992.

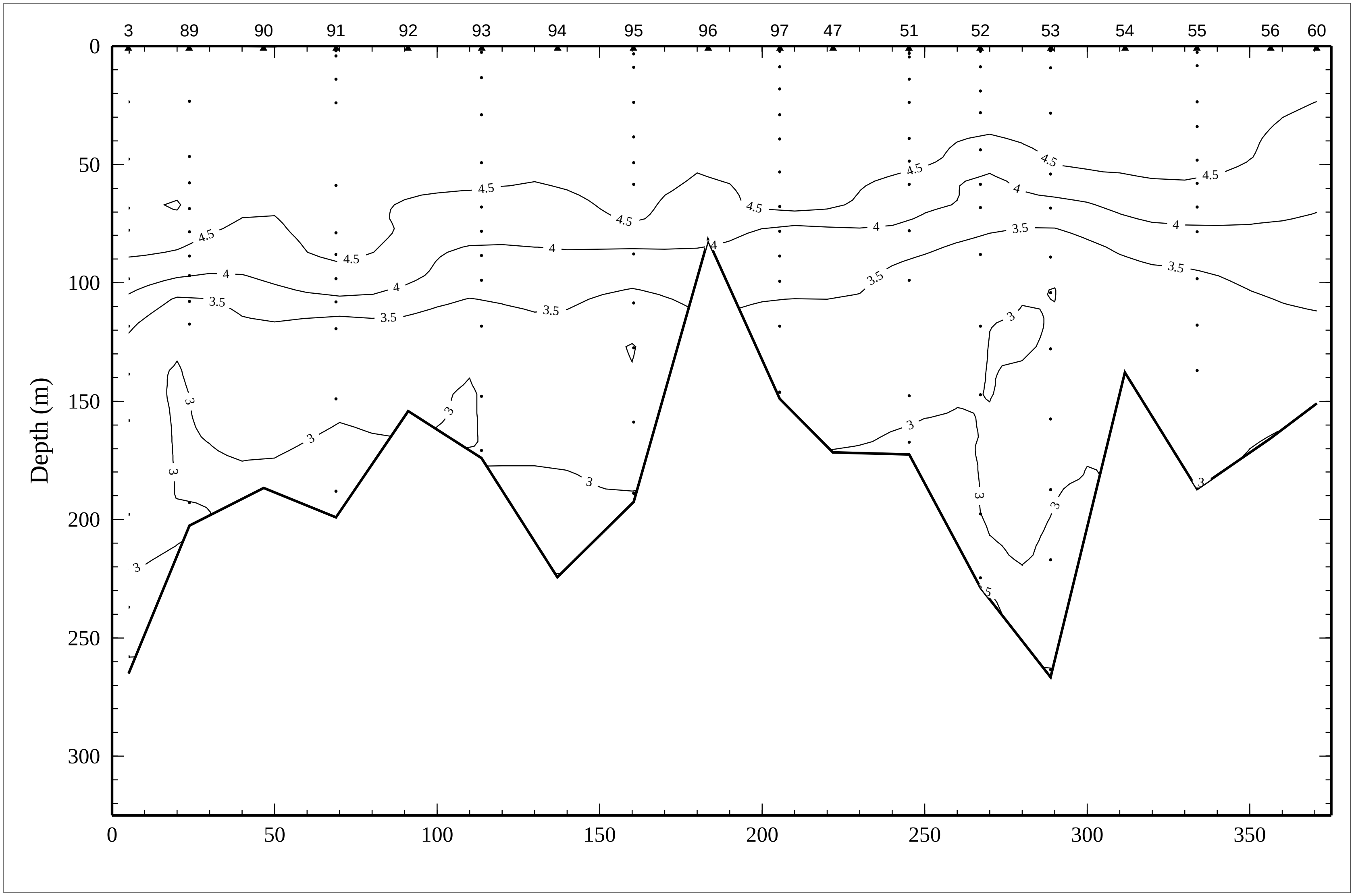

Figure 3.9.9. Dissolved oxygen (ml·l^{-1}) on line 9 of LATEX A survey H03, 4-13 November 1992.

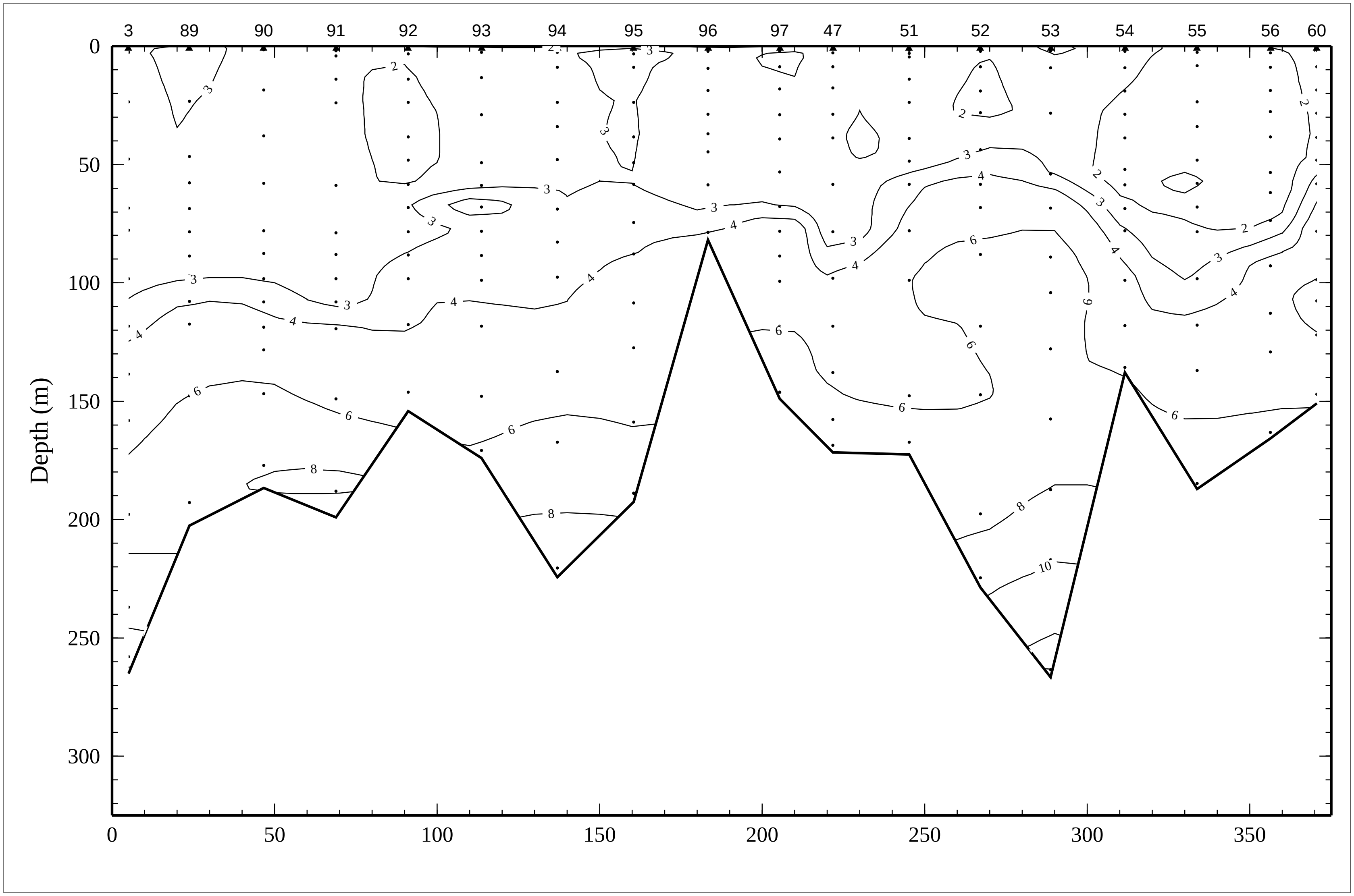

Figure 3.9.10. Silicate ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H03, 4-13 November 1992.

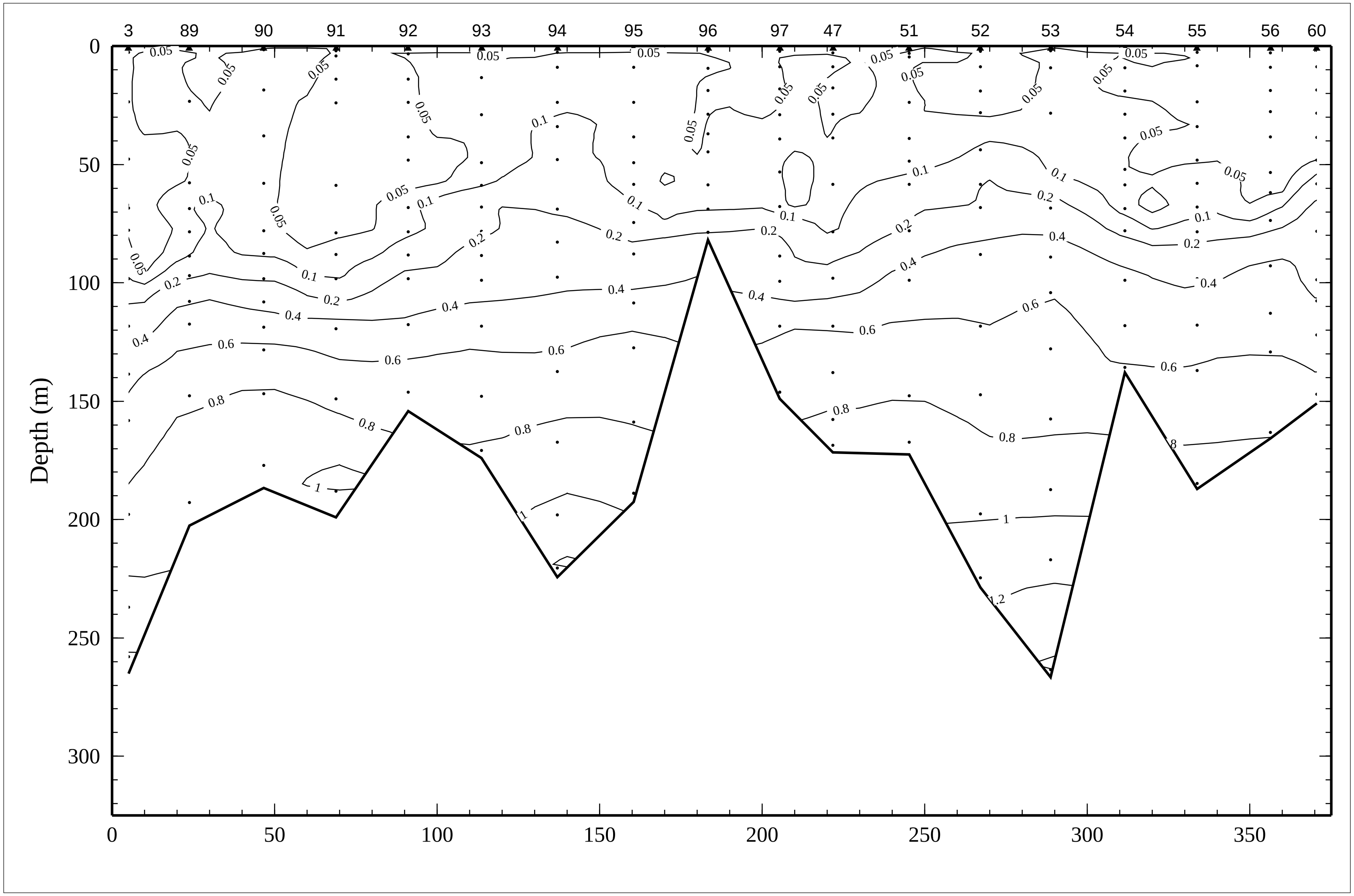

Figure 3.9.11. Phosphate (μmol·l-1) on line 9 of LATEX A survey H03, 4-13 November 1992.

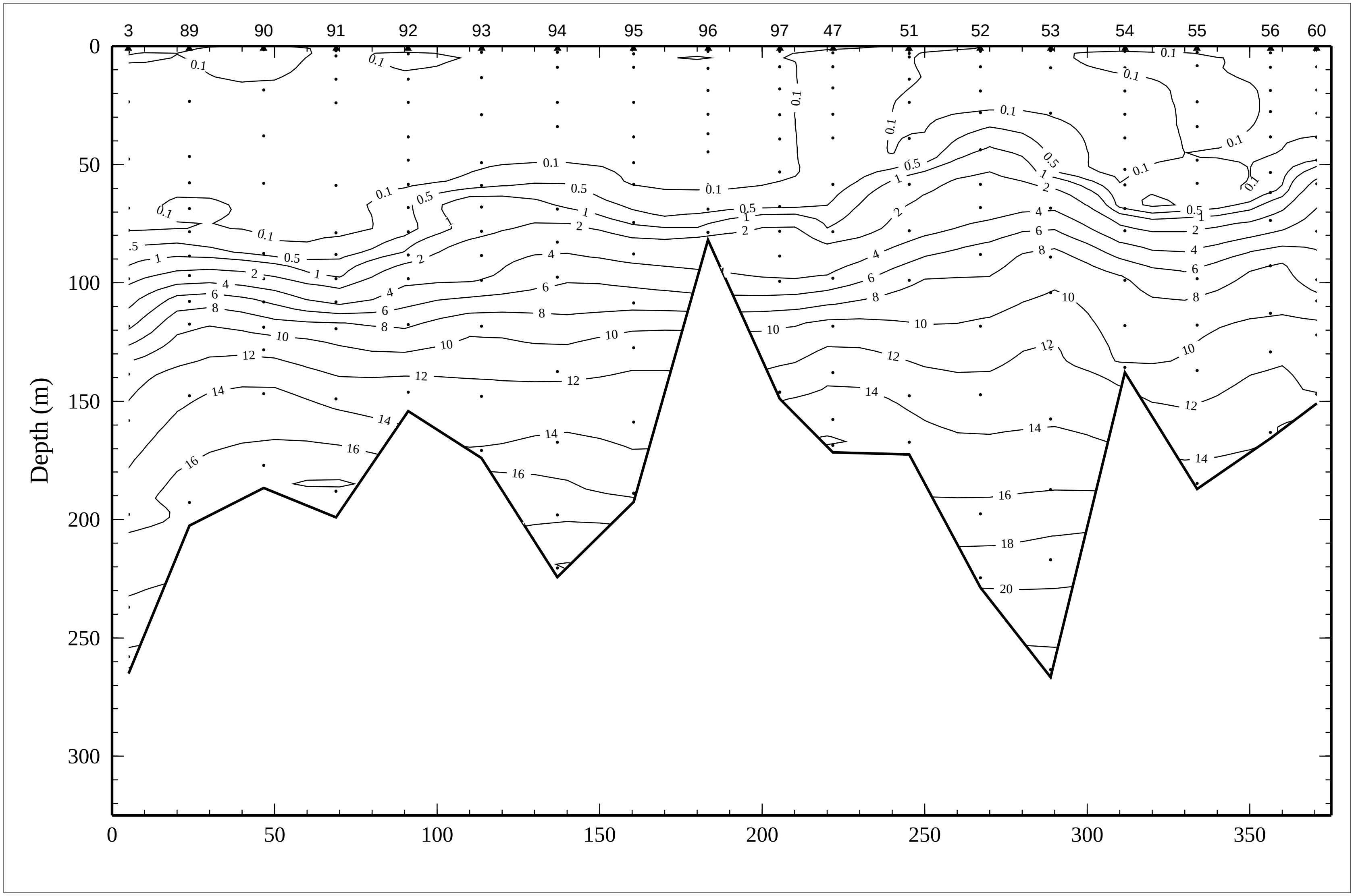

Figure 3.9.12. Nitrate (μmol·l^{-1}) on line 9 of LATEX A survey H03, 4-13 November 1992.

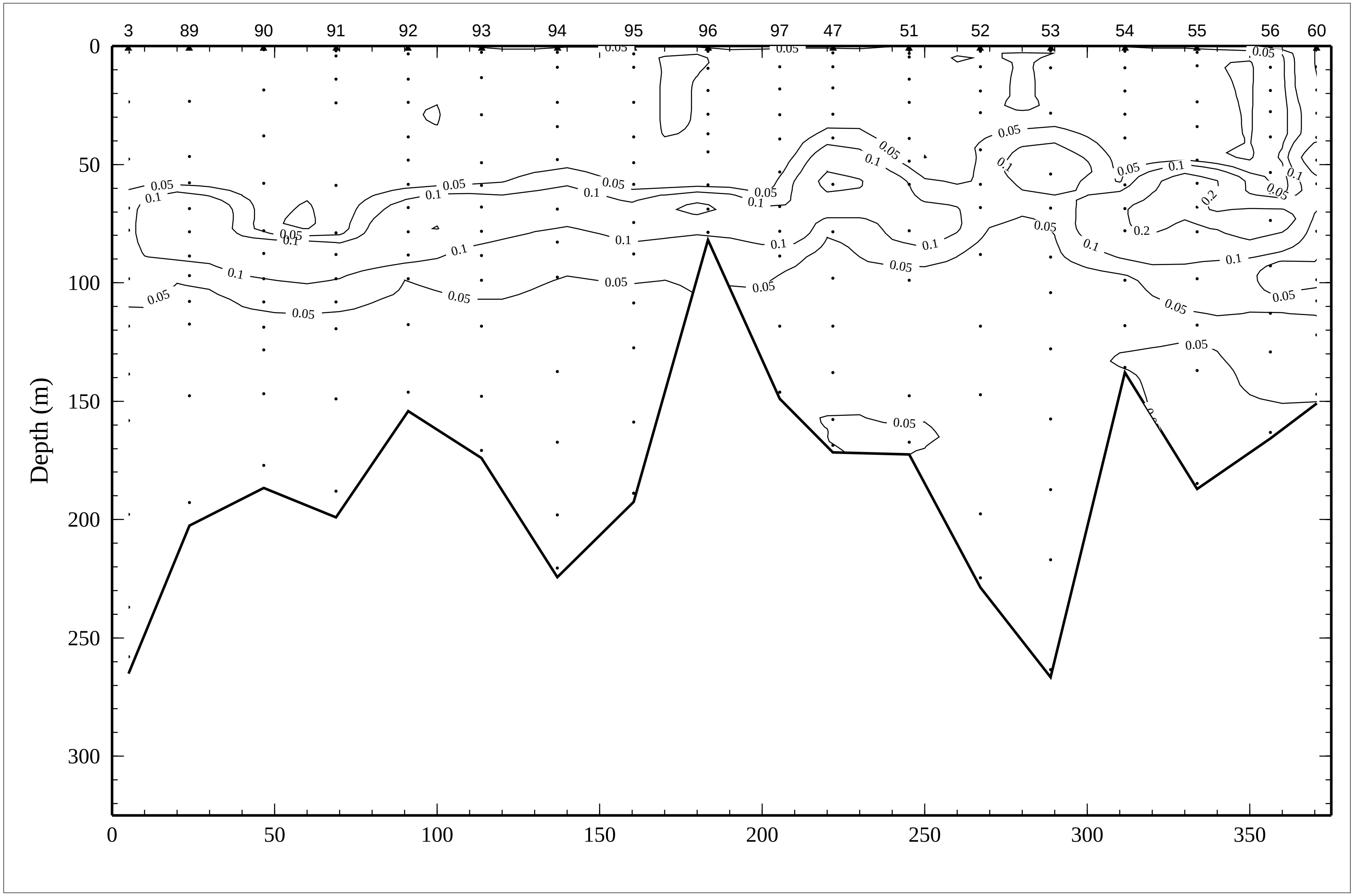

Figure 3.9.13. Nitrite (µmol·l^{-1}) on line 9 of LATEX A survey H03, 4-13 November 1992.

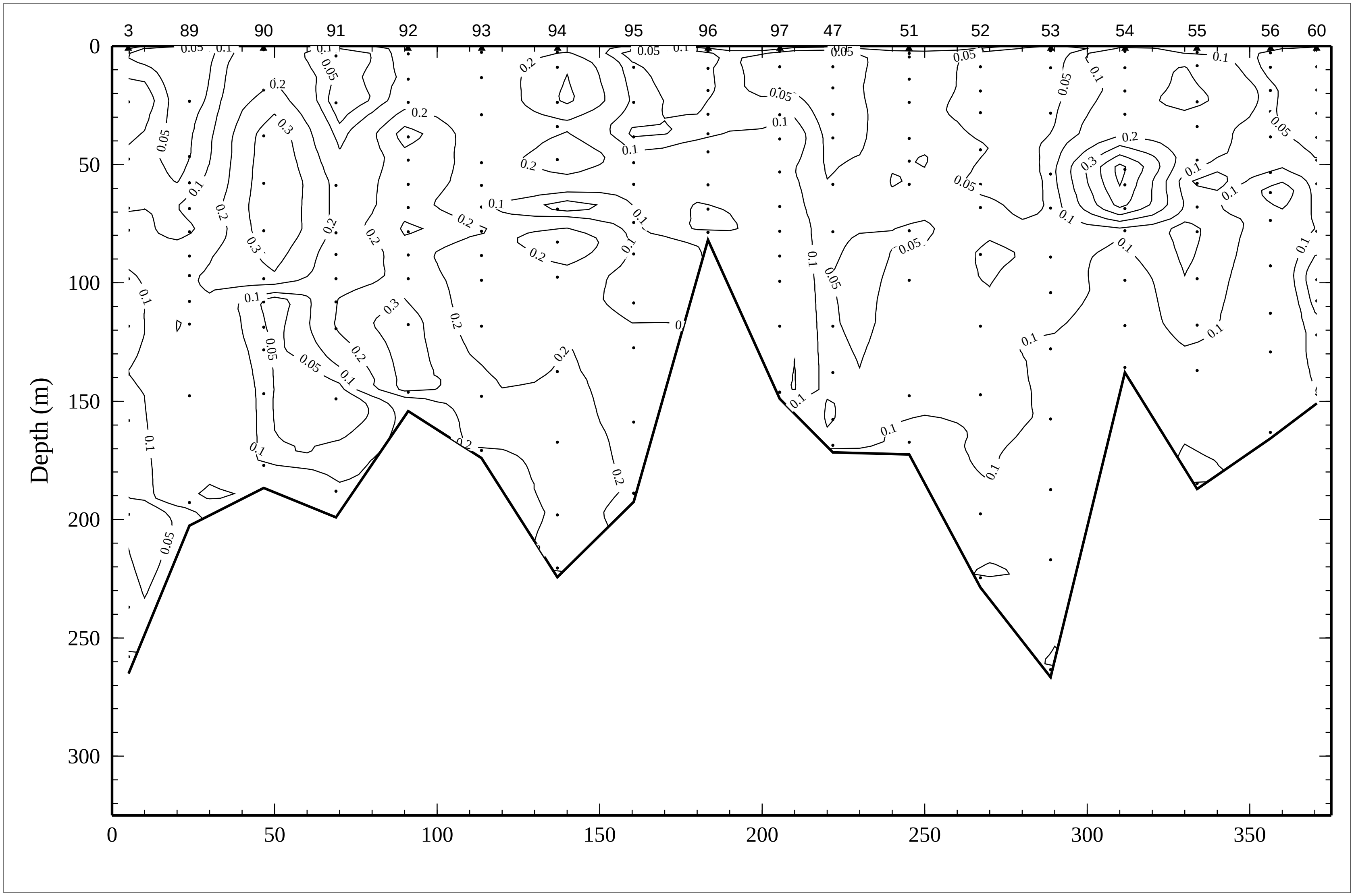

Figure 3.9.14. Ammonium (μmol·l^{-1}) on line 9 of LATEX A survey H03, 4-13 November 1992.

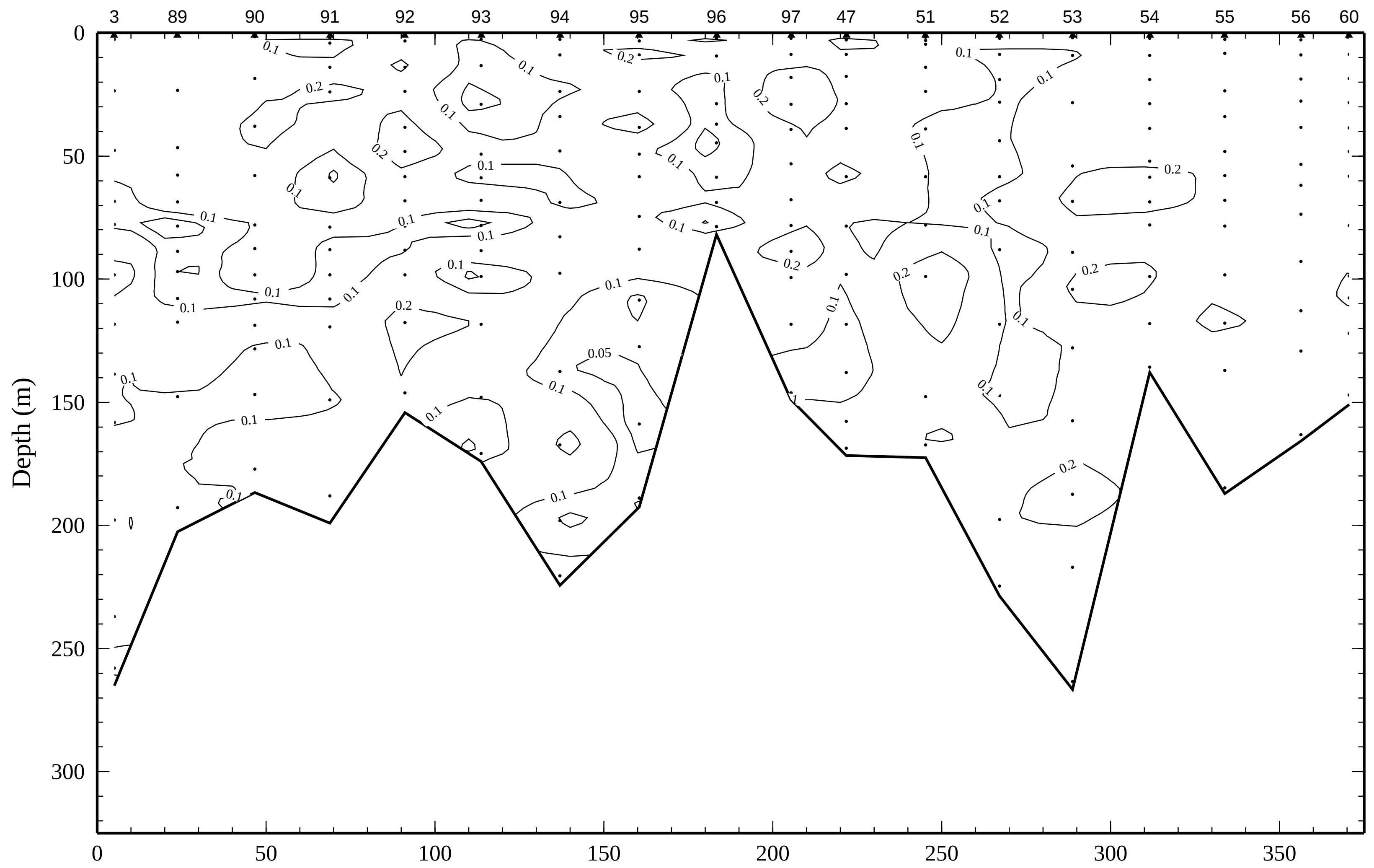

Figure 3.9.15. Urea ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H03, 4-13 November 1992.

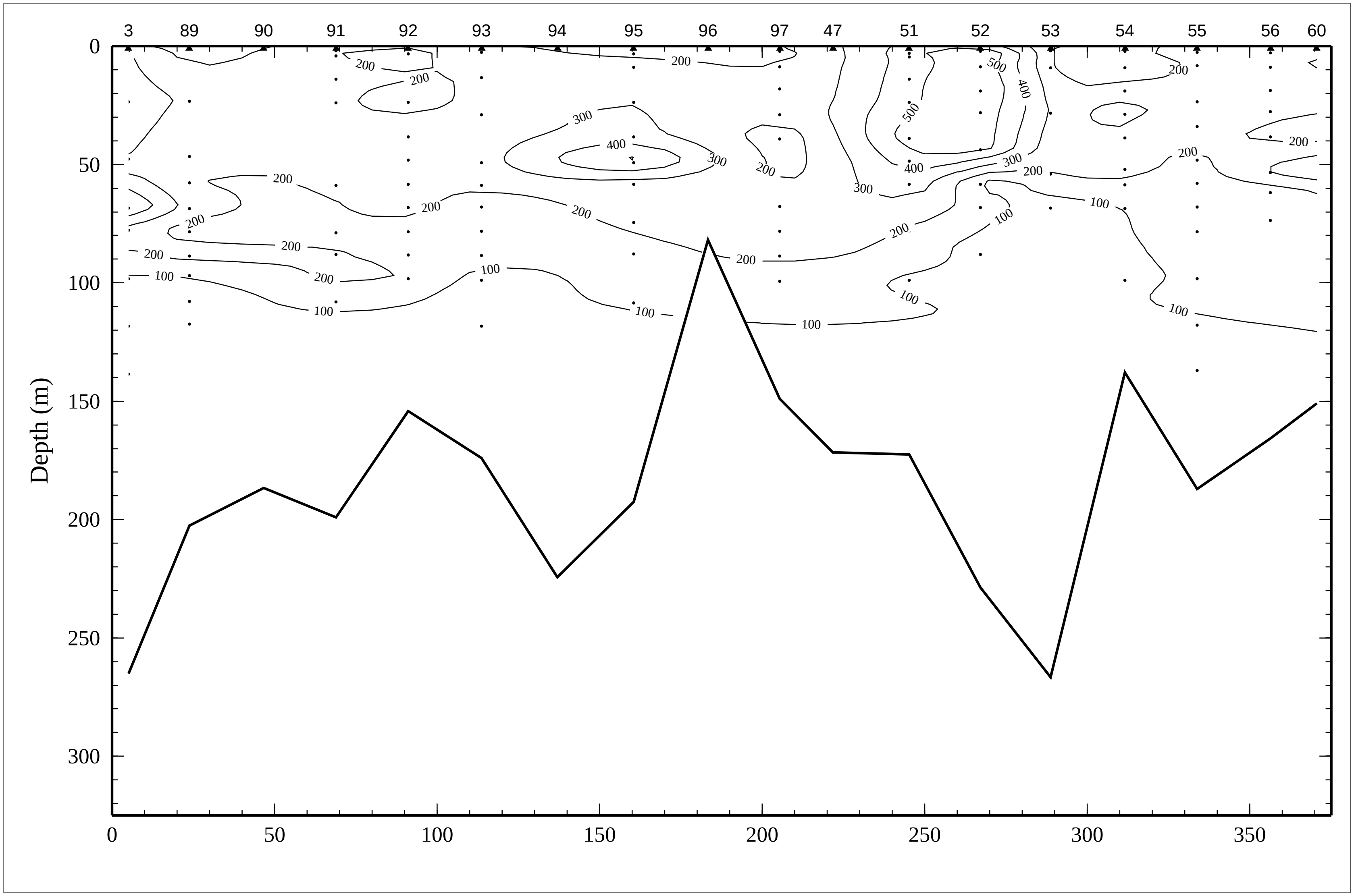

Figure 3.9.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 9 of LATEX A survey H03, 4-13 November 1992.

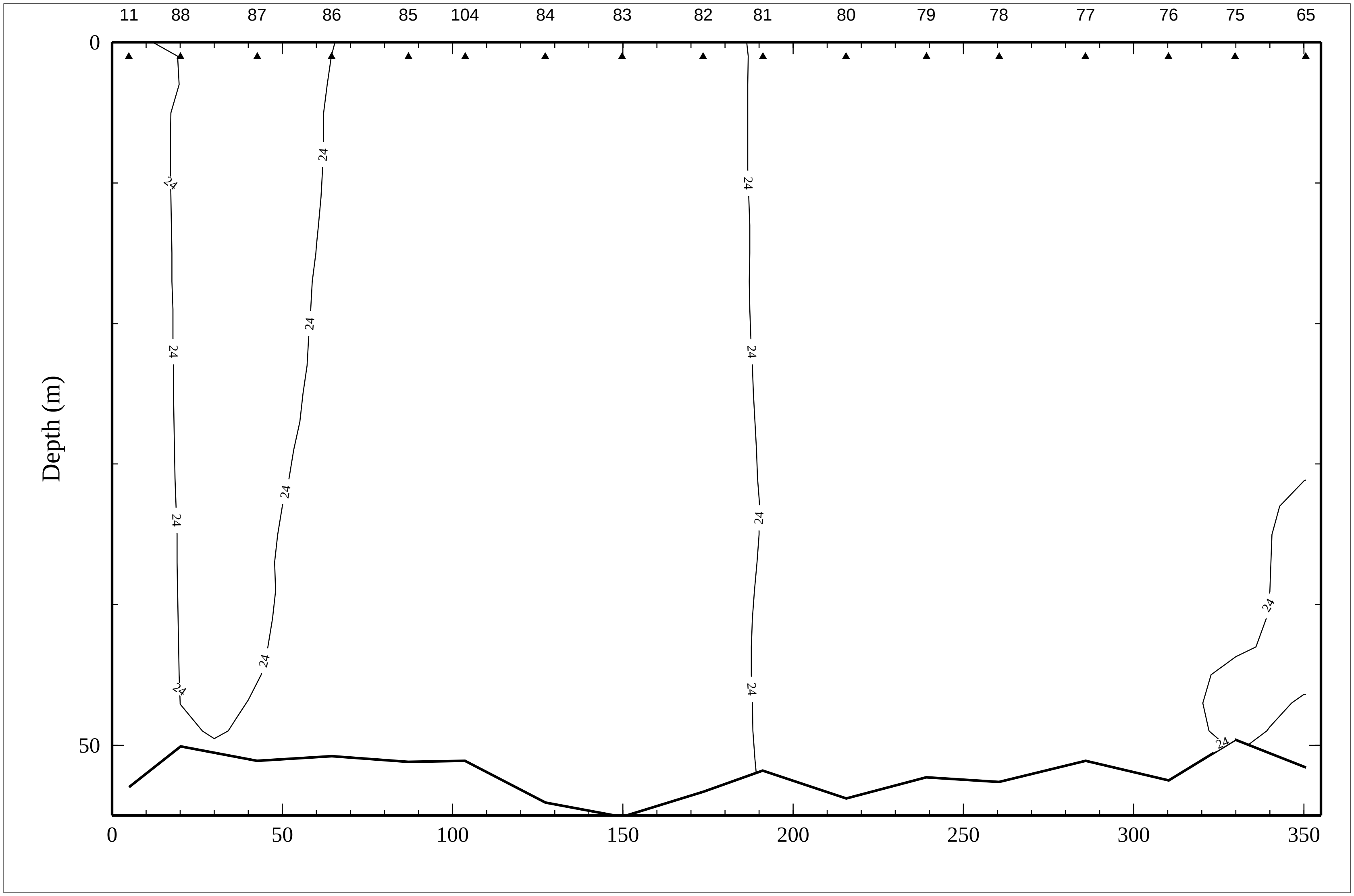

Figure 3.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H03, 4-13 November 1992.

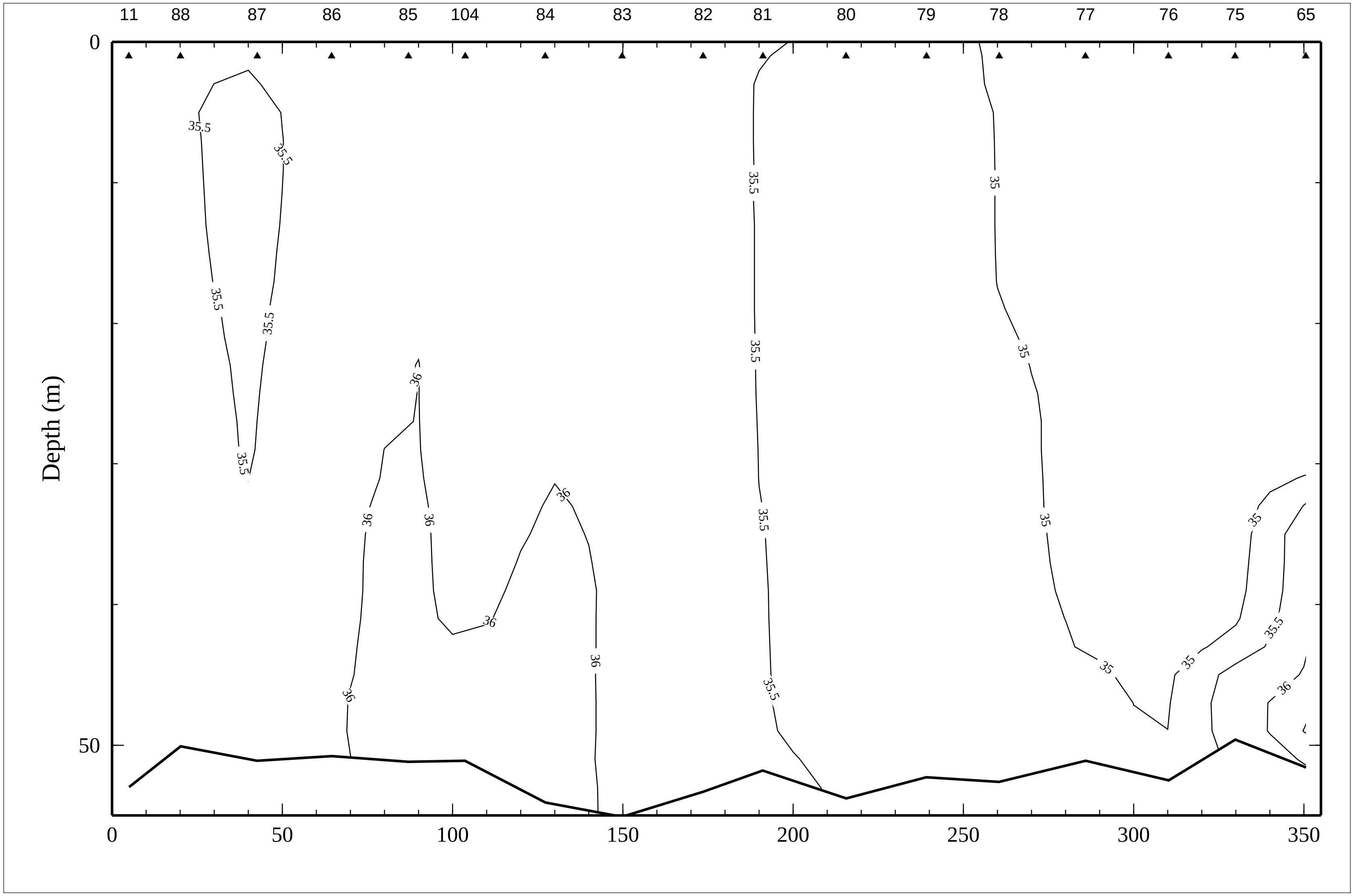

Figure 3.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H03, 4-13 November 1992.

C90

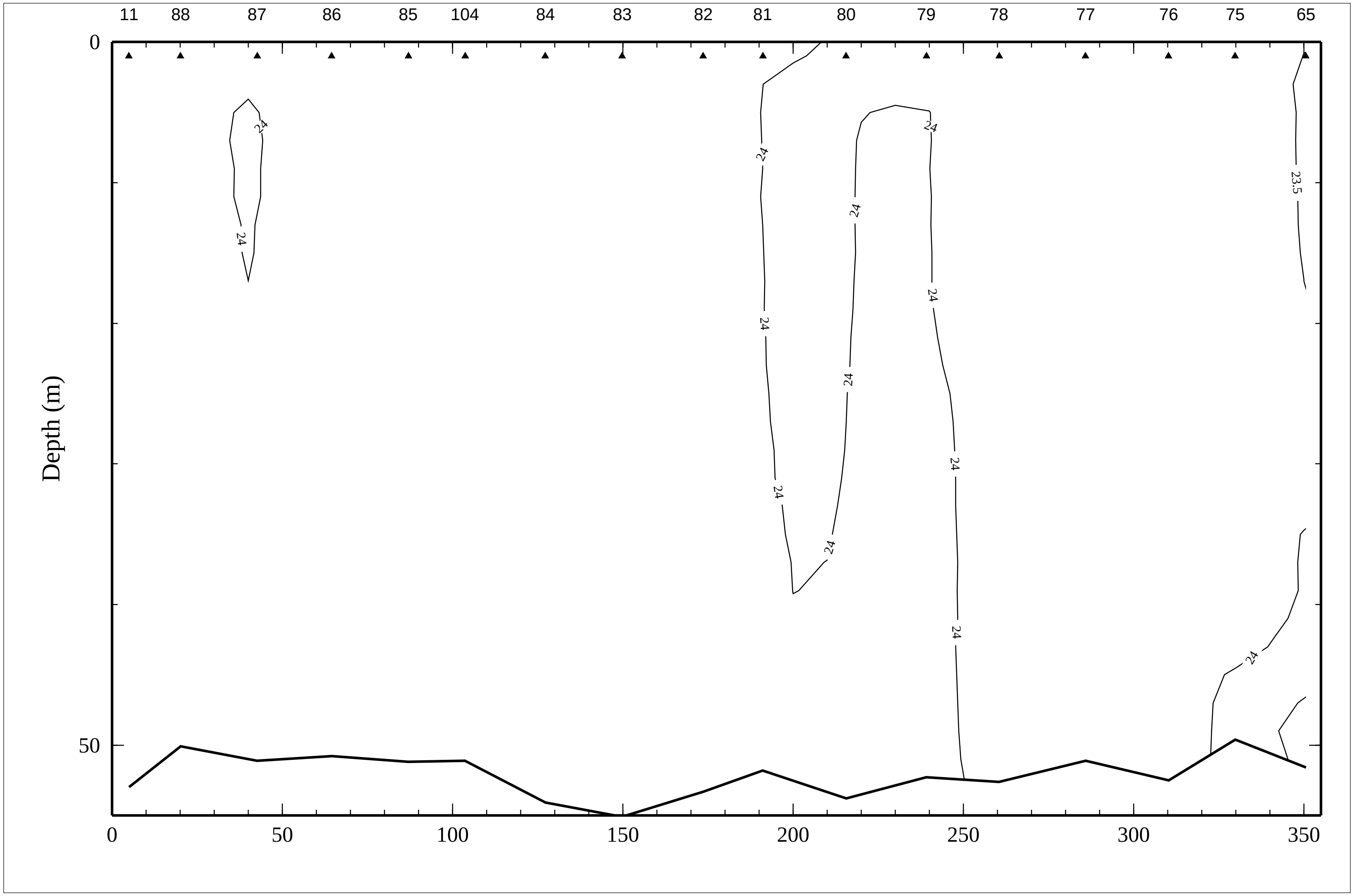

Figure 3.10.3. Density anomaly (σ_θ in kg·m^{-3}) on line 10 of LATEX A survey H03, 4-13 November 1992.

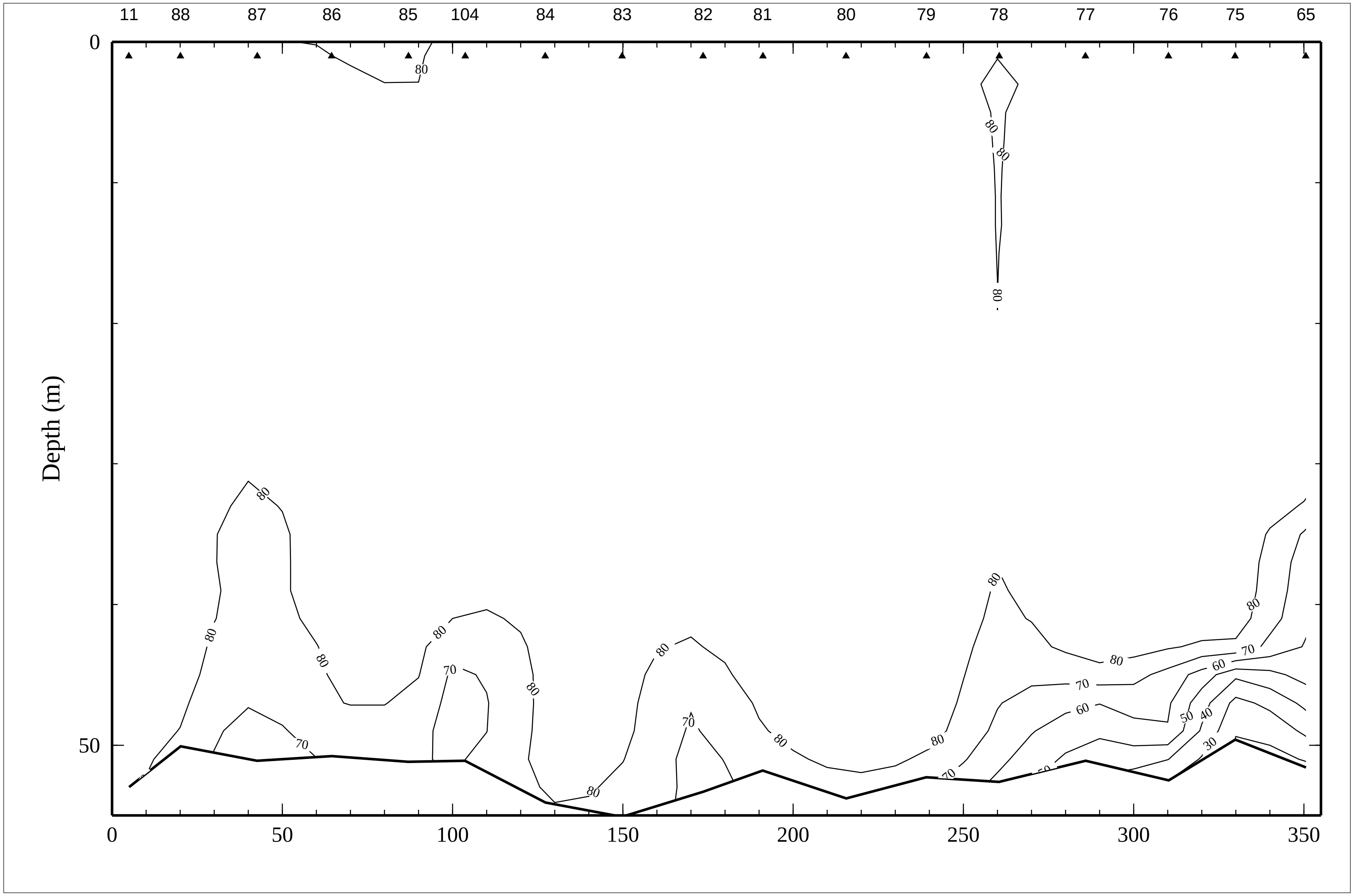

Figure 3.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H03, 4-13 November 1992.

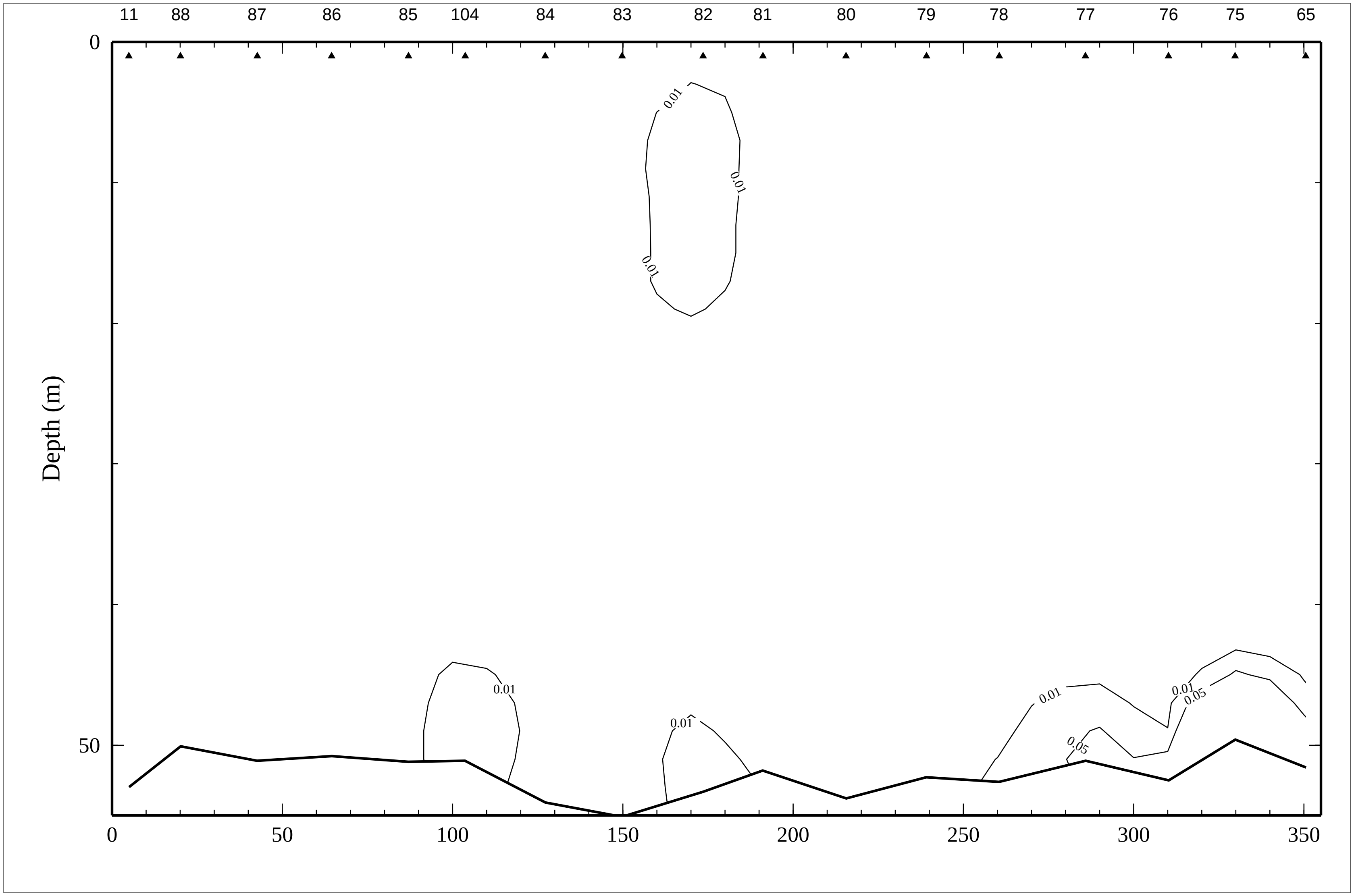

Figure 3.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H03, 4-13 November 1992.

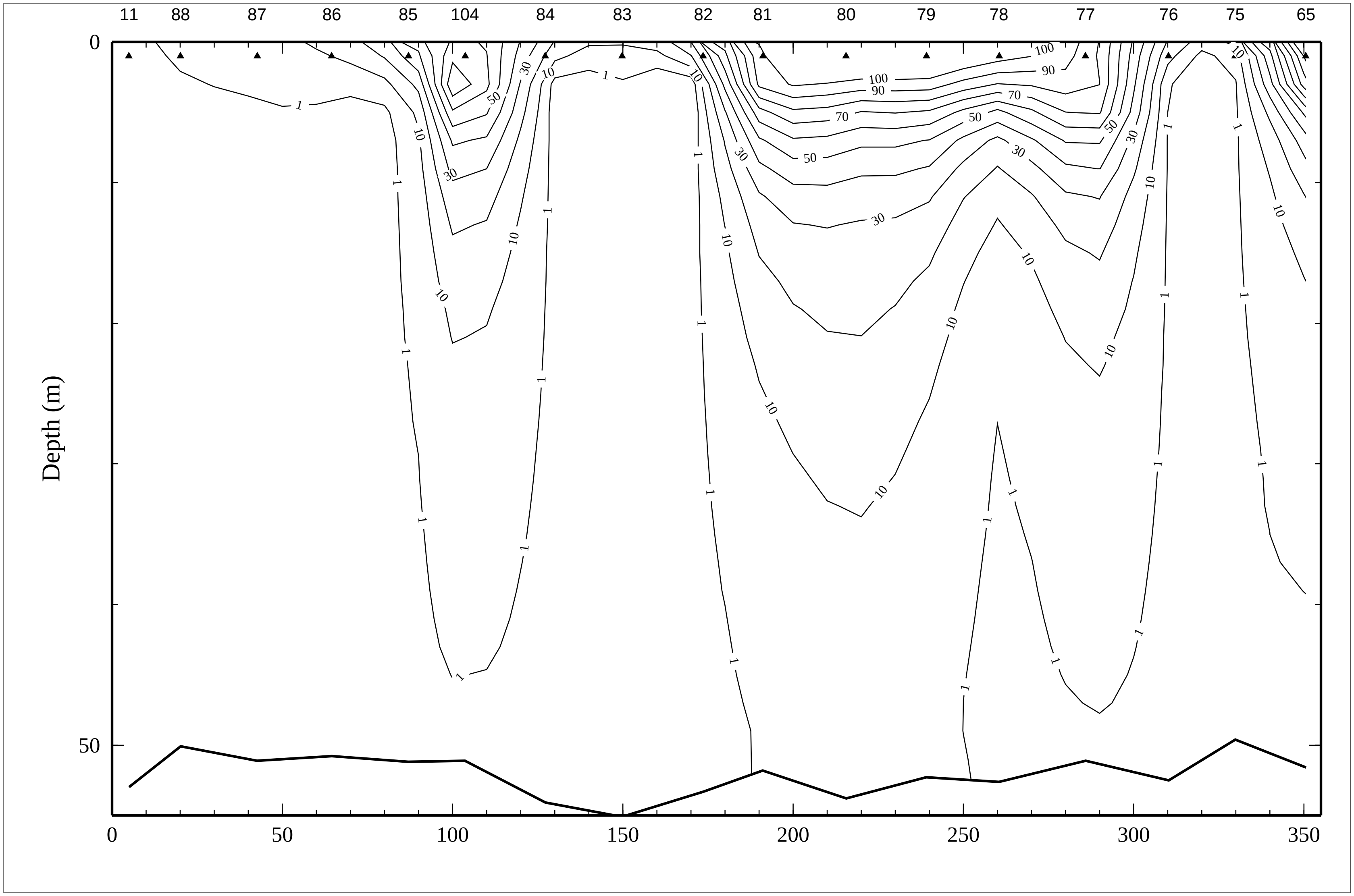

Figure 3.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H03, 4-13 November 1992.

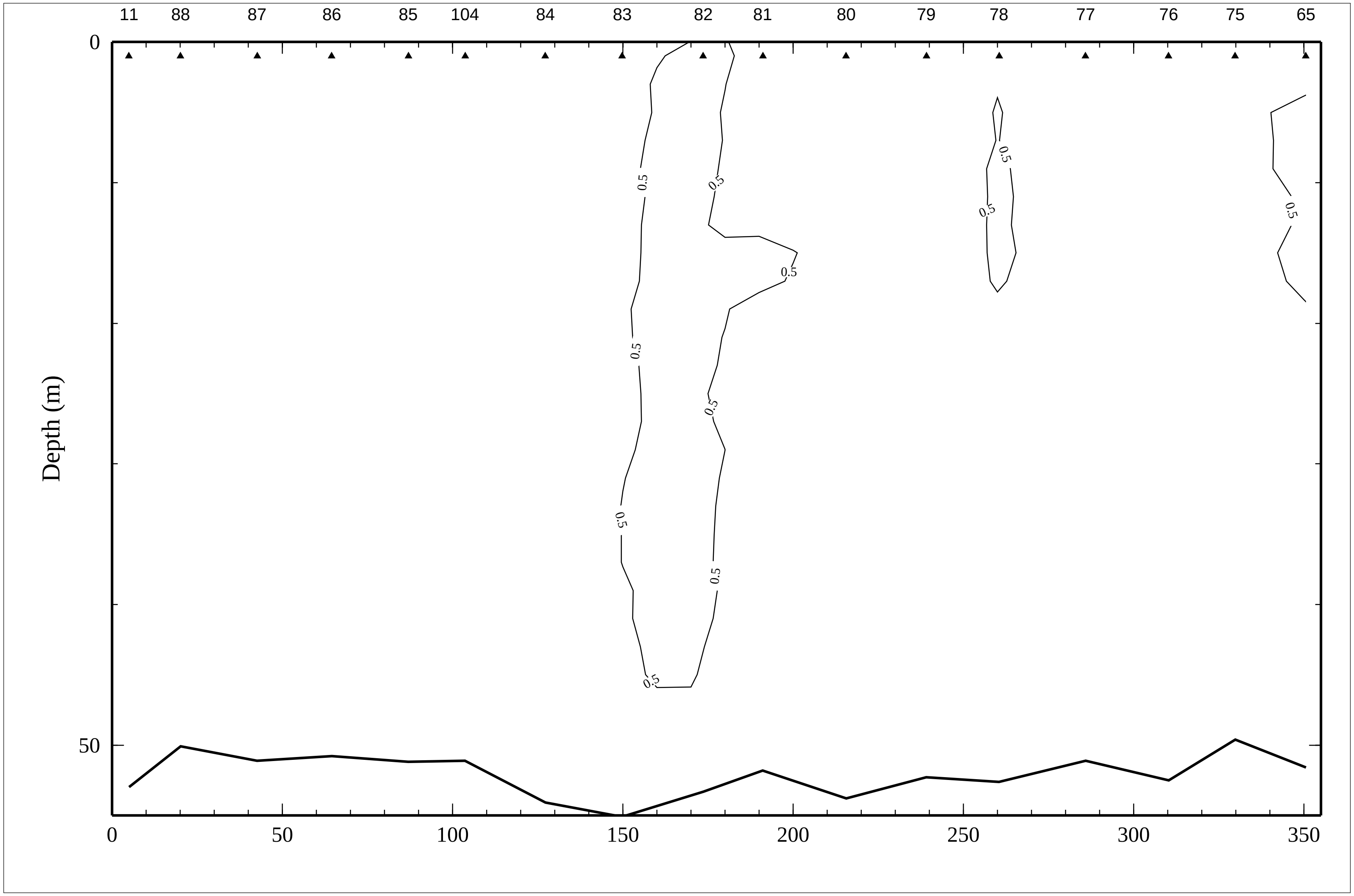

Figure 3.10.7. Relative fluorescence on line 10 of LATEX A survey H03, 4-13 November 1992.

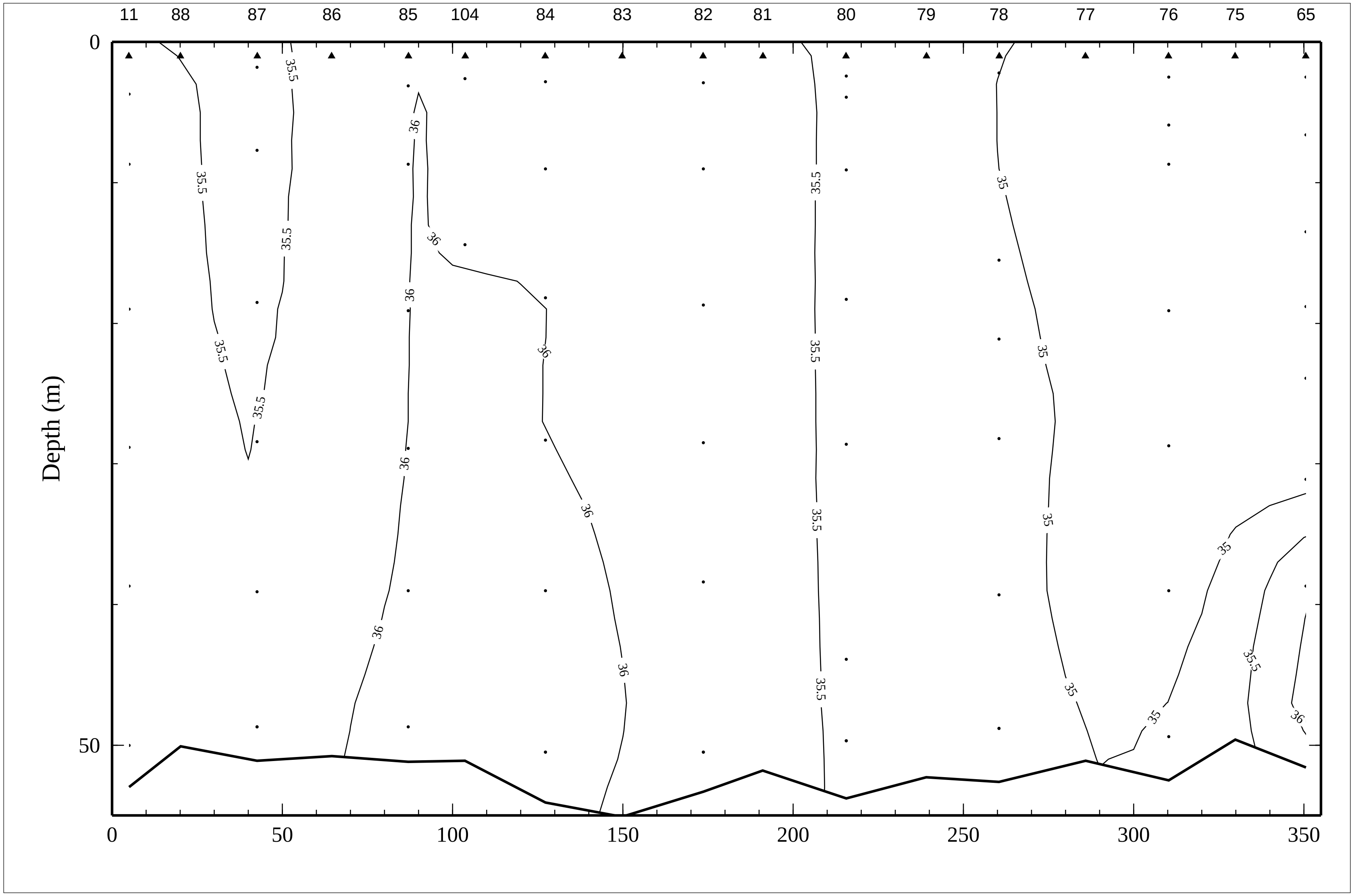

Figure 3.10.8. Bottle salinity on line 10 of LATEX A survey H03, 4-13 November 1992.

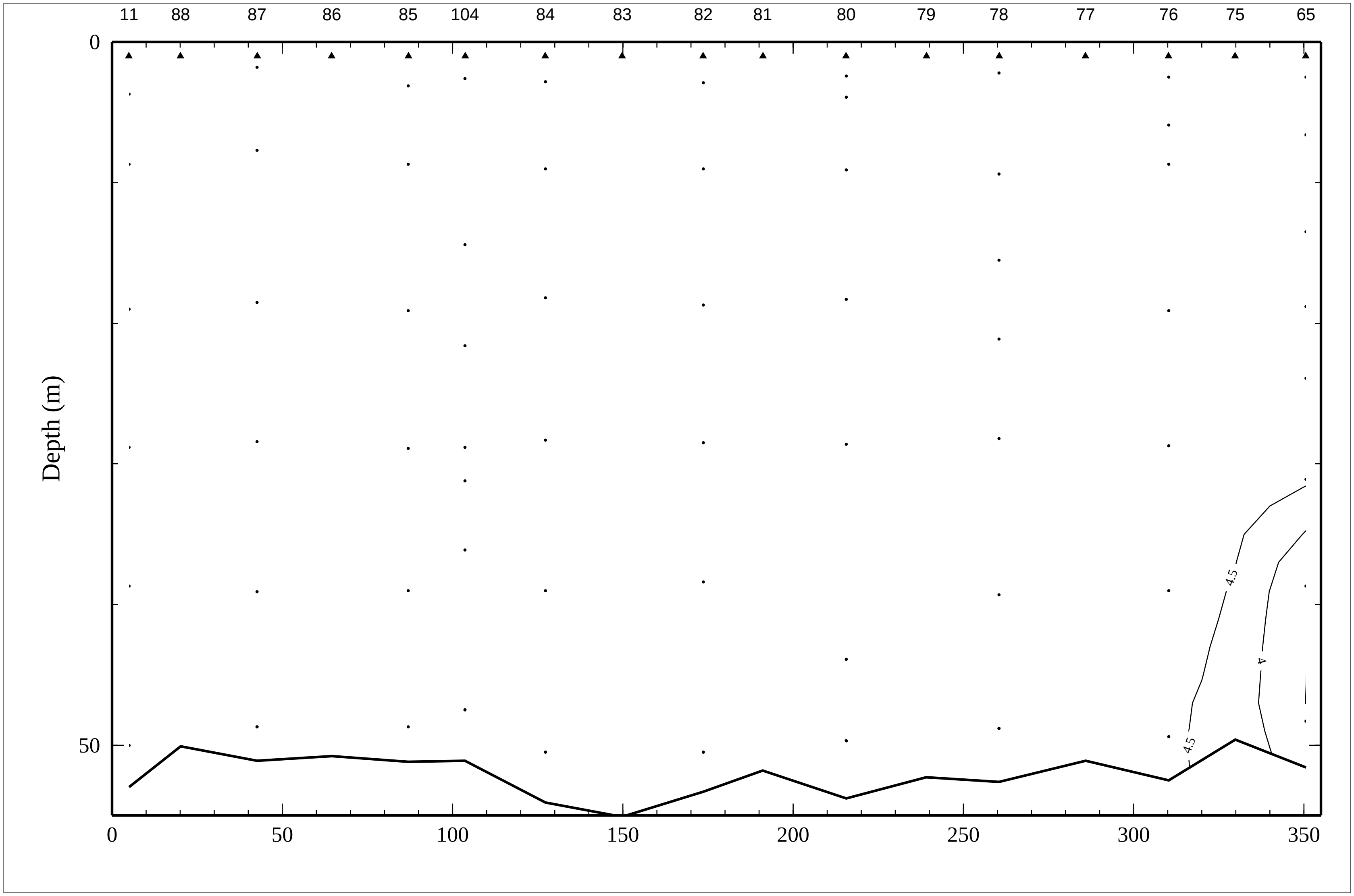

Figure 3.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H03, 4-13 November 1992.

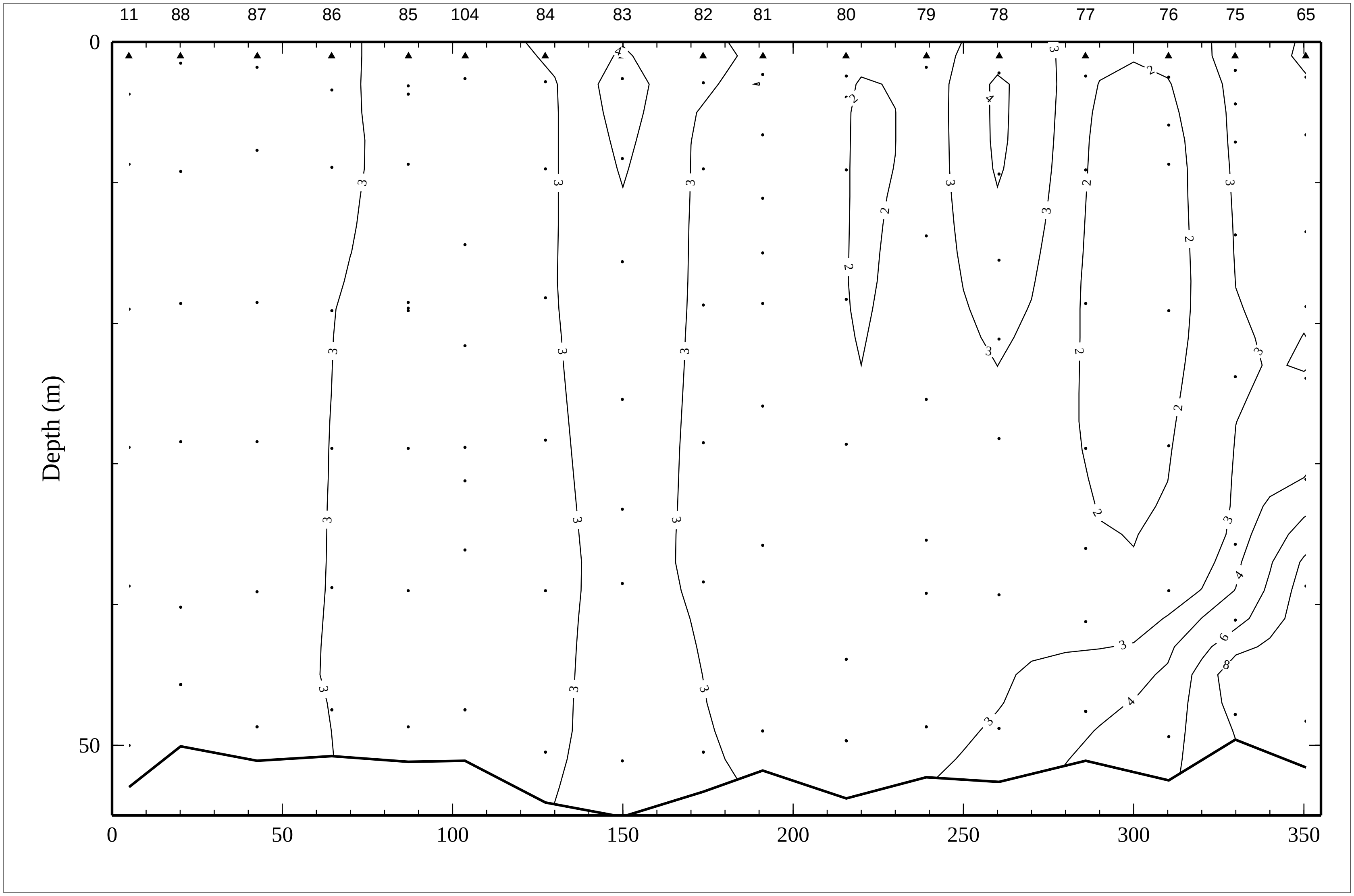

Figure 3.10.10. Silicate (µmol·l^{-1}) on line 10 of LATEX A survey H03, 4-13 November 1992.

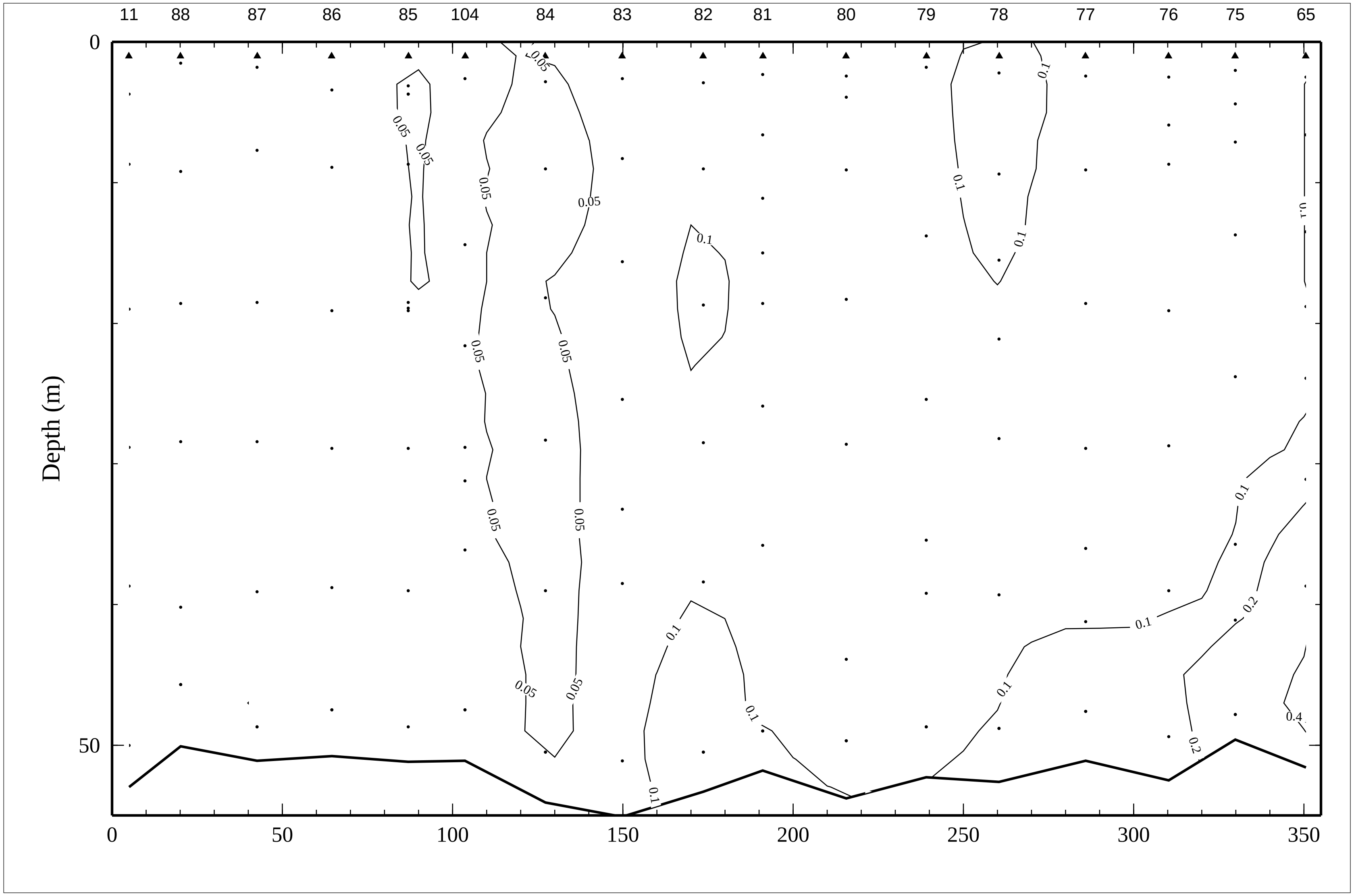

Figure 3.10.11. Phosphate (μmol·l⁻¹) on line 10 of LATEX A survey H03, 4-13 November 1992.

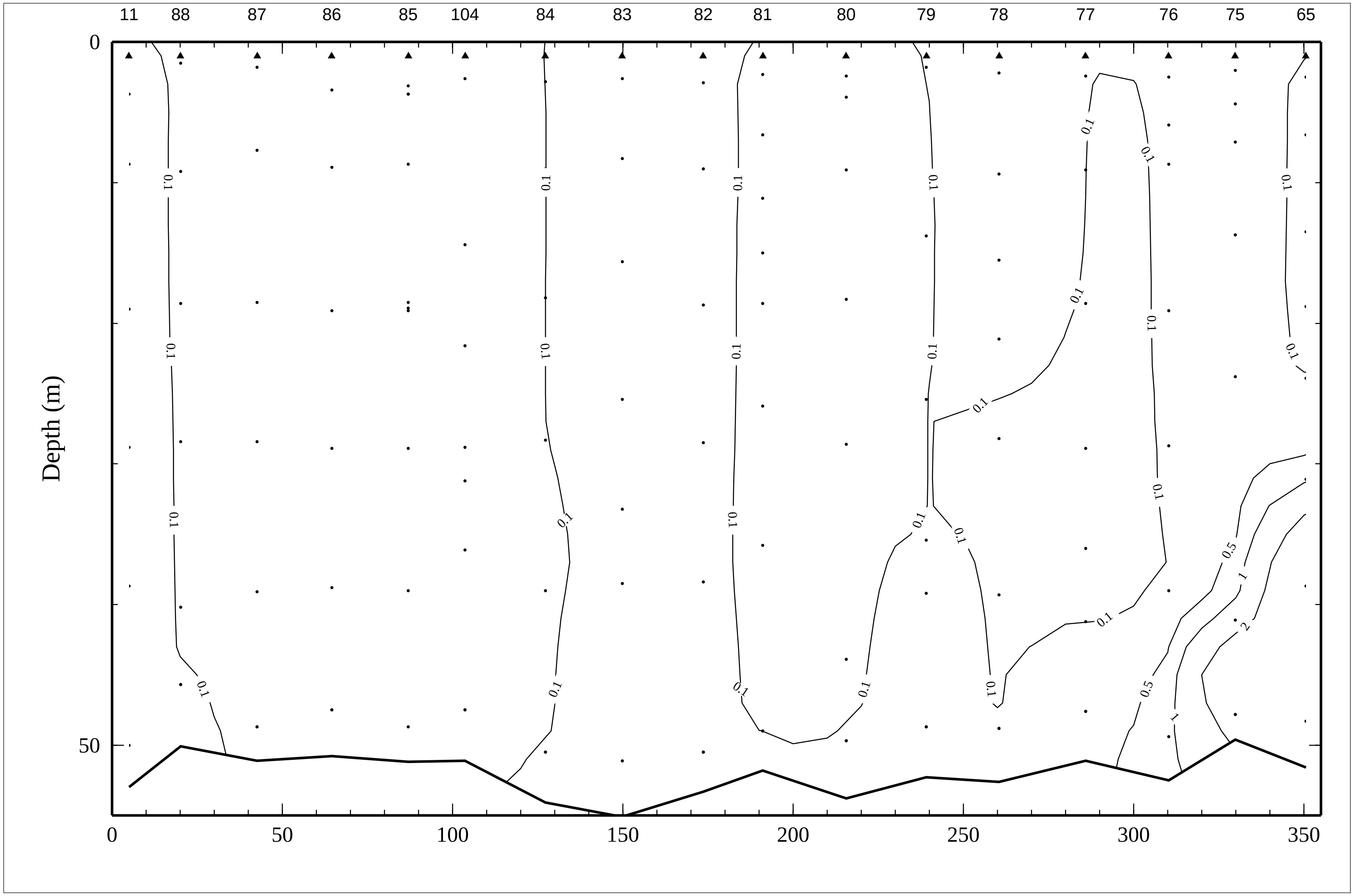

Figure 3.10.12. Nitrate (μmol·l-1) on line 10 of LATEX A survey H03, 4-13 November 1992.

C100

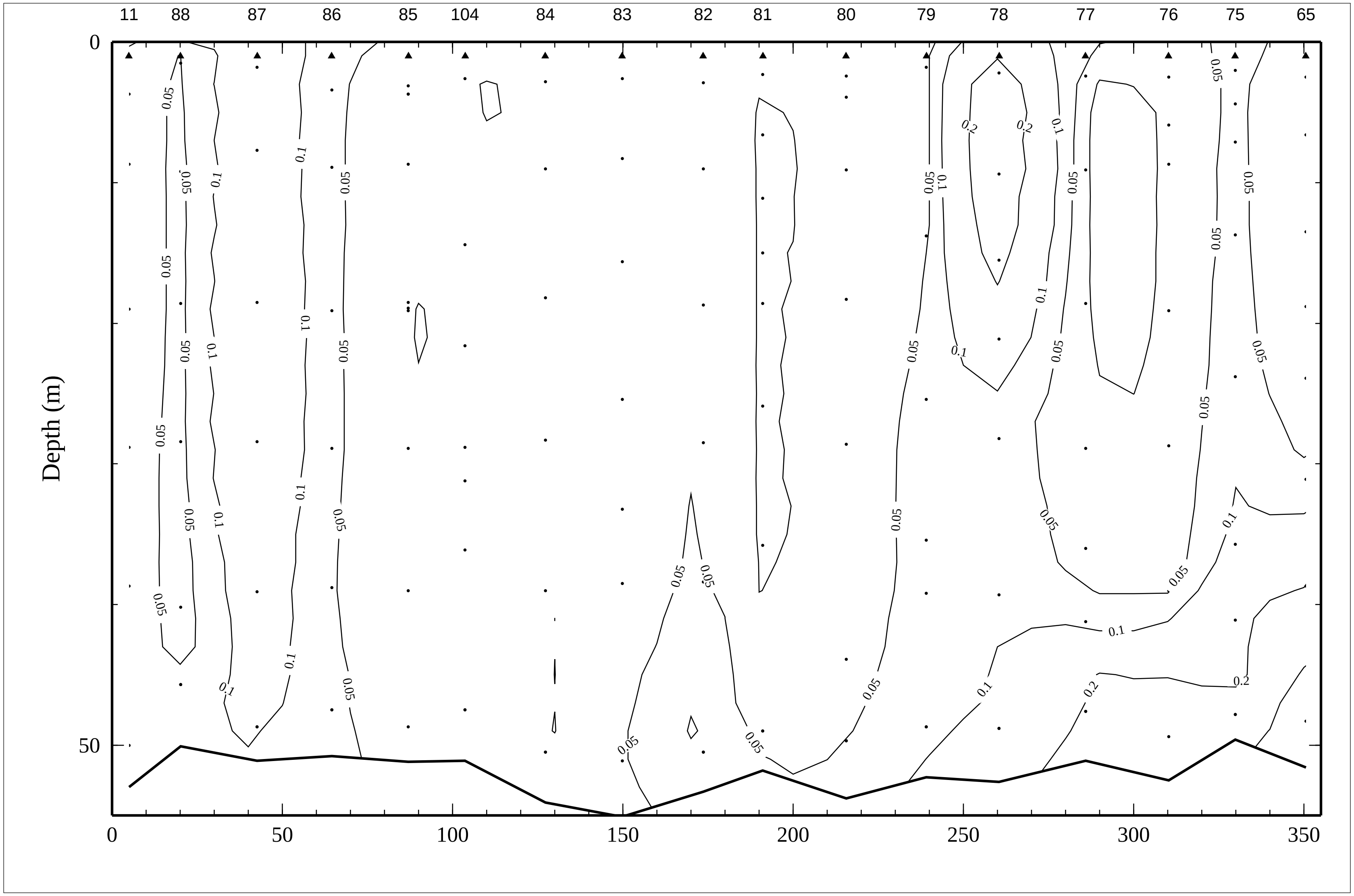

Figure 3.10.13. Nitrite (μmol·l-1) on line 10 of LATEX A survey H03, 4-13 November 1992.

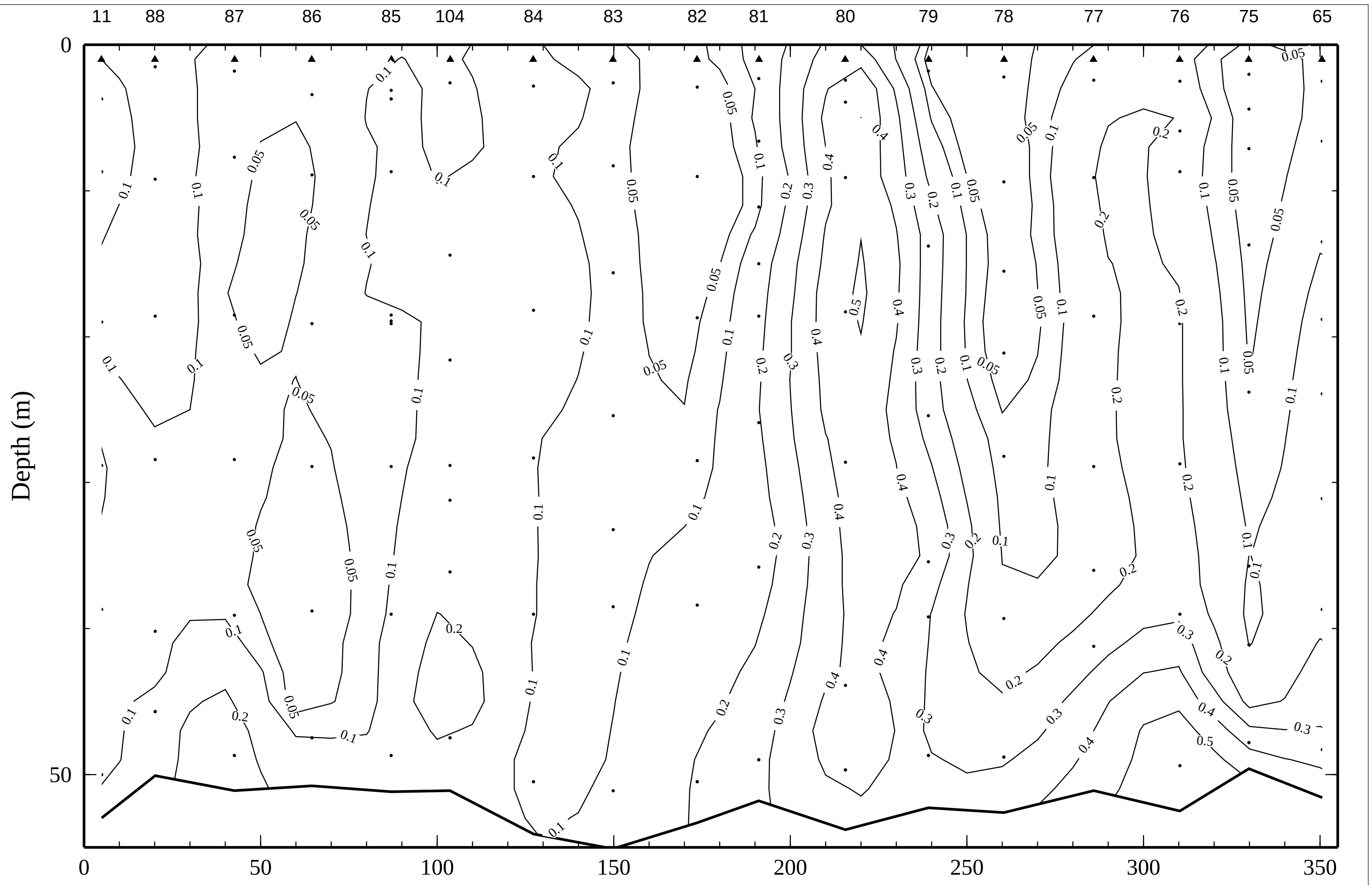

Figure 3.10.14. Ammonium (μmol·l^{-1}) on line 10 of LATEX A survey H03, 4-13 November 1992.

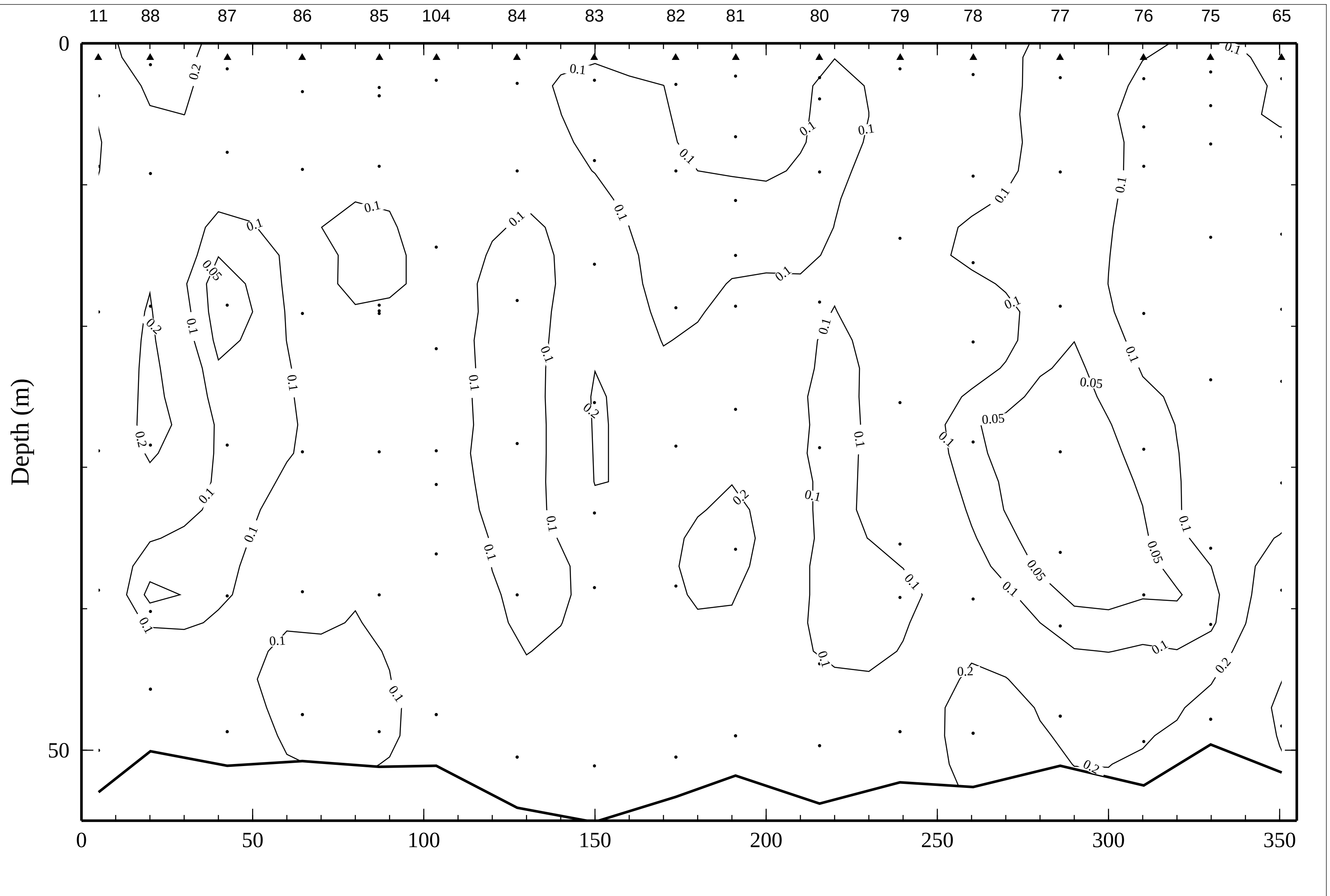

Figure 3.10.15. Urea (μmol·l^{-1}) on line 10 of LATEX A survey H03, 4-13 November 1992.

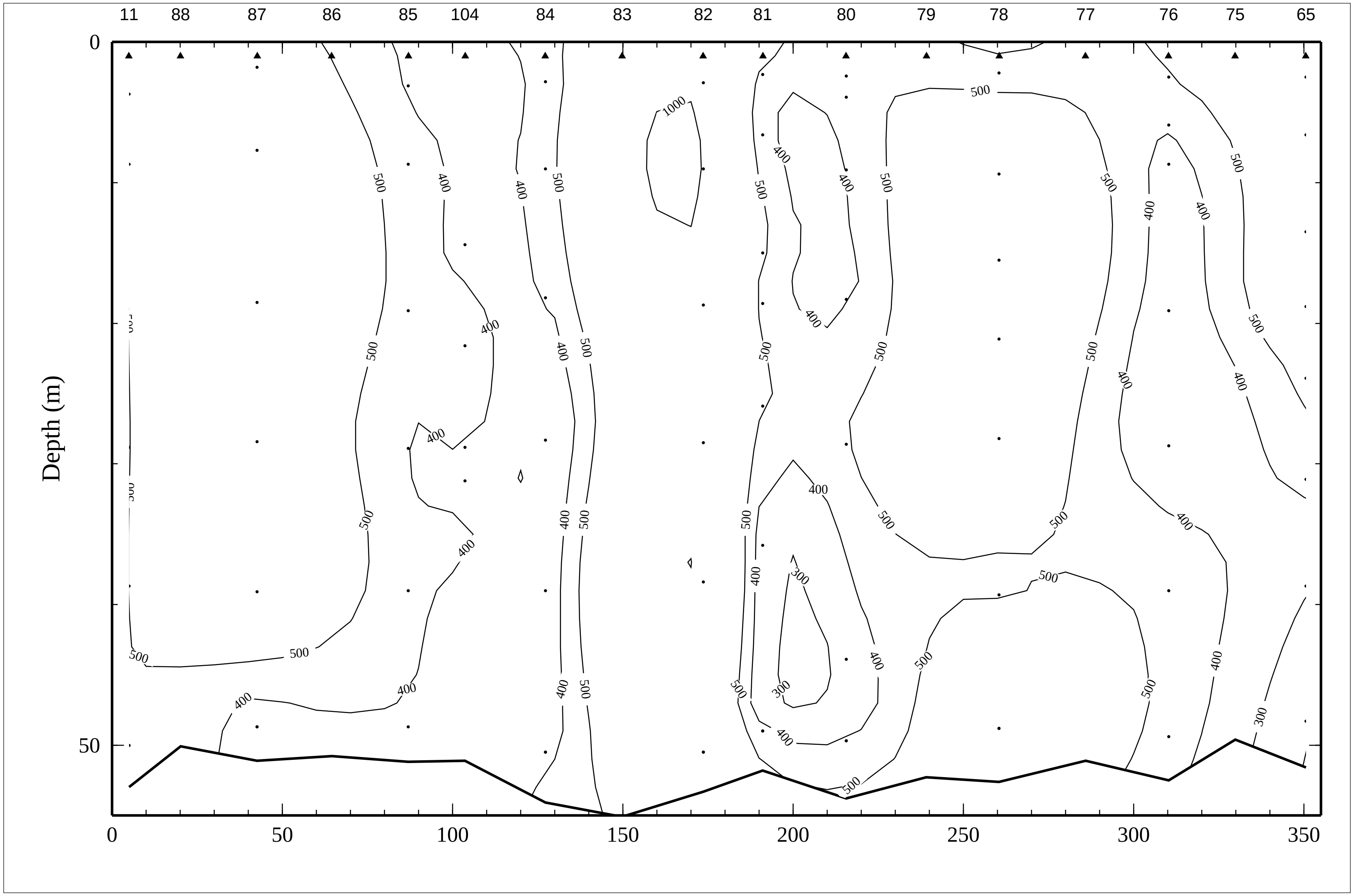

Figure 3.10.16. Chlorophyll a (ng·l-1) on line 10 of LATEX A survey H03, 4-13 November 1992.

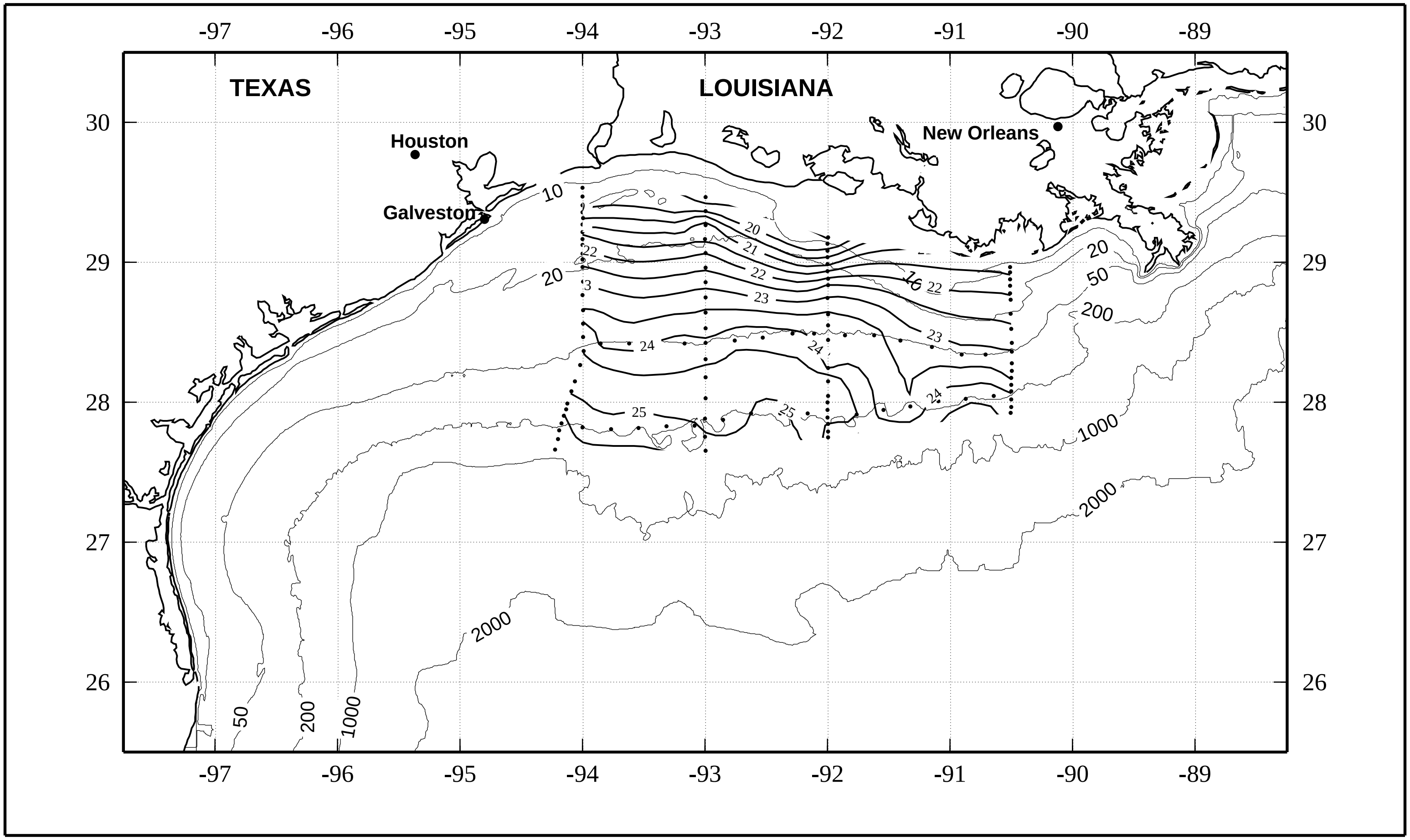

Figure 3.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H03, 4-13 November 1992.

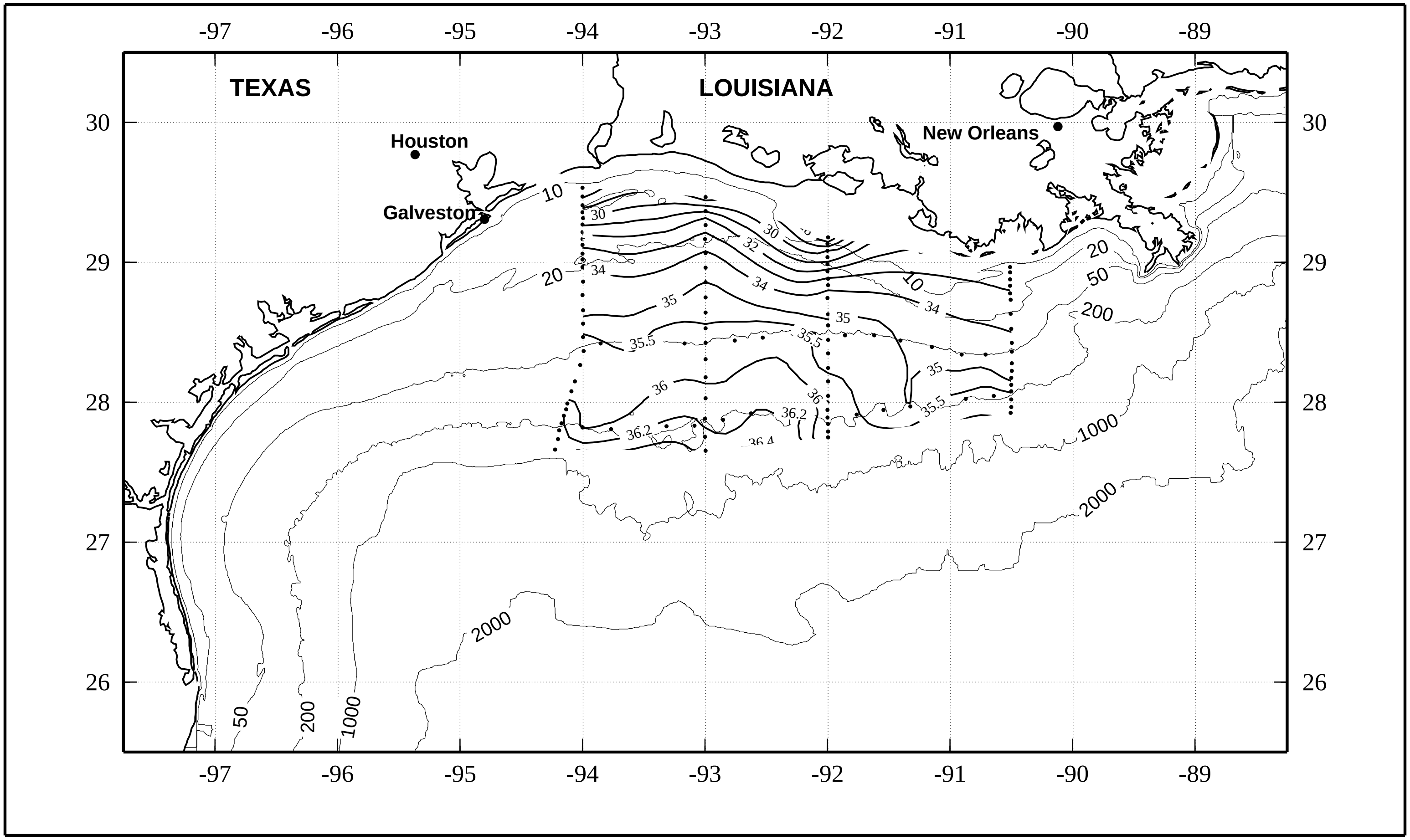

Figure 3.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H03, 4-13 November 1992.

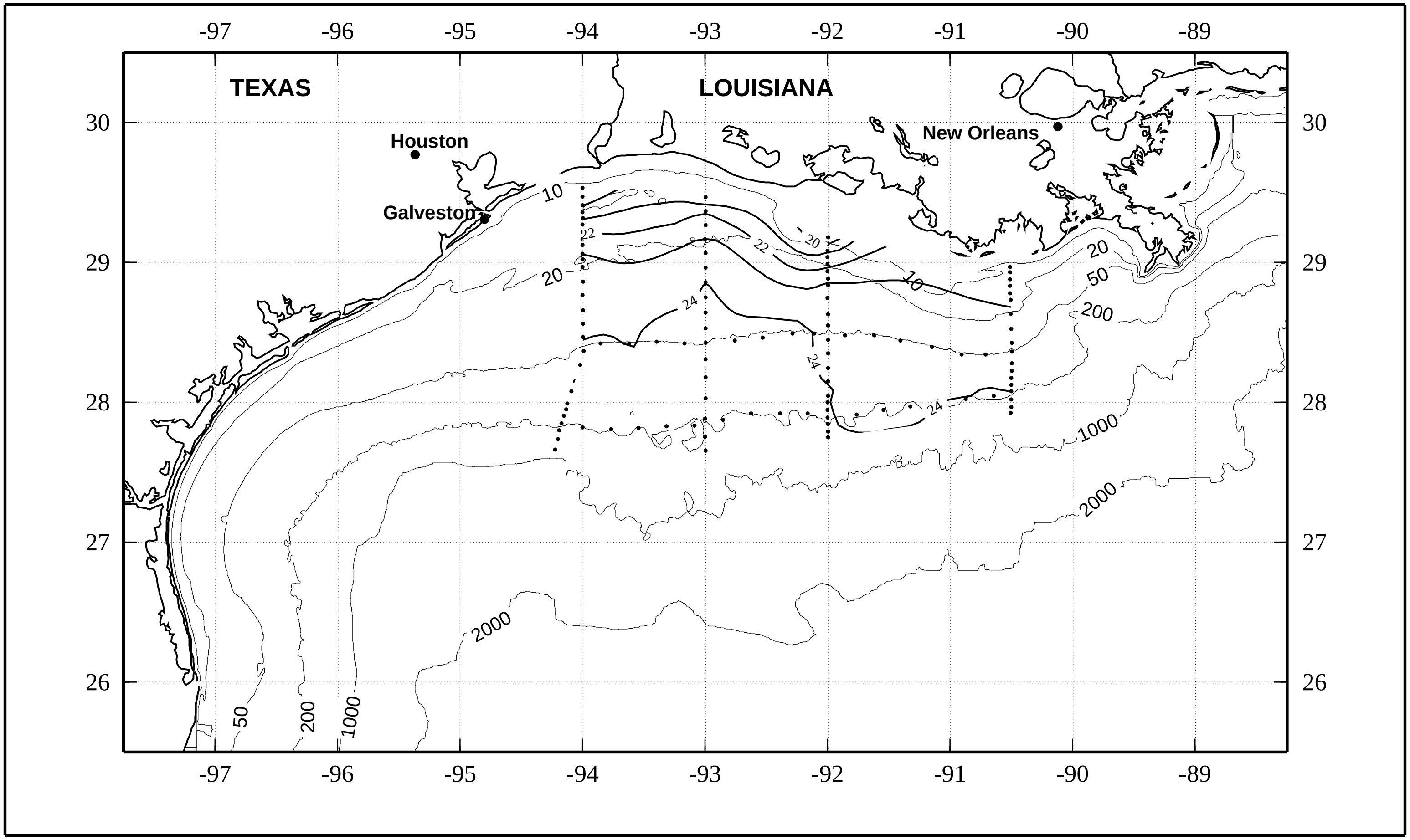

Figure 3.12.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) at 3 m on LATEX A survey H03, 4-13 November 1992.

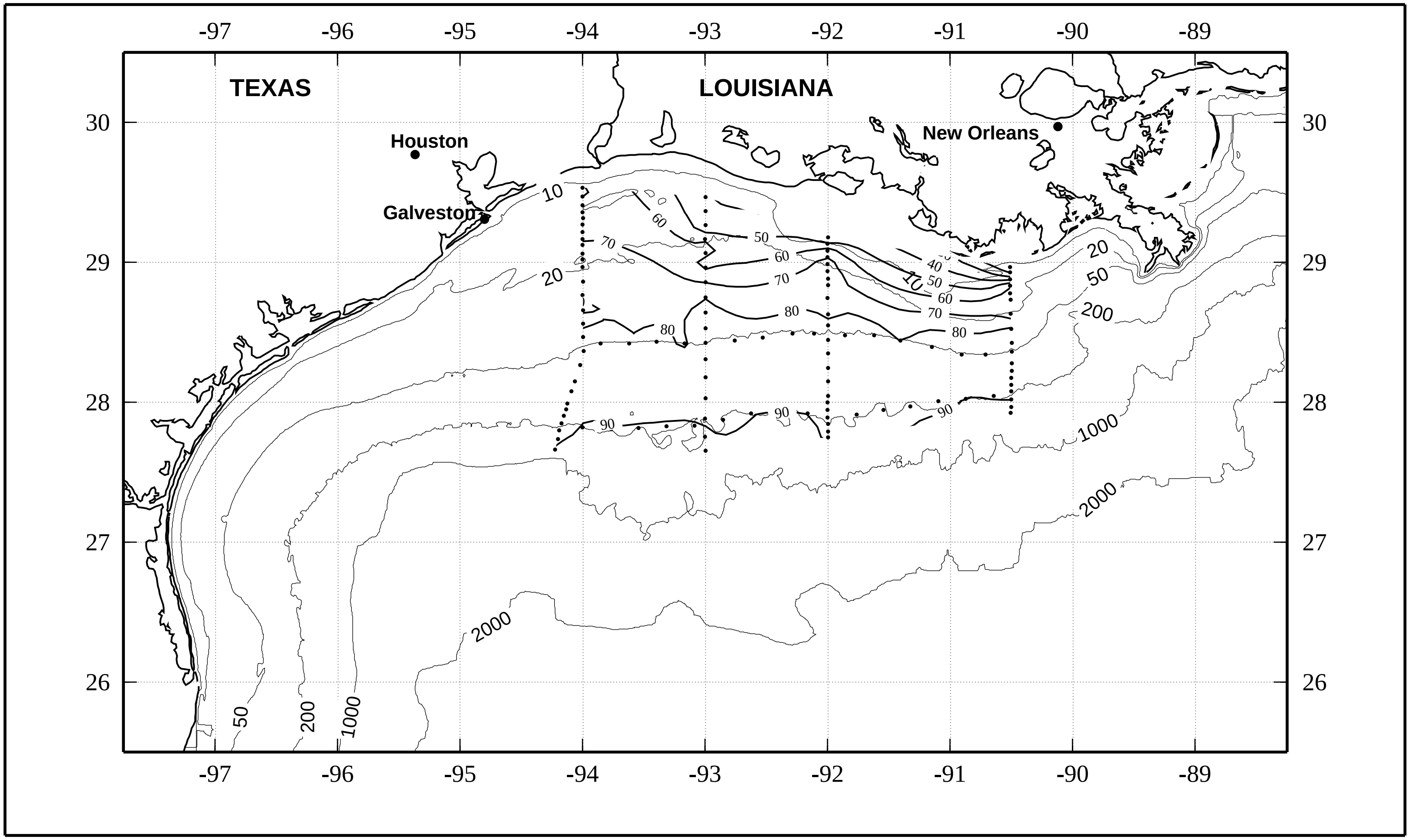

Figure 3.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H03, 4-13 November 1992.

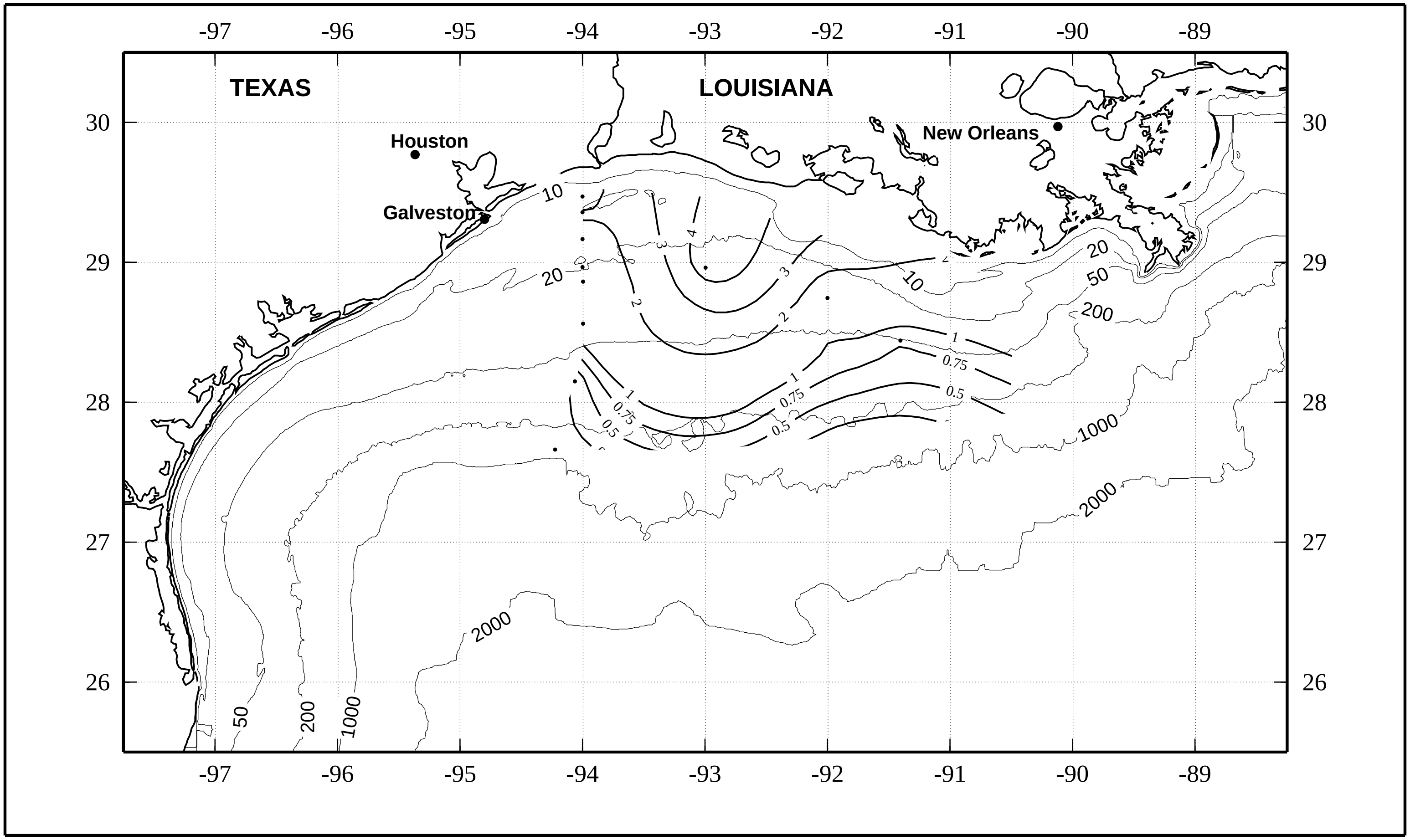

Figure 3.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H03, 4-13 November 1992.

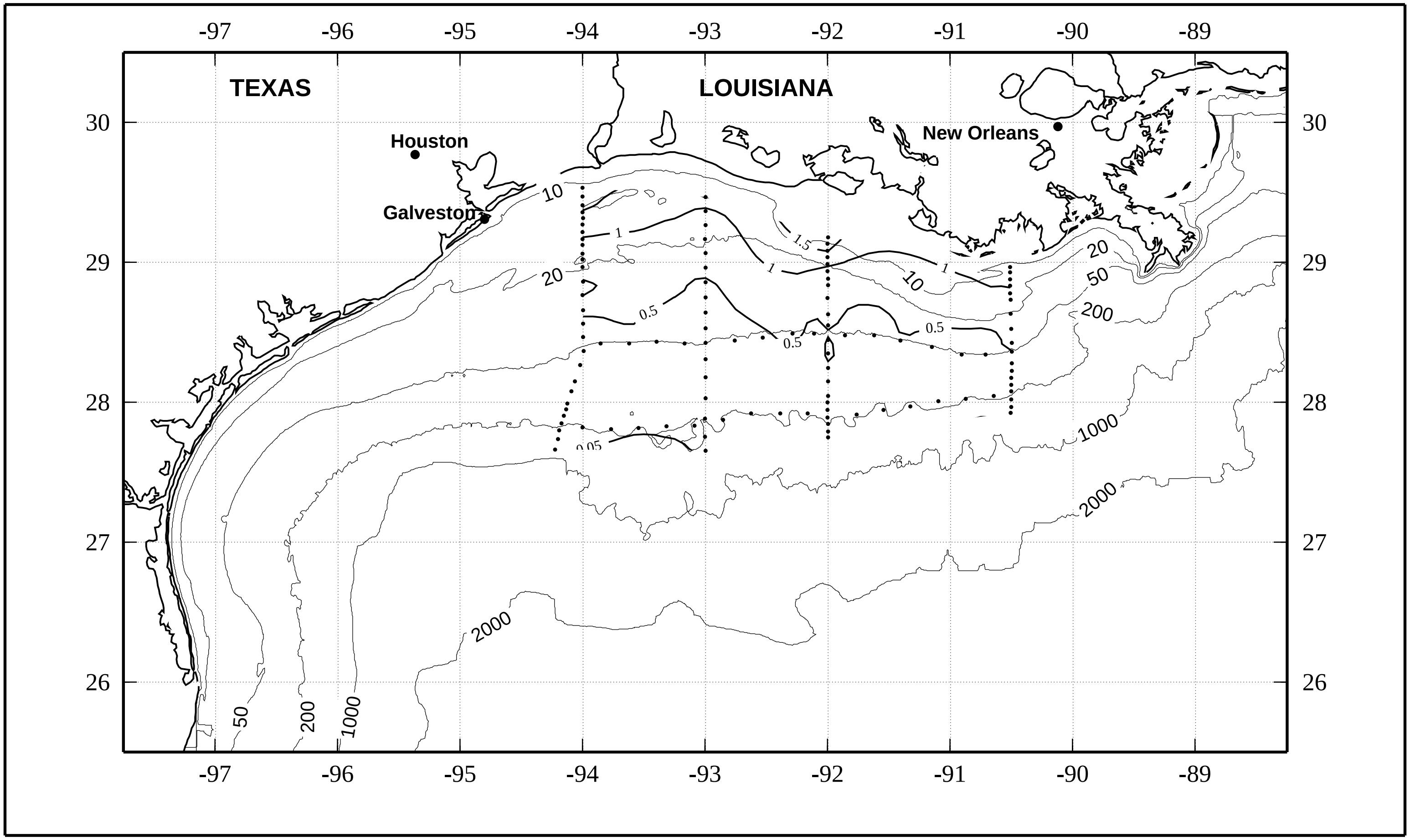

Figure 3.12.7. Relative fluorescence at 3 m on LATEX A survey H03, 4-13 November 1992.

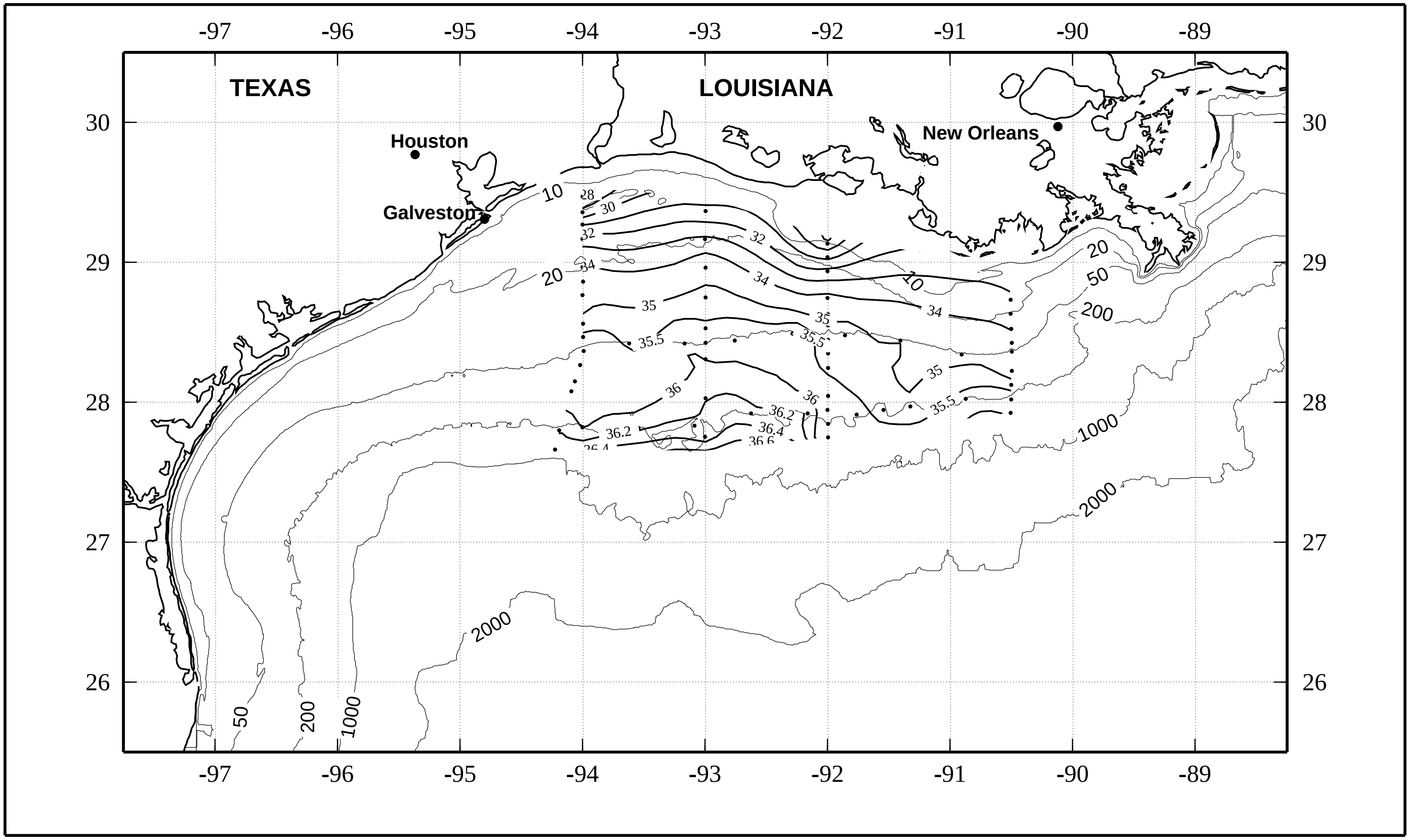

Figure 3.12.8. Bottle salinity at 3 m on LATEX A survey H03, 4-13 November 1992.

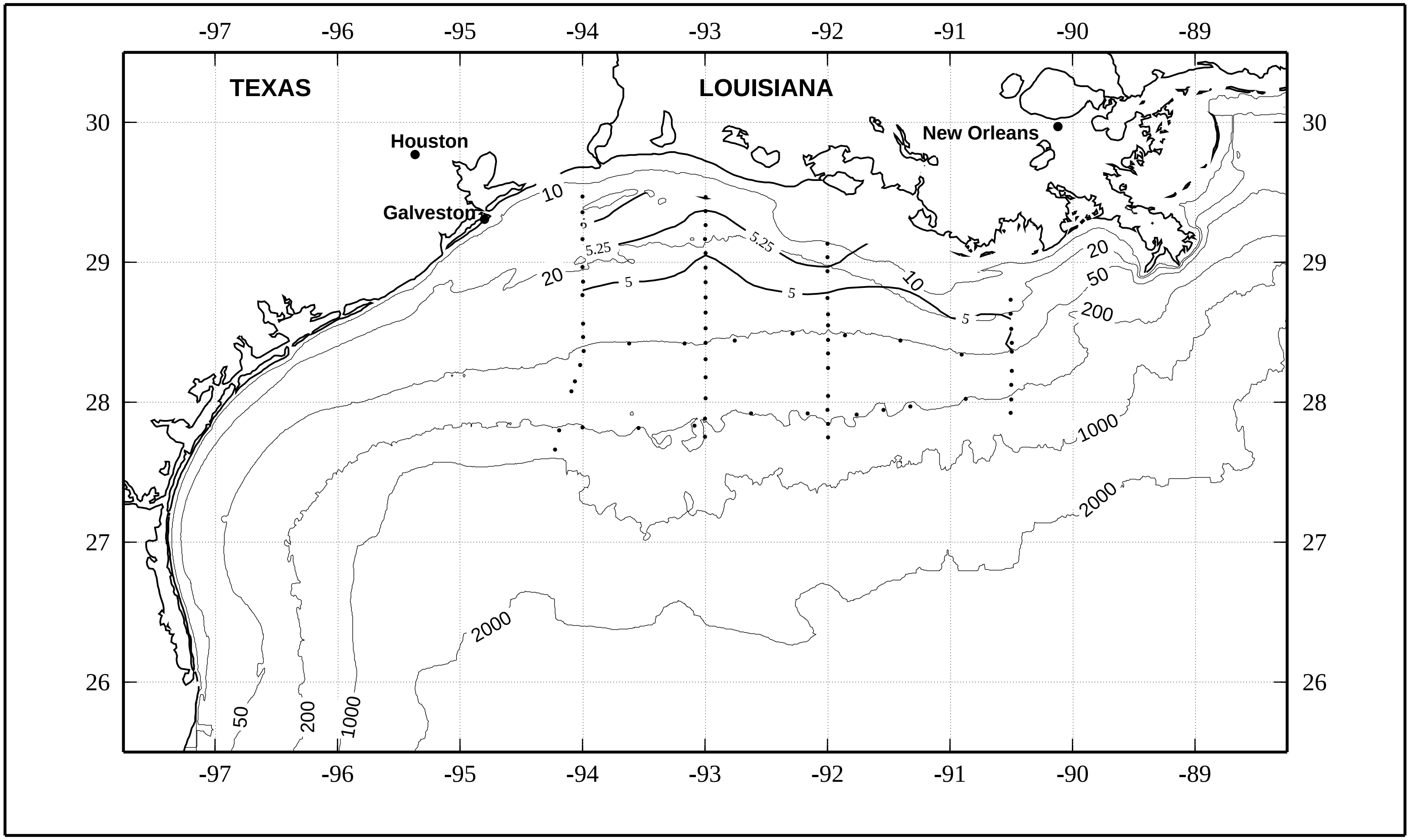

Figure 3.12.9. Dissolved oxygen (ml·l-1) at 3 m on LATEX A survey H03, 4-13 November 1992.

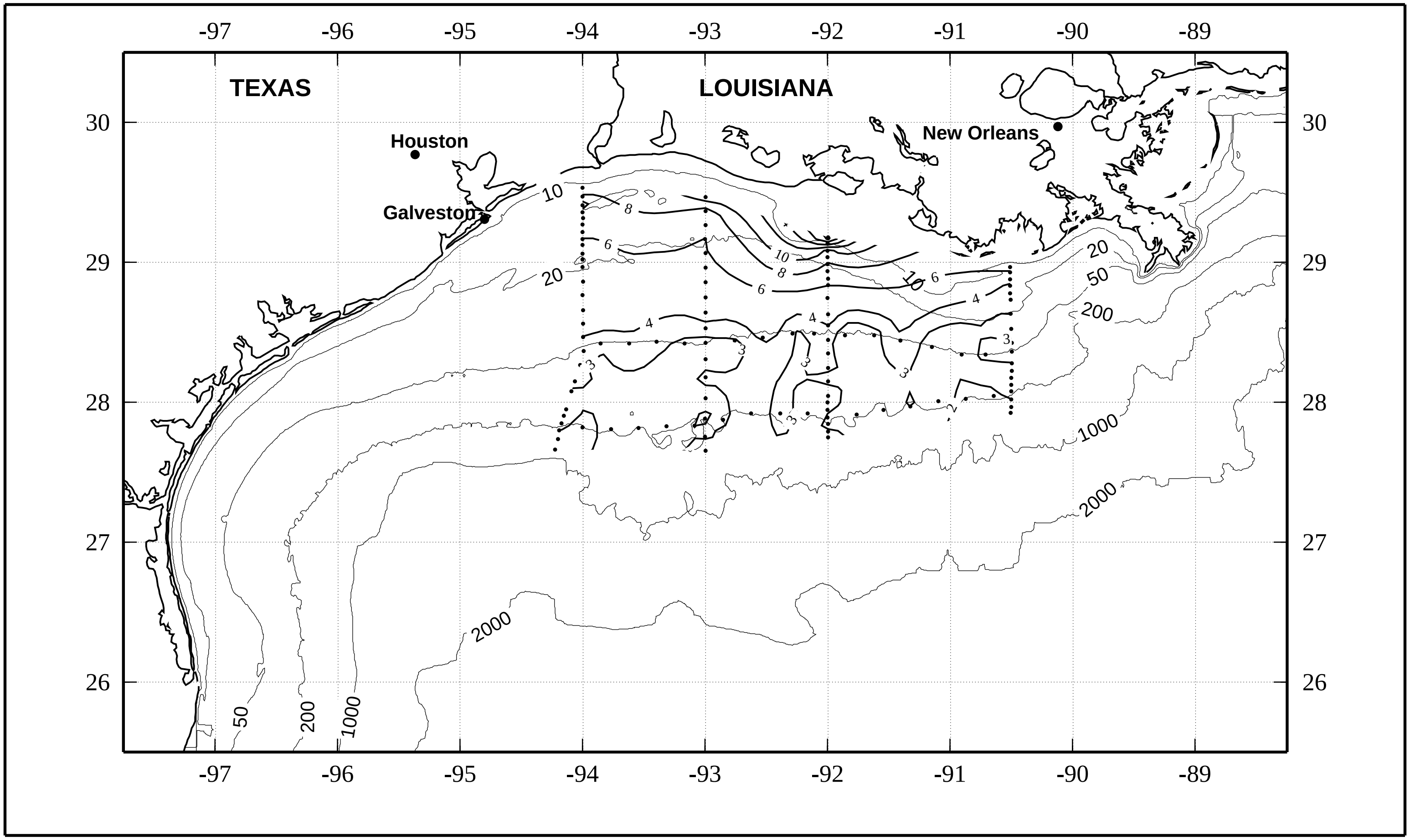

Figure 3.12.10. Silicate (μmol·l^{-1}) at 3 m on LATEX A survey H03, 4-13 November 1992.

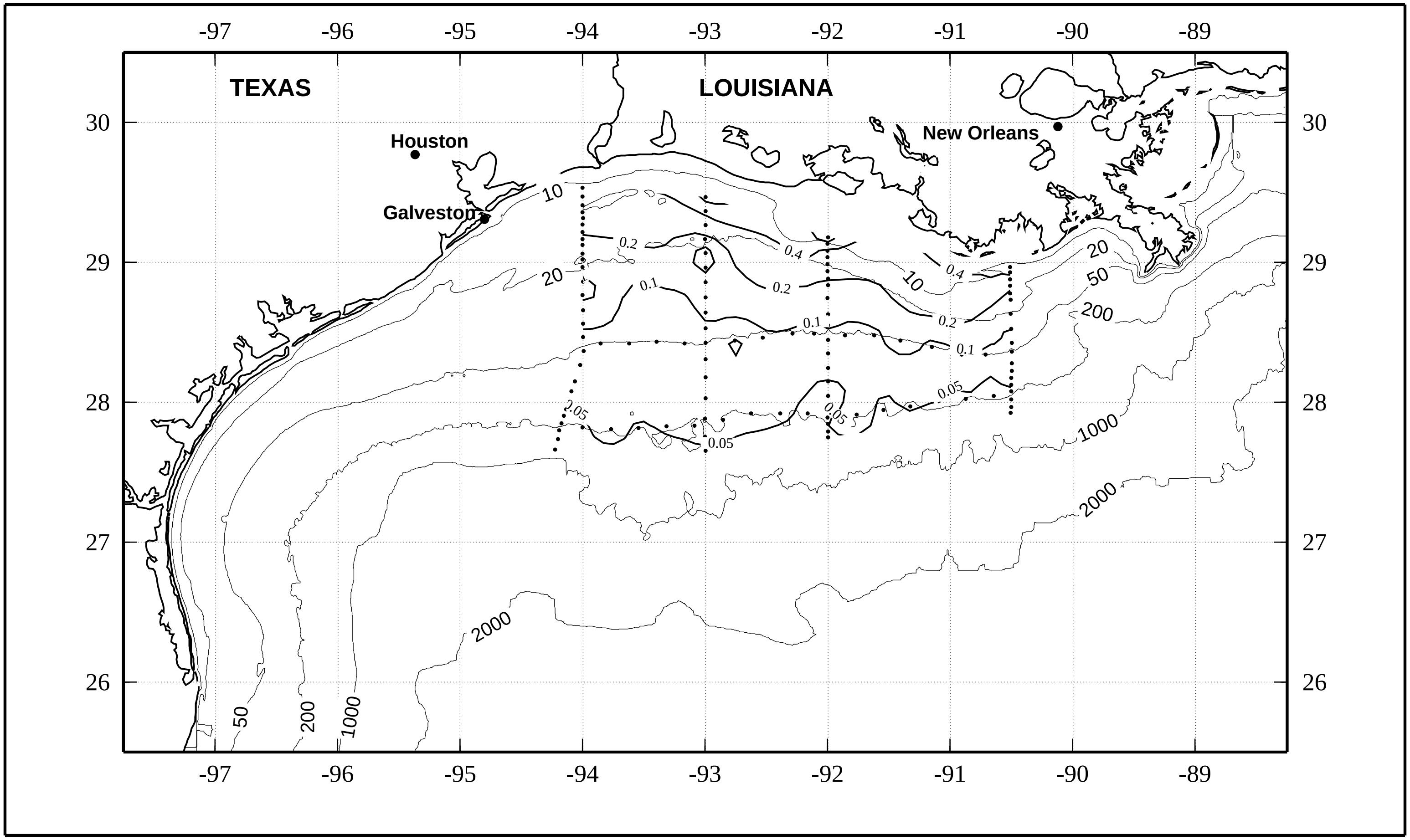

Figure 3.12.11. Phosphate (μmol·l^{-1}) at 3 m on LATEX A survey H03, 4-13 November 1992.

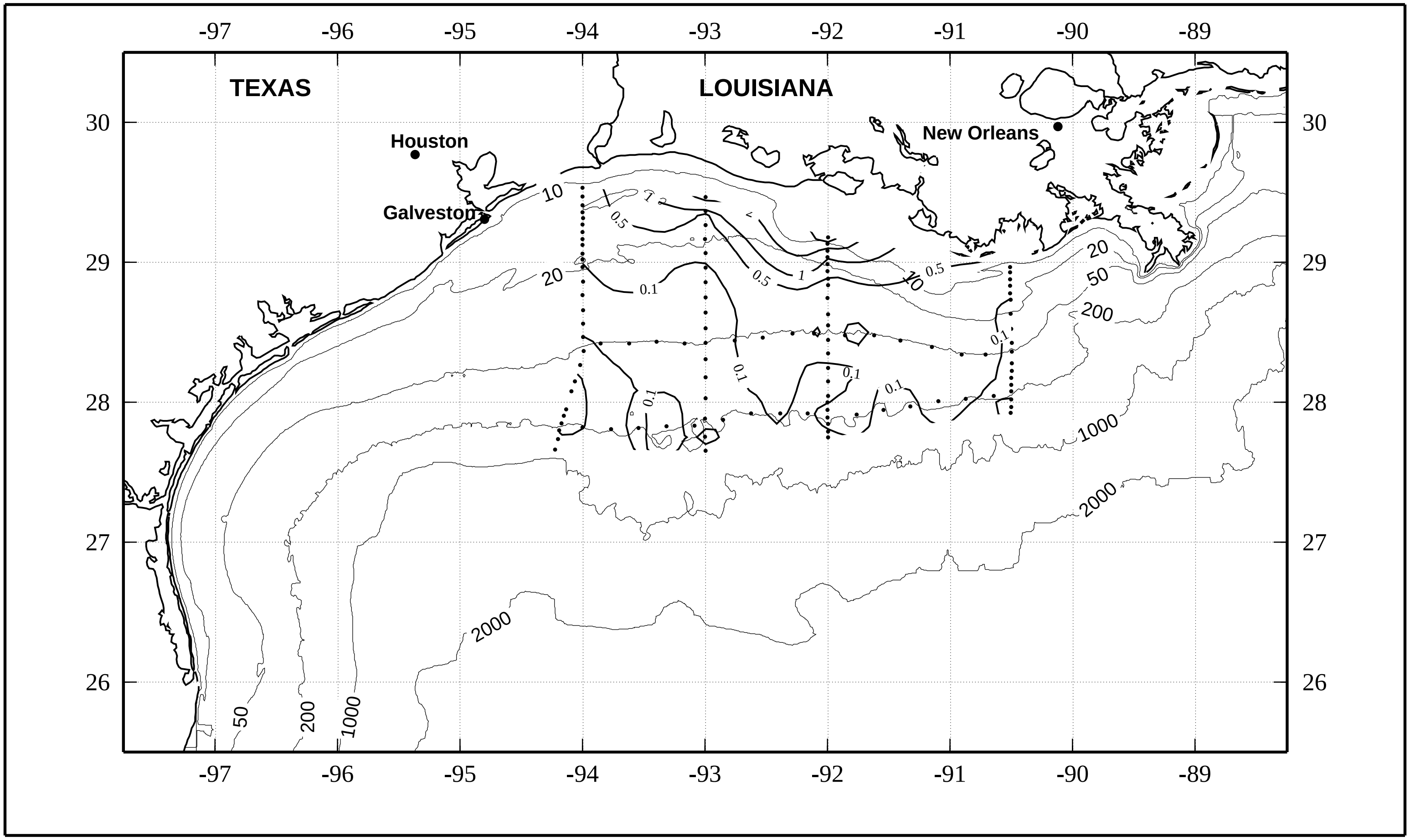

Figure 3.12.12. Nitrate (μmol·l^{-1}) at 3 m on LATEX A survey H03, 4-13 November 1992.

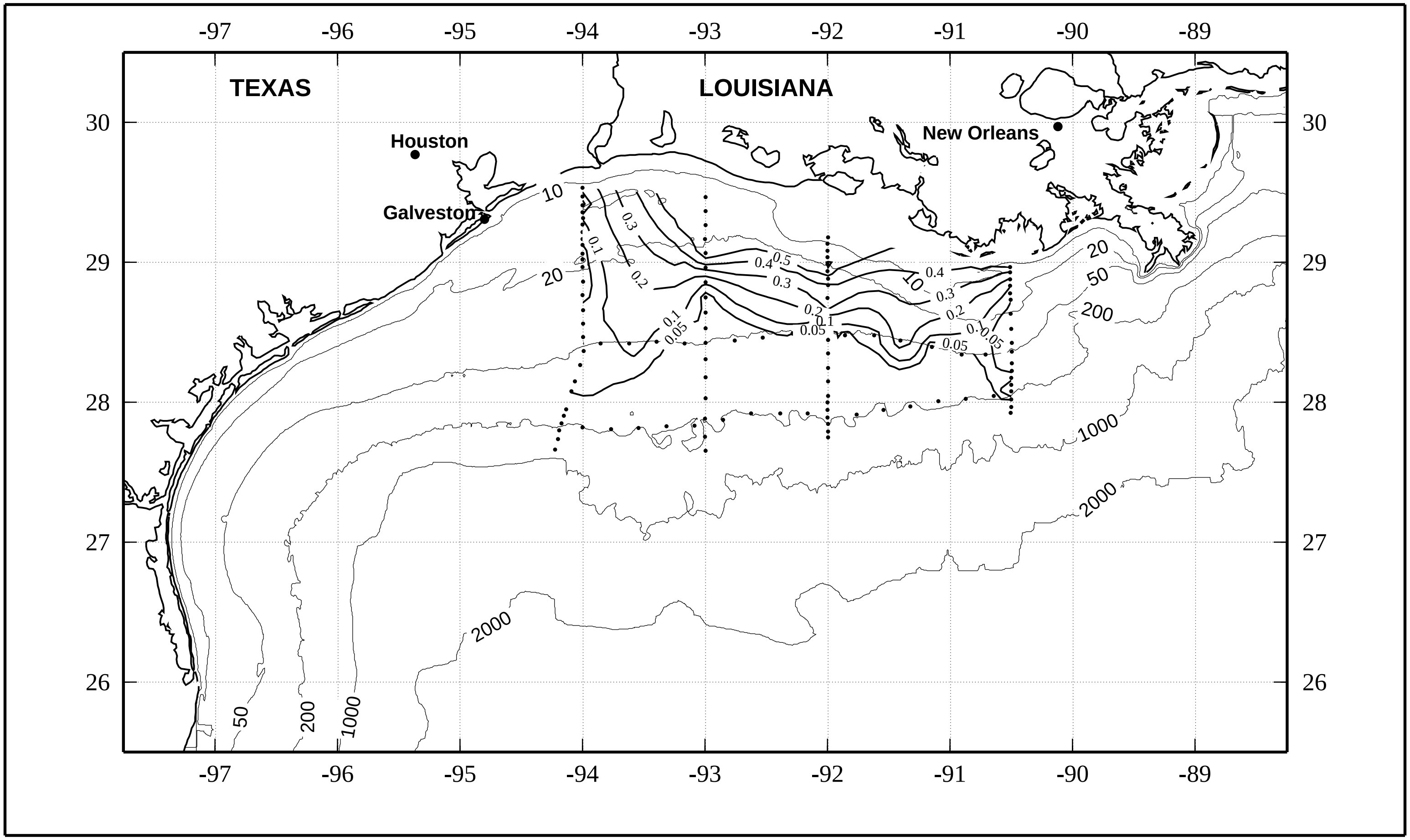

Figure 3.12.13. Nitrite (μmol·l^{-1}) at 3 m on LATEX A survey H03, 4-13 November 1992.

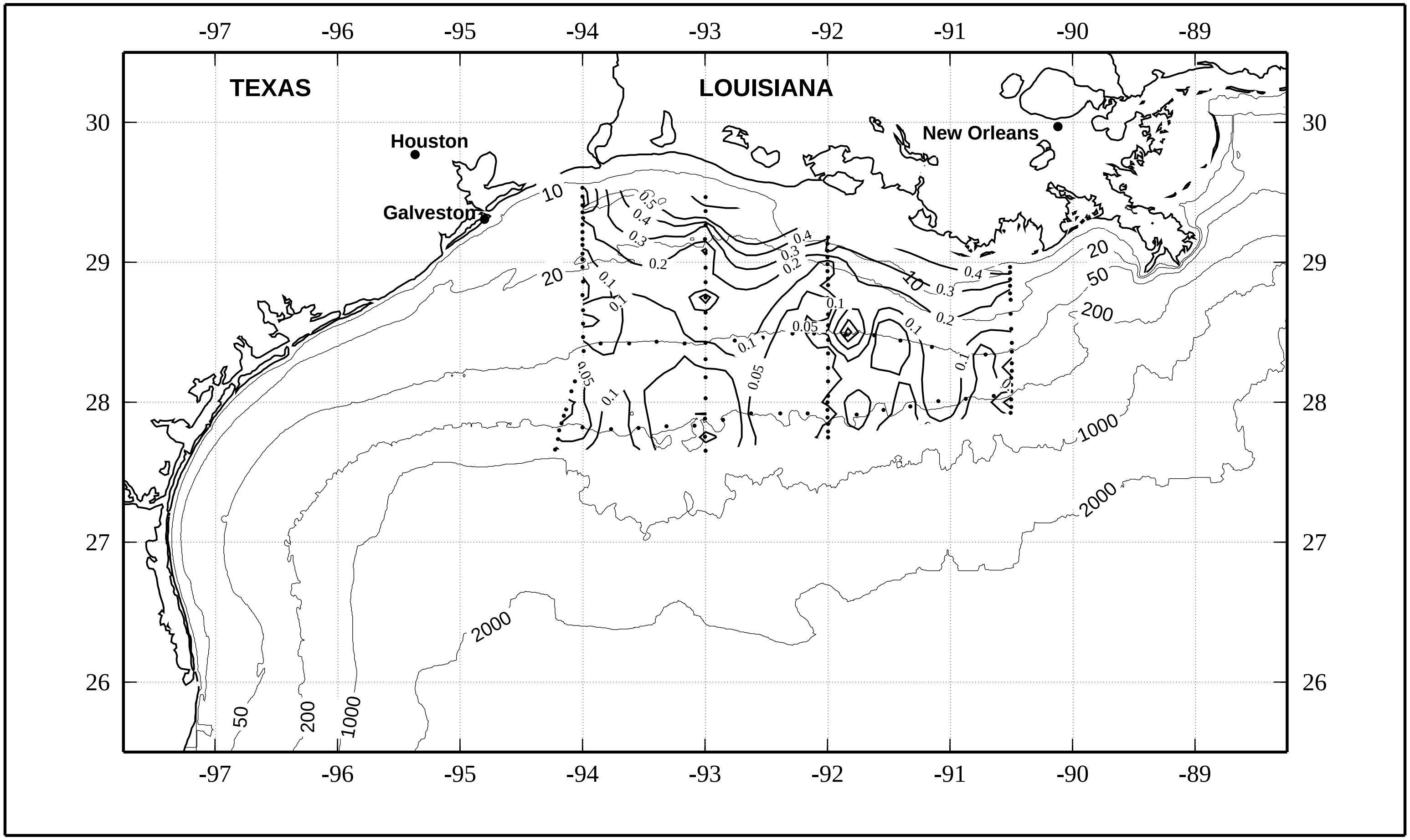

Figure 3.12.14. Ammonium (μmol·l^{-1}) at 3 m on LATEX A survey H03, 4-13 November 1992.

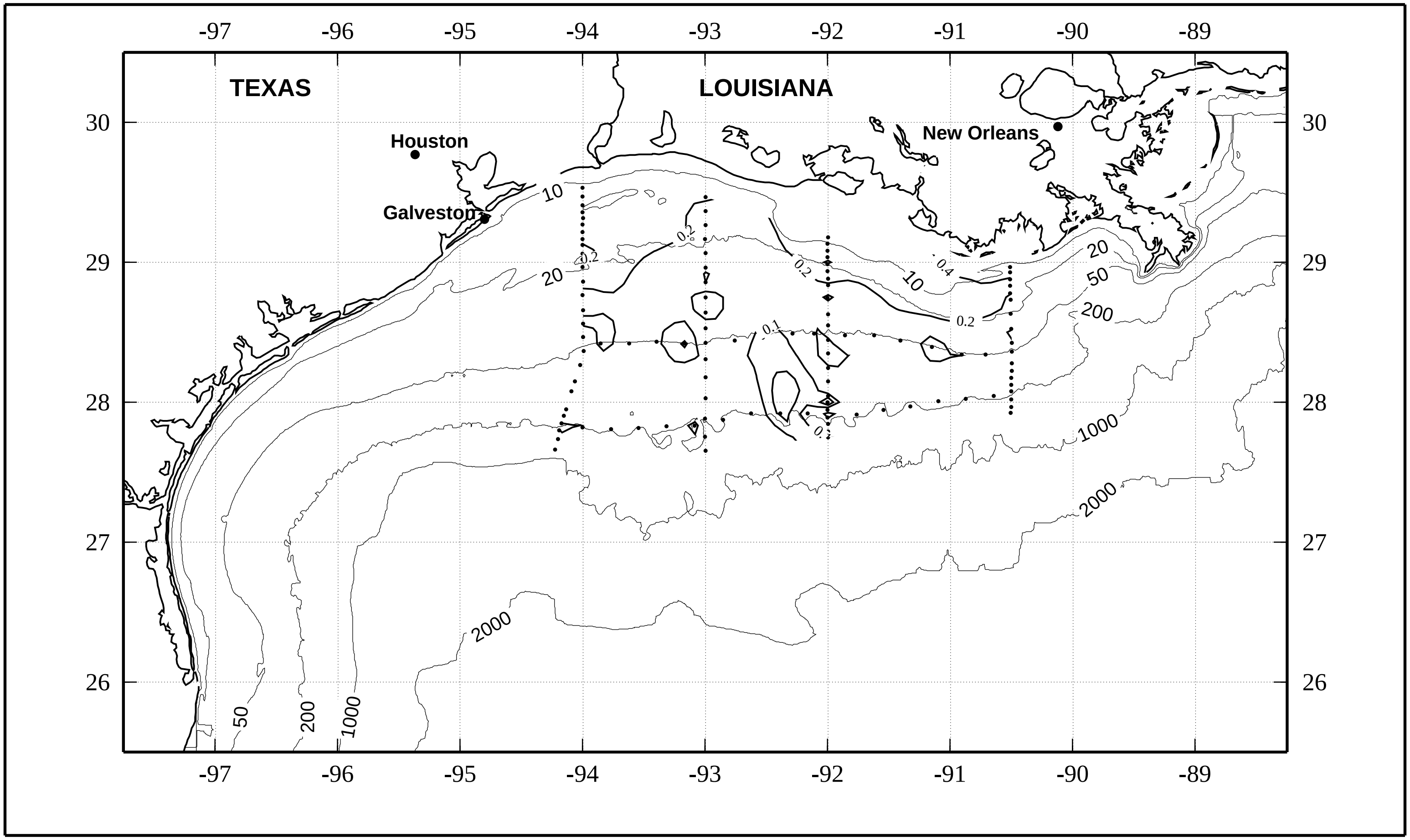

Figure 3.12.15. Urea ($\mu mol \cdot l^{-1}$) on LATEX A survey H03, 4-13 November 1992.

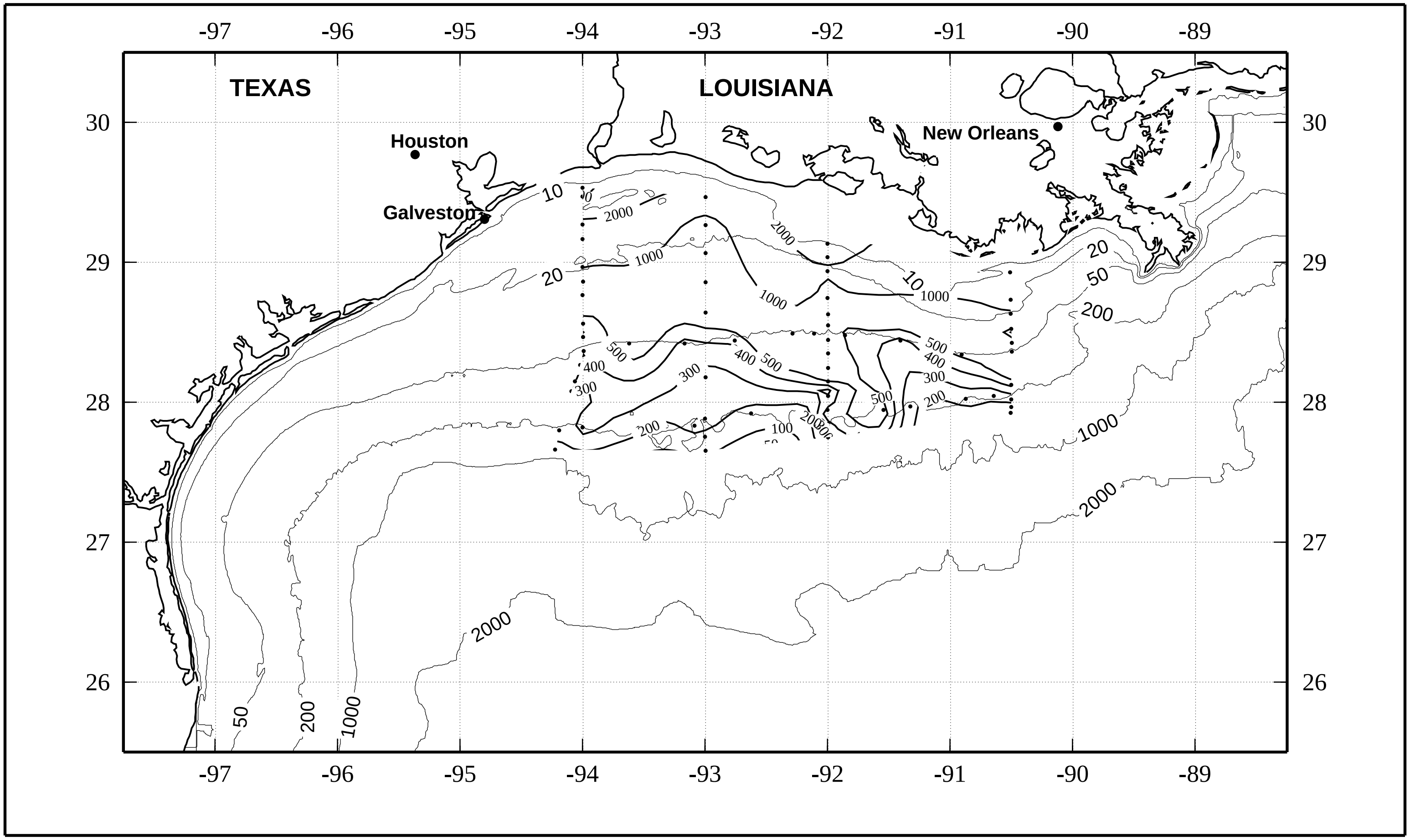

Figure 3.12.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H03, 4-13 November 1992.

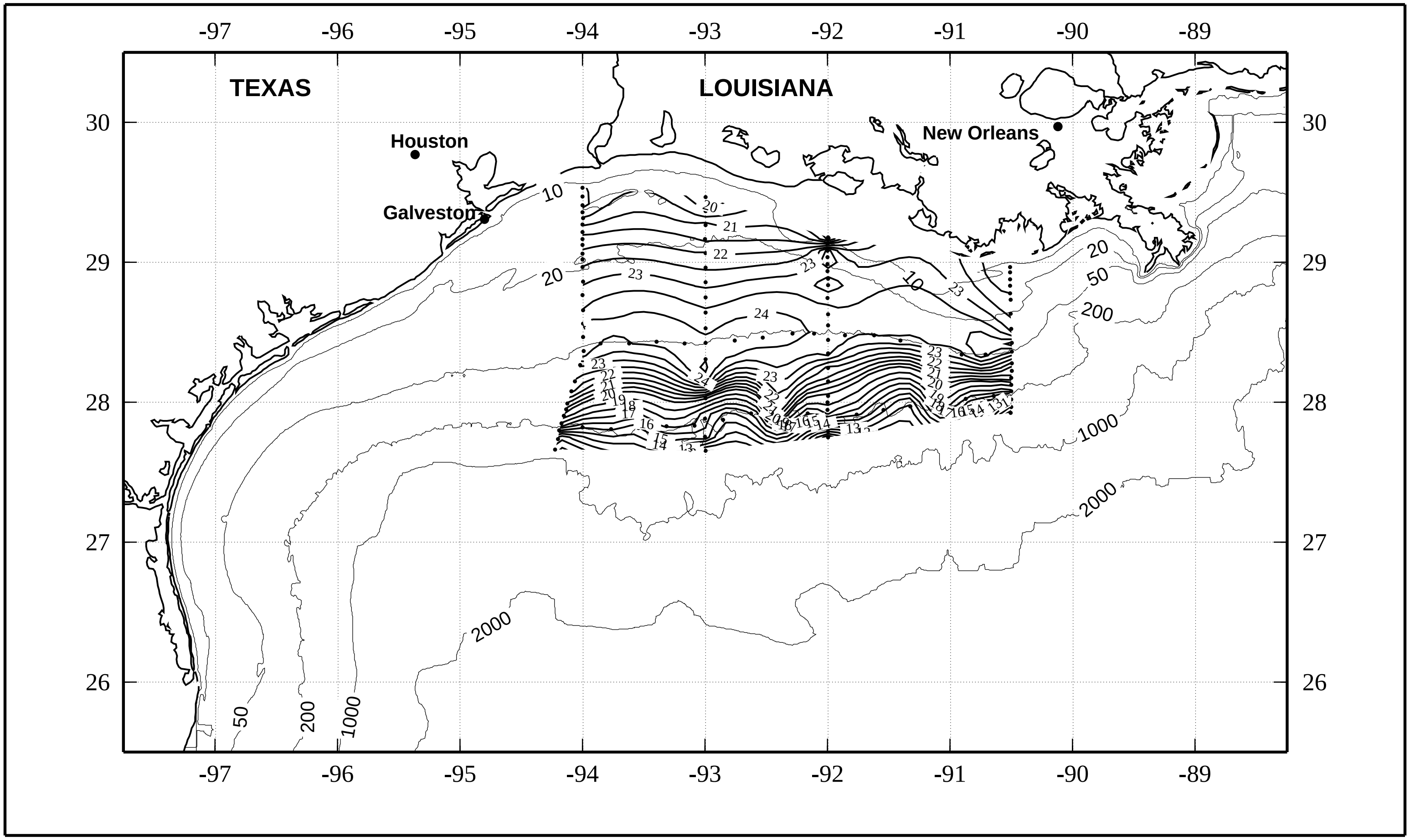

Figure 3.13.1. Potential temperature (˚C) near bottom on LATEX A survey H03, 4-13 November 1992.

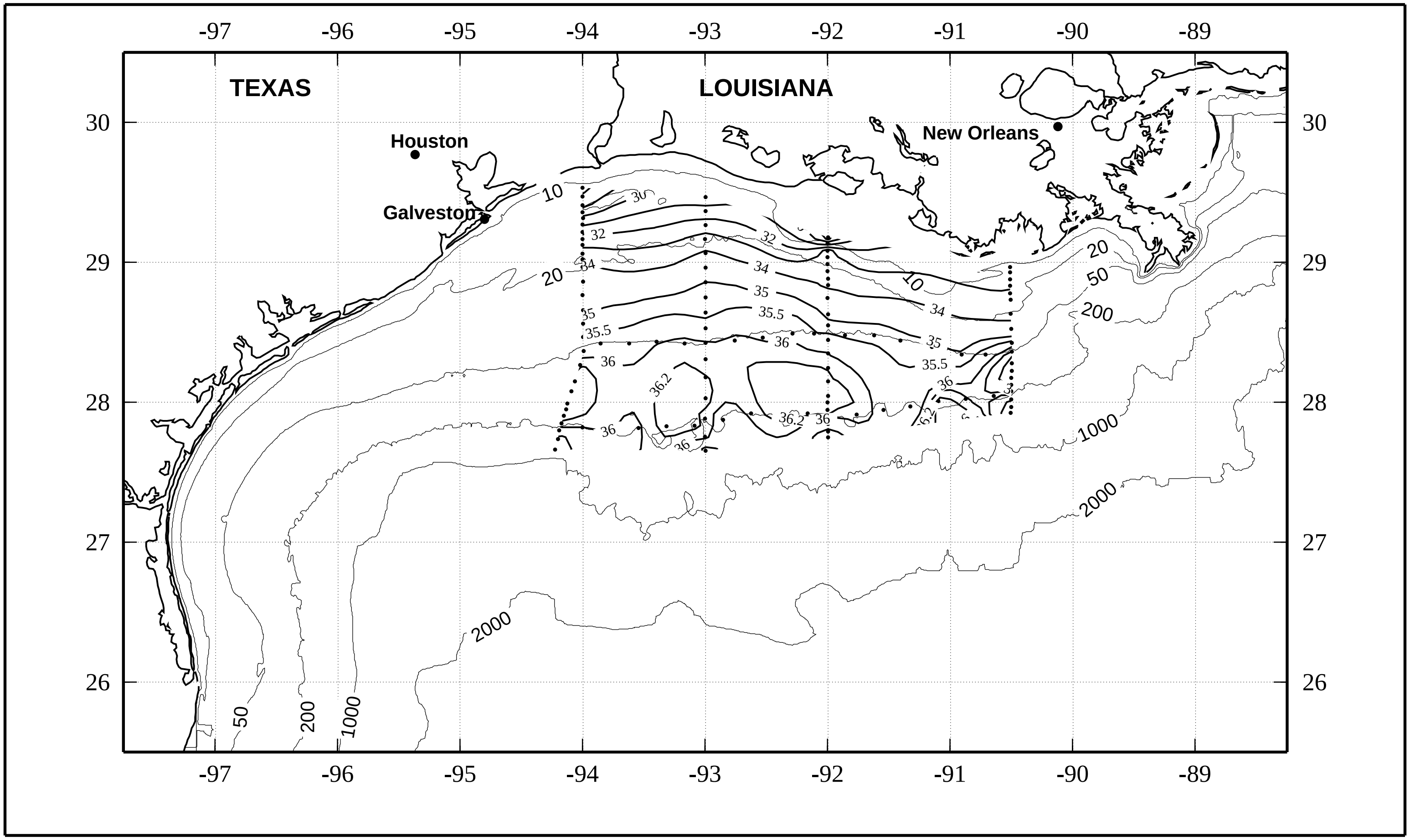

Figure 3.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H03, 4-13 November 1992.

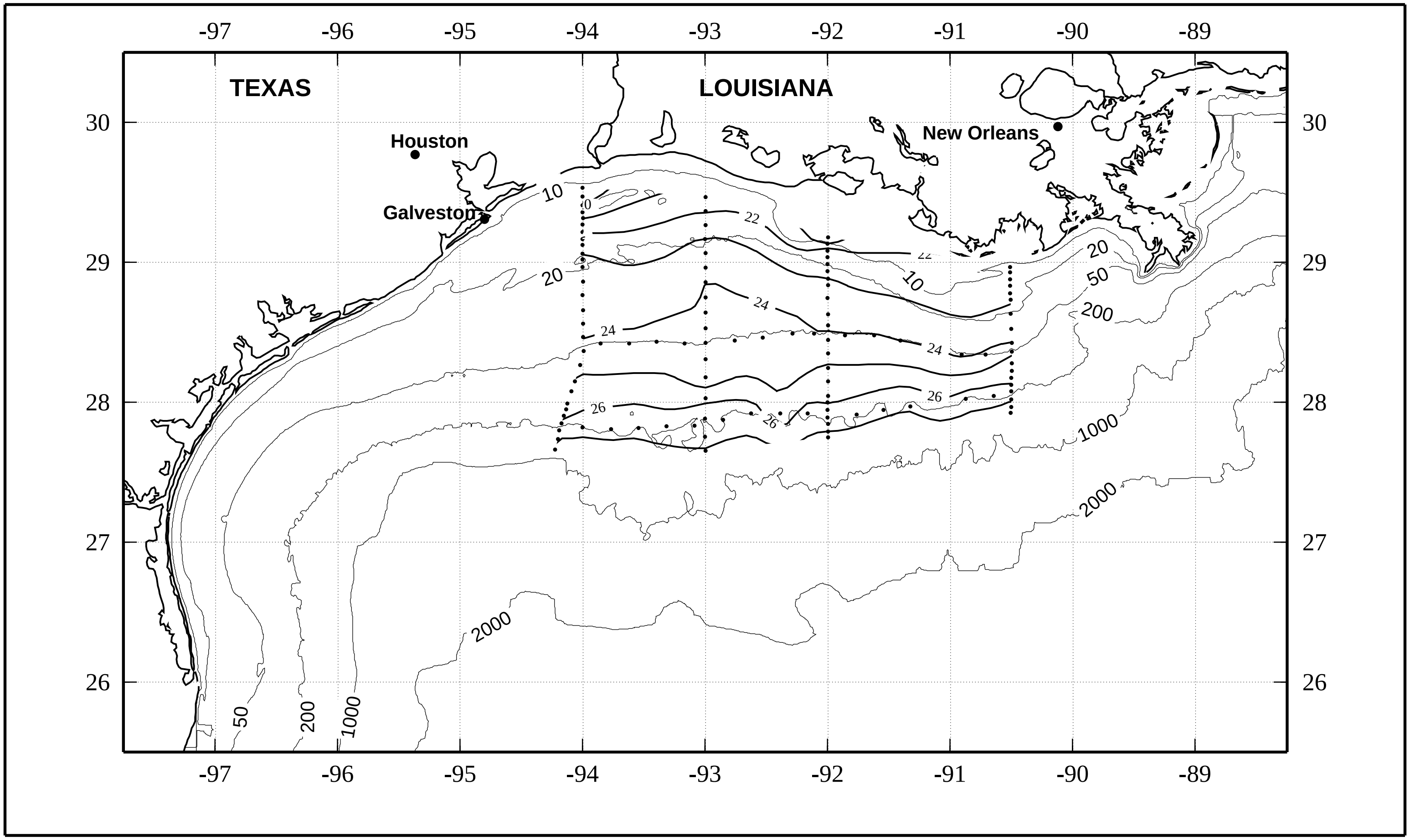

Figure 3.13.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) near bottom on LATEX A survey H03, 4-13 November 1992.

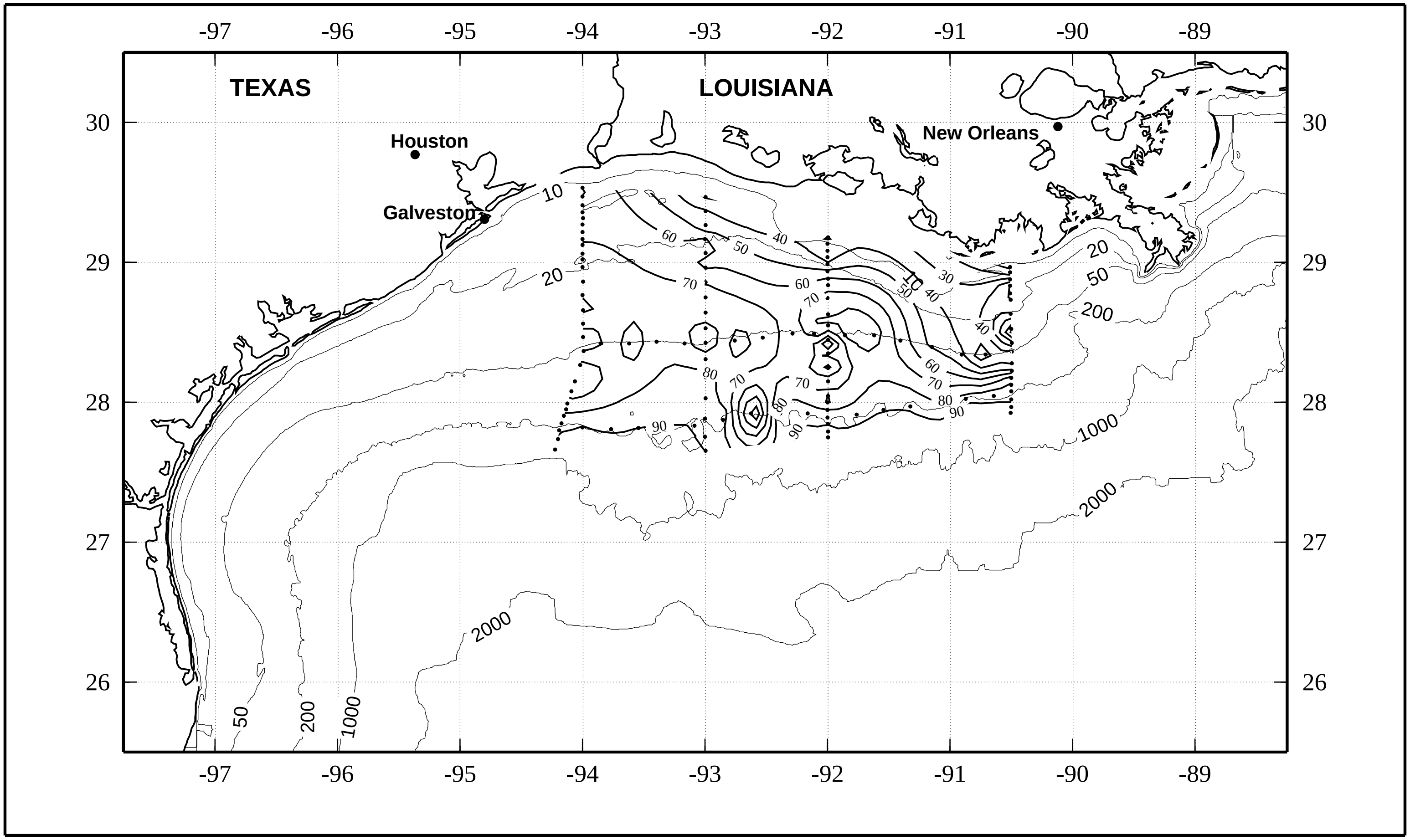

Figure 3.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H03, 4-13 November 1992.

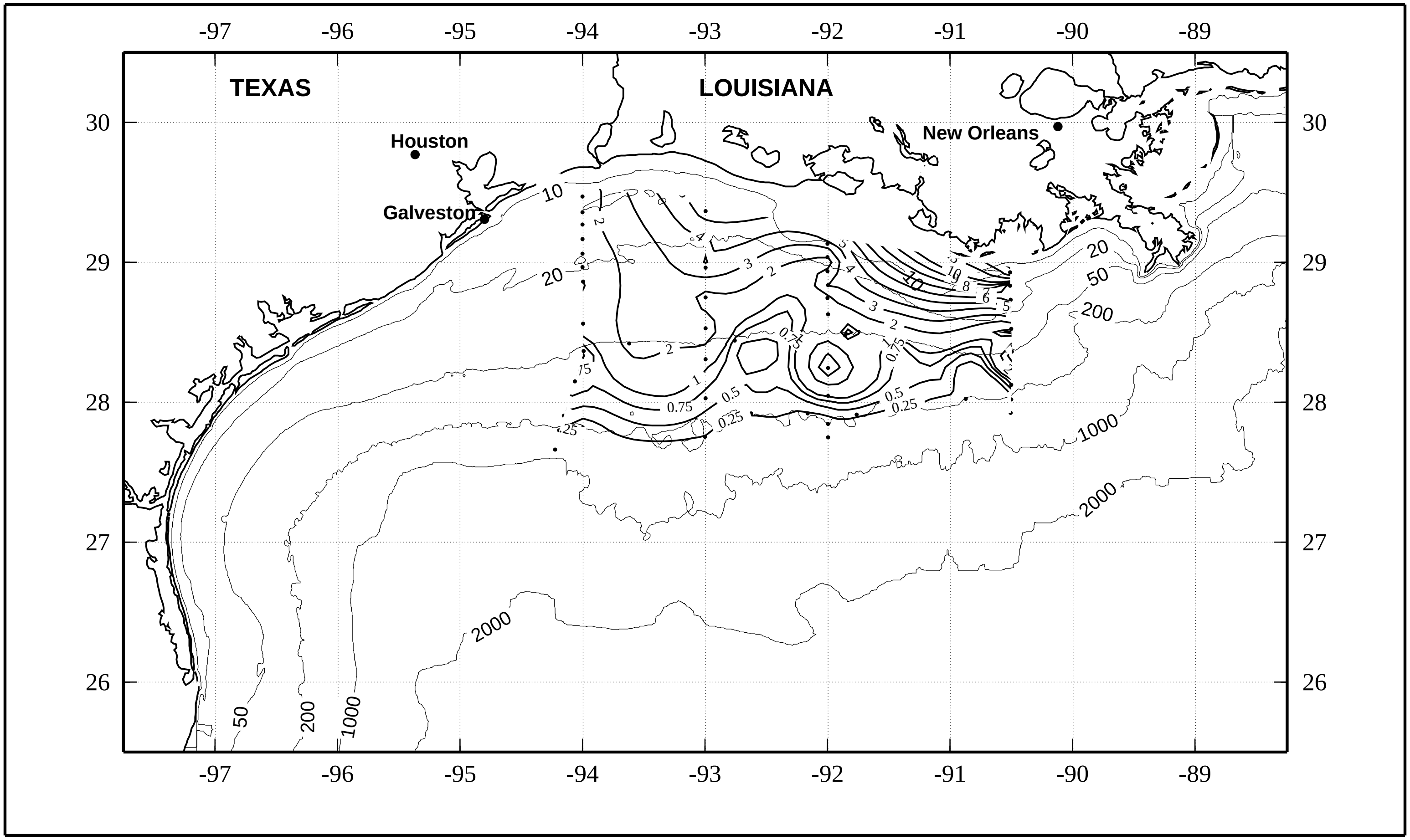

Figure 3.13.5. Suspended particulate material (mg·l^{-1}) near bottom on LATEX A survey H03, 4-13 November 1992.

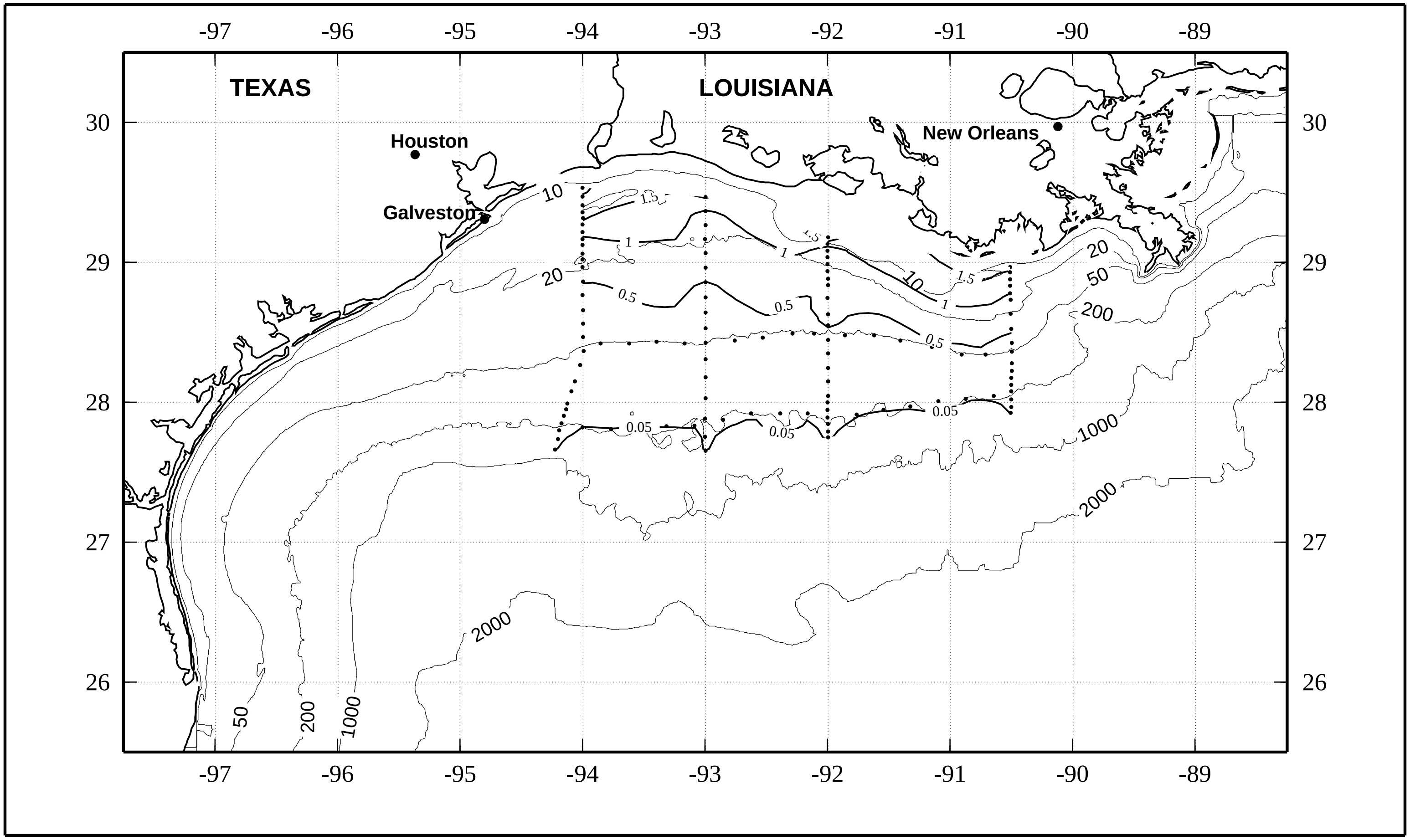

Figure 3.13.7. Relative fluorescence near bottom on LATEX A survey H03, 4-13 November 1992.

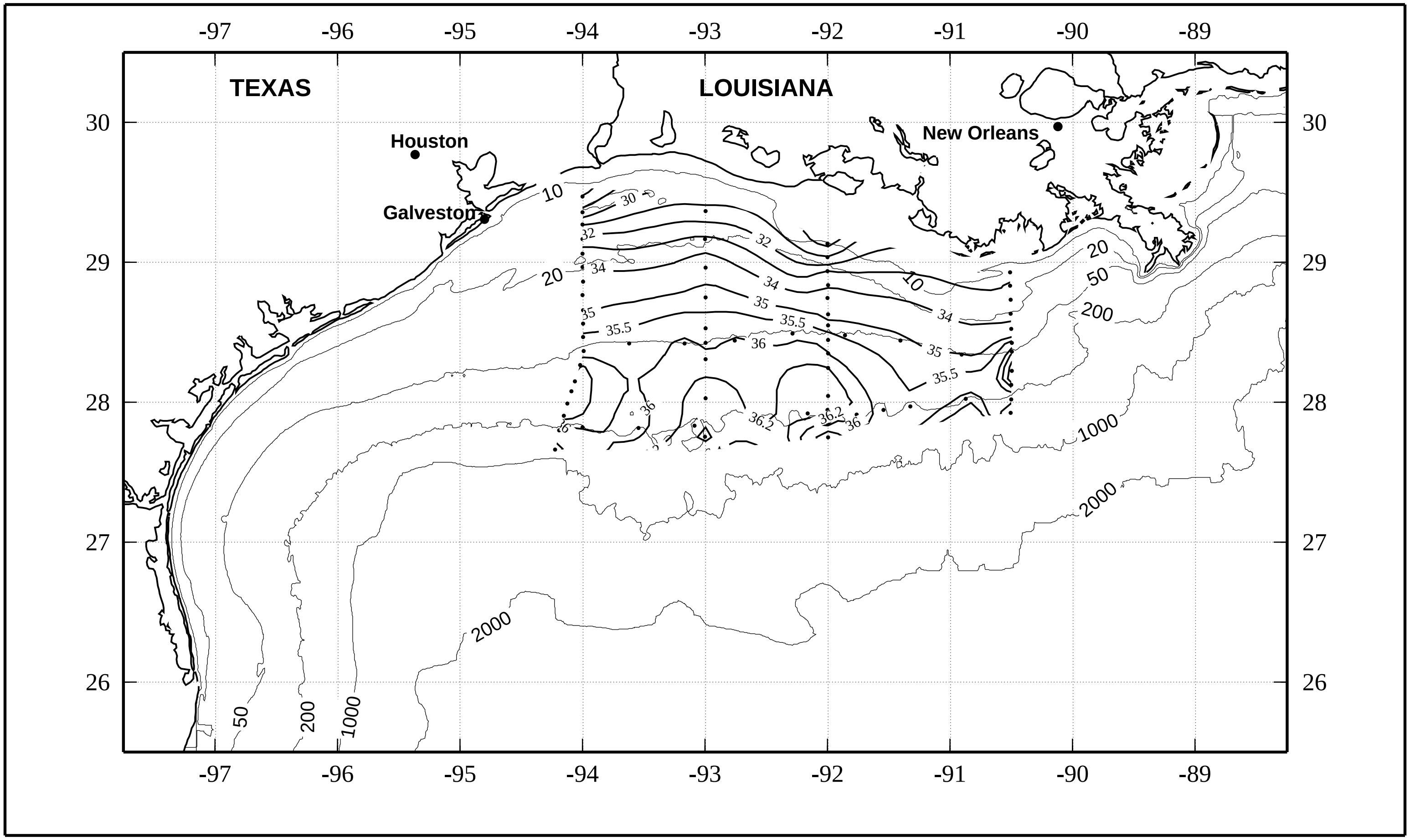

Figure 3.13.8. Bottle salinity near bottom on LATEX A survey H03, 4-13 November 1992.

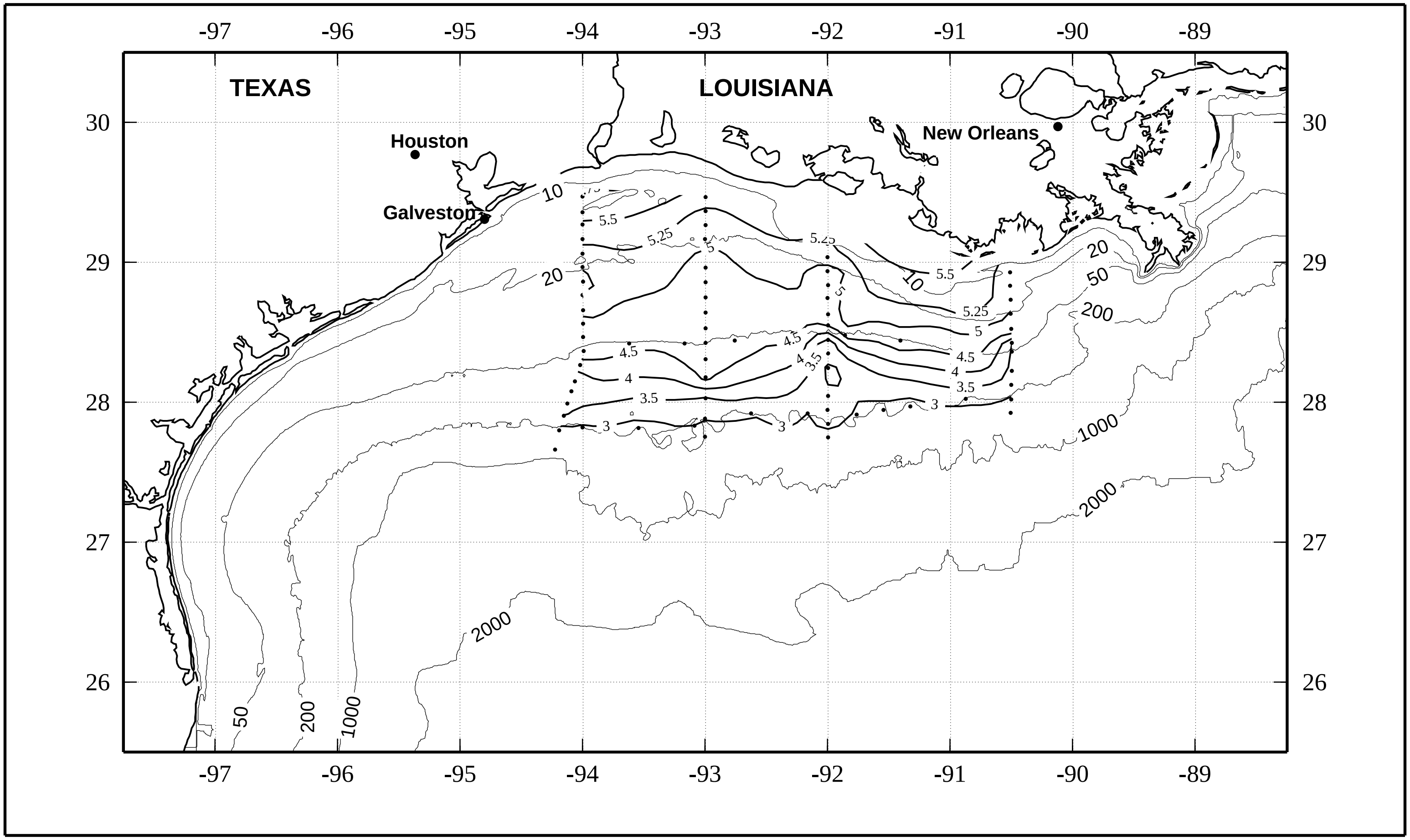

Figure 3.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H03, 4-13 November 1992.

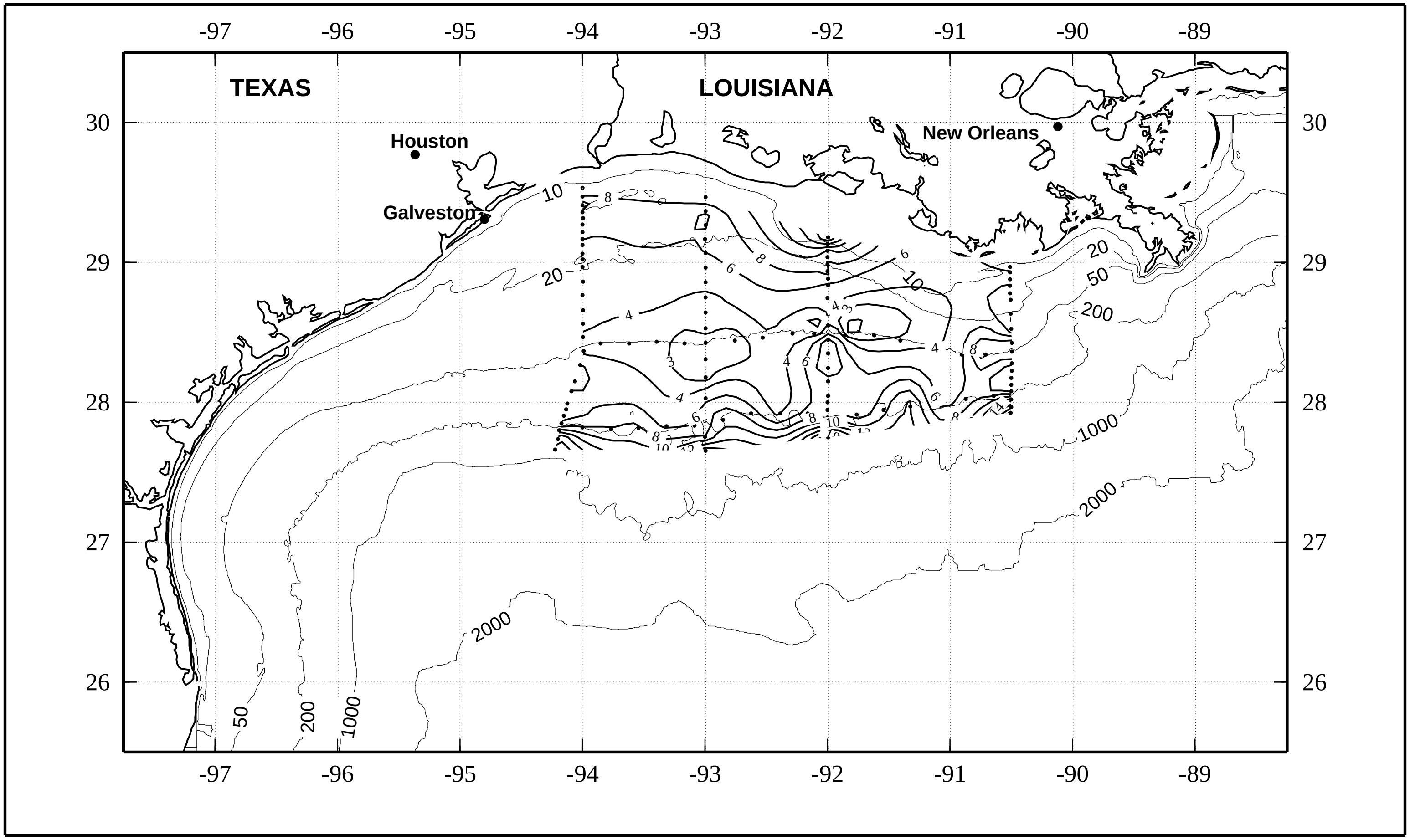

Figure 3.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H03, 4-13 November 1992.

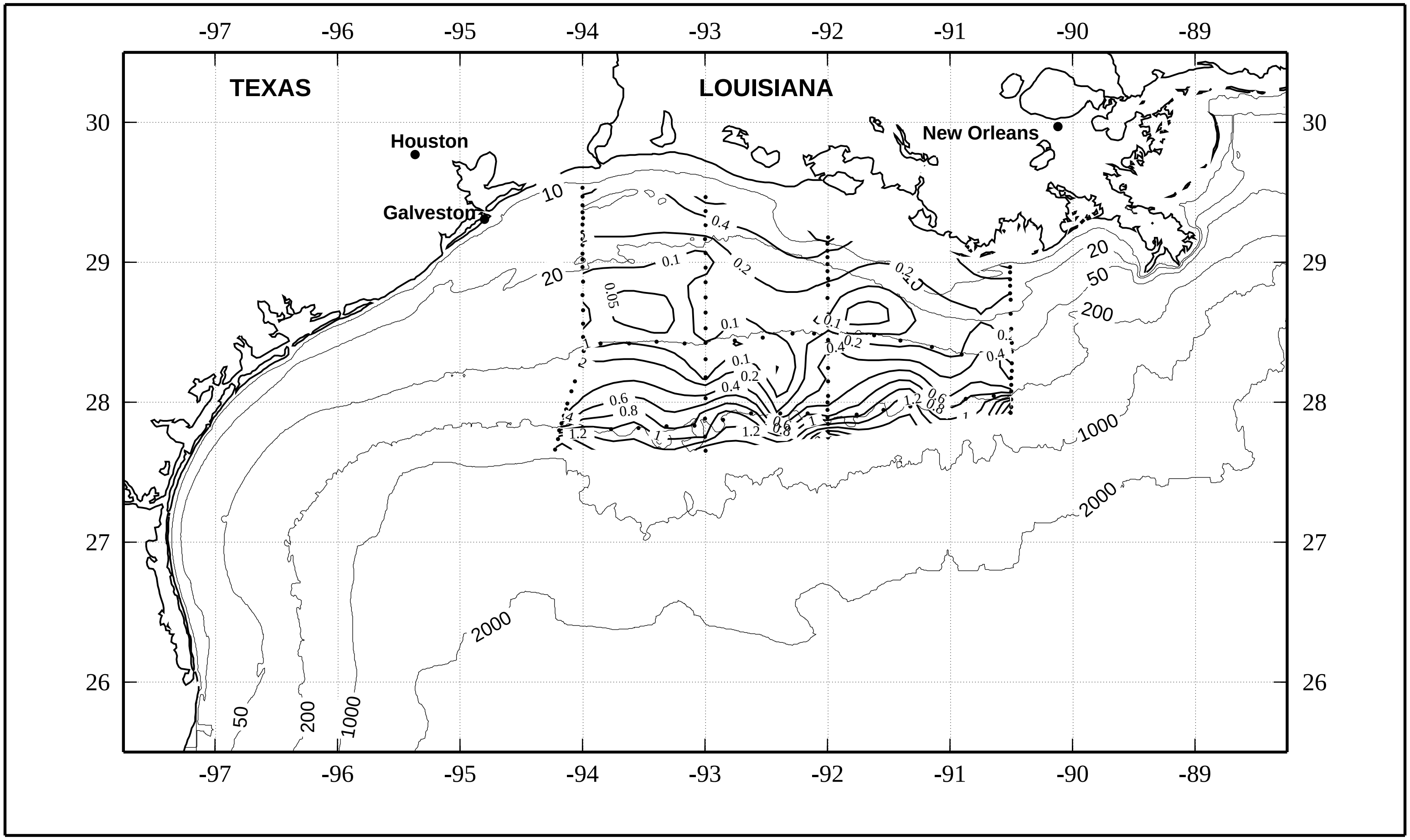

Figure 3.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H03, 4-13 November 1992.

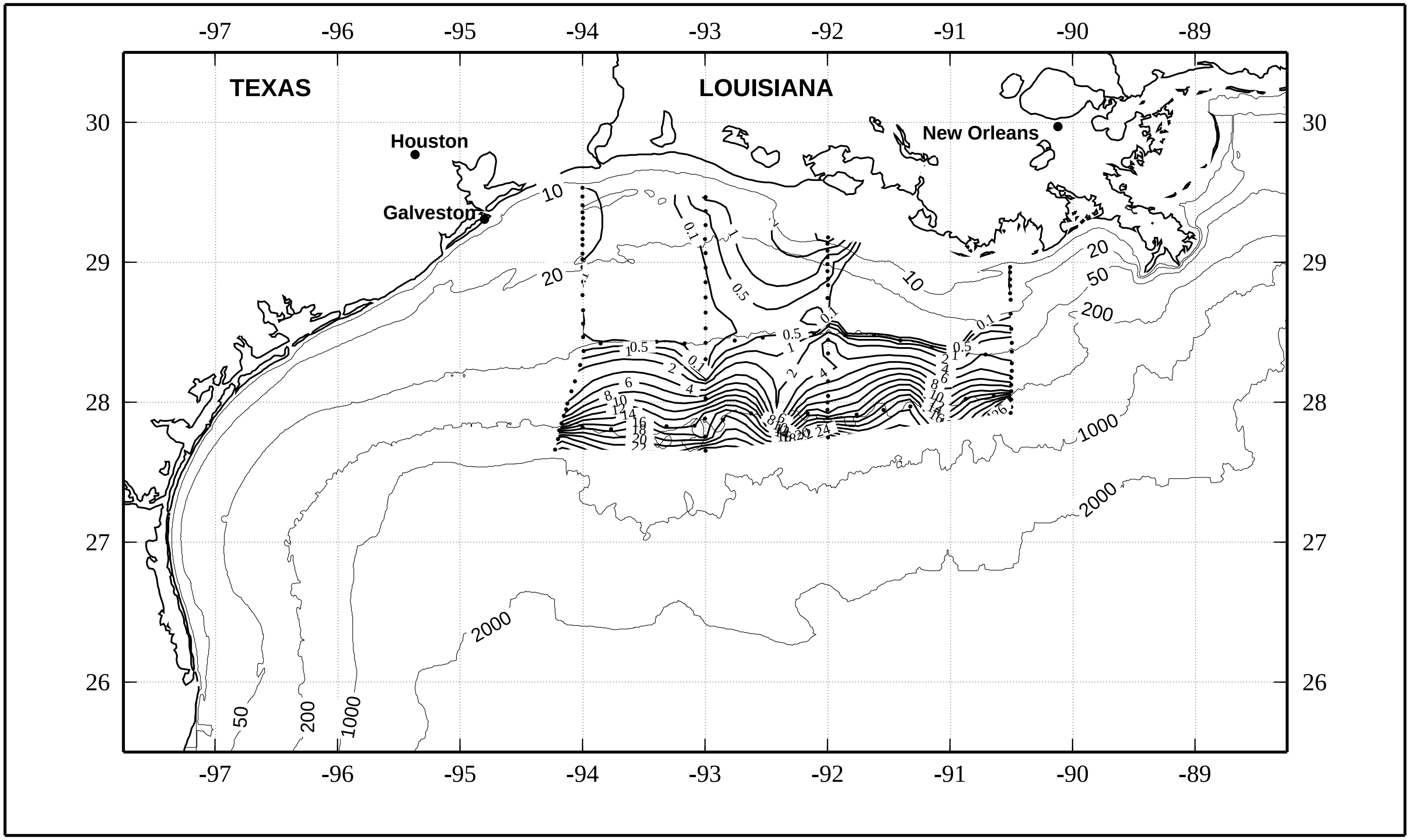

Figure 3.13.12. Nitrate (μmol·l^{-1}) near bottom on LATEX A survey H03, 4-13 November 1992.

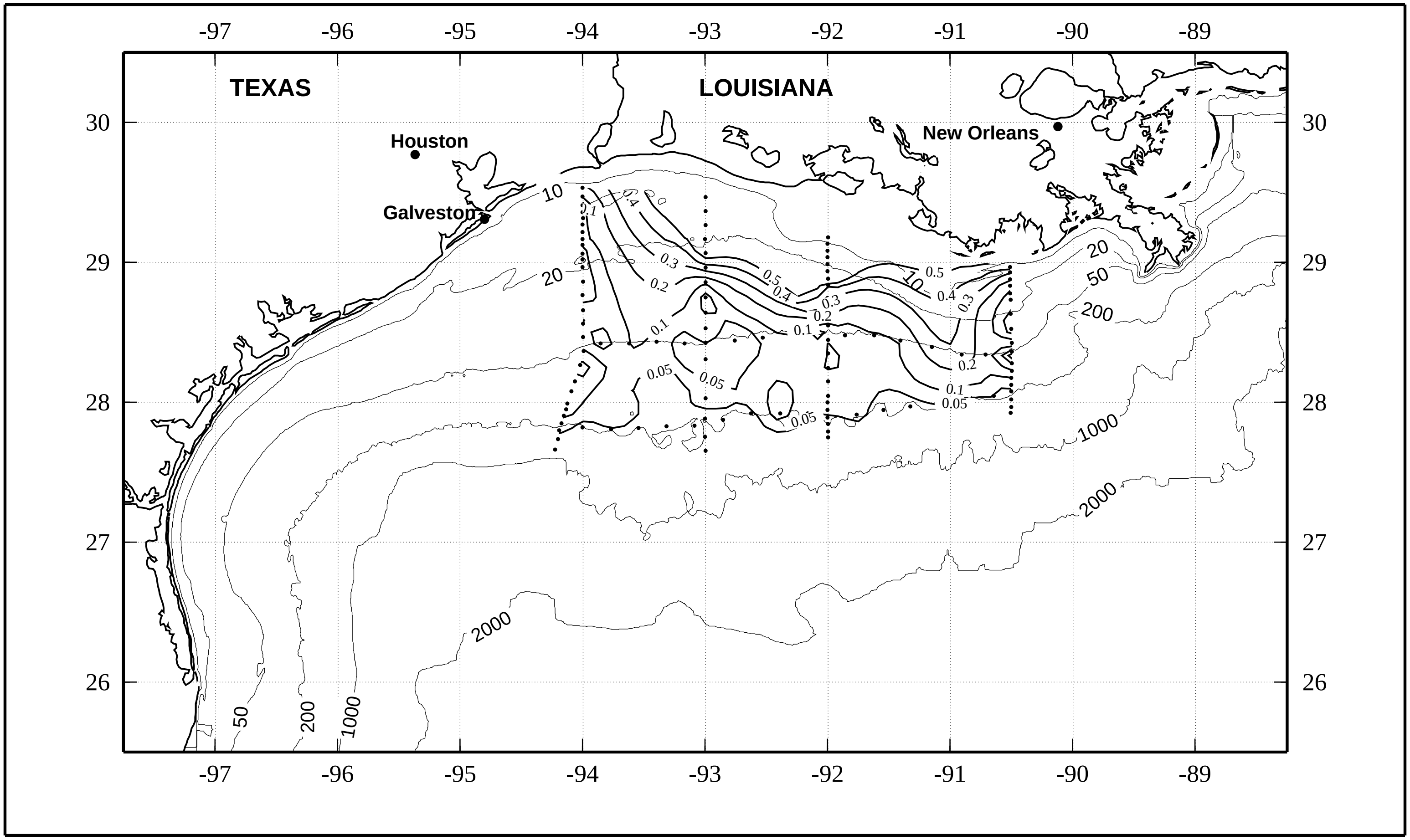

Figure 3.13.13. Nitrite ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H03, 4-13 November 1992.

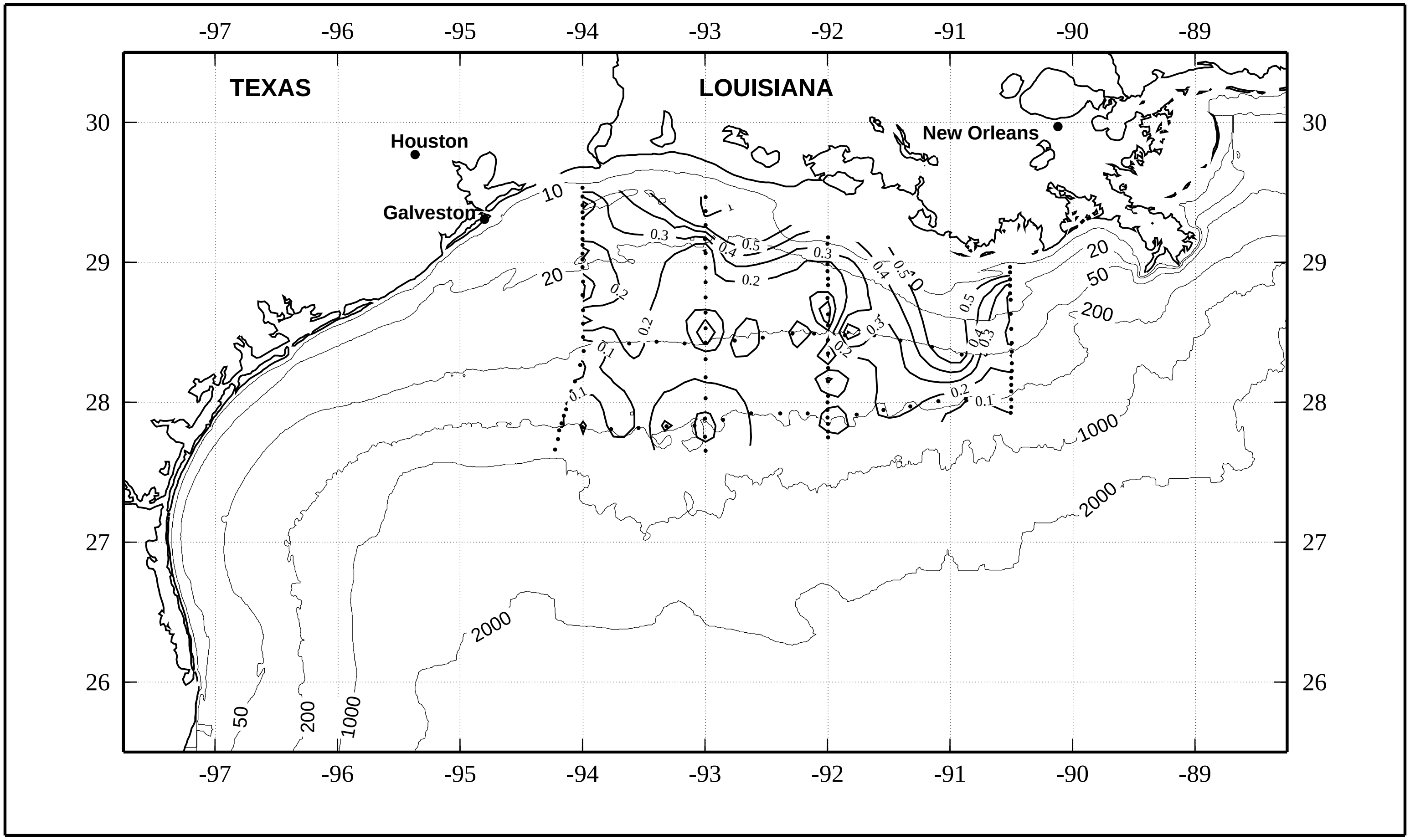

Figure 3.13.14. Ammonium (μmol·l^{-1}) near bottom on LATEX A survey H03, 4-13 November 1992.

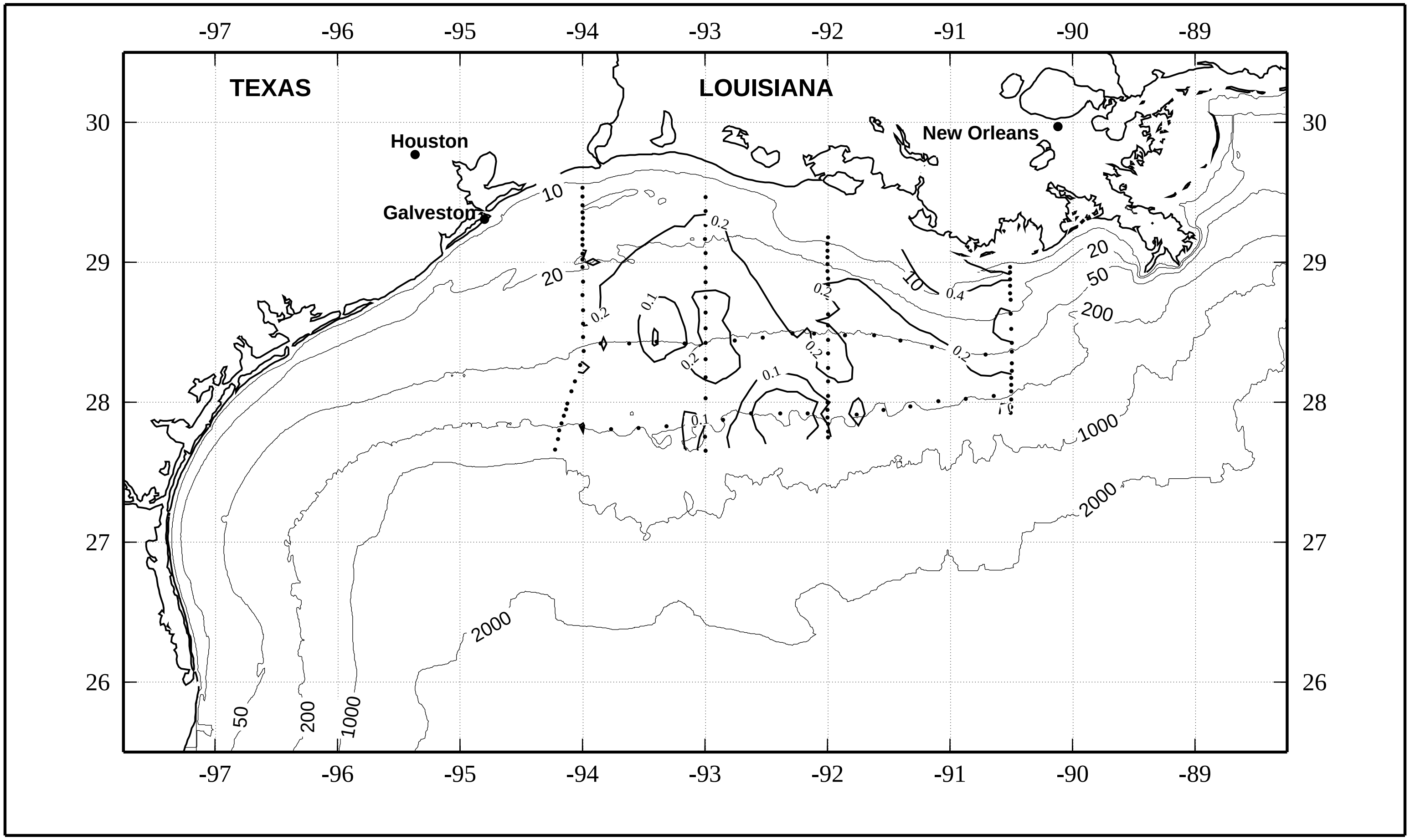

Figure 3.13.15. Urea (μmol·l^{-1}) on LATEX A survey H03, 4-13 November 1992.

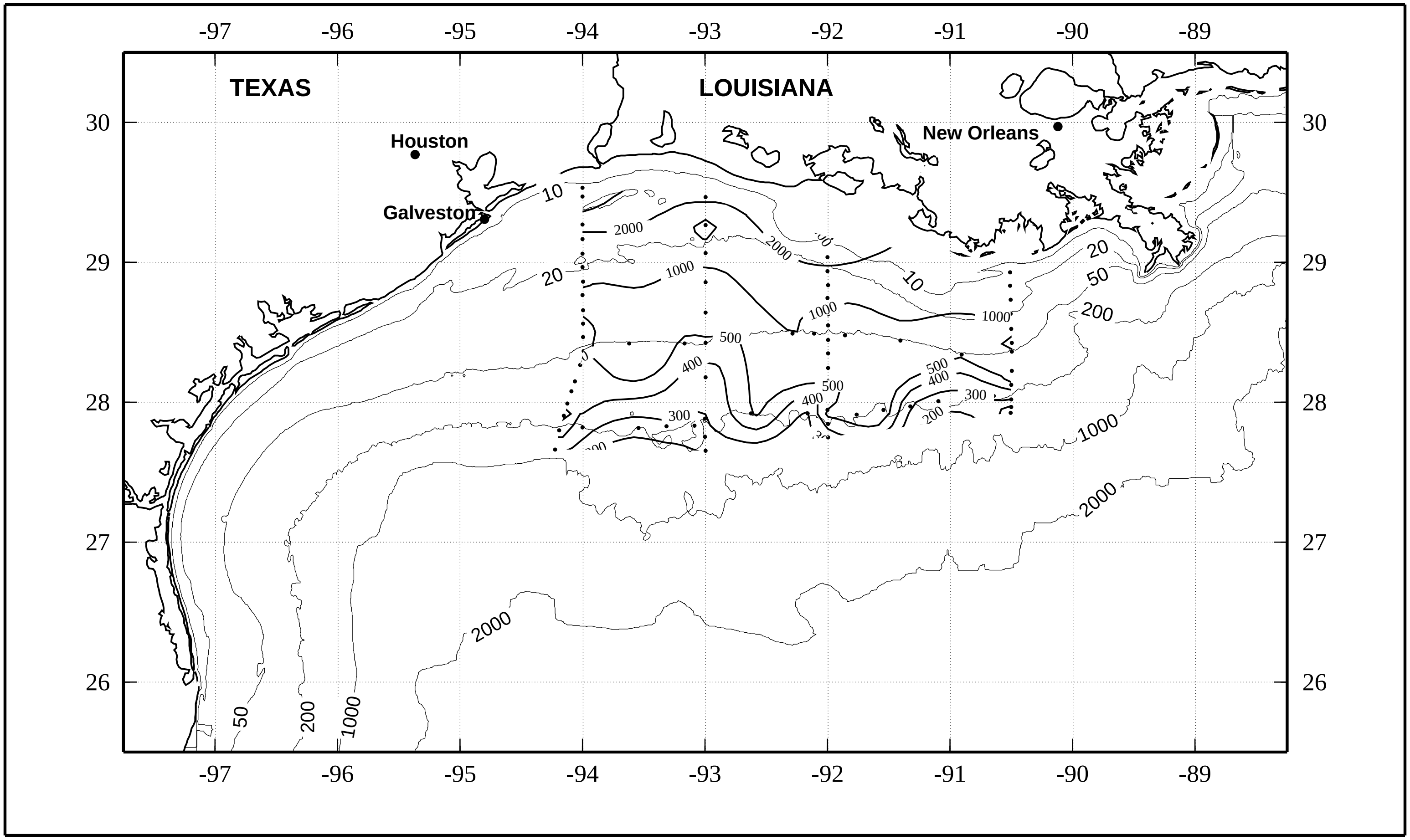

Figure 3.13.16. Chlorophyll a ($ng \cdot l^{-1}$) at the chlorophyll maximum on LATEX A survey H03, 4-13 November 1992.

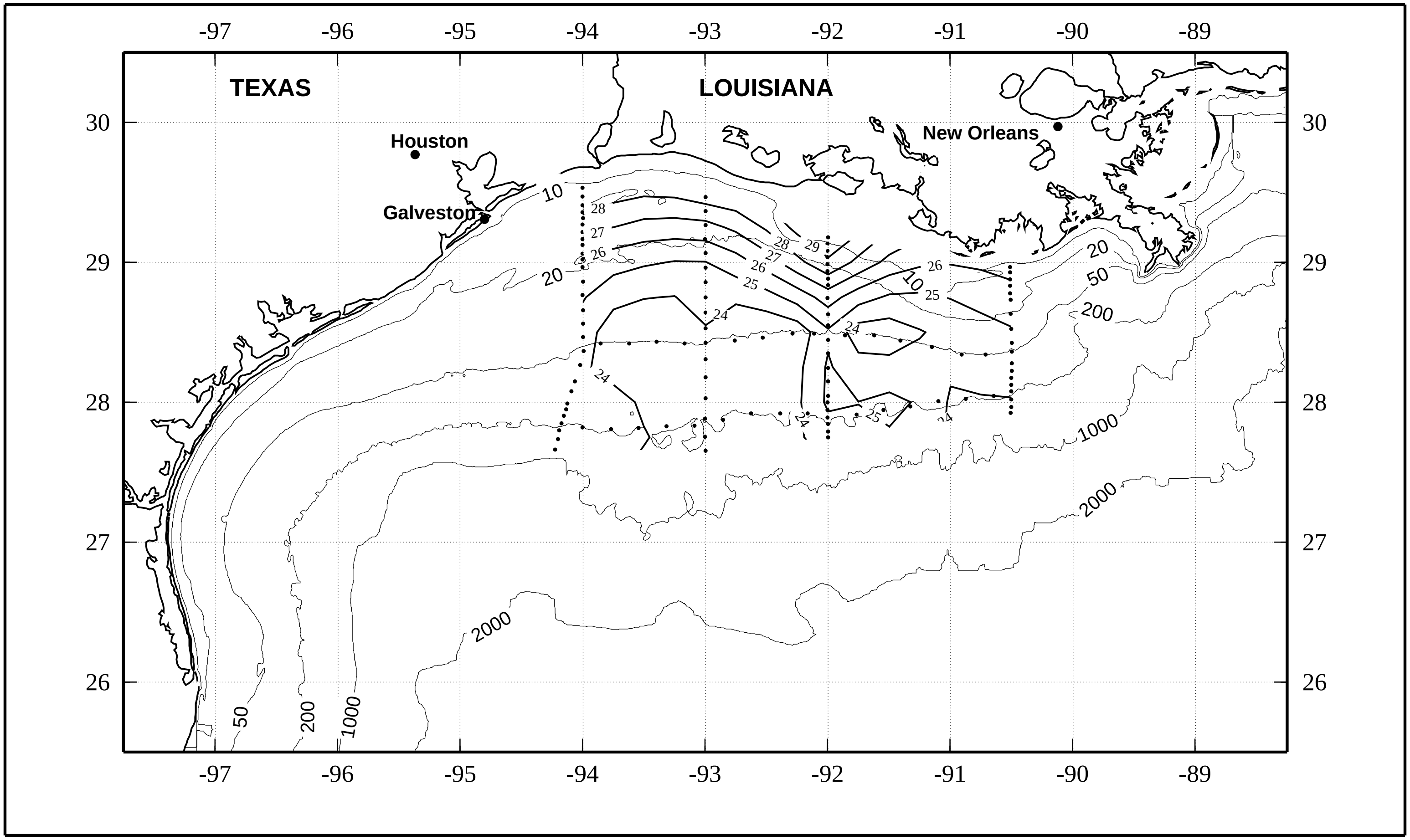

Figure 3.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H03, 4-13 November 1992.

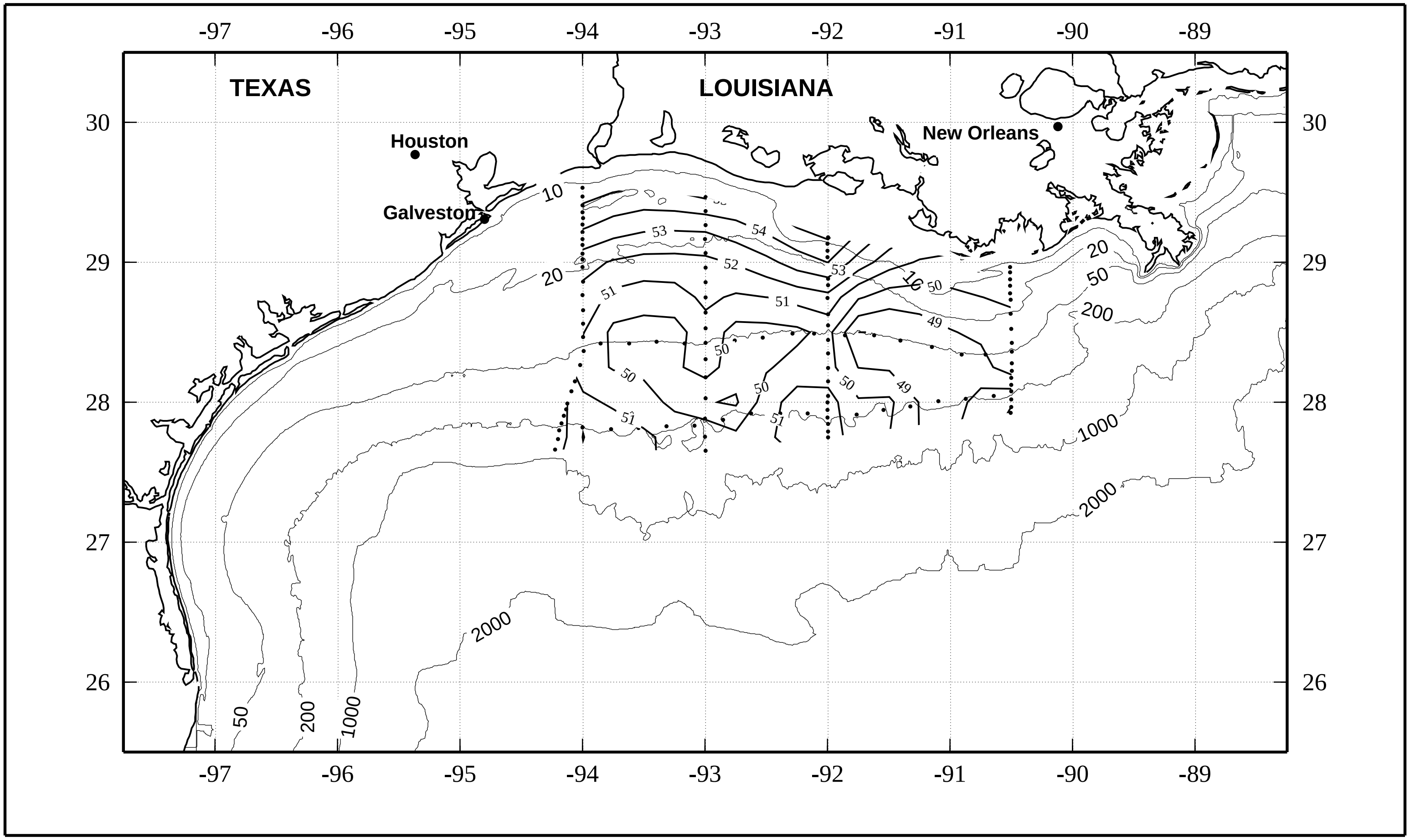

Figure 3.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H03, 4-13 November 1992.

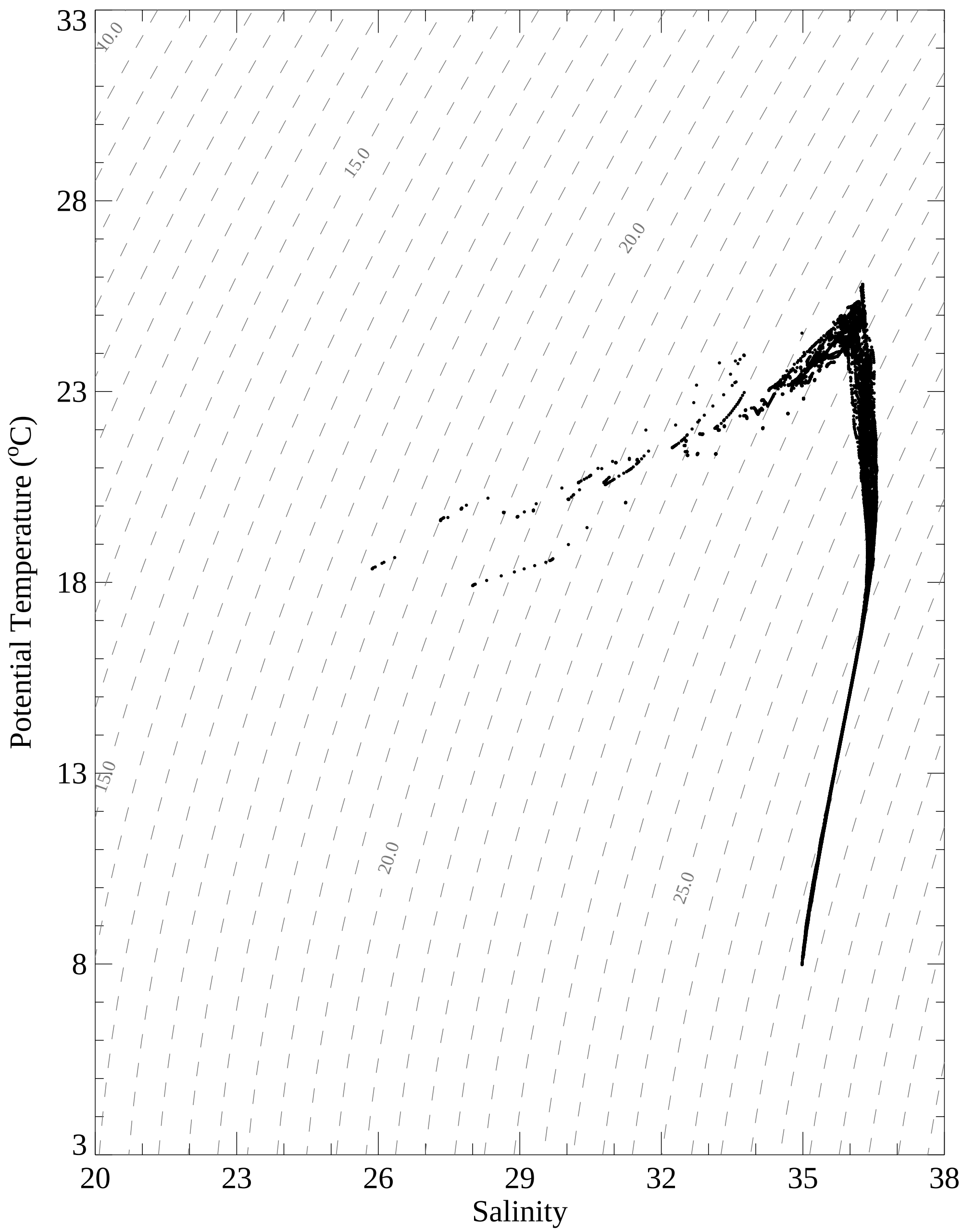

Figure 3.16. Composite potential temperature-salinity diagram for stations from cruise H03, 4 - 13 November 1992.

LATEX A Hydrographic Survey Data Report

APPENDIX D: Cruise H04
February 1993

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Technical Report No. 96-6-T
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Hydrographic Survey H04

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H04, which was conducted 4 - 13 February 1993 aboard the *R/V Gyre*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 4.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 4.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 4.12.6 or 4.13.6.

Table 4.1. Definitions for "x.y.z" figure numbering scheme for cruise H04.

---

cruise number (x):

4 = hydrographic survey H04

plot type (y):

0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = none for H04
6 = none for H04
7 = none for H04
8 = none for H04
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = none for H04
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 4.1. Definitions for "x.y.z" figure numbering scheme for cruise H04. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

The concentrations of 20 pigments were determined using high performance liquid chromatography (HPLC). Chlorophyll *a* is shown in the plots. Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 4.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H04. Figure 4.0 shows the location map for the stations.

Following Figure 4.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

Bontempi, P. S. 1995. Phytoplankton distributions and species composition across the Texas-Louisiana continental shelf during two flow regimes of the Mississippi River. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 137 pp.

Neuhard, C. A. 1994. Phytoplankton distributions across the Texas-Louisiana shelf in relation to coastal physical processes. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 204 pp.

Smith, W. H. F., and P. Wessel. 1990. Gridding with continuous curvature splines in tension. *Geophysics*, 55:293-305.

Wessel, P., and W. H. F. Smith. 1991. Free software helps map and display data. *EOS Trans. Amer. Geophys. U.* 72: 441, 445-446.

Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 4.2. Station time and position data from LATEX A cruise H04.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	06-FEB-1993	0040	27°39.58'	94°13.48'	443.8	12
2	06-FEB-1993	0250	27°44.28'	94°12.26'	455.0	12
3	06-FEB-1993	0507	27°48.06'	94°11.30'	258.0	10
4	06-FEB-1993	0703	27°50.96'	94°10.29'	117.5	10
5	06-FEB-1993	0822	27°54.13'	94°09.32'	99.0	10
6	06-FEB-1993	0941	27°56.99'	94°08.29'	86.4	7
7	06-FEB-1993	1032	27°59.54'	94°07.48'	81.2	7
8	06-FEB-1993	1221	28°04.63'	94°05.46'	68.9	8
9	06-FEB-1993	1345	28°08.99'	94°03.70'	64.6	8
10	06-FEB-1993	1535	28°16.06'	94°01.31'	57.4	9
11	06-FEB-1993	1706	28°22.00'	93°59.61'	51.8	7
12	06-FEB-1993	1809	28°27.96'	93°59.99'	43.4	7
13	06-FEB-1993	1921	28°33.79'	93°59.95'	35.9	7
14	06-FEB-1993	2031	28°39.66'	93°59.89'	29.5	10
15	06-FEB-1993	2147	28°45.98'	94°00.03'	25.1	6
16	06-FEB-1993	2247	28°51.96'	93°59.92'	24.6	6
17	06-FEB-1993	2357	28°57.95'	94°00.13'	17.4	5
18	07-FEB-1993	0033	29°01.31'	94°00.03'	19.8	6
19	07-FEB-1993	0102	29°03.80'	94°00.12'	18.0	10
20	07-FEB-1993	0147	29°07.30'	94°00.06'	17.7	4
21	07-FEB-1993	0221	29°09.99'	94°00.09'	17.2	4
22	07-FEB-1993	0255	29°13.07'	93°59.97'	14.0	4
23	07-FEB-1993	0332	29°16.26'	94°00.11'	12.4	4
24	07-FEB-1993	0404	29°19.06'	93°59.99'	11.9	4
25	07-FEB-1993	0434	29°21.64'	94°00.14'	10.6	4
26	07-FEB-1993	0507	29°24.64'	94°00.06'	10.5	4
27	07-FEB-1993	0544	29°28.21'	94°00.13'	11.7	4
28	07-FEB-1993	0632	29°32.07'	94°00.04'	10.5	4
29	07-FEB-1993	1750	29°10.86'	91°59.99'	6.2	4
30	07-FEB-1993	1833	29°08.00'	92°00.01'	9.8	8
31	07-FEB-1993	1934	29°04.86'	92°00.14'	13.3	5
32	07-FEB-1993	2022	29°02.29'	92°00.08'	16.1	7
33	07-FEB-1993	2115	28°59.16'	91°59.86'	18.8	6
34	07-FEB-1993	2159	28°56.12'	92°00.01'	21.5	7
35	07-FEB-1993	2256	28°52.99'	92°00.01'	24.5	7
36	07-FEB-1993	2328	28°50.27'	92°00.02'	26.5	10
37	08-FEB-1993	0035	28°44.69'	92°00.04'	31.8	7
38	08-FEB-1993	0133	28°37.70'	91°59.92'	39.8	8
39	08-FEB-1993	0227	28°32.92'	91°59.86'	44.8	8
40	08-FEB-1993	0336	28°26.75'	91°59.86'	55.6	8
41	08-FEB-1993	0441	28°20.96'	91°59.59'	60.9	8
42	08-FEB-1993	0843	28°14.70'	91°59.91'	69.6	8
43	08-FEB-1993	0938	28°08.93'	91°59.93'	83.7	10
44	08-FEB-1993	1031	28°02.71'	91°59.92'	106.3	10

Table 4.2. Station time and position data from LATEX A cruise H04. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	08-FEB-1993	1112	27°59.94'	92°00.04'	120.9	10
46	08-FEB-1993	1157	27°56.80'	92°00.05'	101.4	11
47	08-FEB-1993	1246	27°53.59'	92°00.19'	170.4	12
48	08-FEB-1993	1332	27°50.66'	92°00.00'	203.2	12
49	08-FEB-1993	1438	27°47.51'	91°59.99'	390.8	12
50	08-FEB-1993	1523	27°44.93'	91°59.88'	492.9	12
51	08-FEB-1993	1741	27°54.77'	91°45.90'	170.2	12
52	08-FEB-1993	1931	27°56.70'	91°32.68'	227.5	12
53	08-FEB-1993	2114	27°58.23'	91°19.49'	267.0	12
54	08-FEB-1993	2304	28°00.40'	91°05.82'	138.1	12
55	09-FEB-1993	0128	28°01.41'	90°52.39'	188.0	12
56	09-FEB-1993	0318	28°02.72'	90°38.58'	169.7	12
57	09-FEB-1993	0453	27°55.51'	90°30.49'	501.0	12
58	09-FEB-1993	0615	27°58.00'	90°30.15'	440.7	12
59	09-FEB-1993	0709	28°01.28'	90°30.06'	255.8	12
60	09-FEB-1993	0758	28°04.63'	90°30.22'	152.3	12
61	09-FEB-1993	0843	28°07.66'	90°30.20'	118.5	12
62	09-FEB-1993	0943	28°10.47'	90°30.16'	95.5	9
63	09-FEB-1993	1026	28°13.55'	90°29.99'	77.8	9
64	09-FEB-1993	1104	28°16.84'	90°30.02'	63.0	9
65	09-FEB-1993	1153	28°21.69'	90°30.17'	49.8	8
66	09-FEB-1993	1246	28°25.43'	90°29.96'	44.8	7
67	09-FEB-1993	1348	28°31.64'	90°30.15'	35.7	11
68	09-FEB-1993	1444	28°37.95'	90°30.28'	20.8	6
69	09-FEB-1993	1543	28°43.99'	90°30.37'	17.6	5
70	09-FEB-1993	1616	28°46.77'	90°30.73'	17.6	5
71	09-FEB-1993	1703	28°49.97'	90°30.58'	18.1	10
72	09-FEB-1993	1746	28°52.73'	90°30.60'	16.7	5
73	09-FEB-1993	1816	28°55.73'	90°30.86'	13.6	4
74	09-FEB-1993	1842	28°58.12'	90°30.64'	11.4	4
75	09-FEB-1993	2309	28°20.45'	90°42.60'	48.9	8
76	10-FEB-1993	0025	28°20.41'	90°54.88'	51.9	9
77	10-FEB-1993	0158	28°23.76'	91°08.90'	50.5	7
78	10-FEB-1993	0334	28°26.46'	91°24.01'	50.9	8
79	10-FEB-1993	0457	28°28.79'	91°37.23'	50.5	7
80	10-FEB-1993	0626	28°28.89'	91°51.61'	53.0	7
81	10-FEB-1993	0759	28°29.42'	92°06.66'	50.9	7
82	10-FEB-1993	0916	28°29.52'	92°17.32'	51.4	4
83	10-FEB-1993	1051	28°27.63'	92°31.82'	53.1	6
84	10-FEB-1993	1221	28°26.69'	92°45.70'	52.0	6
85	10-FEB-1993	1453	28°25.32'	93°10.23'	49.4	12
86	10-FEB-1993	1646	28°25.95'	93°23.99'	49.3	6
87	10-FEB-1993	1816	28°25.16'	93°37.30'	49.3	8
88	10-FEB-1993	1951	28°25.27'	93°51.00'	50.1	7

Table 4.2. Station time and position data from LATEX A cruise H04. (continued)

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	10-FEB-1993	2358	27°49.25'	94°00.05'	202.6	12
90	11-FEB-1993	0200	27°48.37'	93°46.28'	185.1	12
91	11-FEB-1993	0345	27°49.03'	93°32.56'	198.6	12
92	11-FEB-1993	0529	27°49.85'	93°19.10'	151.0	12
93	11-FEB-1993	0716	27°50.09'	93°05.29'	182.0	12
94	11-FEB-1993	0905	27°52.53'	92°51.41'	220.2	12
95	11-FEB-1993	1103	27°55.13'	92°37.42'	194.2	12
96	11-FEB-1993	1251	27°55.15'	92°23.37'	83.9	9
97	11-FEB-1993	1432	27°55.16'	92°09.91'	145.3	12
98	11-FEB-1993	2107	27°14.97'	93°00.03'	940.0	12
99	11-FEB-1993	2330	27°21.04'	93°00.03'	750.0	12
100	12-FEB-1993	0108	27°27.00'	92°59.99'	975.0	12
101	12-FEB-1993	0255	27°33.11'	92°59.97'	675.0	12
102	12-FEB-1993	0522	27°39.38'	92°59.98'	319.4	12
103	12-FEB-1993	0635	27°45.29'	93°00.13'	208.1	12
104	12-FEB-1993	0818	27°52.84'	93°00.09'	192.9	11
105	12-FEB-1993	0945	28°01.91'	92°59.81'	102.6	7
106	12-FEB-1993	1058	28°10.89'	92°59.94'	72.1	8
107	12-FEB-1993	1208	28°18.40'	92°59.95'	53.9	8
108	12-FEB-1993	1312	28°25.44'	92°59.95'	48.3	7
109	12-FEB-1993	1427	28°31.92'	92°59.88'	42.9	7
110	12-FEB-1993	1623	28°38.37'	93°00.04'	33.0	6
111	12-FEB-1993	1732	28°45.04'	92°59.91'	30.3	6
112	12-FEB-1993	1848	28°51.46'	93°00.06'	24.7	6
113	12-FEB-1993	1951	28°57.77'	92°59.99'	22.5	7
114	12-FEB-1993	2046	29°03.98'	92°59.95'	23.1	6
115	12-FEB-1993	2140	29°10.11'	93°00.05'	18.9	5
116	12-FEB-1993	2238	29°15.92'	92°59.98'	16.8	6
117	12-FEB-1993	2329	29°21.98'	92°59.95'	15.3	5
118	13-FEB-1993	0017	29°27.99'	92°59.96'	13.5	5
119	13-FEB-1993	0113	29°34.04'	93°00.02'	11.5	4

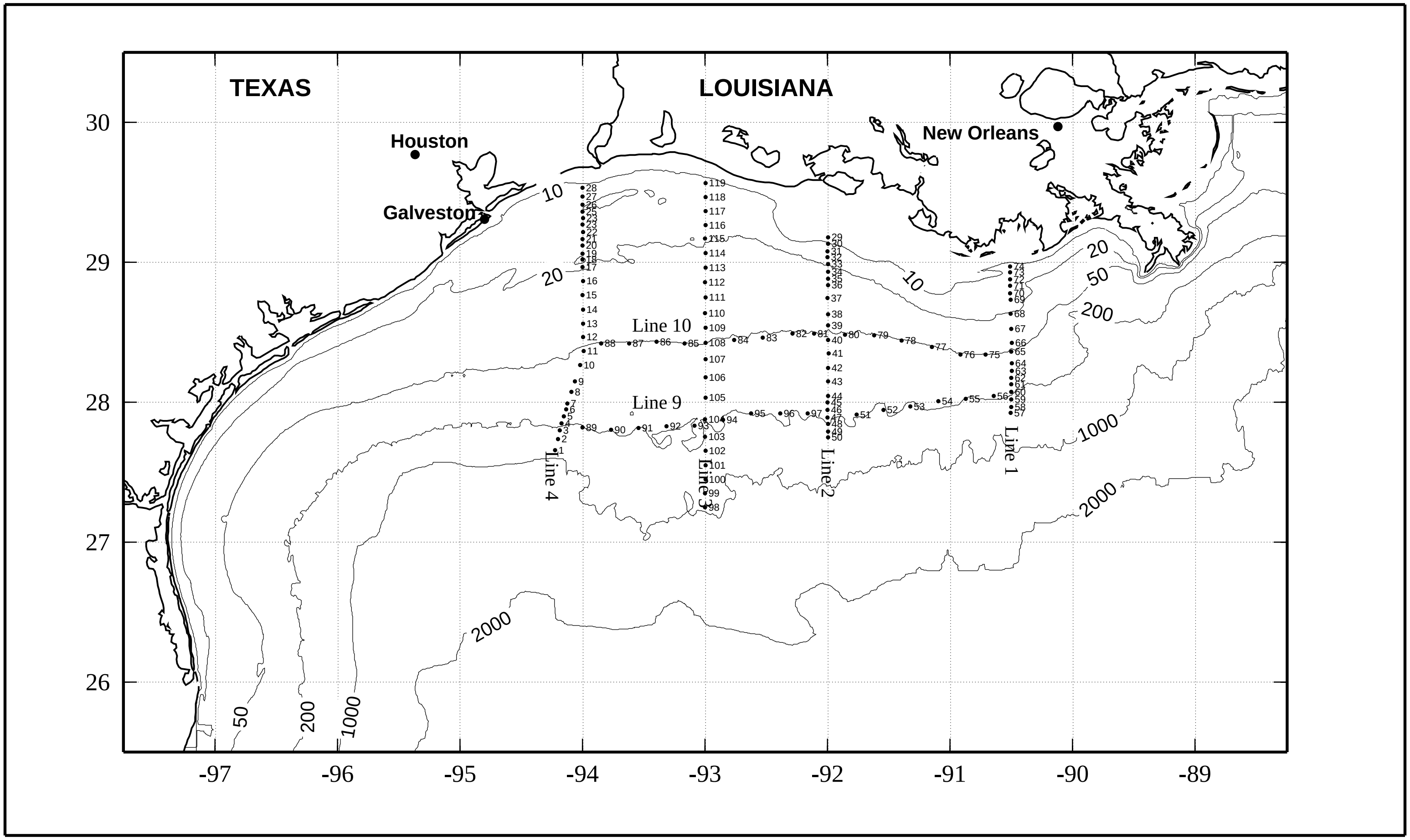

Figure 4.0. Cruise track and station locations for LATEX A Hydrographic Survey H04, 4 - 13 February 1992.

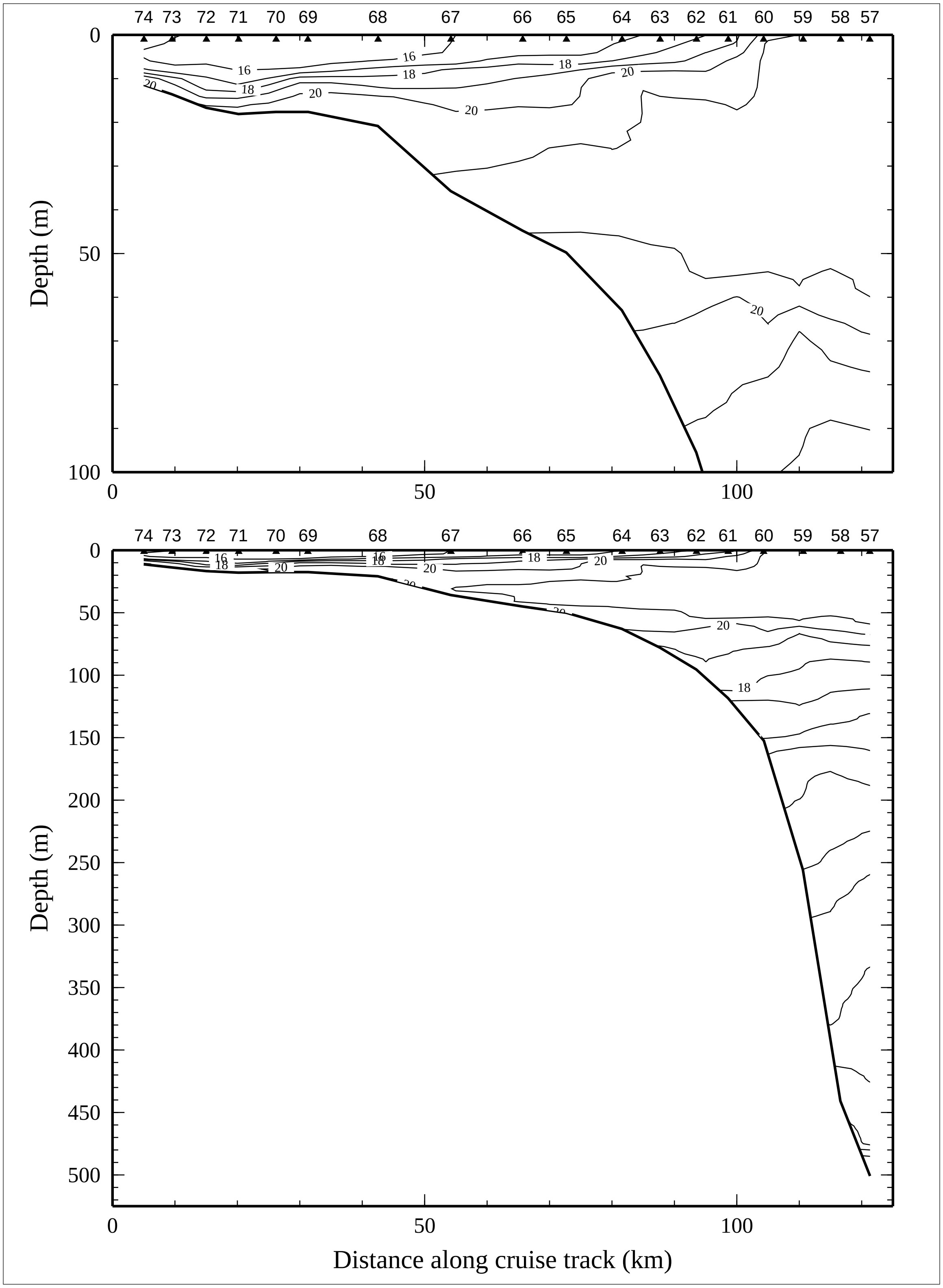

Figure 4.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H04, 4-13 February 1993.

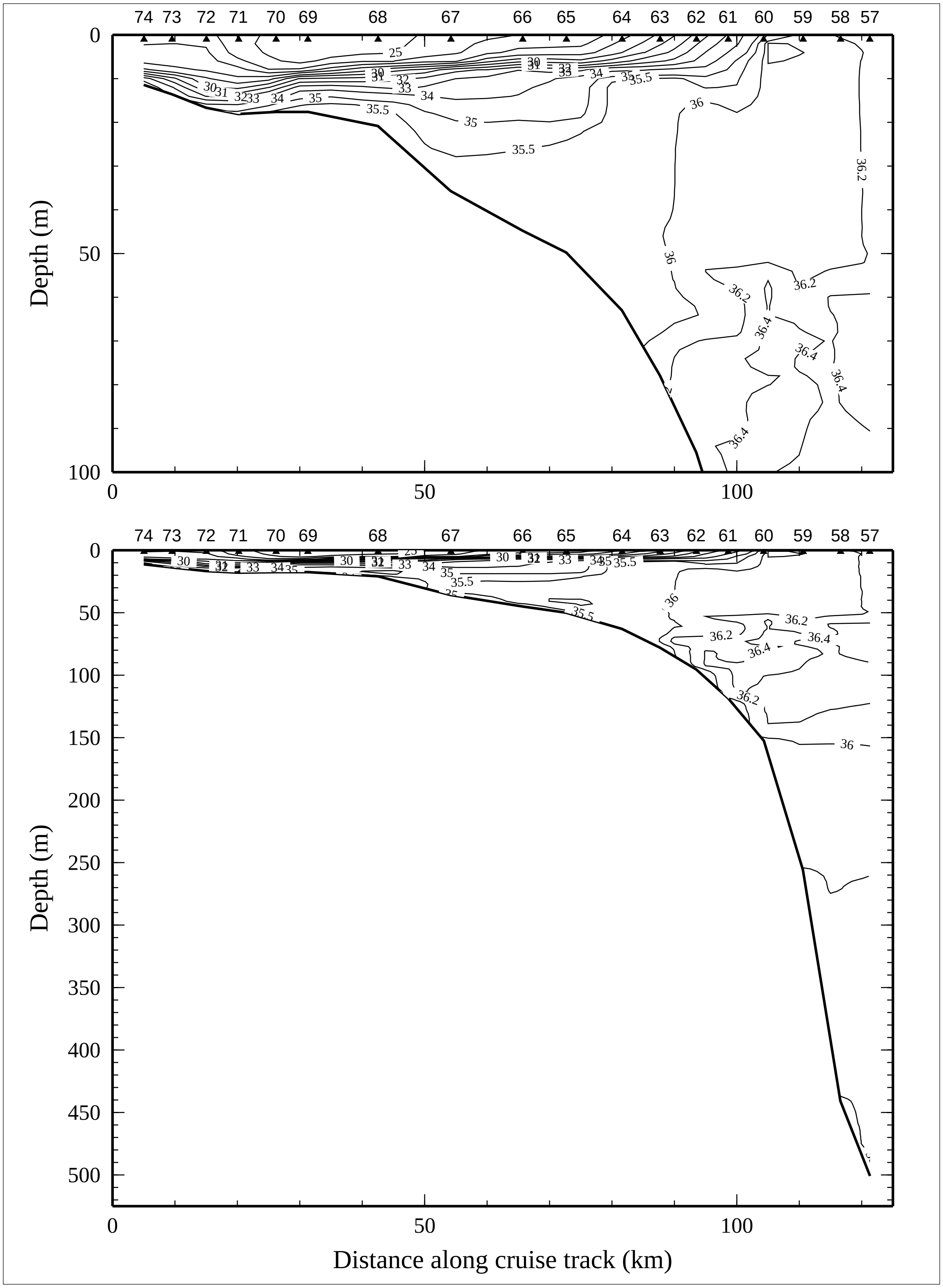

Figure 4.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H04, 4-13 February 1993.

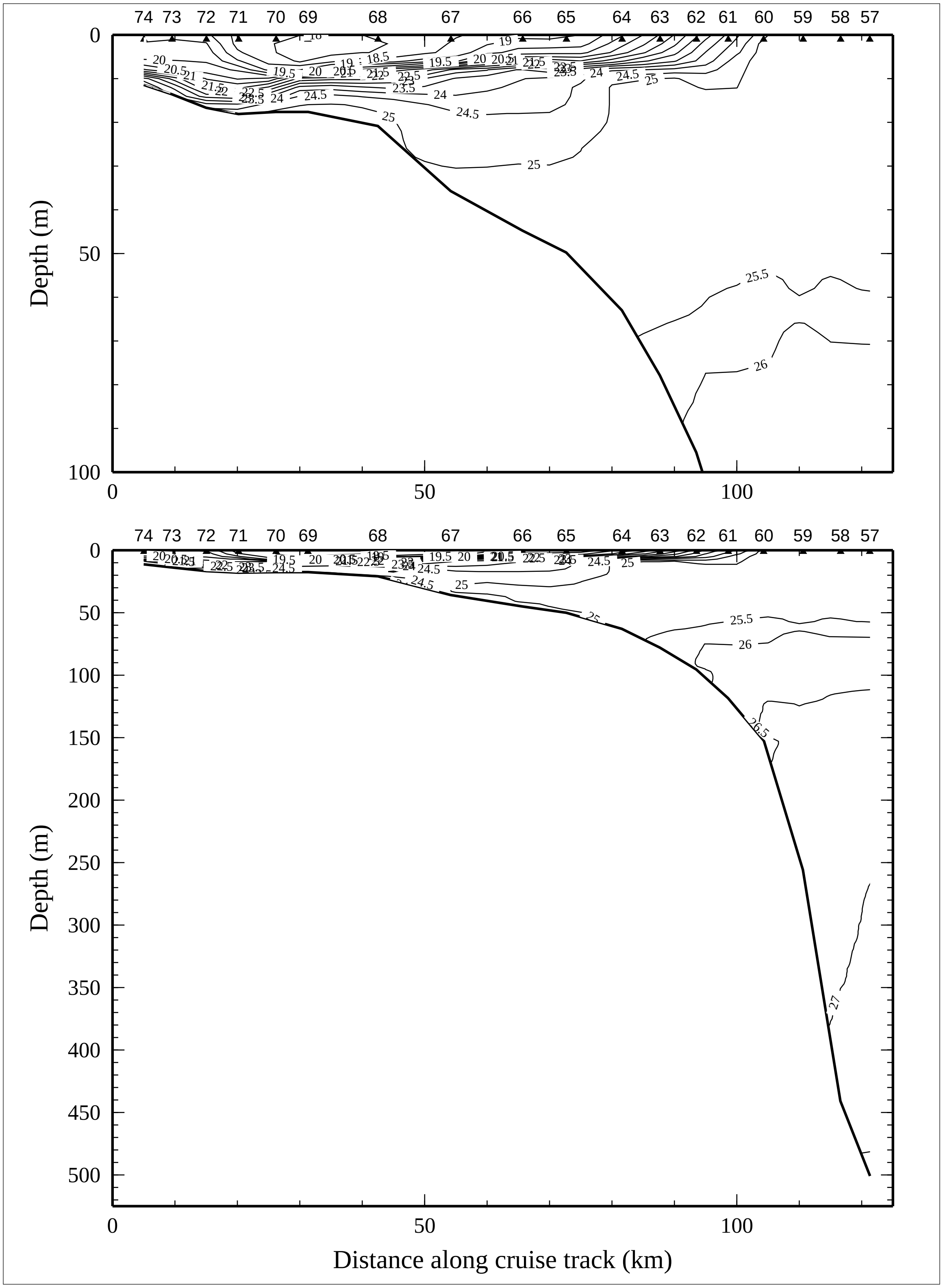

Figure 4.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H04, 4-13 February 1993.

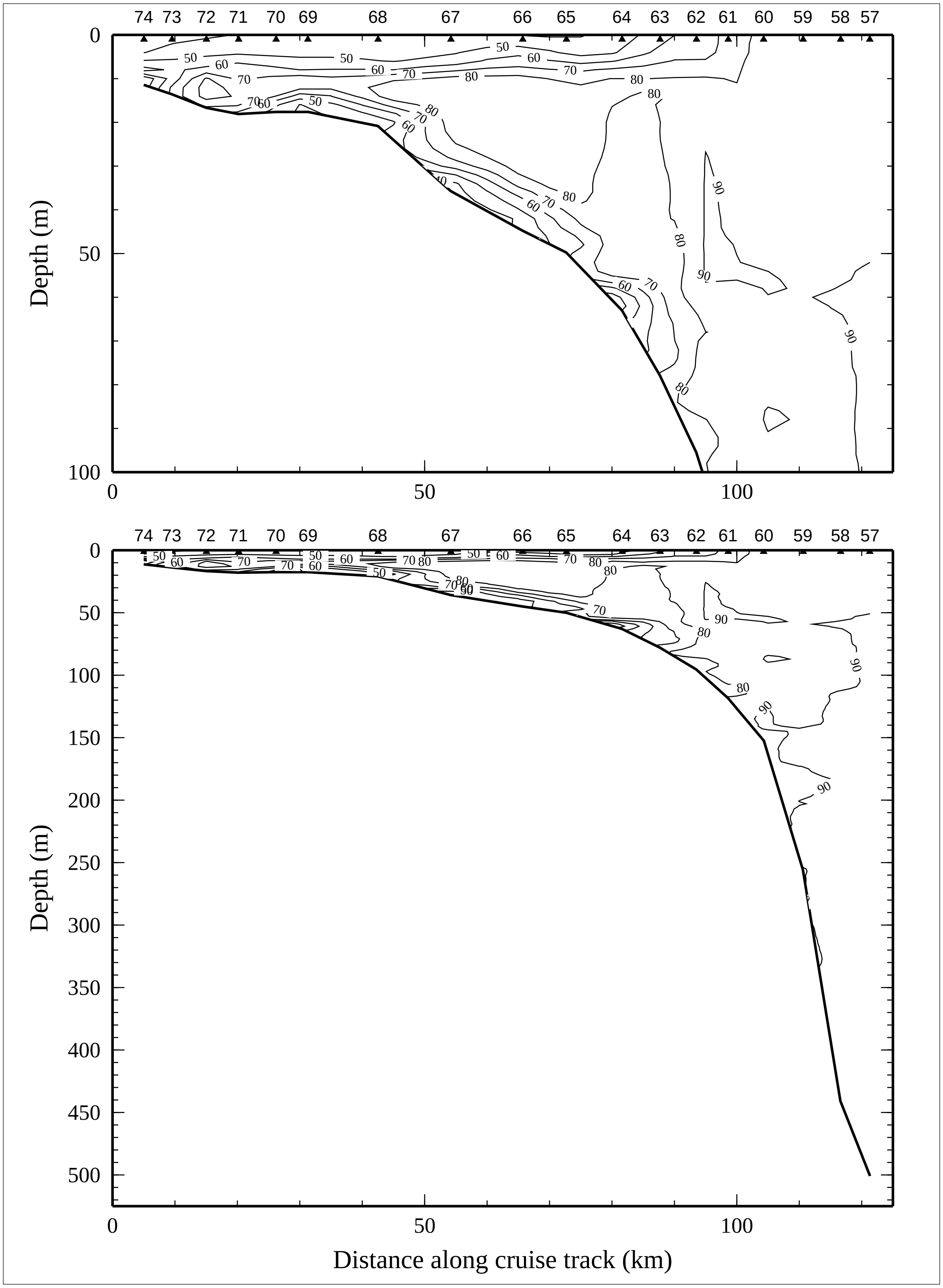

Figure 4.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H04, 4-13 February 1993.

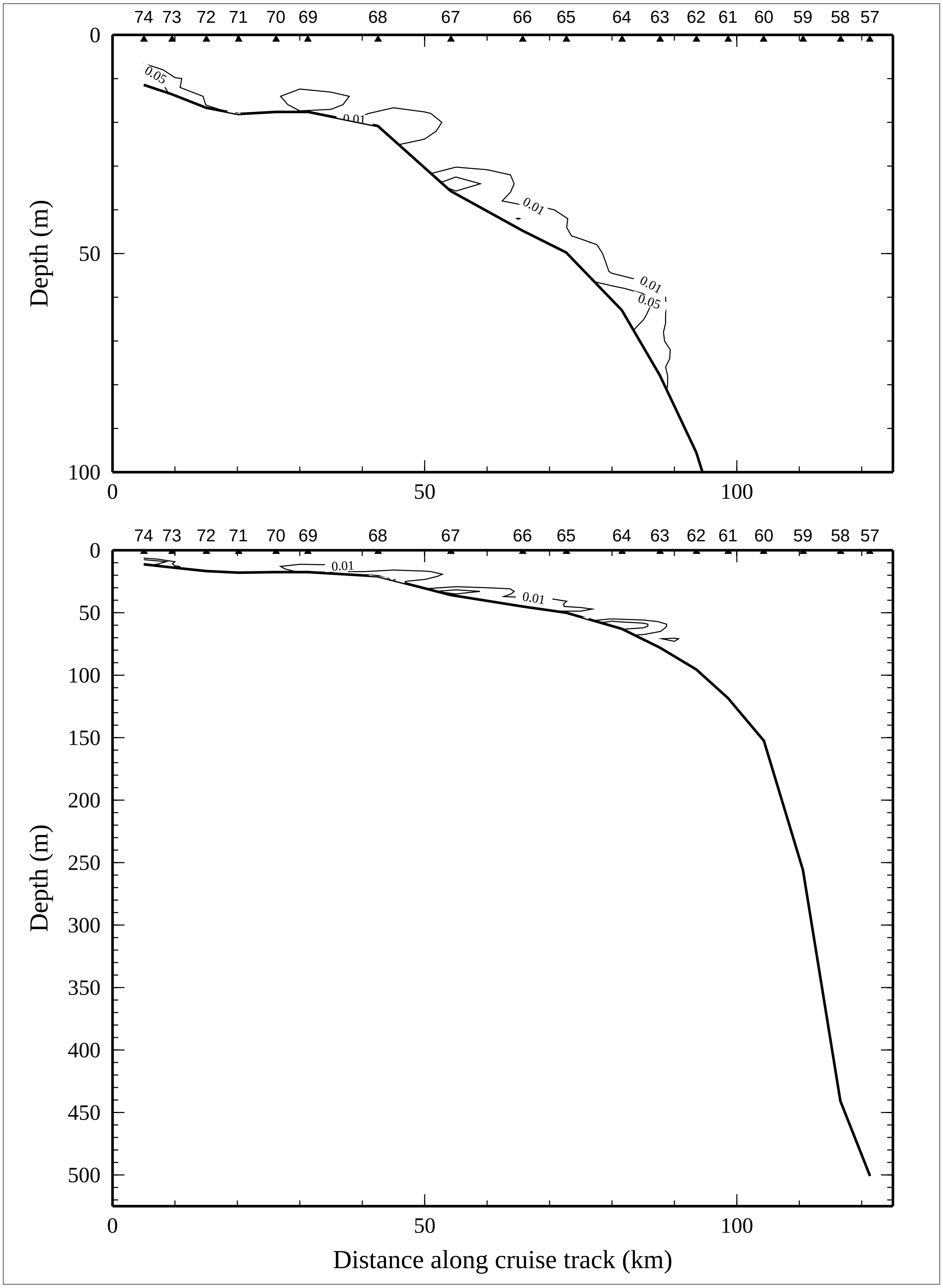

Figure 4.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H04, 4-13 February 1993.

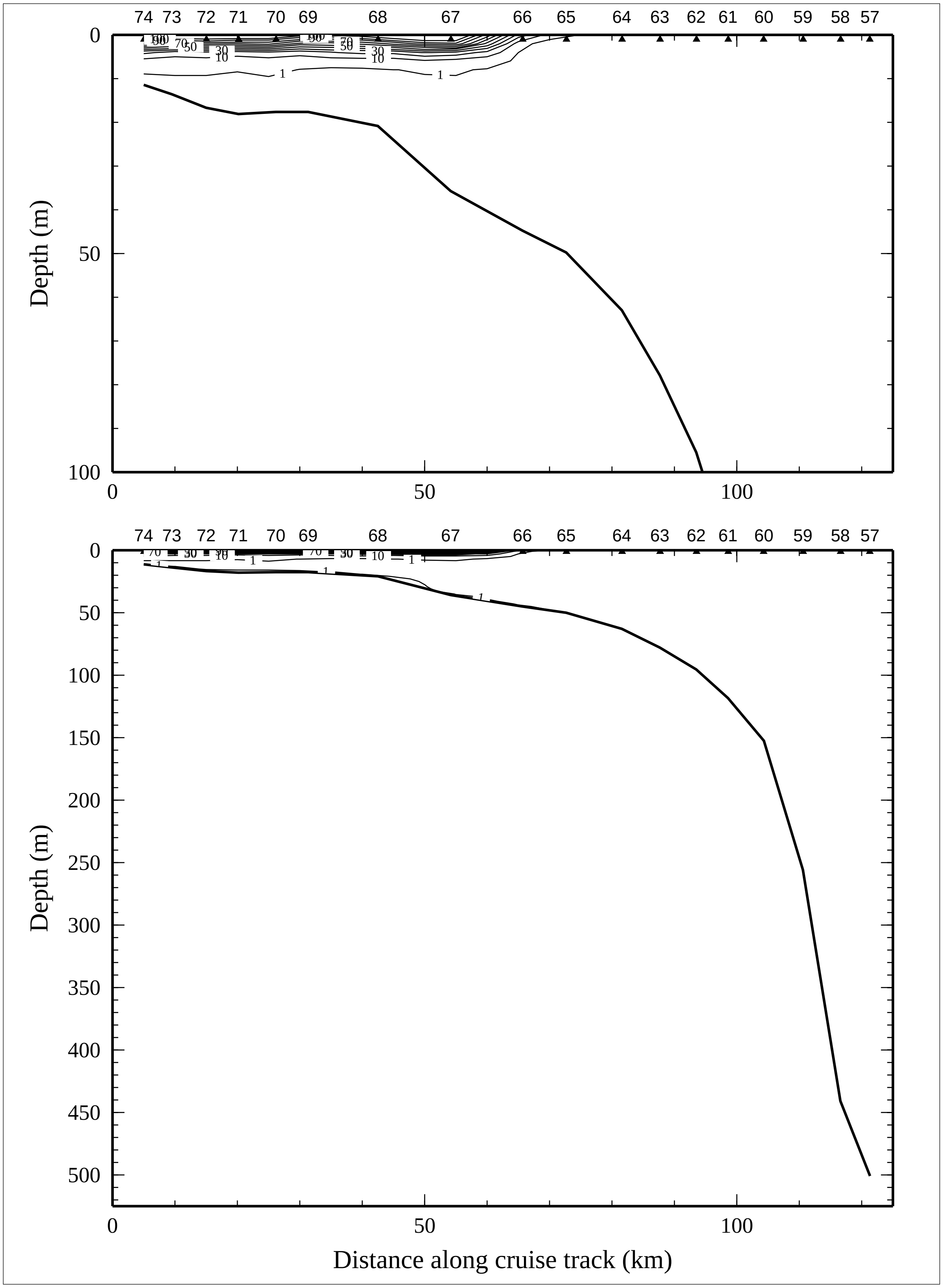

Figure 4.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H04, 4-13 February 1993.

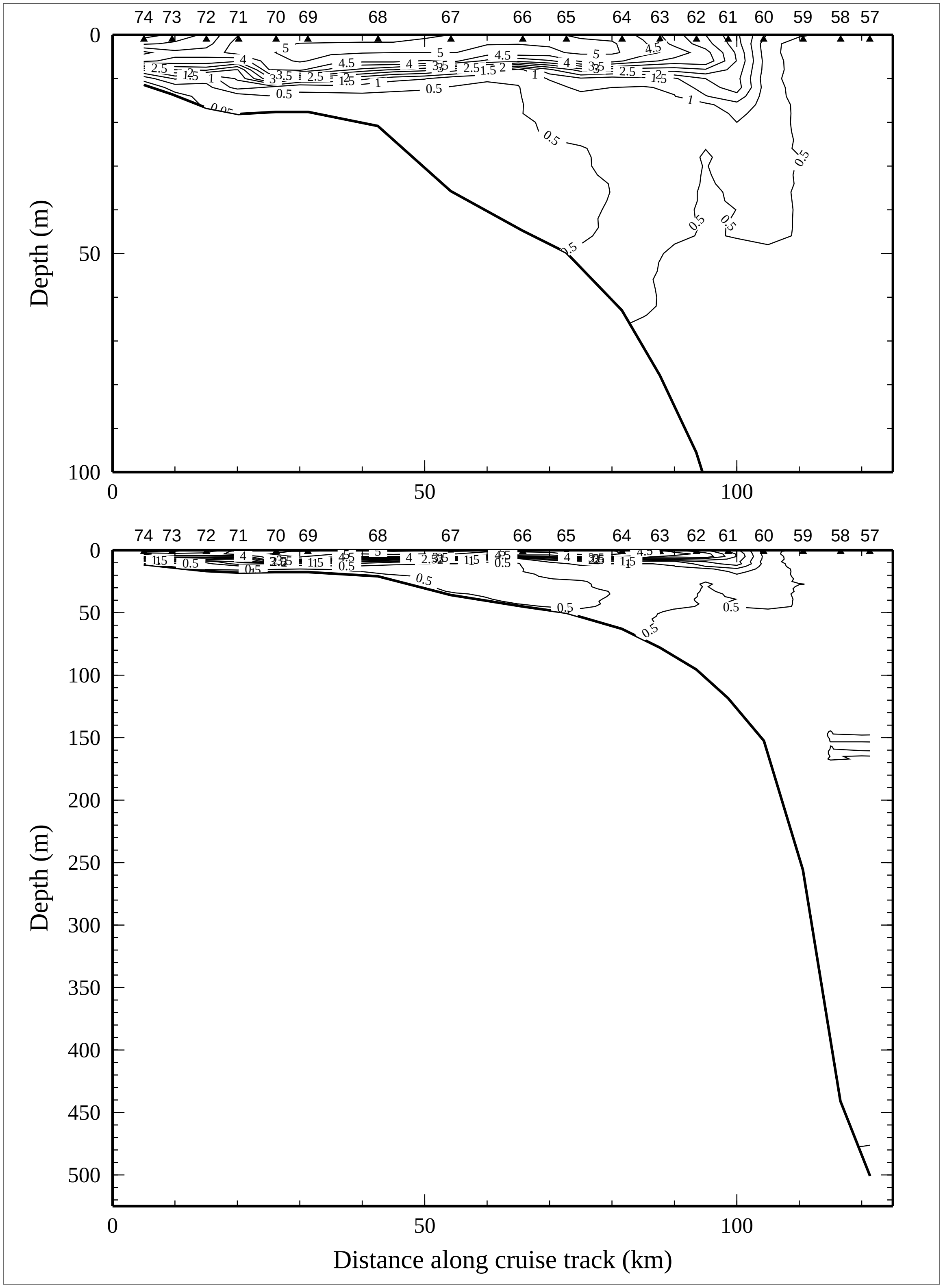

Figure 4.1.7. Relative fluorescence on line 1 of LATEX A survey H04, 4-13 February 1993.

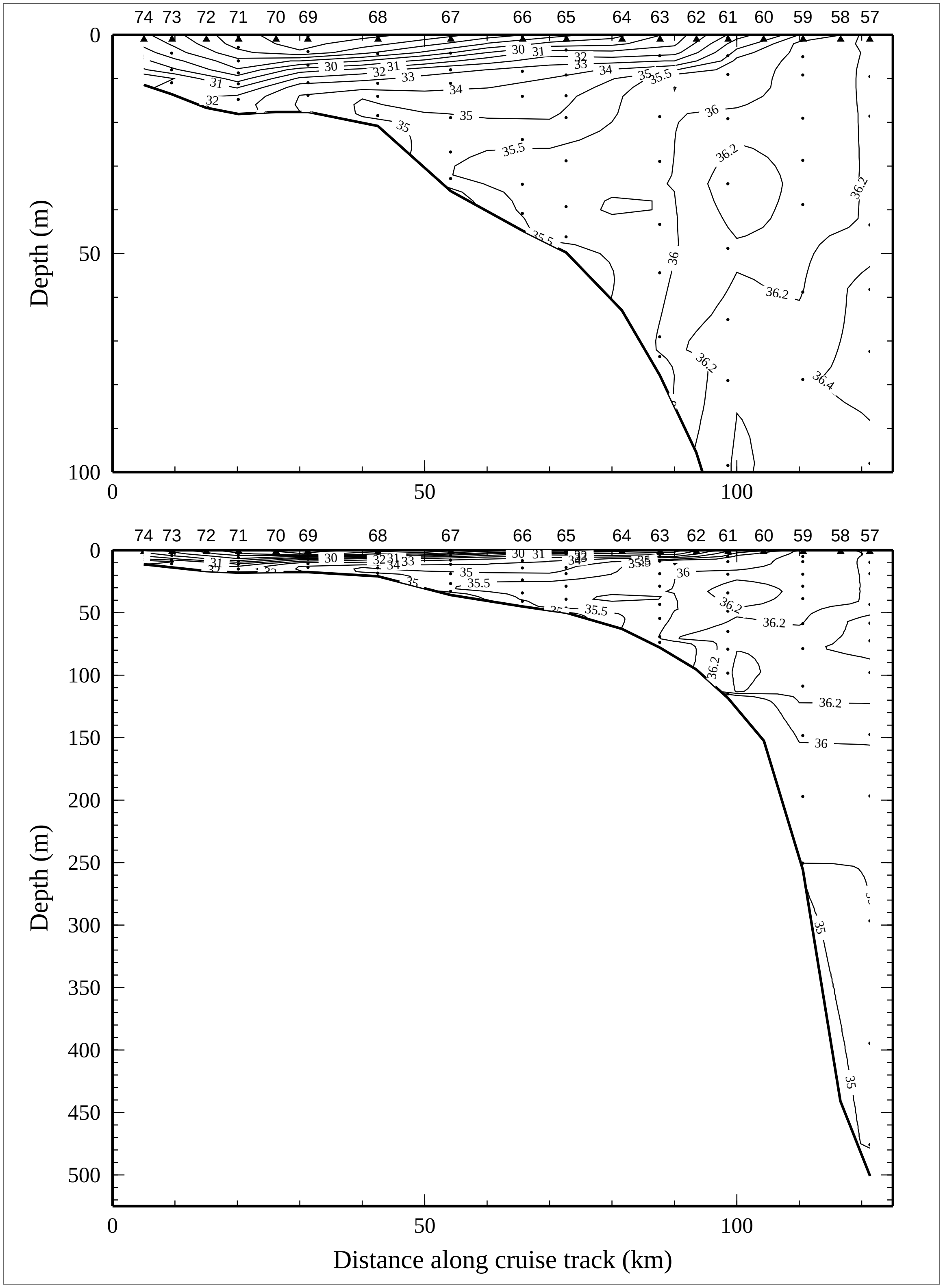

Figure 4.1.8. Bottle salinity on line 1 of LATEX A survey H04,
4-13 February 1993.

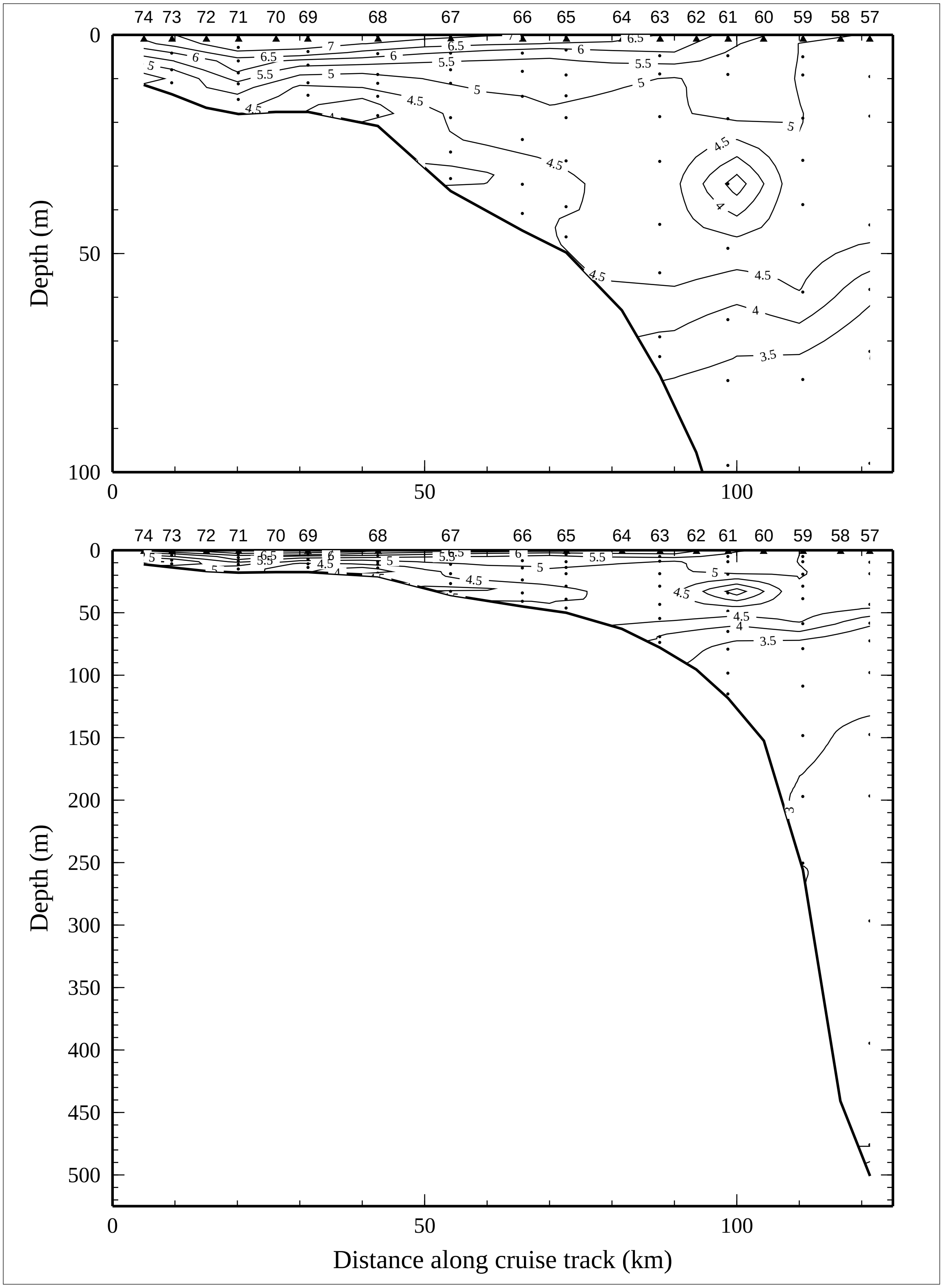

Figure 4.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H04, 4-13 February 1993.

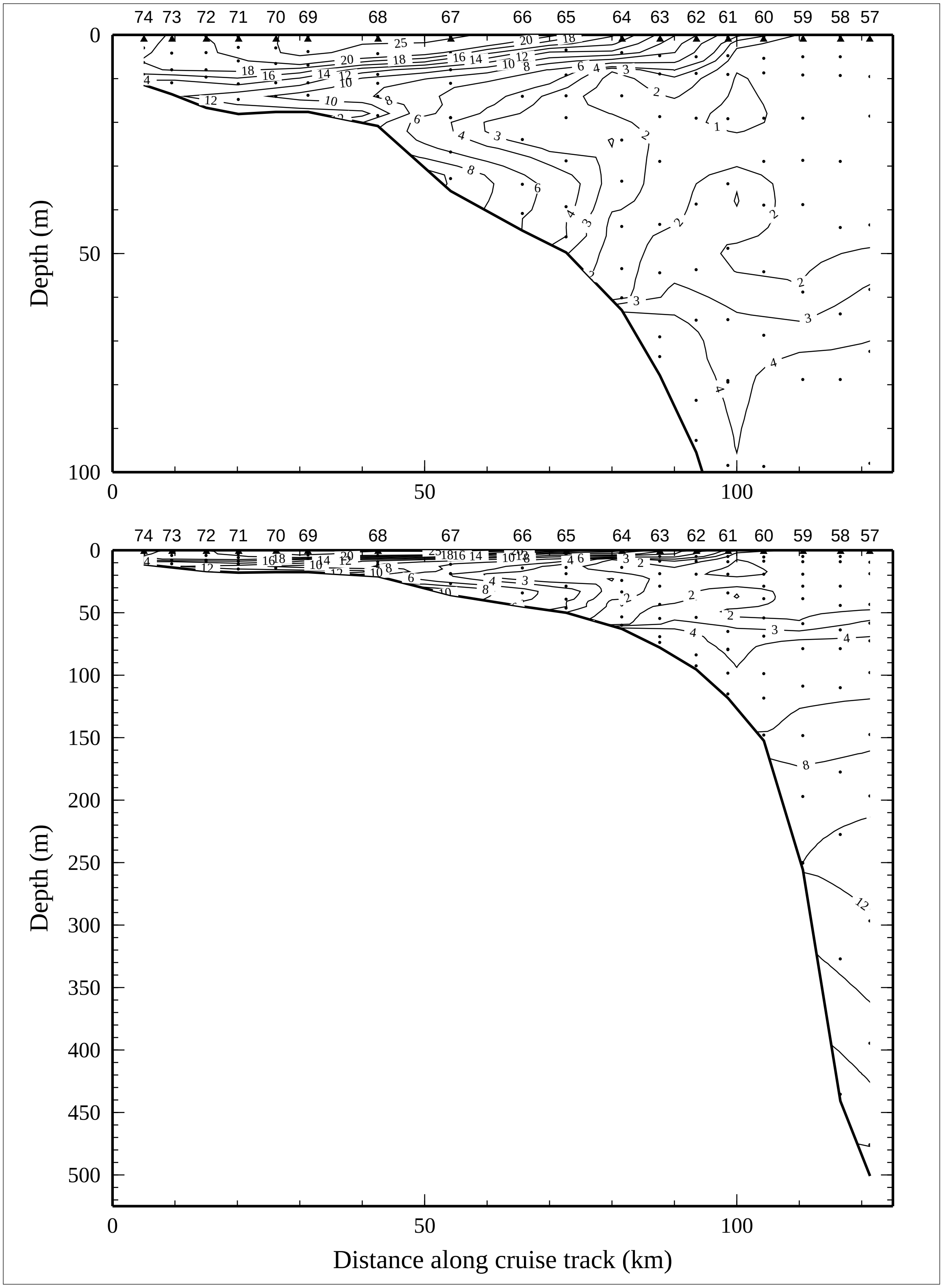

Figure 4.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H04, 4-13 February 1993.

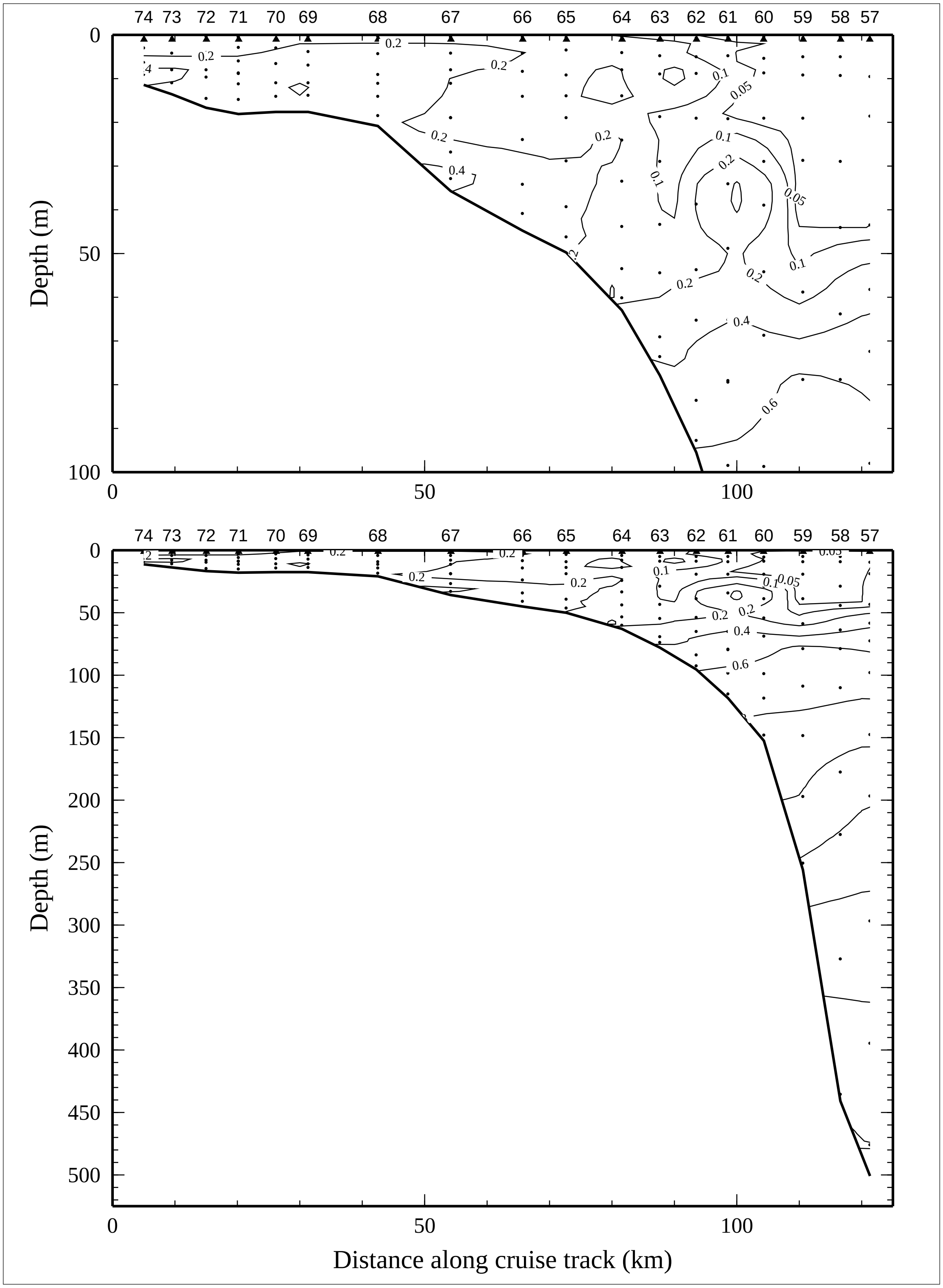

Figure 4.1.11. Phosphate (μmol·l^{-1}) on line 1 of LATEX A survey H04, 4-13 February 1993.

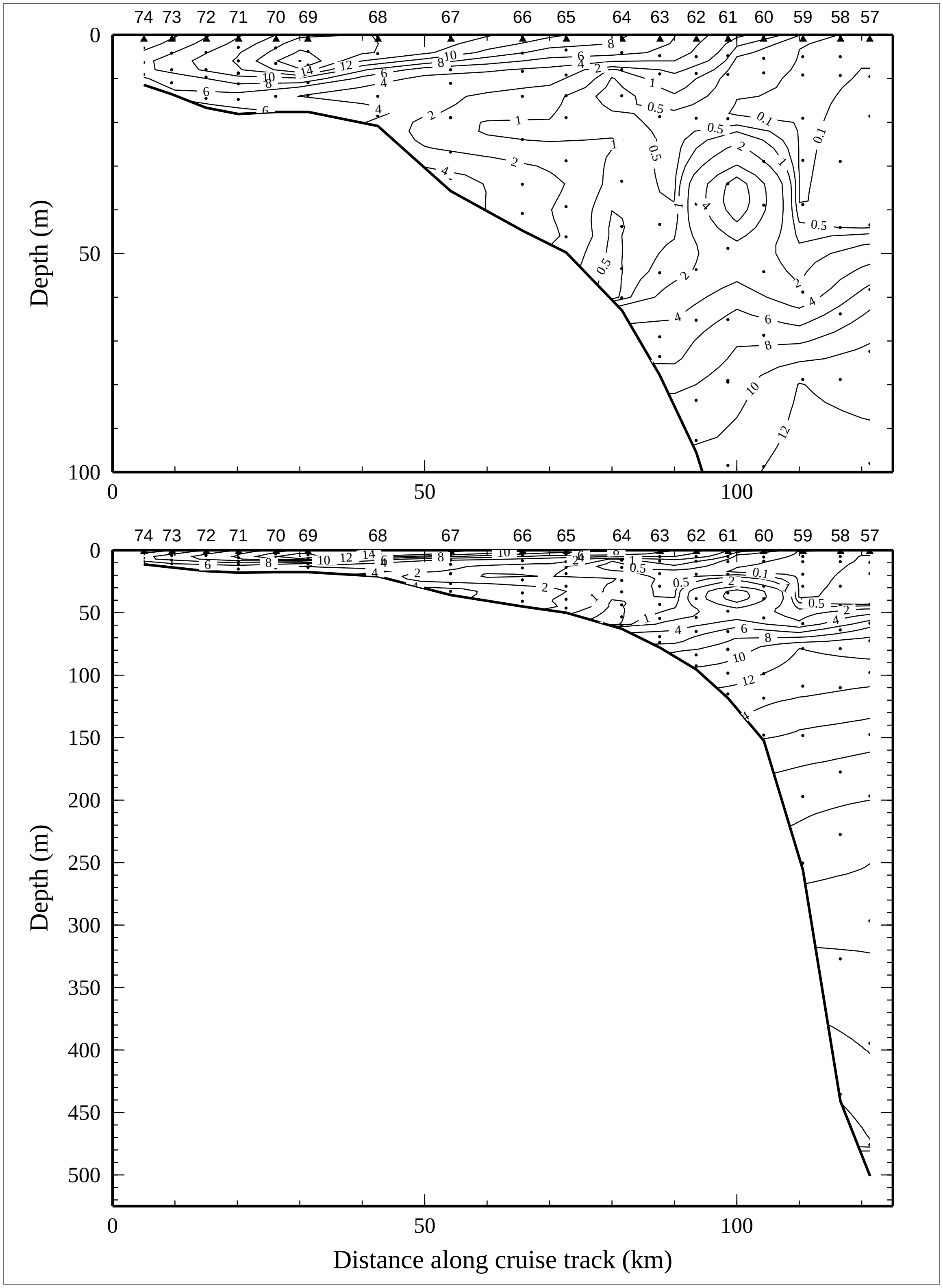

Figure 4.1.12. Nitrate (μmol·l-1) on line 1 of LATEX A survey H04, 4-13 February 1993.

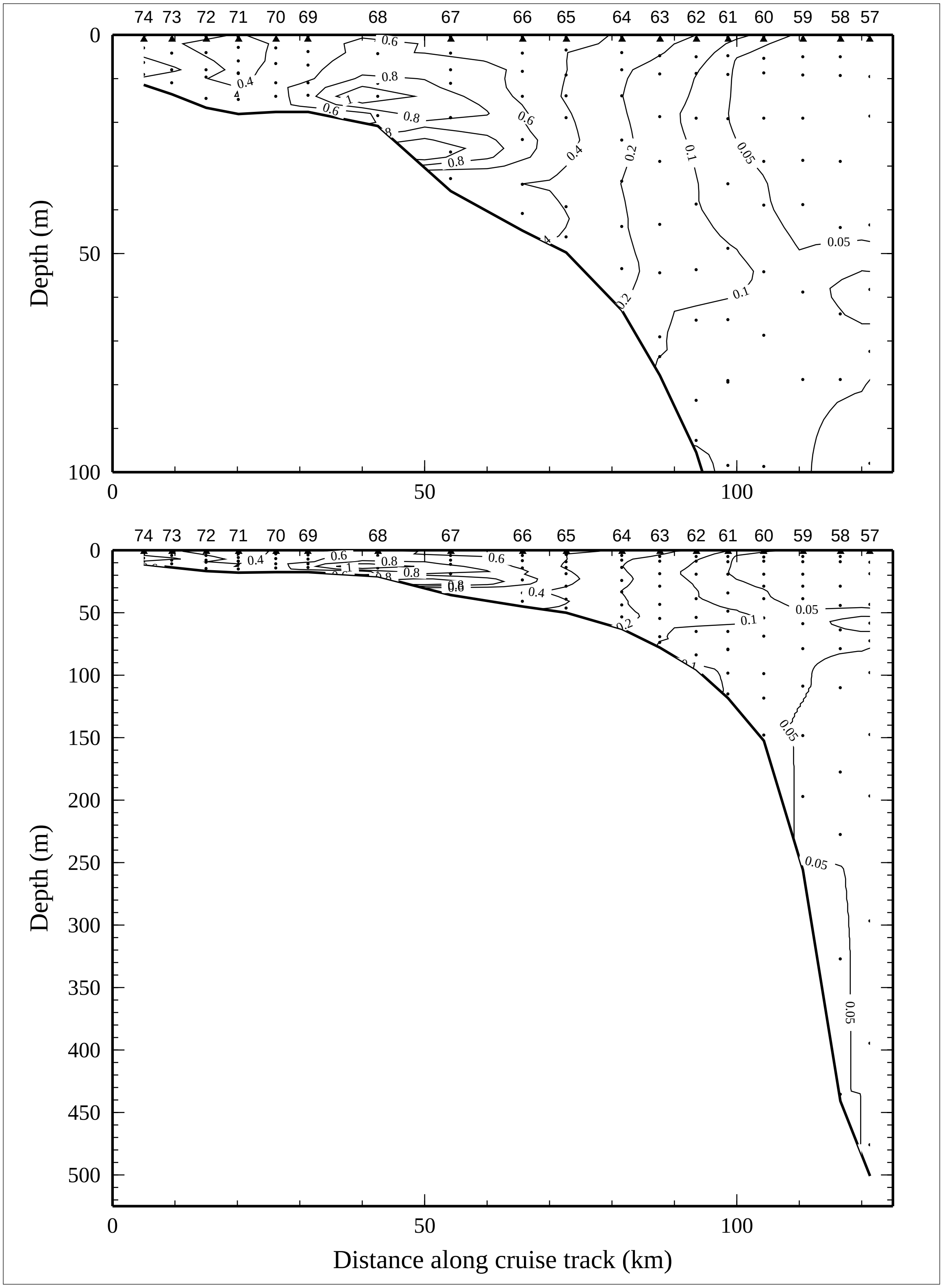

Figure 4.1.13. Nitrite (μmol·l-1) on line 1 of LATEX A survey H04, 4-13 February 1993.

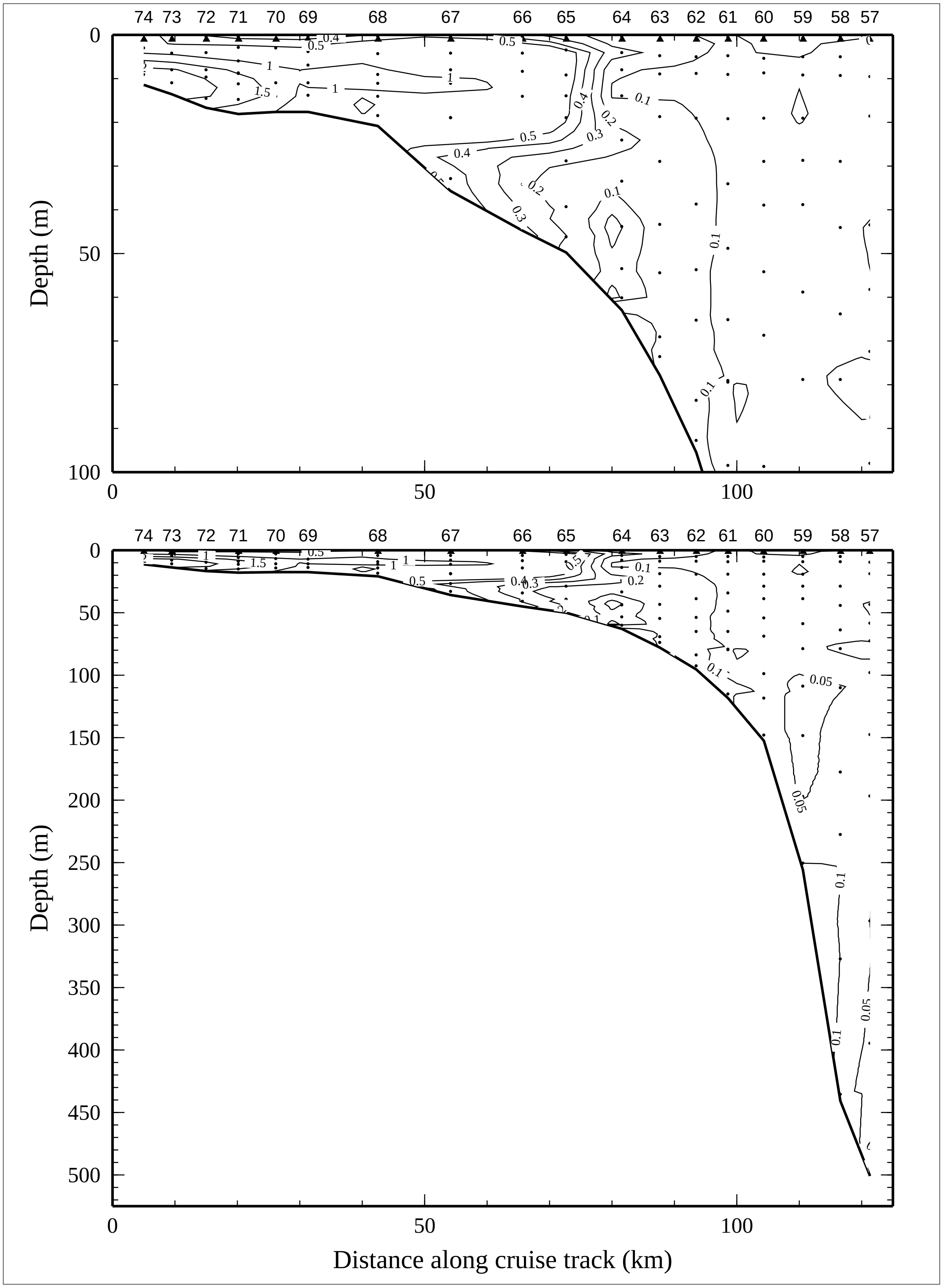

Figure 4.1.14. Ammonium (μmol·l^{-1}) on line 1 of LATEX A survey H04, 4-13 February 1993.

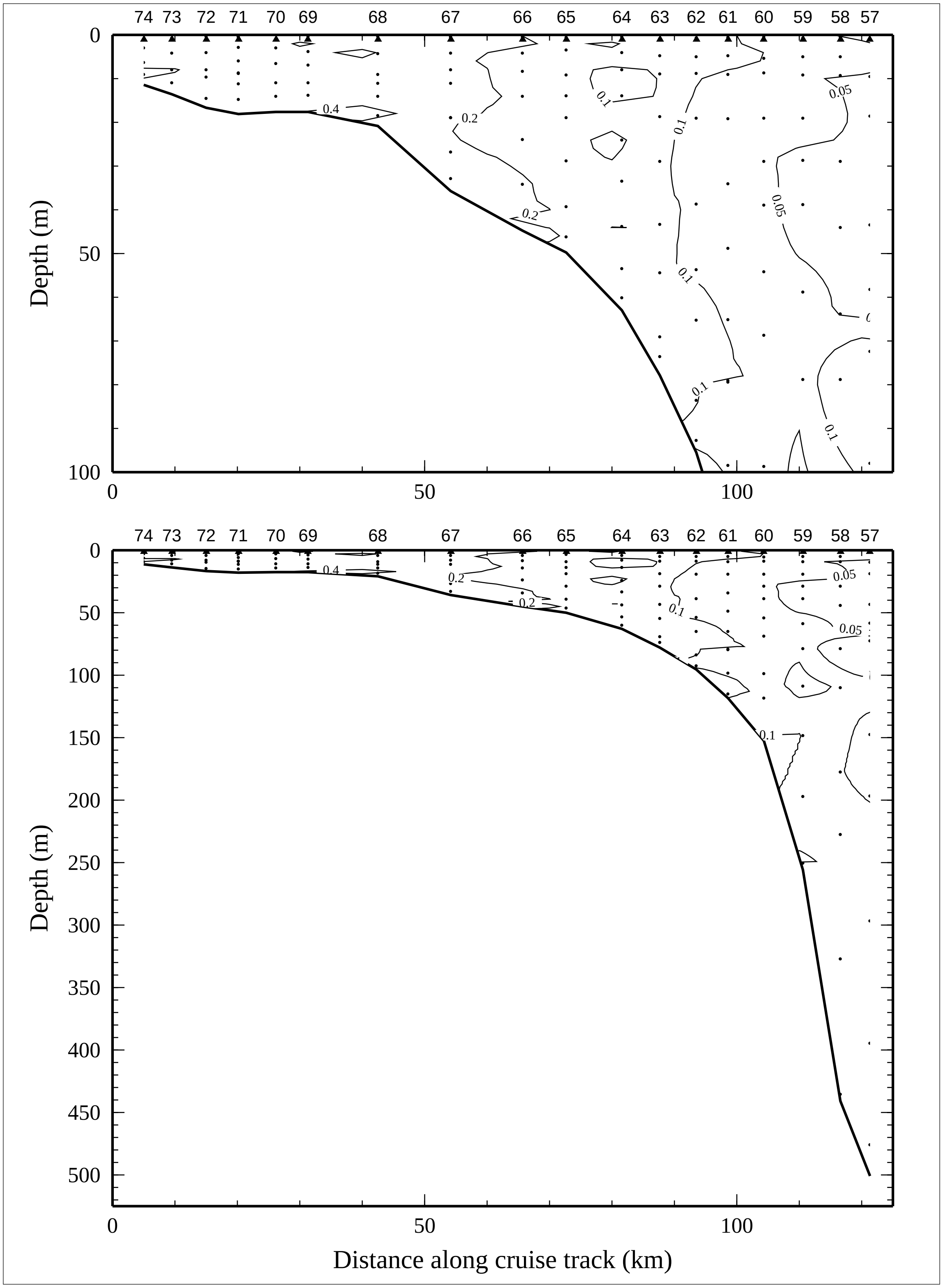

Figure 4.1.15. Urea (µmol·l-1) on line 1 of LATEX A survey H04, 4-13 February 1993.

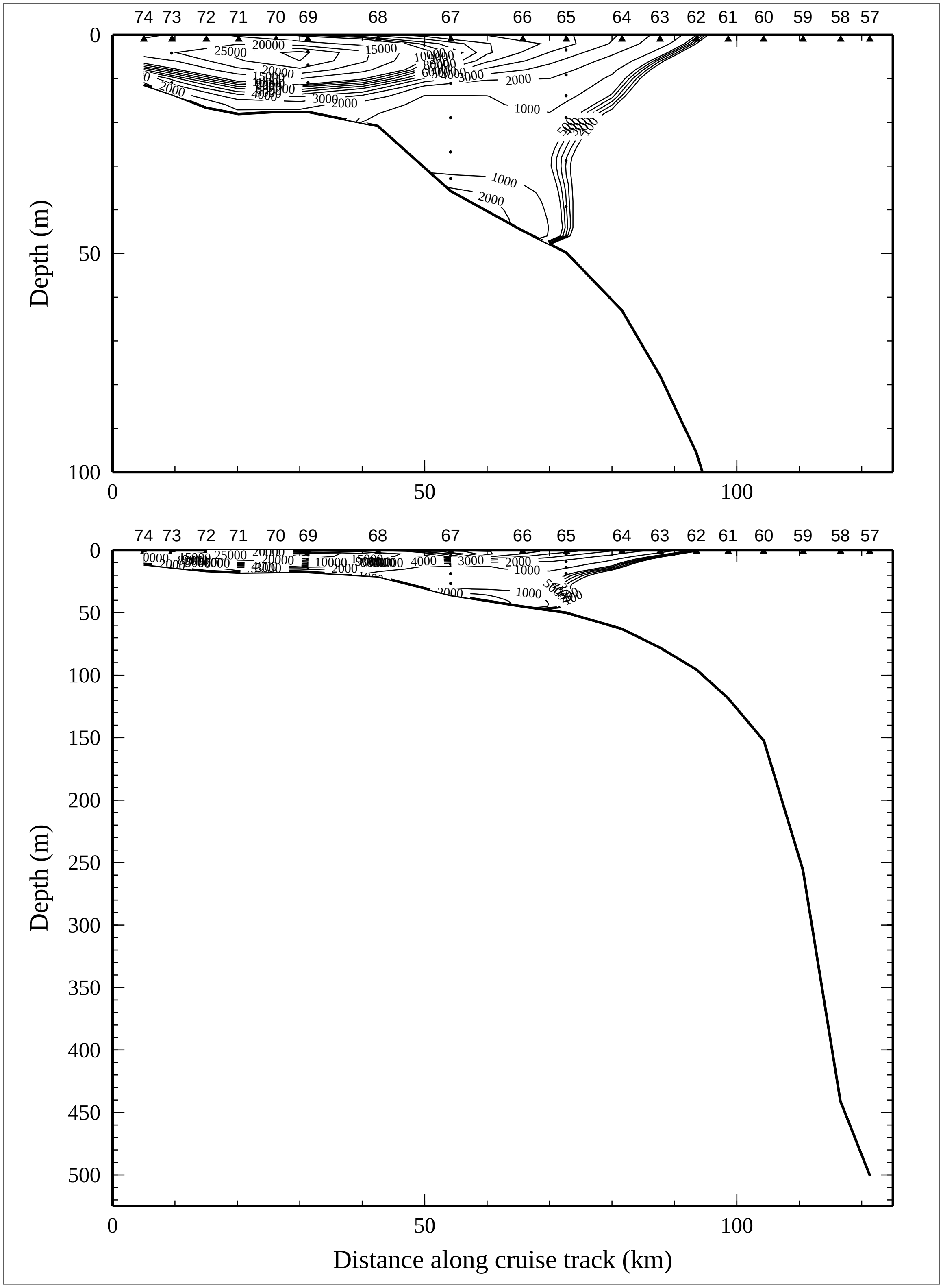

Figure 4.1.16. Chlorophyll a (ng·l^{-1}) on line 1 of LATEX A survey H04, 4-13 February 1993.

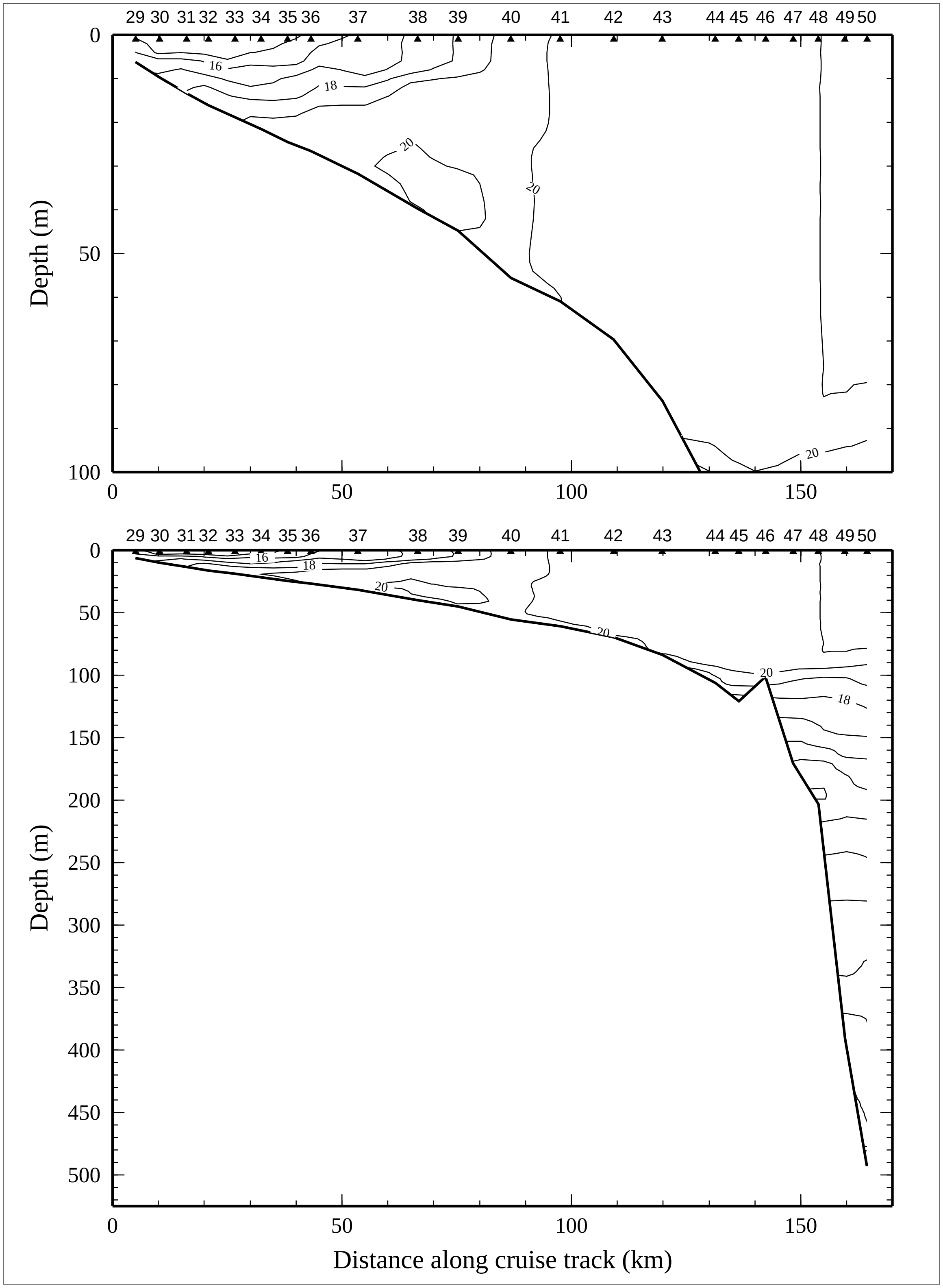

Figure 4.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H04, 4-13 February 1993.

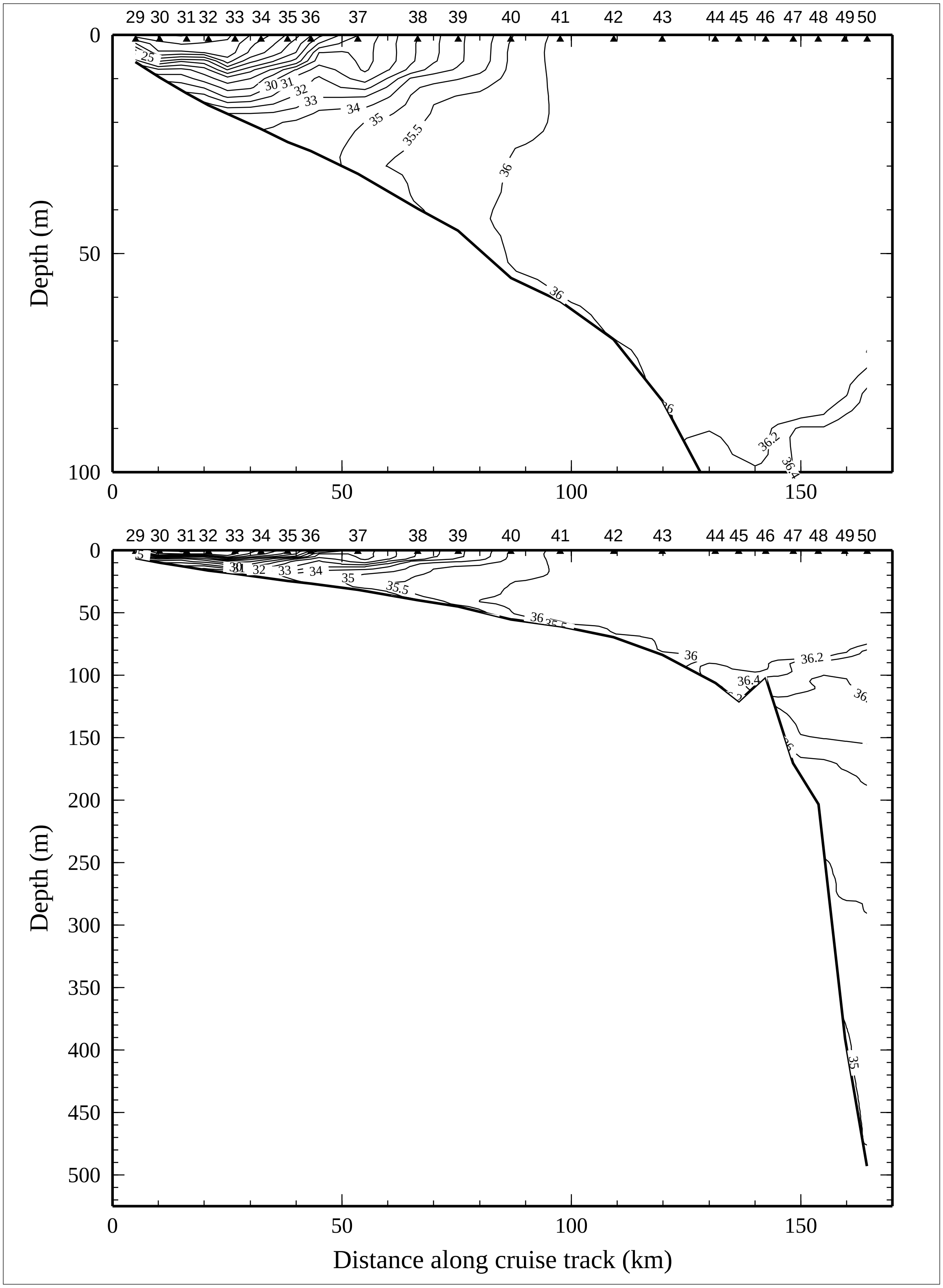

Figure 4.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H04, 4-13 February 1993.

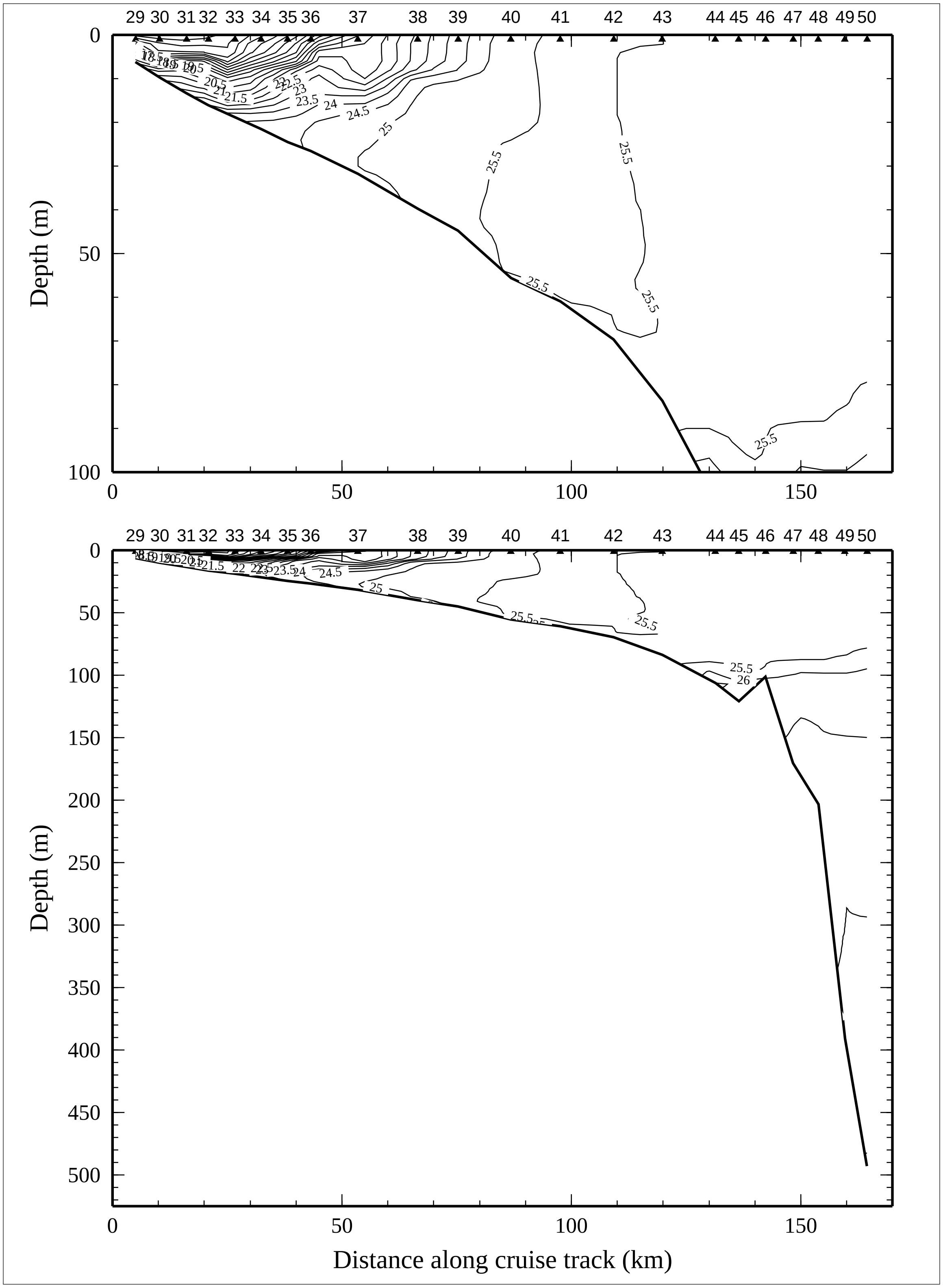

Figure 4.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H04, 4-13 February 1993.

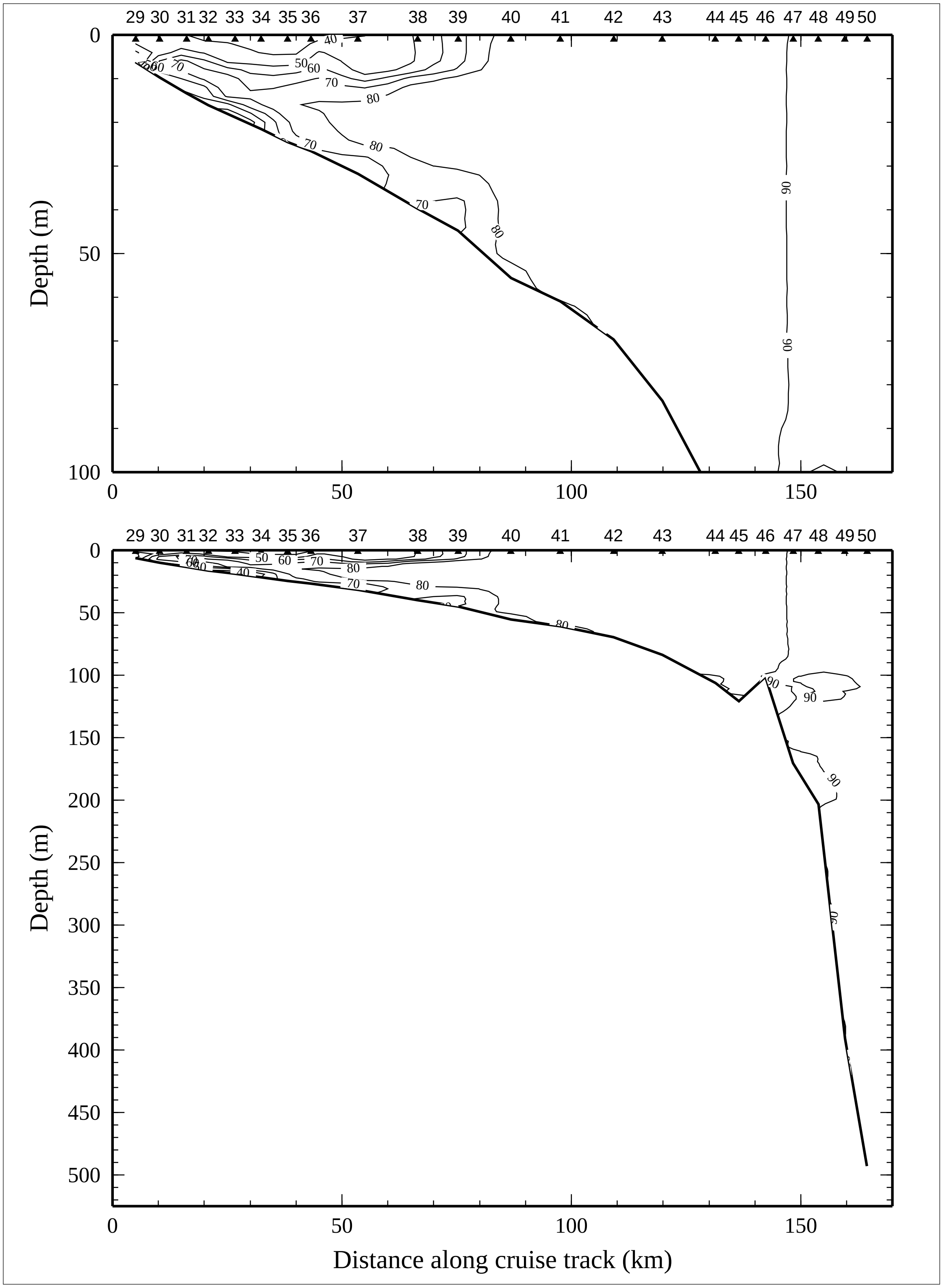

Figure 4.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H04, 4-13 February 1993.

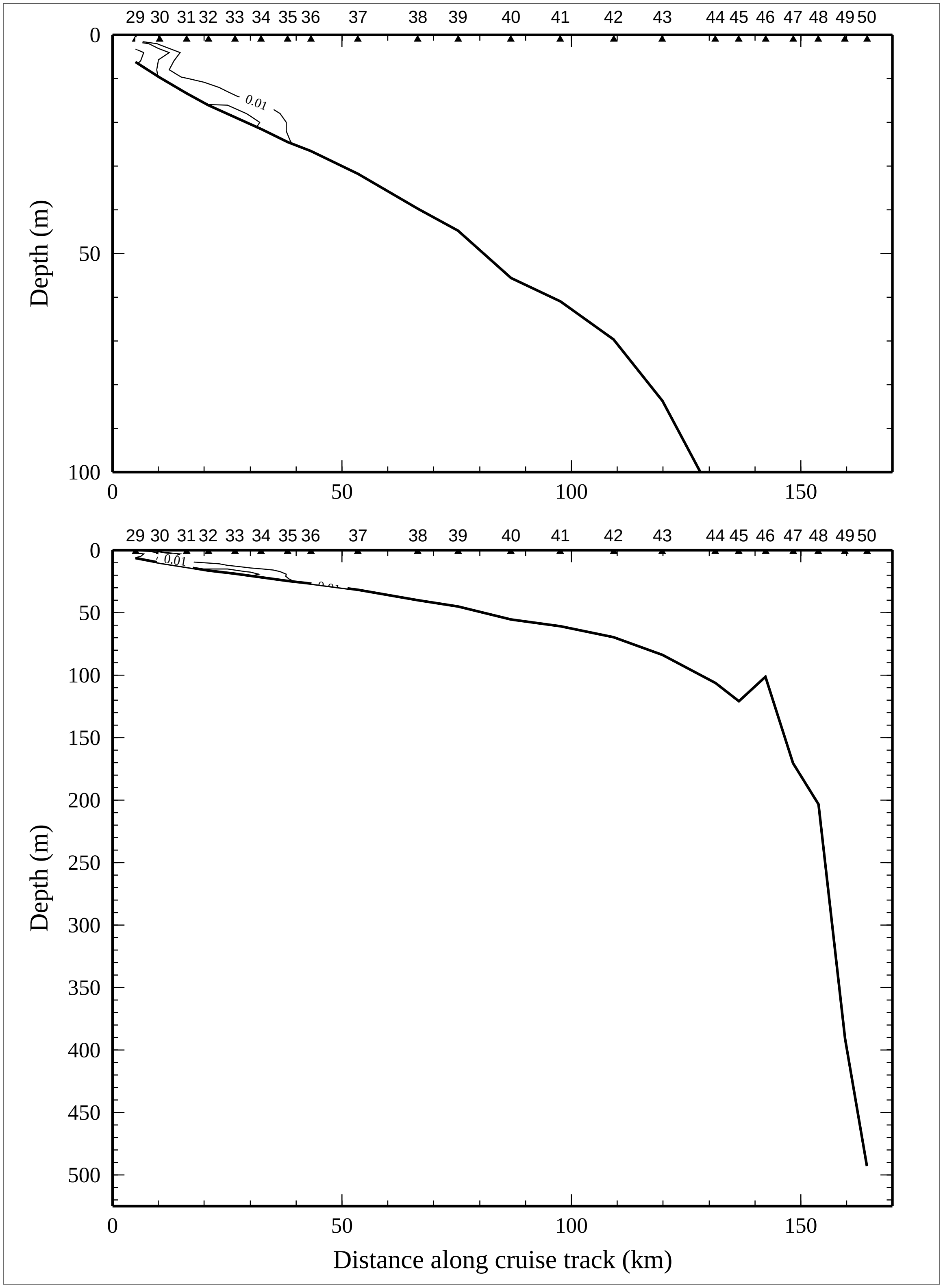

Figure 4.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H04, 4-13 February 1993.

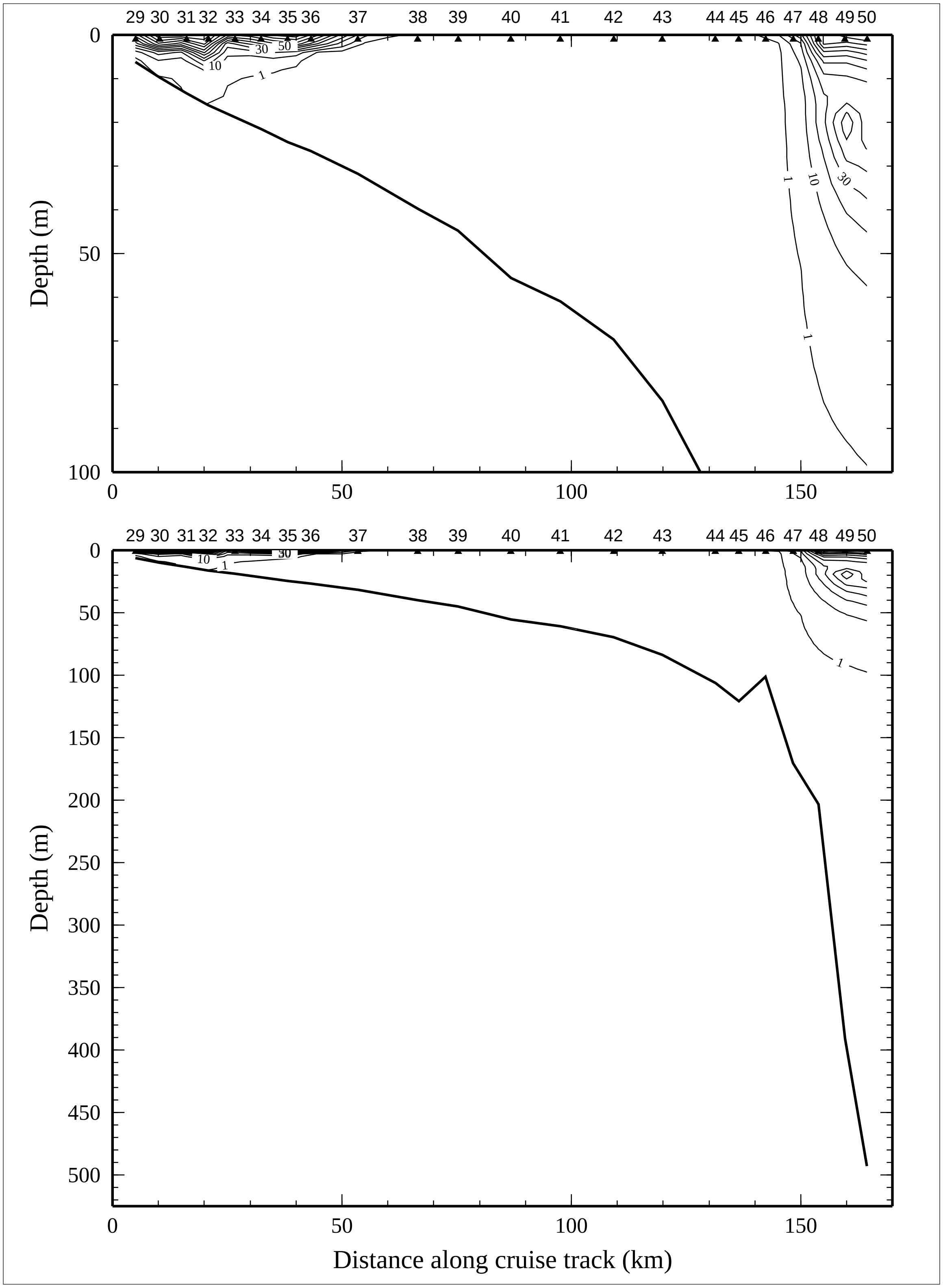

Figure 4.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H04, 4-13 February 1993.

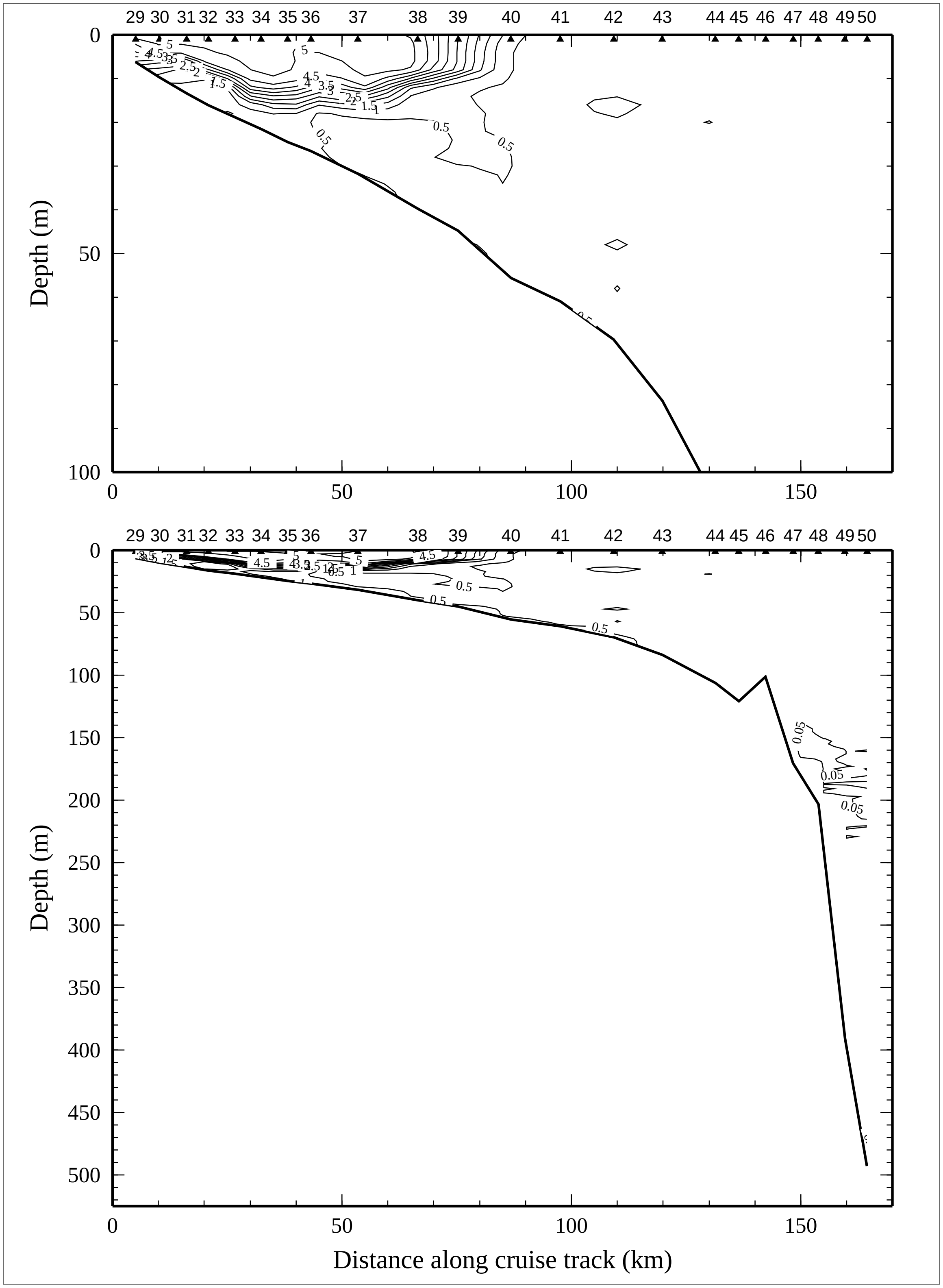

Figure 4.2.7. Relative fluorescence on line 2 of LATEX A survey H04, 4-13 February 1993.

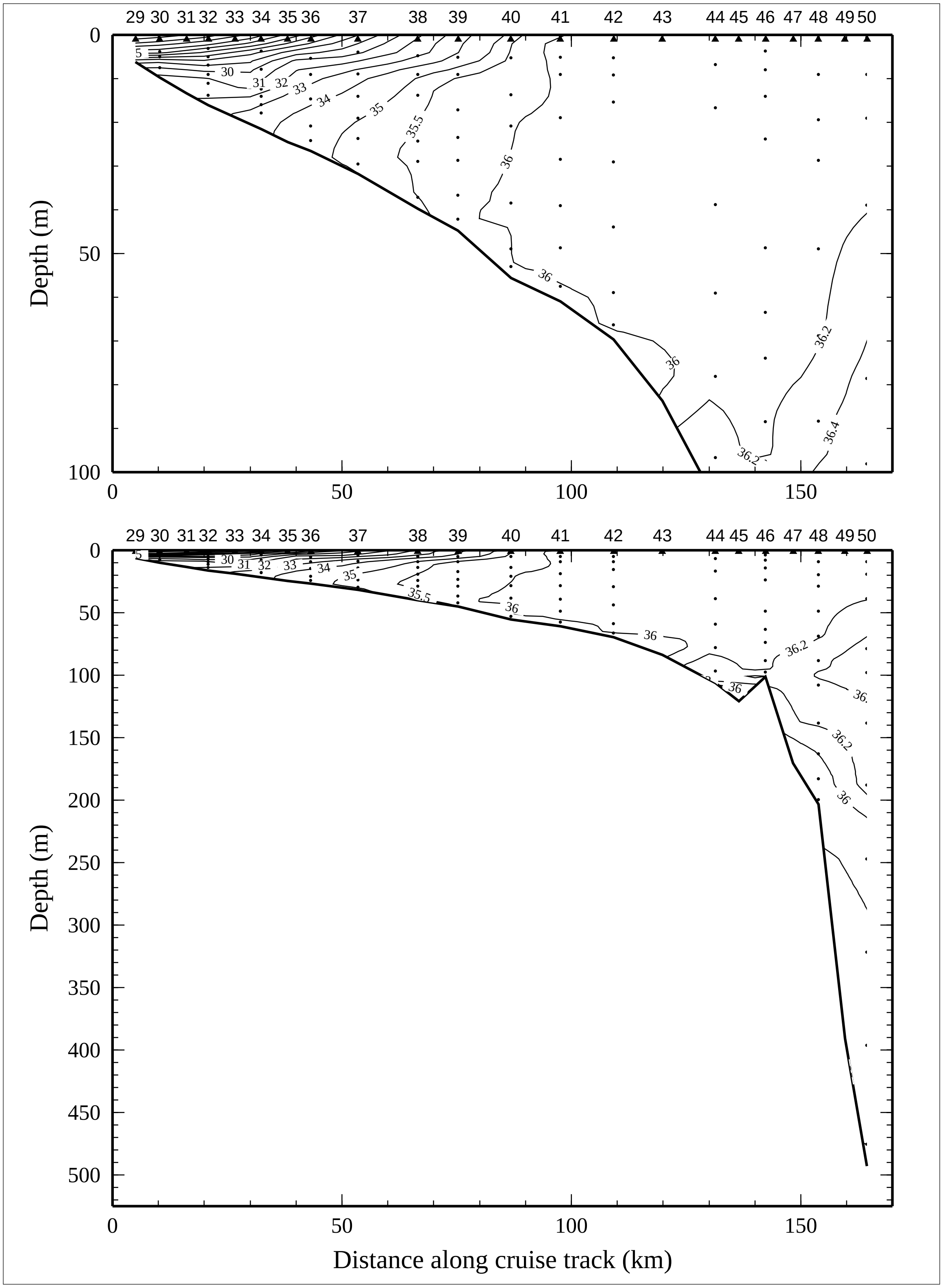

Figure 4.2.8. Bottle salinity on line 2 of LATEX A survey H04, 4-13 February 1993.

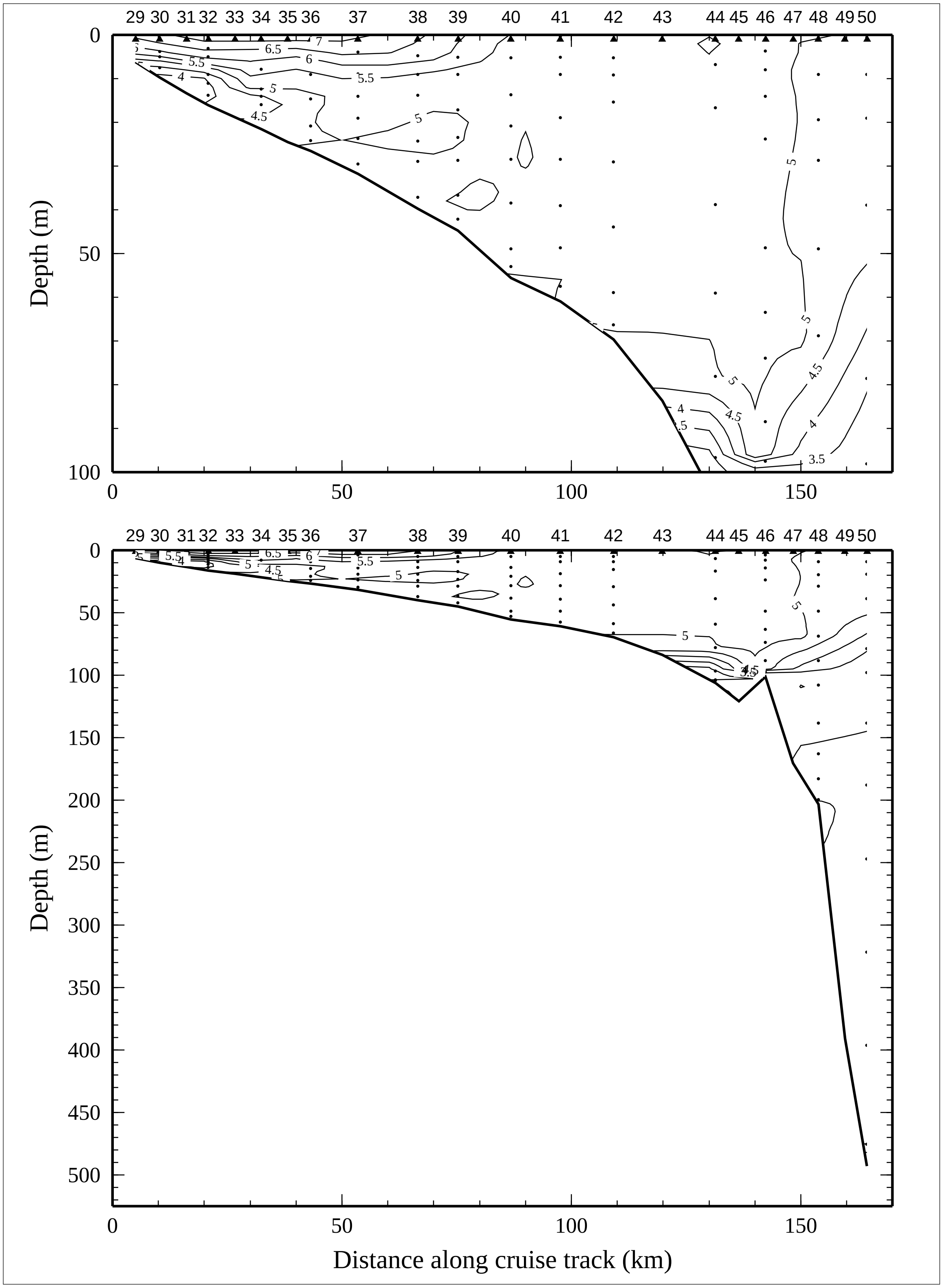

Figure 4.2.9. Dissolved oxygen (ml·l-1) on line 2 of LATEX A survey H04, 4-13 February 1993.

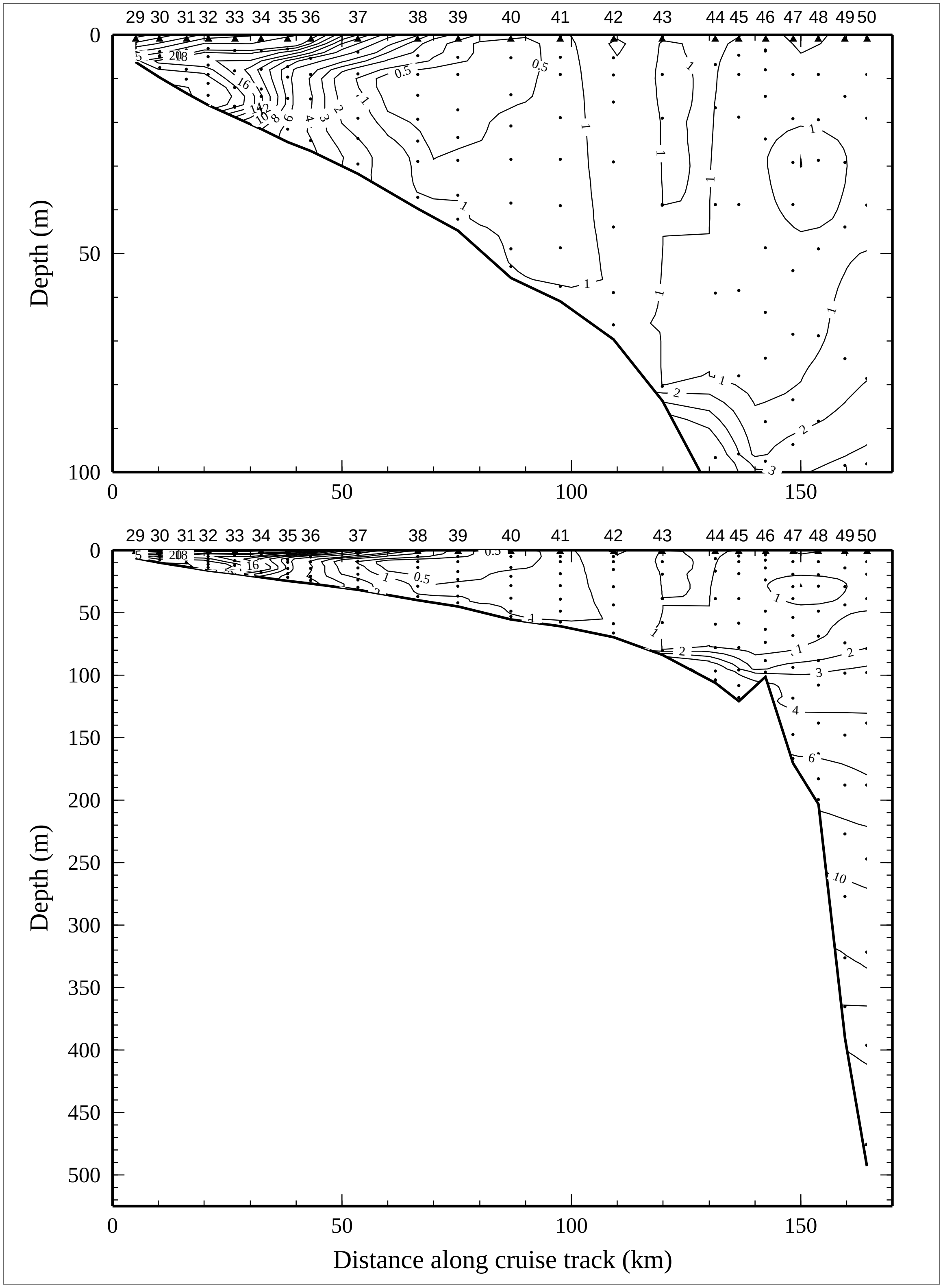

Figure 4.2.10. Silicate (μmol·l^{-1}) on line 2 of LATEX A survey H04, 4-13 February 1993.

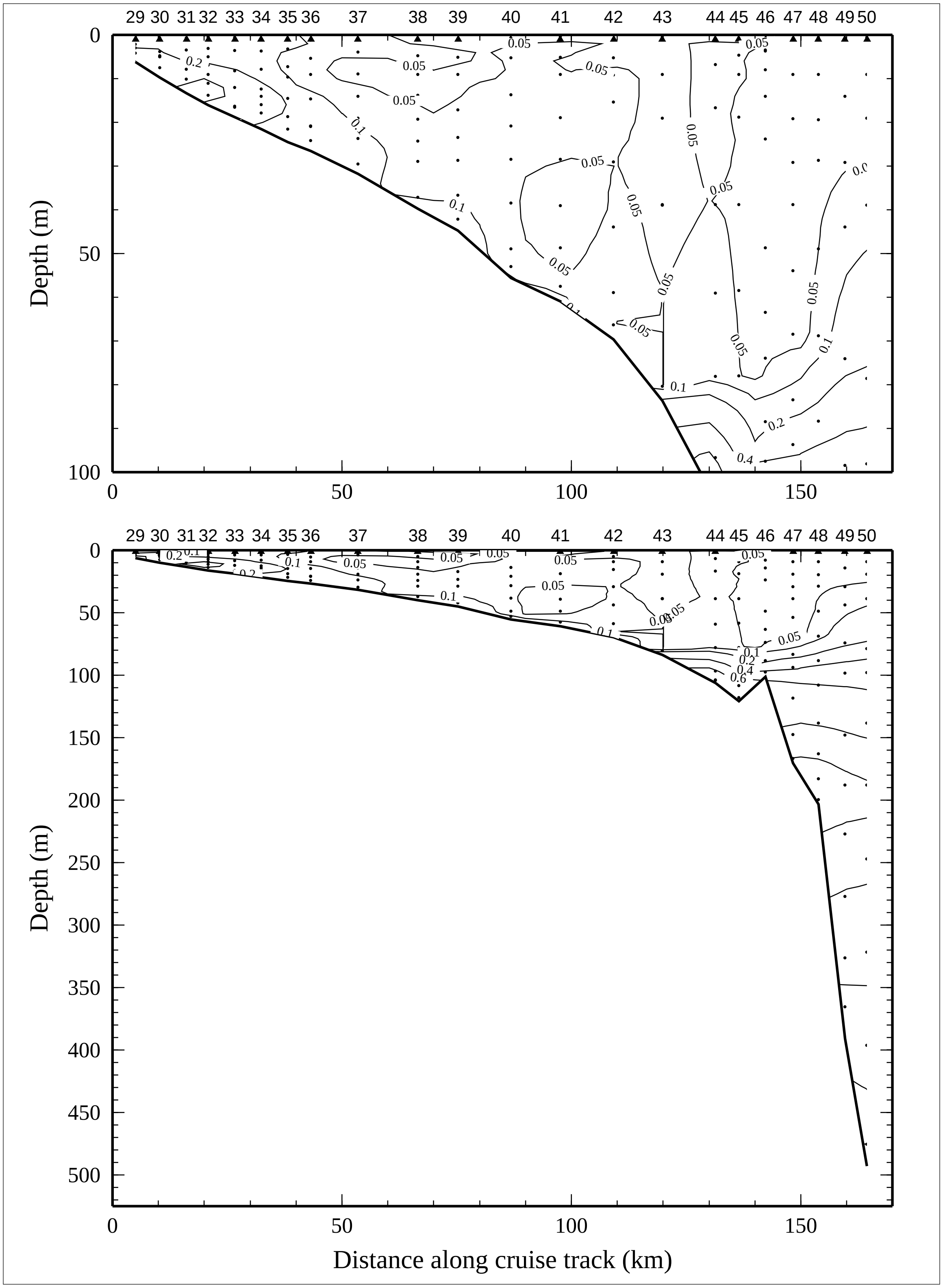

Figure 4.2.11. Phosphate (μmol·l^{-1}) on line 2 of LATEX A survey H04, 4-13 February 1993.

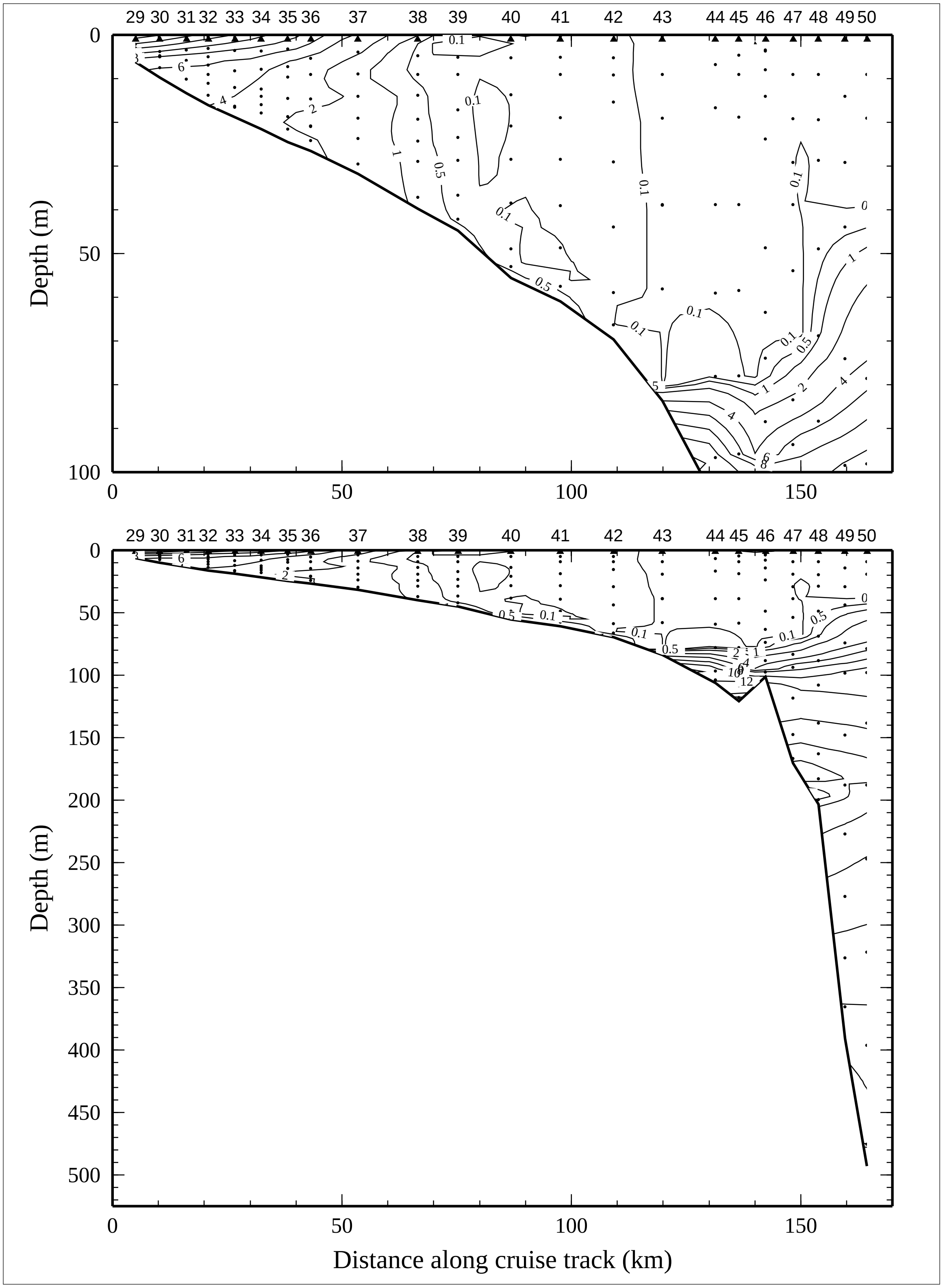

Figure 4.2.12. Nitrate (µmol·l⁻¹) on line 2 of LATEX A survey H04, 4-13 February 1993.

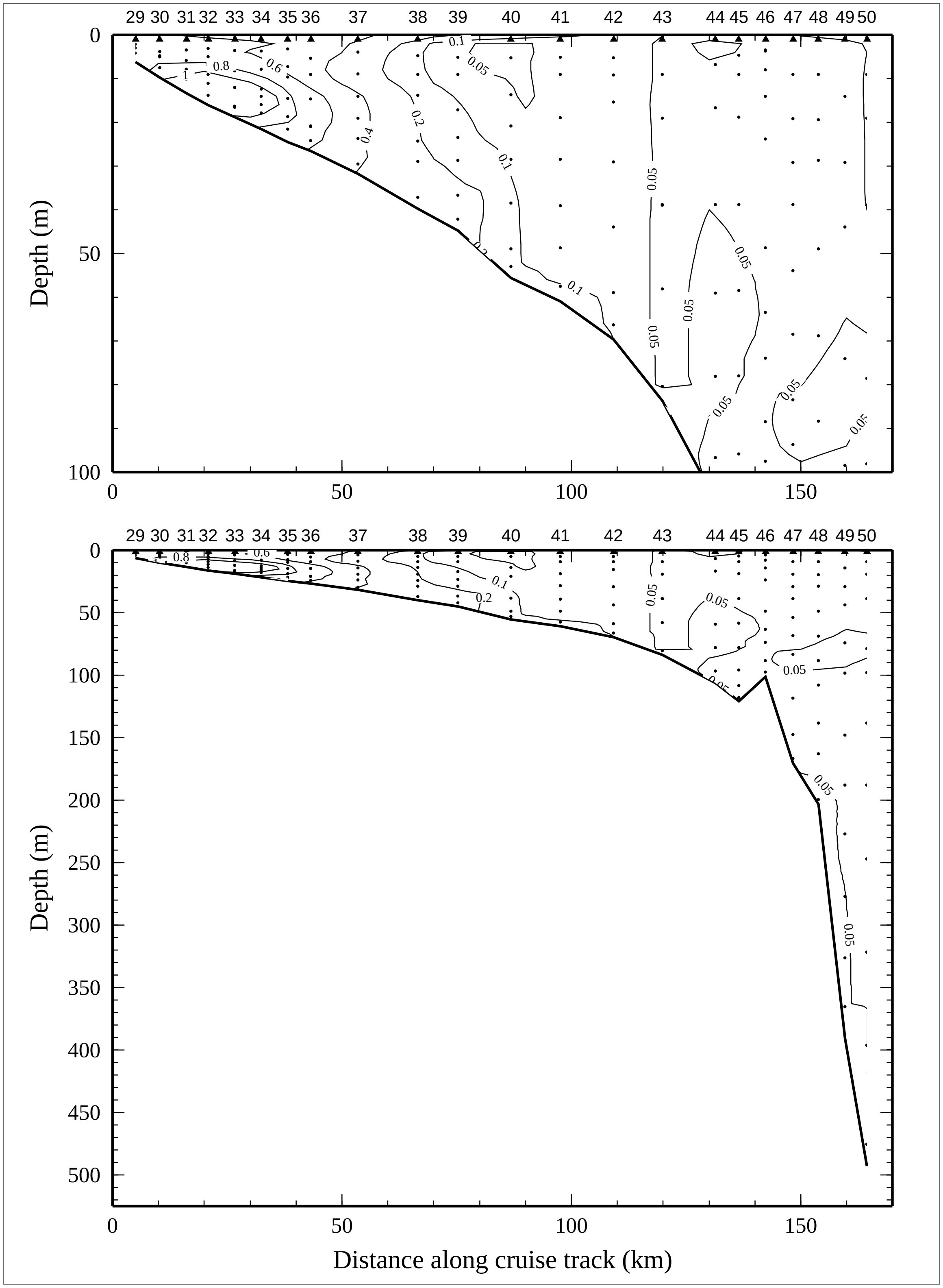

Figure 4.2.13. Nitrite (μmol·l-1) on line 2 of LATEX A survey H04, 4-13 February 1993.

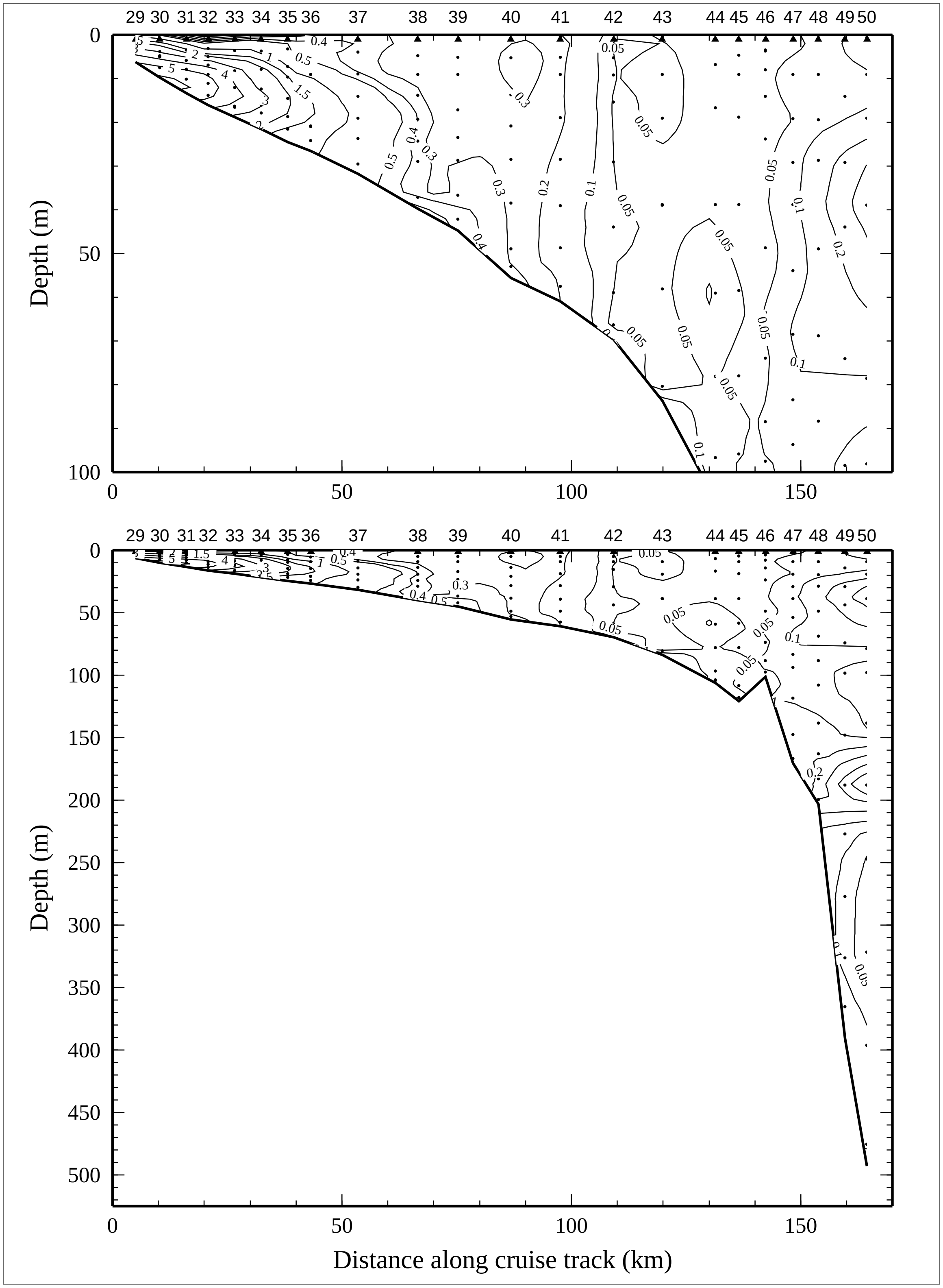

Figure 4.2.14. Ammonium (μmol·l^{-1}) on line 2 of LATEX A survey H04, 4-13 February 1993.

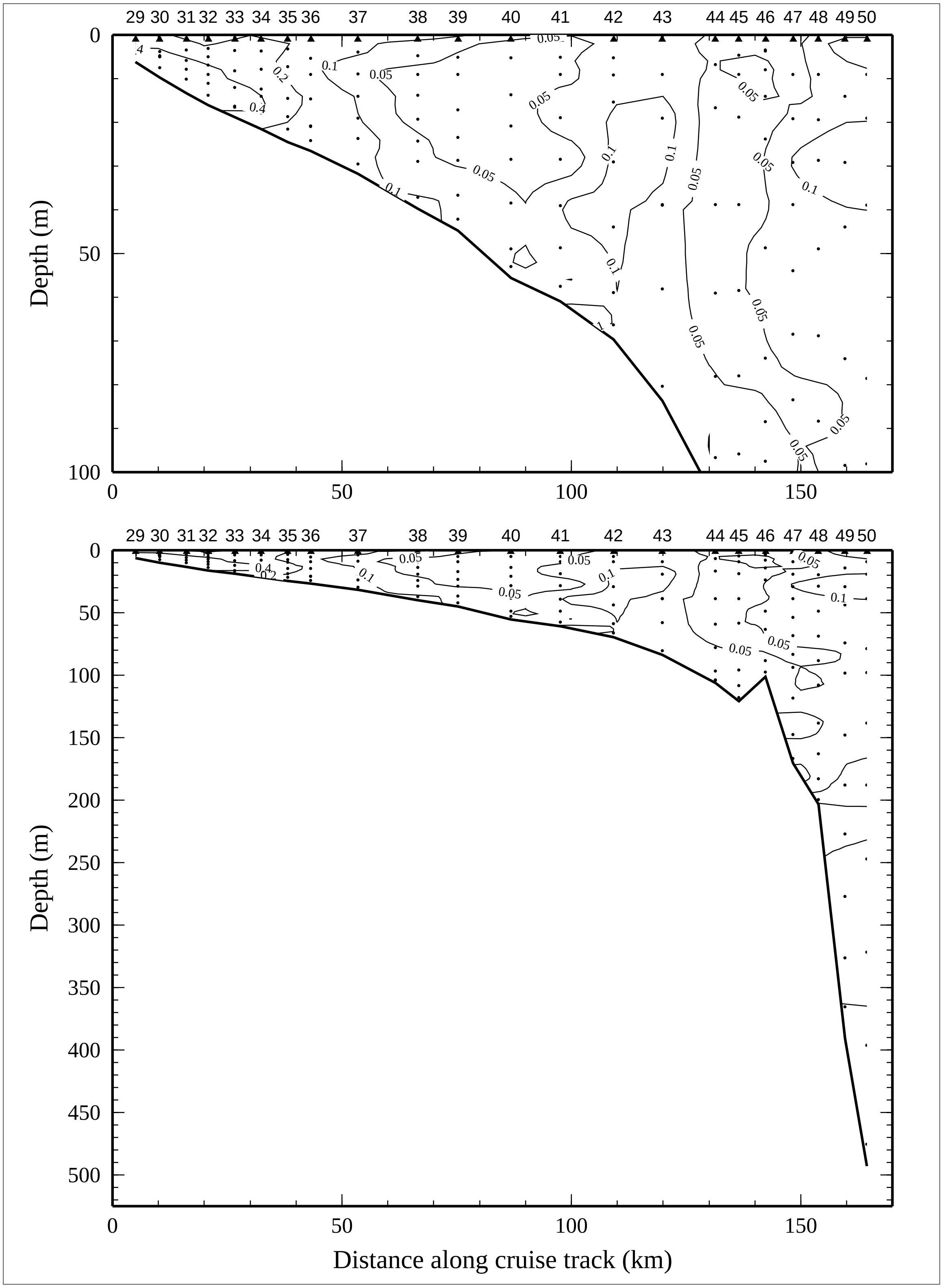

Figure 4.2.15. Urea (μmol·l^{-1}) on line 2 of LATEX A survey H04, 4-13 February 1993.

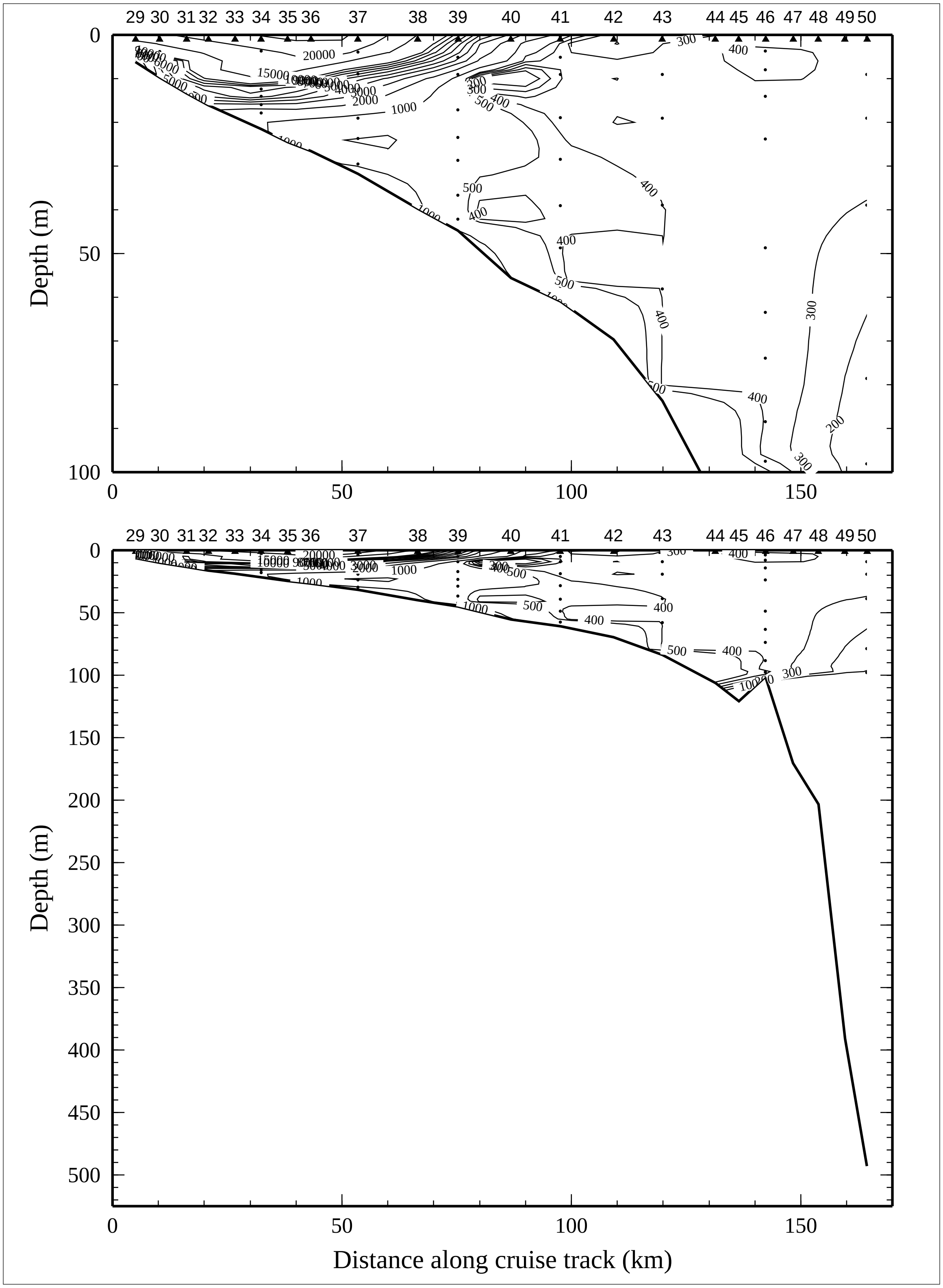

Figure 4.2.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 2 of LATEX A survey H04, 4-13 February 1993.

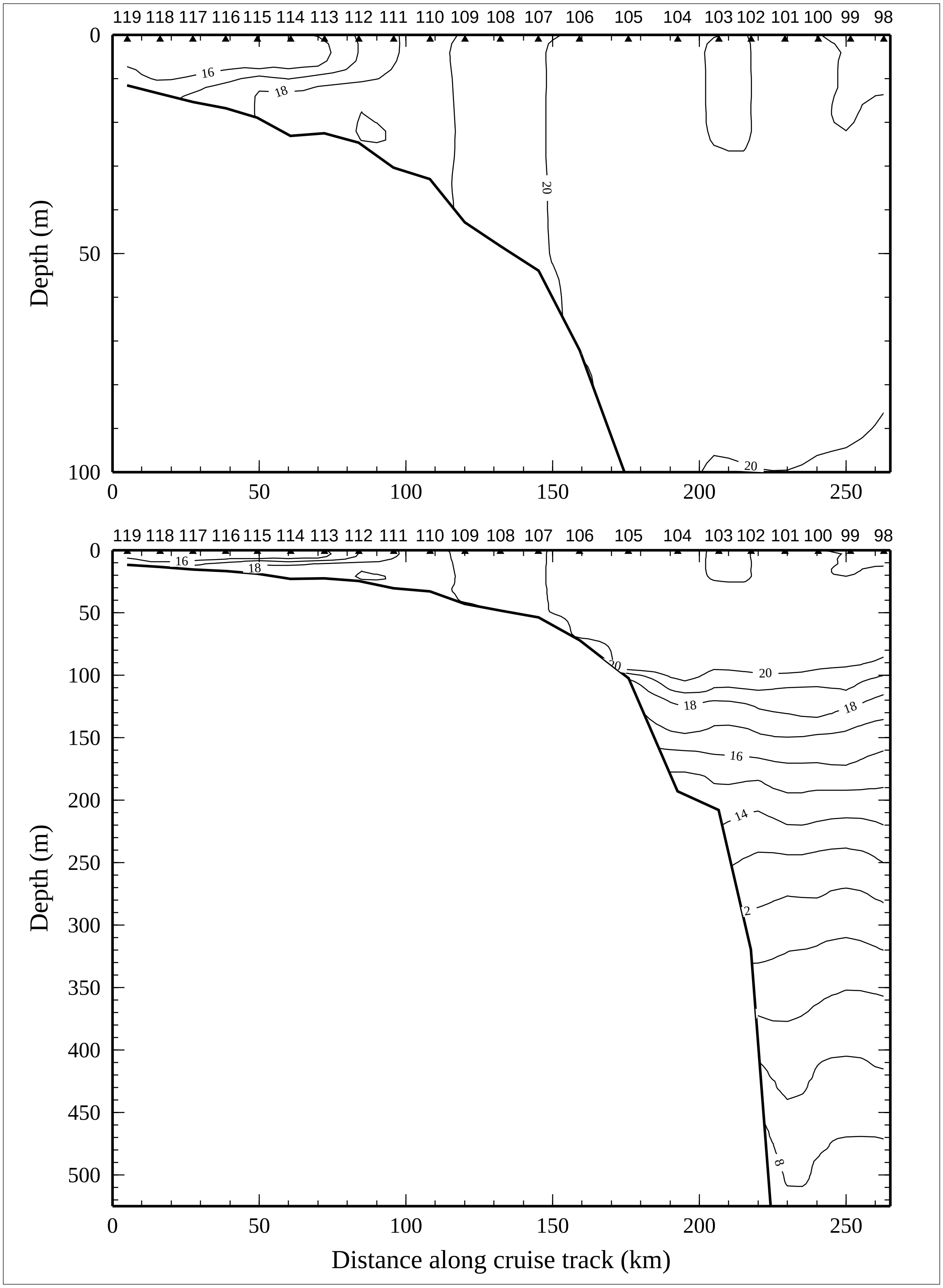

Figure 4.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H04, 4-13 February 1993.

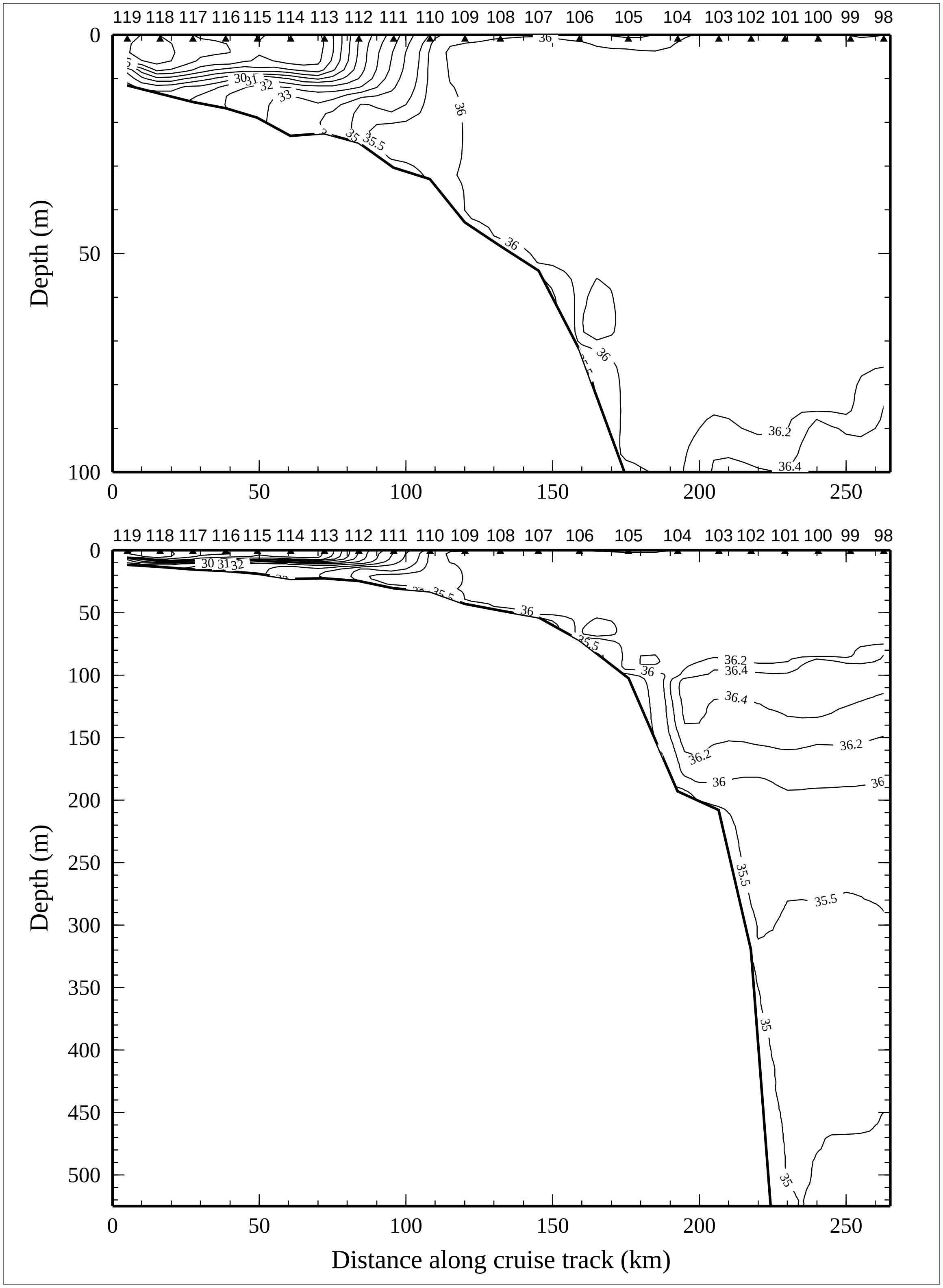

Figure 4.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H04, 4-13 February 1993.

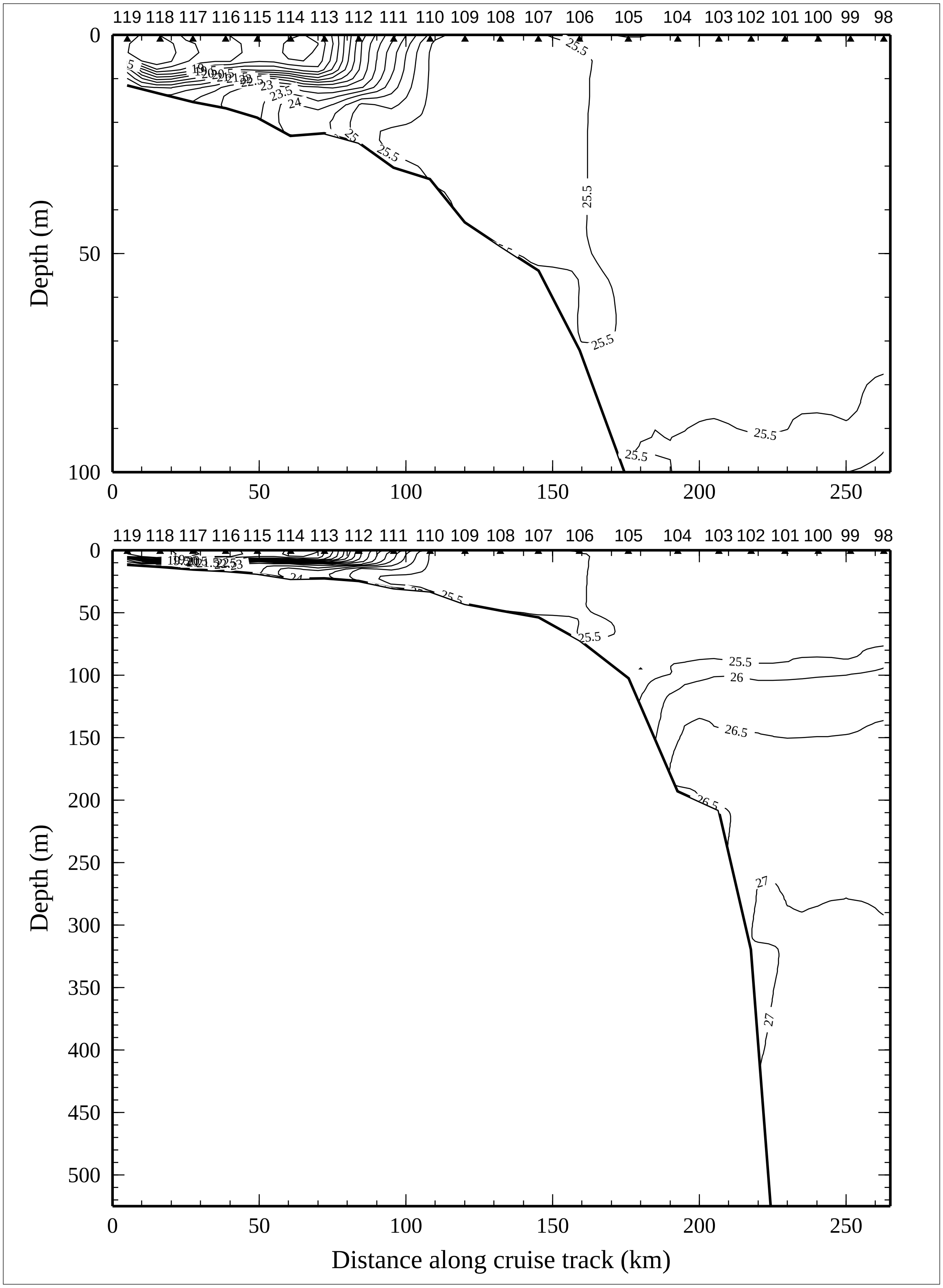

Figure 4.3.3. Density anomaly (σ_θ in kg·m^{-3}) on line 3 of LATEX A survey H04, 4-13 February 1993.

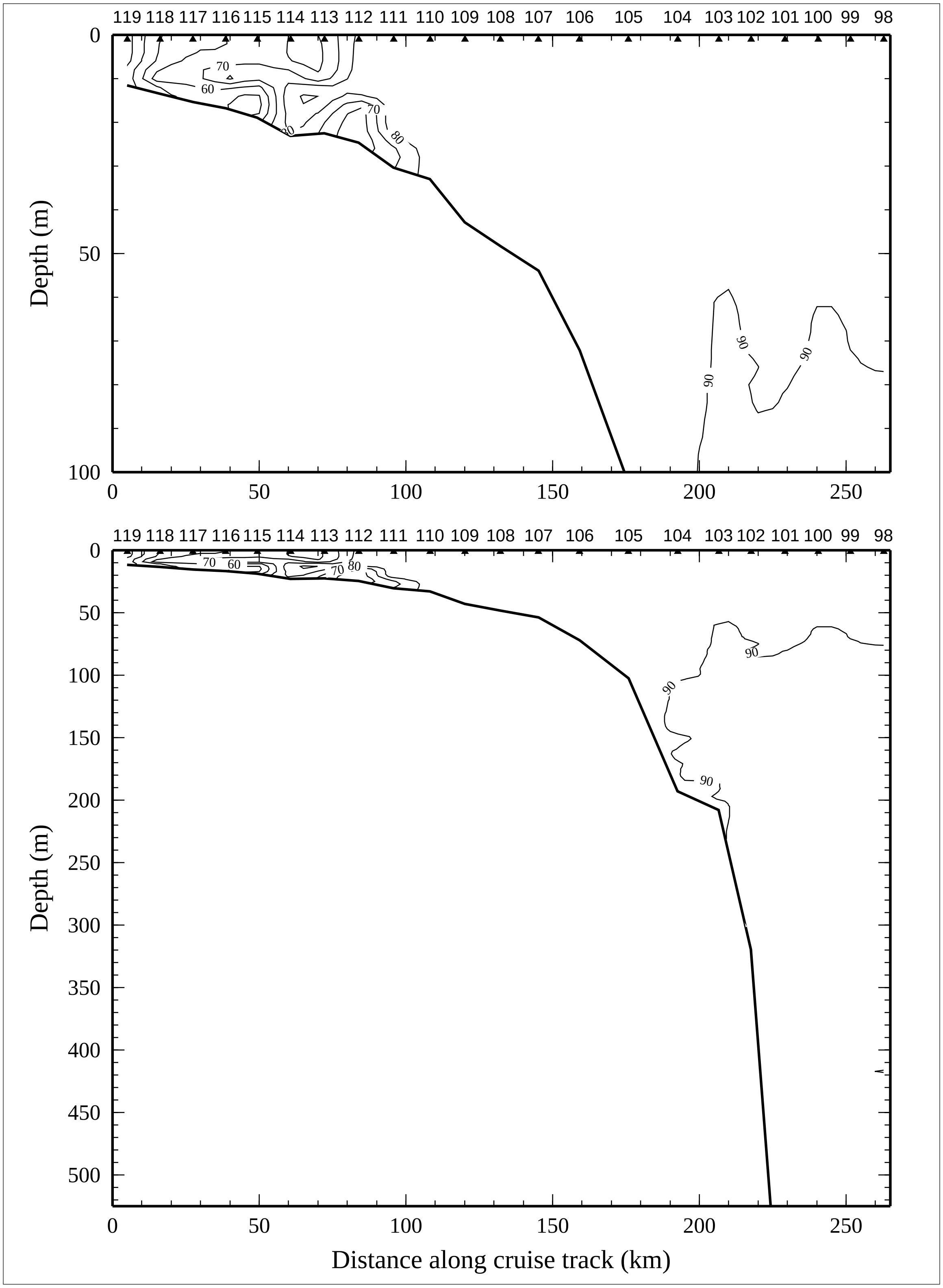

Figure 4.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H04, 4-13 February 1993.

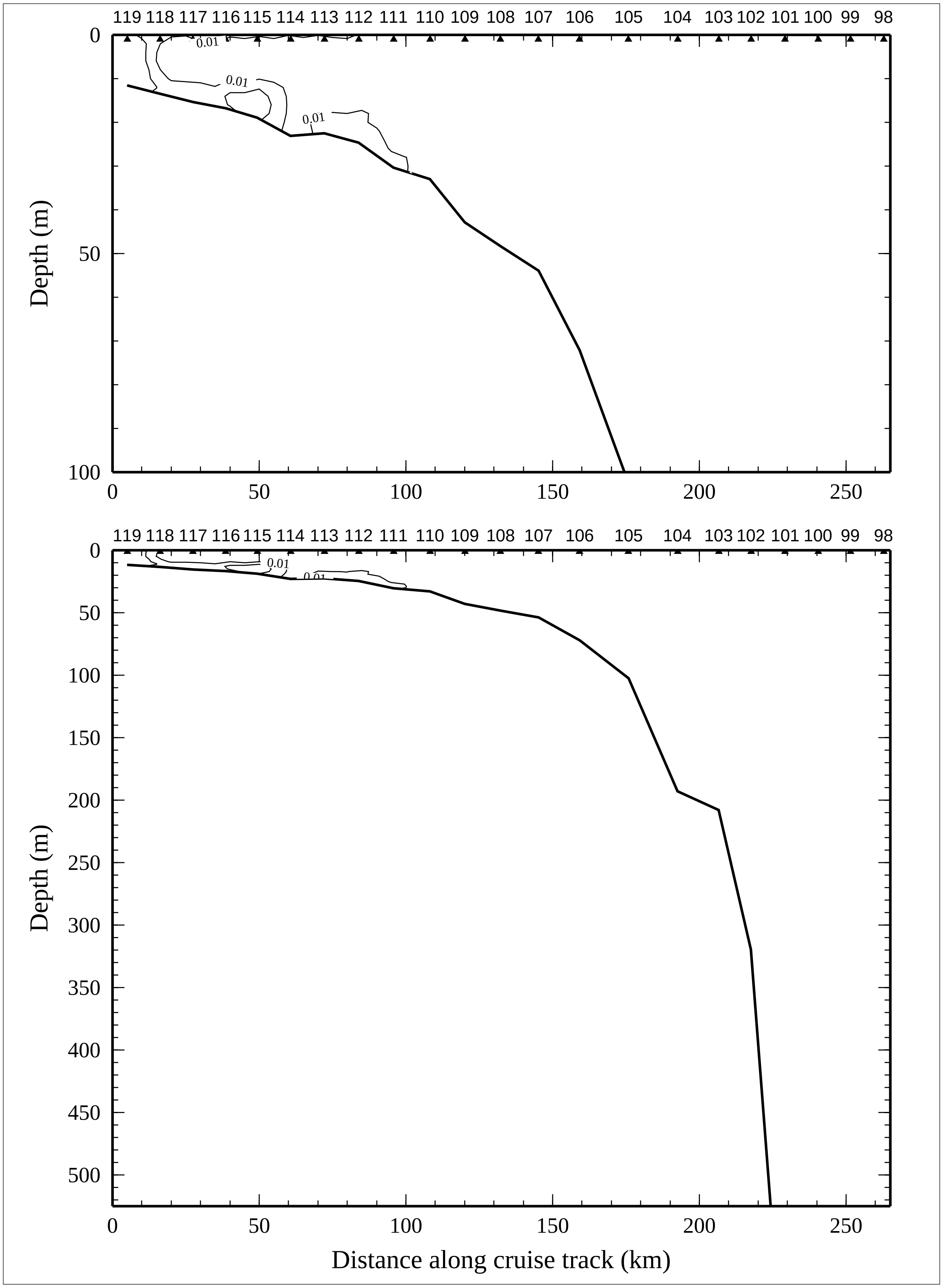

Figure 4.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H04, 4-13 February 1993.

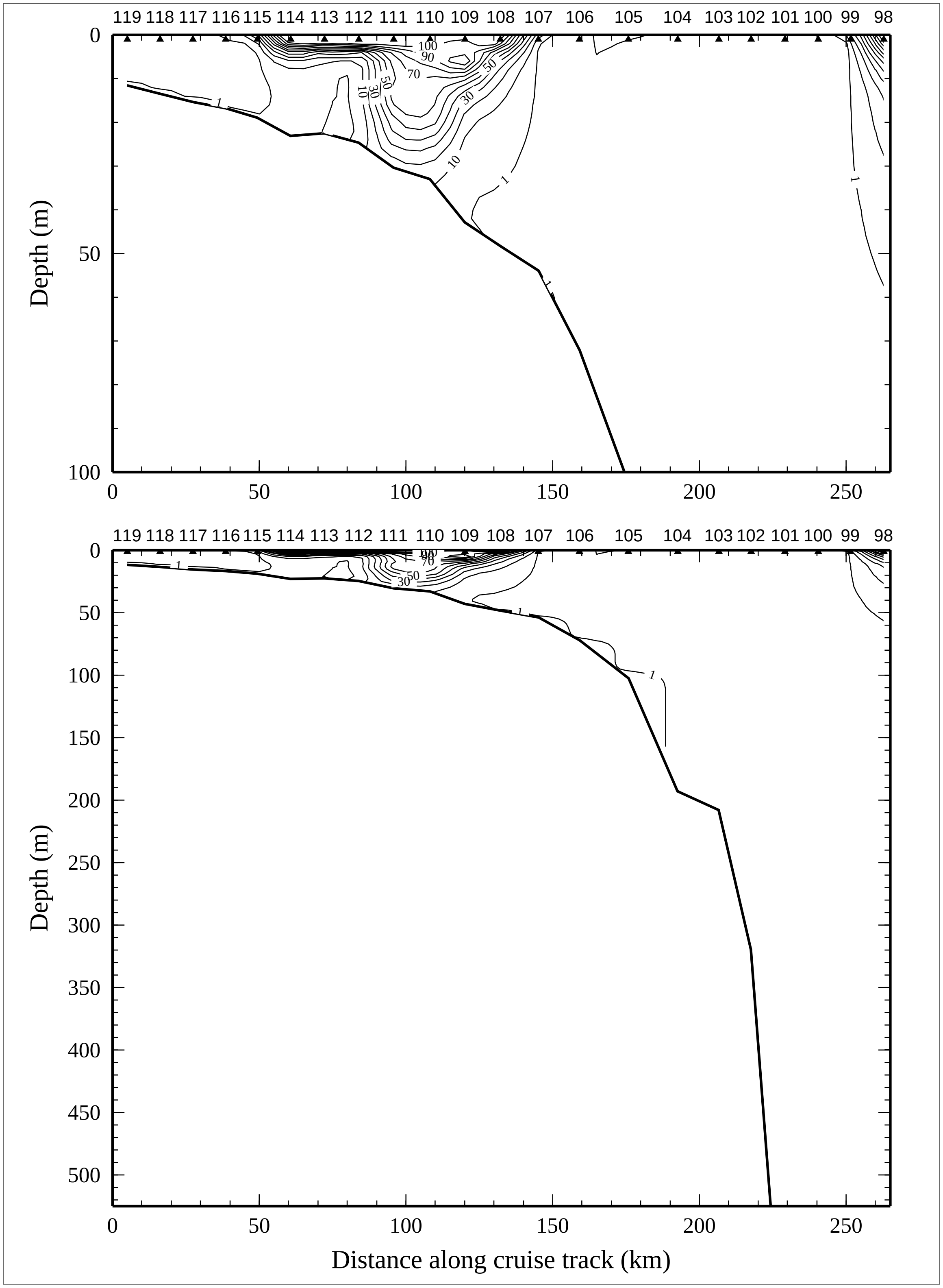

Figure 4.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H04, 4-13 February 1993.

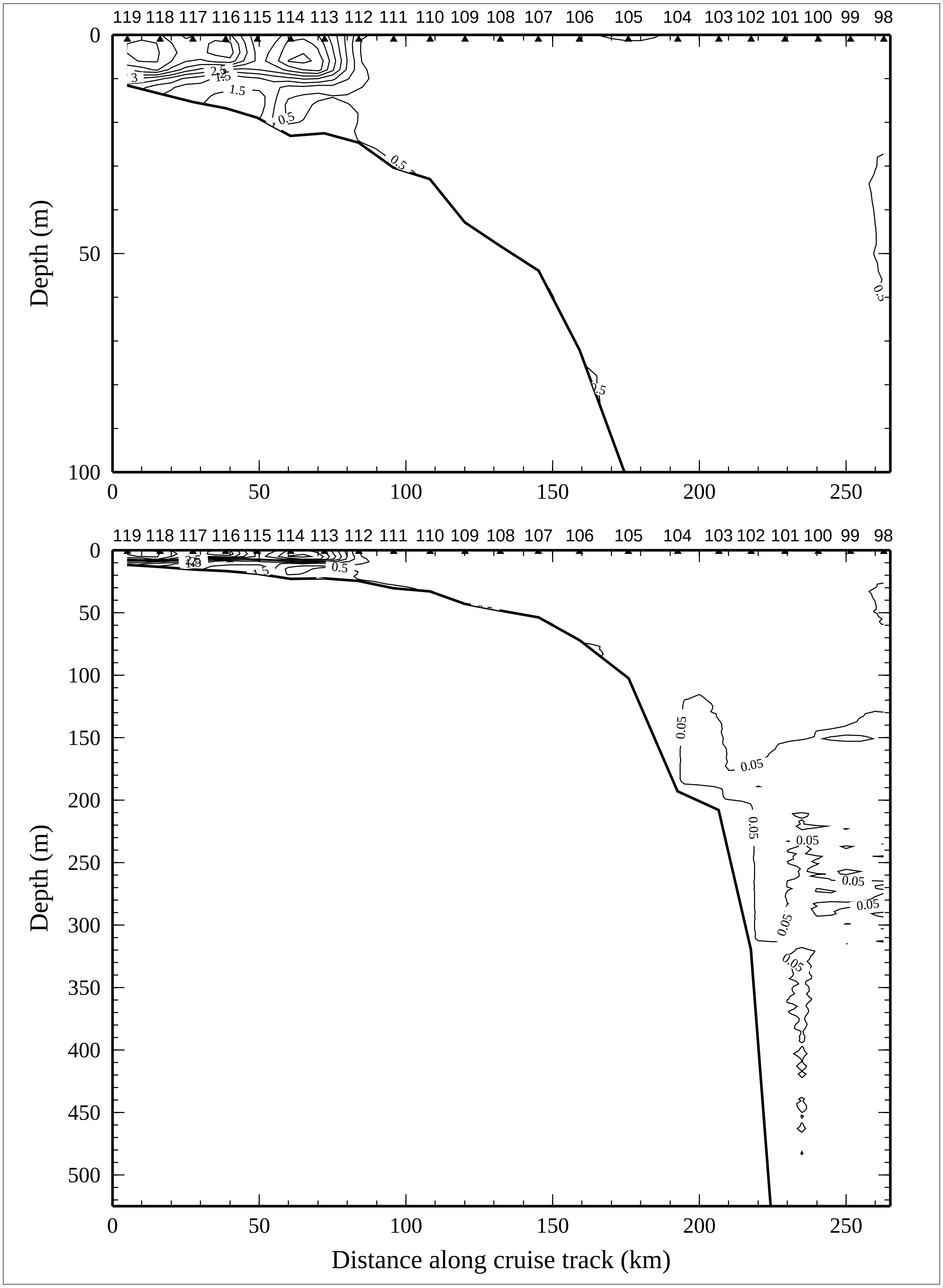

Figure 4.3.7. Relative fluorescence on line 3 of LATEX A survey H04, 4-13 February 1993.

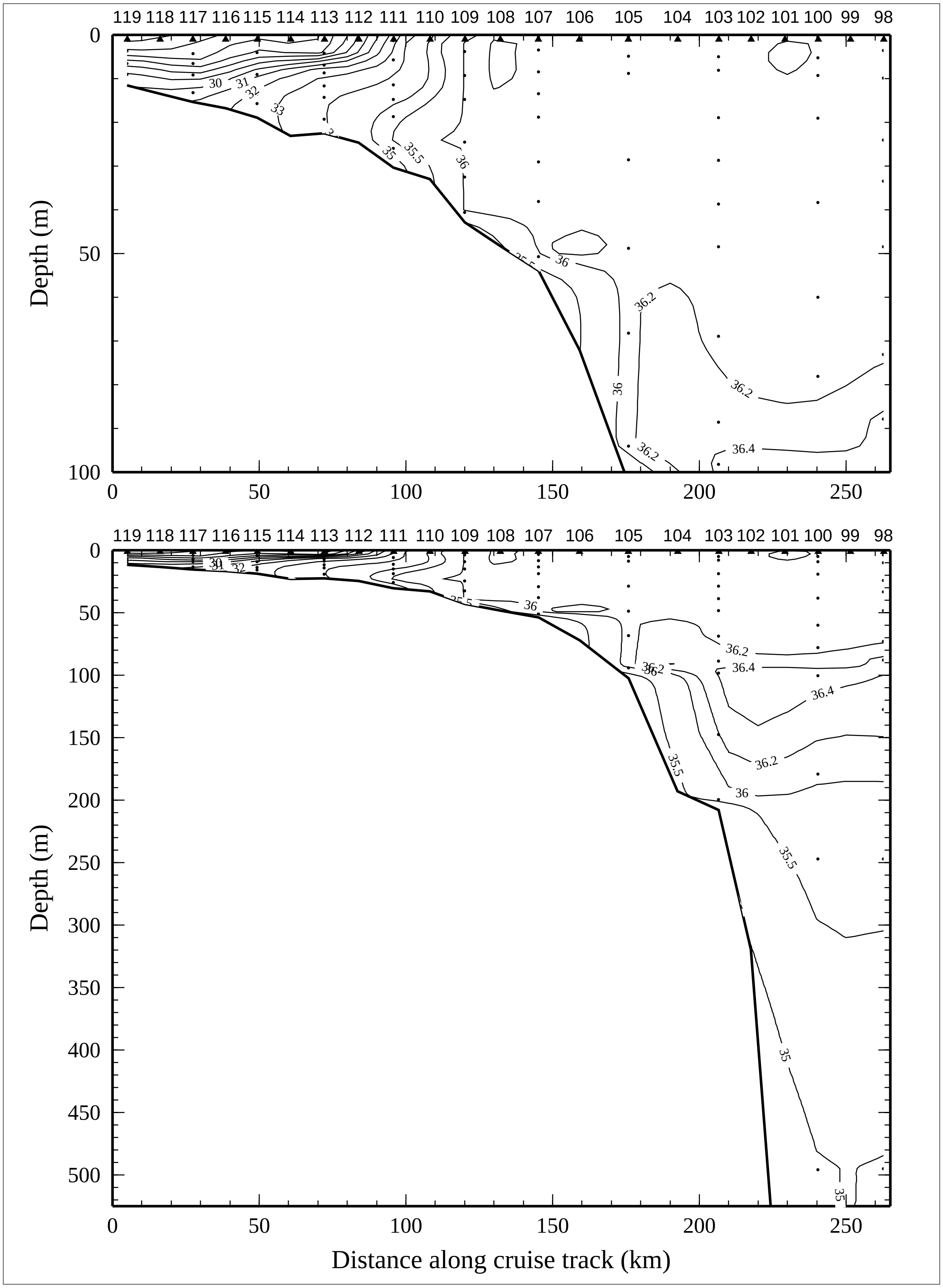

Figure 4.3.8. Bottle salinity on line 3 of LATEX A survey H04, 4-13 February 1993.

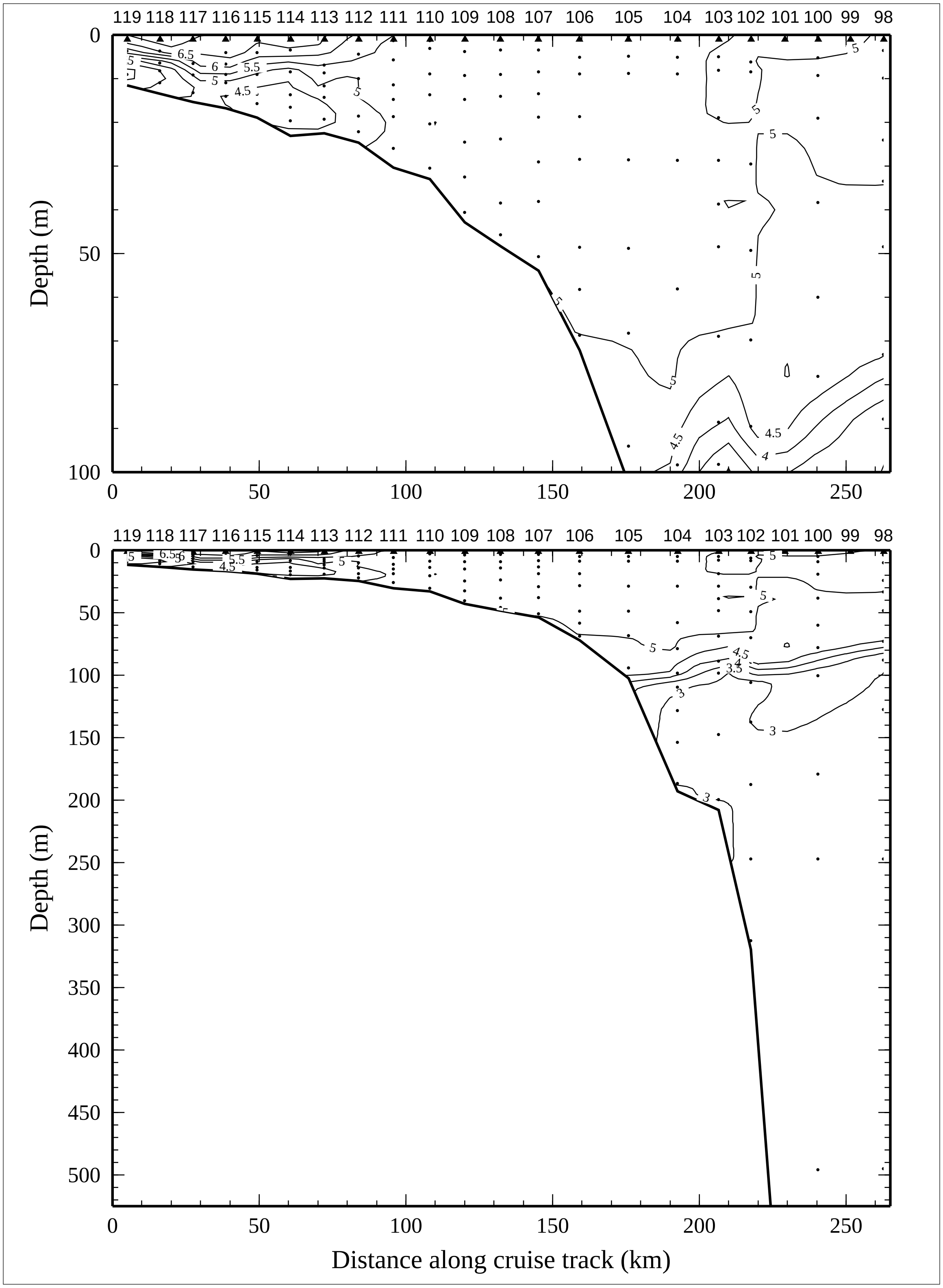

Figure 4.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H04, 4-13 February 1993.

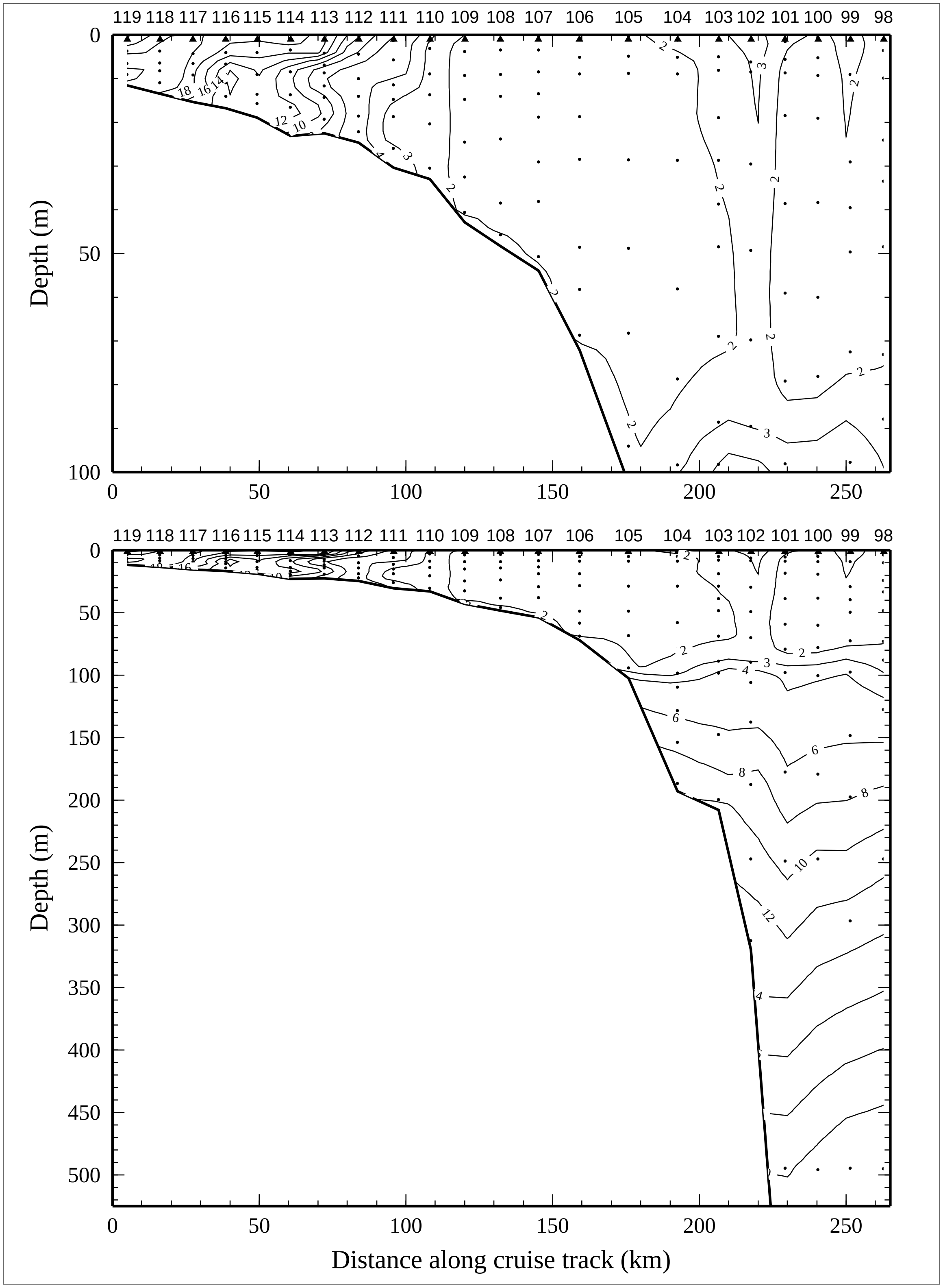

Figure 4.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H04, 4-13 February 1993.

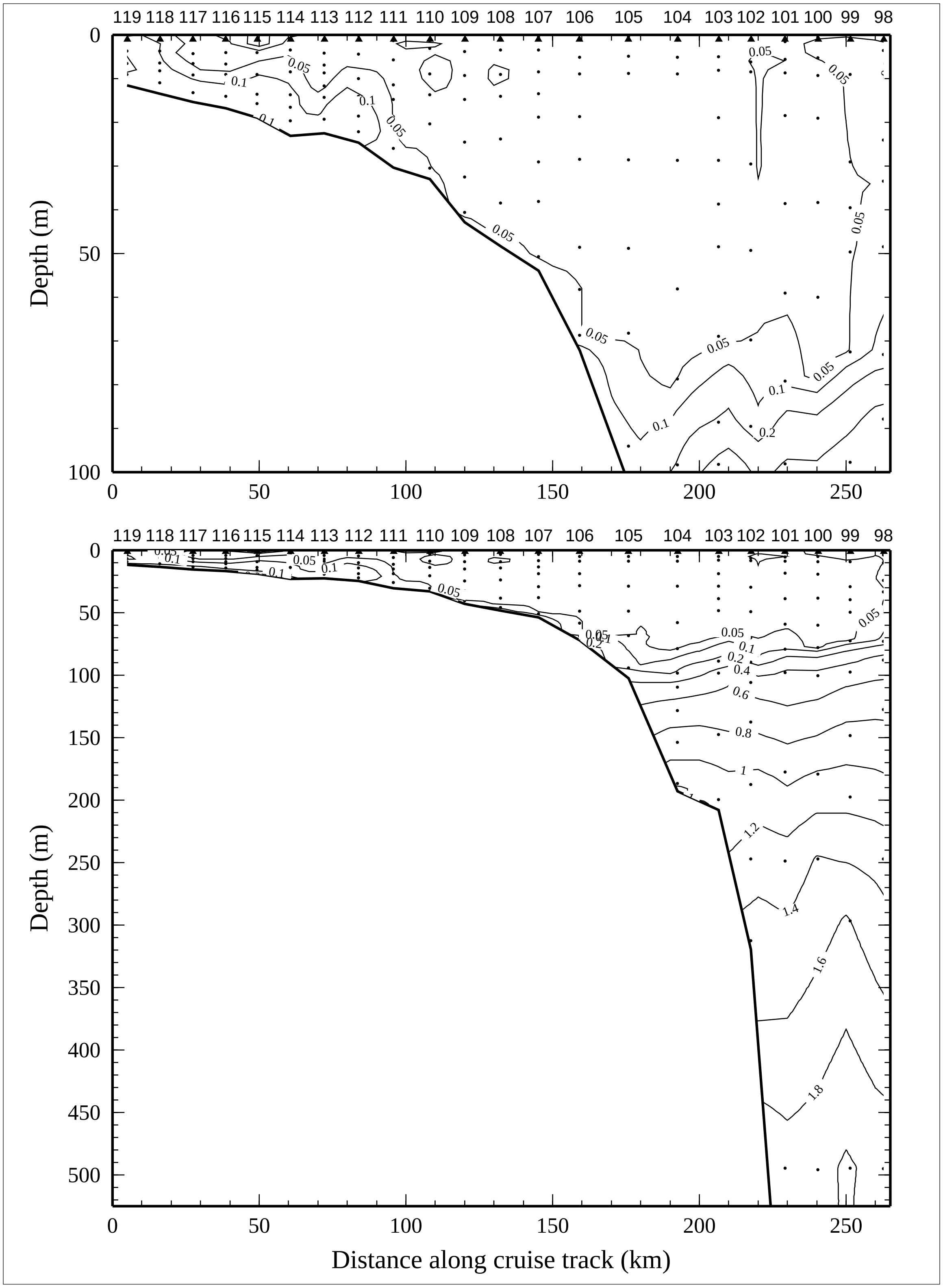

Figure 4.3.11. Phosphate (μmol·l^{-1}) on line 3 of LATEX A survey H04, 4-13 February 1993.

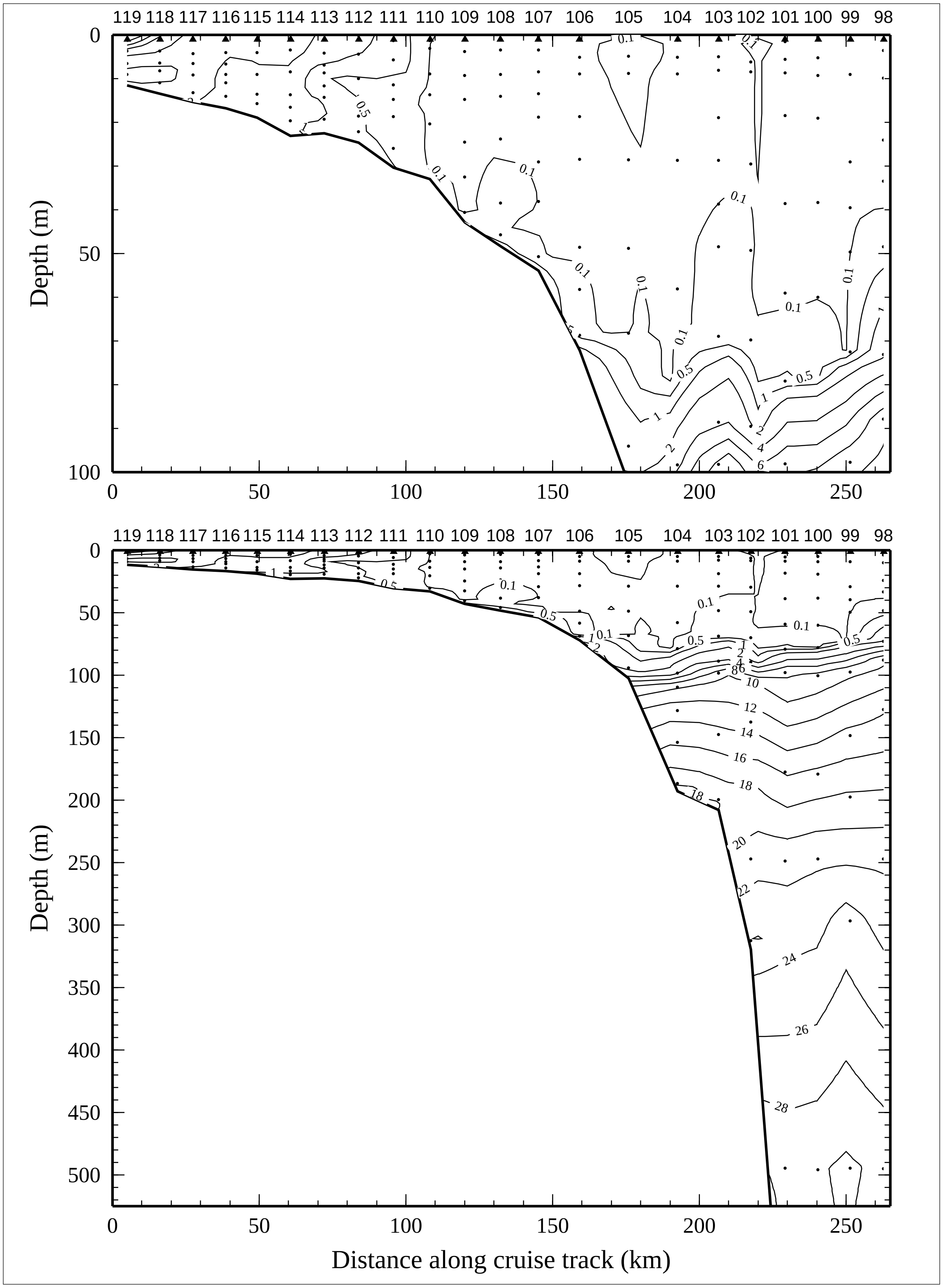

Figure 4.3.12. Nitrate (μmol·l^{-1}) on line 3 of LATEX A survey H04, 4-13 February 1993.

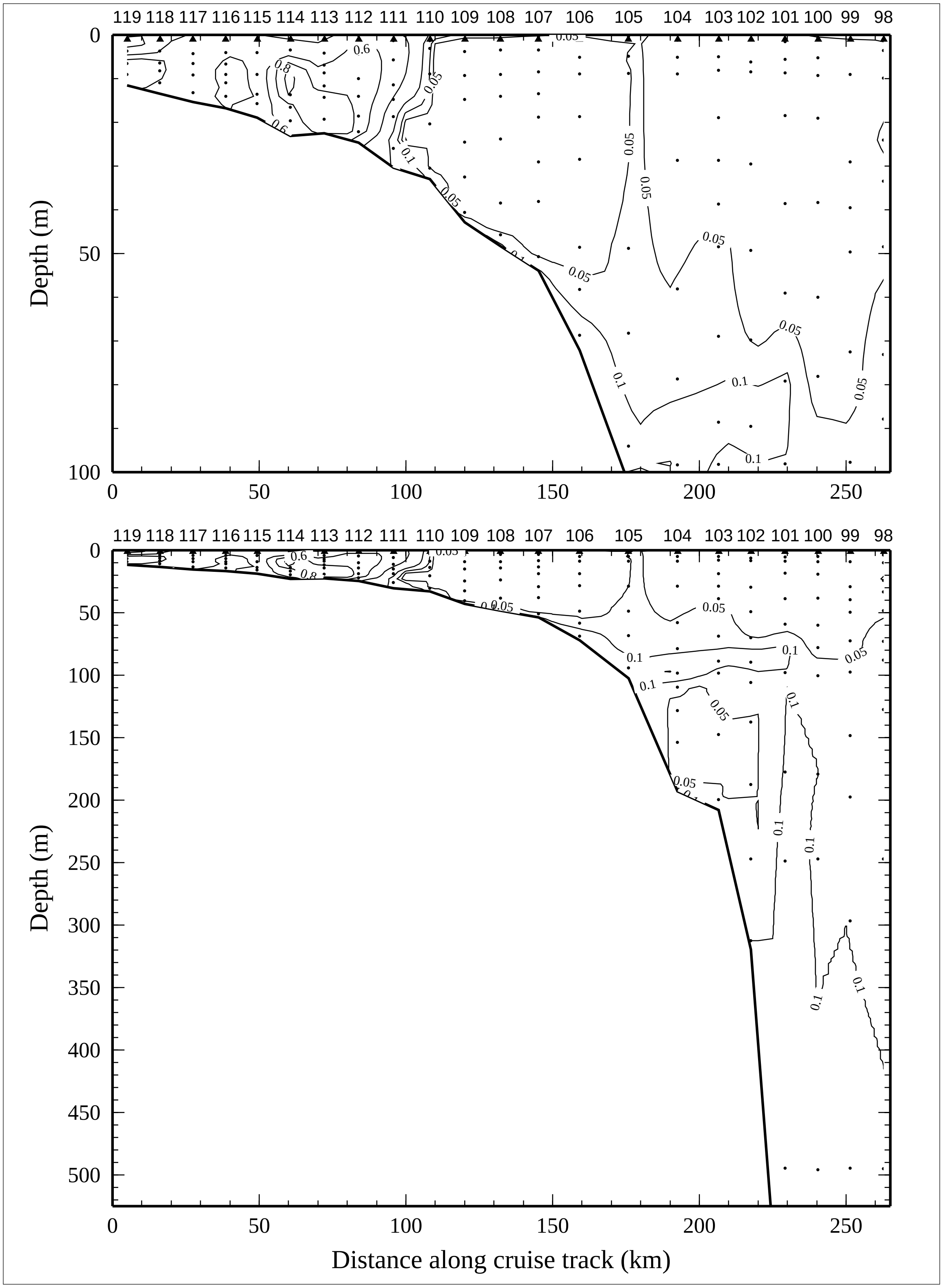

Figure 4.3.13. Nitrite (μmol·l[-1]) on line 3 of LATEX A survey H04, 4-13 February 1993.

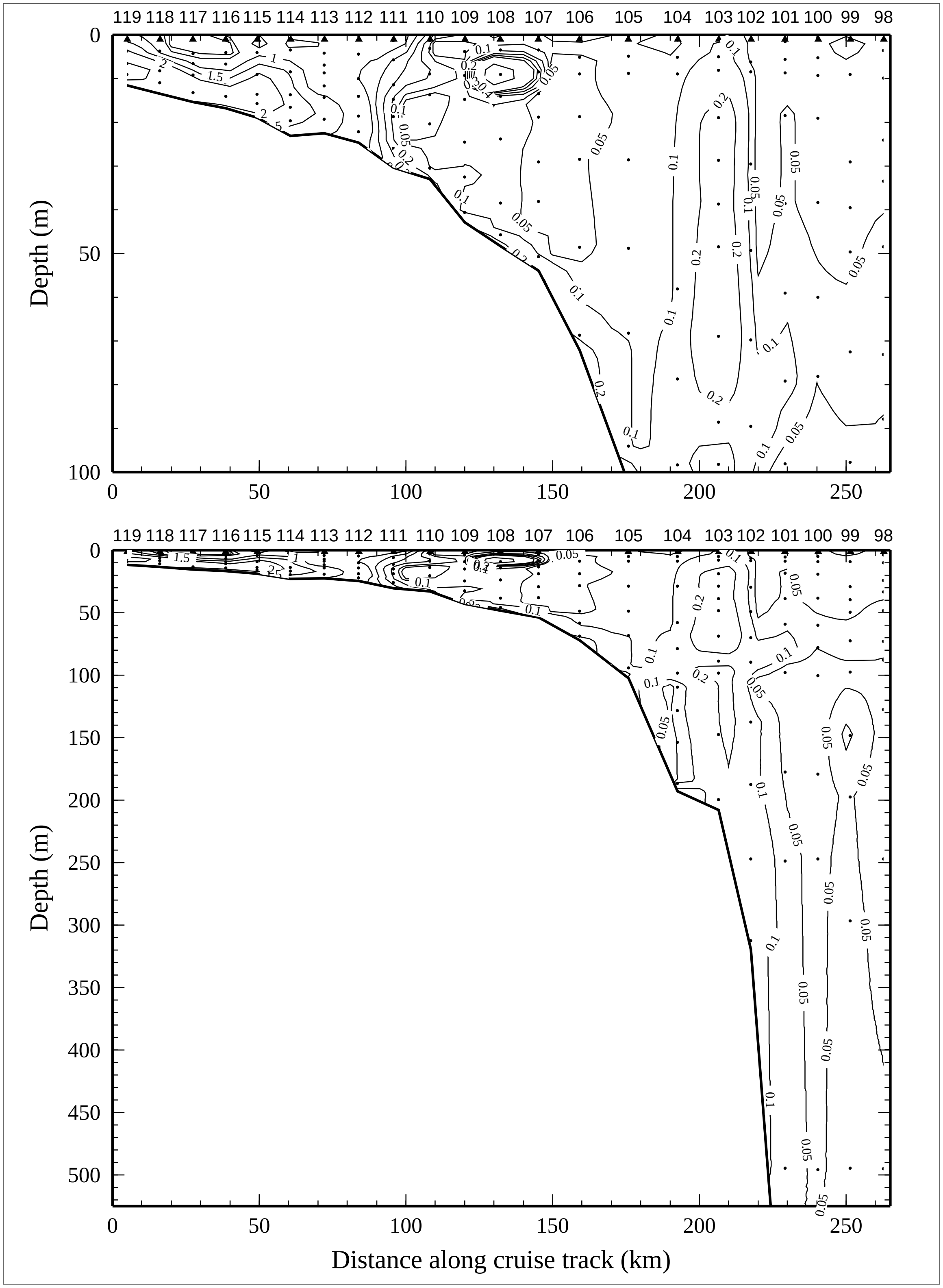

Figure 4.3.14. Ammonium (μmol·l-1) on line 3 of LATEX A survey H04, 4-13 February 1993.

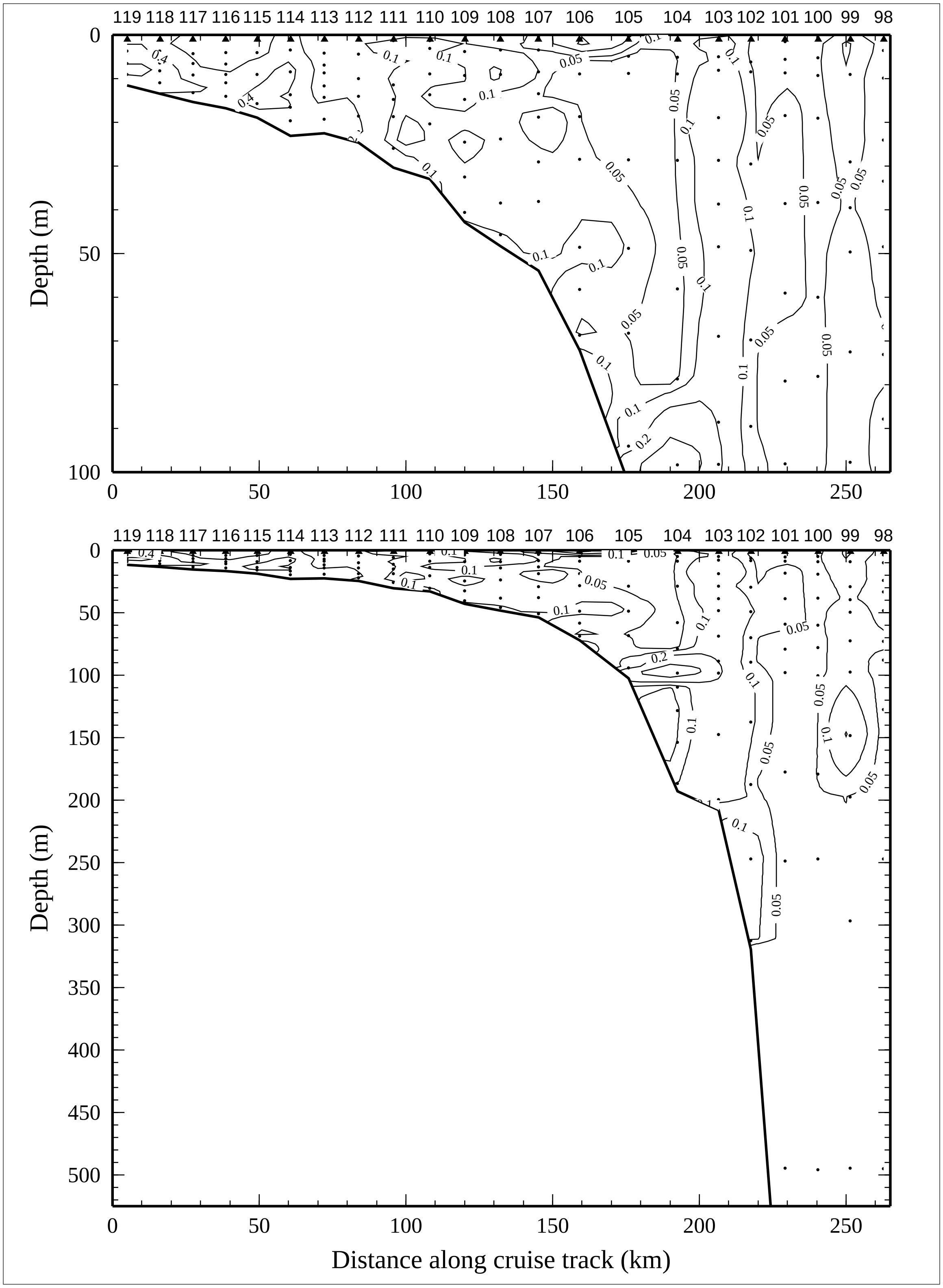

Figure 4.3.15. Urea (µmol·l^{-1}) on line 3 of LATEX A survey H04, 4-13 February 1993.

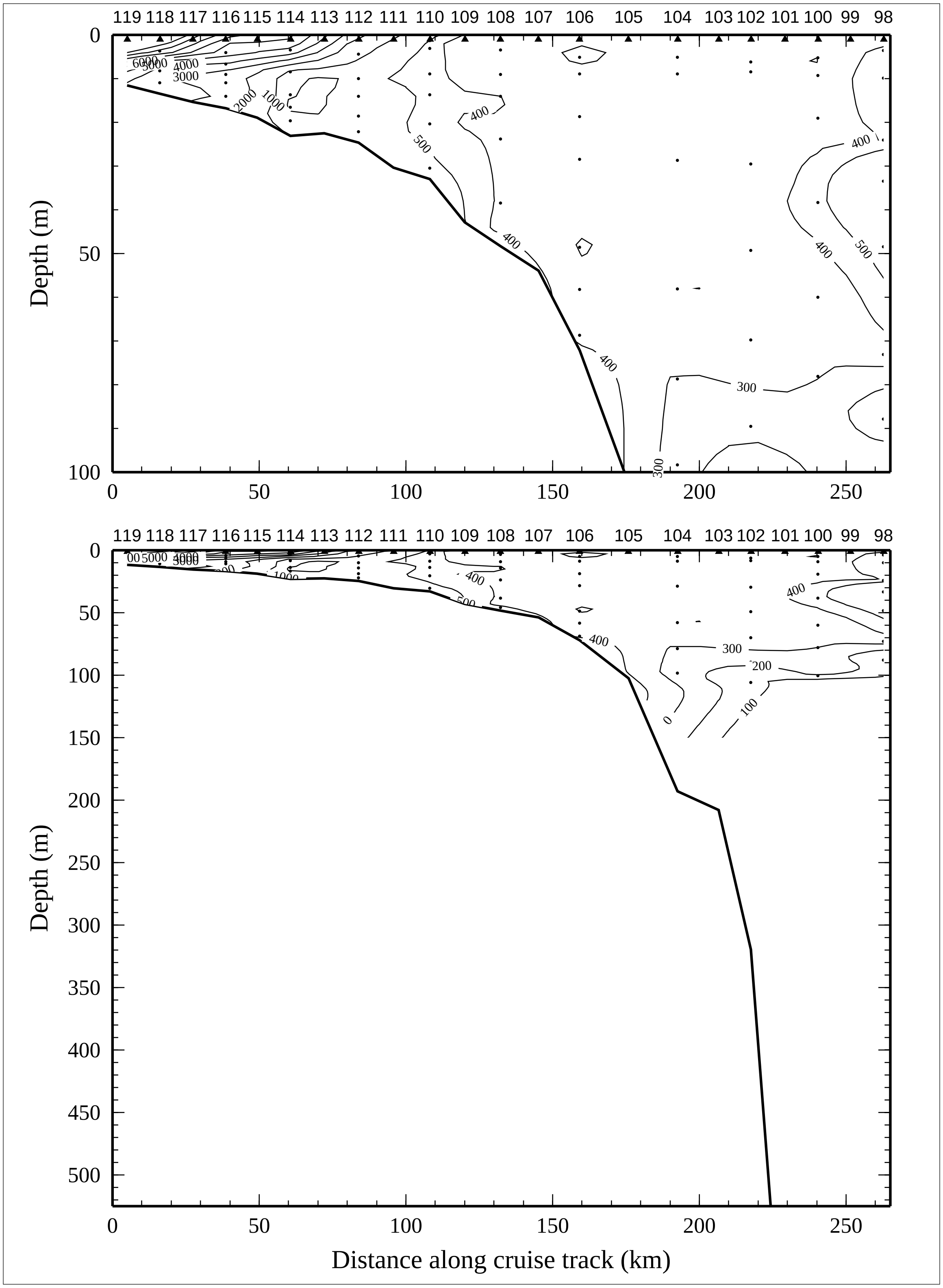

Figure 4.3.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 3 of LATEX A survey H04, 4-13 February 1993.

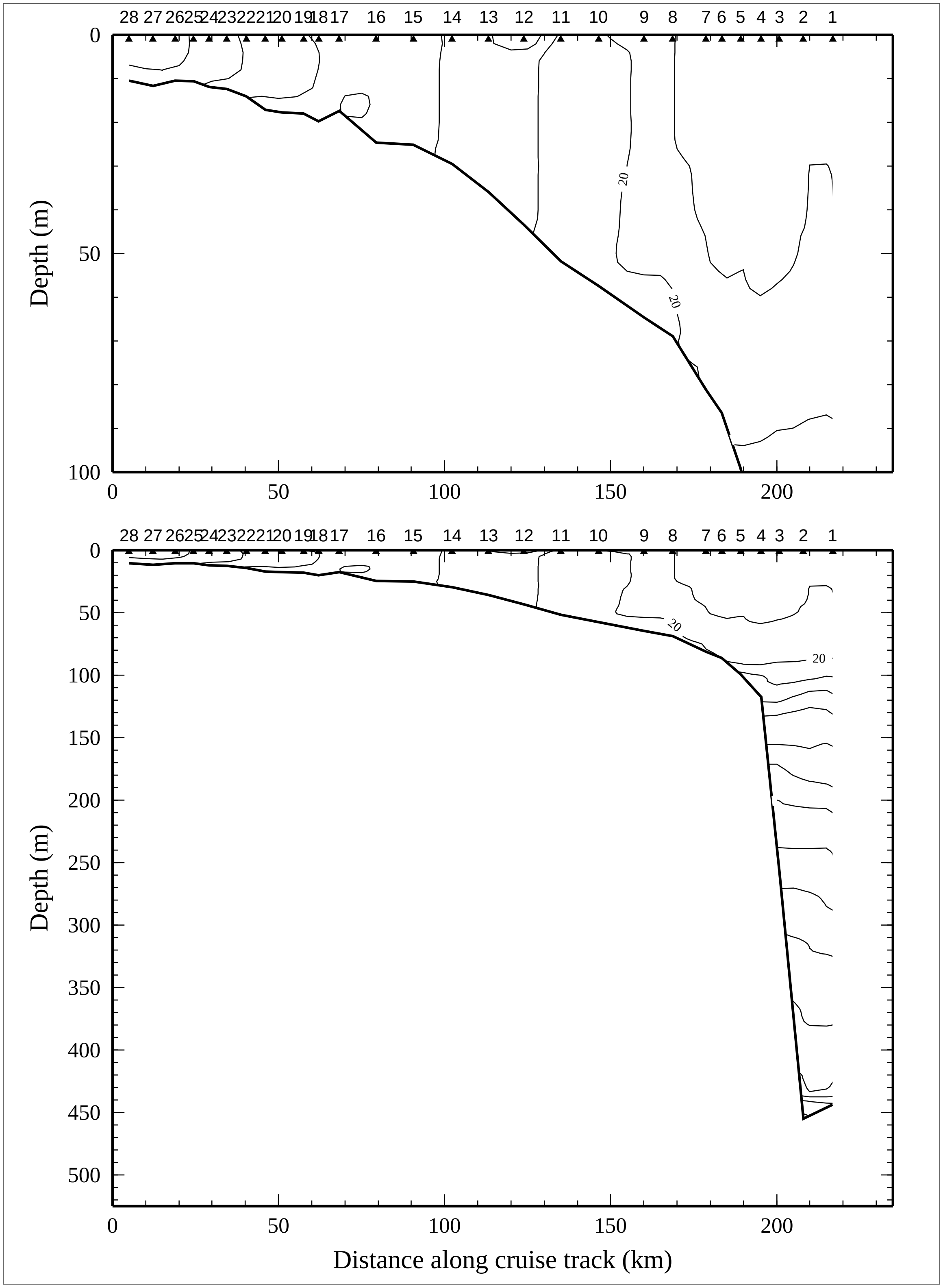

Figure 4.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H04, 4-13 February 1993.

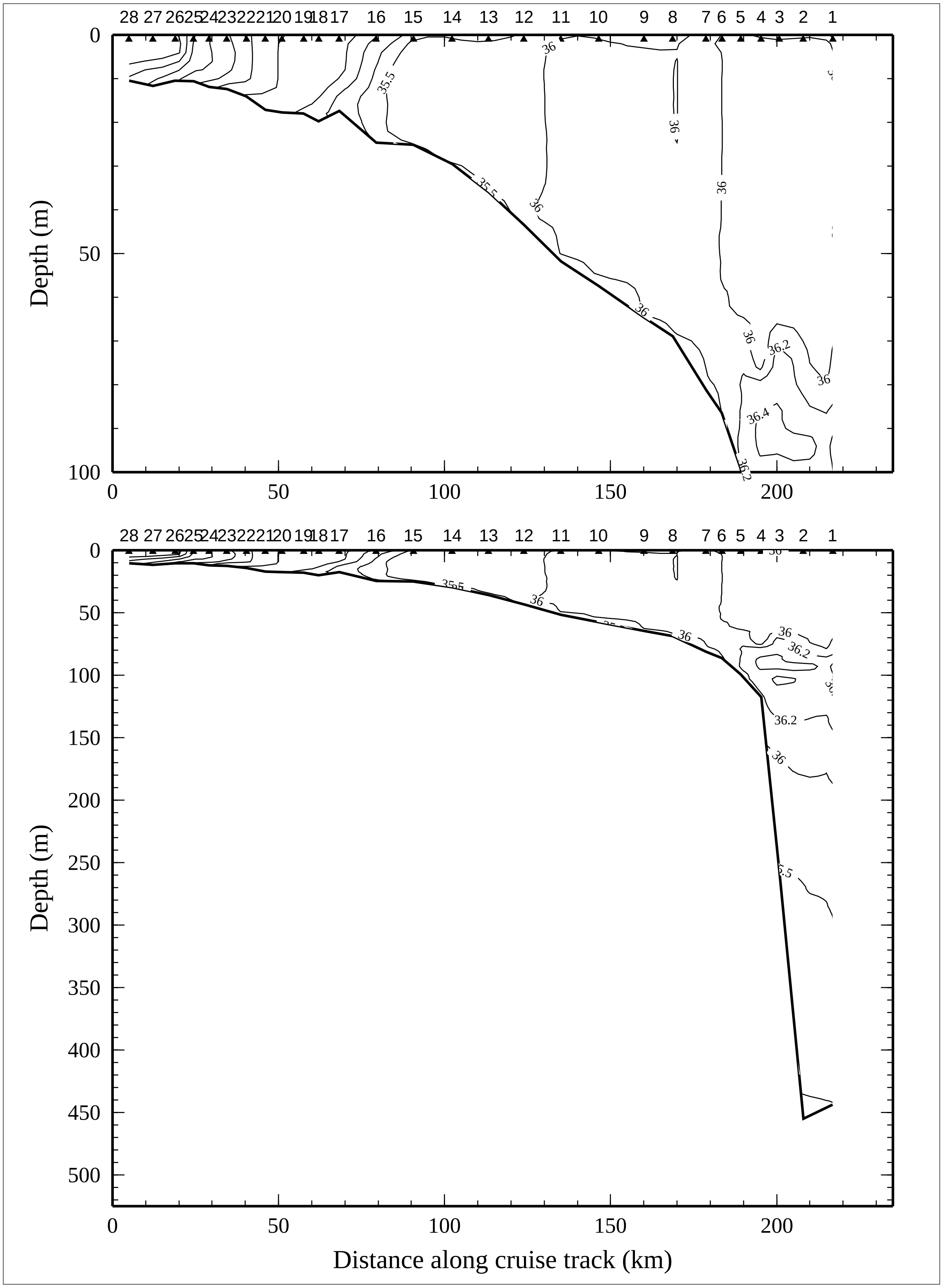

Figure 4.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H04, 4-13 February 1993.

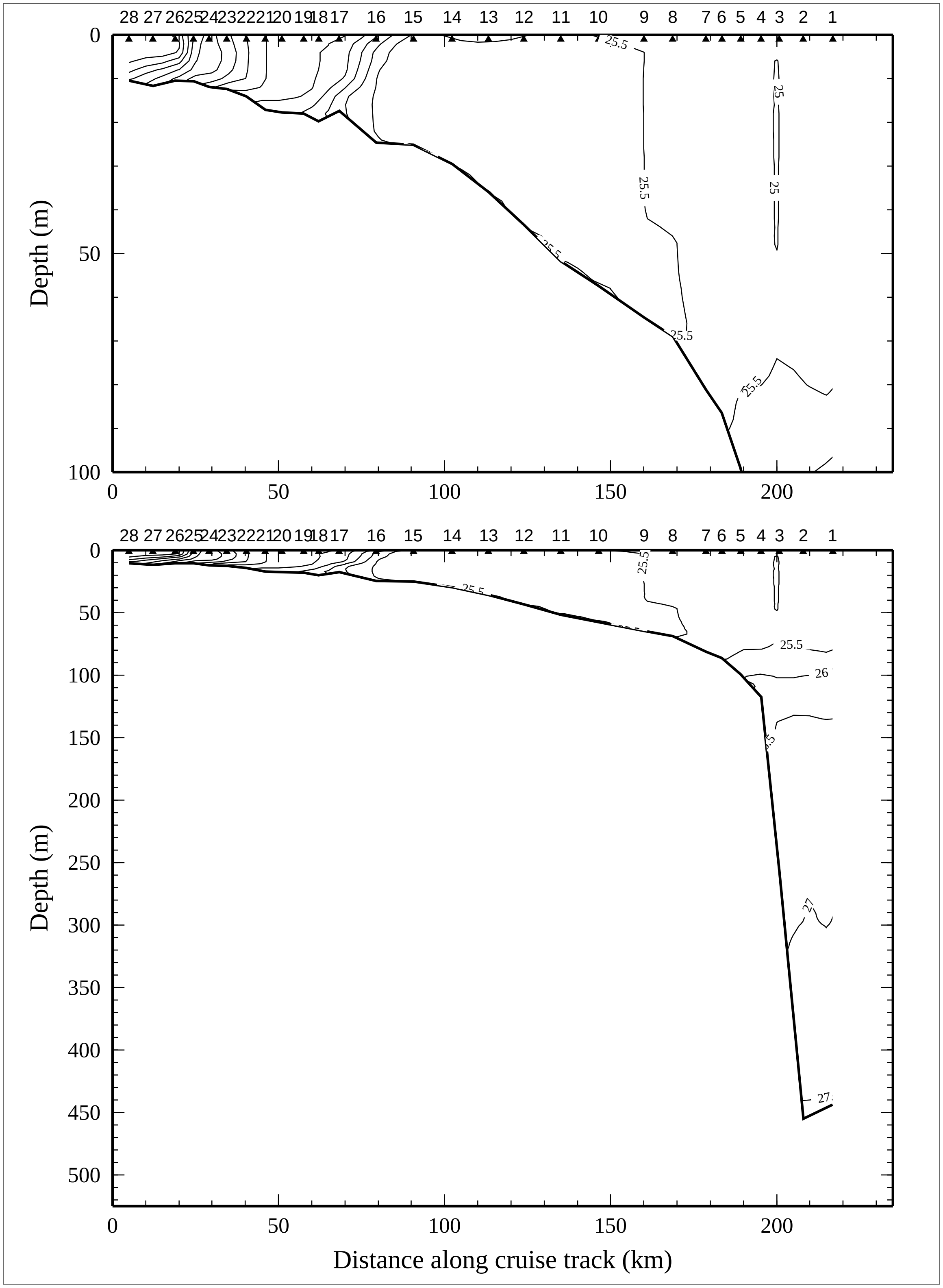

Figure 4.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H04, 4-13 February 1993.

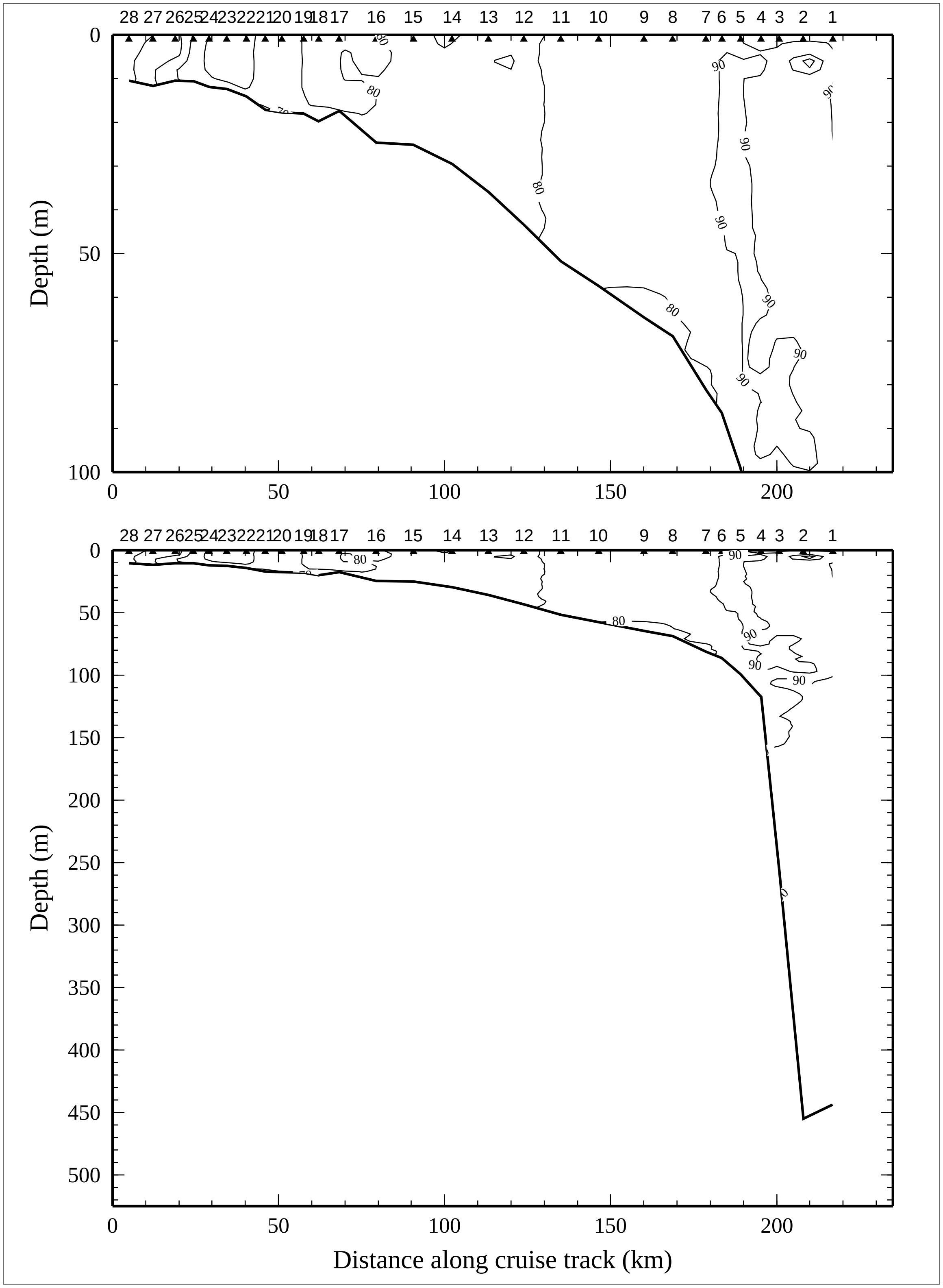

Figure 4.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H04, 4-13 February 1993.

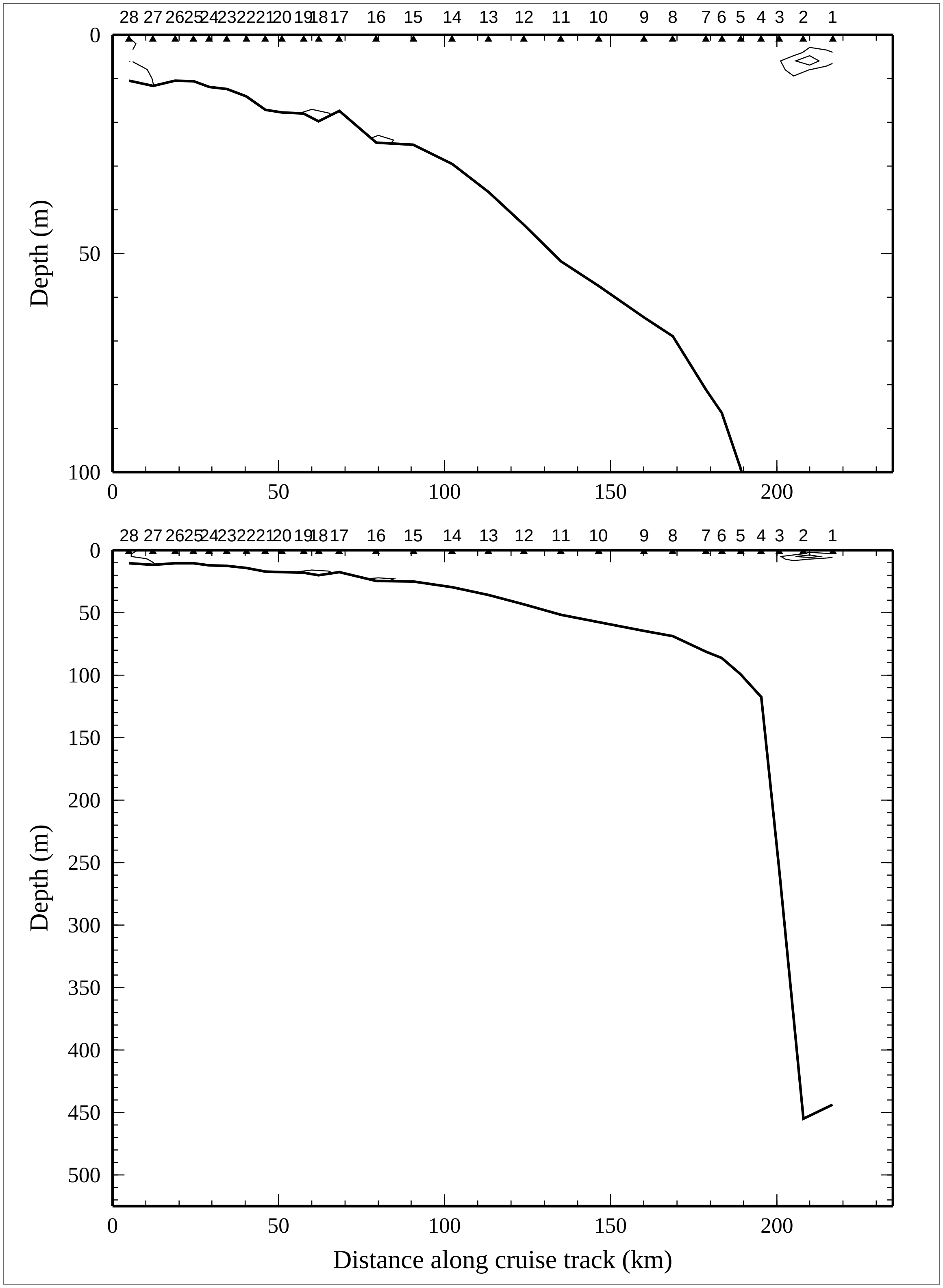

Figure 4.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H04, 4-13 February 1993.

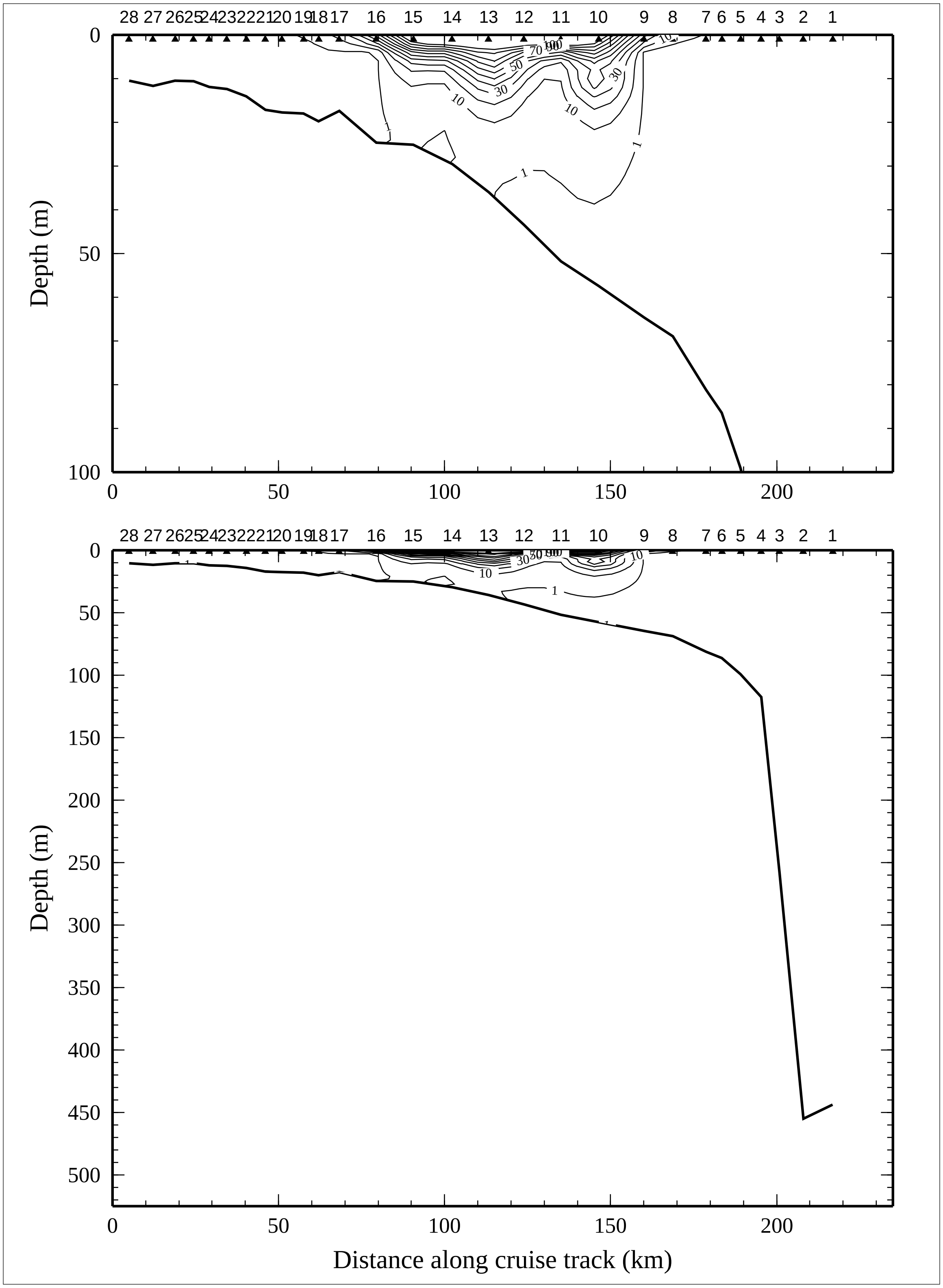

Figure 4.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H04, 4-13 February 1993.

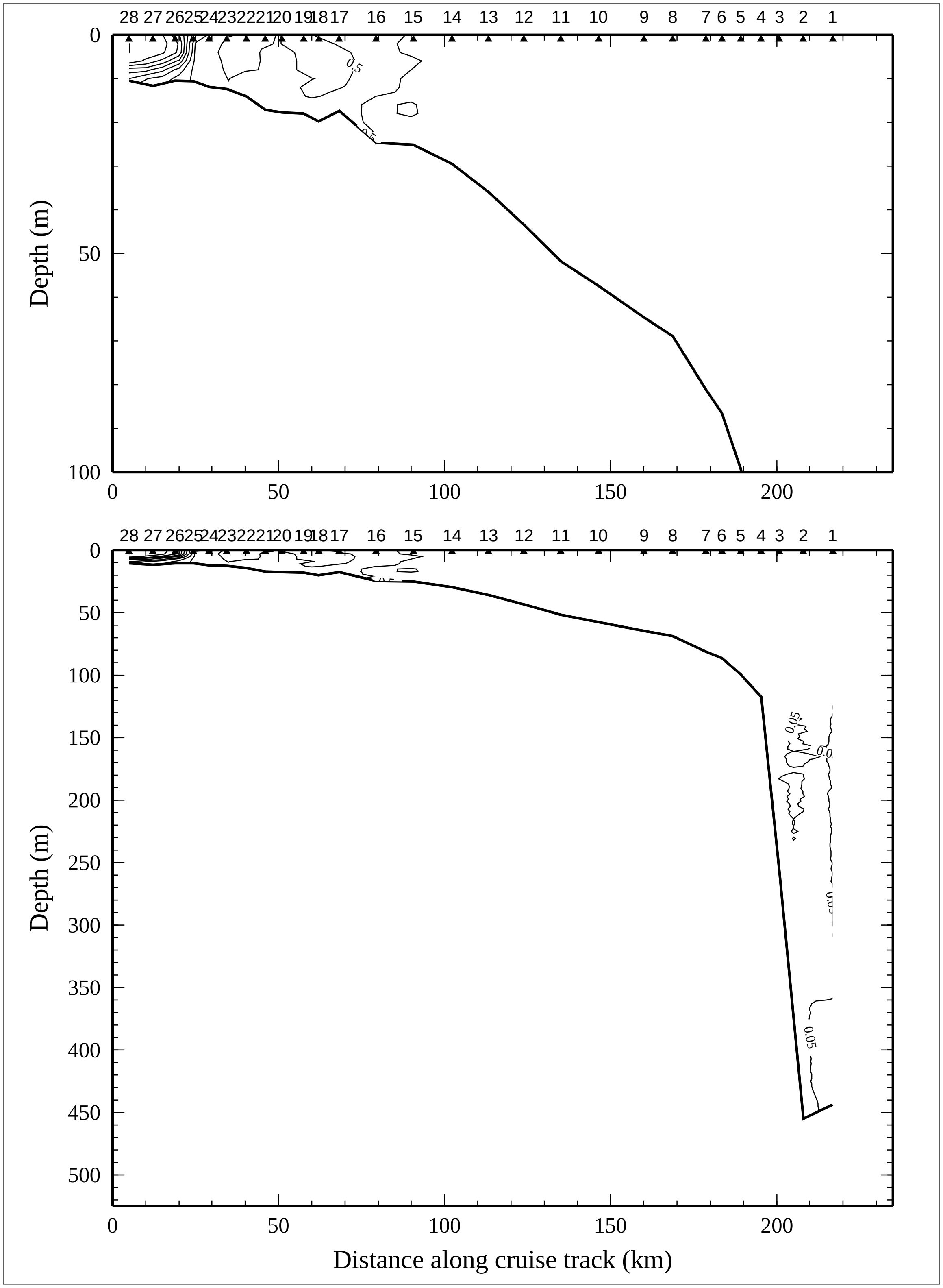

Figure 4.4.7. Relative fluorescence on line 4 of LATEX A survey H04, 4-13 February 1993.

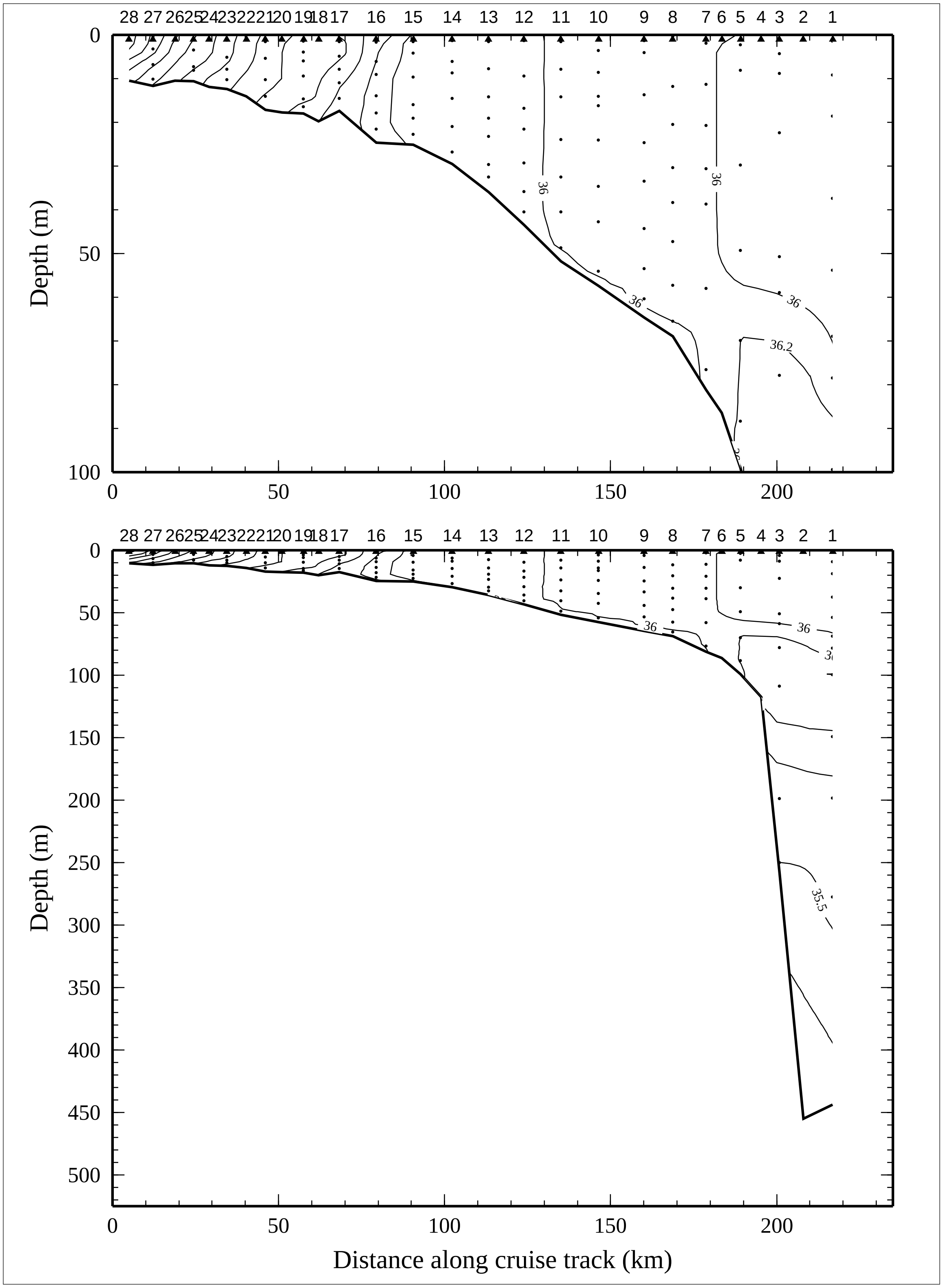

Figure 4.4.8. Bottle salinity on line 4 of LATEX A survey H04, 4-13 February 1993.

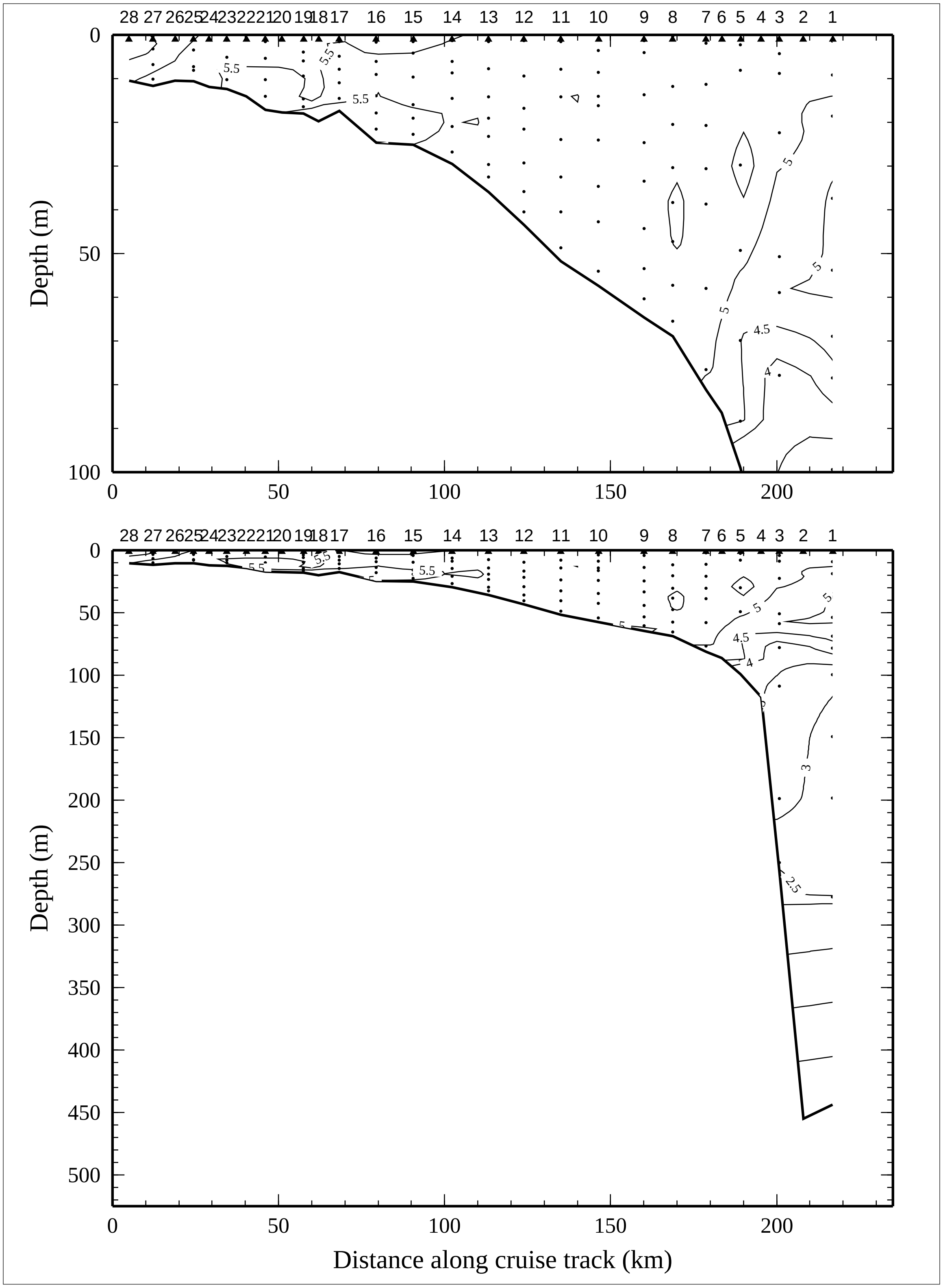

Figure 4.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H04, 4-13 February 1993.

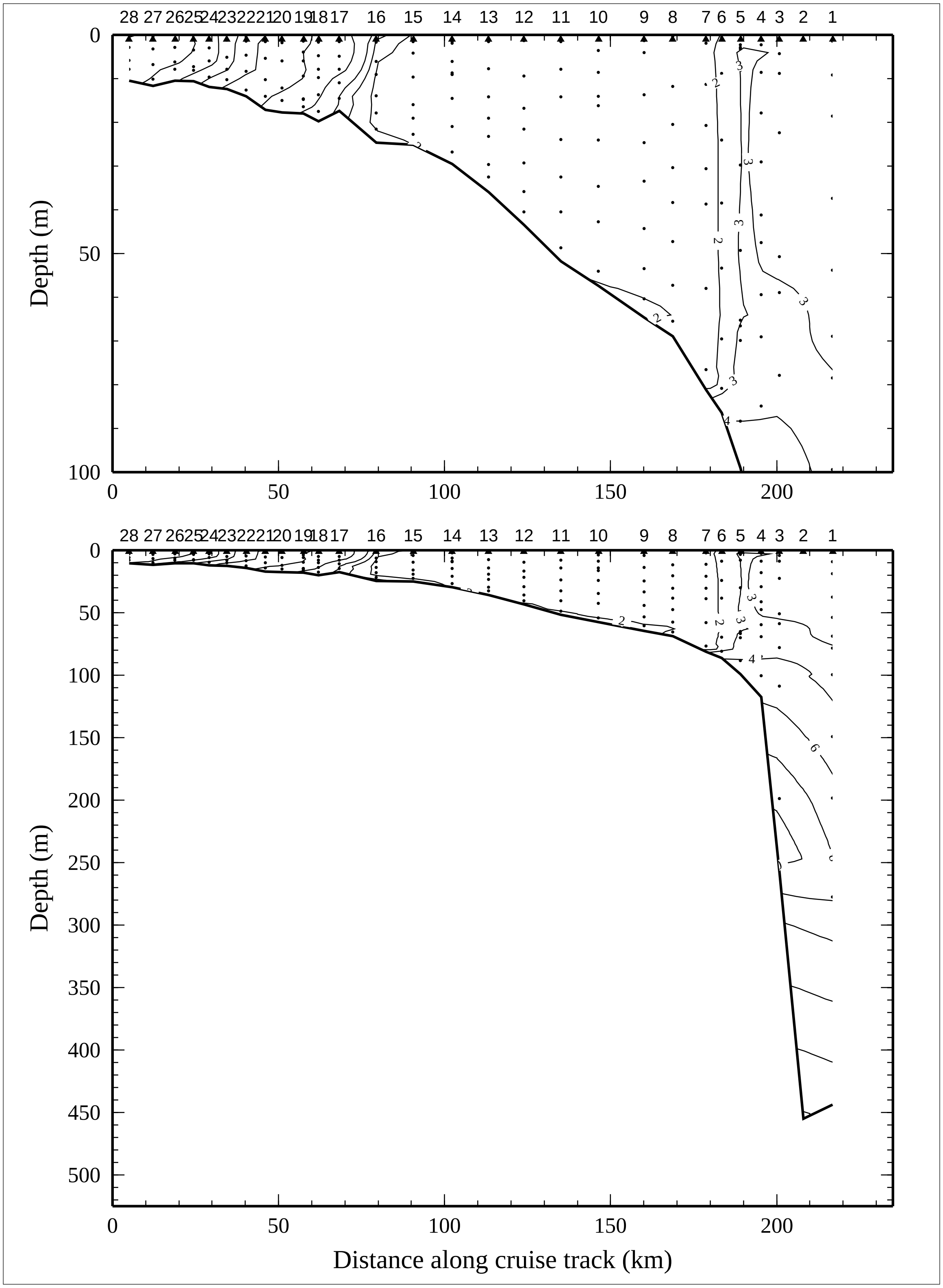

Figure 4.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H04, 4-13 February 1993.

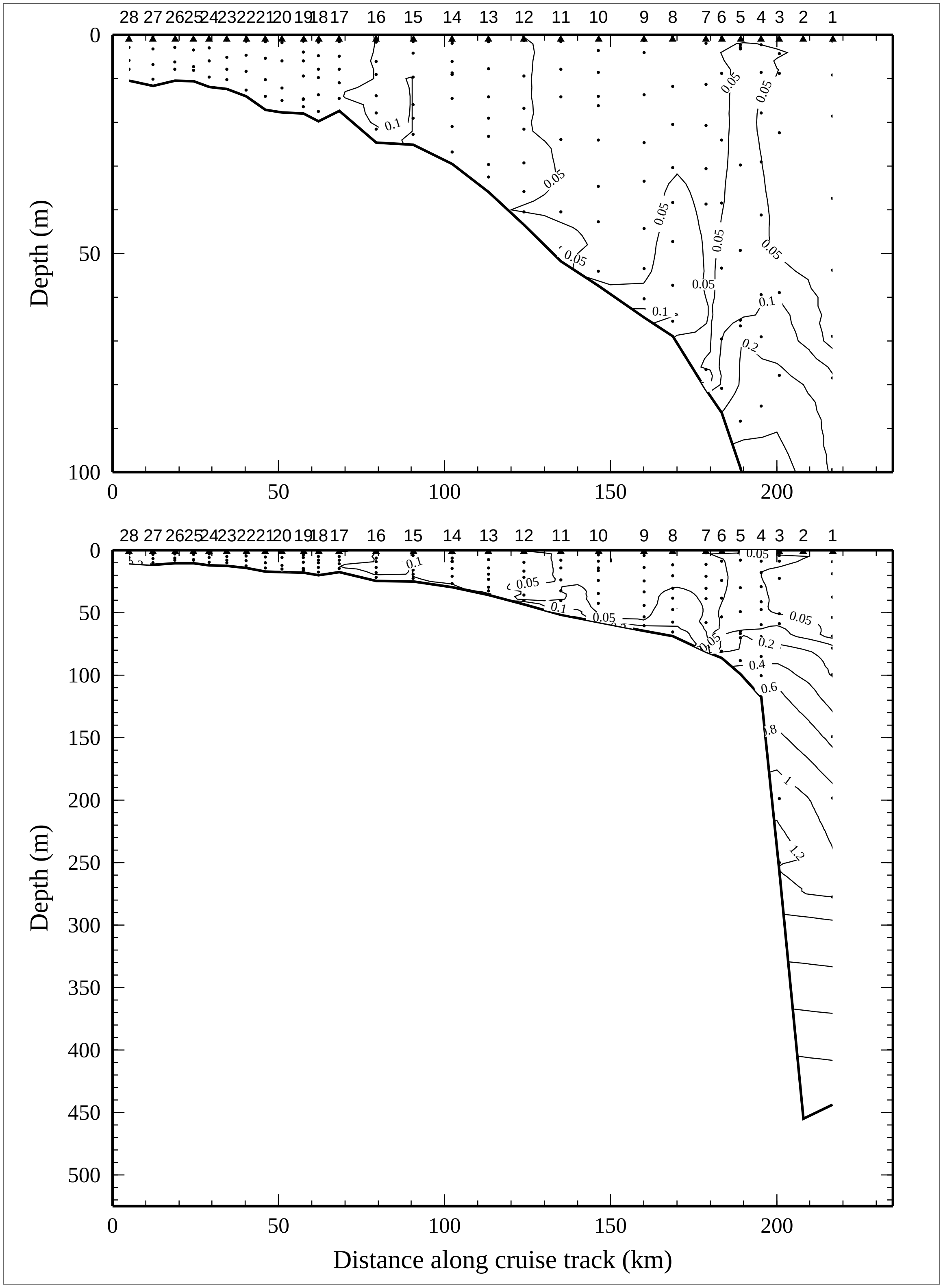

Figure 4.4.11. Phosphate (μmol·l^{-1}) on line 4 of LATEX A survey H04, 4-13 February 1993.

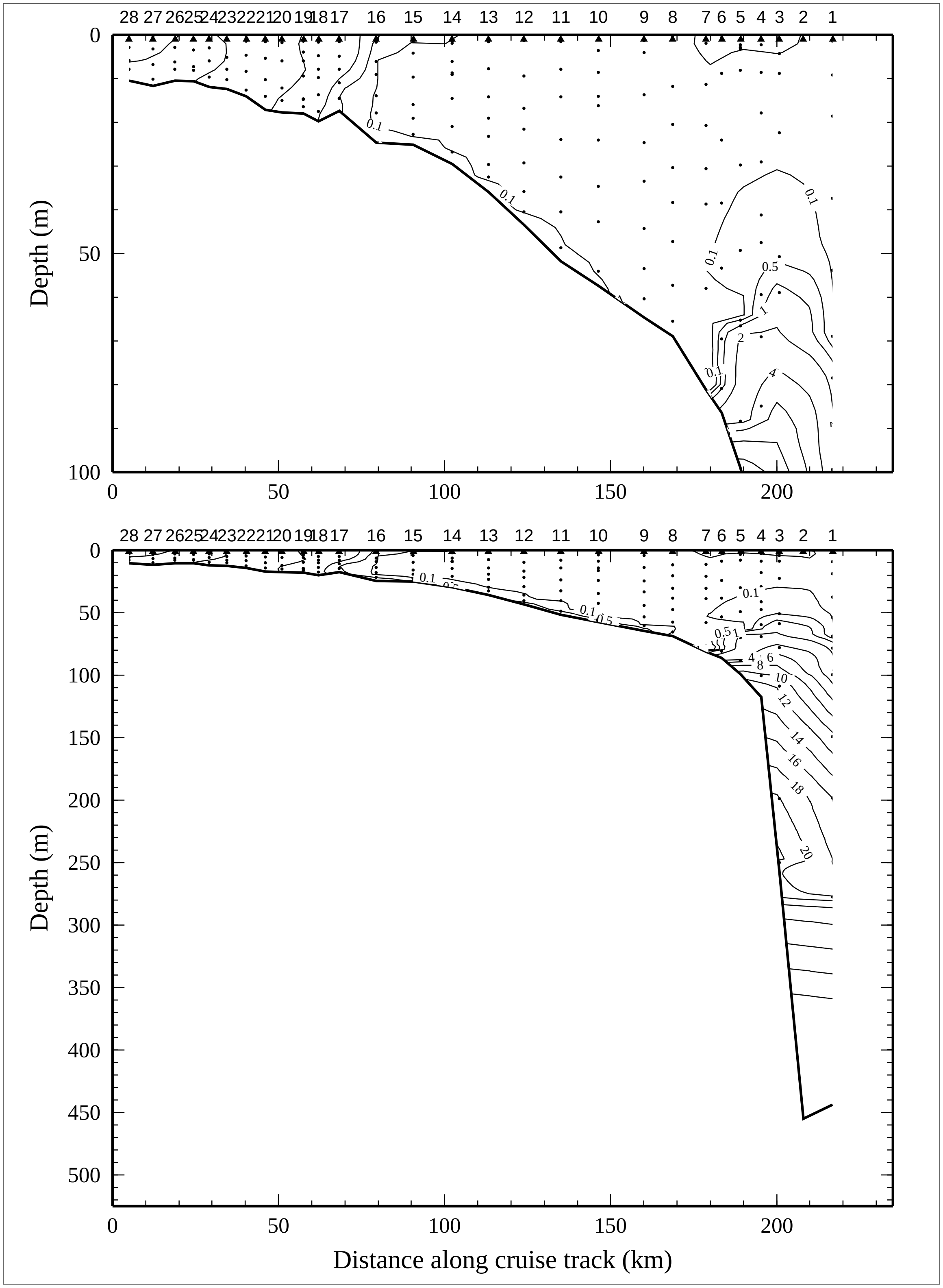

Figure 4.4.12. Nitrate (μmol·l⁻¹) on line 4 of LATEX A survey H04, 4-13 February 1993.

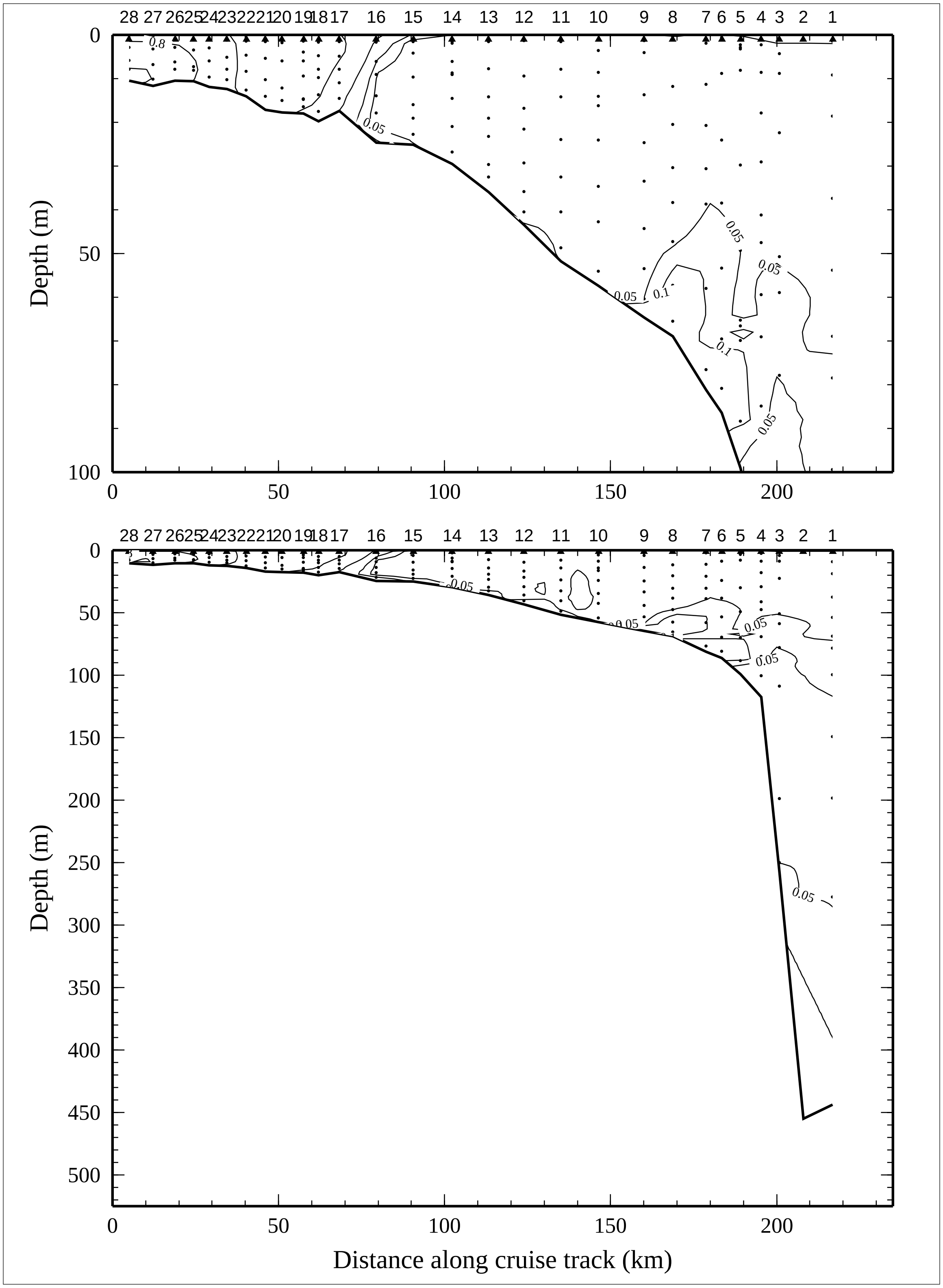

Figure 4.4.13. Nitrite (μmol·l^{-1}) on line 4 of LATEX A survey H04, 4-13 February 1993.

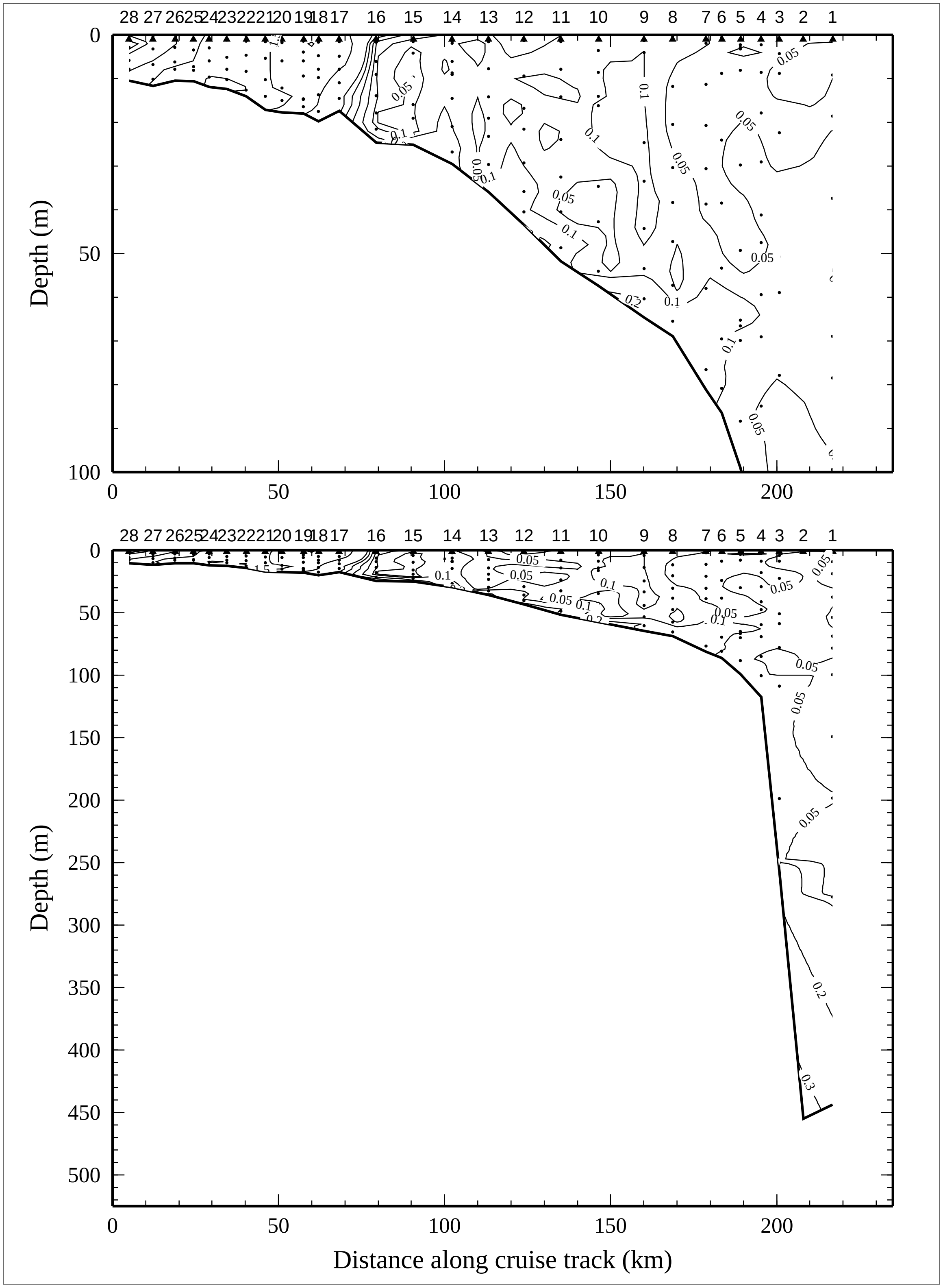

Figure 4.4.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H04, 4-13 February 1993.

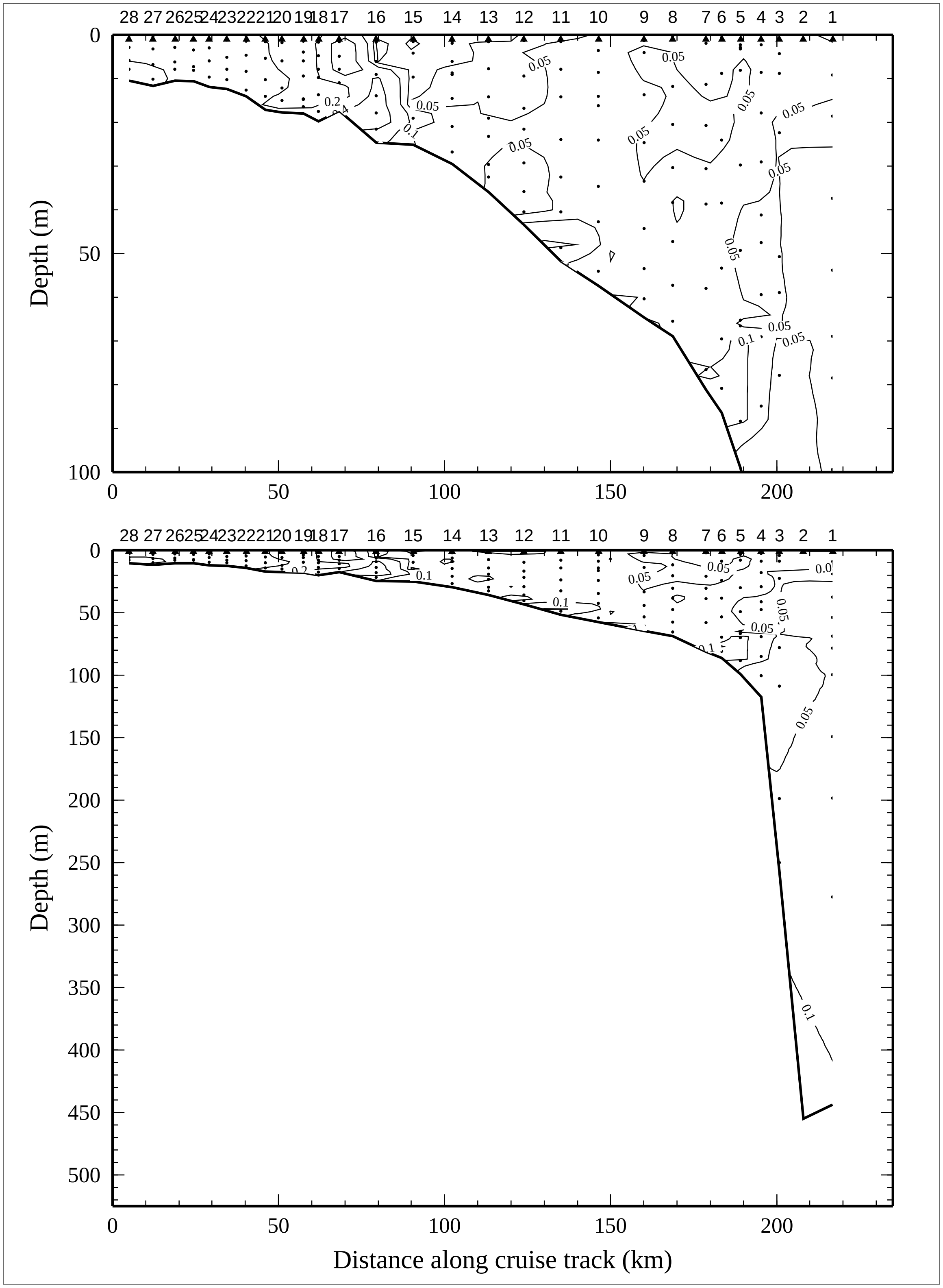

Figure 4.4.15. Urea ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H04,
4-13 February 1993.

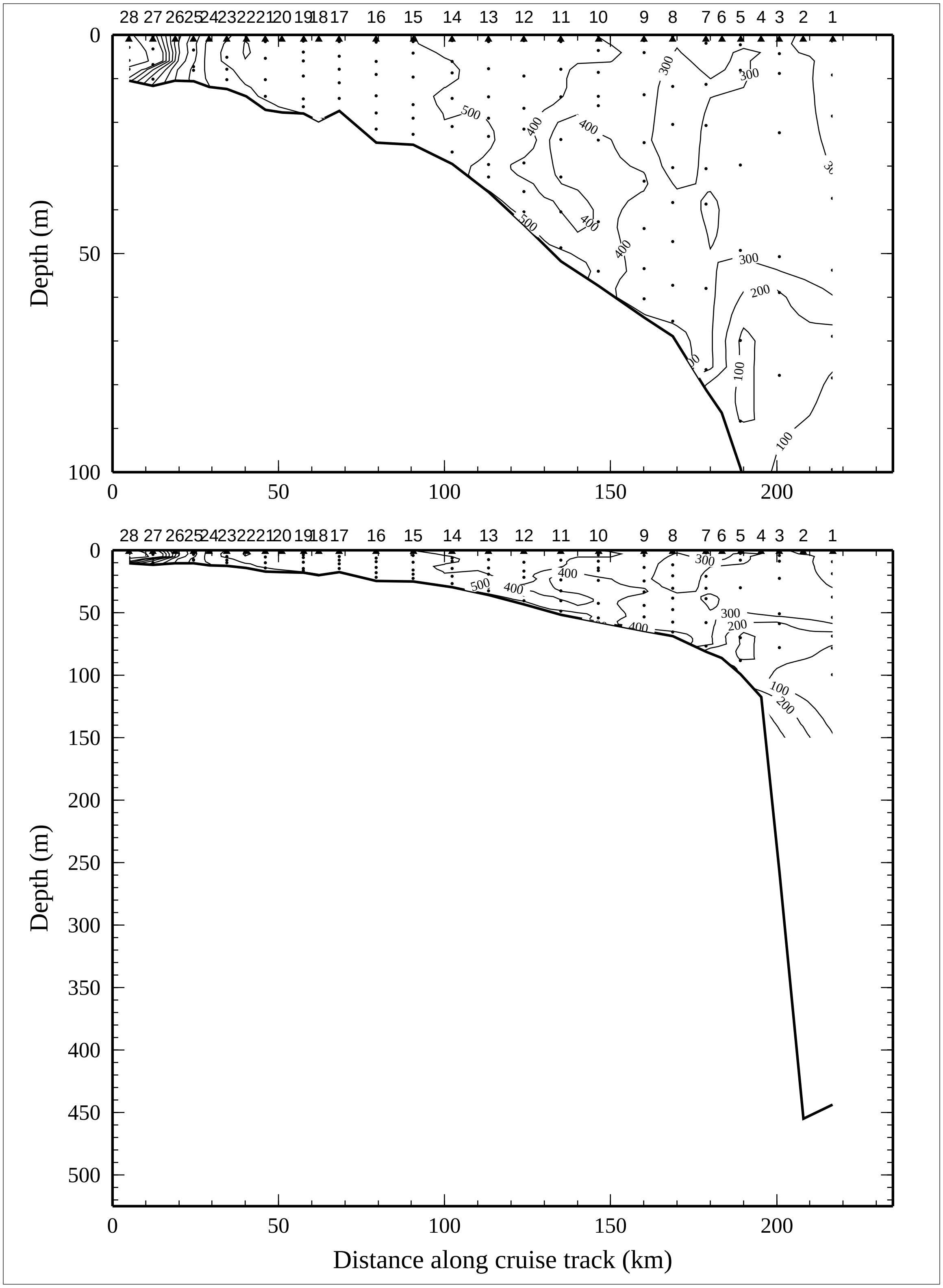

Figure 4.4.16. Chlorophyll a (ng·l^{-1}) on line 4 of LATEX A survey H04, 4-13 February 1993.

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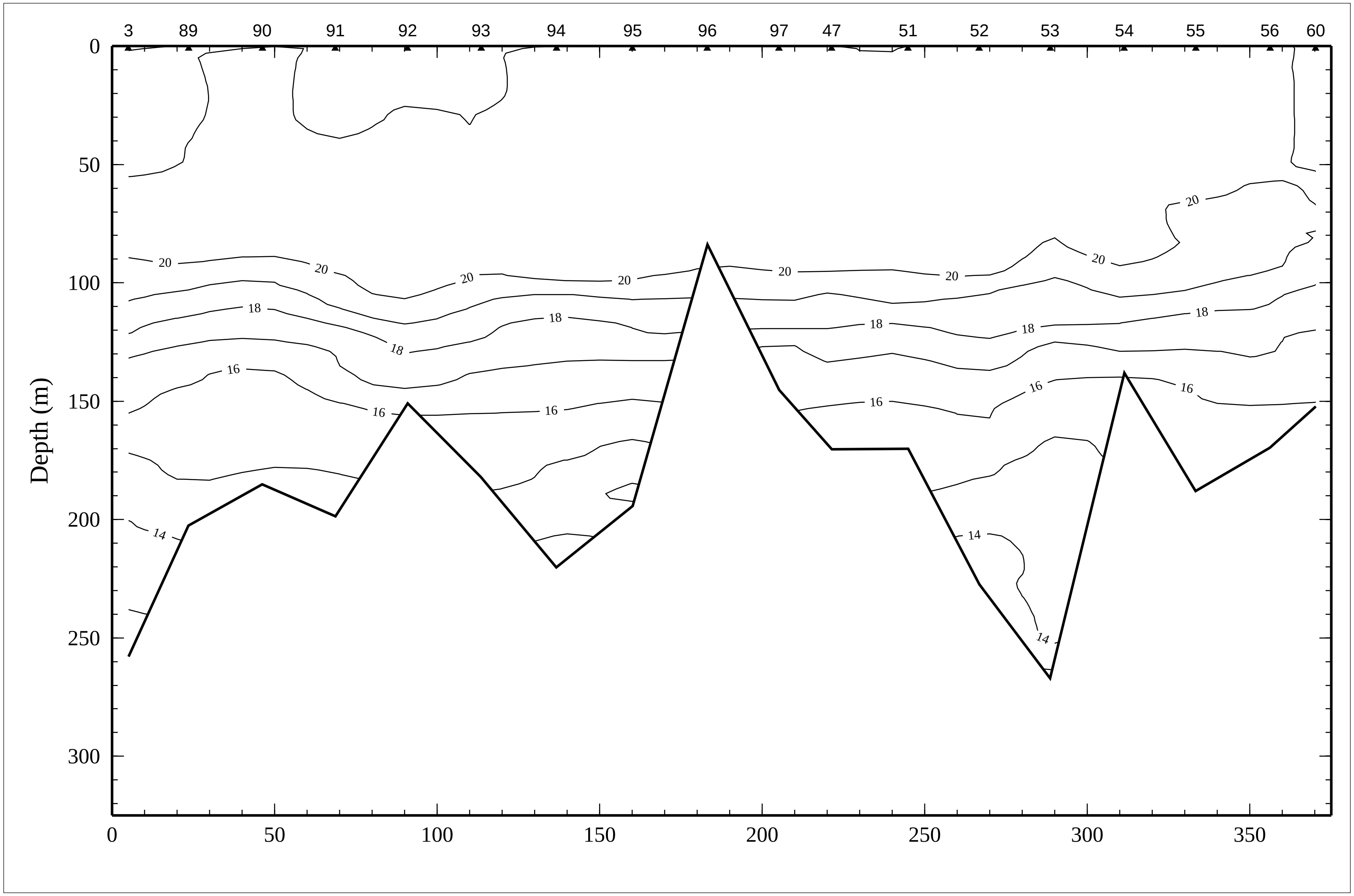

Figure 4.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H04, 4-13 February 1993.

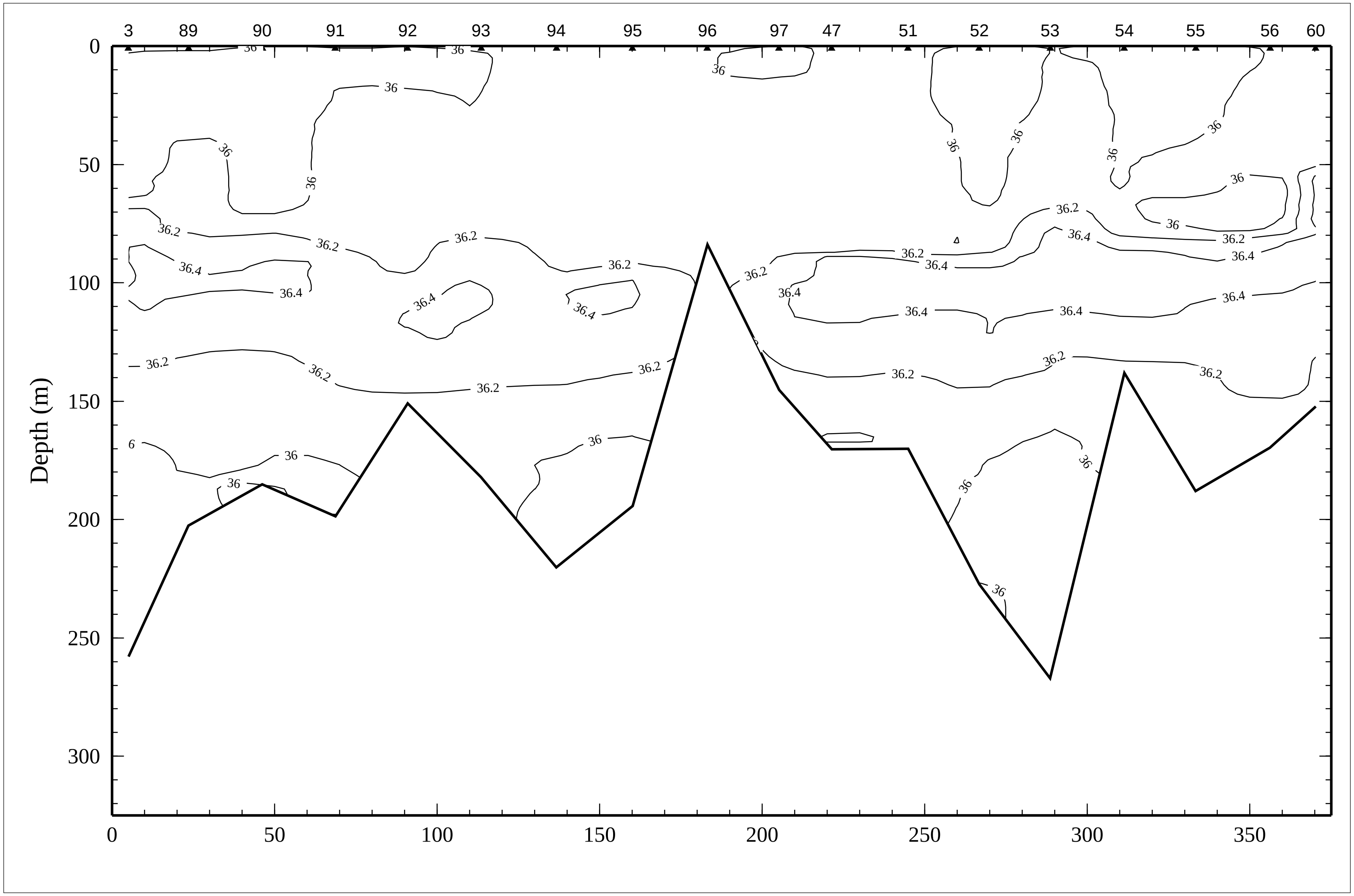

Figure 4.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H04, 4-13 February 1993.

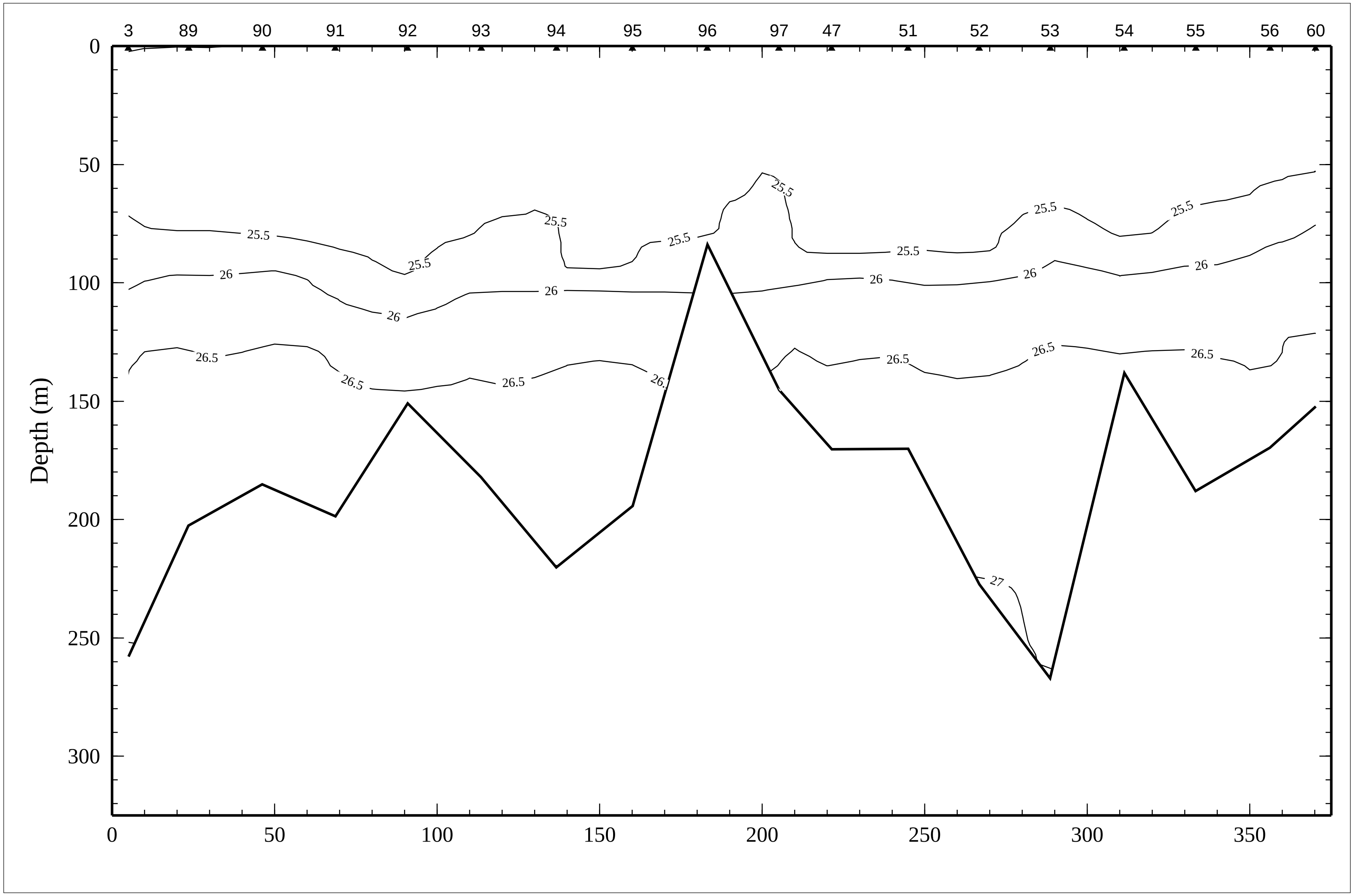

Figure 4.9.3. Density anomaly (σ_θ in kg·m^{-3}) on line 9 of LATEX A survey H04, 4-13 February 1993.

D75

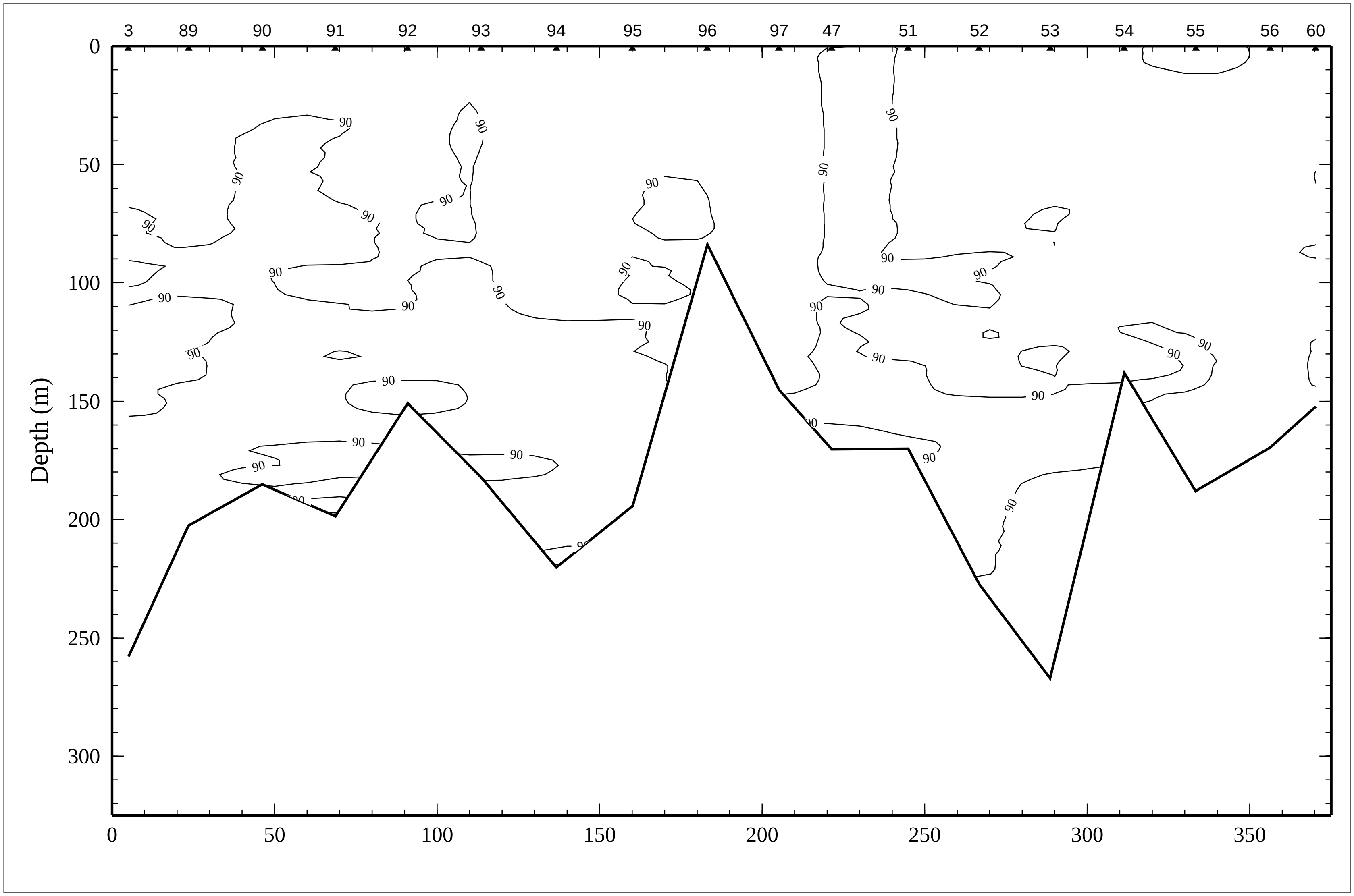

Figure 4.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H04, 4-13 February 1993.

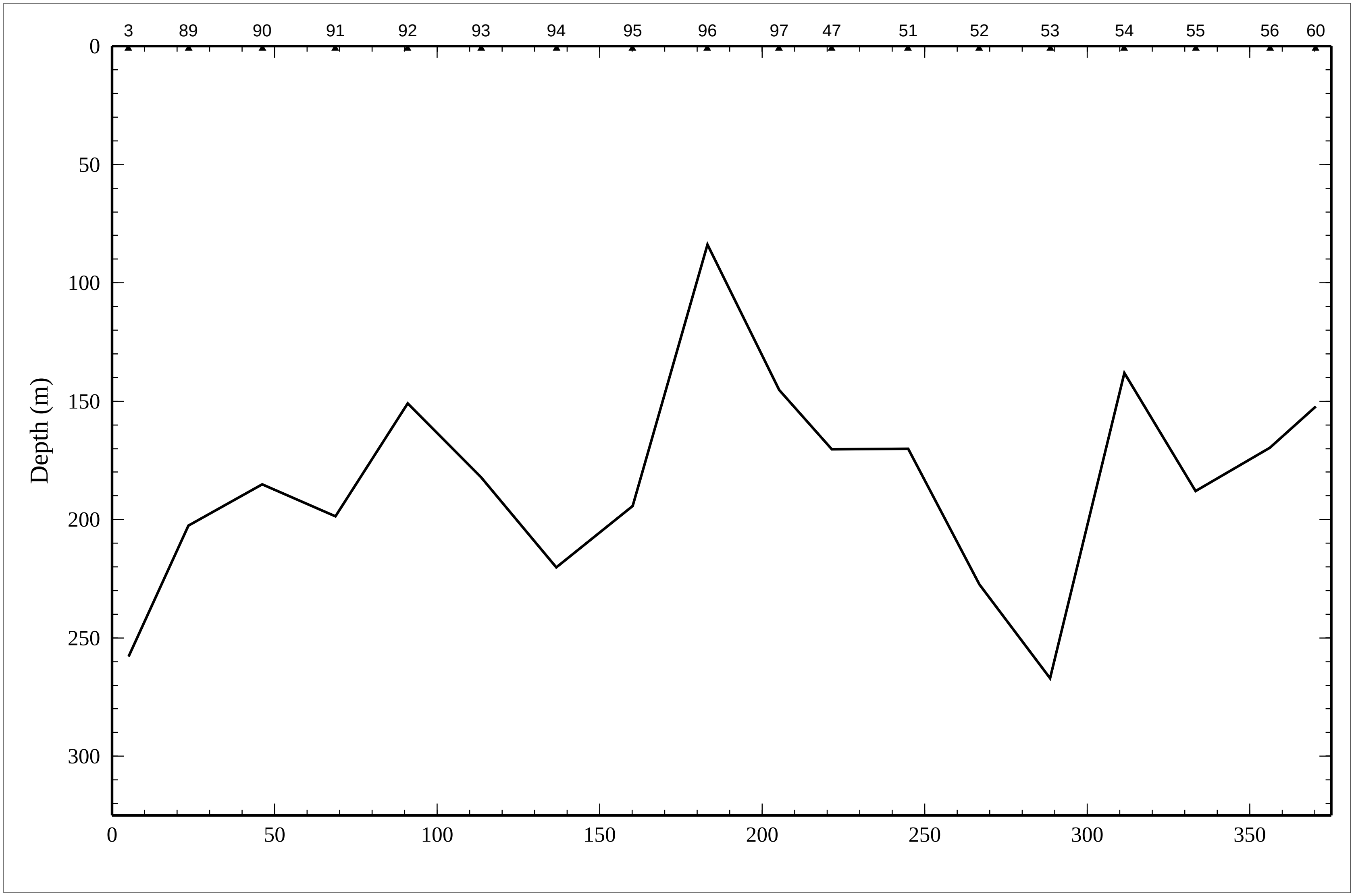

Figure 4.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H04, 4-13 February 1993.
Values were less than 0.05.

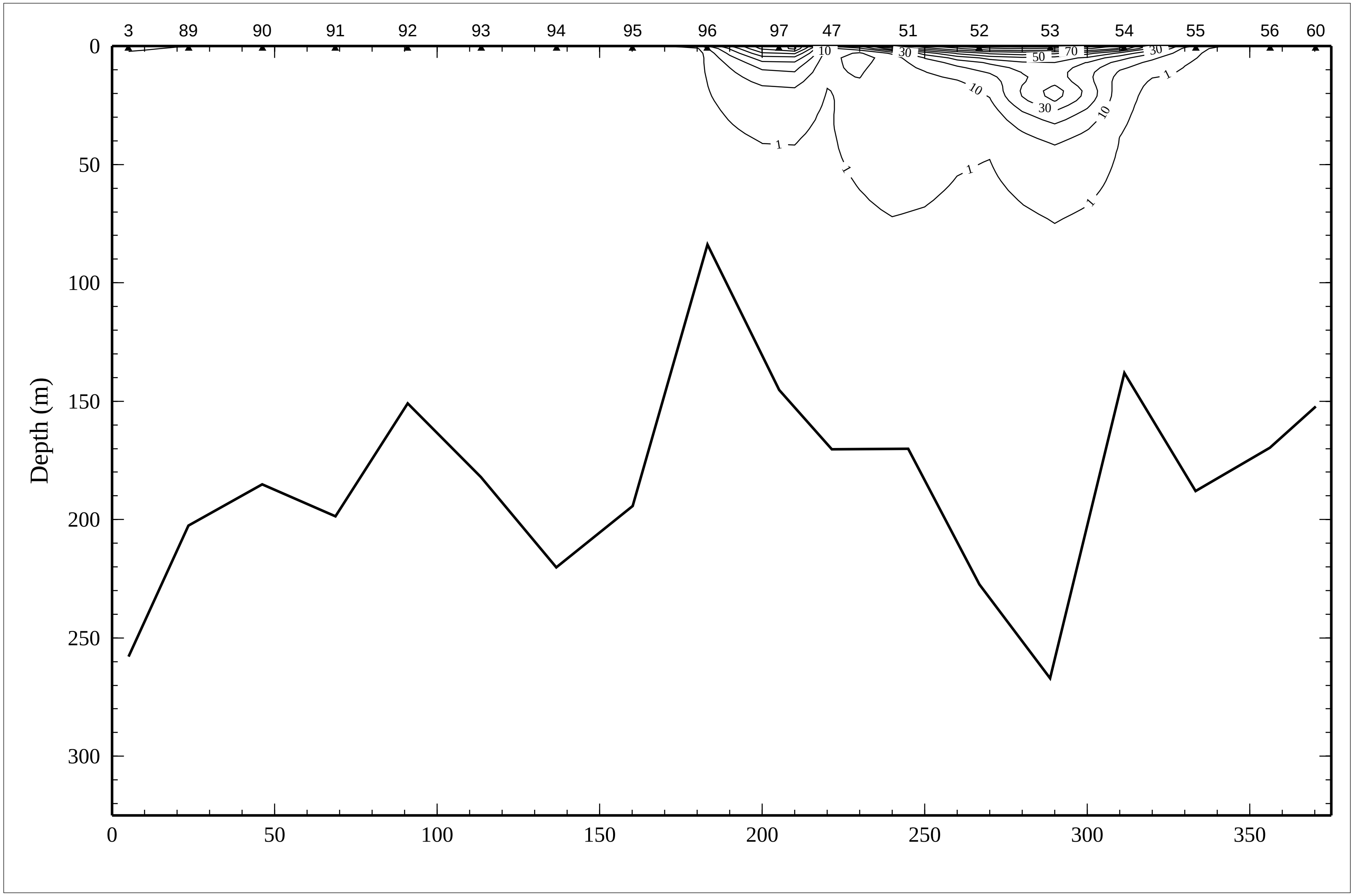

Figure 4.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H04, 4-13 February 1993.

D78

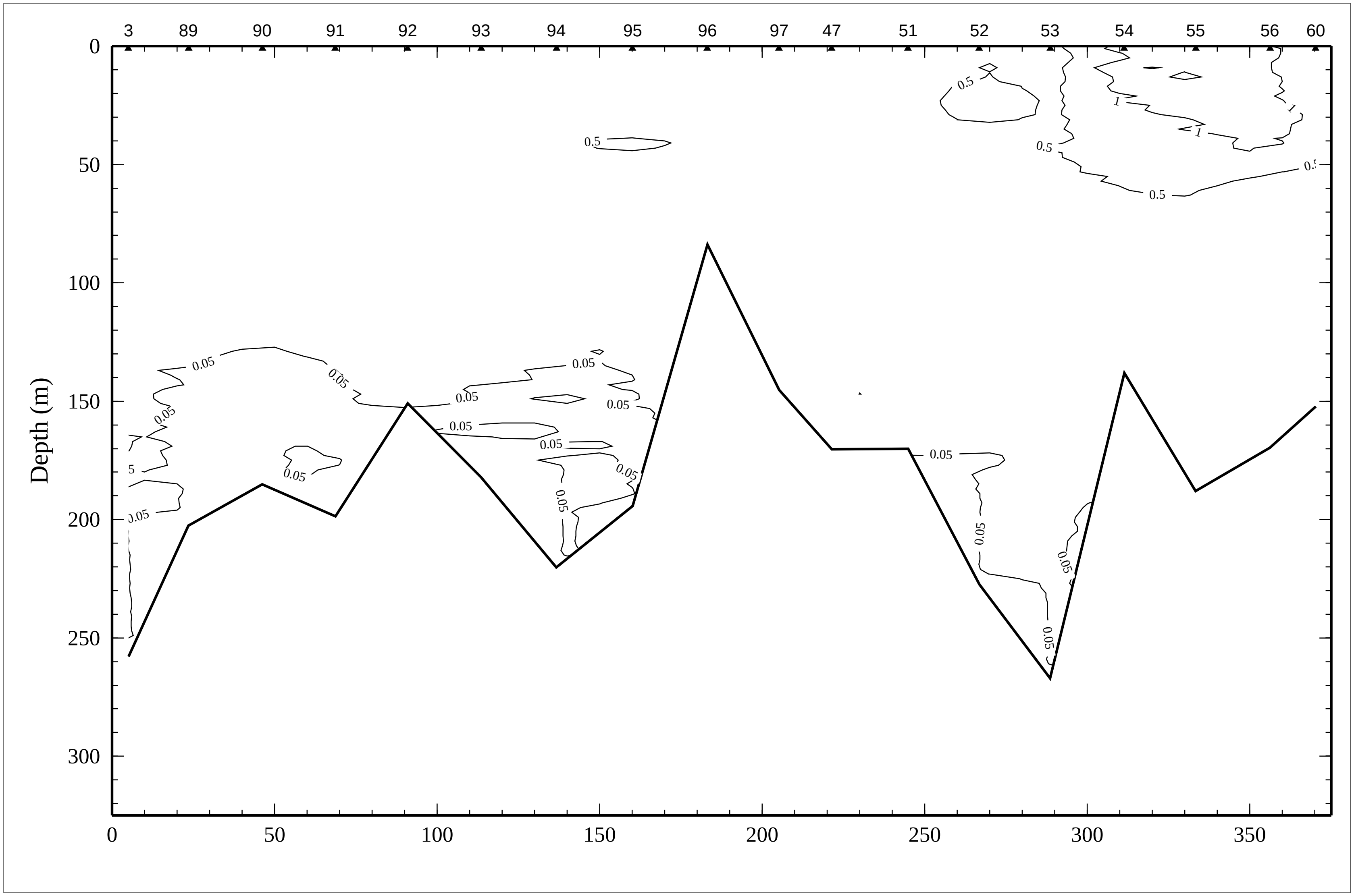

Figure 4.9.7. Relative fluorescence on line 9 of LATEX A survey H04, 4-13 February 1993.

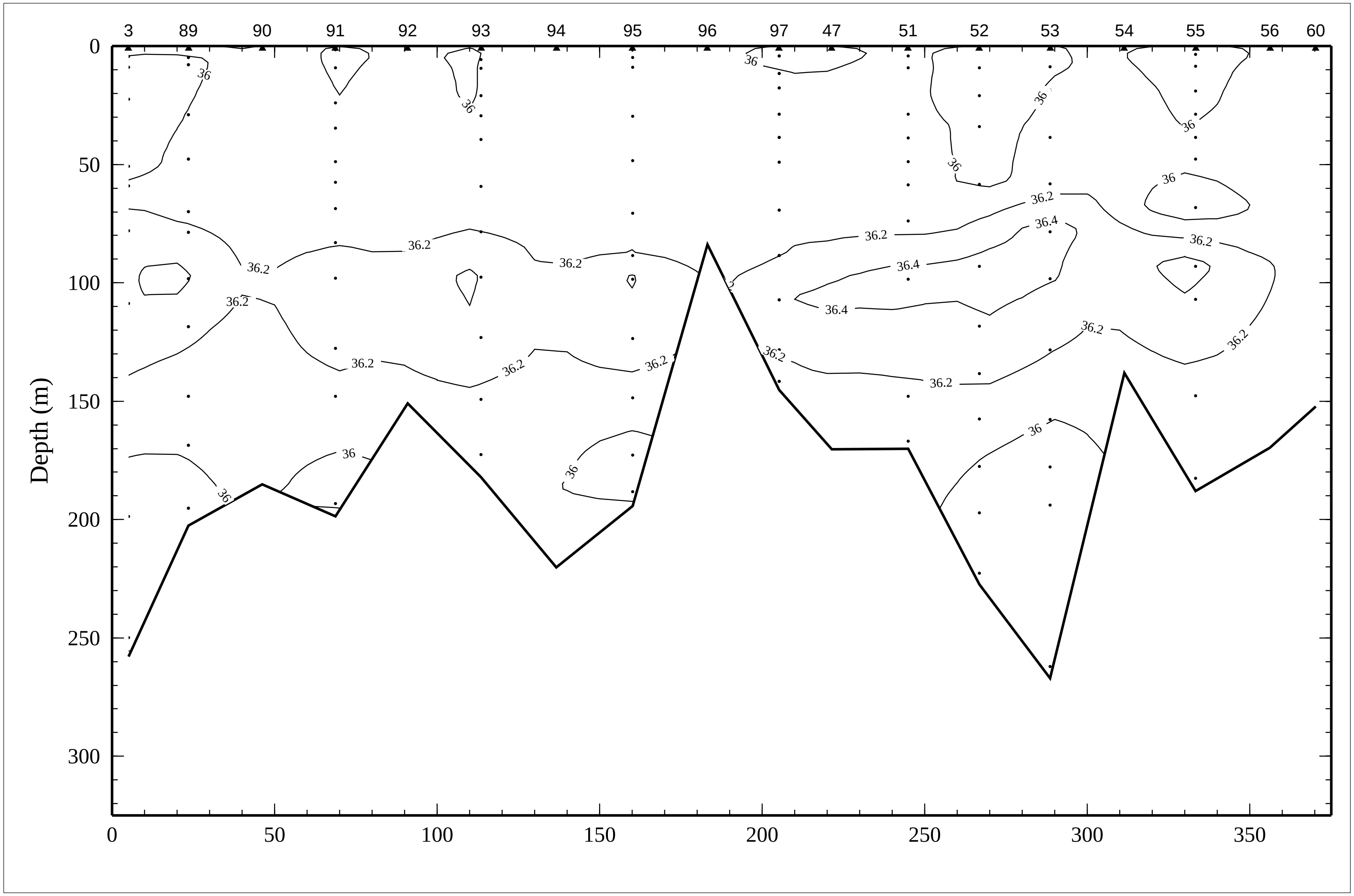

Figure 4.9.8. Bottle salinity on line 9 of LATEX A survey H04, 4-13 February 1993.

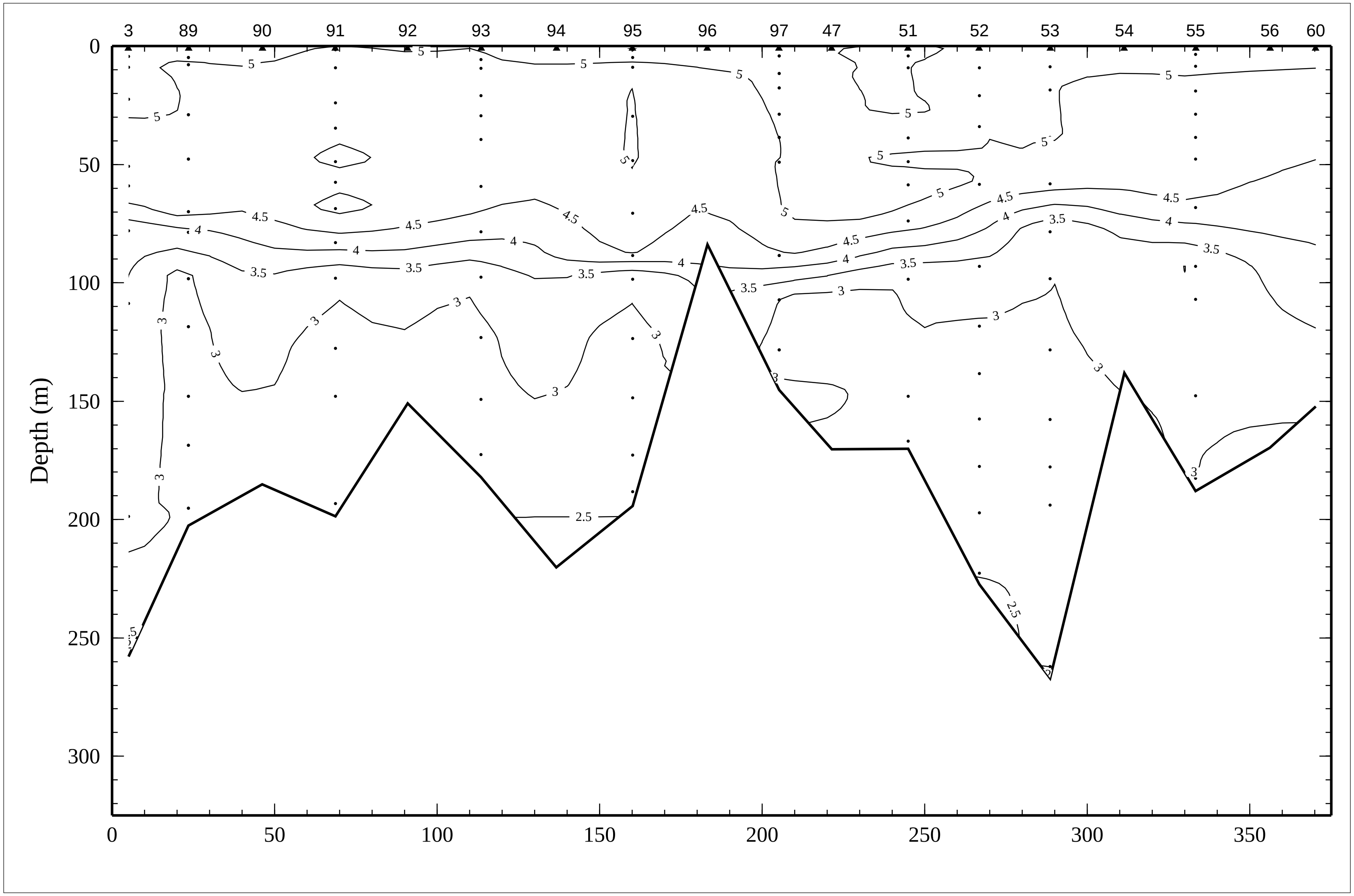

Figure 4.9.9. Dissolved oxygen (ml·l^{-1}) on line 9 of LATEX A survey H04, 4-13 February 1993.

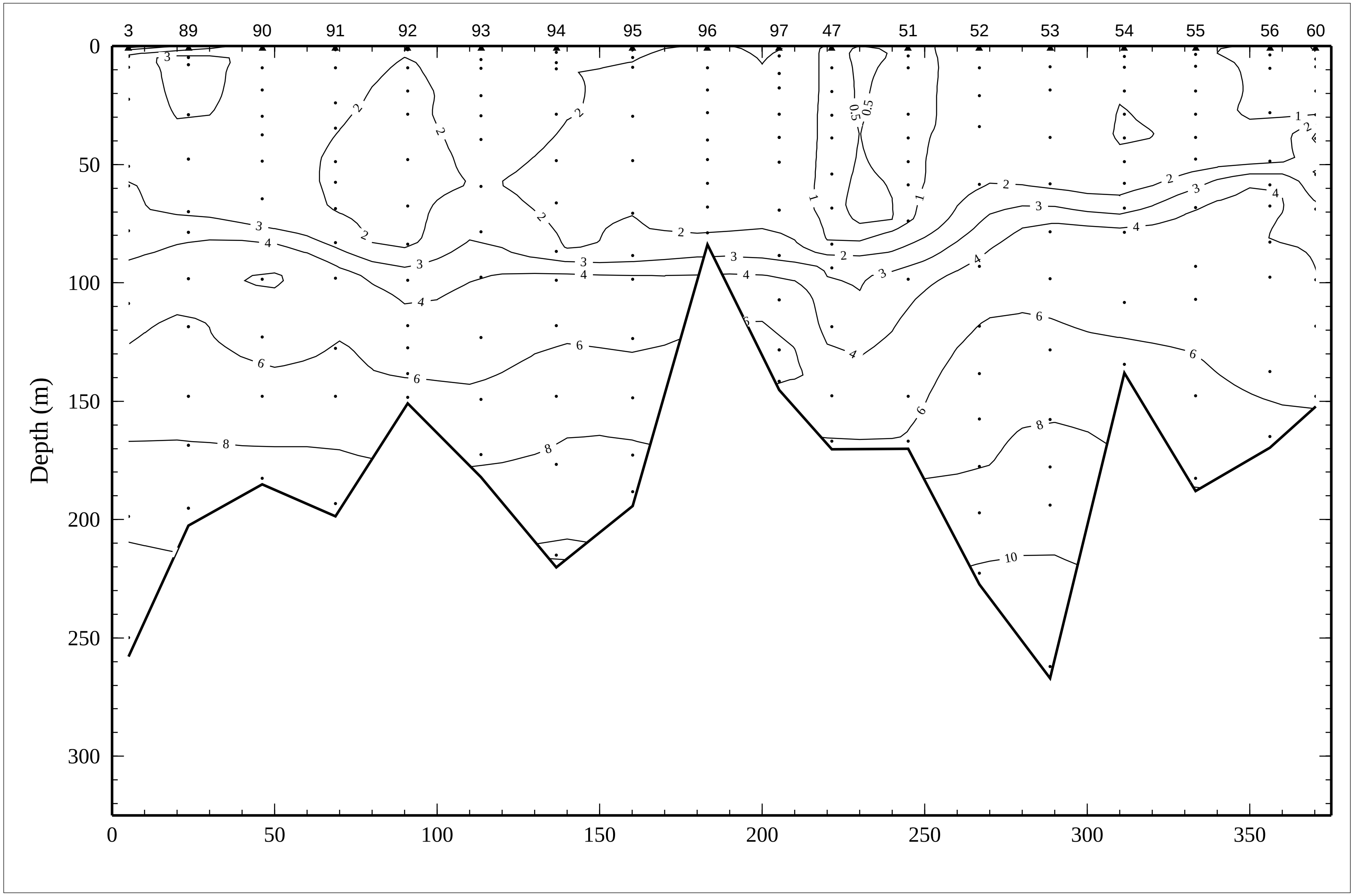

Figure 4.9.10. Silicate (µmol·l^{-1}) on line 9 of LATEX A survey H04, 4-13 February 1993.

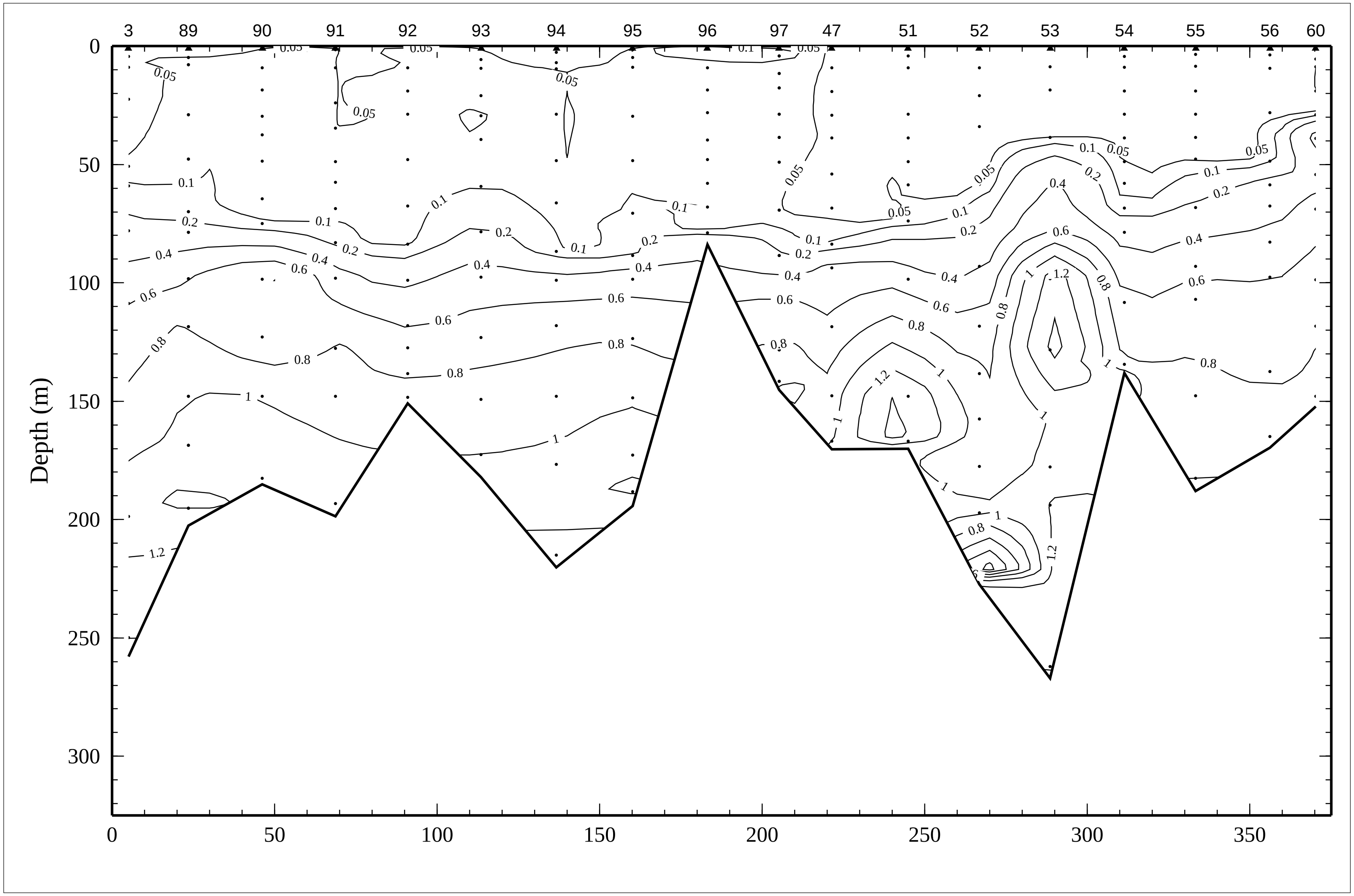

Figure 4.9.11. Phosphate (μmol·l-1) on line 9 of LATEX A survey H04, 4-13 February 1993.

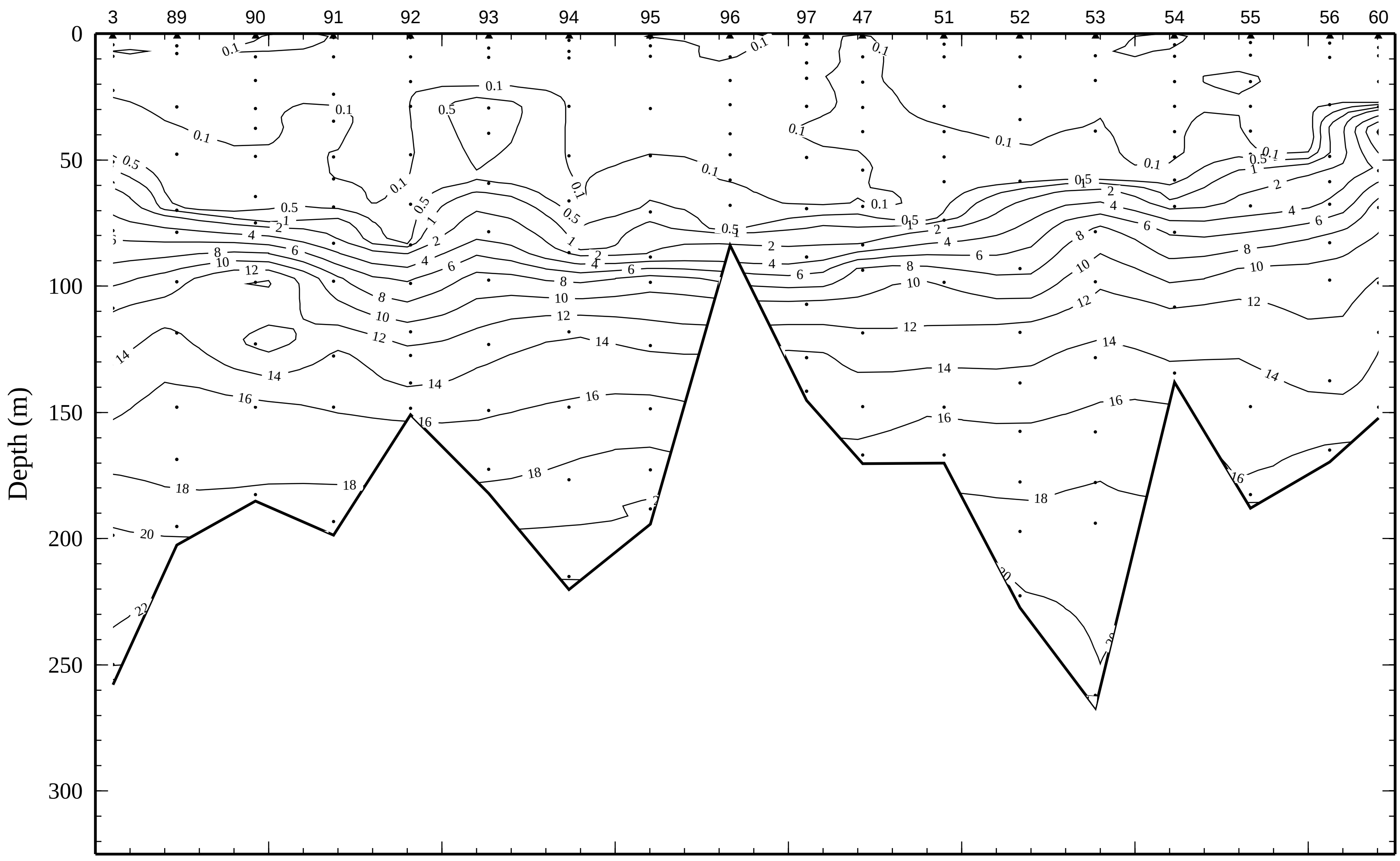

Figure 4.9.12. Nitrate (μmol·l^{-1}) on line 9 of LATEX A survey H04, 4-13 February 1993.

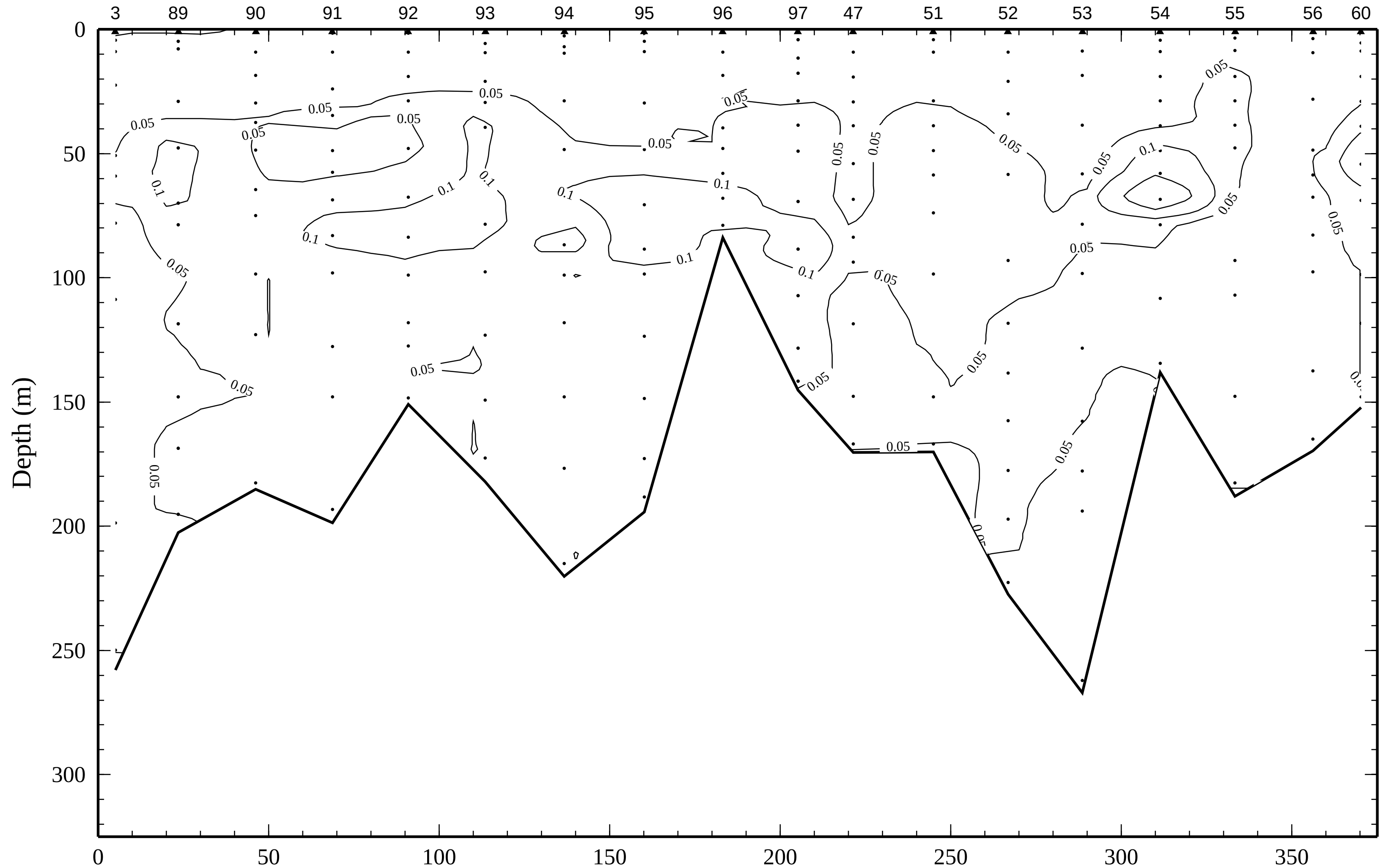

Figure 4.9.13. Nitrite (μmol·l^{-1}) on line 9 of LATEX A survey H04, 4-13 February 1993.

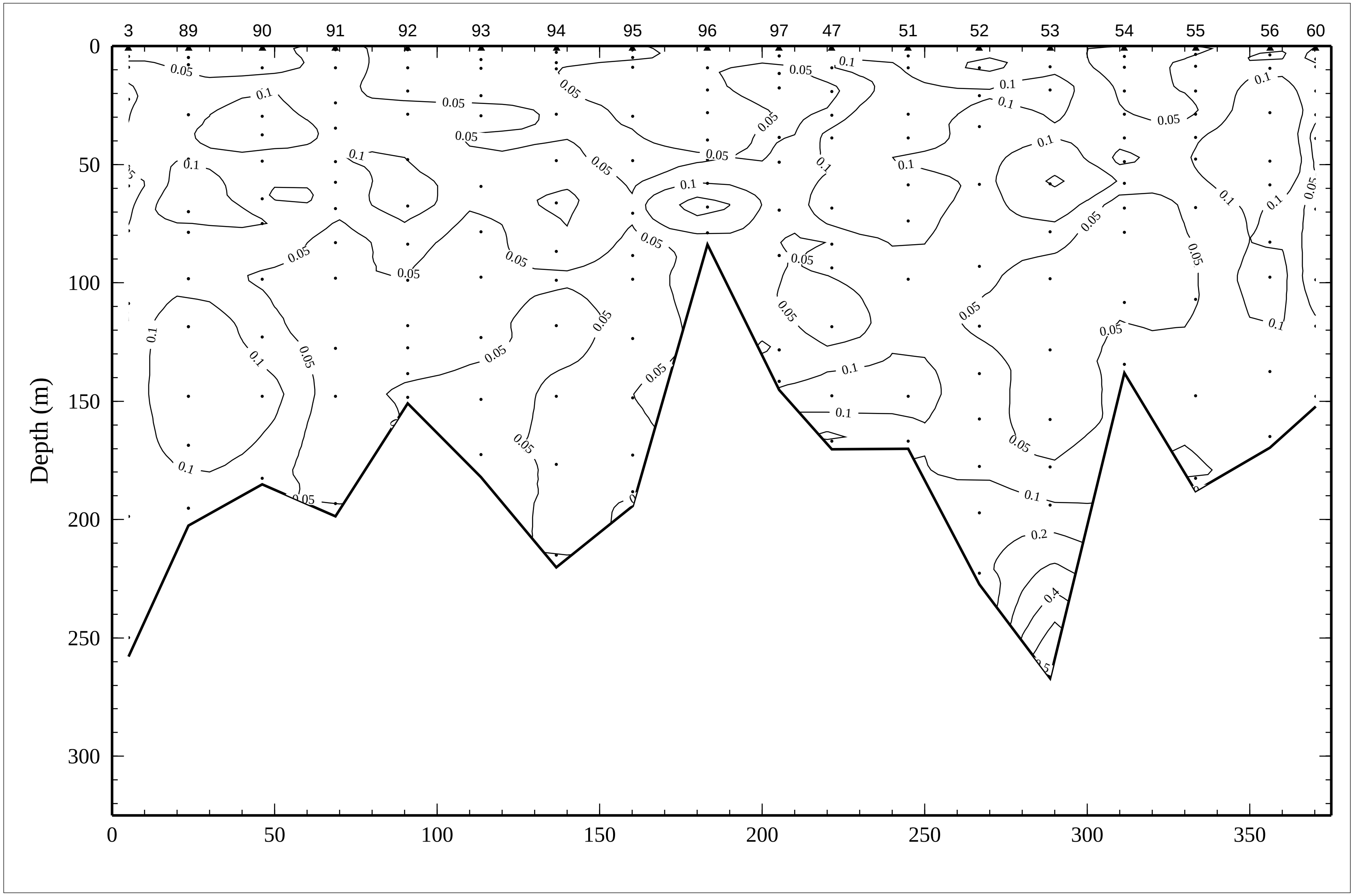

Figure 4.9.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H04, 4-13 February 1993.

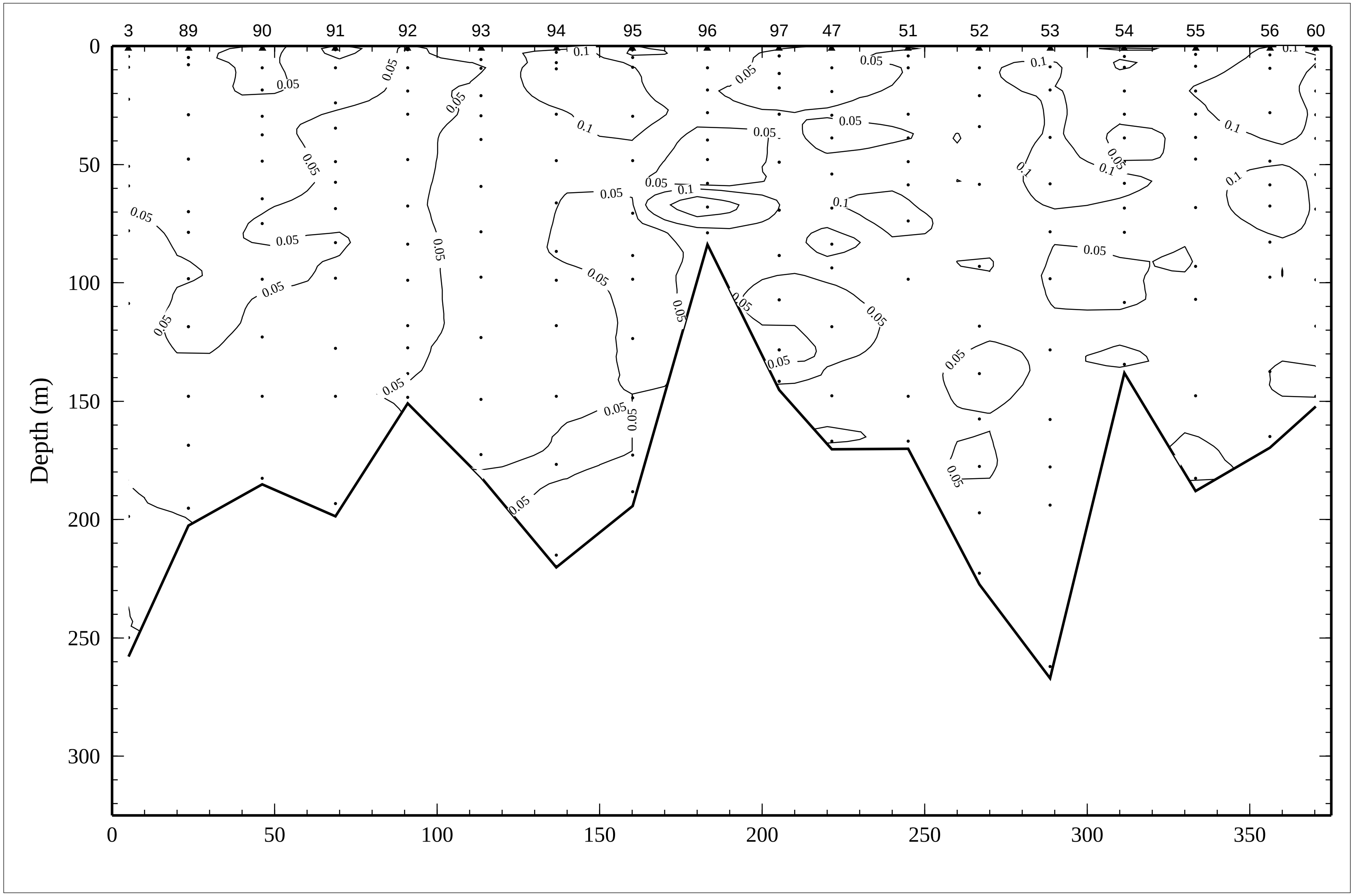

Figure 4.9.15. Urea (μmol·l^{-1}) on line 9 of LATEX A survey H04, 4-13 February 1993.

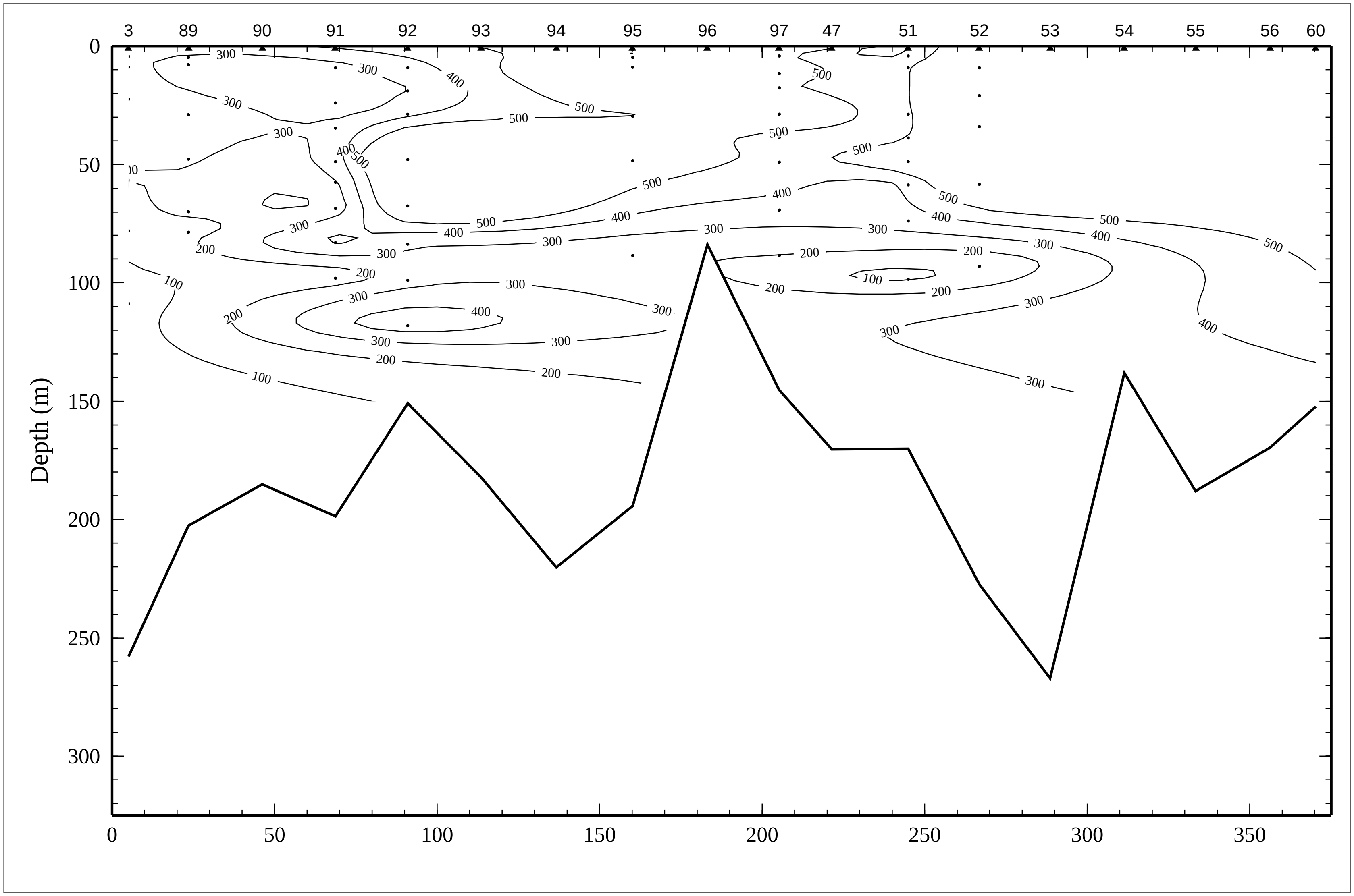

Figure 4.9.16. Chlorophyll a (ng·l^{-1}) on line 9 of LATEX A survey H04, 4-13 February 1993.

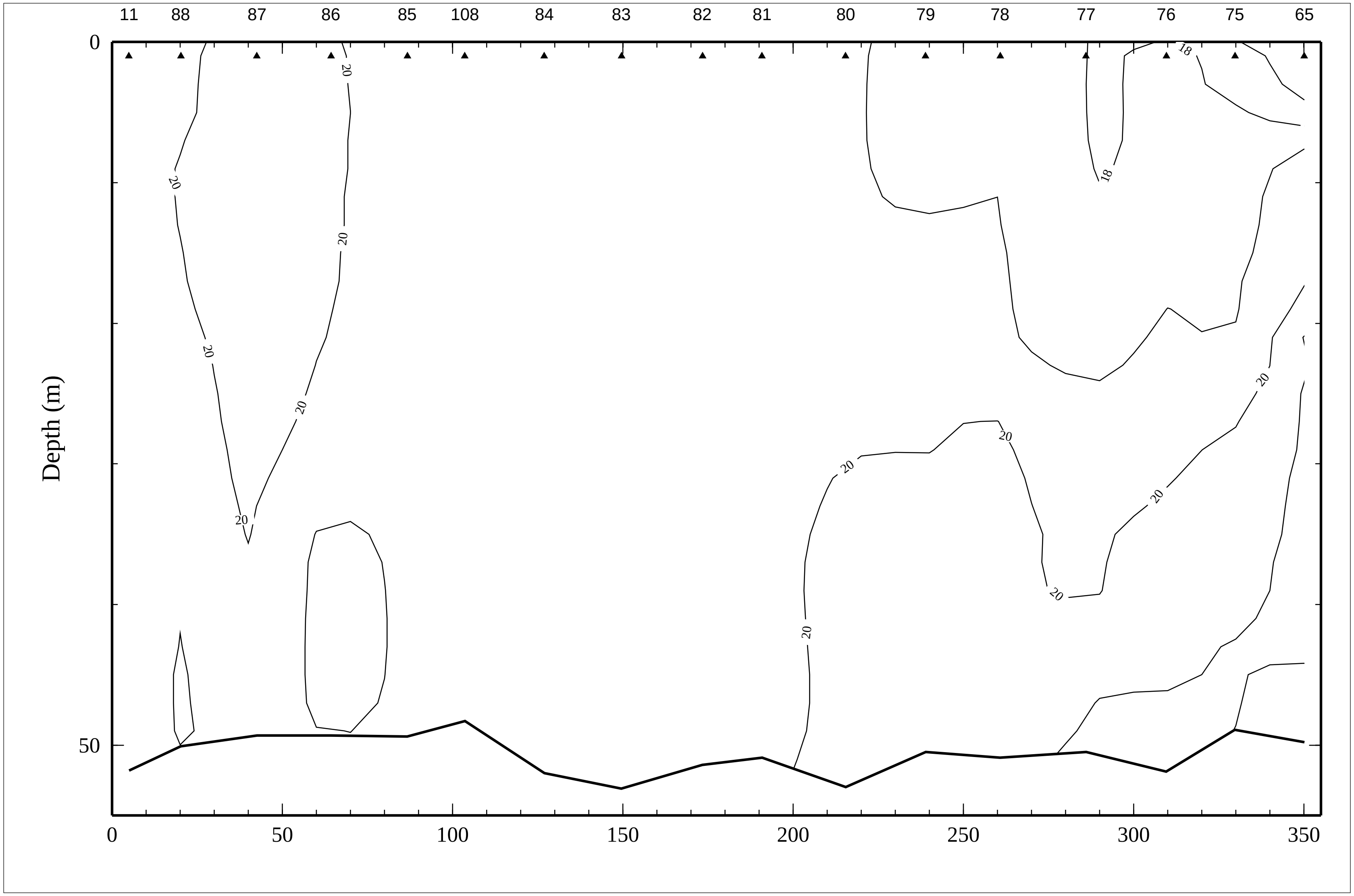

Figure 4.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H04, 4-13 February 1993.

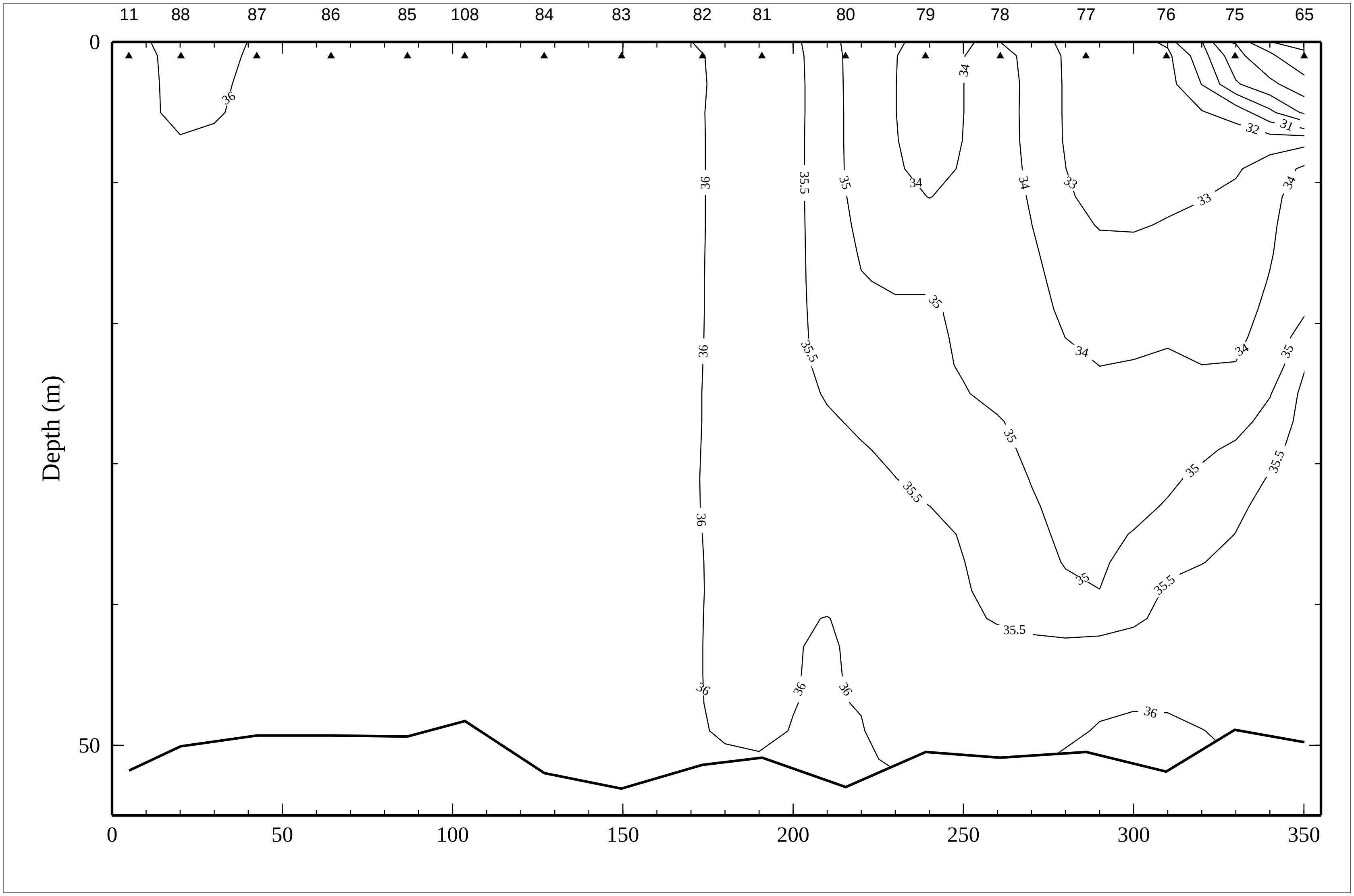

Figure 4.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H04, 4-13 February 1993.

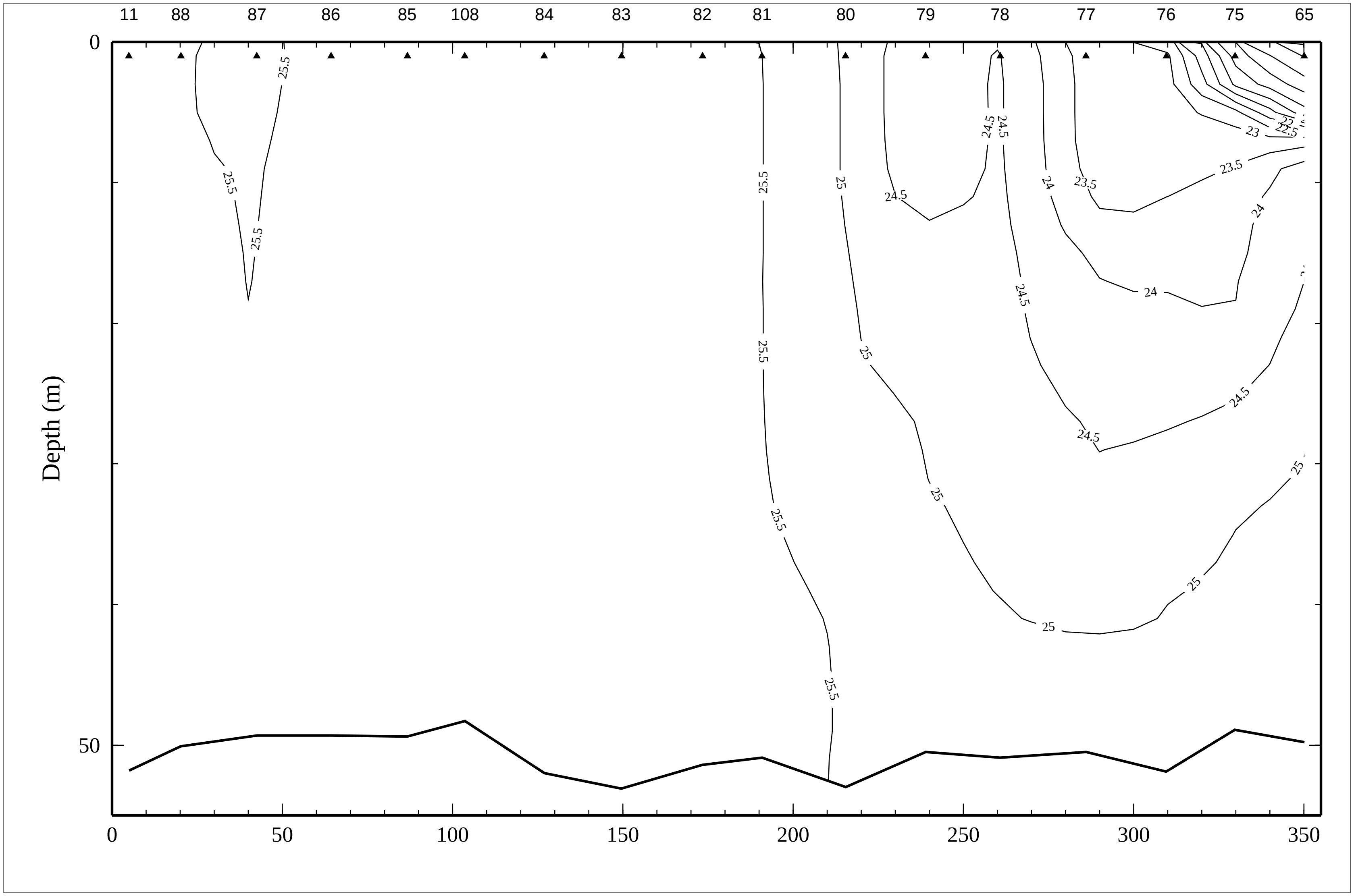

Figure 4.10.3. Density anomaly (σ_θ in kg·m^{-3}) on line 10 of LATEX A survey H04, 4-13 February 1993.

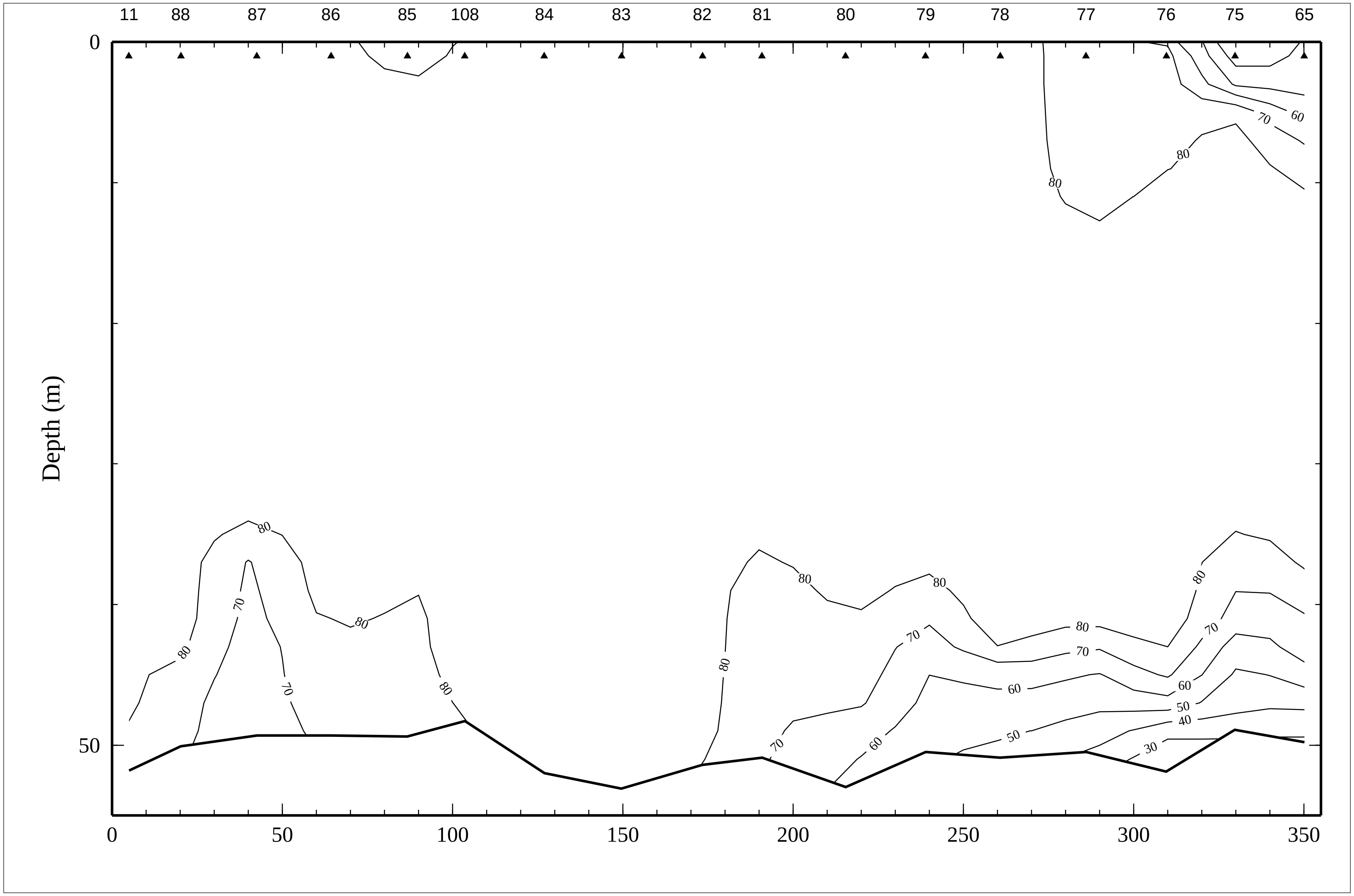

Figure 4.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H04, 4-13 February 1993.

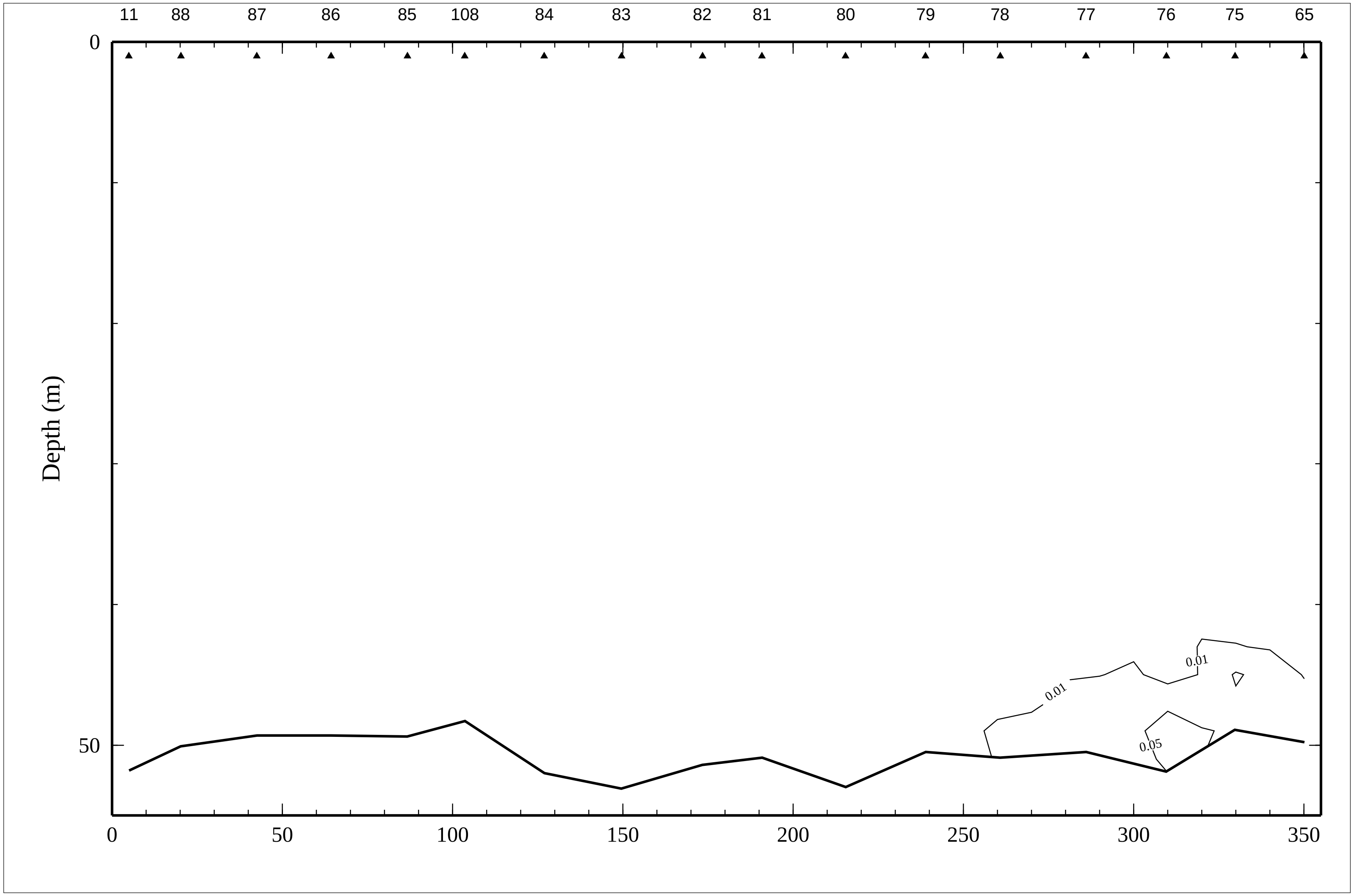

Figure 4.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H04, 4-13 February 1993.

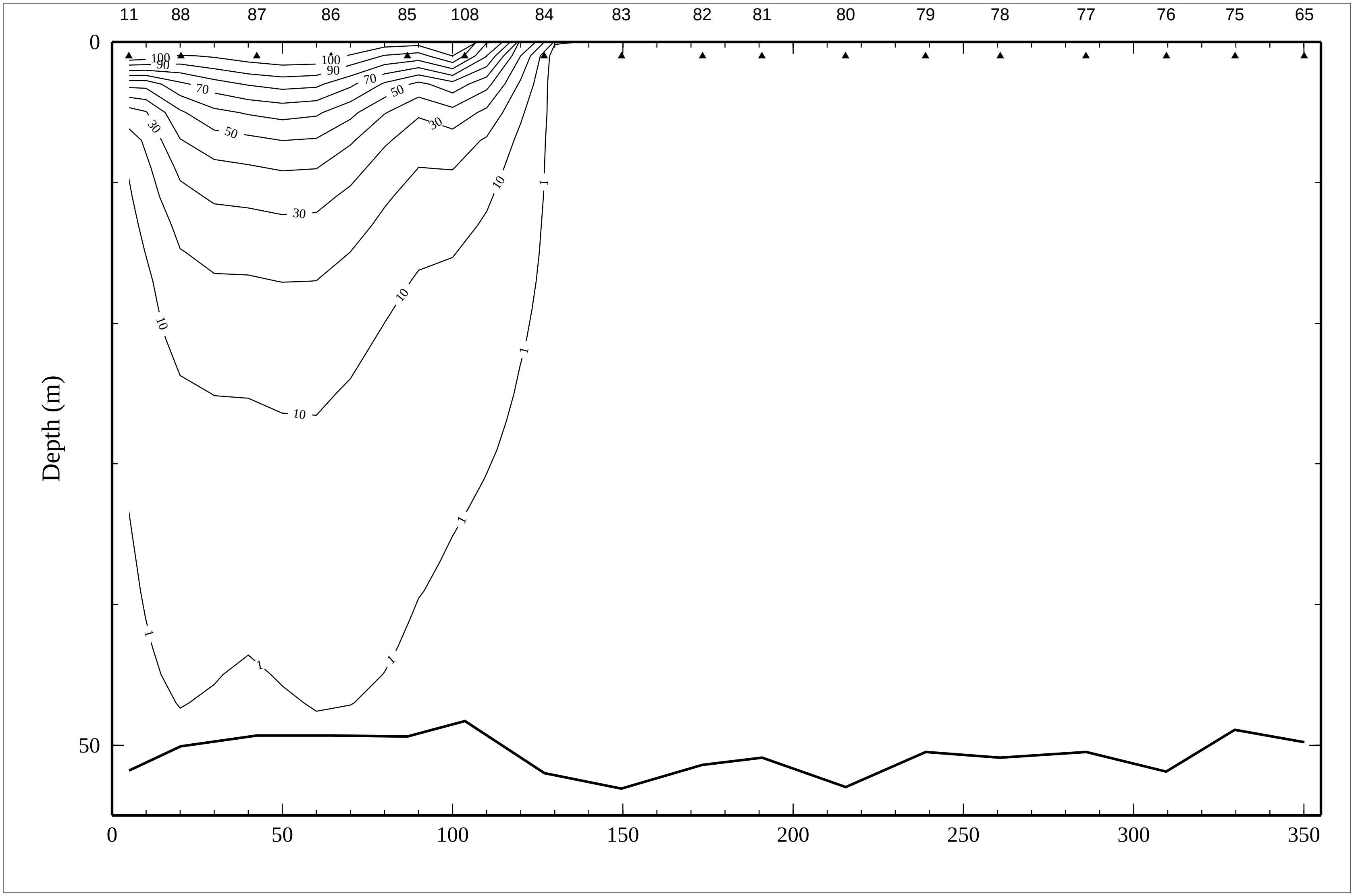

Figure 4.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H04, 4-13 February 1993.

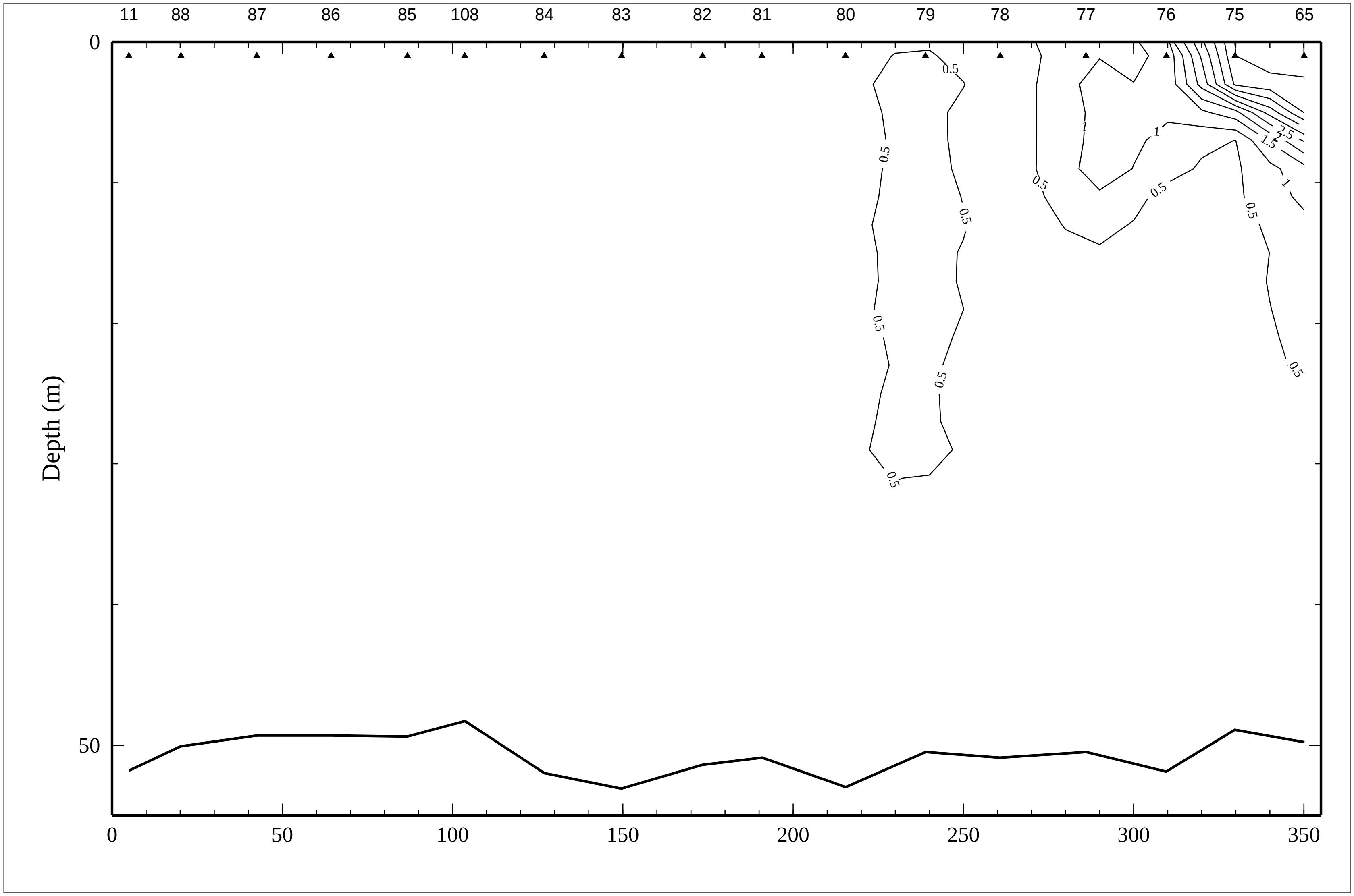

Figure 4.10.7. Relative fluorescence on line 10 of LATEX A survey H04, 4-13 February 1993.

D95

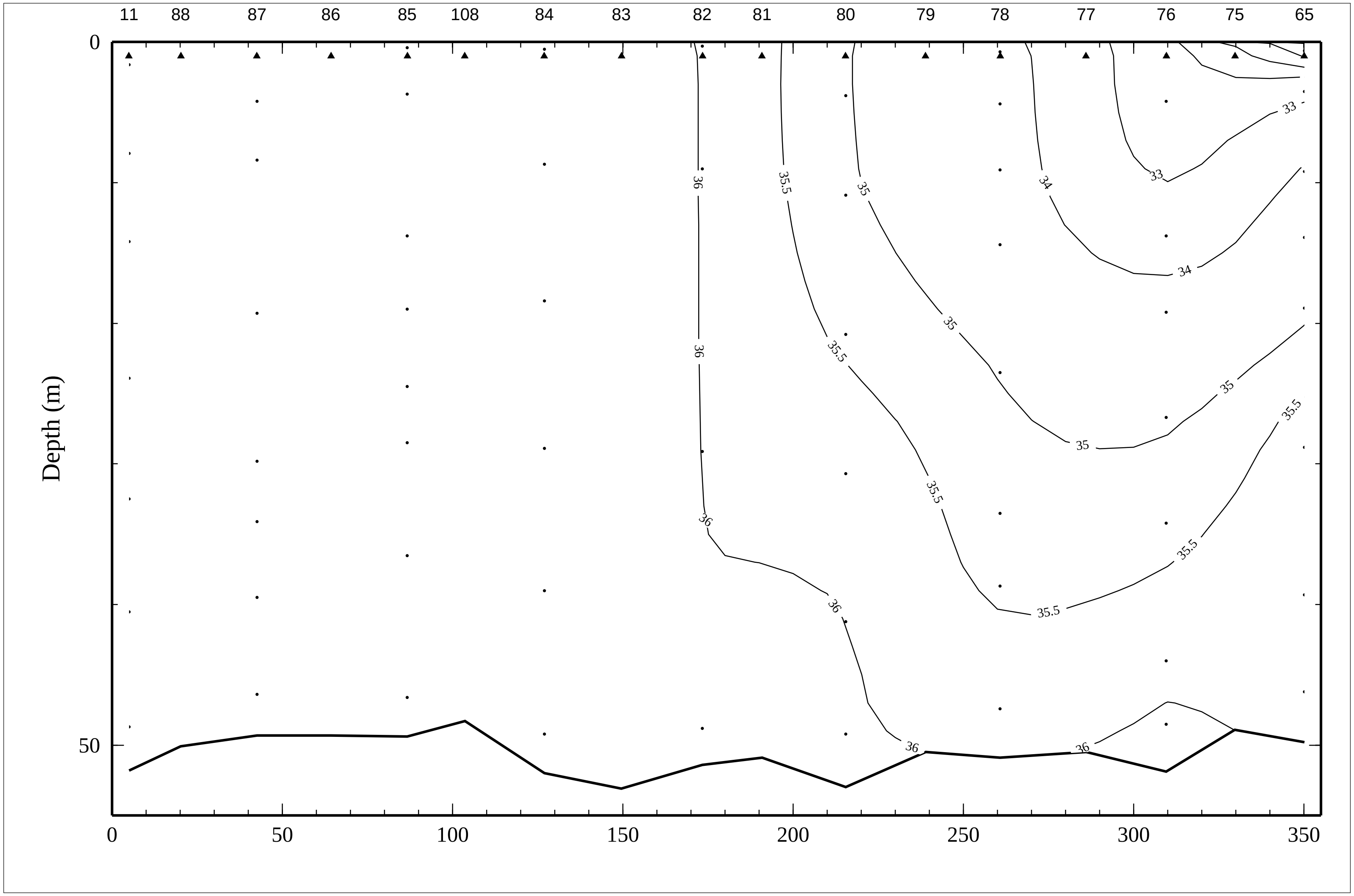

Figure 4.10.8. Bottle salinity on line 10 of LATEX A survey H04, 4-13 February 1993.

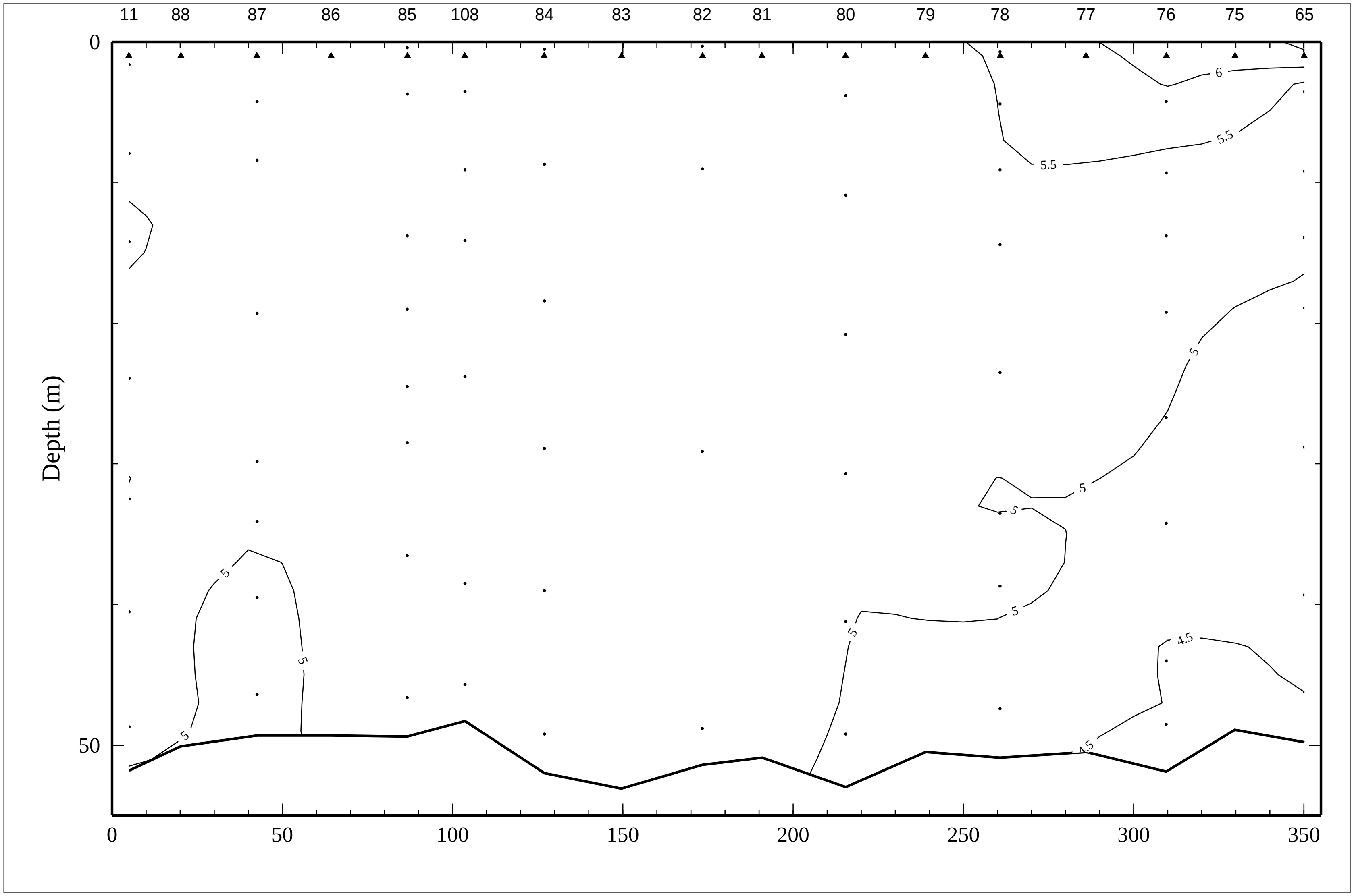

Figure 4.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H04, 4-13 February 1993.

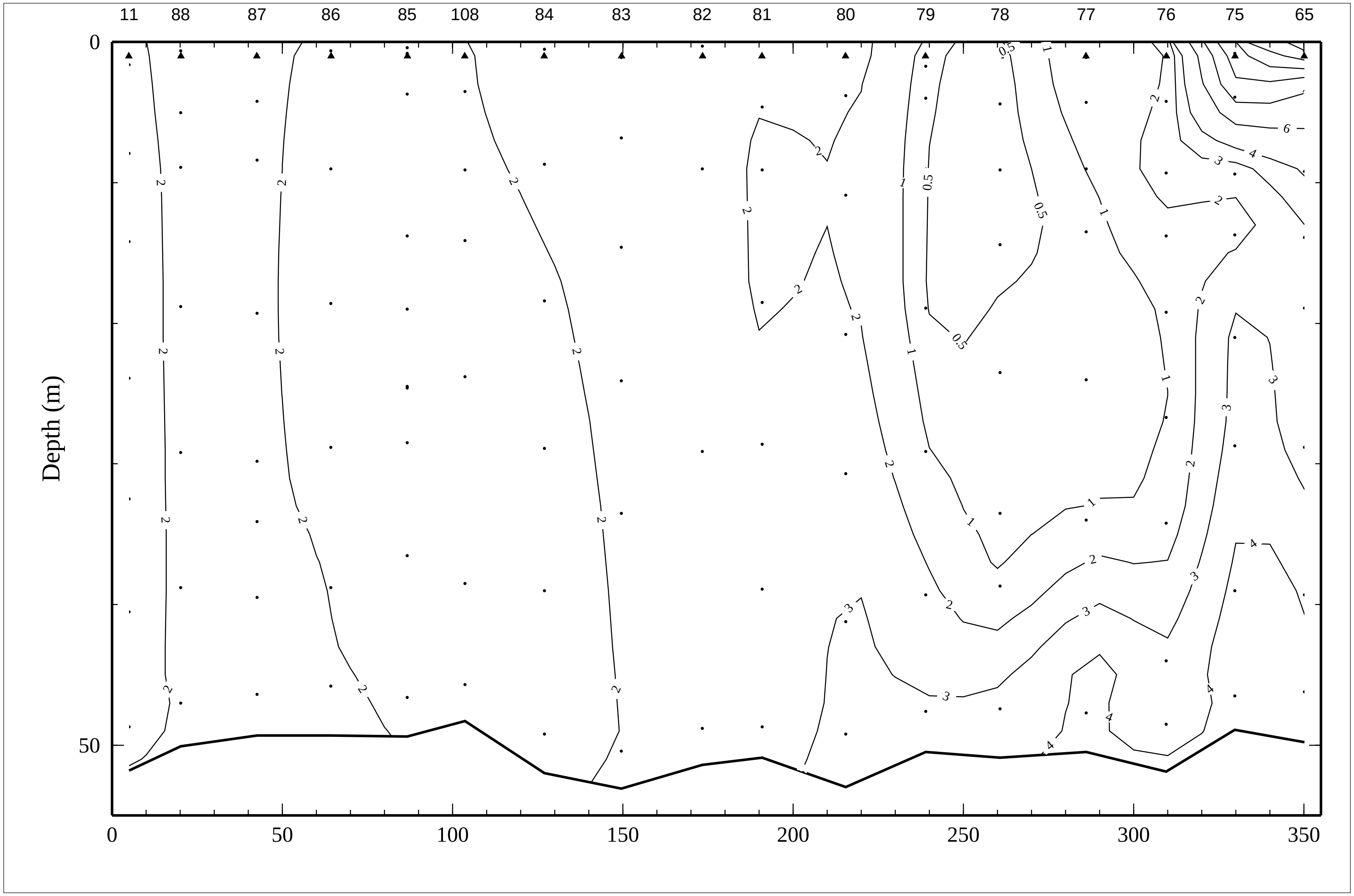

Figure 4.10.10. Silicate (μmol·l^{-1}) on line 10 of LATEX A survey H04, 4-13 February 1993.

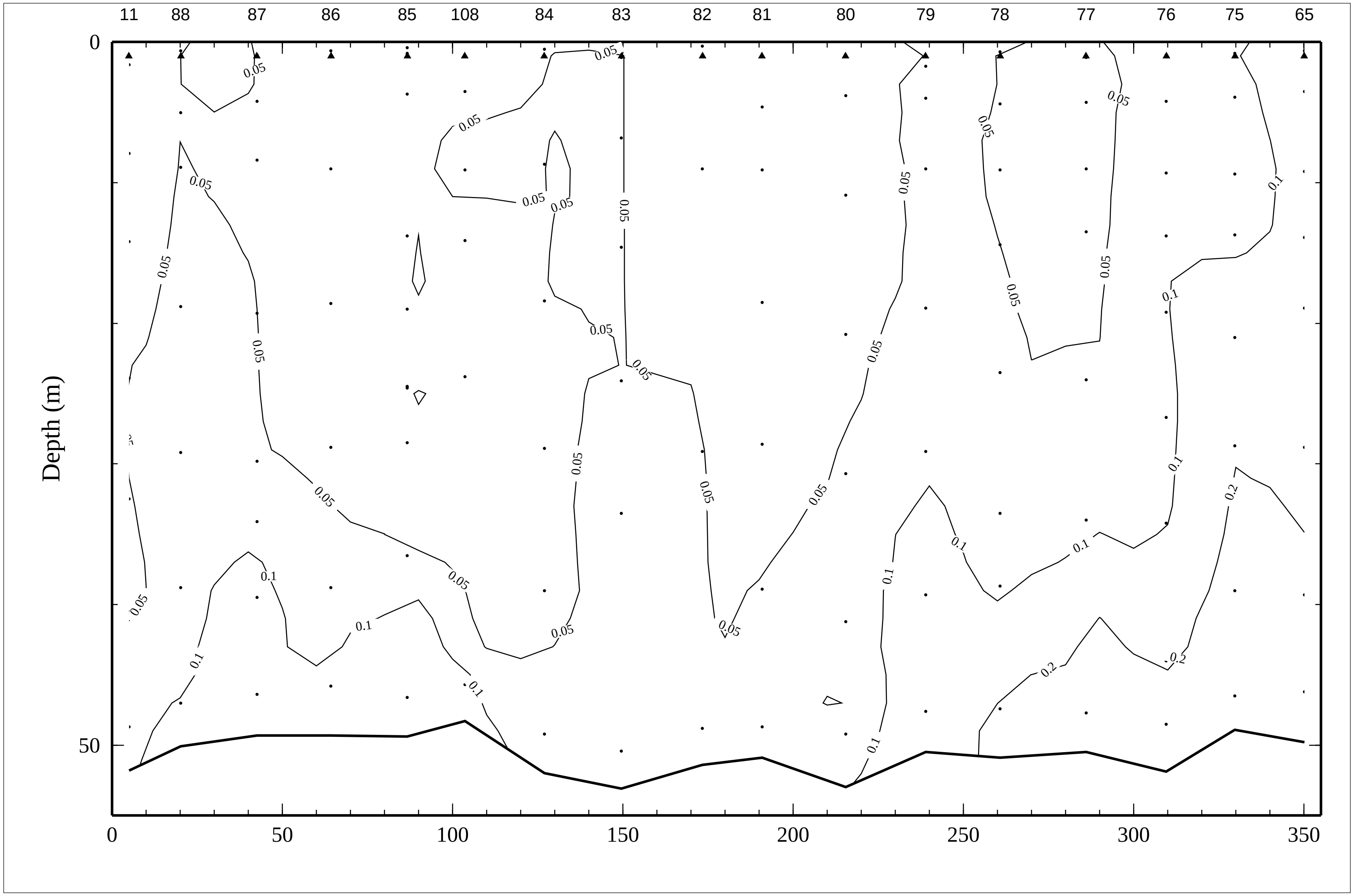

Figure 4.10.11. Phosphate (μmol·l^{-1}) on line 10 of LATEX A survey H04, 4-13 February 1993.

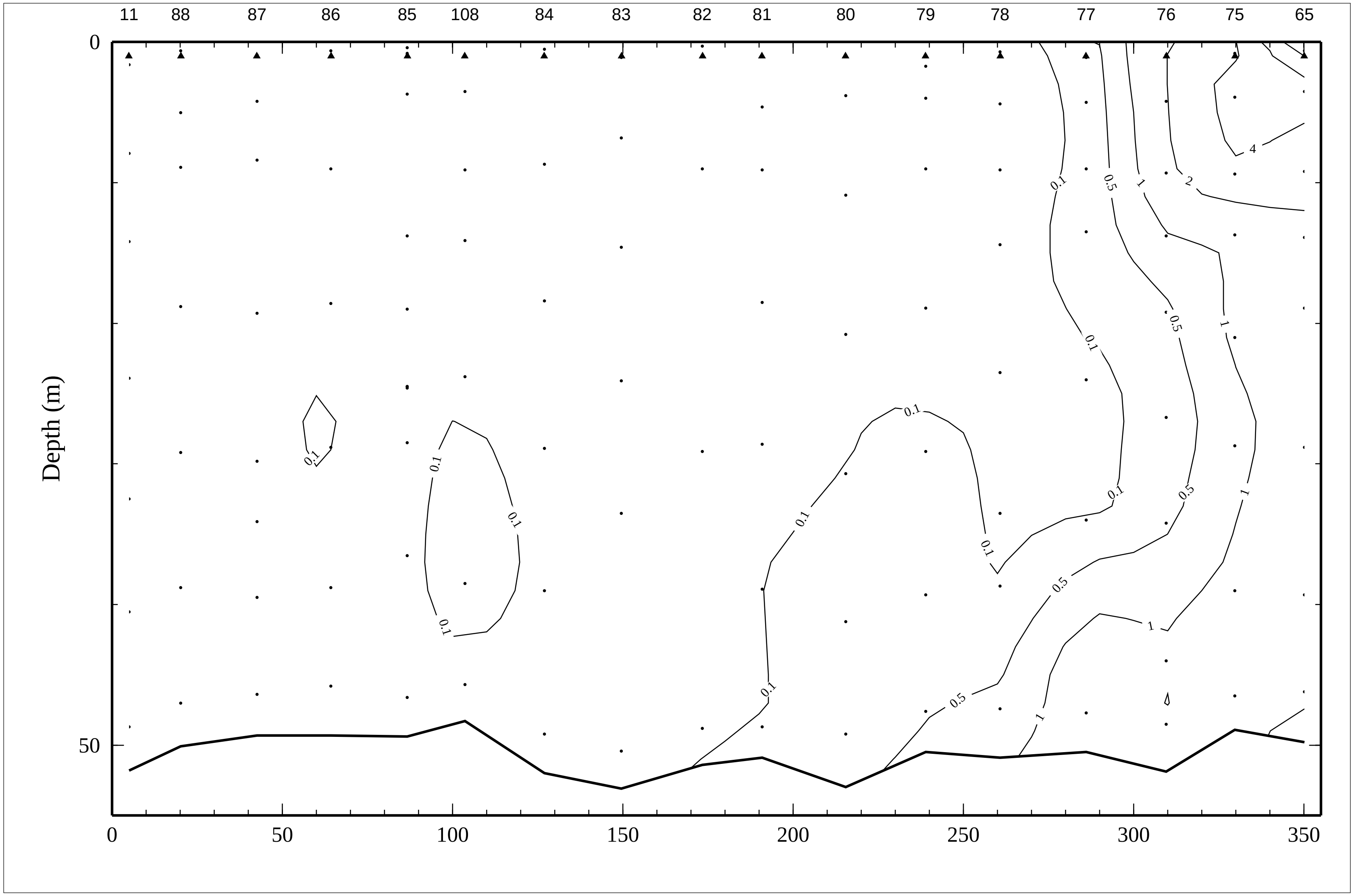

Figure 4.10.12. Nitrate (μmol·l-1) on line 10 of LATEX A survey H04, 4-13 February 1993.

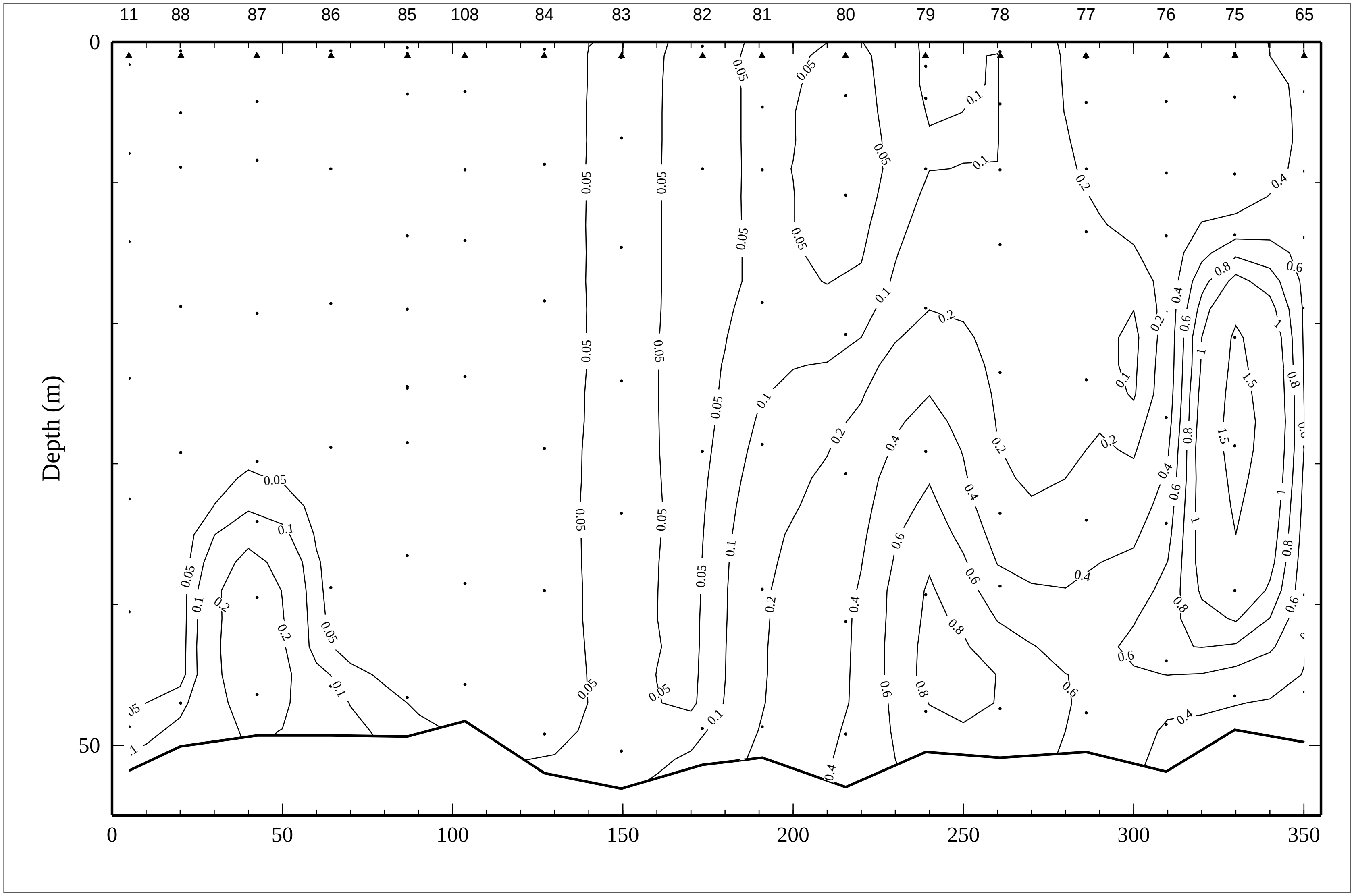

Figure 4.10.13. Nitrite (µmol·l^{-1}) on line 10 of LATEX A survey H04, 4-13 February 1993.

D101

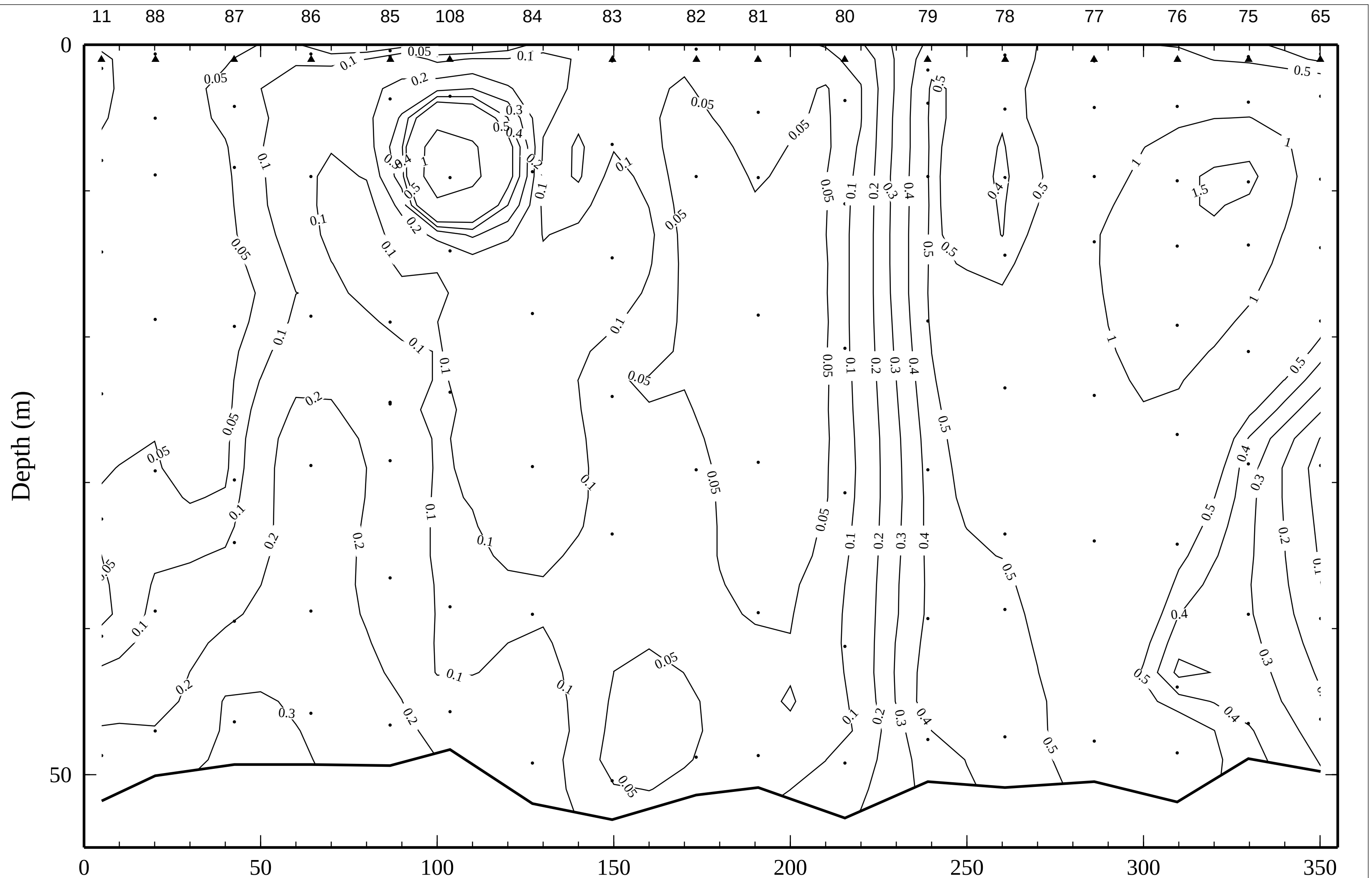

Figure 4.10.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 10 of LATEX A survey H04, 4-13 February 1993.

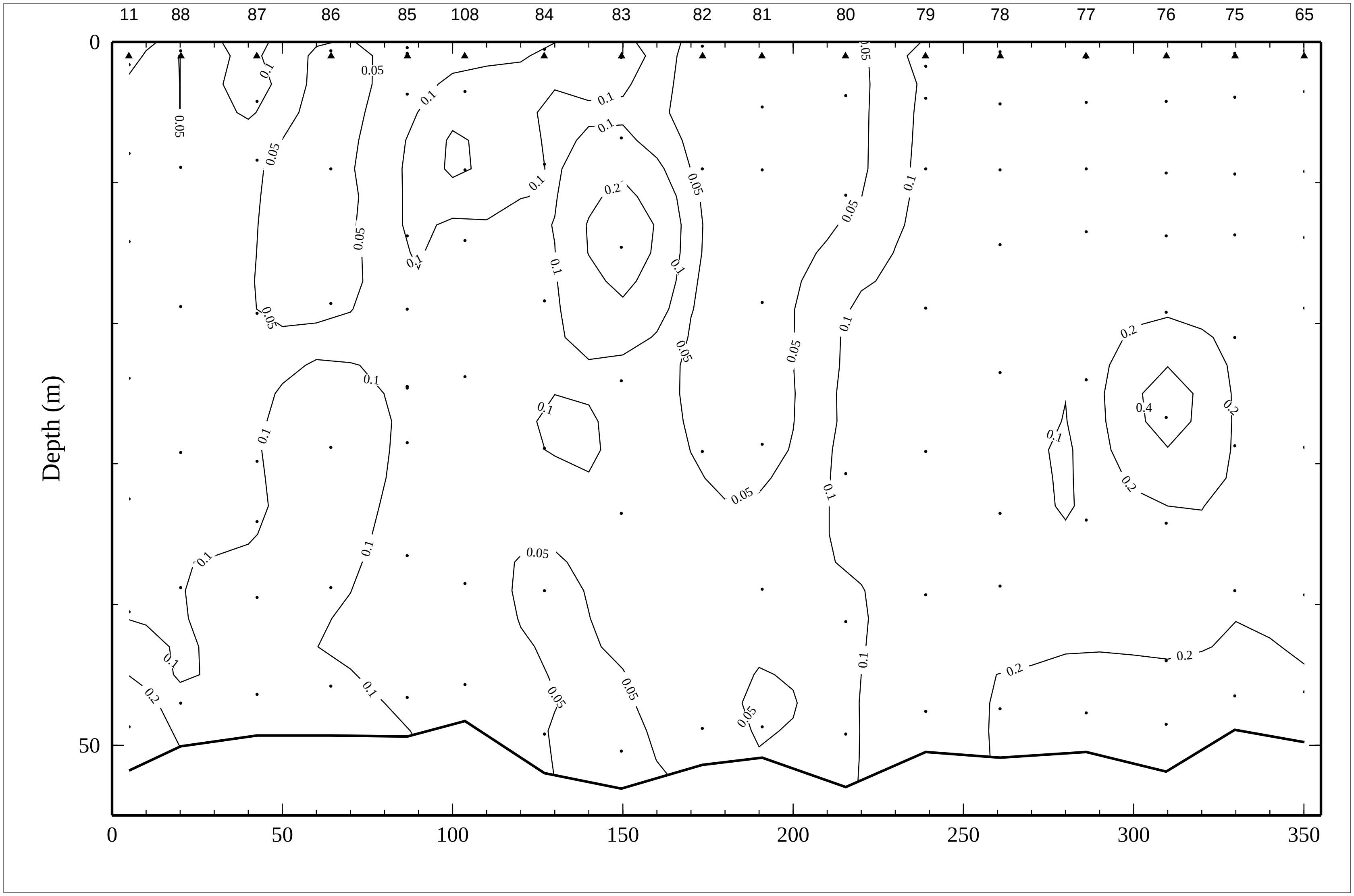

Figure 4.10.15. Urea (μmol·l-1) on line 10 of LATEX A survey H04, 4-13 February 1993.

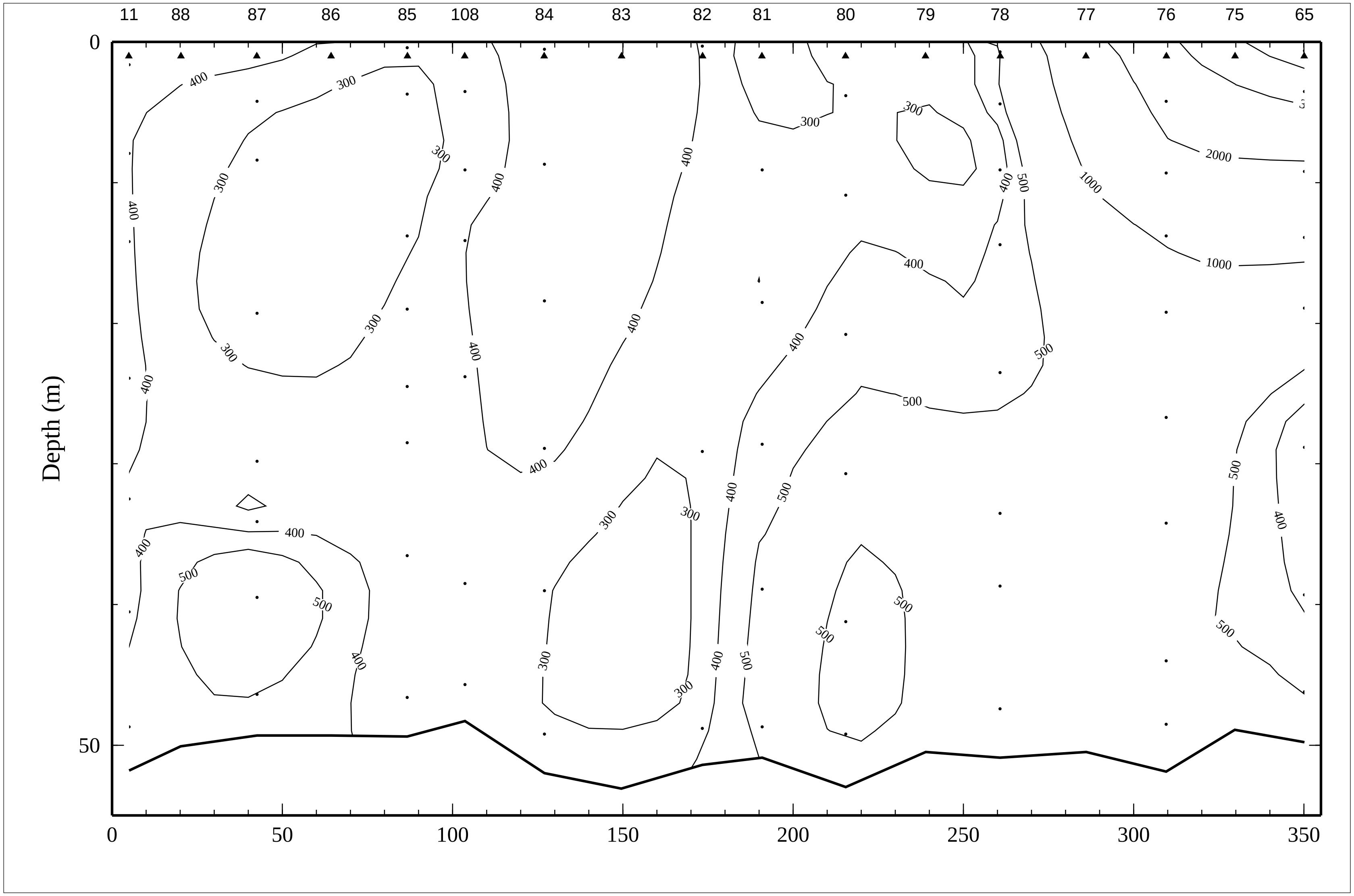

Figure 4.10.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 10 of LATEX A survey H04, 4-13 February 1993.

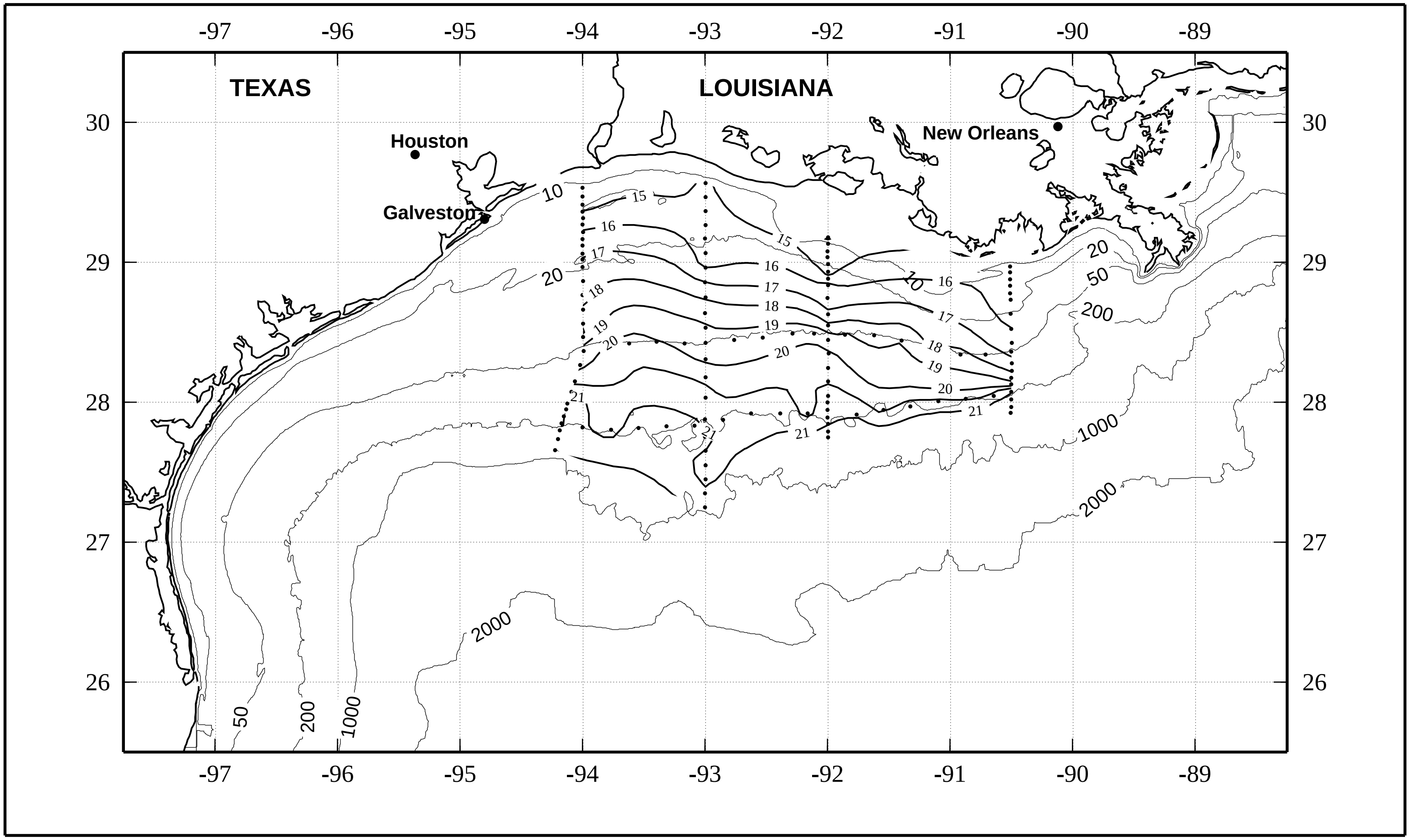

Figure 4.12.1. Potential temperature (˚C) at 4 m on LATEX A survey H04, 4-13 February 1993.

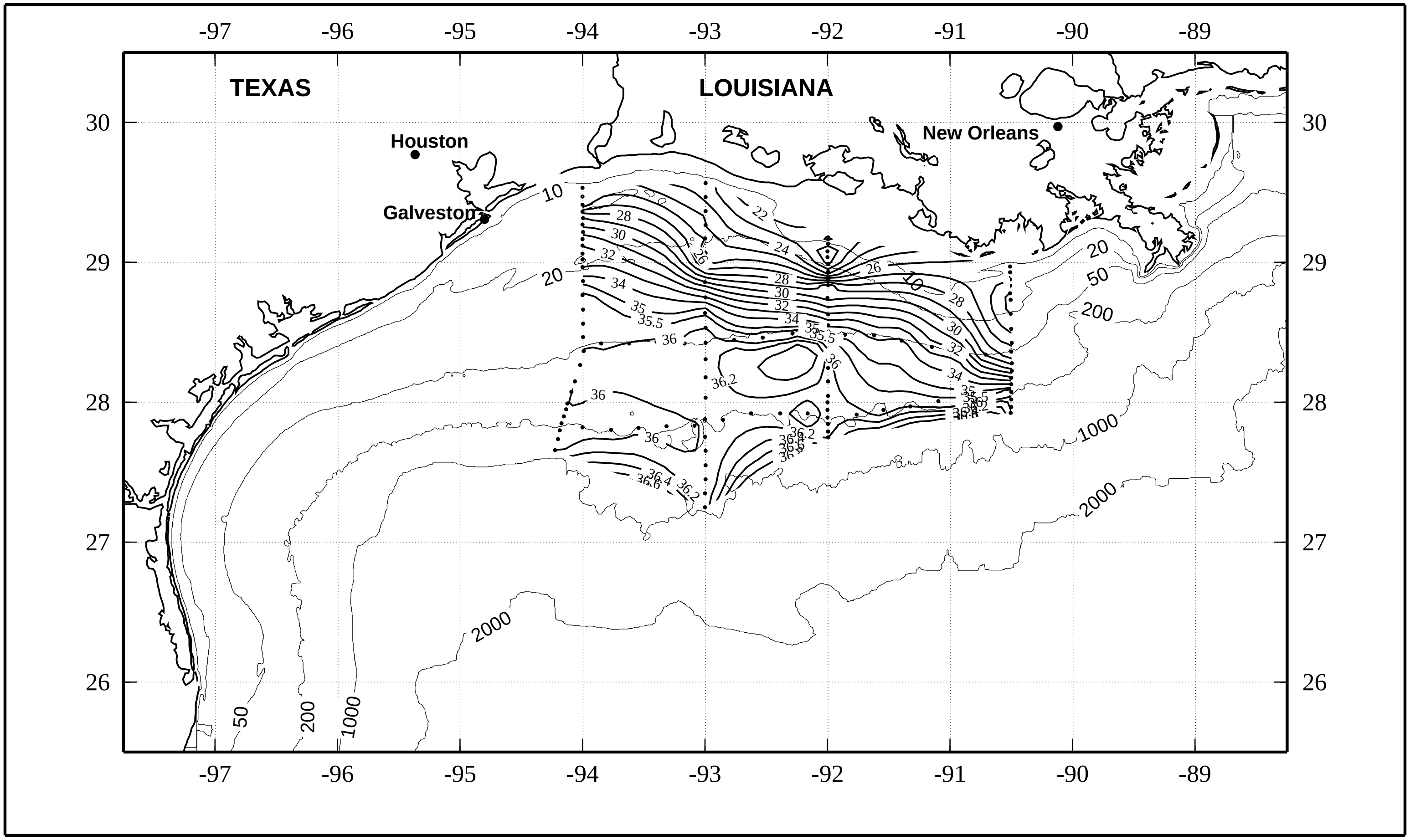

Figure 4.12.2. Salinity, derived from CTD data, at 4 m on LATEX A survey H04, 4-13 February 1993.

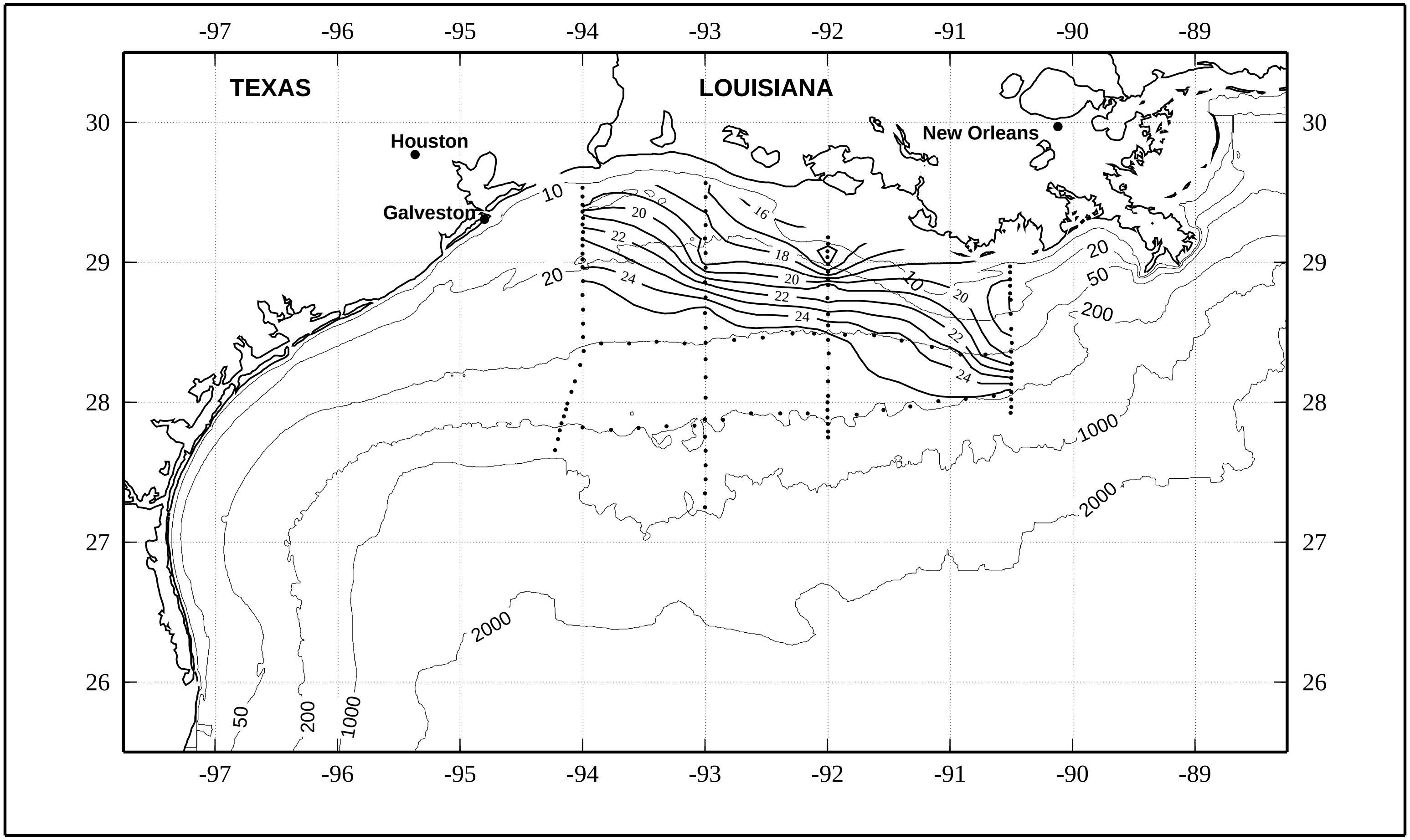

Figure 4.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 4 m on LATEX A survey H04, 4-13 February 1993.

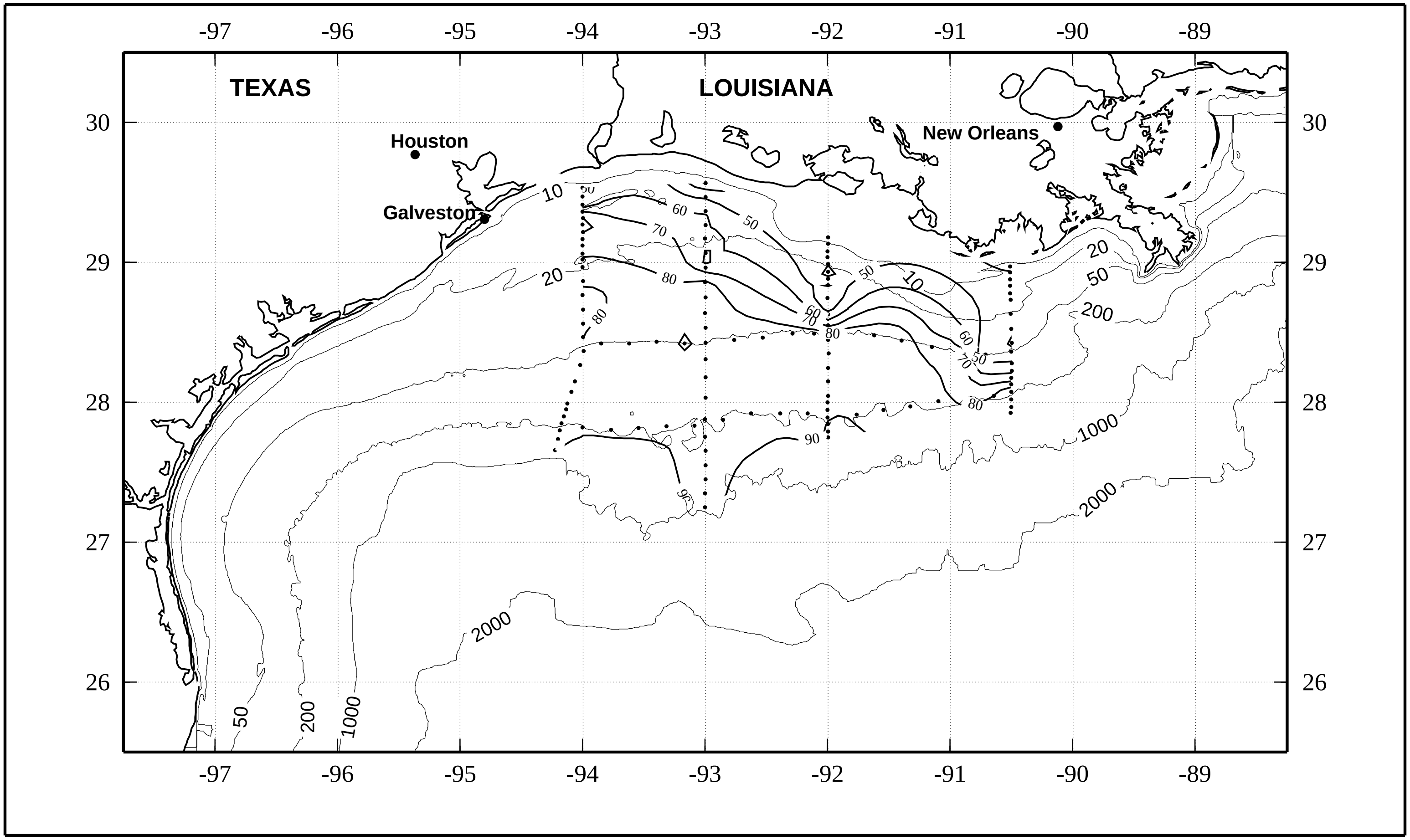

Figure 4.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 4 m on LATEX A survey H04, 4-13 February 1993.

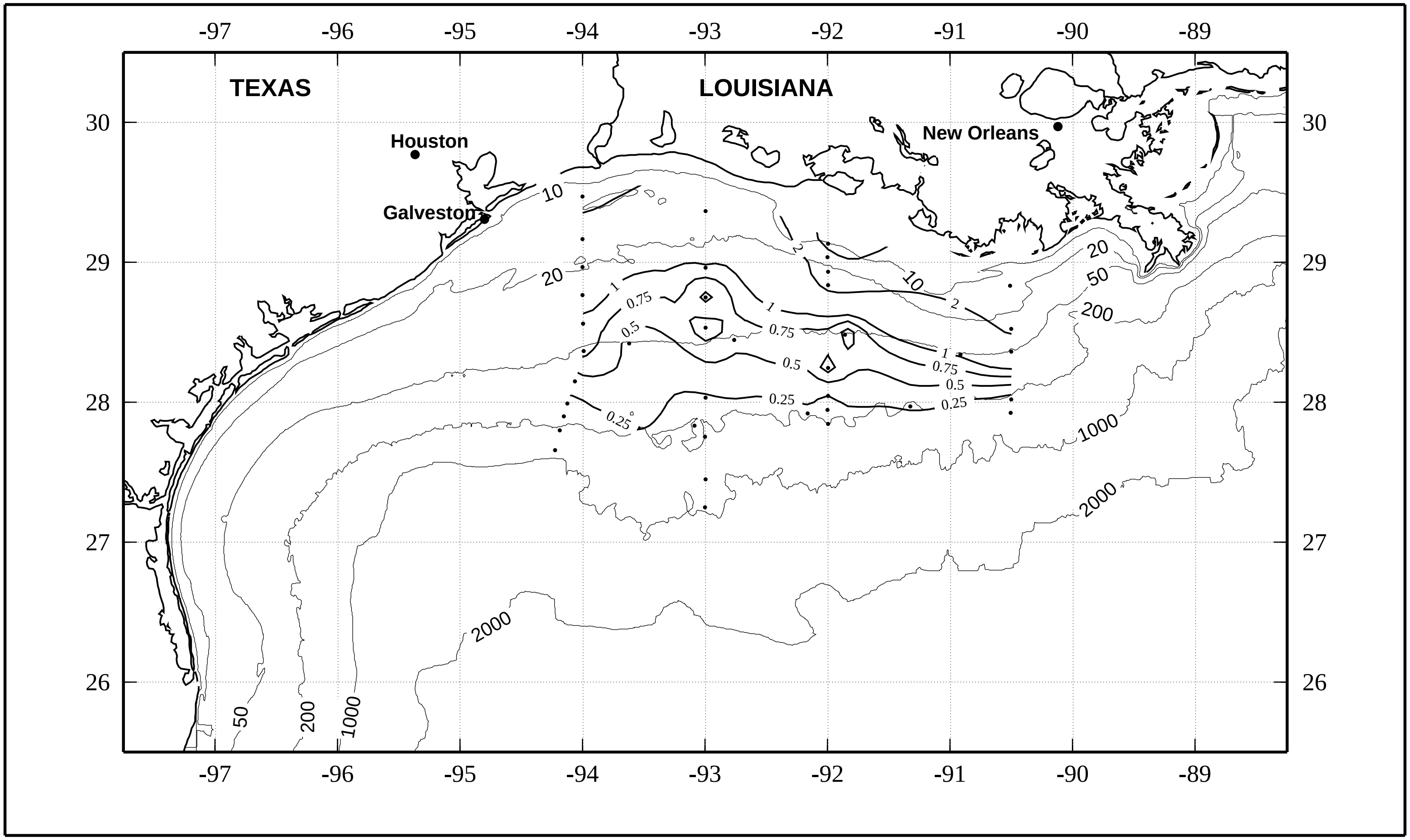

Figure 4.12.5. Suspended particulate material (mg·l^{-1}) at 4 m on LATEX A survey H04, 4-13 February 1993.

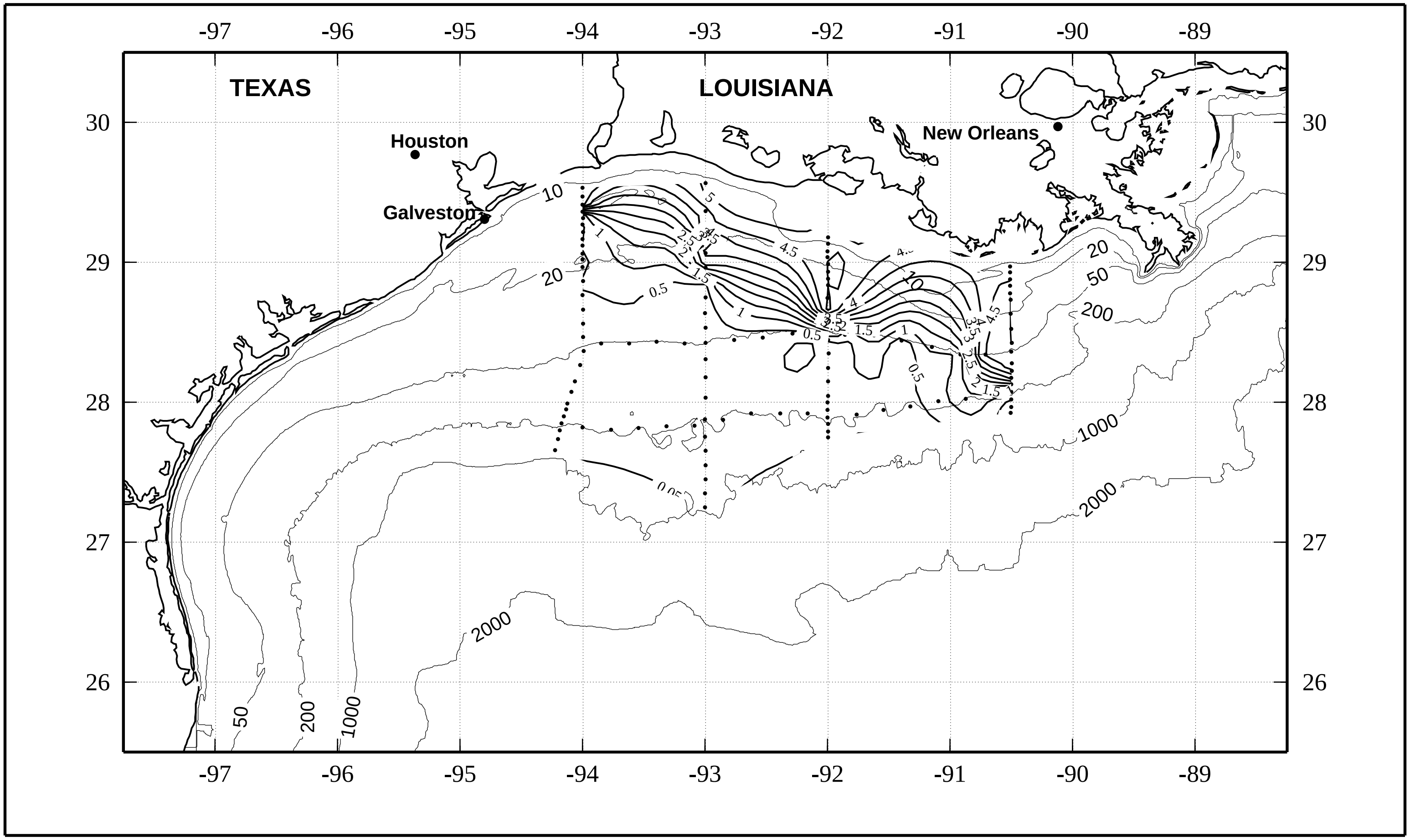

Figure 4.12.7. Relative fluorescence at 4 m on LATEX A survey H04, 4-13 February 1993.

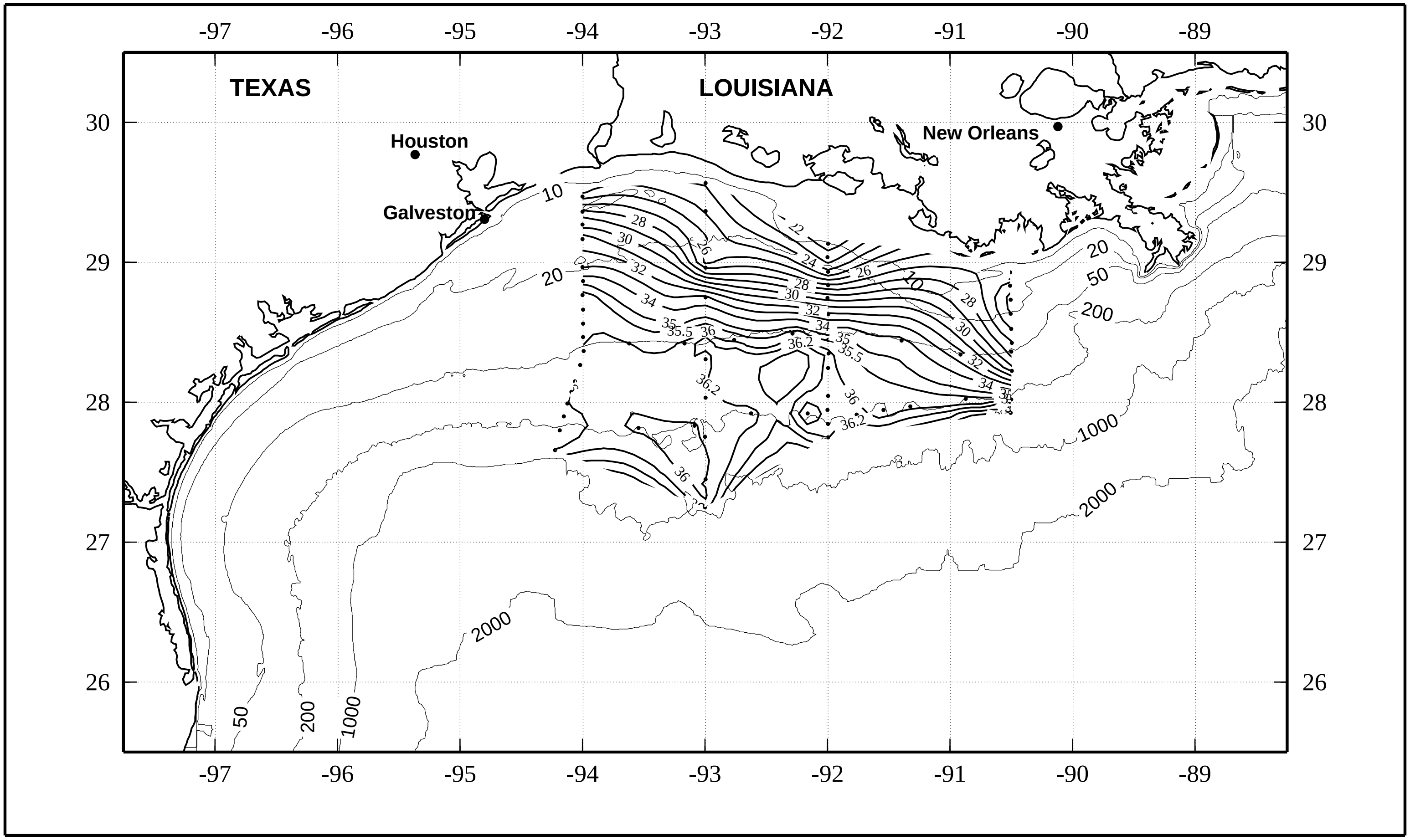

Figure 4.12.8. Bottle salinity at 4 m on LATEX A survey H04, 4-13 February 1993.

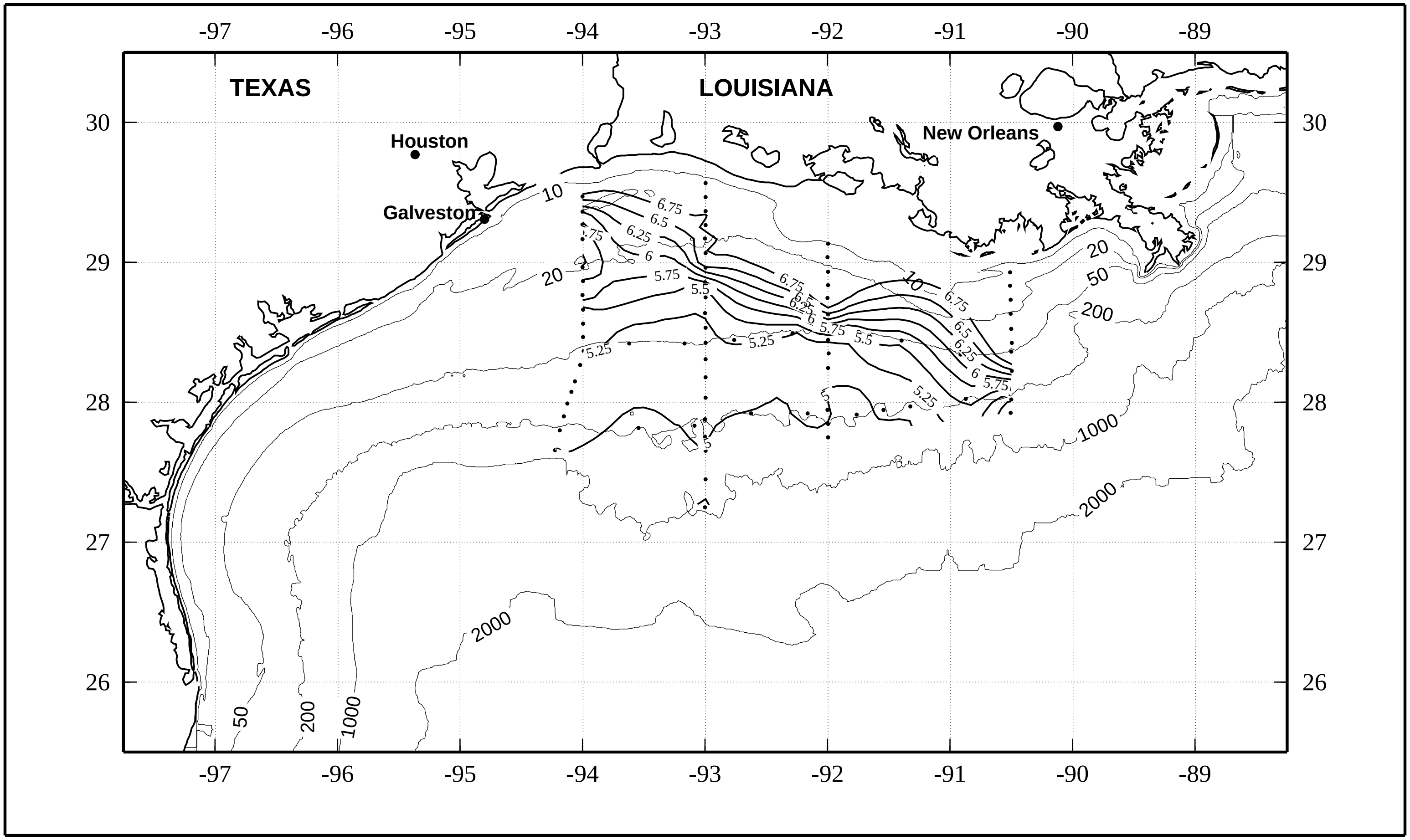

Figure 4.12.9. Dissolved oxygen (ml·l^{-1}) at 4 m on LATEX A survey H04, 4-13 February 1993.

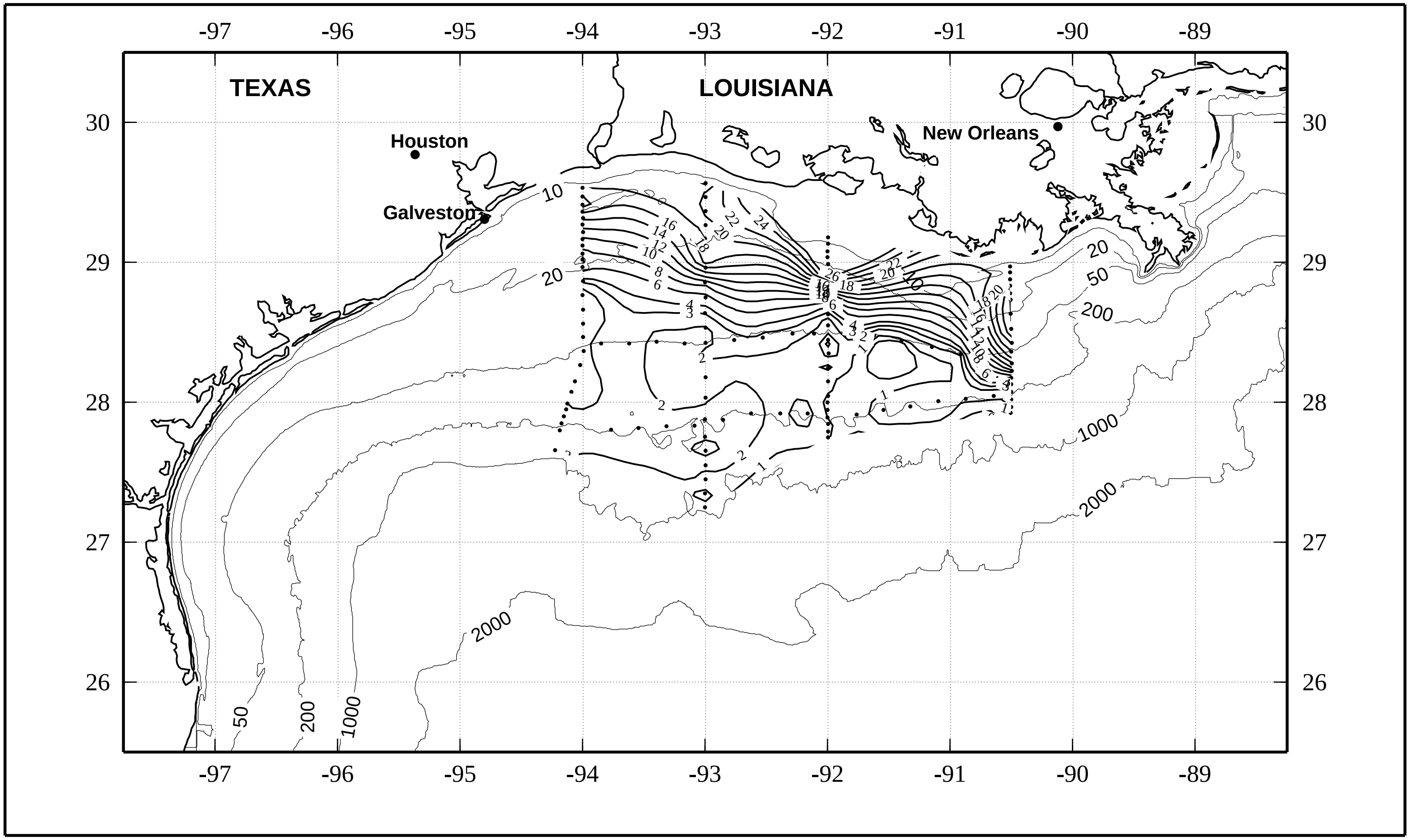

Figure 4.12.10. Silicate (μmol·l^{-1}) at 4 m on LATEX A survey H04, 4-13 February 1993.

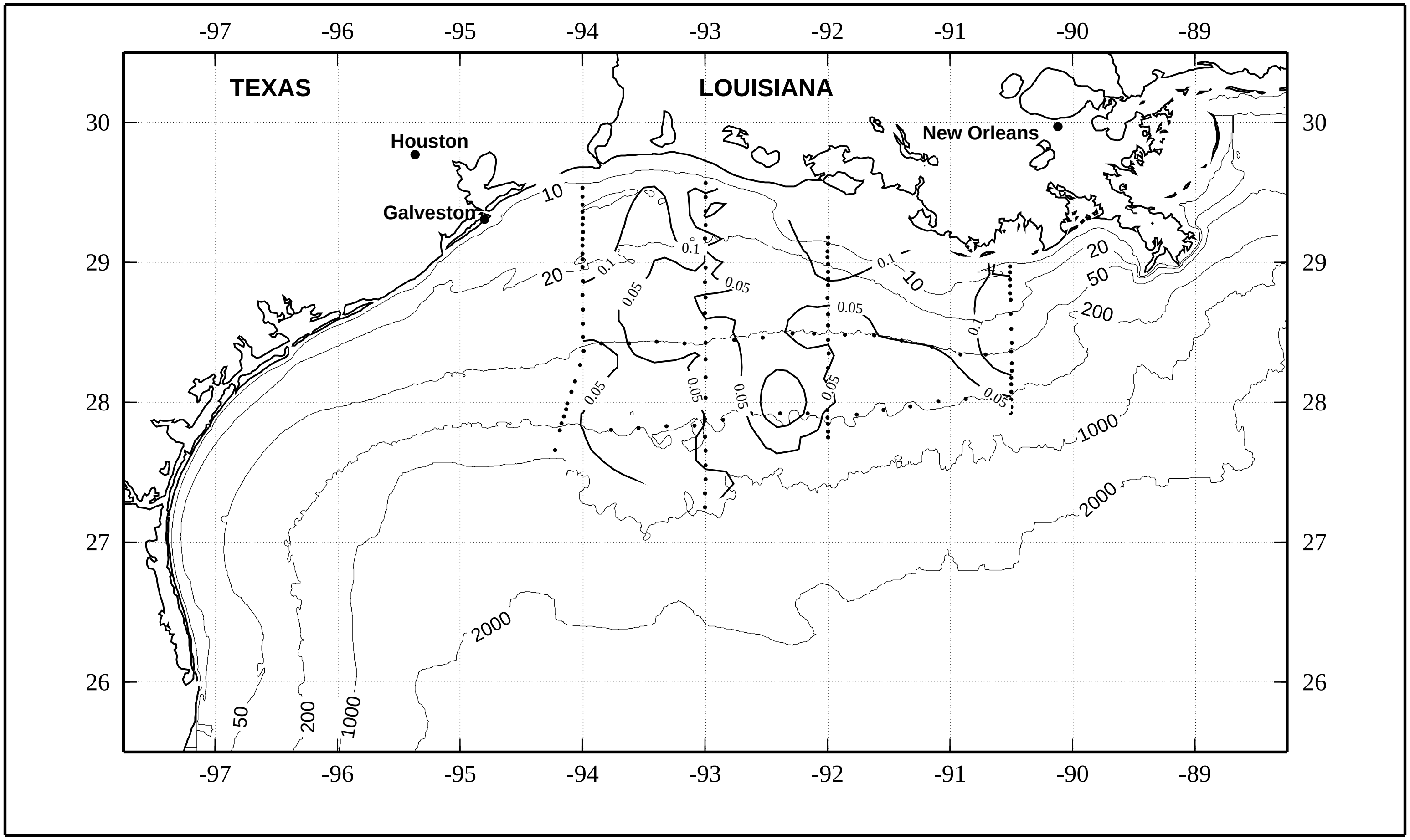

Figure 4.12.11. Phosphate (μmol·l^{-1}) at 4 m on LATEX A survey H04, 4-13 February 1993.

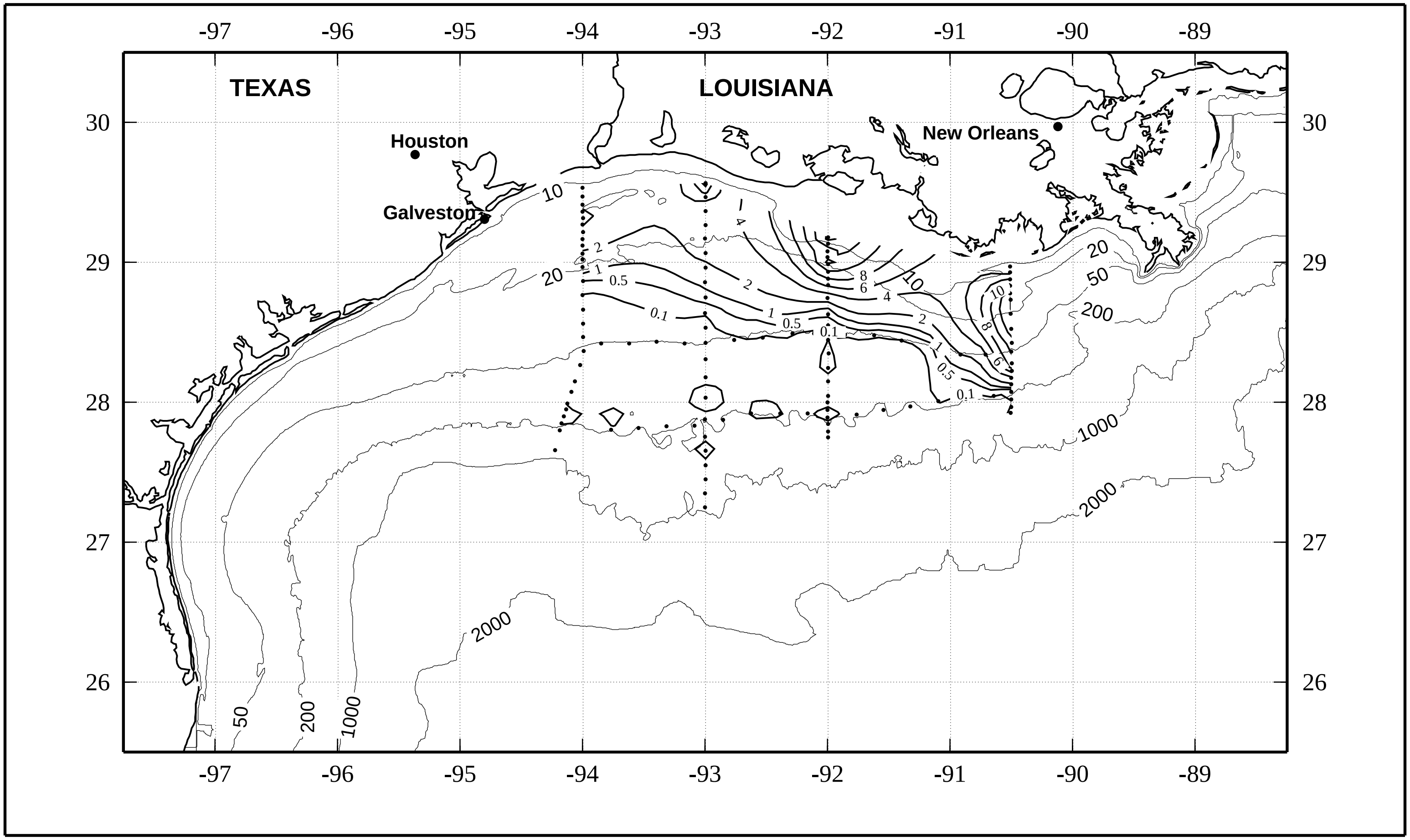

Figure 4.12.12. Nitrate (μmol·l^{-1}) at 4 m on LATEX A survey H04, 4-13 February 1993.

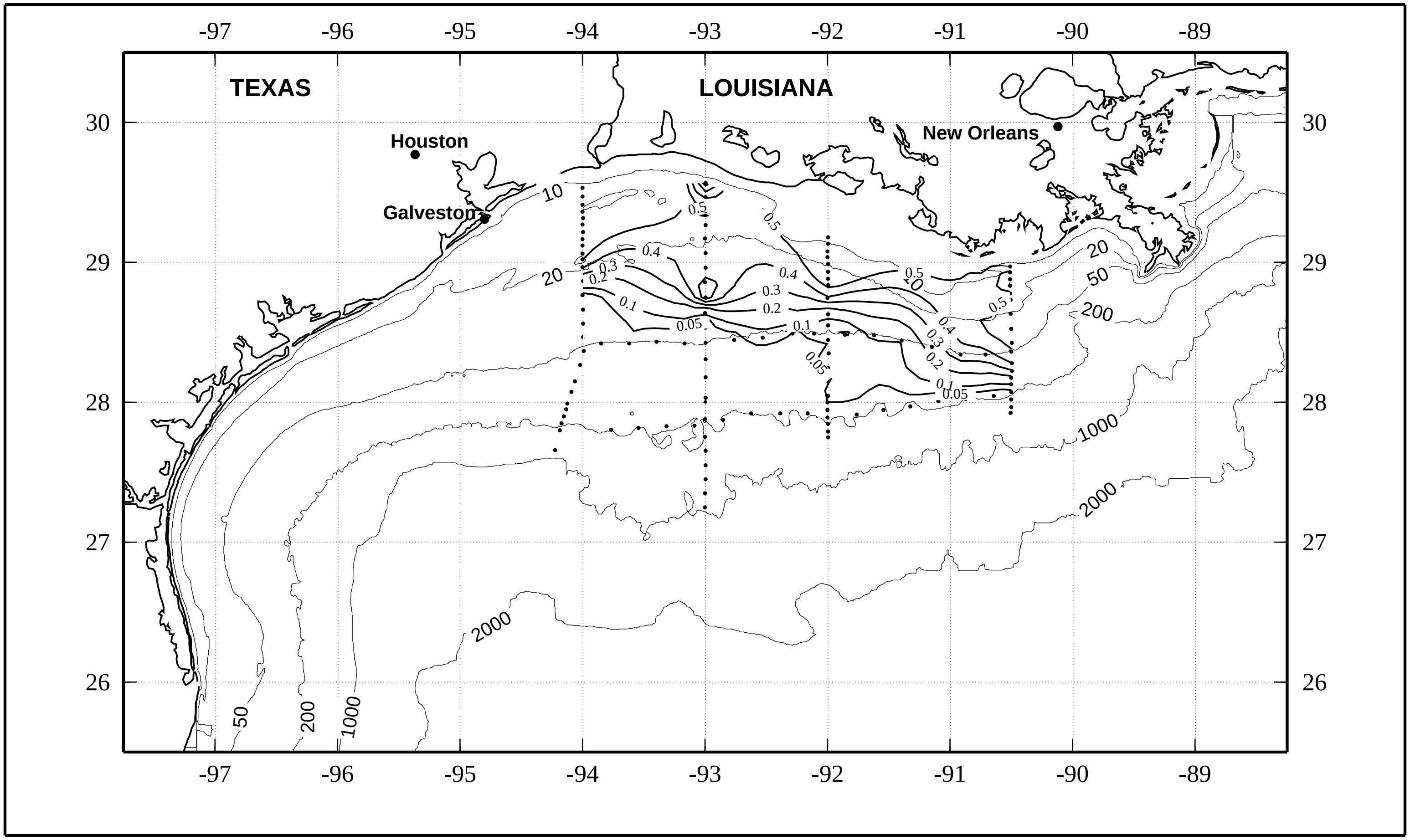

Figure 4.12.13. Nitrite (μmol·l^{-1}) at 4 m on LATEX A survey H04, 4-13 February 1993.

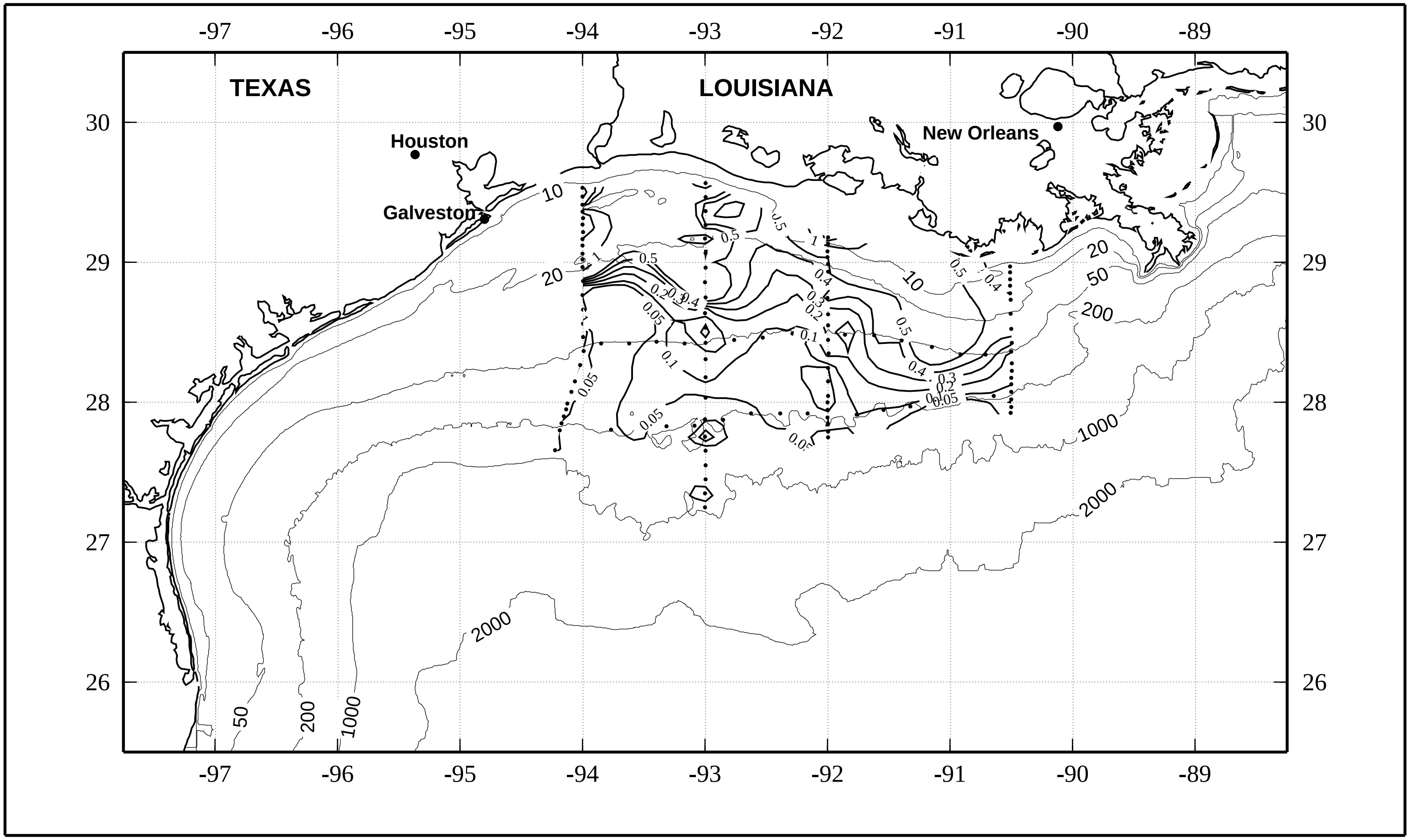

Figure 4.12.14. Ammonium ($\mu mol \cdot l^{-1}$) at 4 m on LATEX A survey H04, 4-13 February 1993.

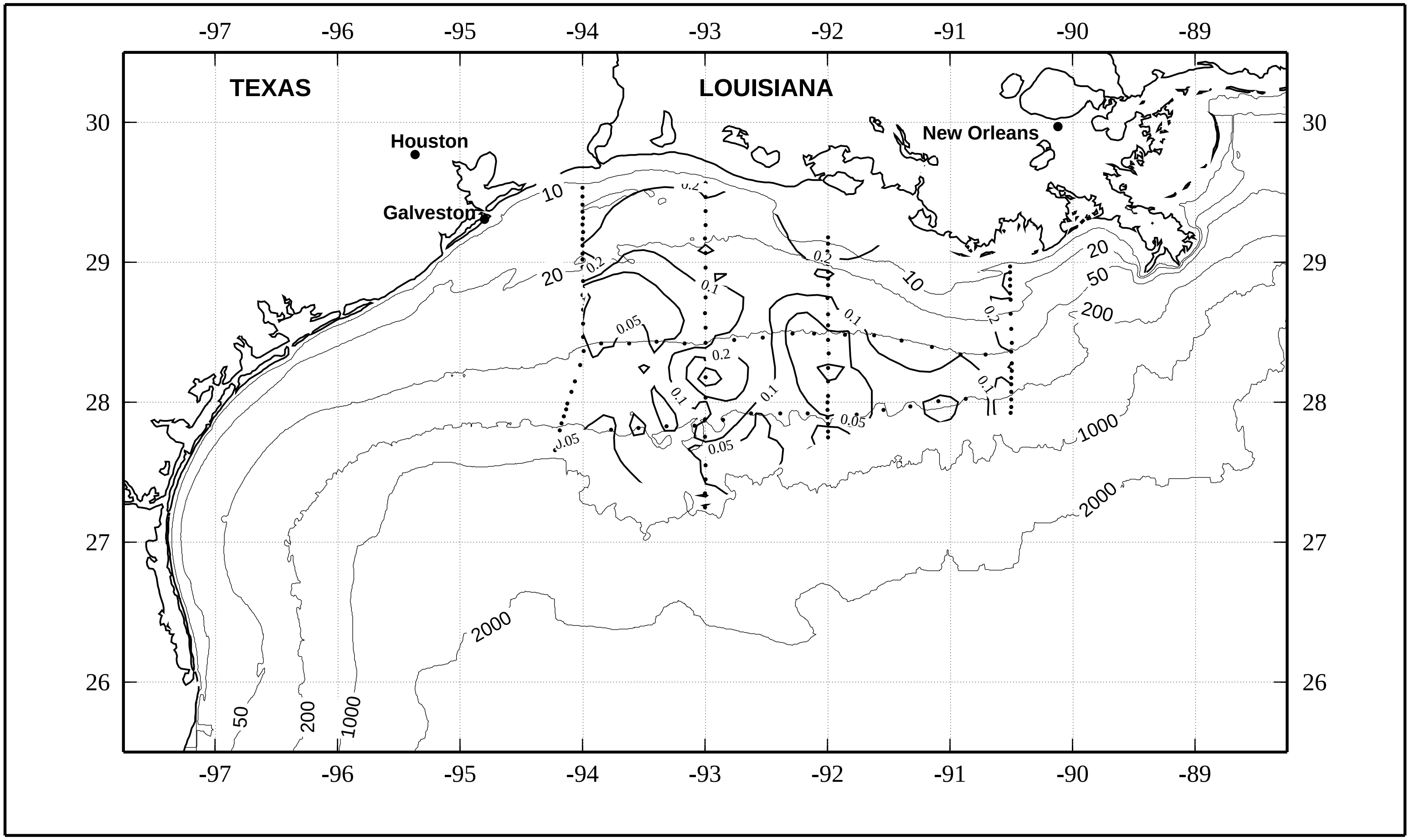

Figure 4.12.15. Urea ($\mu mol \cdot l^{-1}$) on LATEX A survey H04, 4-13 February 1993.

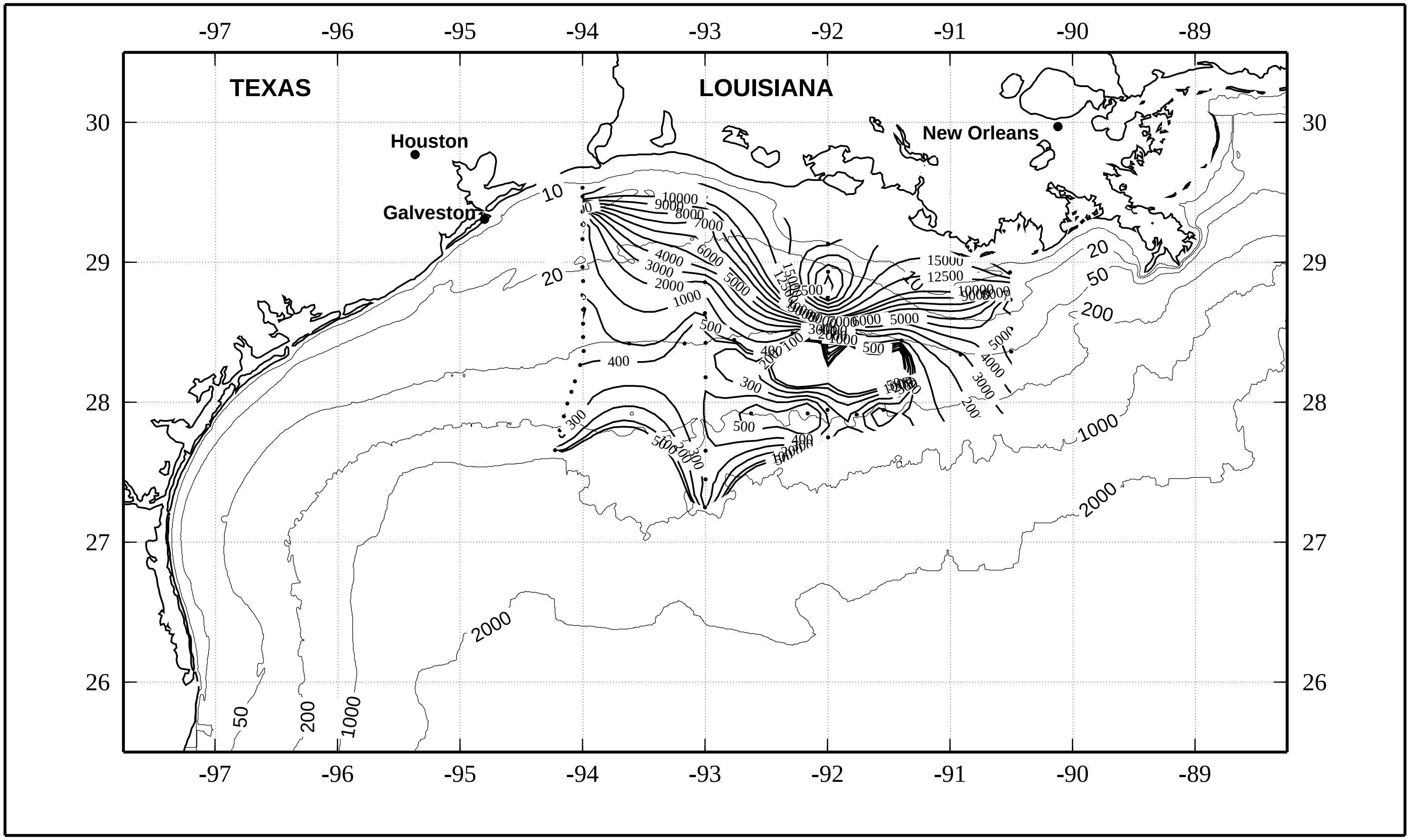

Figure 4.12.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H04, 4-13 February 1993.

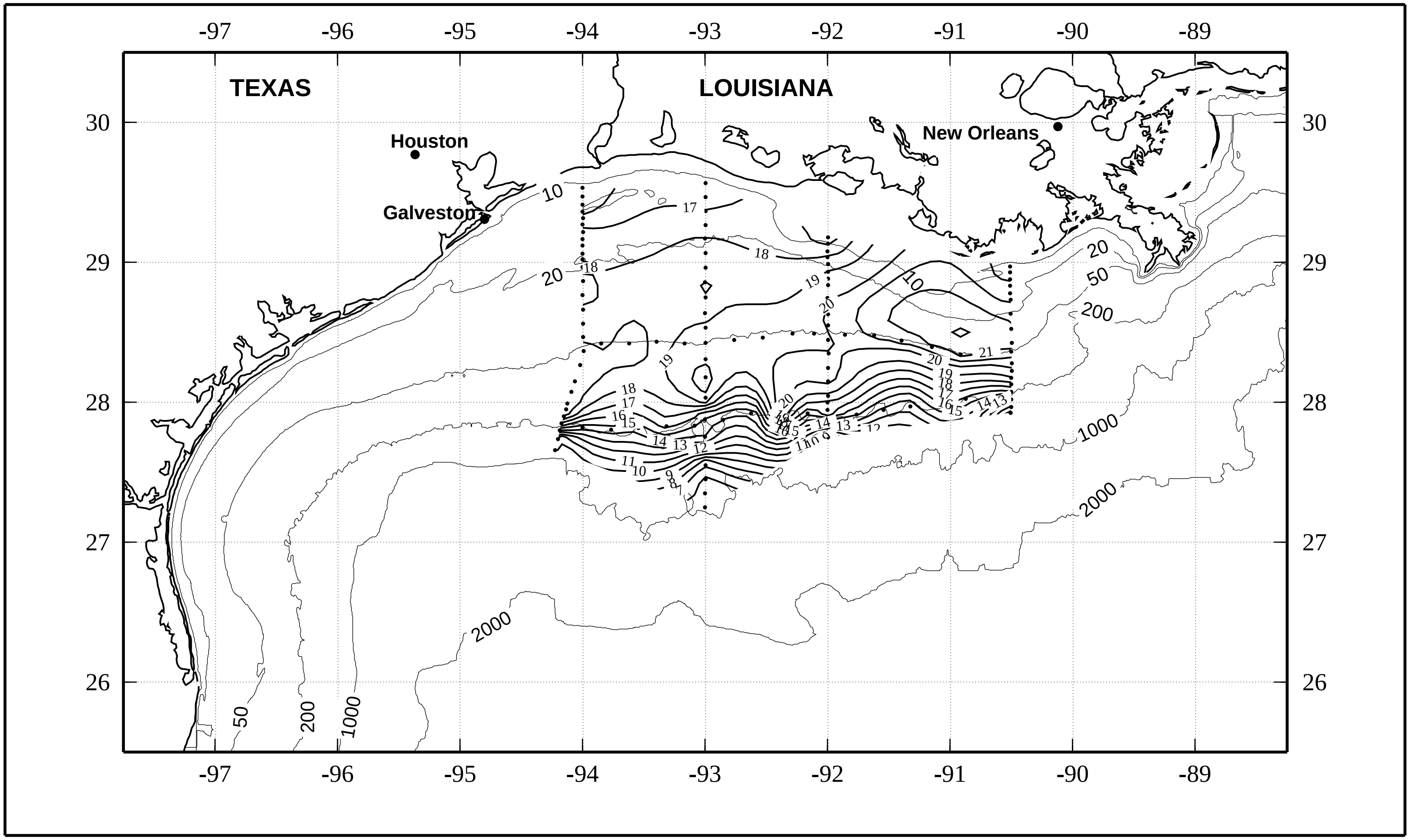

Figure 4.13.1. Potential temperature (˚C) near bottom on LATEX A survey H04, 4-13 February 1993.

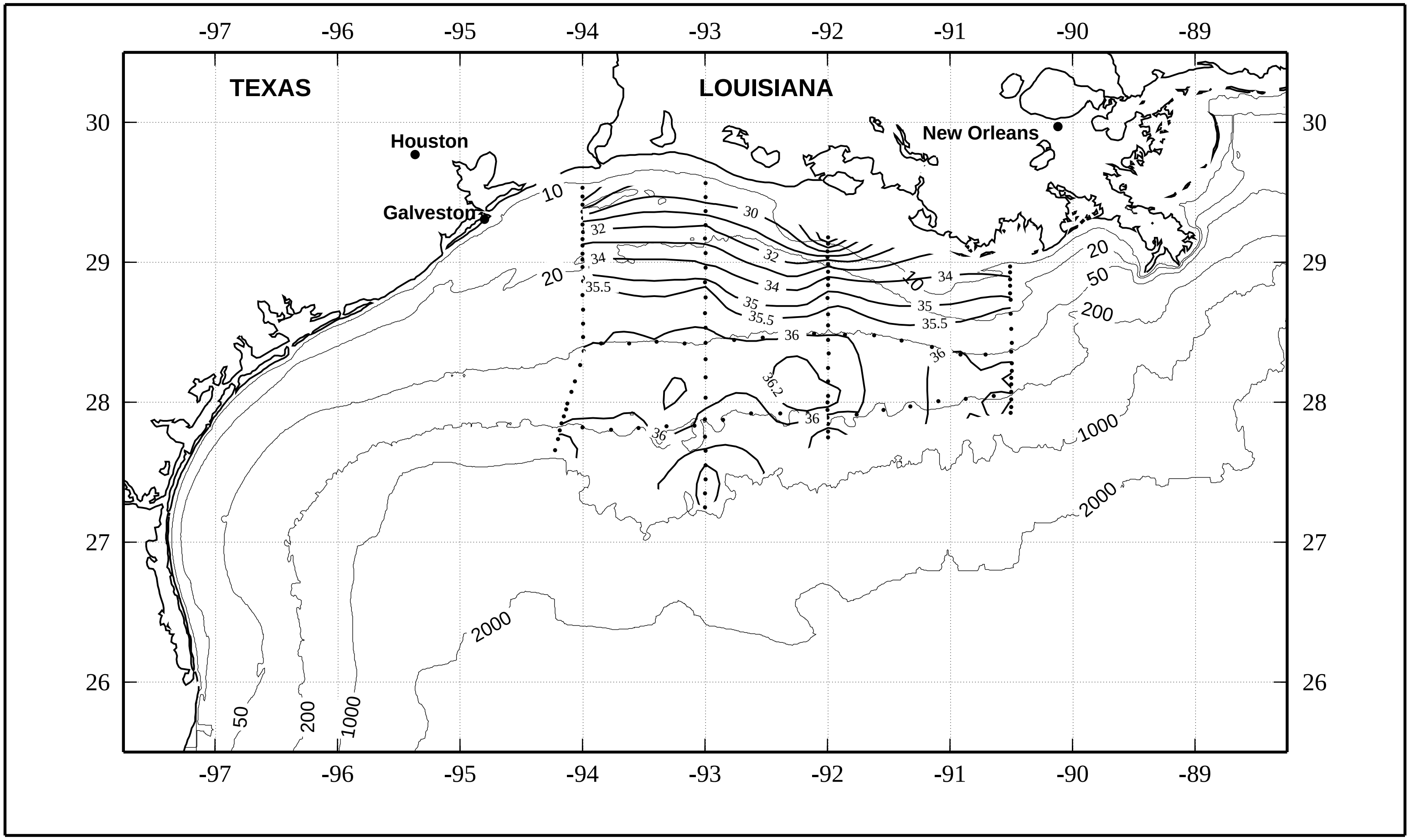

Figure 4.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H04, 4-13 February 1993.

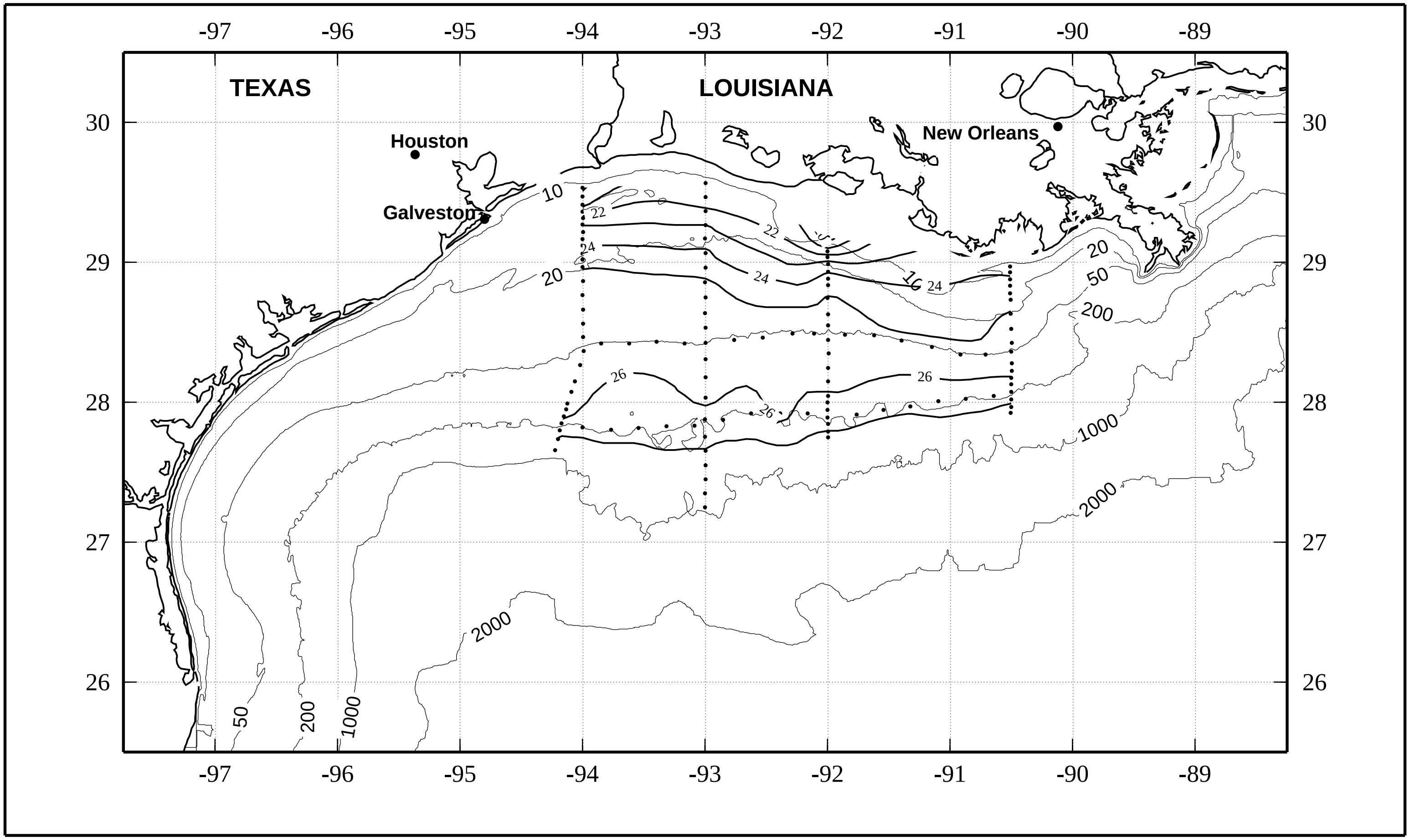

Figure 4.13.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) near bottom on LATEX A survey H04, 4-13 February 1993.

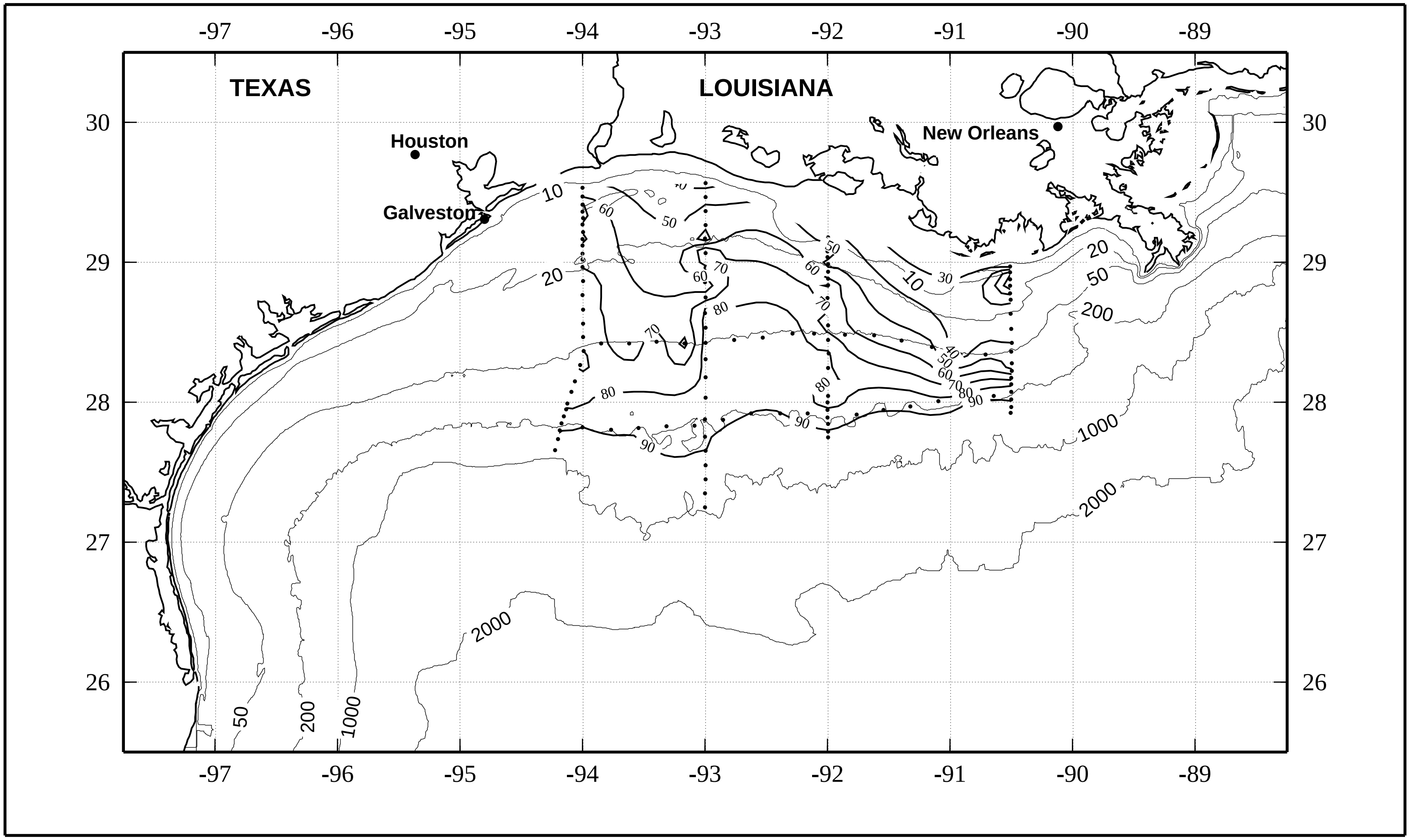

Figure 4.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H04, 4-13 February 1993.

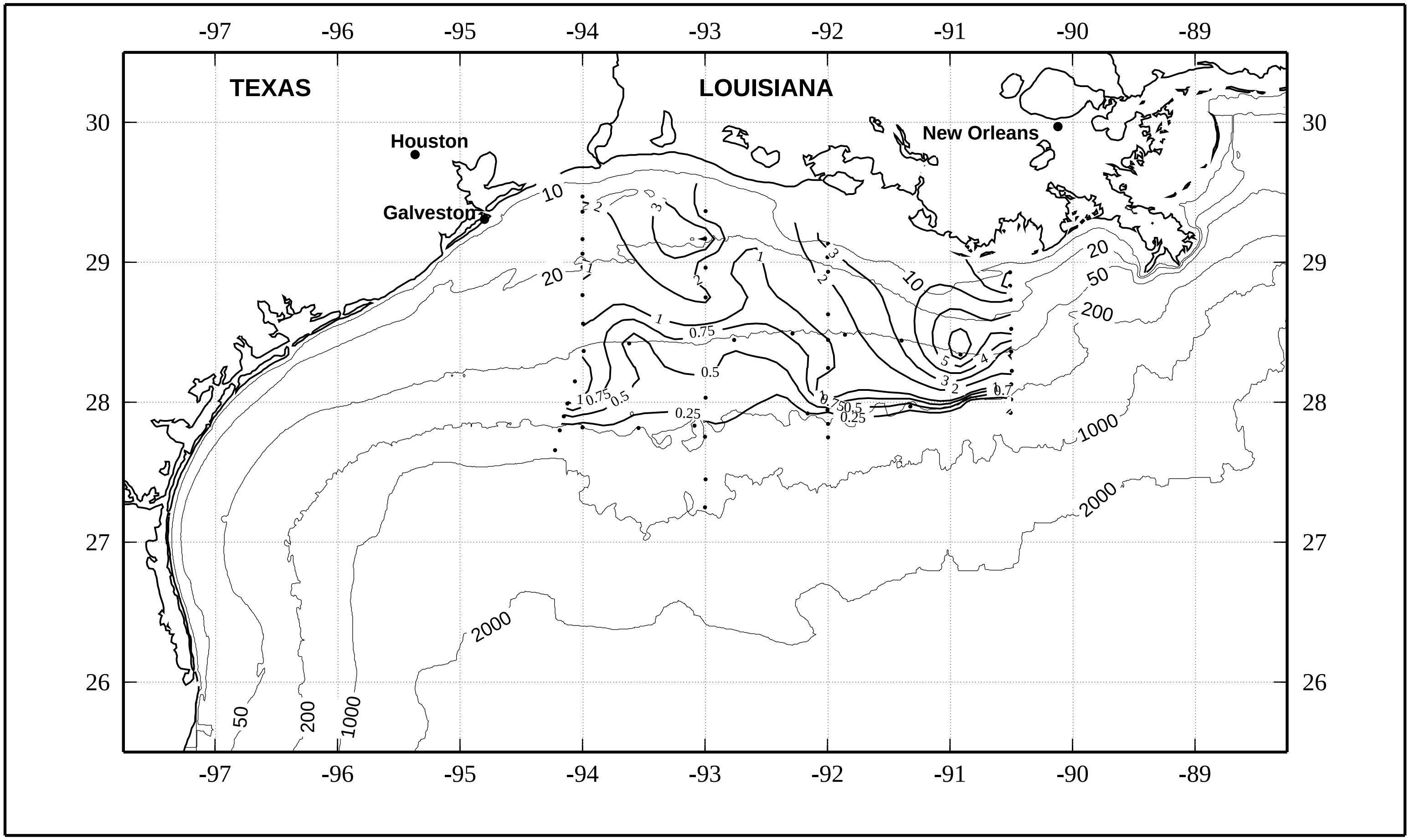

Figure 4.13.5. Suspended particulate material (mg·l^{-1}) near bottom on LATEX A survey H04, 4-13 February 1993.

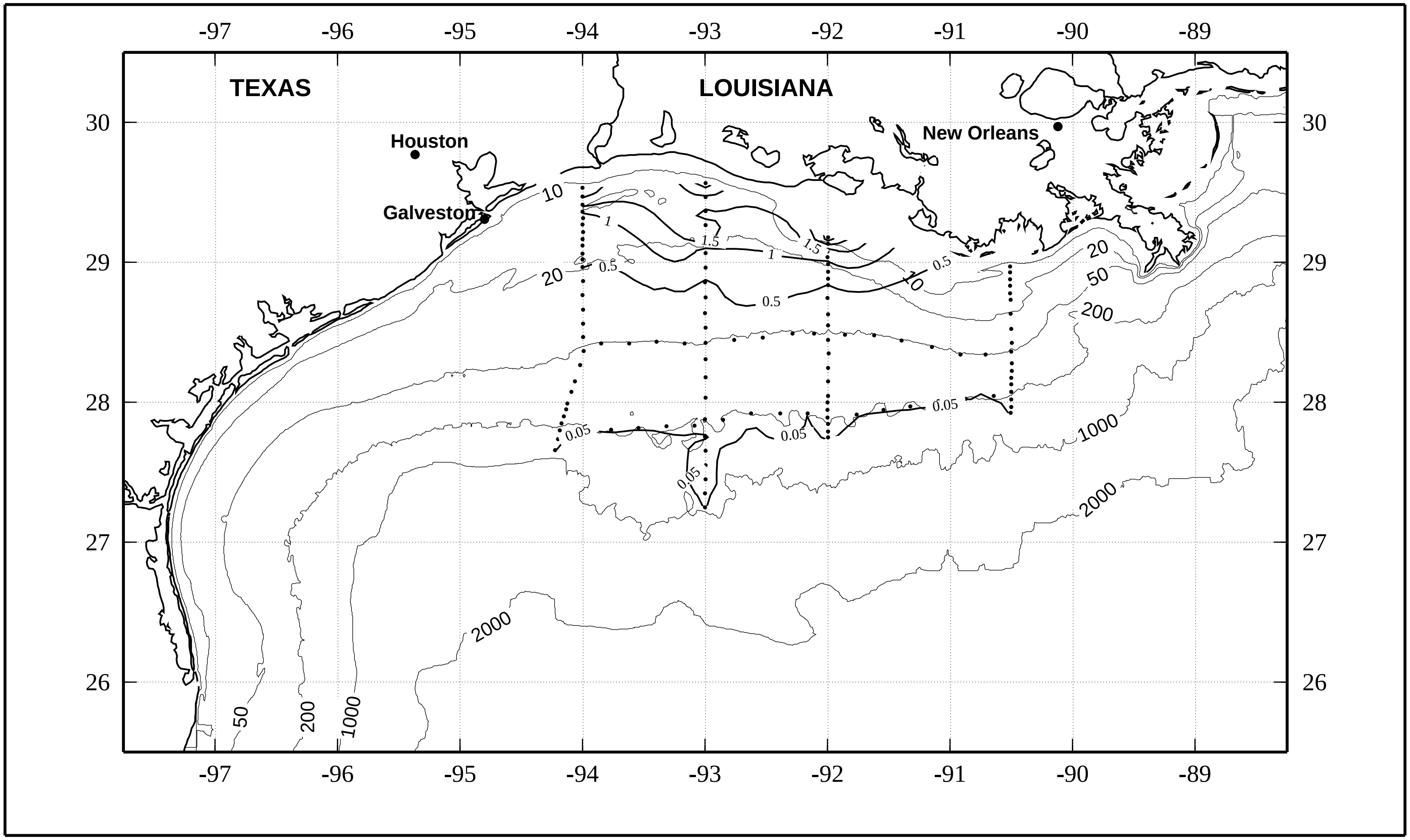

Figure 4.13.7. Relative fluorescence near bottom on LATEX A survey H04, 4-13 February 1993.

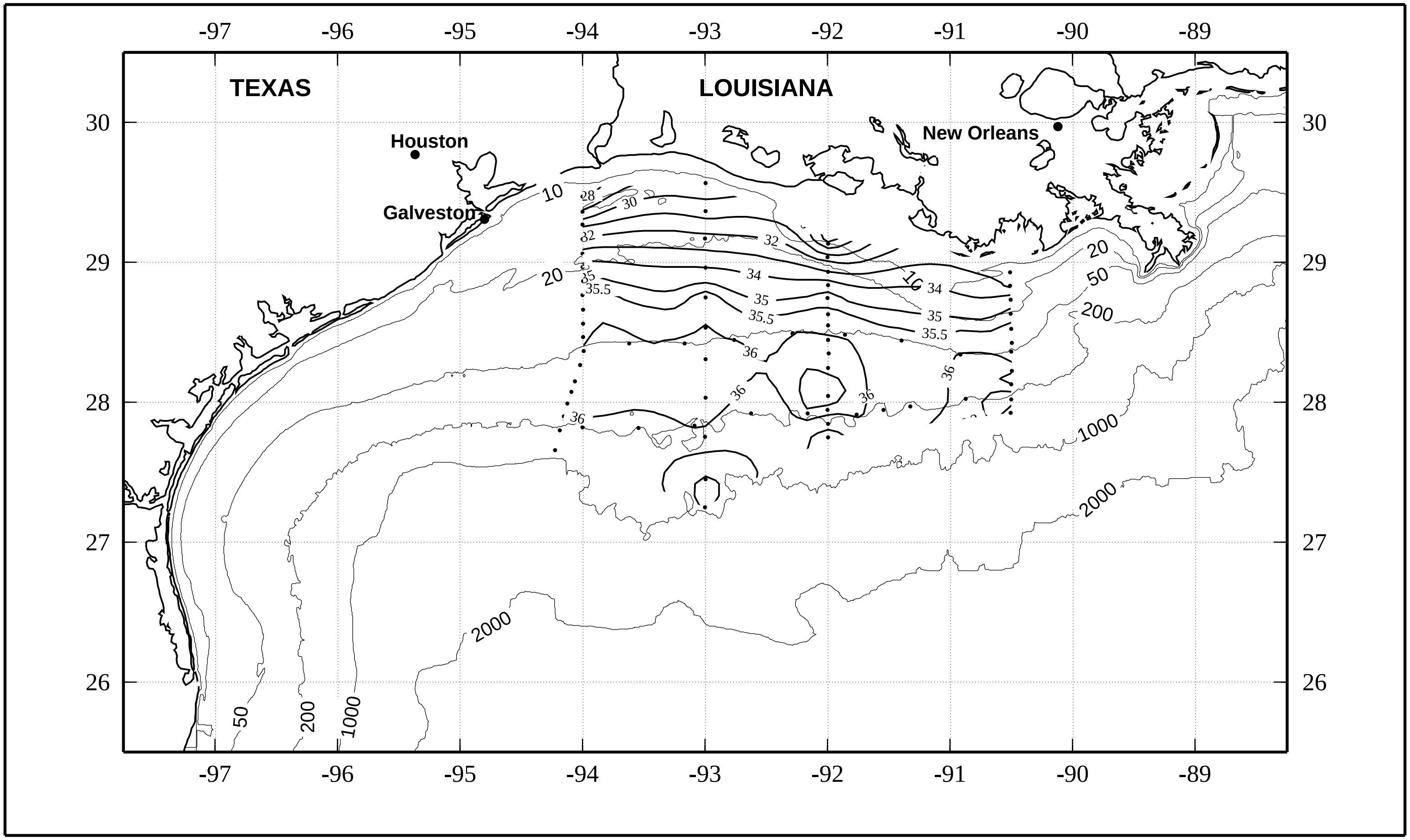

Figure 4.13.8. Bottle salinity near bottom on LATEX A survey H04, 4-13 February 1993.

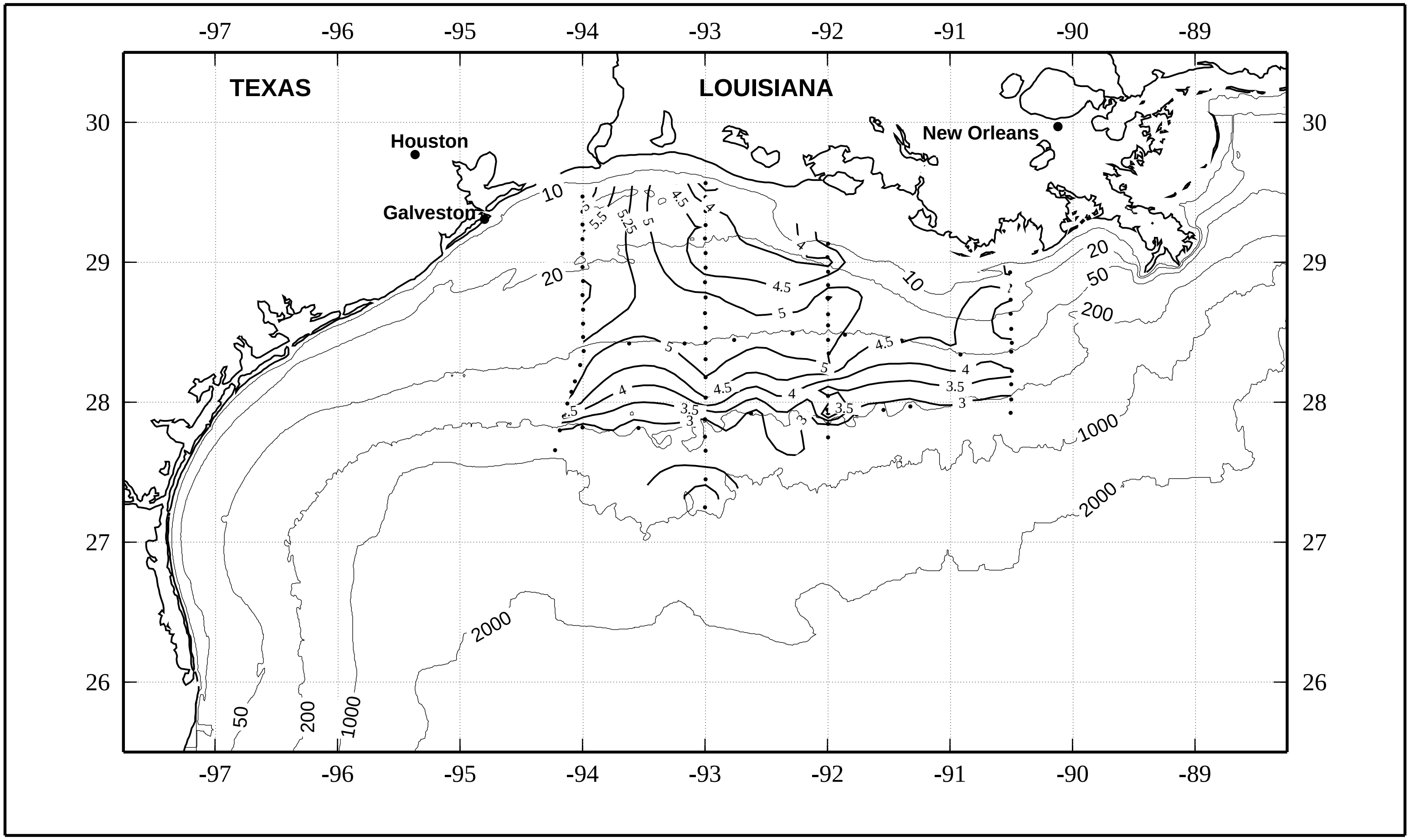

Figure 4.13.9. Dissolved oxygen ($ml \cdot l^{-1}$) near bottom on LATEX A survey H04, 4-13 February 1993.

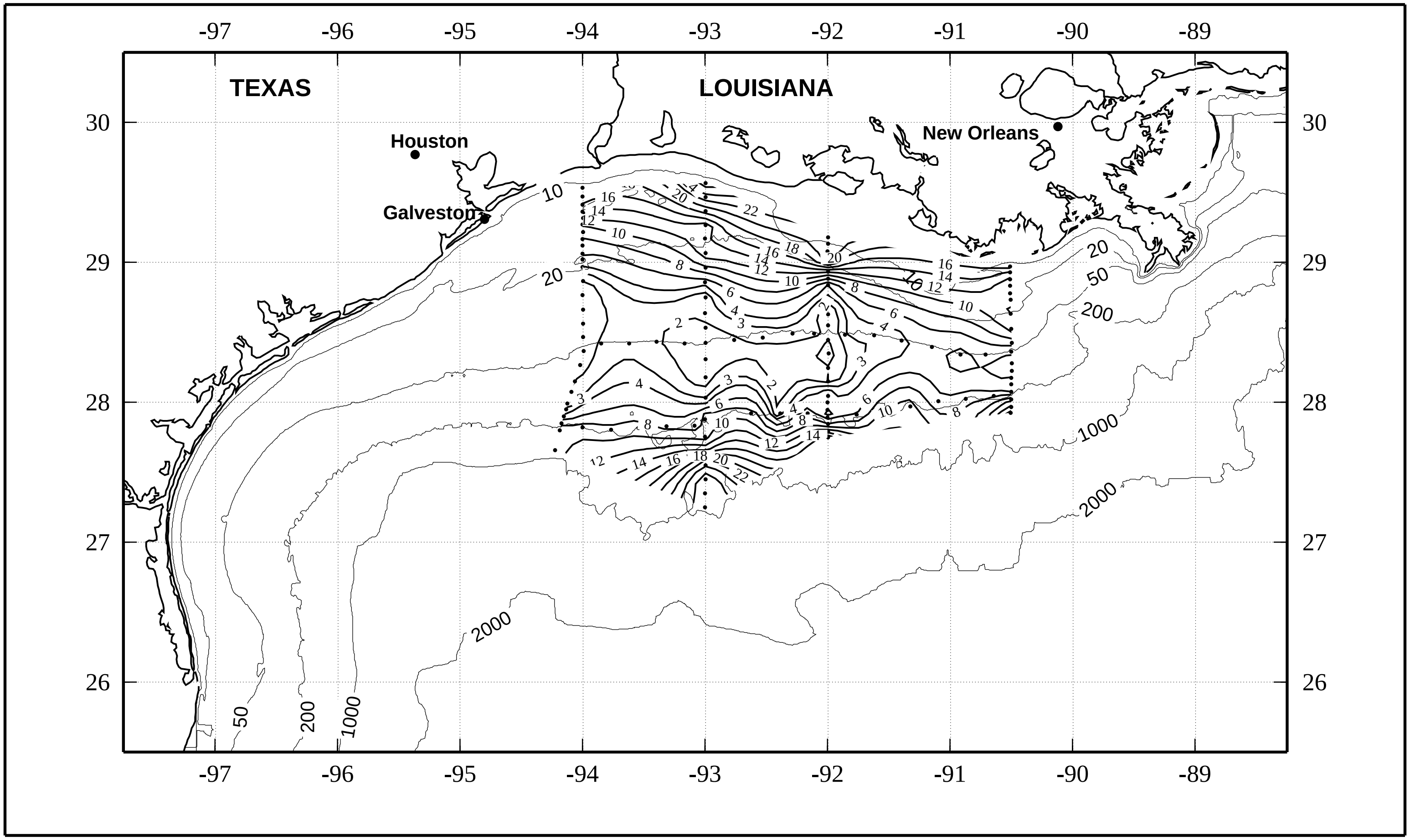

Figure 4.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H04, 4-13 February 1993.

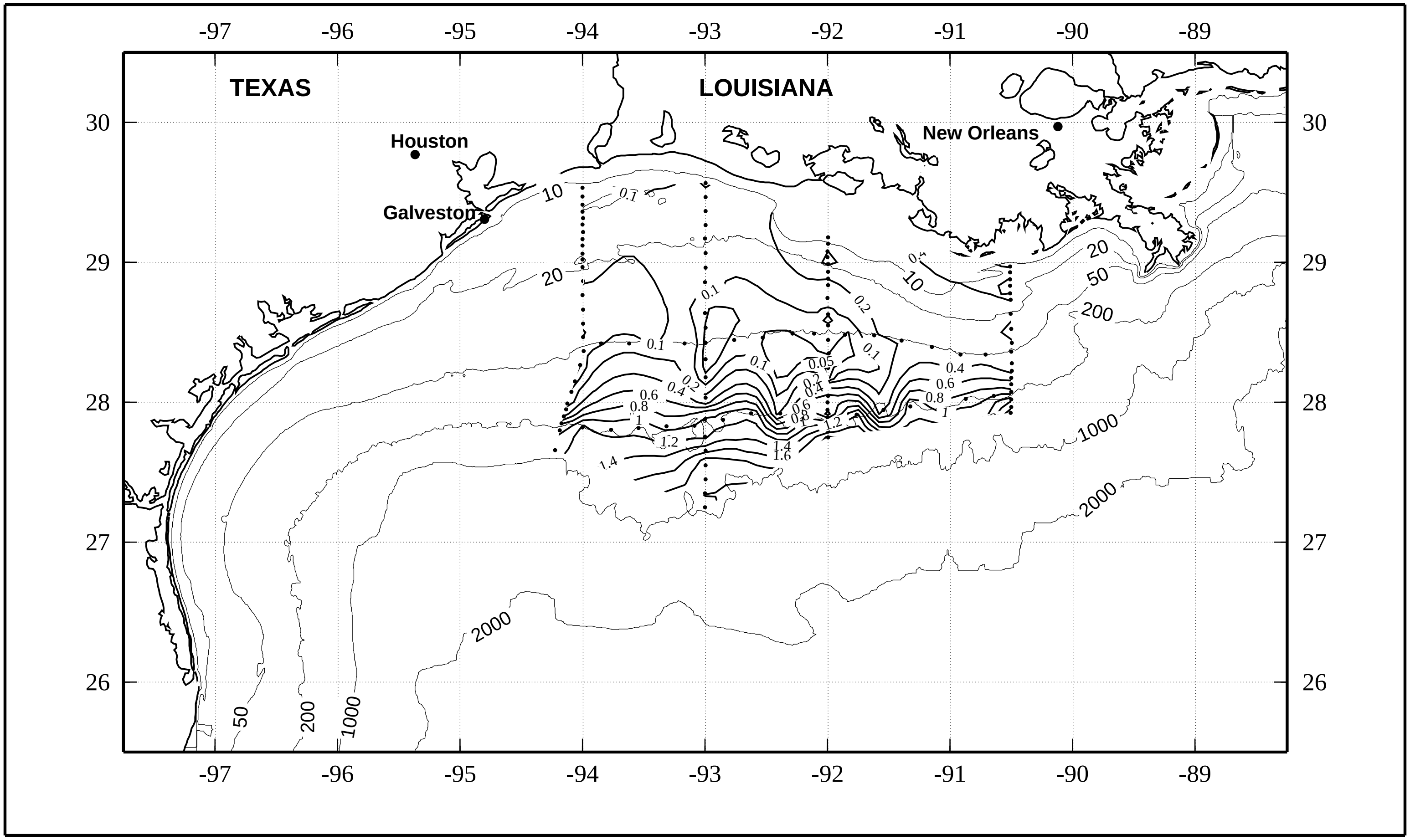

Figure 4.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H04, 4-13 February 1993.

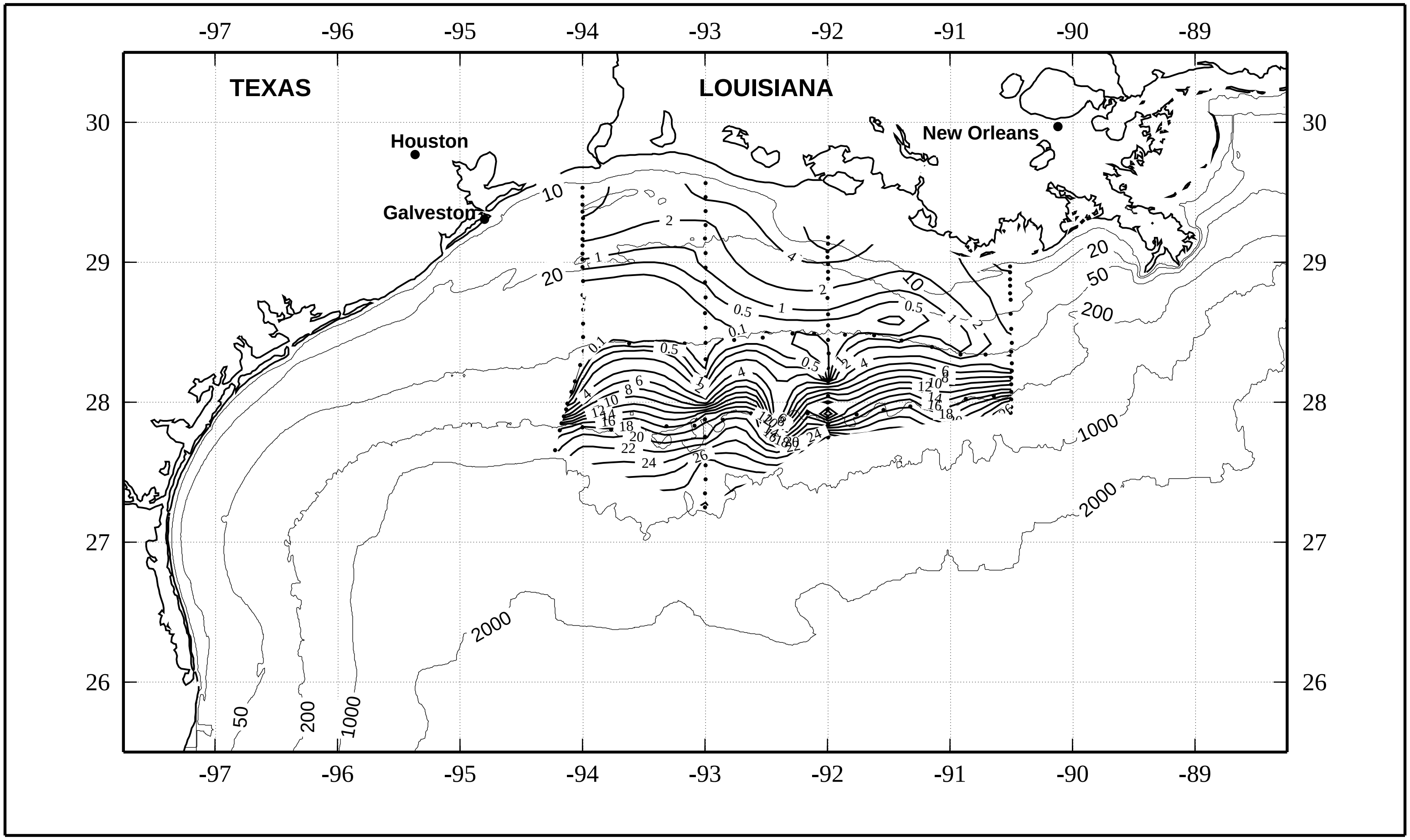

Figure 4.13.12. Nitrate ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H04, 4-13 February 1993.

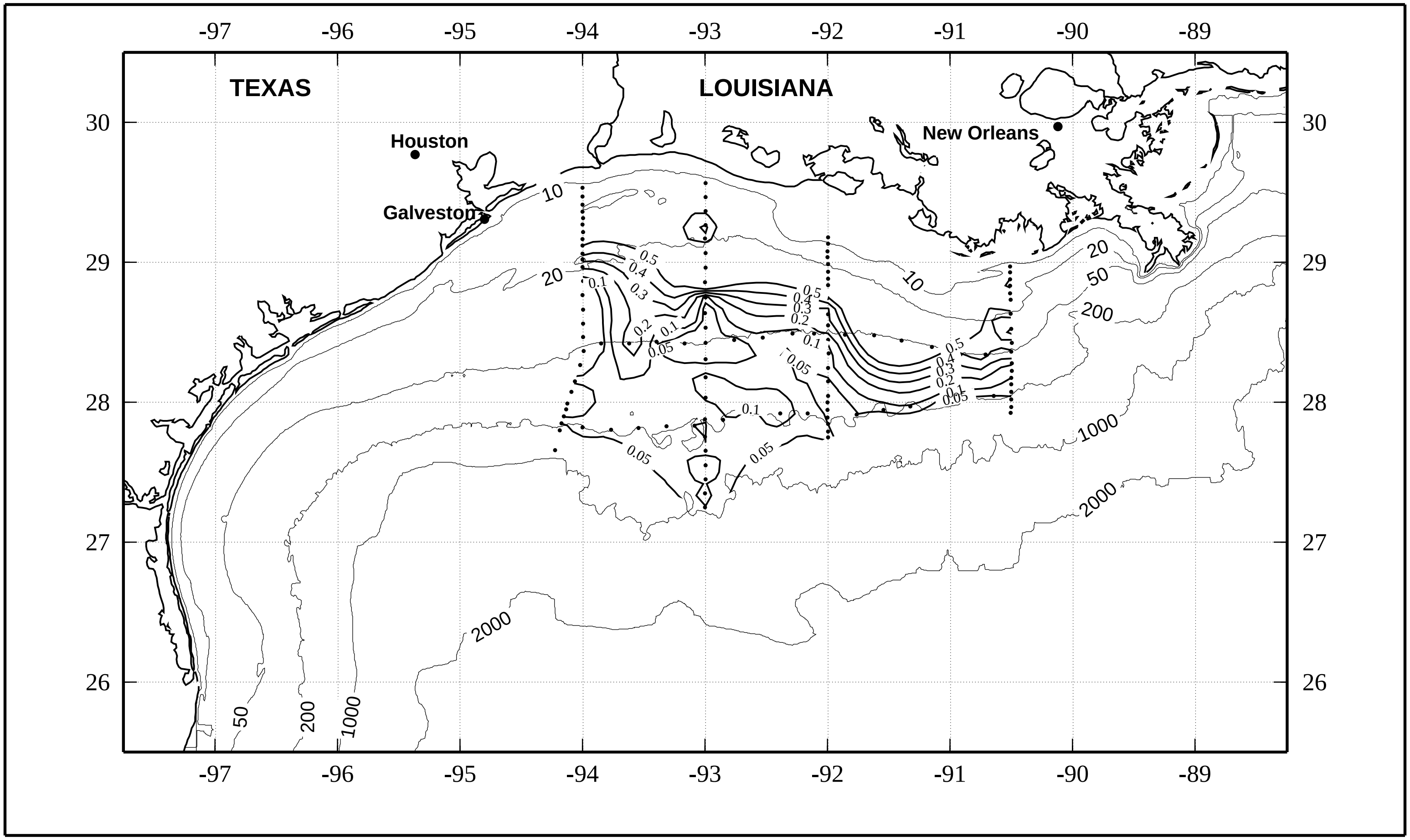

Figure 4.13.13. Nitrite (μmol·l^{-1}) near bottom on LATEX A survey H04, 4-13 February 1993.

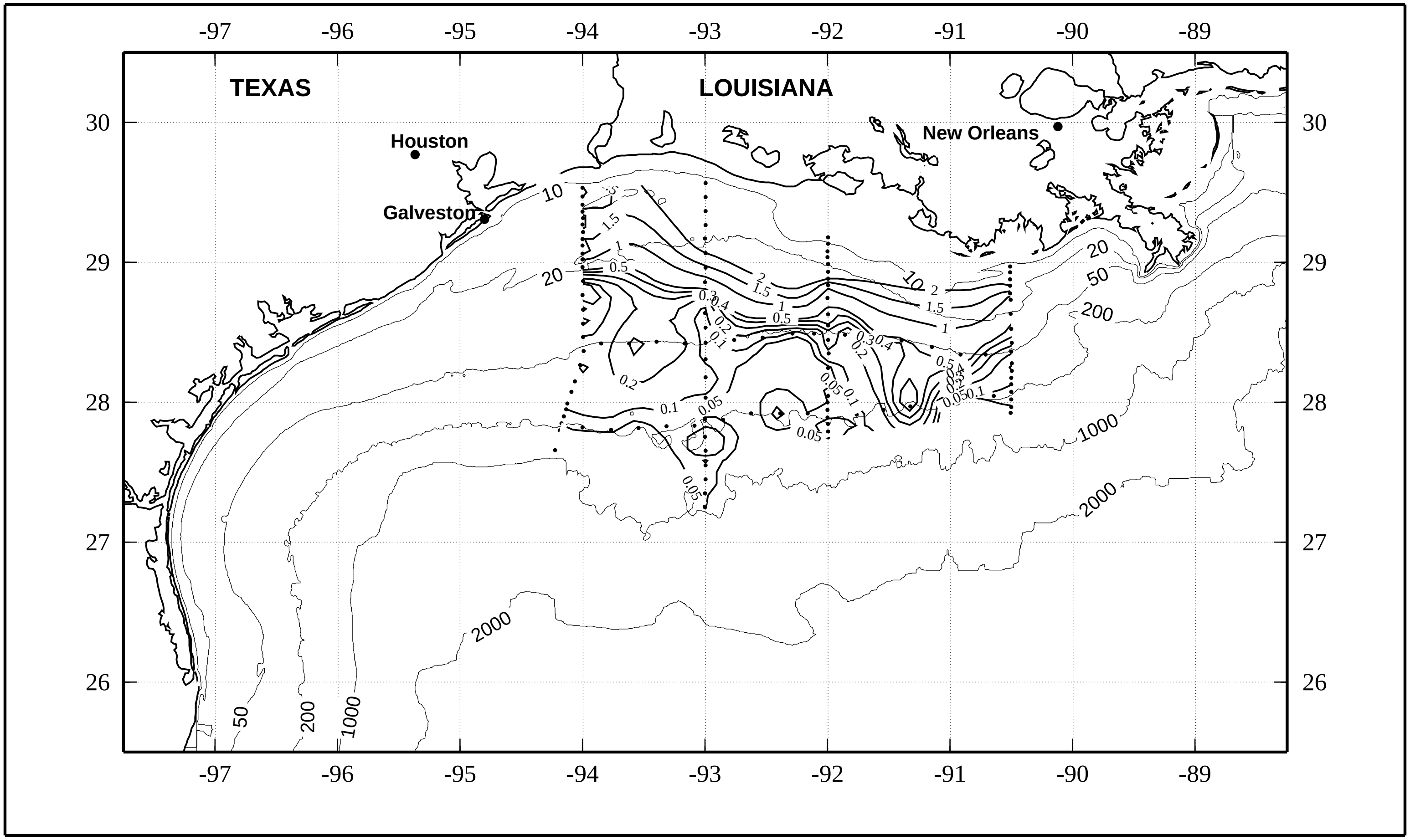

Figure 4.13.14. Ammonium (μmol·l^{-1}) near bottom on LATEX A survey H04, 4-13 February 1993.

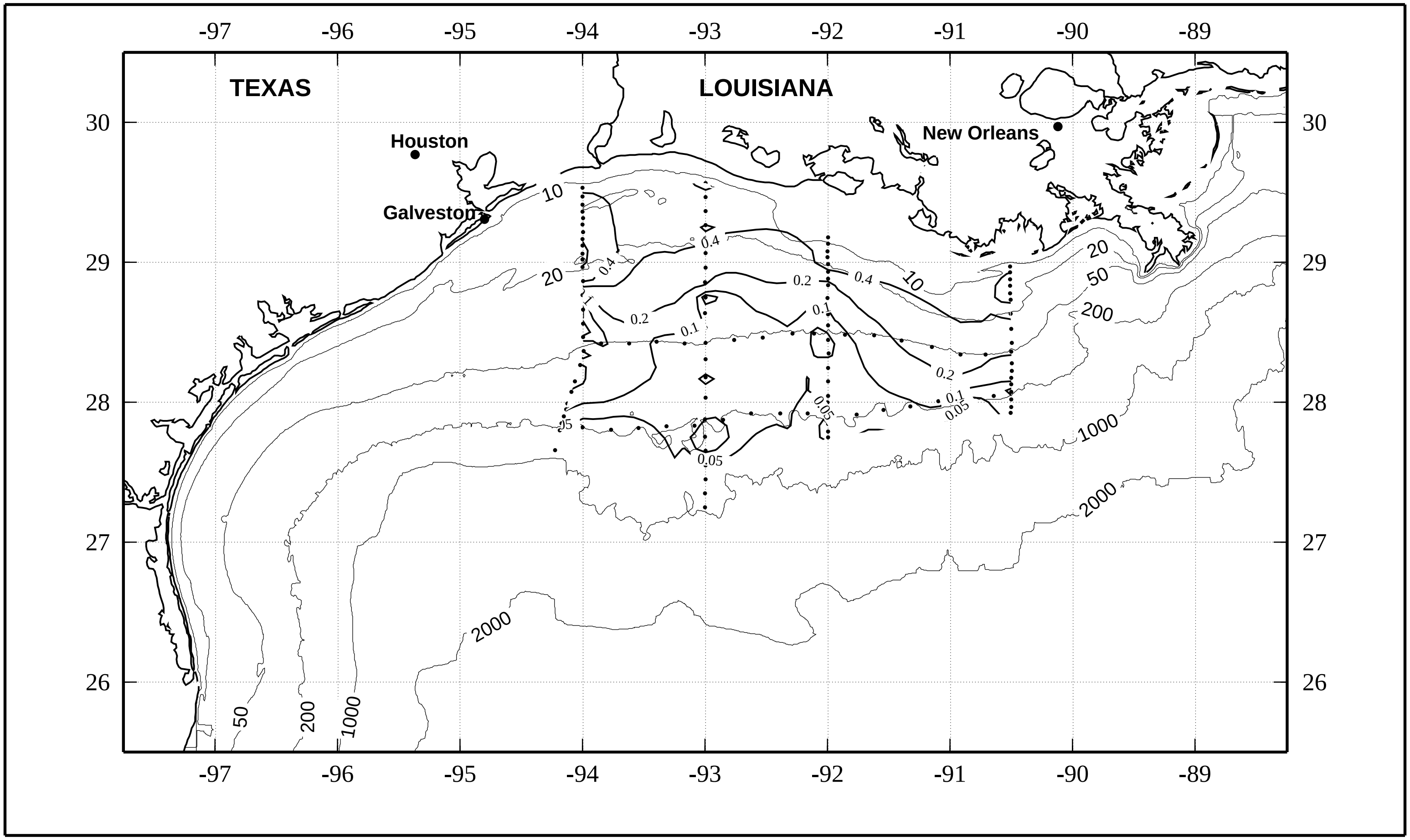

Figure 4.13.15. Urea (μmol·l^{-1}) on LATEX A survey H04, 4-13 February 1993.

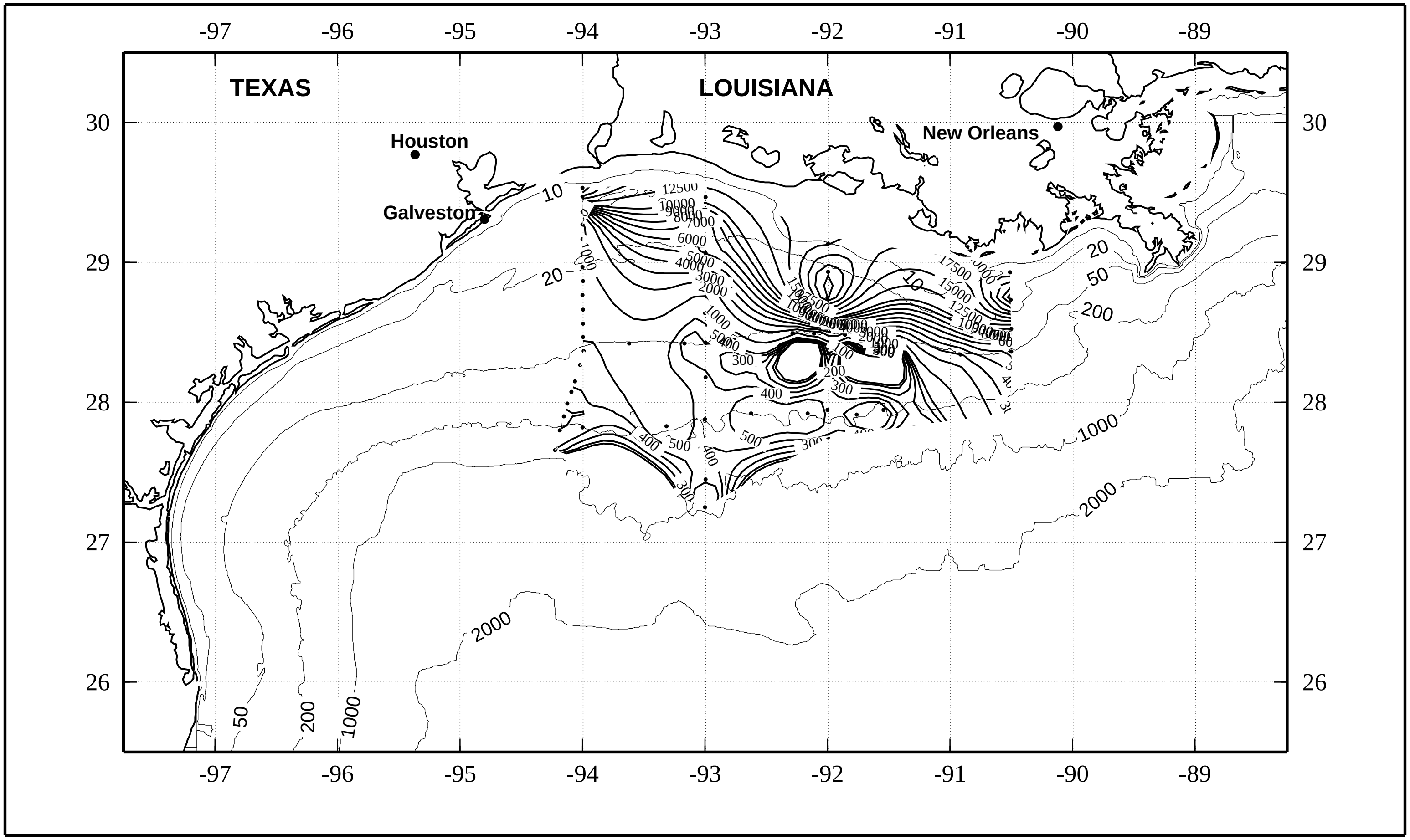

Figure 4.13.16. Chlorophyll a ($ng \cdot l^{-1}$) at the chlorophyll maximum on LATEX A survey H04, 4-13 February 1993.

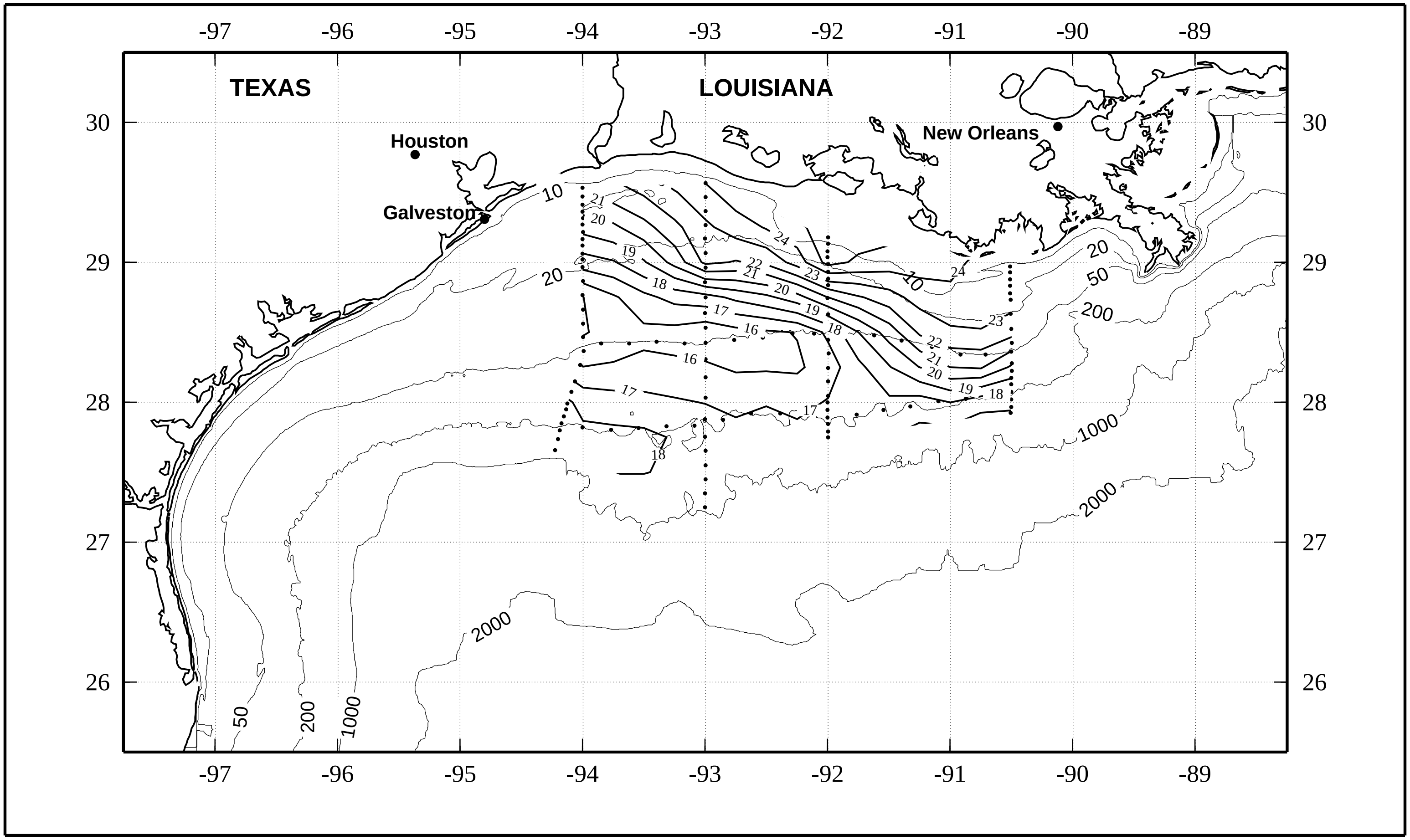

Figure 4.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H04, 4-13 February 1993.

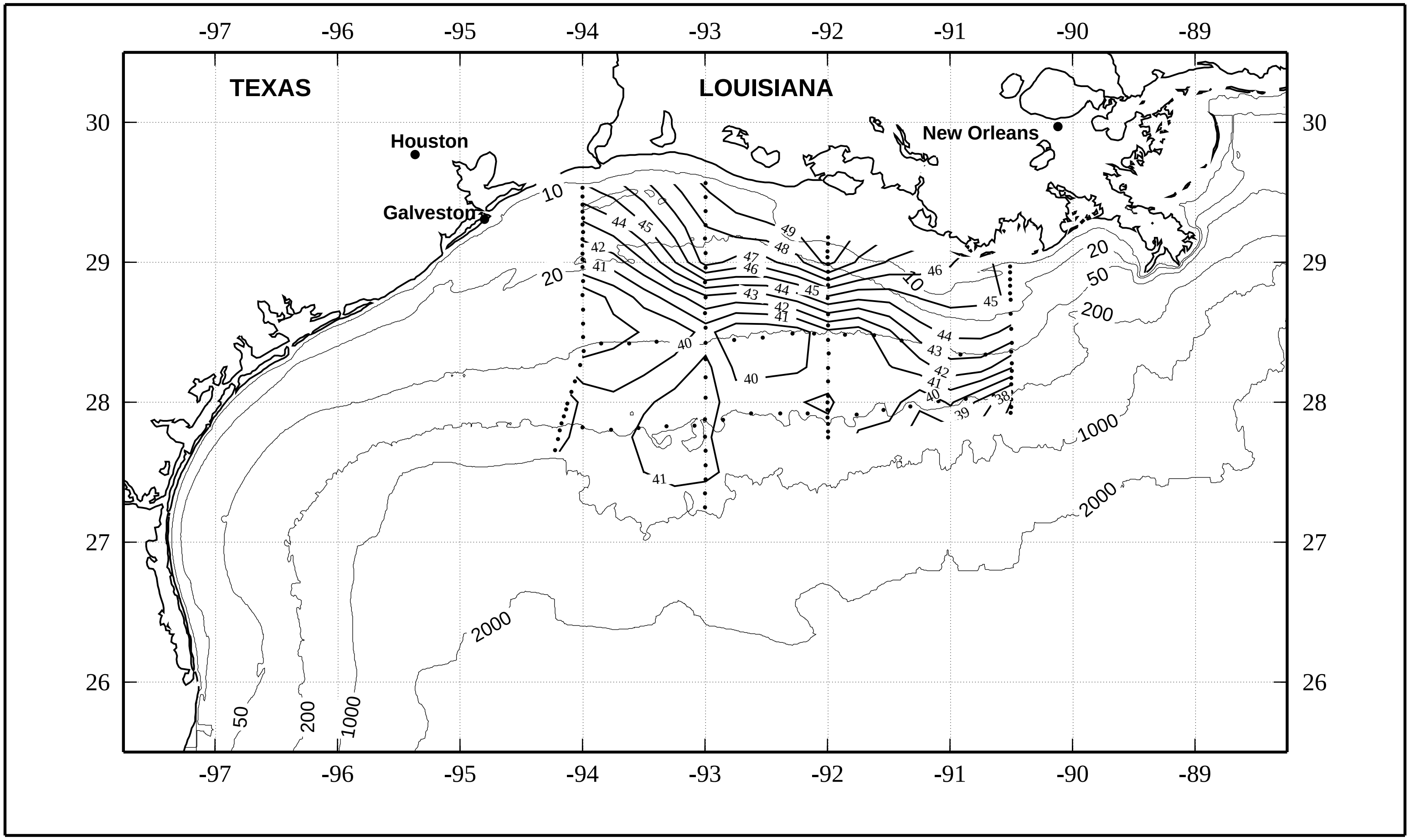

Figure 4.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H04, 4-13 February 1993.

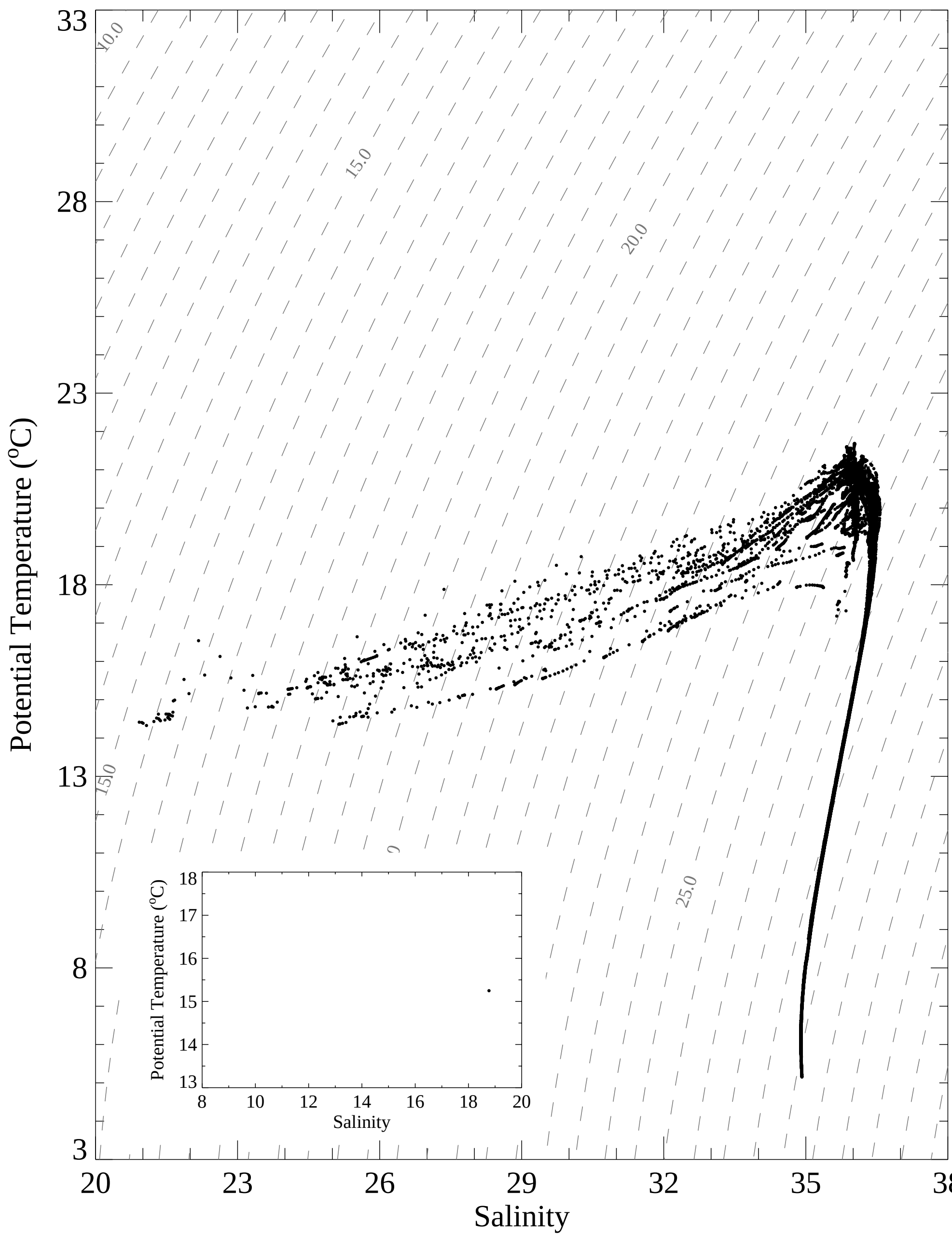

Figure 4.16. Composite potential temperature-salinity diagram for stations from cruise H04, 4 - 13 February 1993. Inset shows points with salinity less than 20.

LATEX A Hydrographic Survey Data Report

APPENDIX E: Cruise H05
April/May 1993

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Hydrographic Survey H05

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H05, which was conducted 25 April - 11 May 1993 aboard the *R/V J. W. Powell*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 5.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 5.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 5.12.6 or 5.13.6.

Table 5.1. Definitions for "x.y.z" figure numbering scheme for cruise H05.

cruise number (x):
5 = hydrographic survey H05

plot type (y):
0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 5.1. Definitions for "x.y.z" figure numbering scheme for cruise H05. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

The concentrations of 20 pigments were determined using high performance liquid chromatography (HPLC). Chlorophyll *a* is shown in the plots. Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 5.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H05. Figure 5.0 shows the location map for the stations.

Following Figure 5.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

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Table 5.2. Station times and positions for LATEX A cruise H05.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	26-APR-1993	1938	28˚25.30'	93˚51.04'	49.1	7
2	26-APR-1993	2145	28˚25.07'	93˚37.27'	47.9	7
3	27-APR-1993	0005	28˚25.98'	93˚24.01'	50.5	7
4	27-APR-1993	0150	28˚25.33'	93˚10.18'	49.3	8
5	27-APR-1993	0446	28˚26.48'	92˚45.66'	51.8	8
6	27-APR-1993	0632	28˚27.61'	92˚31.80'	52.6	8
7	27-APR-1993	0807	28˚29.40'	92˚17.36'	51.4	7
8	27-APR-1993	0920	28˚29.39'	92˚06.59'	51.1	7
9	27-APR-1993	1129	28˚28.79'	91˚51.60'	52.6	7
10	27-APR-1993	1310	28˚28.76'	91˚37.23'	50.3	7
11	27-APR-1993	1501	28˚26.42'	91˚24.03'	52.2	7
12	27-APR-1993	1709	28˚23.70'	91˚08.90'	50.3	7
13	27-APR-1993	1923	28˚20.47'	90˚54.15'	52.0	7
14	27-APR-1993	2056	28˚20.42'	90˚42.59'	49.1	8
15	28-APR-1993	0127	28˚58.09'	90˚30.59'	11.7	4
16	28-APR-1993	0156	28˚55.72'	90˚30.86'	13.4	5
17	28-APR-1993	0234	28˚52.69'	90˚30.61'	16.5	5
18	28-APR-1993	0304	28˚49.97'	90˚30.58'	18.0	5
19	28-APR-1993	0336	28˚46.72'	90˚30.63'	17.2	5
20	28-APR-1993	0405	28˚43.93'	90˚30.36'	17.4	6
21	28-APR-1993	0455	28˚37.93'	90˚30.29'	20.5	6
22	28-APR-1993	0552	28˚31.63'	90˚30.16'	35.7	7
23	28-APR-1993	0653	28˚25.43'	90˚29.96'	43.9	7
24	28-APR-1993	0734	28˚21.61'	90˚29.97'	48.3	8
25	28-APR-1993	0825	28˚16.82'	90˚29.99'	61.8	8
26	28-APR-1993	0903	28˚13.54'	90˚30.02'	75.3	12
27	28-APR-1993	1000	28˚10.47'	90˚30.15'	94.2	12
28	28-APR-1993	1049	28˚07.68'	90˚30.16'	118.0	12
29	28-APR-1993	1153	28˚04.65'	90˚30.20'	150.6	12
30	28-APR-1993	1302	28˚01.27'	90˚30.07'	256.0	12
31	28-APR-1993	1411	27˚57.98'	90˚30.18'	440.6	12
32	28-APR-1993	1510	27˚55.45'	90˚30.47'	498.8	12
33	28-APR-1993	1655	28˚02.72'	90˚38.59'	165.3	12
34	28-APR-1993	1845	28˚01.38'	90˚52.40'	187.0	12
35	28-APR-1993	2037	28˚00.39'	91˚05.84'	138.0	12
36	28-APR-1993	2236	27˚58.15'	91˚19.49'	270.4	12
37	29-APR-1993	0022	27˚56.61'	91˚32.70'	228.5	12
38	29-APR-1993	0202	27˚54.77'	91˚45.89'	171.3	12
39	29-APR-1993	0410	27˚44.93'	91˚59.89'	494.5	12
40	29-APR-1993	0538	27˚47.52'	92˚00.02'	392.0	12
41	29-APR-1993	0656	27˚50.67'	91˚59.98'	199.9	12
42	29-APR-1993	0821	27˚53.57'	92˚00.07'	170.2	12
43	29-APR-1993	0934	27˚56.80'	92˚00.05'	100.6	10
44	29-APR-1993	1058	27˚59.97'	92˚00.04'	120.9	12

Table 5.2. Station times and positions for LATEX A cruise H05 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	29-APR-1993	1156	28˚02.69'	91˚59.96'	106.7	11
46	29-APR-1993	1348	28˚08.93'	91˚59.92'	82.5	10
47	29-APR-1993	1524	28˚14.71'	91˚59.89'	69.0	7
48	29-APR-1993	1727	28˚21.13'	91˚59.82'	61.6	7
49	29-APR-1993	1812	28˚26.78'	91˚59.85'	55.0	8
50	29-APR-1993	1921	28˚33.01'	91˚59.84'	44.9	6
51	29-APR-1993	2006	28˚37.74'	91˚59.88'	39.8	6
52	29-APR-1993	2109	28˚44.70'	92˚00.09'	31.5	7
53	29-APR-1993	2205	28˚50.26'	92˚00.00'	26.6	6
54	29-APR-1993	2240	28˚52.96'	91˚59.99'	24.6	5
55	29-APR-1993	2319	28˚56.22'	91˚59.98'	21.8	6
56	29-APR-1993	2358	28˚59.33'	92˚00.08'	19.5	6
57	30-APR-1993	0033	29˚02.28'	92˚00.11'	16.5	5
58	30-APR-1993	0105	29˚04.86'	92˚00.16'	13.5	5
59	30-APR-1993	0136	29˚07.98'	92˚00.06'	10.5	4
60	30-APR-1993	0206	29˚10.87'	91˚59.99'	7.0	4
61	30-APR-1993	0844	29˚34.02'	93˚00.04'	10.8	4
62	30-APR-1993	0942	29˚27.93'	92˚59.96'	12.6	4
63	30-APR-1993	1033	29˚22.00'	92˚59.96'	13.0	4
64	30-APR-1993	1126	29˚15.90'	93˚00.01'	17.0	5
65	30-APR-1993	1222	29˚10.04'	93˚00.04'	19.1	5
66	30-APR-1993	1355	29˚03.99'	92˚59.95'	22.8	5
67	30-APR-1993	1454	28˚57.80'	92˚59.99'	23.0	6
68	30-APR-1993	1549	28˚51.42'	92˚59.99'	26.0	6
69	30-APR-1993	1643	28˚44.93'	92˚59.94'	29.9	6
70	30-APR-1993	1737	28˚38.41'	92˚59.93'	33.8	7
71	30-APR-1993	1843	28˚31.87'	92˚59.99'	44.0	7
72	30-APR-1993	1942	28˚25.39'	92˚59.97'	49.5	8
73	30-APR-1993	2044	28˚18.48'	92˚59.90'	52.2	8
74	30-APR-1993	2151	28˚10.85'	92˚59.94'	71.5	9
75	30-APR-1993	2307	28˚01.82'	92˚59.86'	100.8	9
76	01-MAY-1993	0032	27˚52.85'	93˚00.12'	190.2	12
77	01-MAY-1993	0147	27˚45.28'	93˚00.16'	207.4	12
78	01-MAY-1993	0252	27˚39.40'	92˚59.91'	320.9	12
79	01-MAY-1993	0836	27˚55.13'	92˚09.96'	144.5	12
80	01-MAY-1993	1040	27˚55.13'	92˚23.41'	83.8	9
81	01-MAY-1993	1238	27˚55.13'	92˚37.47'	194.5	12
82	01-MAY-1993	1455	27˚52.49'	92˚51.37'	218.1	12
83	01-MAY-1993	1648	27˚50.07'	93˚05.28'	172.7	12
84	01-MAY-1993	1837	27˚49.86'	93˚19.15'	150.6	12
85	01-MAY-1993	2030	27˚49.00'	93˚32.57'	200.7	12
86	01-MAY-1993	2227	27˚48.29'	93˚46.27'	191.4	12
87	02-MAY-1993	0024	27˚49.24'	94˚00.01'	199.8	12
88	02-MAY-1993	0230	27˚39.63'	94˚13.47'	458.4	12

Table 5.2. Station times and positions for LATEX A cruise H05 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	02-MAY-1993	0352	27˚44.25'	94˚12.21'	453.0	12
90	02-MAY-1993	0450	27˚47.99'	94˚11.41'	268.5	12
91	02-MAY-1993	0543	27˚50.98'	94˚10.26'	118.6	10
92	02-MAY-1993	0641	27˚54.14'	94˚09.30'	96.8	10
93	02-MAY-1993	0729	27˚57.05'	94˚08.32'	84.6	8
94	02-MAY-1993	0809	27˚59.54'	94˚07.50'	81.1	8
95	02-MAY-1993	0908	28˚04.65'	94˚05.52'	69.4	8
96	02-MAY-1993	1002	28˚08.96'	94˚03.76'	64.4	8
97	02-MAY-1993	1113	28˚16.01'	94˚01.30'	57.7	7
98	02-MAY-1993	1257	28˚21.93'	93˚59.64'	51.1	7
99	02-MAY-1993	1433	28˚27.92'	93˚59.99'	42.8	6
100	02-MAY-1993	1548	28˚33.80'	93˚59.94'	35.7	6
101	02-MAY-1993	1657	28˚39.65'	93˚59.93'	29.6	6
102	02-MAY-1993	1806	28˚46.02'	94˚00.08'	24.8	6
103	02-MAY-1993	1902	28˚51.91'	93˚59.97'	25.2	6
104	02-MAY-1993	1959	28˚57.93'	94˚00.13'	17.7	5
105	02-MAY-1993	2040	29˚01.30'	94˚00.05'	18.6	4
106	02-MAY-1993	2116	29˚03.79'	94˚00.12'	19.2	5
107	02-MAY-1993	2158	29˚07.34'	94˚00.06'	17.5	5
108	02-MAY-1993	2235	29˚09.97'	94˚00.07'	16.1	5
109	02-MAY-1993	2313	29˚13.02'	94˚00.15'	14.1	4
110	02-MAY-1993	2344	29˚16.19'	94˚00.10'	12.8	5
111	03-MAY-1993	0016	29˚18.97'	93˚59.92'	12.0	5
112	03-MAY-1993	0046	29˚21.61'	94˚00.12'	10.7	4
113	03-MAY-1993	0118	29˚24.57'	94˚00.02'	9.7	4
114	03-MAY-1993	0155	29˚28.15'	94˚00.12'	11.5	4
115	03-MAY-1993	0233	29˚32.05'	94˚00.16'	10.3	5
116	03-MAY-1993	0738	29˚10.19'	94˚47.98'	13.6	4
117	03-MAY-1993	0827	29˚04.50'	94˚46.20'	16.7	5
118	03-MAY-1993	0915	28˚58.80'	94˚44.40'	16.4	6
119	03-MAY-1993	1005	28˚53.40'	94˚43.20'	19.4	5
120	03-MAY-1993	1051	28˚48.00'	94˚41.41'	20.3	6
121	03-MAY-1993	1137	28˚42.59'	94˚39.90'	25.7	7
122	03-MAY-1993	1226	28˚37.20'	94˚38.40'	29.4	8
123	03-MAY-1993	1317	28˚31.80'	94˚36.59'	34.3	8
124	03-MAY-1993	1406	28˚26.40'	94˚35.12'	38.7	8
125	03-MAY-1993	1455	28˚21.00'	94˚33.60'	42.4	8
126	03-MAY-1993	1751	28˚22.21'	94˚05.41'	48.2	6
127	03-MAY-1993	1916	28˚18.59'	94˚18.02'	48.2	6
128	03-MAY-1993	2047	28˚15.60'	94˚32.41'	48.2	6
129	03-MAY-1993	2219	28˚14.41'	94˚46.80'	48.3	6
130	03-MAY-1993	2354	28˚13.20'	95˚01.20'	48.4	6
131	04-MAY-1993	0248	28˚06.62'	95˚26.98'	47.7	6
132	04-MAY-1993	0433	28˚01.81'	95˚40.79'	49.0	6

Table 5.2. Station times and positions for LATEX A cruise H05 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
133	05-MAY-1993	1400	27˚43.02'	95˚00.67'	500.0	12
134	05-MAY-1993	1654	27˚45.82'	95˚01.94'	374.2	12
135	05-MAY-1993	1808	27˚48.55'	95˚03.57'	266.9	12
136	05-MAY-1993	1915	27˚51.30'	95˚04.92'	164.5	12
137	05-MAY-1993	2005	27˚54.08'	95˚06.41'	107.8	10
138	05-MAY-1993	2111	27˚59.66'	95˚09.15'	77.2	10
139	05-MAY-1993	2212	28˚05.03'	95˚12.10'	54.9	8
140	05-MAY-1993	2307	28˚10.51'	95˚15.01'	46.5	8
141	06-MAY-1993	0003	28˚16.36'	95˚17.84'	38.6	6
142	06-MAY-1993	0100	28˚21.65'	95˚20.84'	32.3	6
143	06-MAY-1993	0211	28˚27.00'	95˚23.46'	30.0	6
144	06-MAY-1993	0246	28˚29.68'	95˚25.05'	28.5	6
145	06-MAY-1993	0322	28˚32.37'	95˚26.34'	24.5	6
146	06-MAY-1993	0357	28˚34.84'	95˚28.19'	20.6	4
147	06-MAY-1993	0430	28˚37.44'	95˚29.31'	18.0	4
148	06-MAY-1993	0508	28˚39.71'	95˚30.82'	14.6	4
149	06-MAY-1993	0555	28˚42.30'	95˚32.17'	13.6	4
150	06-MAY-1993	1136	27˚58.20'	95˚57.60'	47.9	7
151	06-MAY-1993	1619	27˚31.50'	95˚47.10'	520.2	12
152	06-MAY-1993	1753	27˚36.12'	95˚52.68'	192.3	12
153	06-MAY-1993	1903	27˚41.10'	95˚58.19'	103.8	8
154	06-MAY-1993	2001	27˚45.29'	96˚03.30'	79.5	8
155	06-MAY-1993	2110	27˚48.60'	96˚07.84'	67.0	6
156	06-MAY-1993	2216	27˚53.98'	96˚13.50'	49.6	6
157	06-MAY-1993	2313	27˚58.20'	96˚18.93'	36.4	5
158	07-MAY-1993	0015	28˚02.39'	96˚24.06'	26.6	5
159	07-MAY-1993	0112	28˚07.81'	96˚30.01'	19.0	4
160	07-MAY-1993	0207	28˚12.60'	96˚36.01'	9.6	4
161	07-MAY-1993	0530	27˚51.60'	96˚19.20'	48.6	6
162	07-MAY-1993	0706	27˚44.40'	96˚30.00'	48.9	6
163	07-MAY-1993	0849	27˚34.80'	96˚39.61'	49.6	6
164	07-MAY-1993	1025	27˚24.01'	96˚47.39'	49.8	6
165	07-MAY-1993	1453	27˚05.99'	96˚12.60'	445.3	12
166	07-MAY-1993	1554	27˚06.88'	96˚16.97'	316.2	12
167	07-MAY-1993	1654	27˚07.59'	96˚20.21'	225.5	12
168	07-MAY-1993	1741	27˚08.10'	96˚22.80'	184.3	12
169	07-MAY-1993	1843	27˚08.85'	96˚26.72'	140.3	12
170	07-MAY-1993	1952	27˚09.10'	96˚29.80'	115.2	10
171	07-MAY-1993	2033	27˚09.68'	96˚33.14'	99.3	10
172	07-MAY-1993	2112	27˚10.18'	96˚36.38'	88.9	10
173	07-MAY-1993	2207	27˚11.04'	96˚42.93'	71.6	10
174	07-MAY-1993	2317	27˚11.92'	96˚49.60'	57.5	8
175	07-MAY-1993	2358	27˚12.59'	96˚53.39'	48.8	8
176	08-MAY-1993	0035	27˚12.69'	96˚56.24'	42.8	8

Table 5.2. Station times and positions for LATEX A cruise H05 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
177	08-MAY-1993	0139	27°13.56'	97°03.15'	32.1	6
178	08-MAY-1993	0218	27°14.30'	97°06.27'	29.3	6
179	08-MAY-1993	0320	27°14.42'	97°09.58'	24.7	4
180	08-MAY-1993	0350	27°15.38'	97°12.64'	22.1	4
181	08-MAY-1993	0421	27°15.45'	97°16.05'	17.3	4
182	08-MAY-1993	0739	27°01.00'	96°55.80'	48.7	6
183	08-MAY-1993	0938	26°48.00'	96°54.61'	48.3	6
184	08-MAY-1993	1136	26°36.59'	96°47.26'	52.2	6
185	08-MAY-1993	1343	26°24.60'	96°39.00'	47.2	6
186	08-MAY-1993	1602	26°13.22'	96°37.07'	49.7	6
187	08-MAY-1993	2116	26°01.29'	97°06.98'	14.5	4
188	08-MAY-1993	2149	26°01.37'	97°04.55'	20.1	4
189	08-MAY-1993	2223	26°01.20'	97°01.36'	25.0	4
190	08-MAY-1993	2302	26°01.50'	96°58.12'	29.4	4
191	09-MAY-1993	0004	26°00.99'	96°51.44'	36.6	6
192	09-MAY-1993	0103	26°00.99'	96°44.98'	43.4	6
193	09-MAY-1993	0203	26°00.98'	96°38.64'	48.6	6
194	09-MAY-1993	0320	26°00.97'	96°31.84'	59.9	6
195	09-MAY-1993	0435	26°00.71'	96°25.26'	85.1	8
196	09-MAY-1993	0523	26°00.84'	96°21.94'	120.2	10
197	09-MAY-1993	0625	26°00.81'	96°18.67'	209.3	12
198	09-MAY-1993	0733	26°00.60'	96°14.69'	502.7	12
199	09-MAY-1993	0944	26°08.61'	96°19.94'	228.3	12
200	09-MAY-1993	1133	26°19.81'	96°17.85'	245.4	12
201	09-MAY-1993	1339	26°31.81'	96°19.94'	294.5	12
202	09-MAY-1993	1558	26°43.78'	96°26.25'	205.1	12
203	09-MAY-1993	1745	26°55.81'	96°26.25'	209.1	12
204	09-MAY-1993	1939	27°07.59'	96°20.21'	226.1	12
205	09-MAY-1993	2118	27°16.79'	96°15.21'	206.3	12
206	09-MAY-1993	2313	27°25.79'	96°06.25'	206.4	12
207	10-MAY-1993	0222	27°39.03'	95°42.68'	252.2	12
208	10-MAY-1993	0412	27°42.49'	95°30.12'	299.8	12
209	10-MAY-1993	0613	27°45.68'	95°17.21'	265.8	12
210	10-MAY-1993	0937	27°50.15'	94°48.57'	240.8	12
211	10-MAY-1993	1128	27°50.12'	94°35.31'	277.8	12
212	10-MAY-1993	1334	27°50.05'	94°21.67'	179.4	12
213	10-MAY-1993	1813	27°24.95'	93°49.97'	854.0	0
214	10-MAY-1993	2315	27°25.04'	94°30.03'	996.0	0
215	11-MAY-1993	0404	27°26.23'	95°10.44'	1056.0	0

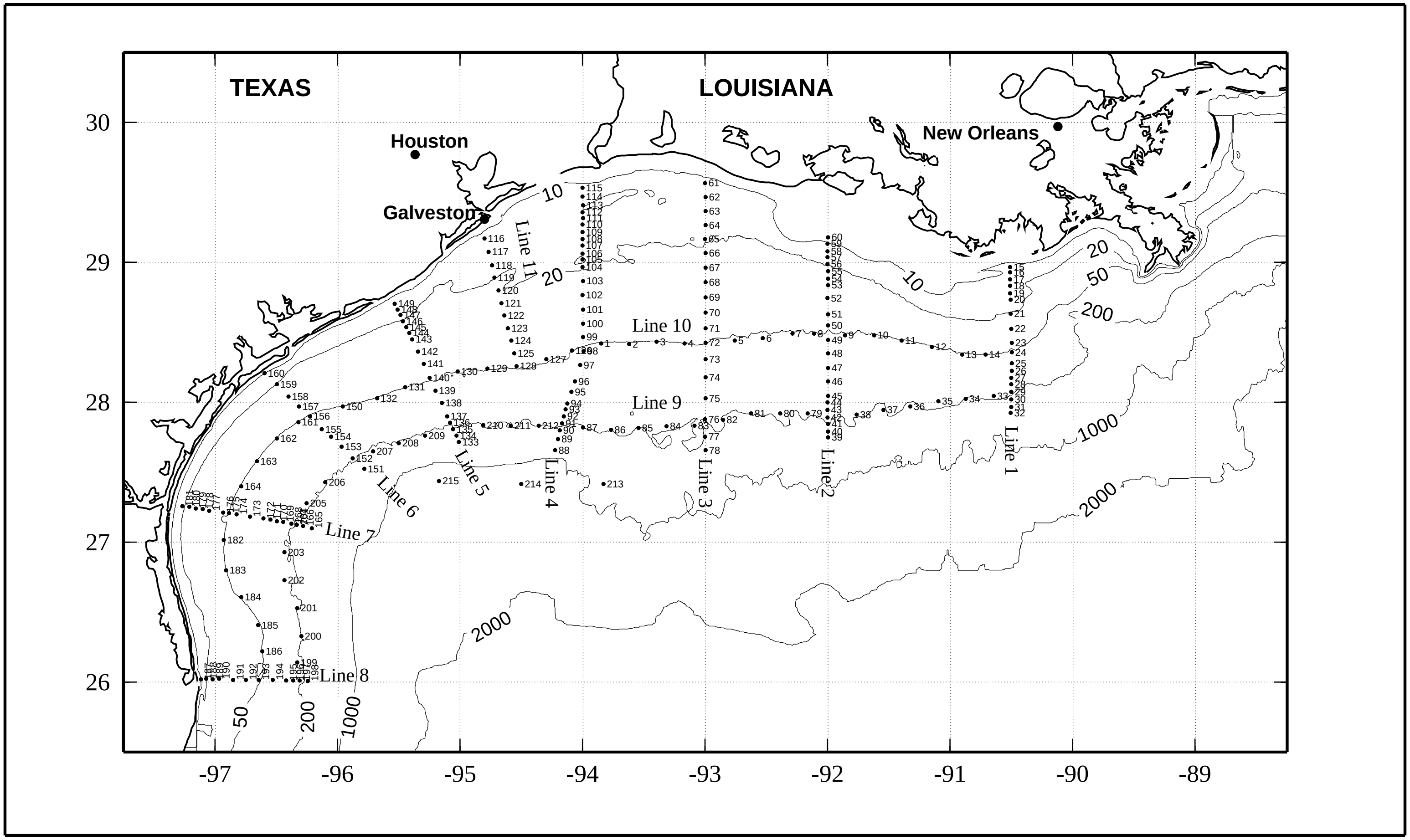

Figure 5.0. Cruise track and station locations for LATEX A Hydrographic Survey H05, 25 April - 11 May 1993.

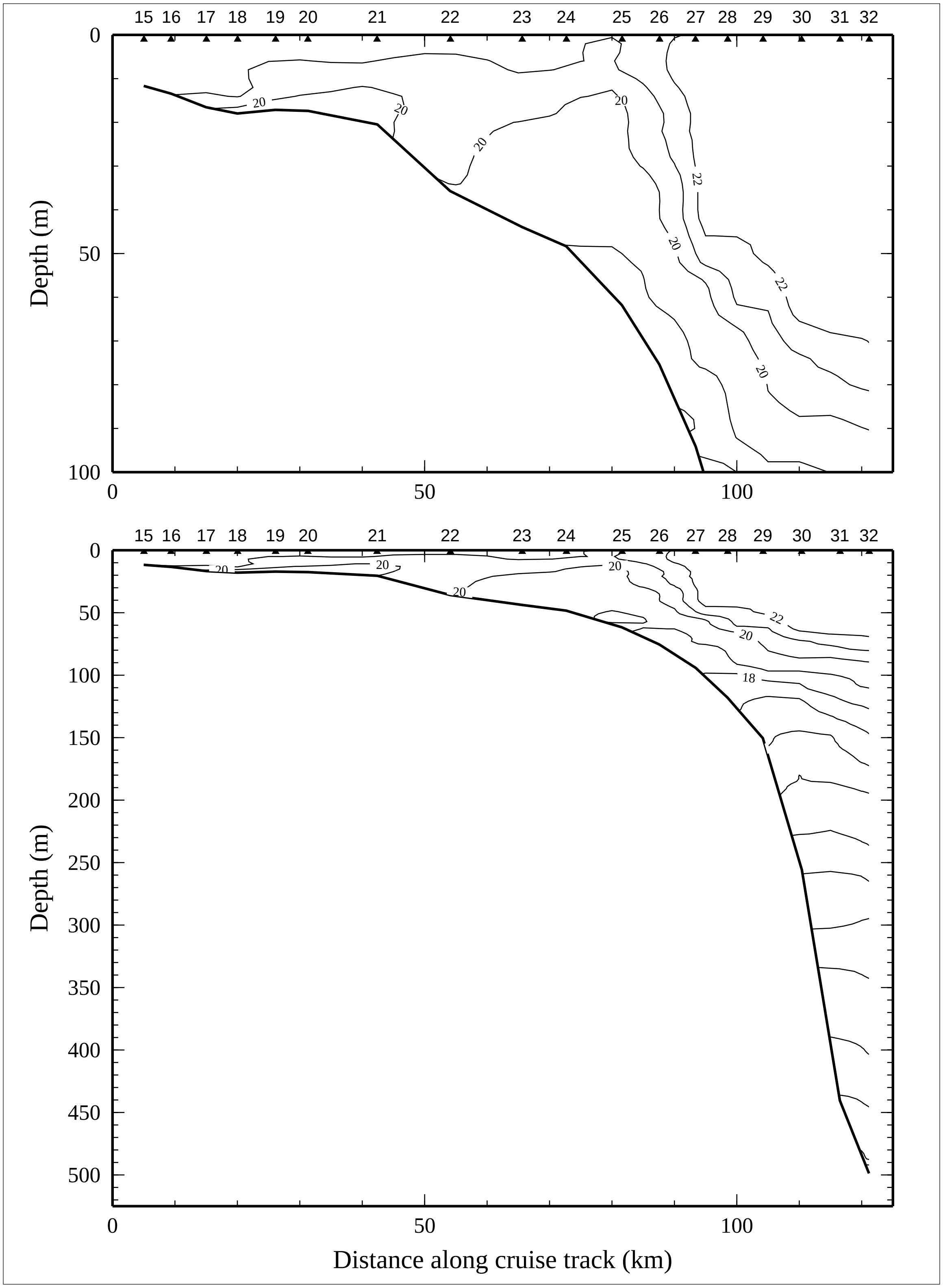

Figure 5.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H05,
25 April - 11 May 1993.

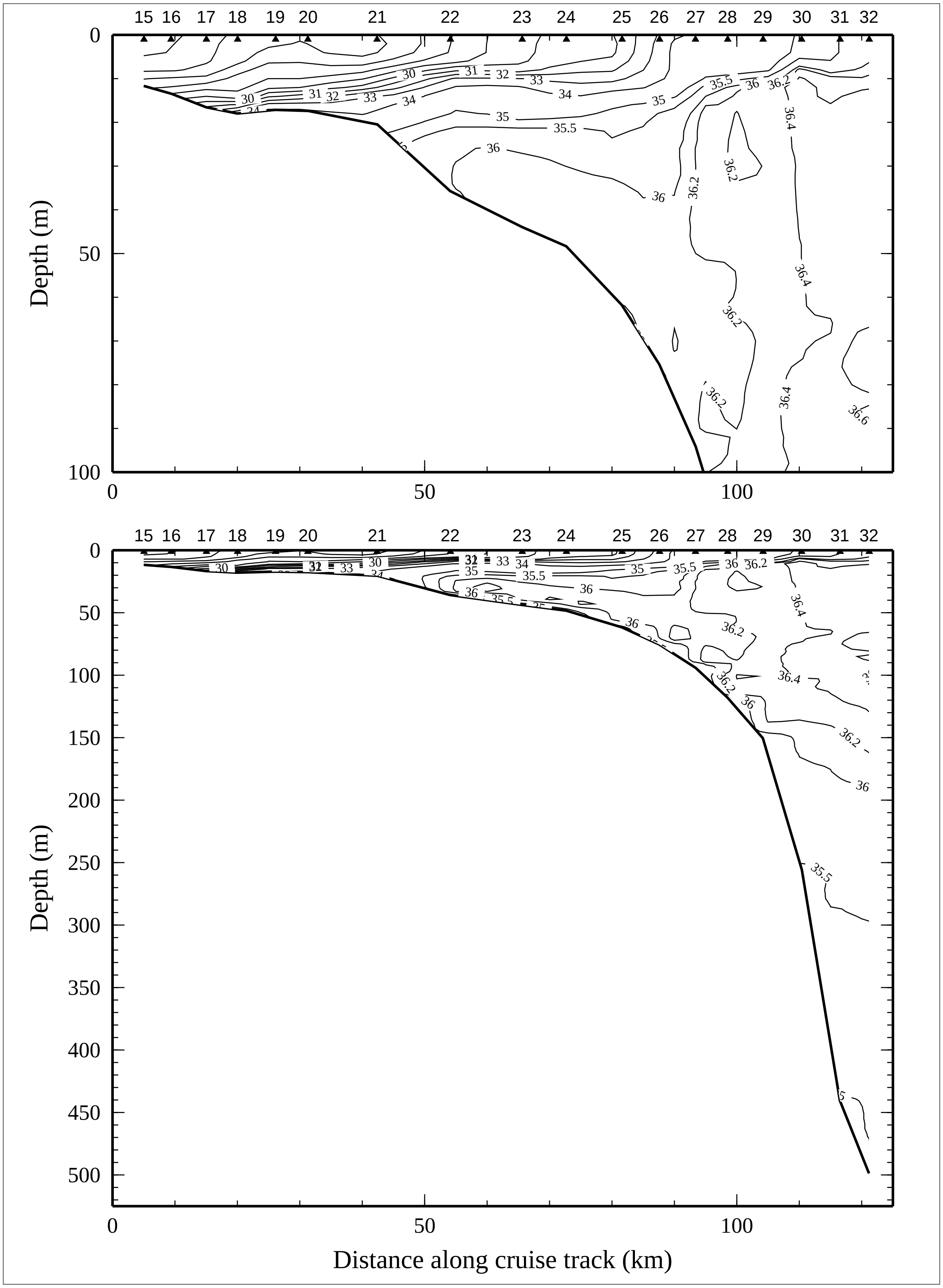

Figure 5.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

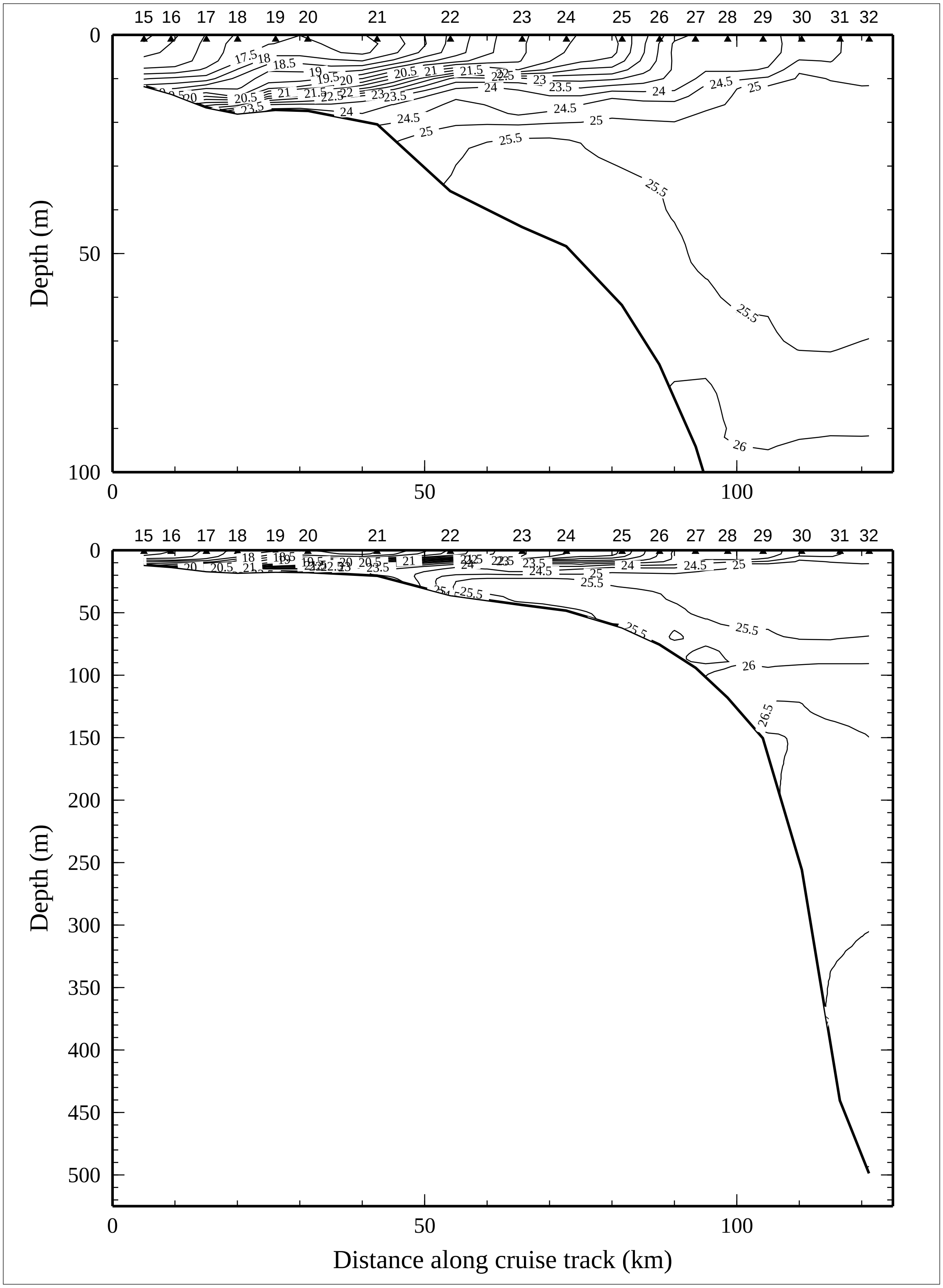

Figure 5.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

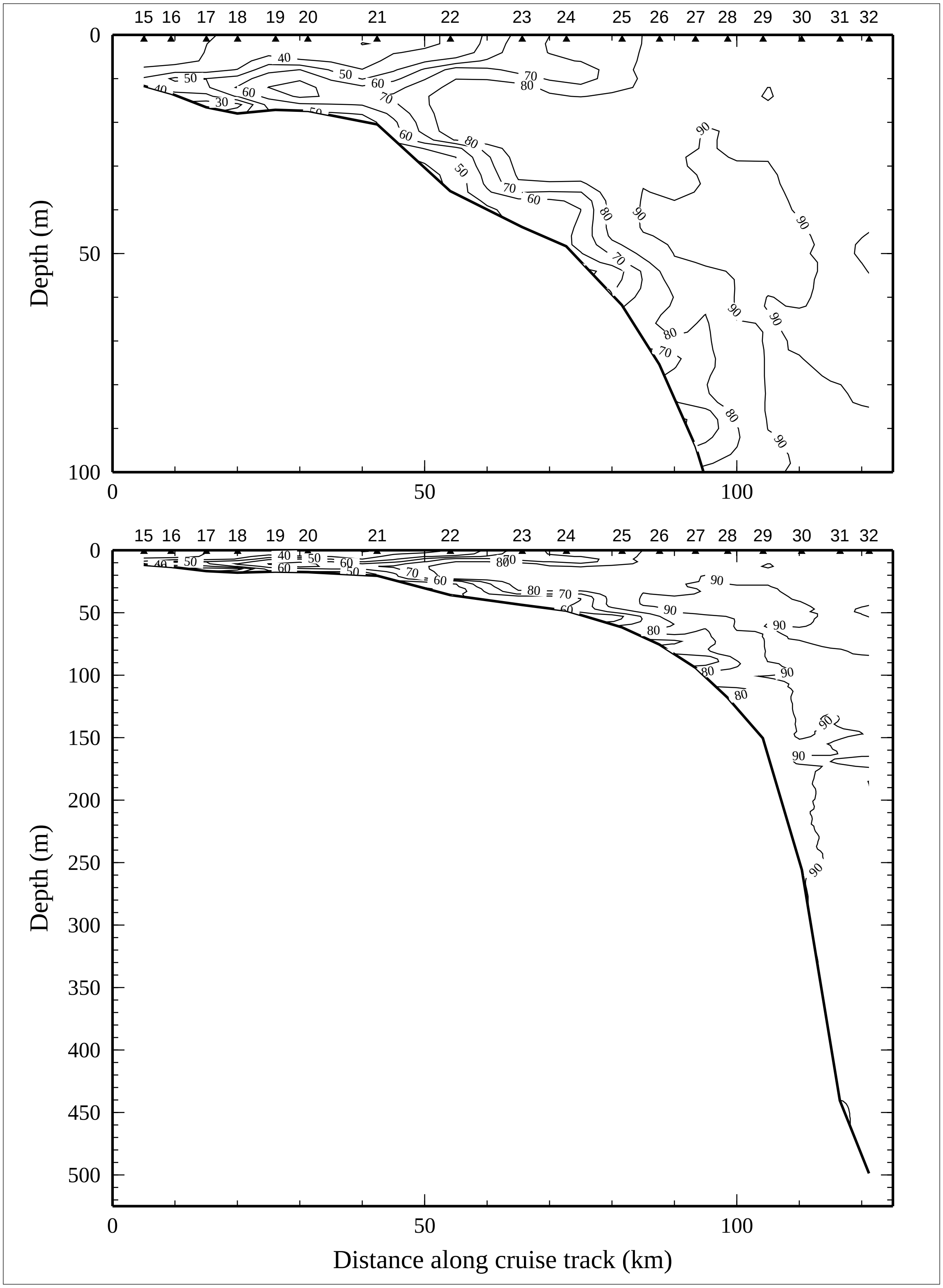

Figure 5.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

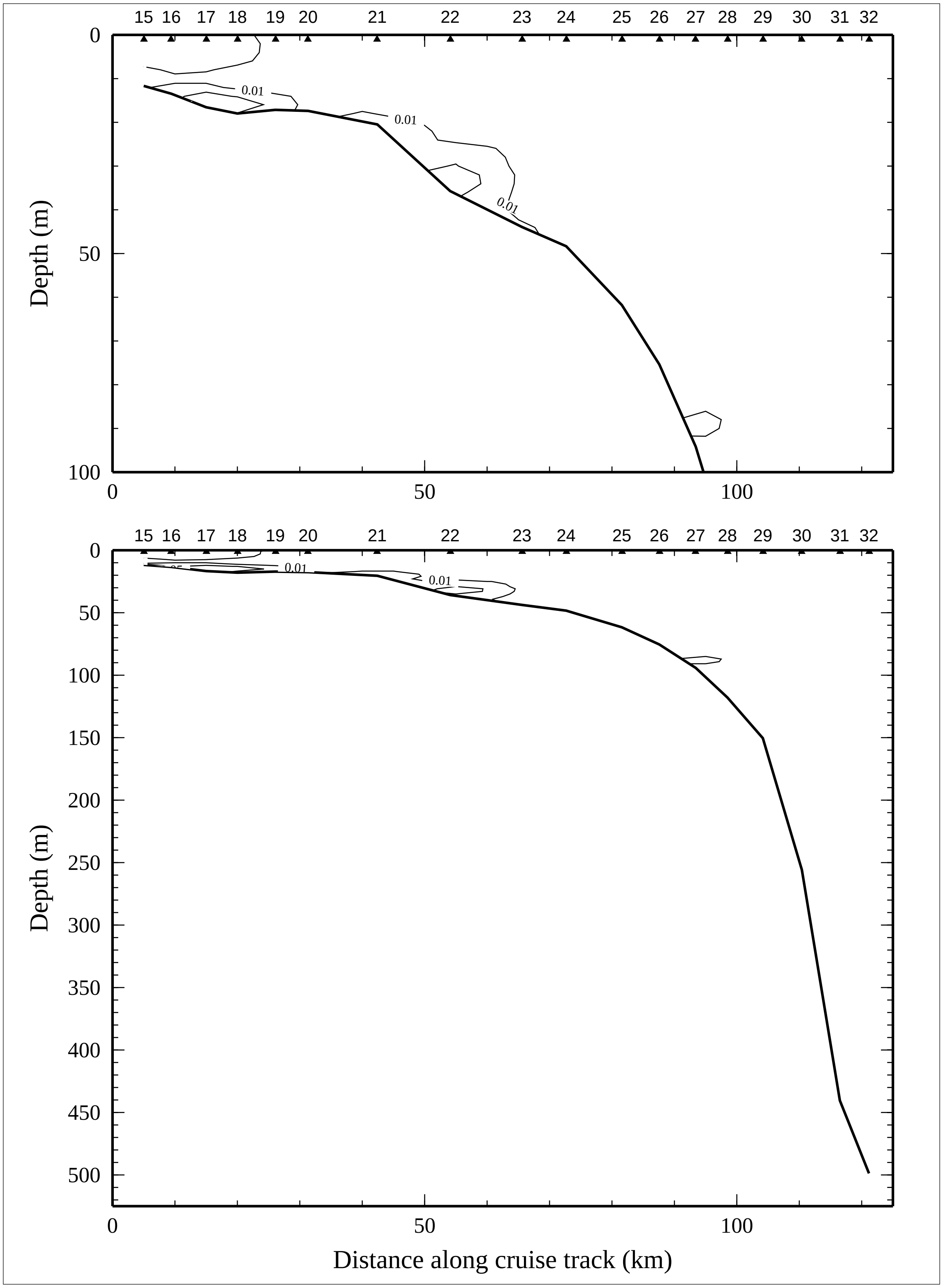

Figure 5.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

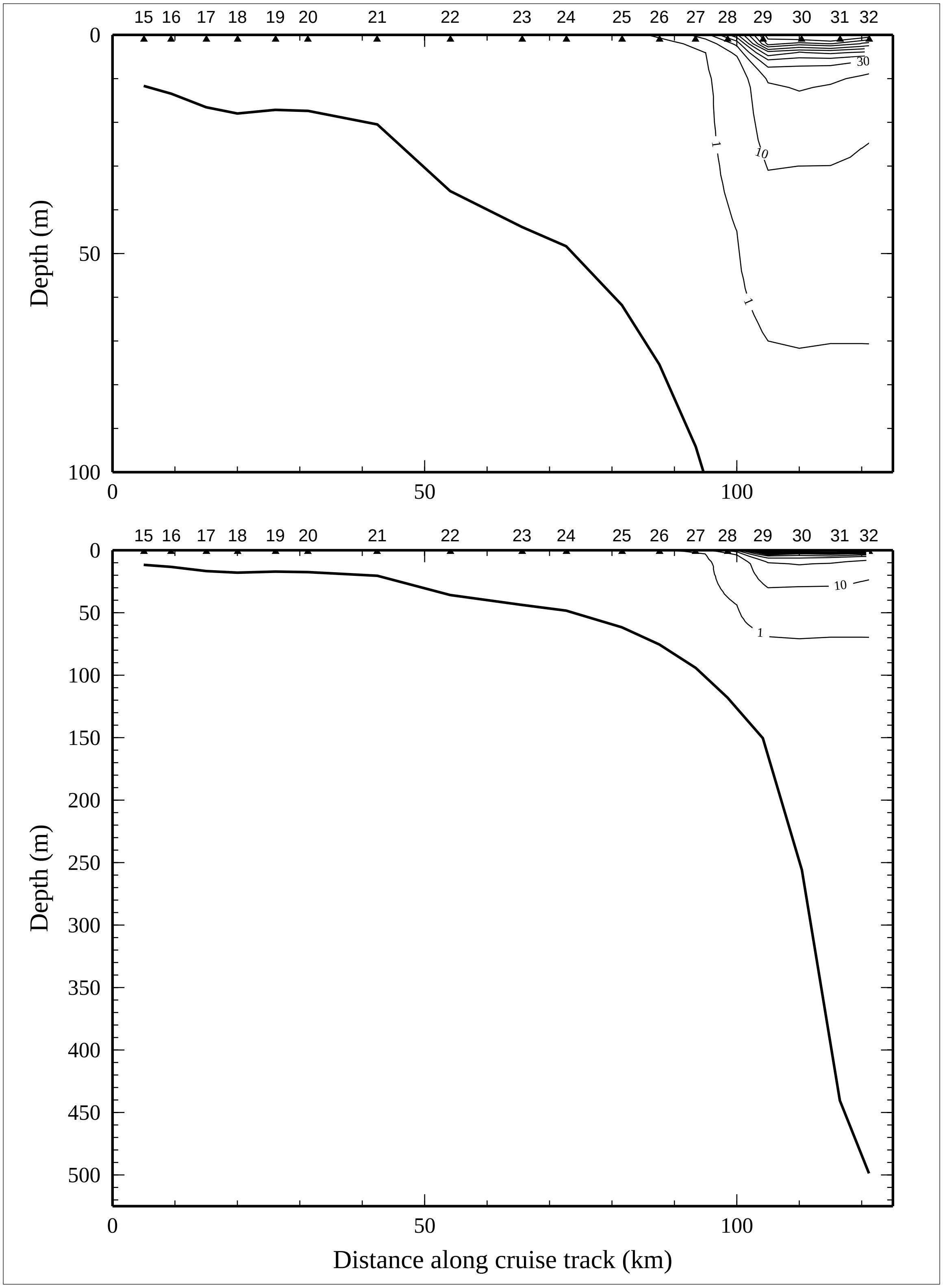

Figure 5.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

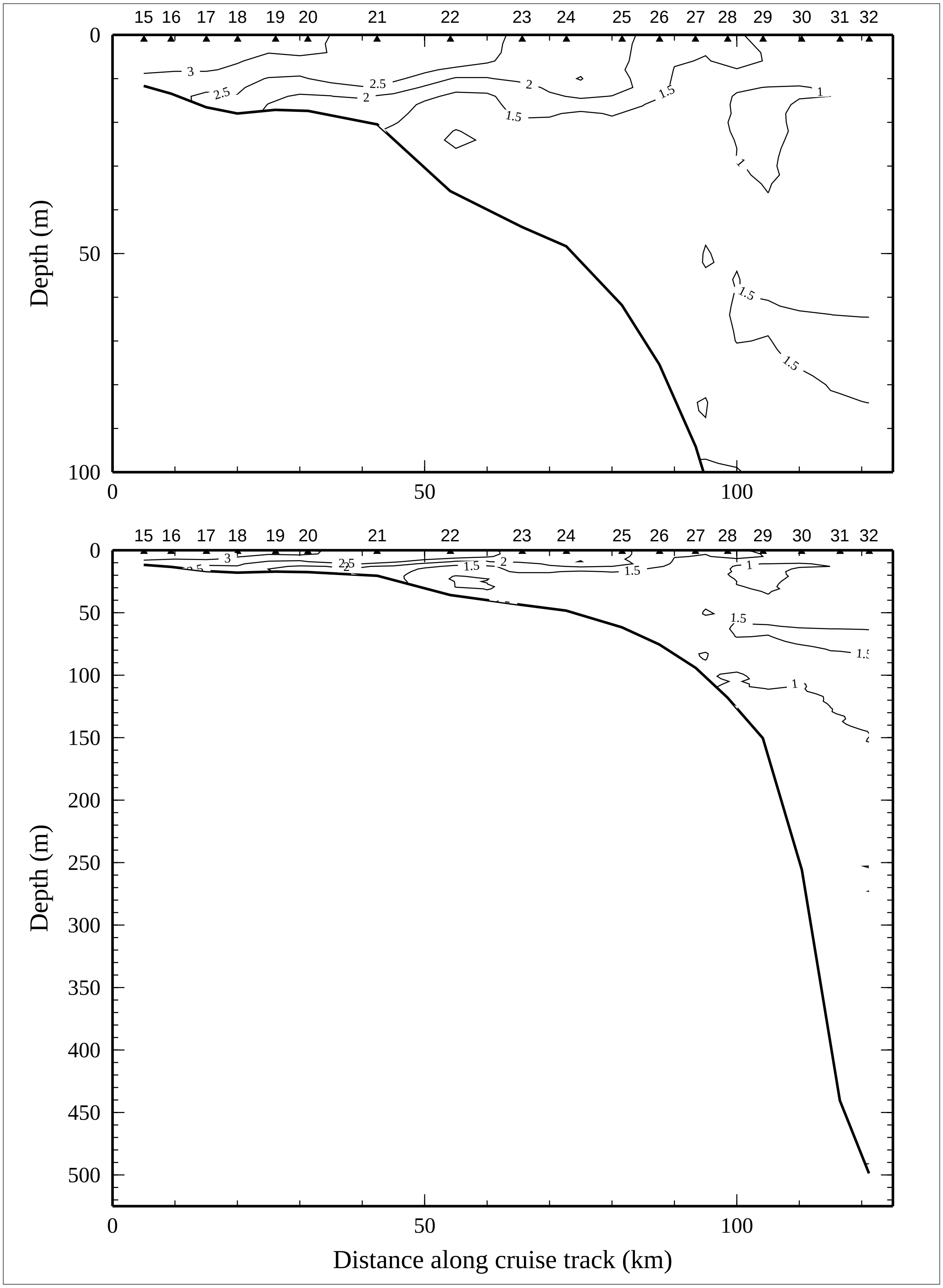

Figure 5.1.7. Relative fluorescence on line 1 of LATEX A survey H05,
25 April - 11 May 1993.

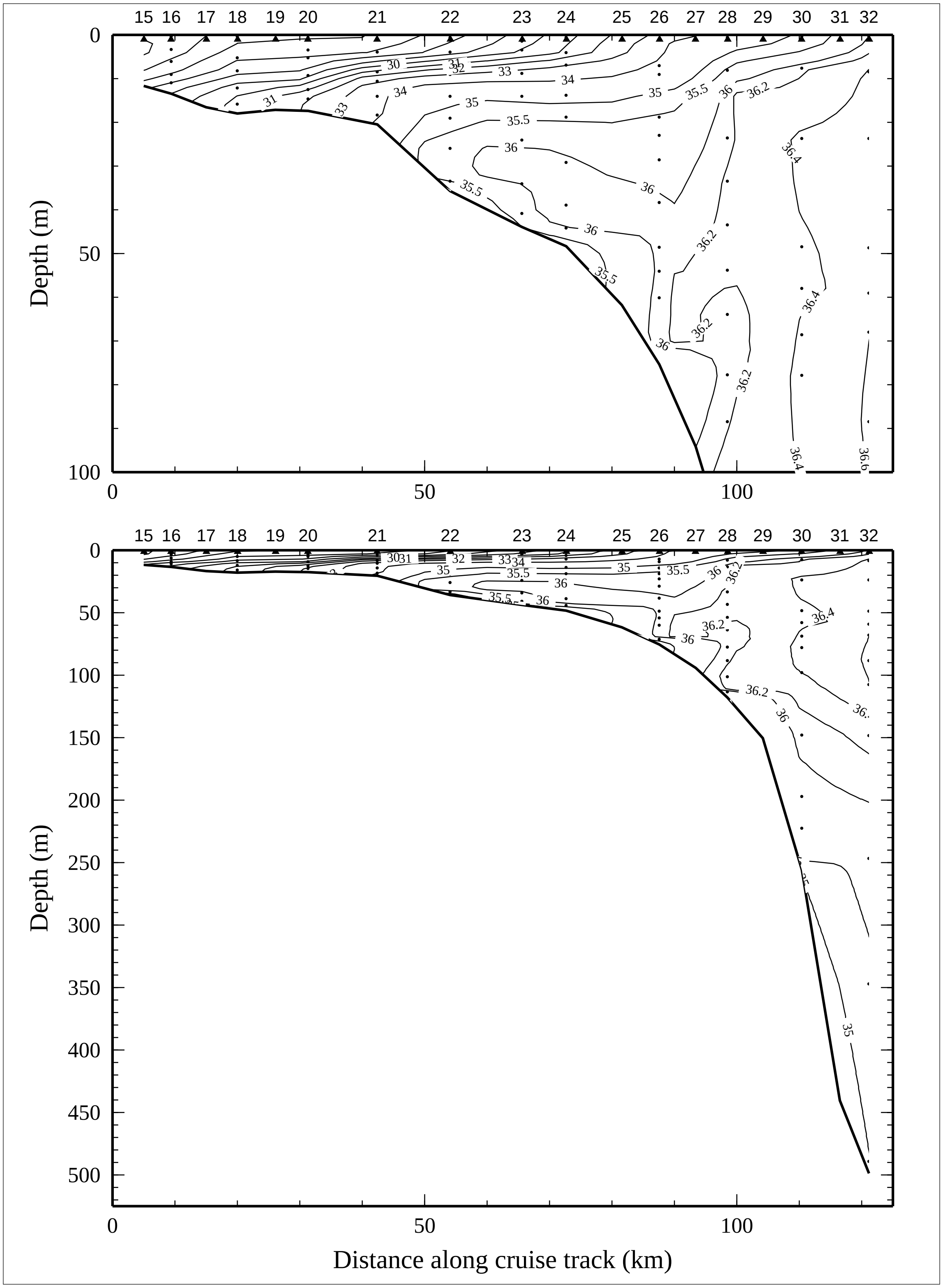

Figure 5.1.8. Bottle salinity on line 1 of LATEX A survey H05,
25 April - 11 May 1993.

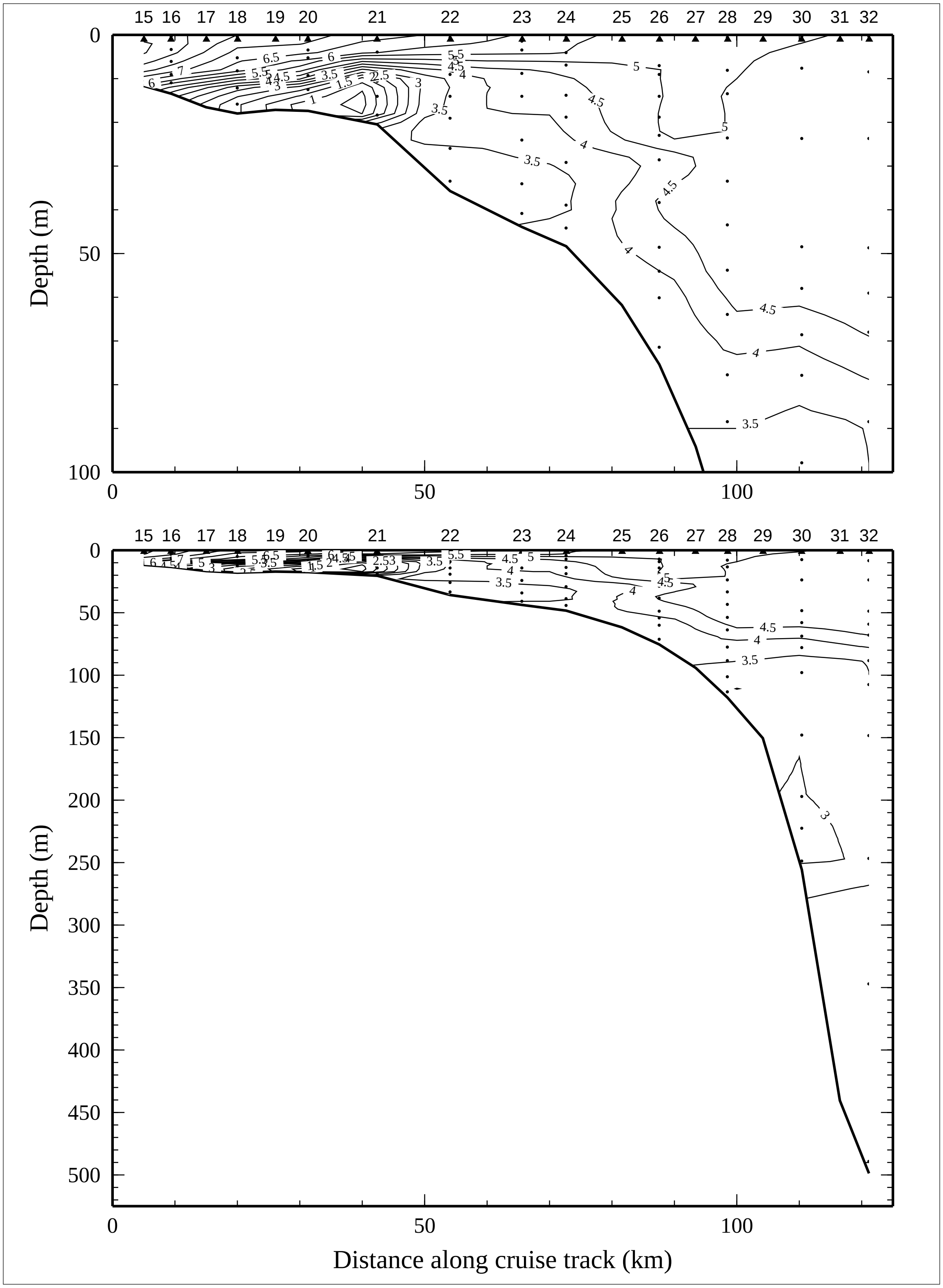

Figure 5.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H05,
25 April - 11 May 1993.

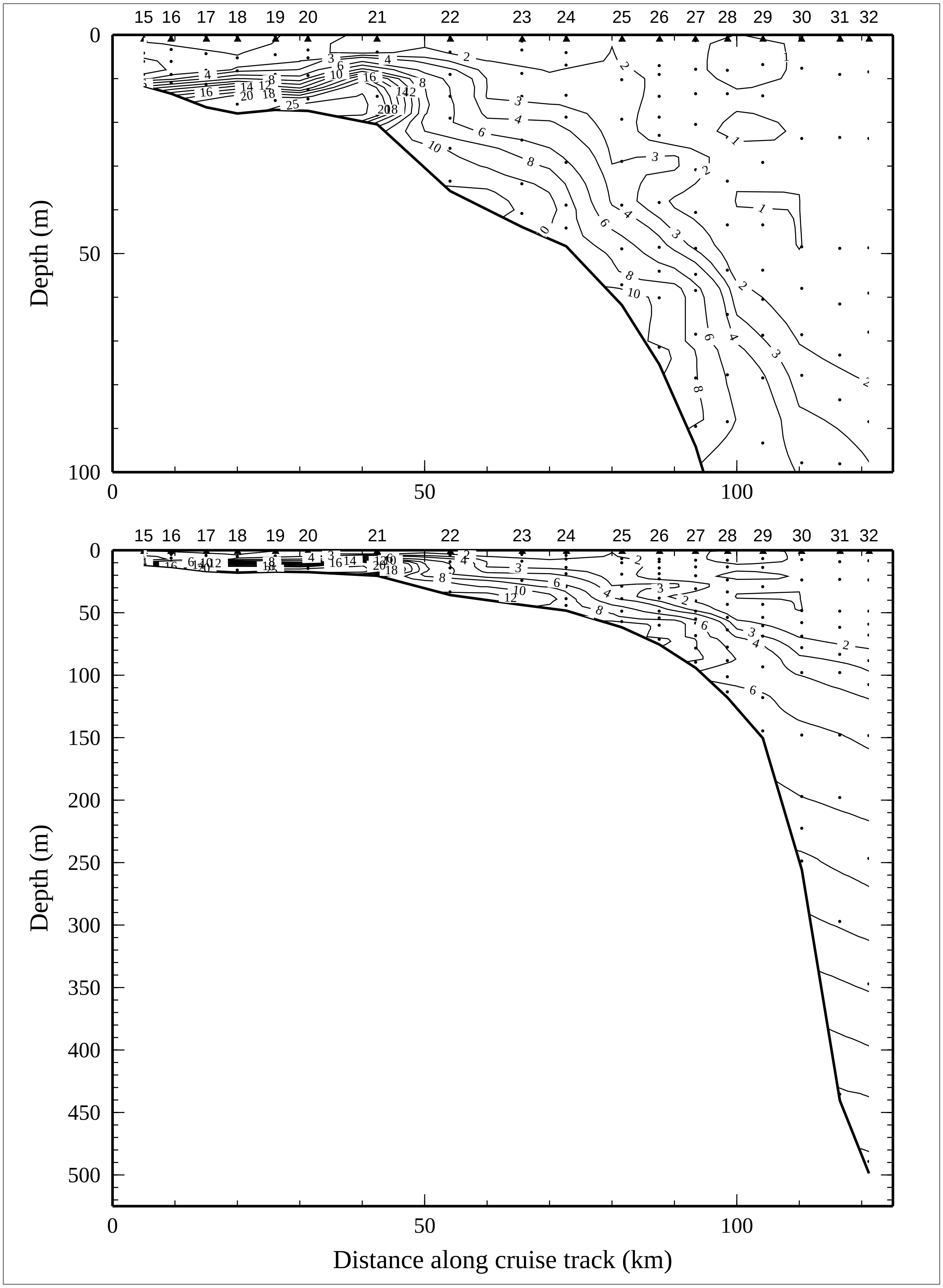

Figure 5.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

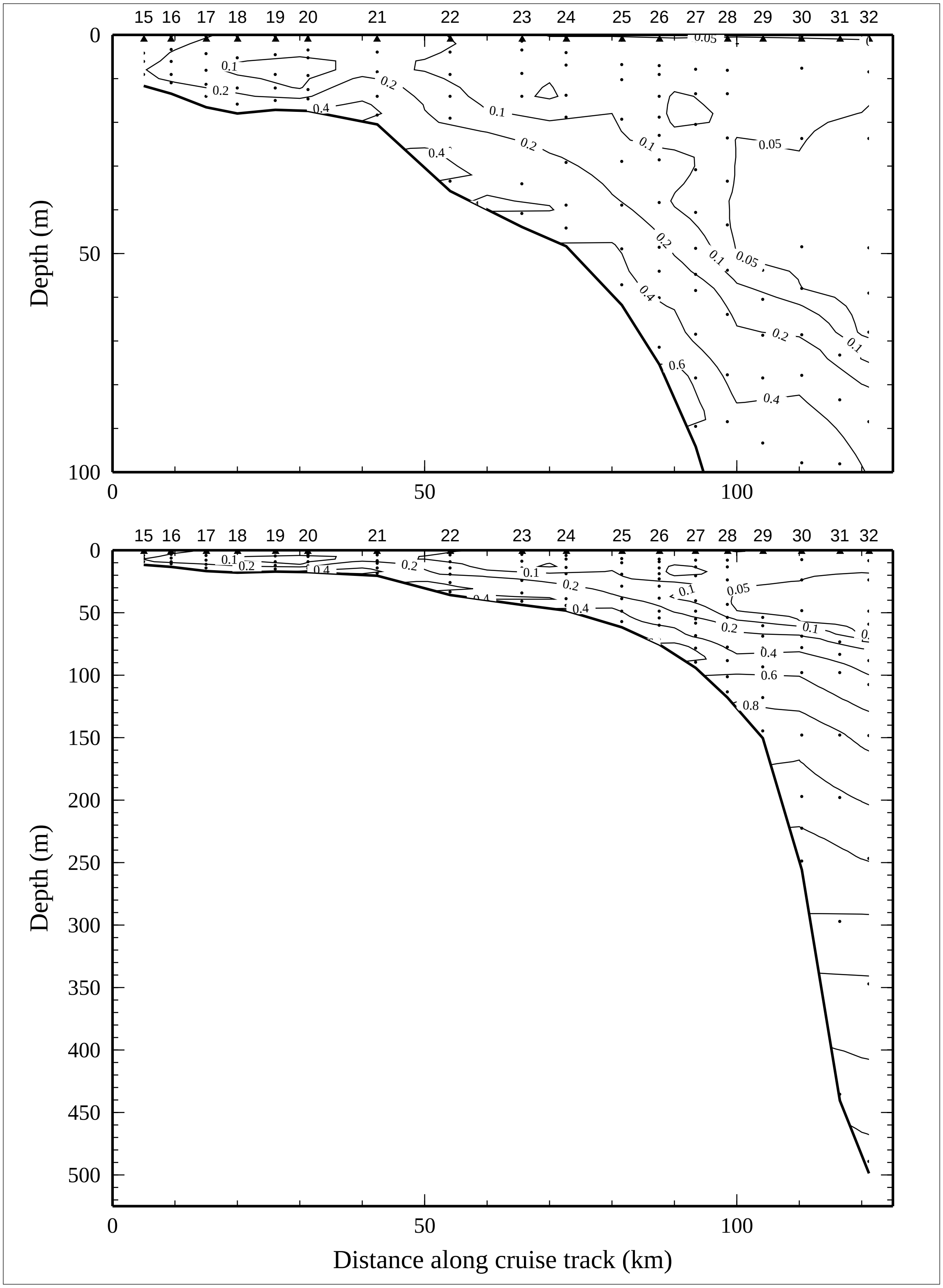

Figure 5.1.11. Phosphate (µmol·l⁻¹) on line 1 of LATEX A survey H05,
25 April - 11 May 1993.

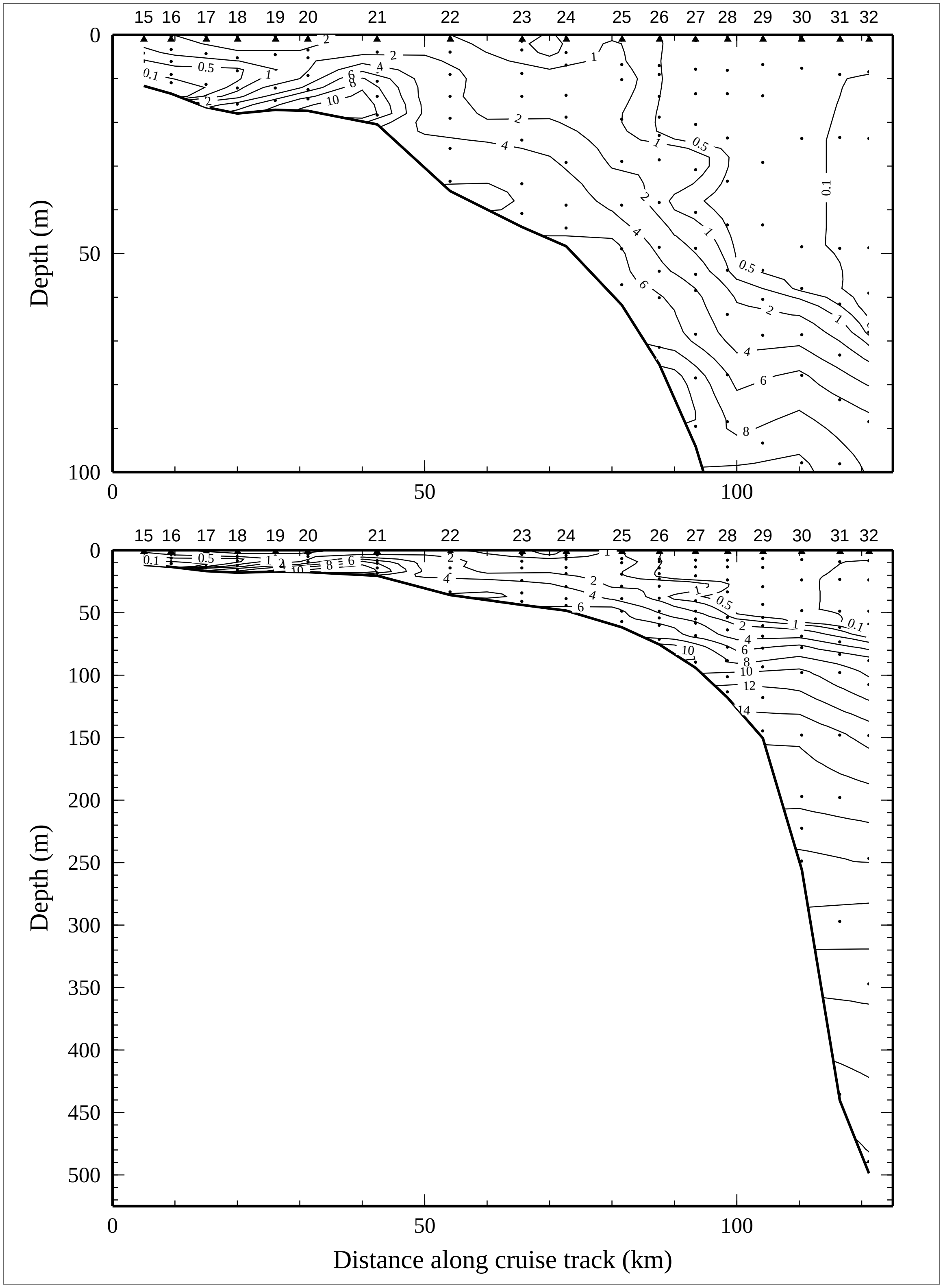

Figure 5.1.12. Nitrate (μmol·l⁻¹) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

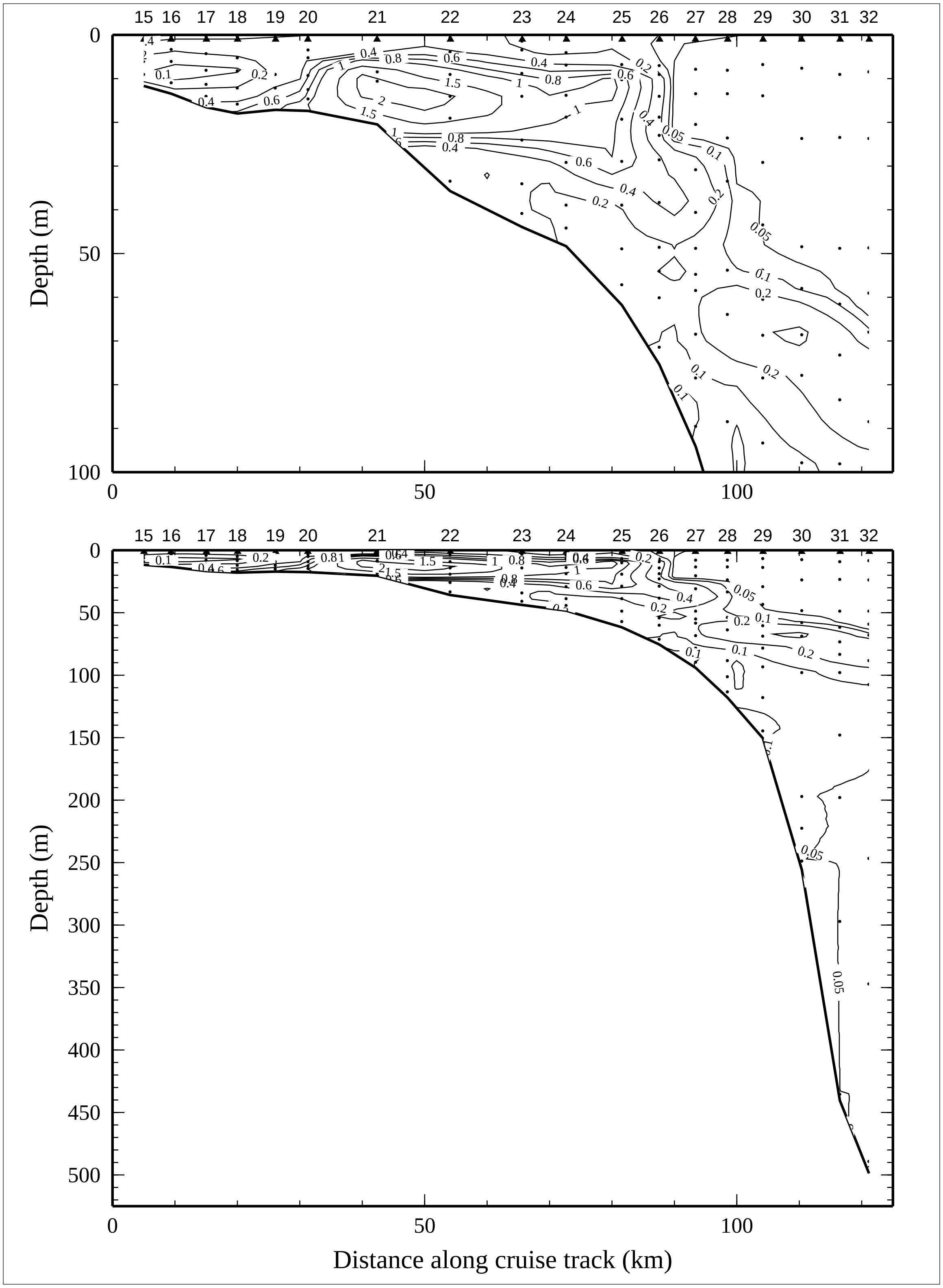

Figure 5.1.13. Nitrite (μmol·l-1) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

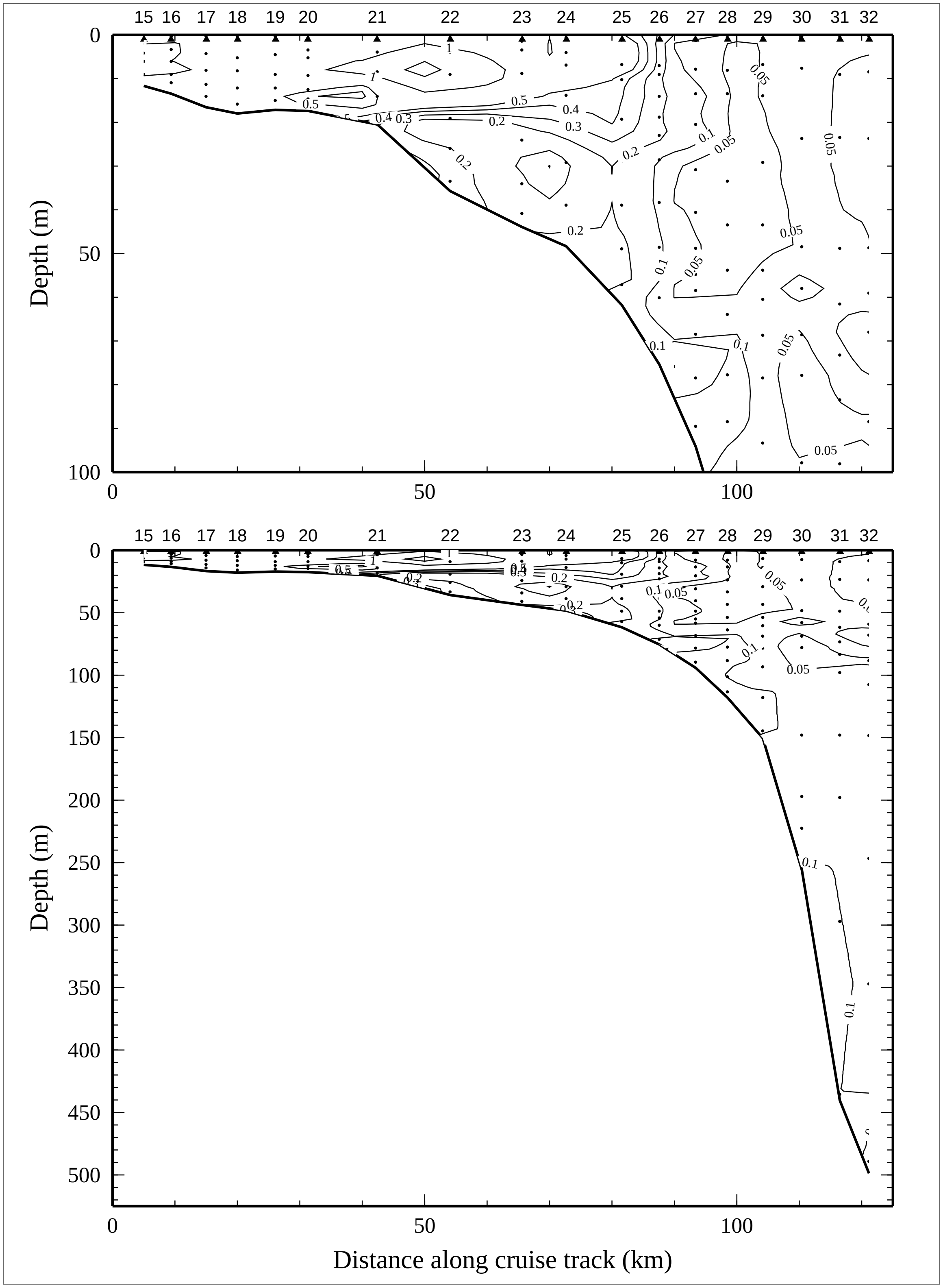

Figure 5.1.14. Ammonium (μmol·l⁻¹) on line 1 of LATEX A survey H05,
25 April - 11 May 1993.

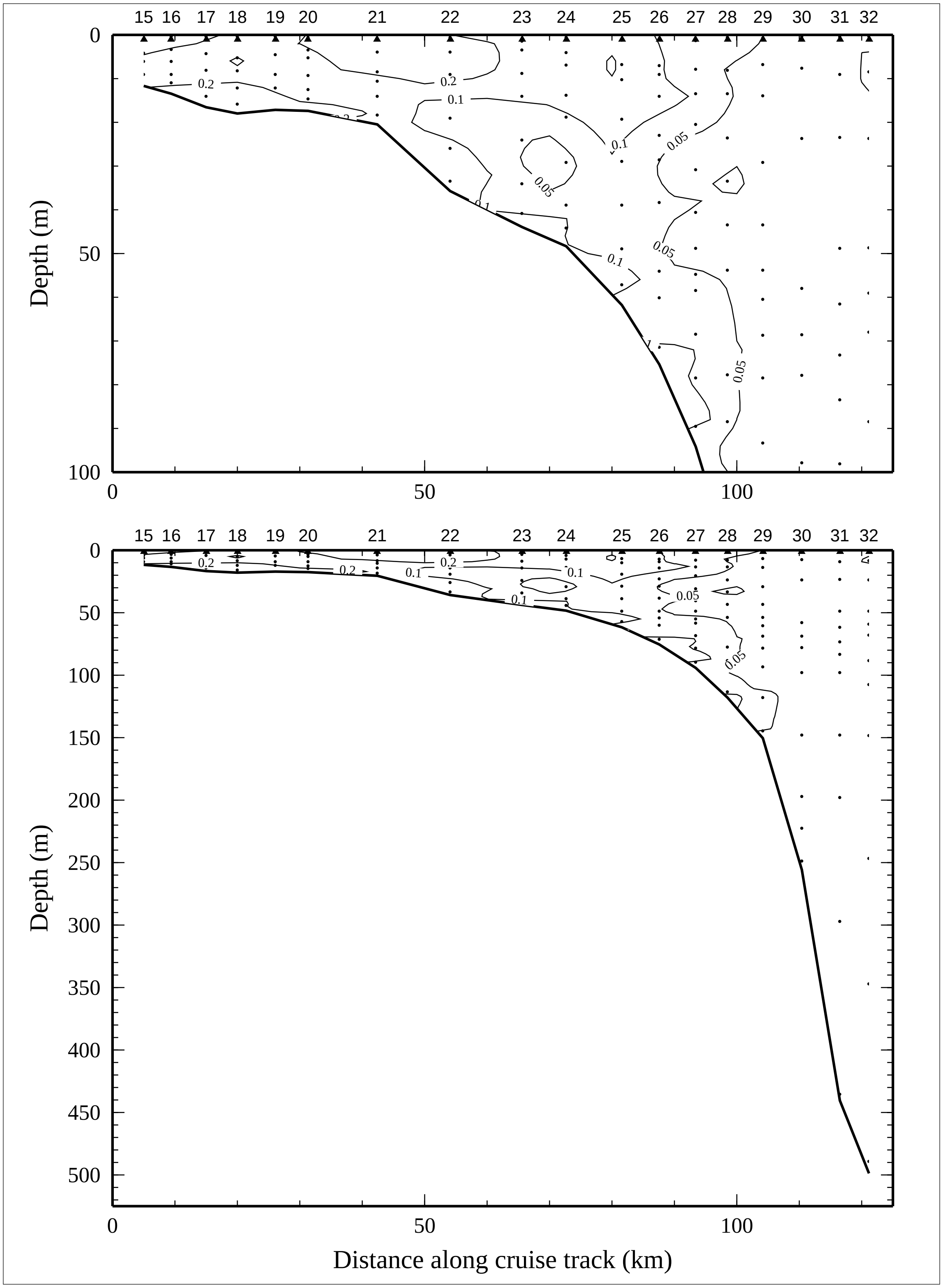

Figure 5.1.15. Urea (μmol·l-1) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

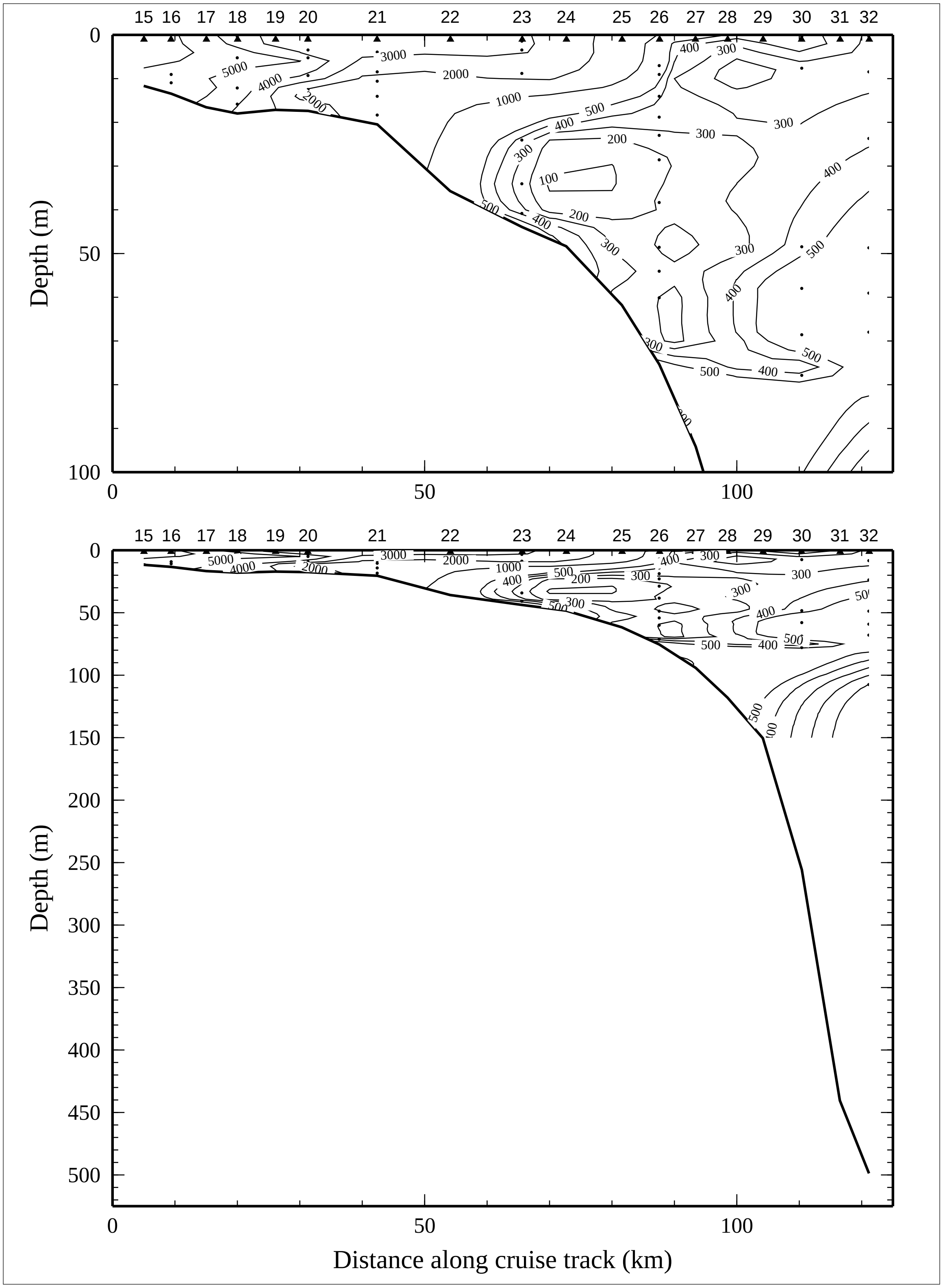

Figure 5.1.16. Chlorophyll a (ng·l-1) on line 1 of LATEX A survey H05, 25 April - 11 May 1993.

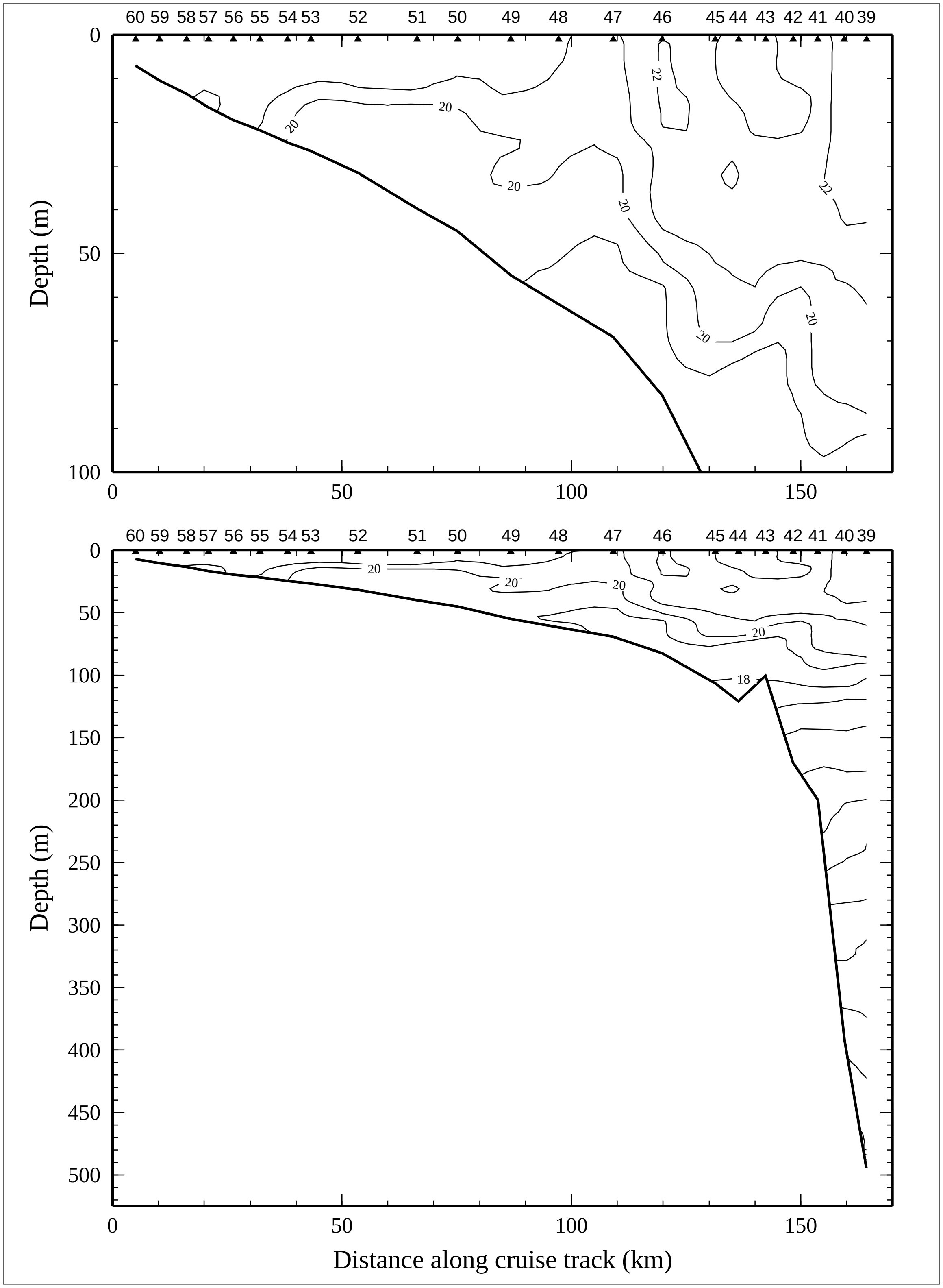

Figure 5.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

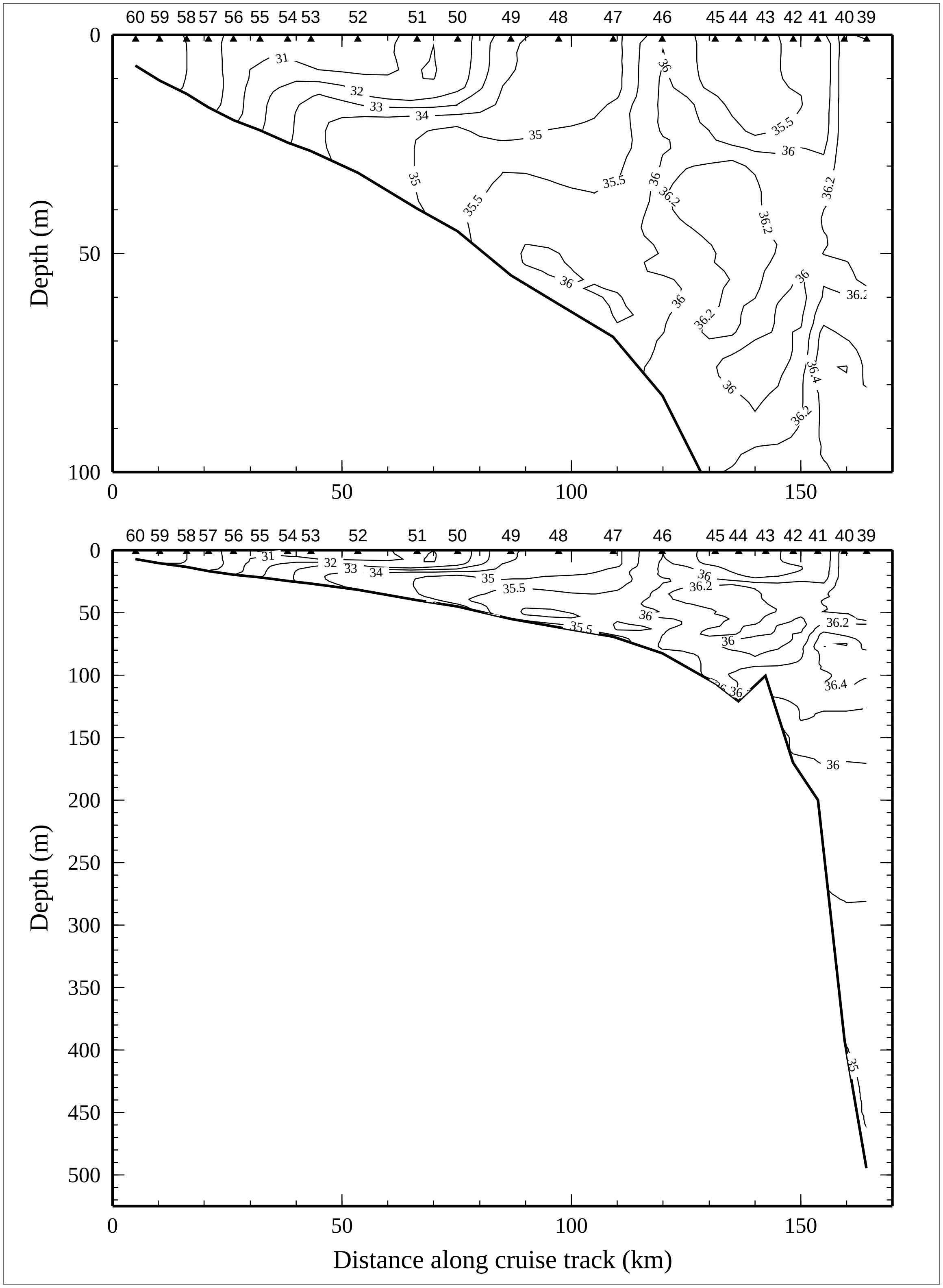

Figure 5.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

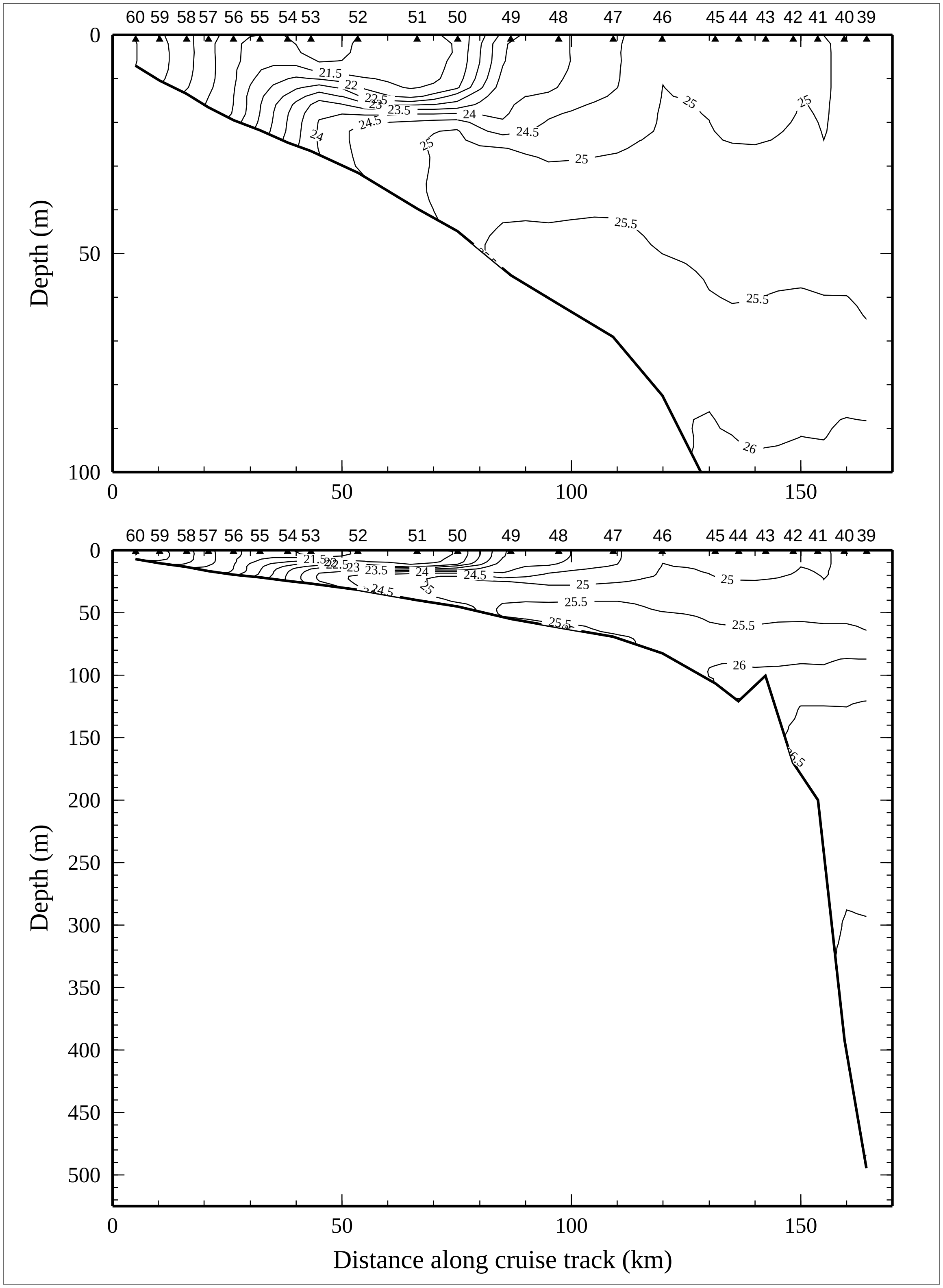

Figure 5.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

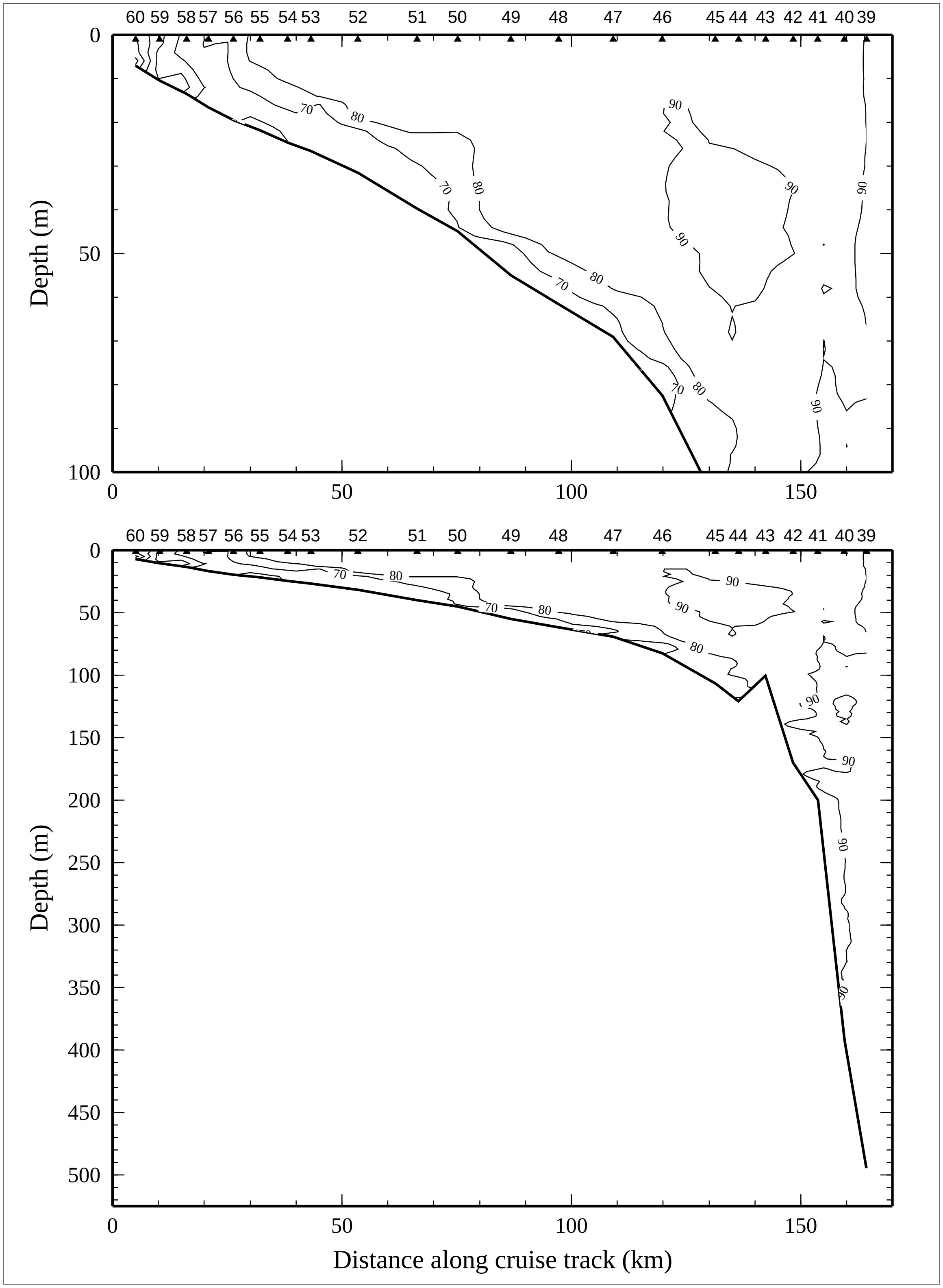

Figure 5.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

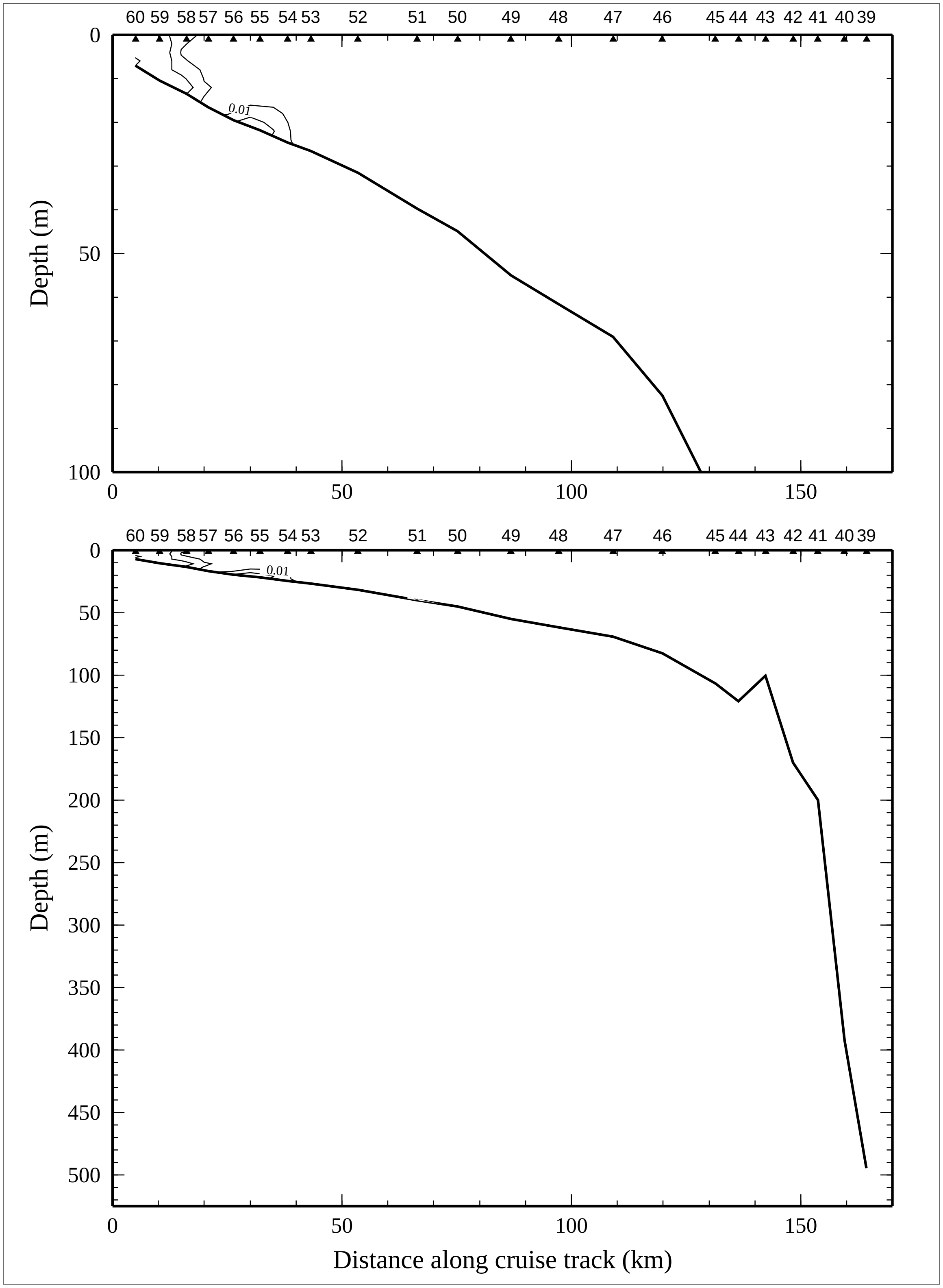

Figure 5.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

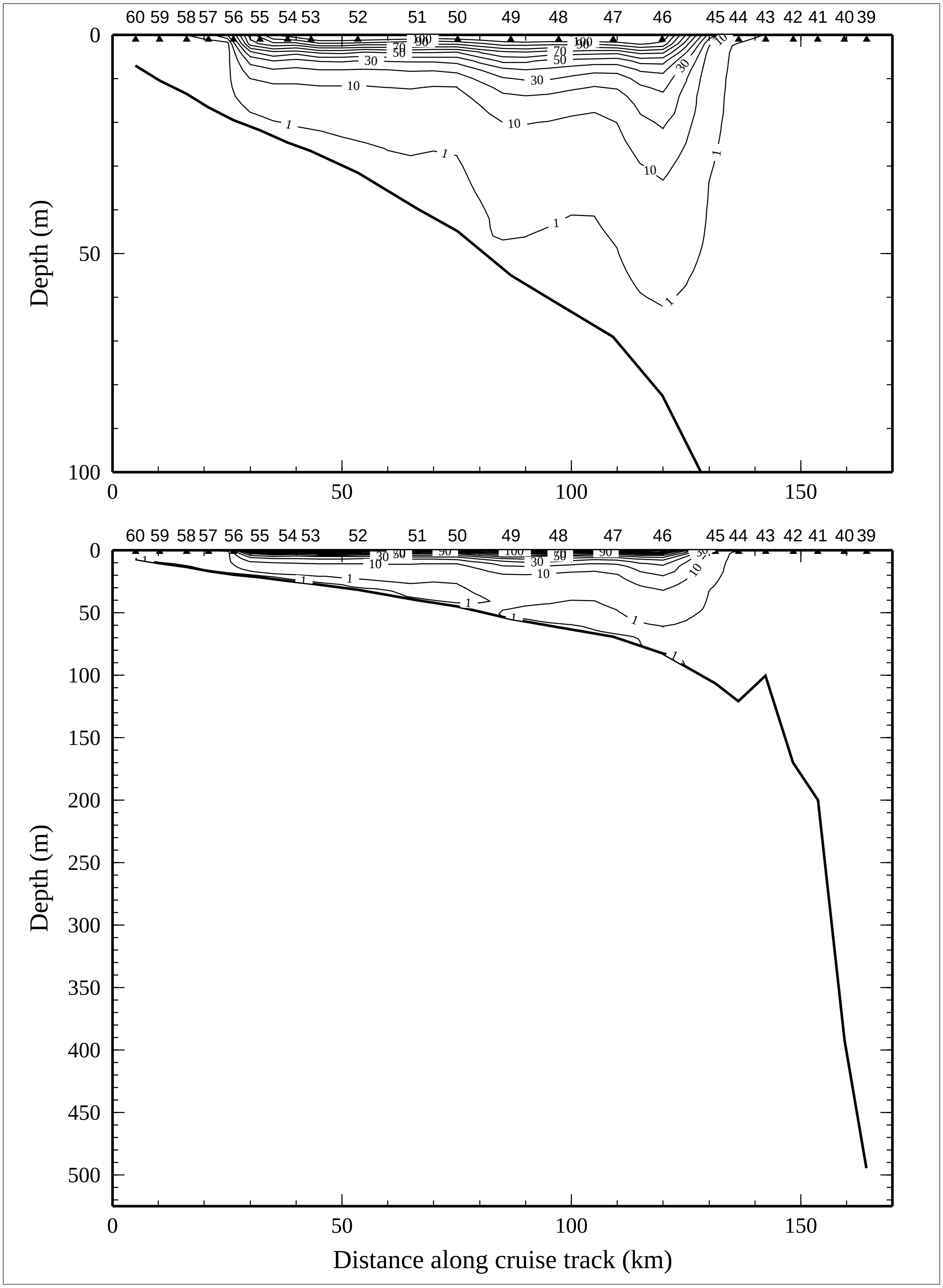

Figure 5.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

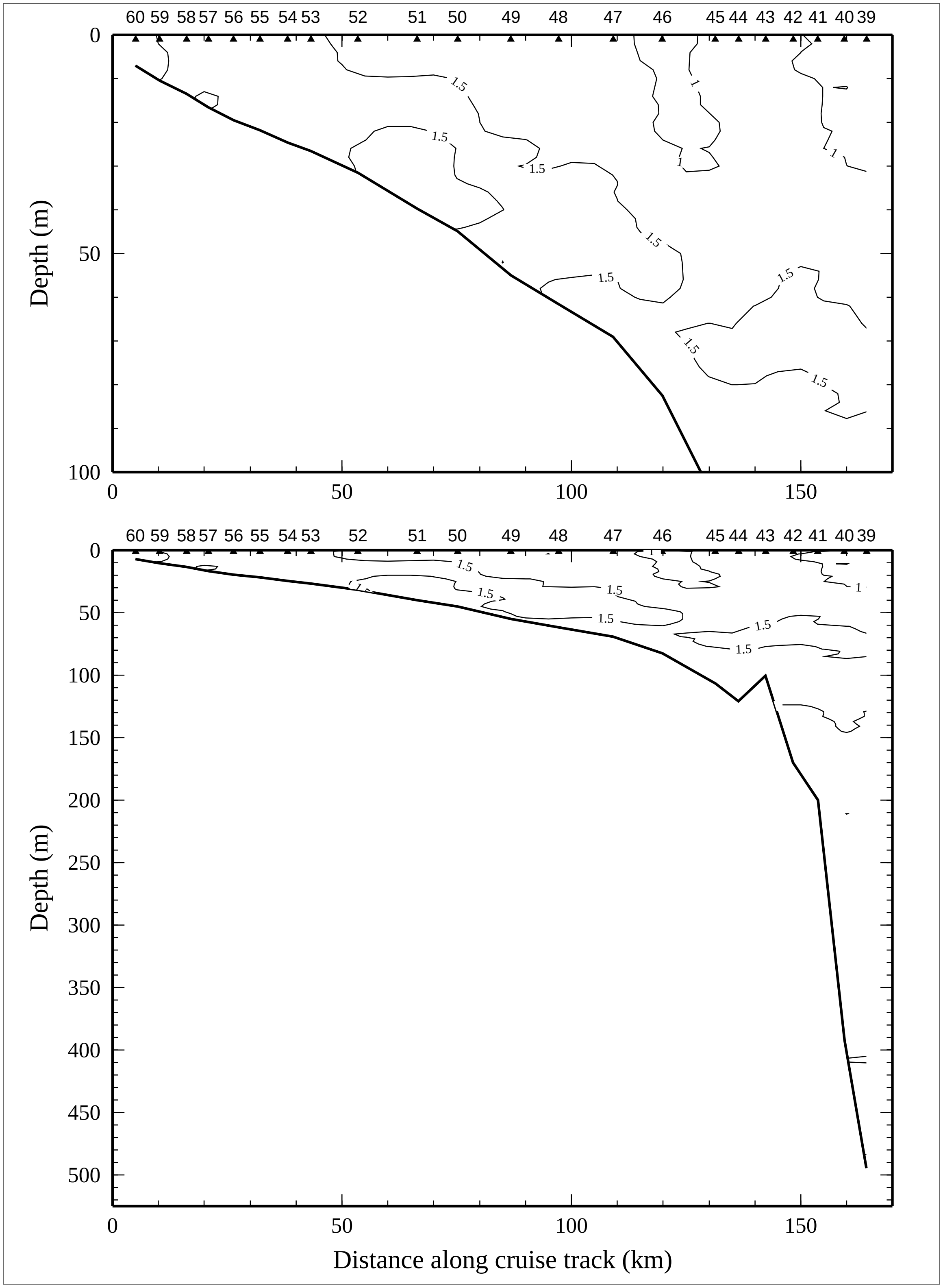

Figure 5.2.7. Relative fluorescence on line 2 of LATEX A survey H05,
25 April - 11 May 1993.

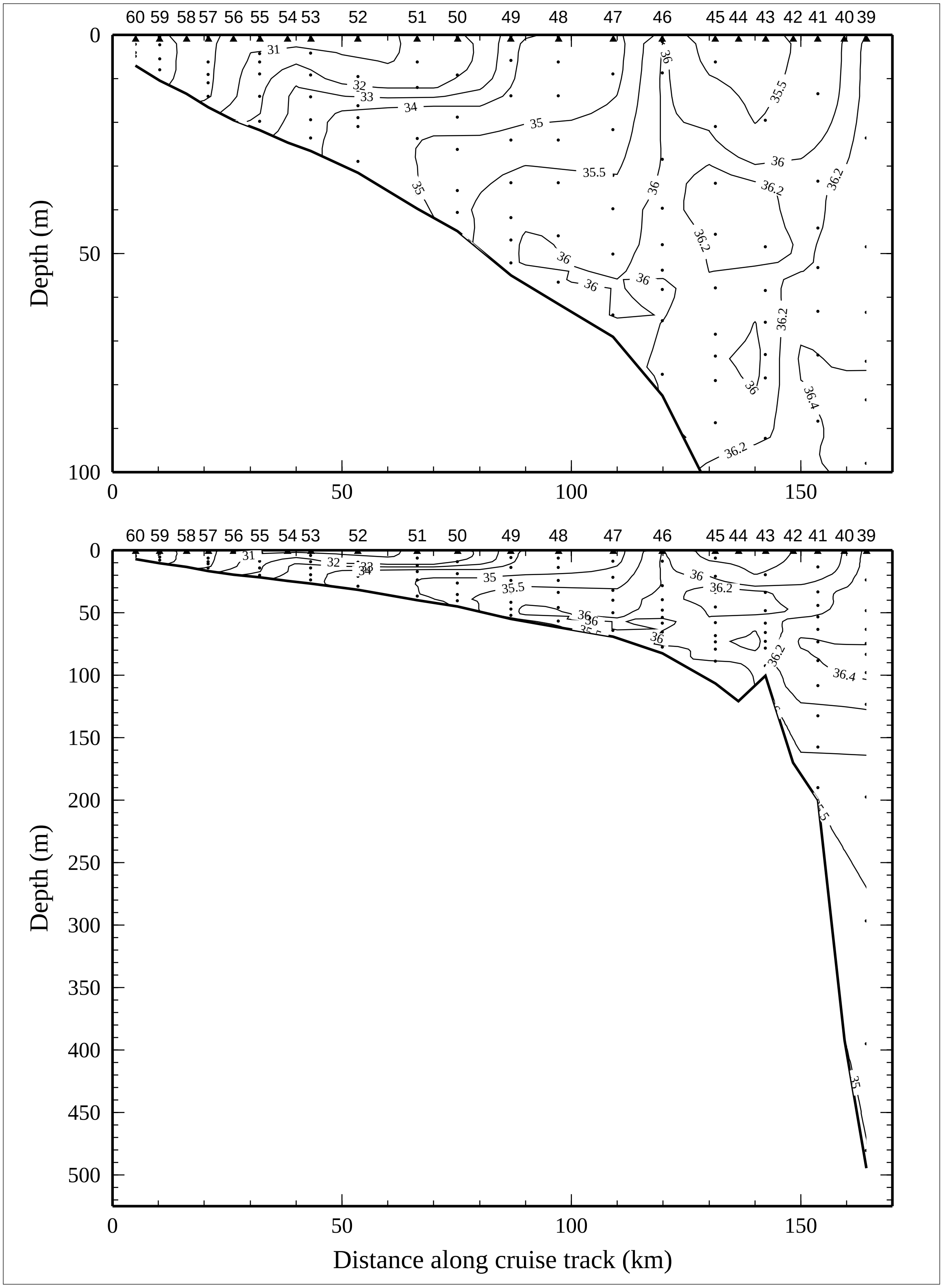

Figure 5.2.8. Bottle salinity on line 2 of LATEX A survey H05,
25 April - 11 May 1993.

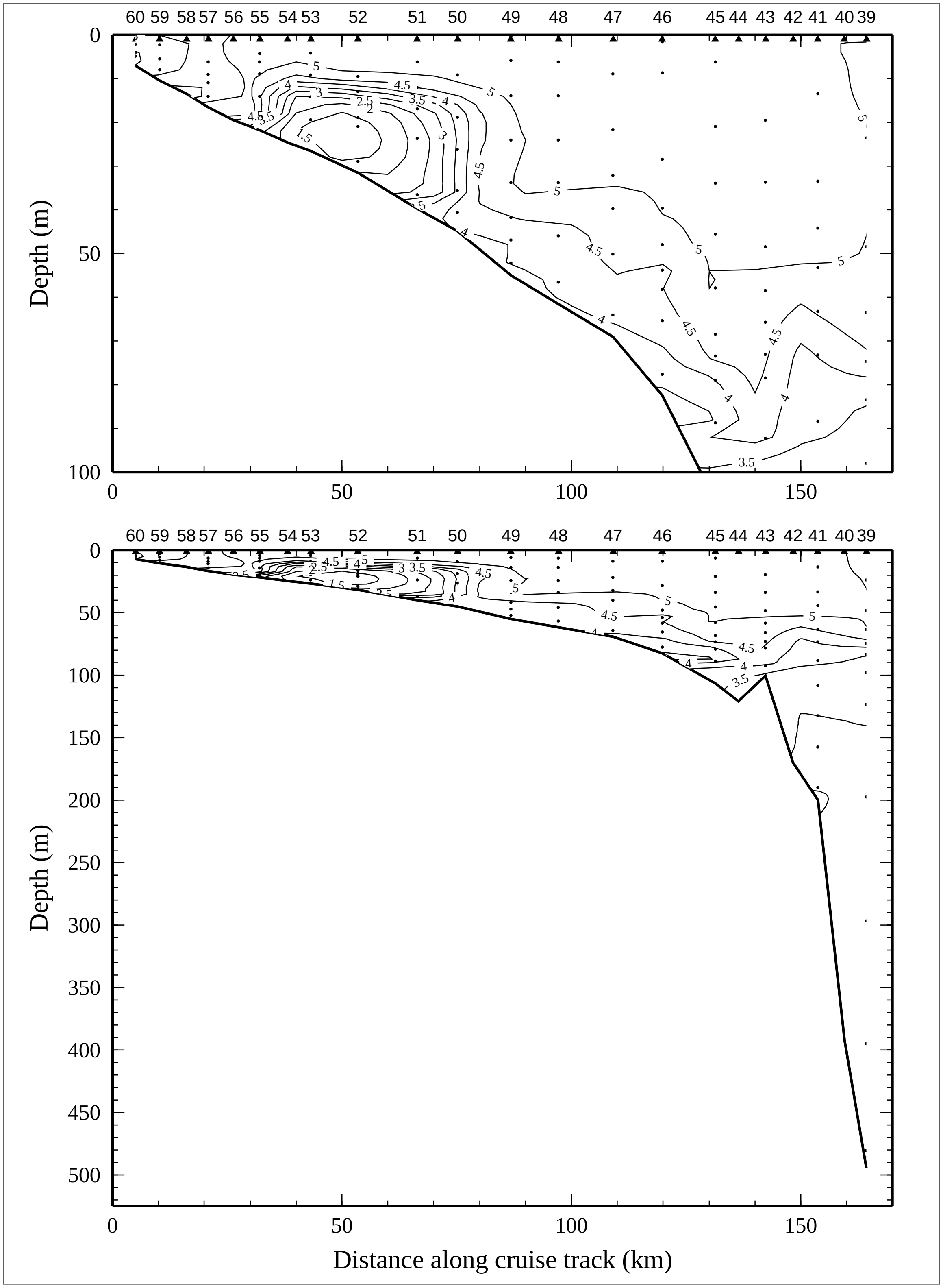

Figure 5.2.9. Dissolved oxygen (ml·l-1) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

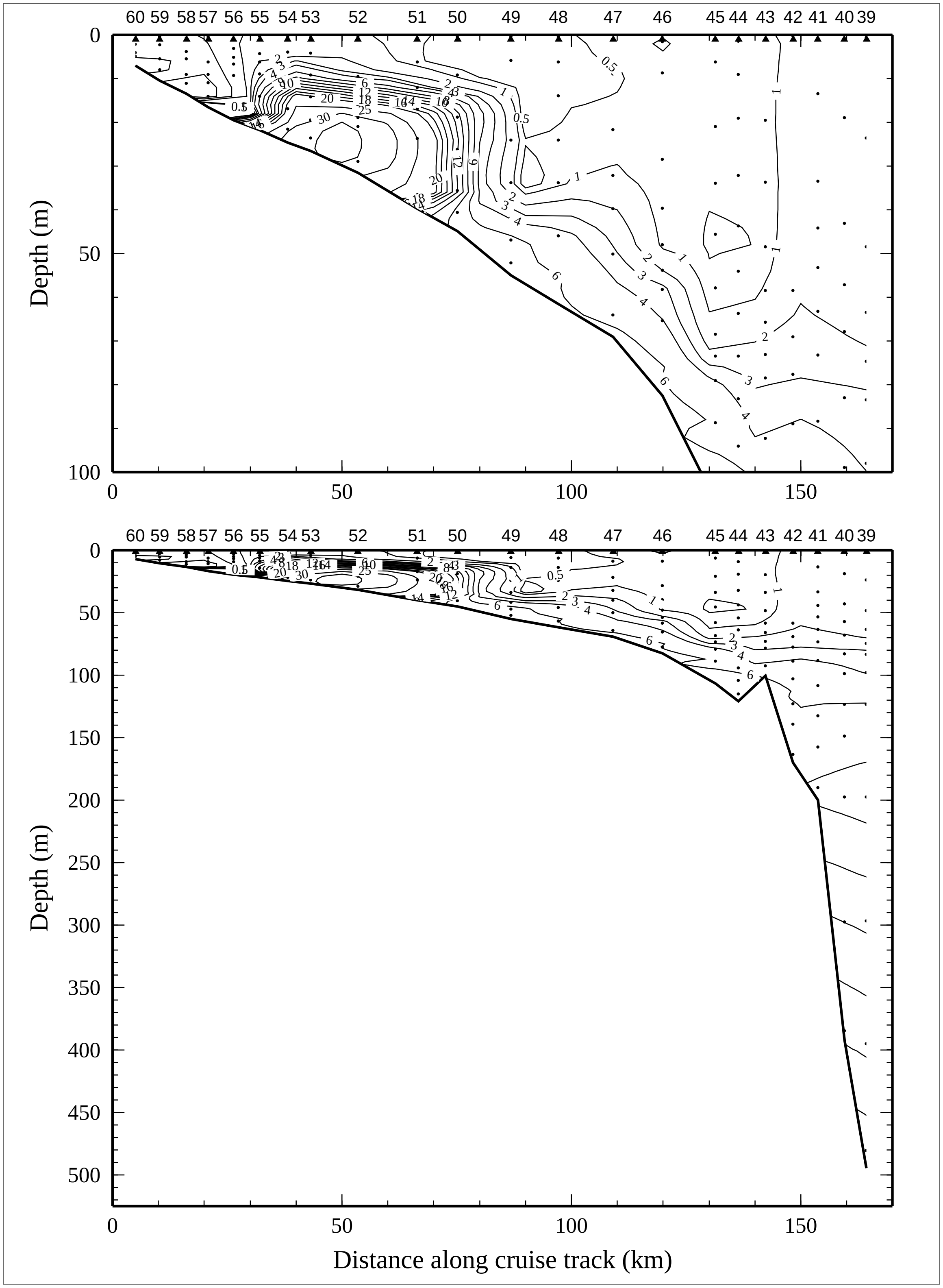

Figure 5.2.10. Silicate (μmol·l^{-1}) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

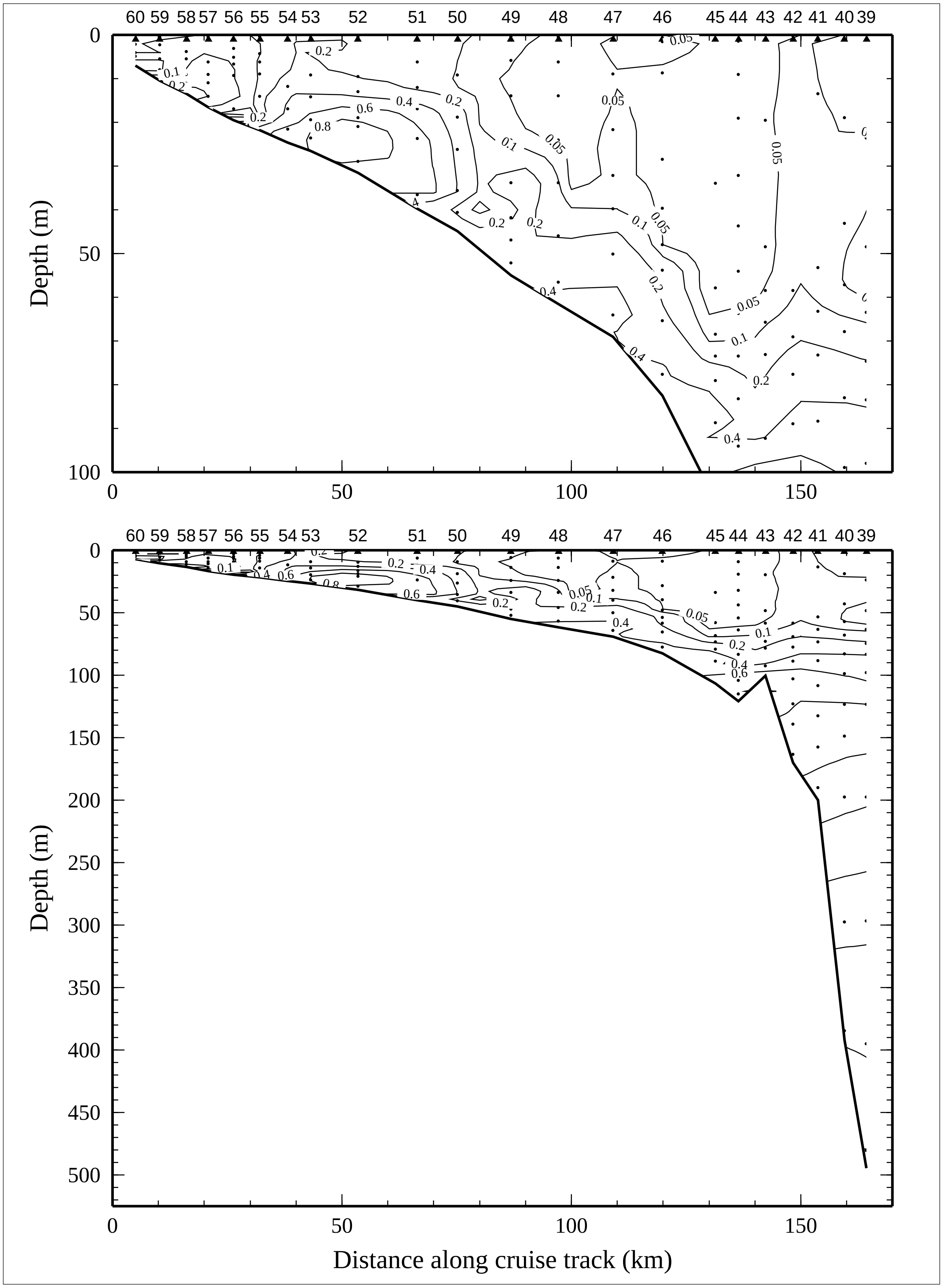

Figure 5.2.11. Phosphate (µmol·l^{-1}) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

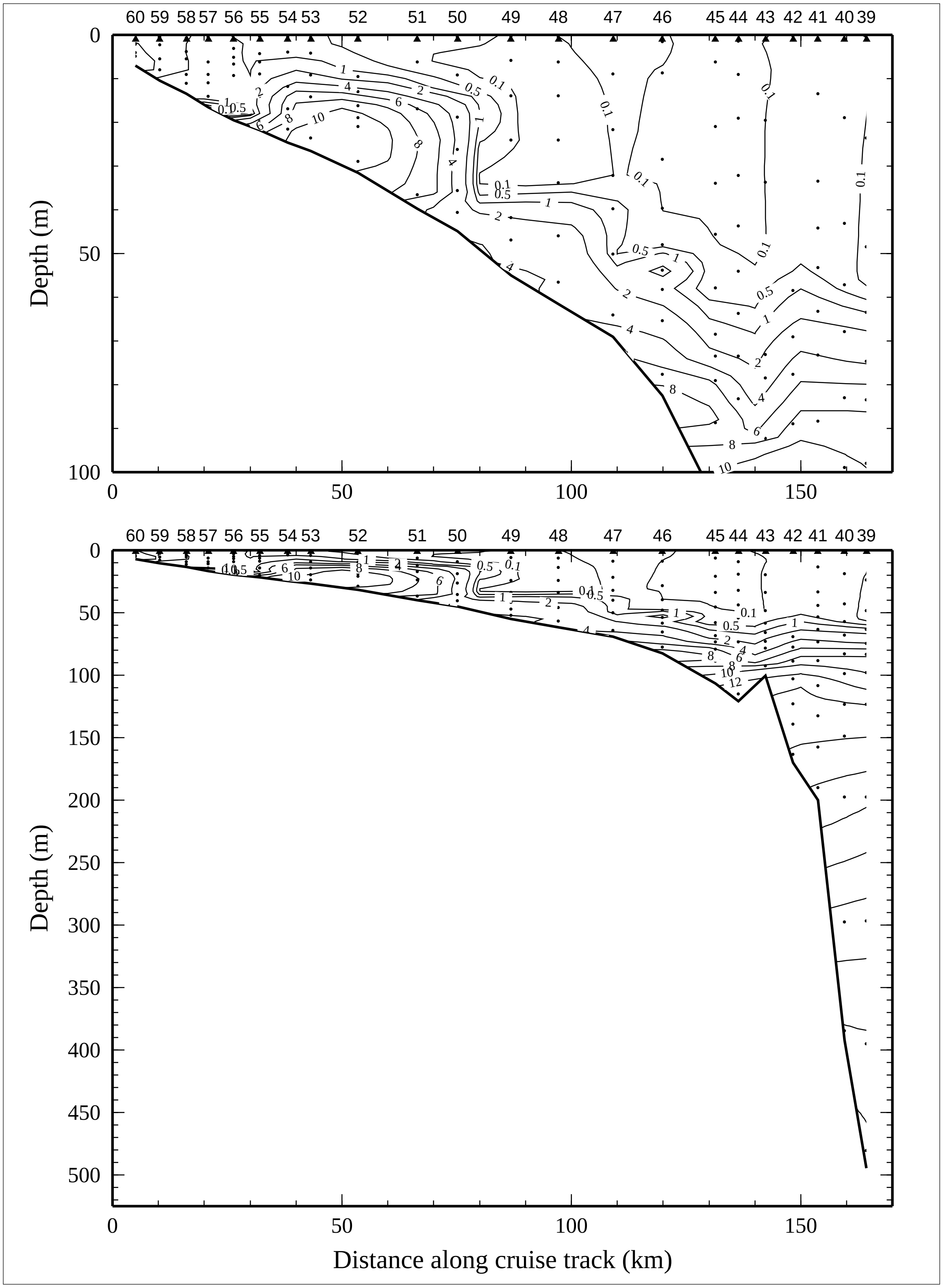

Figure 5.2.12. Nitrate (μmol·l-1) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

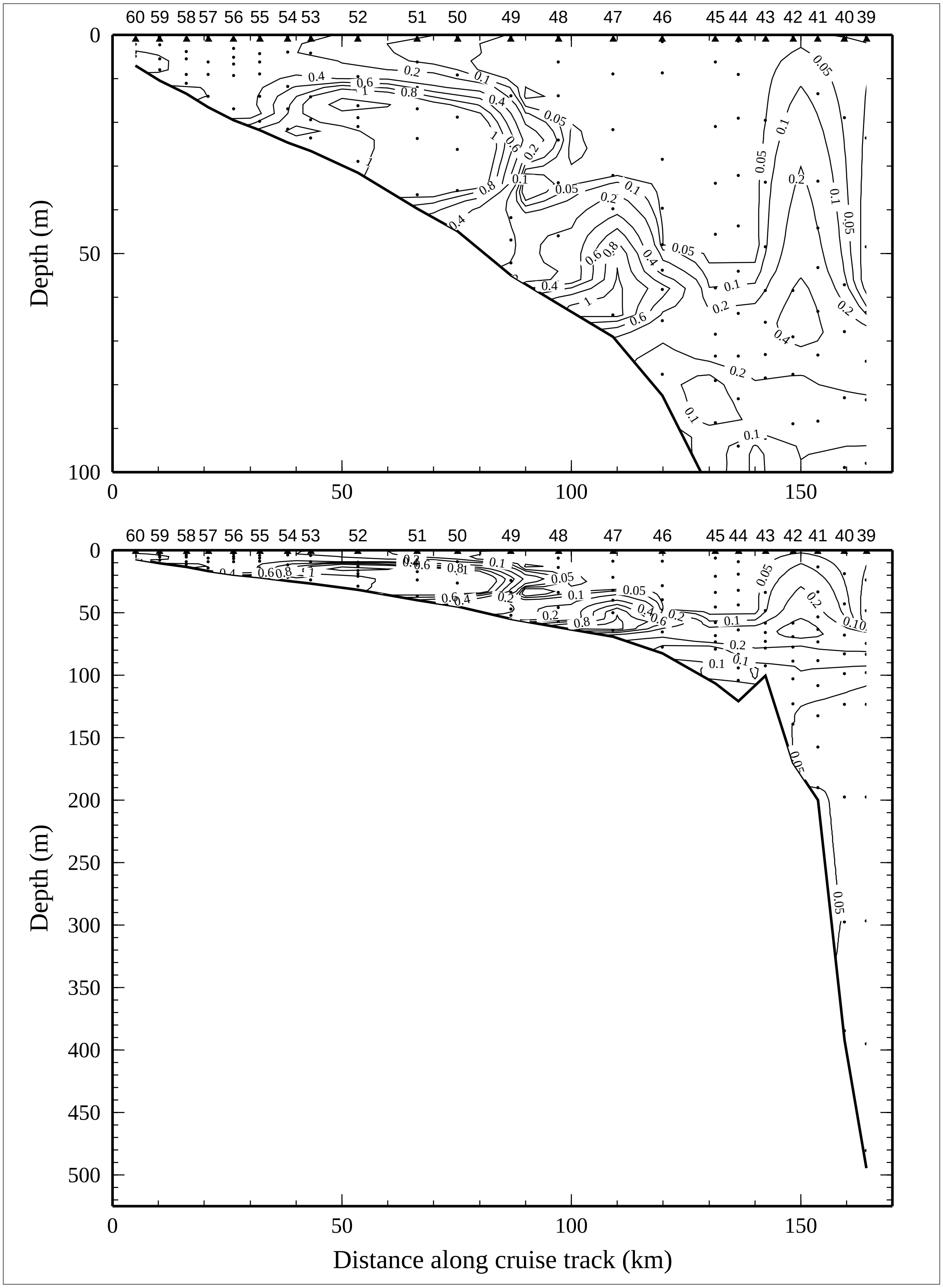

Figure 5.2.13. Nitrite (μmol·l^{-1}) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

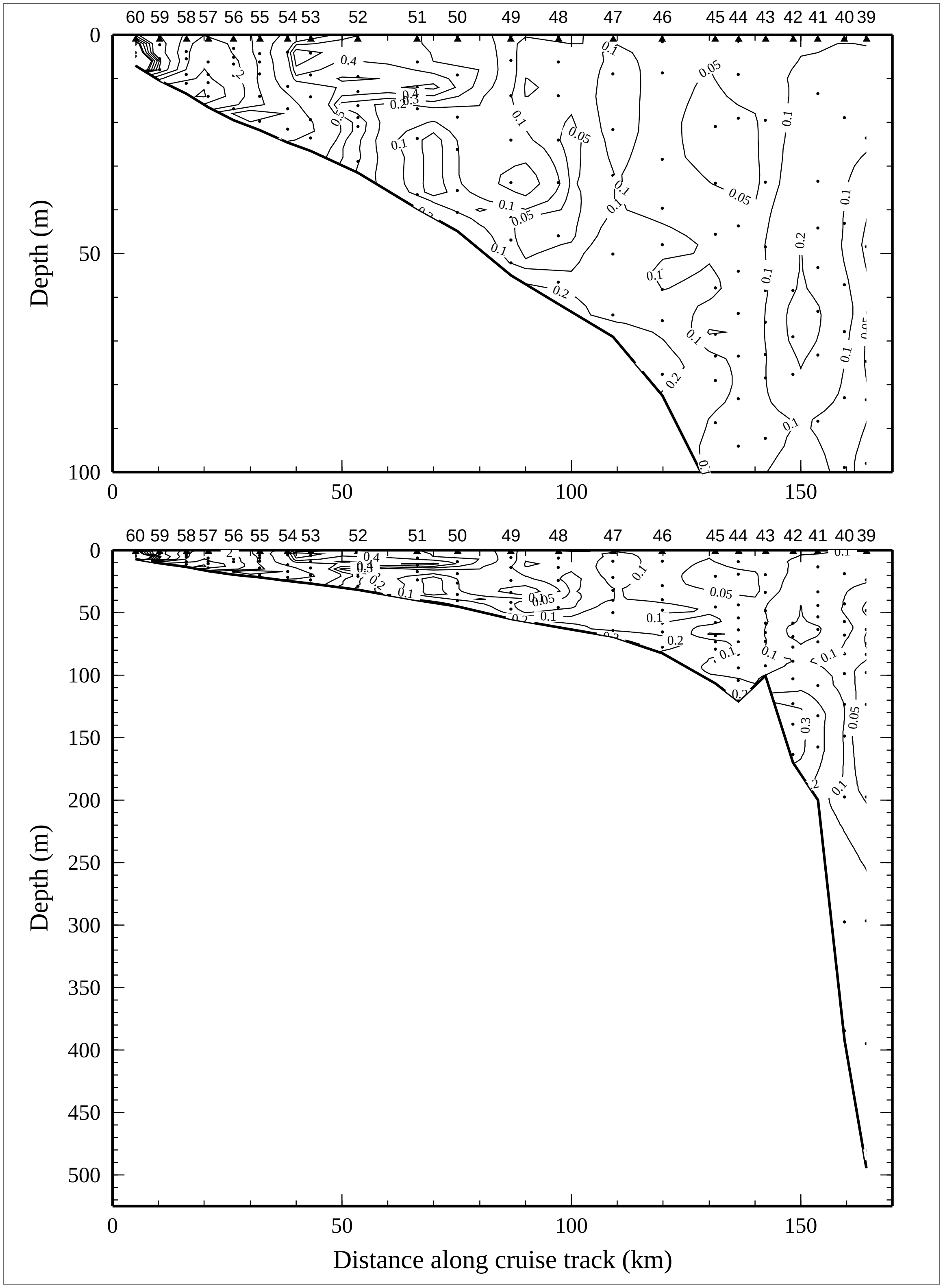

Figure 5.2.14. Ammonium (μmol·l-1) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

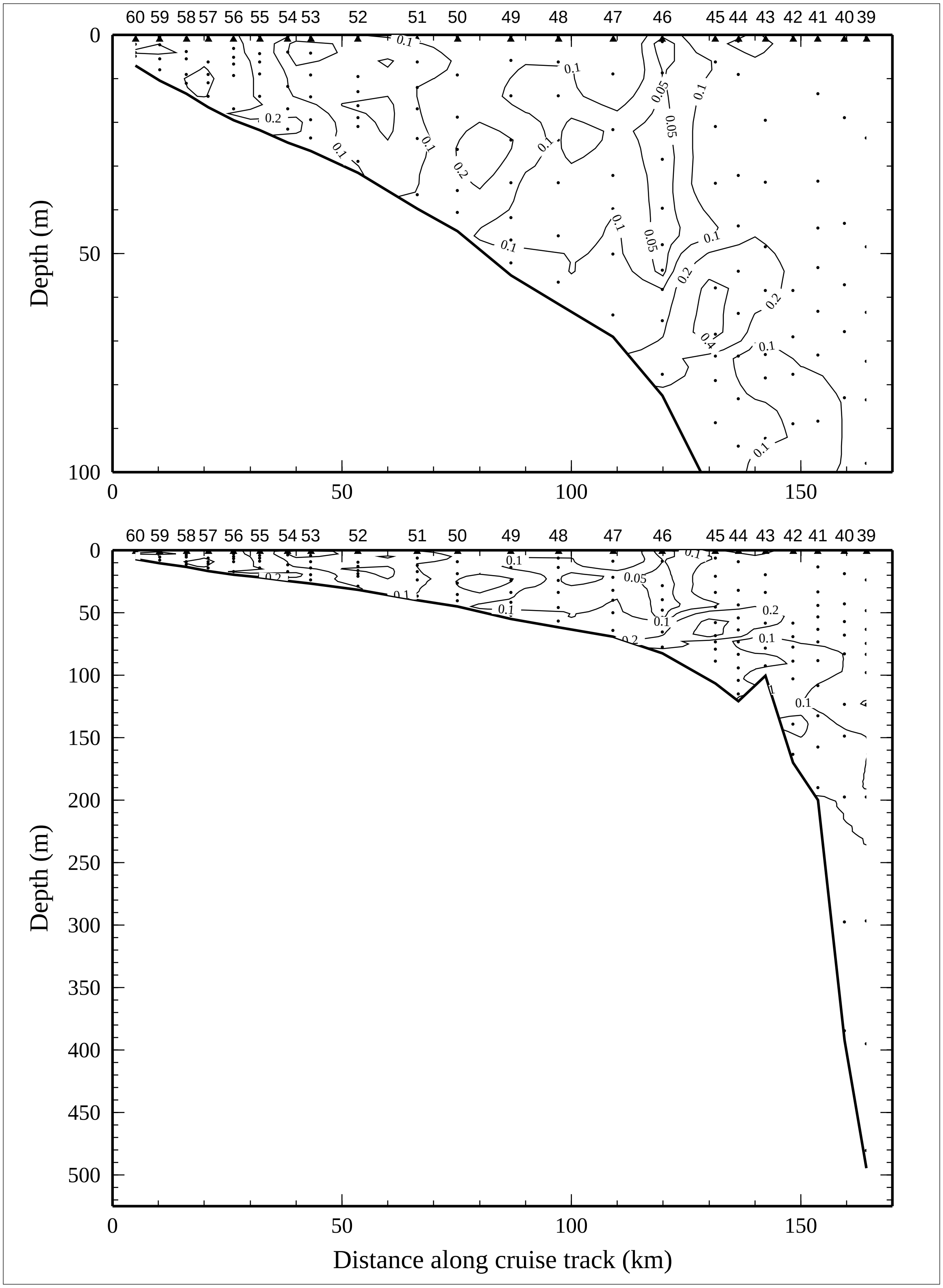

Figure 5.2.15. Urea (µmol·l^{-1}) on line 2 of LATEX A survey H05, 25 April - 11 May 1993.

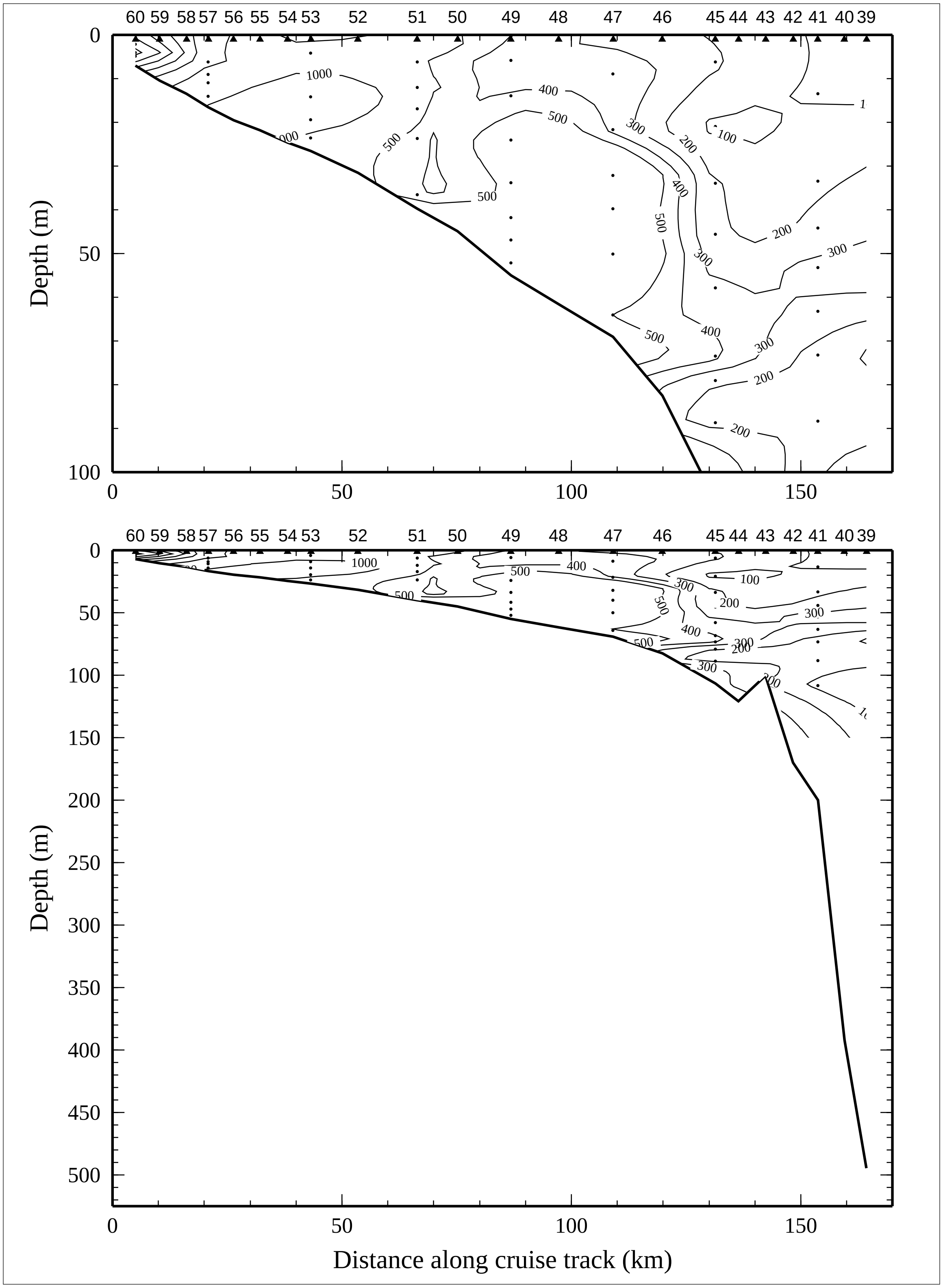

Figure 5.2.16. Chlorophyll a (ng·l^{-1}) on line 2 of LATEX A survey H05,
25 April - 11 May 1993.

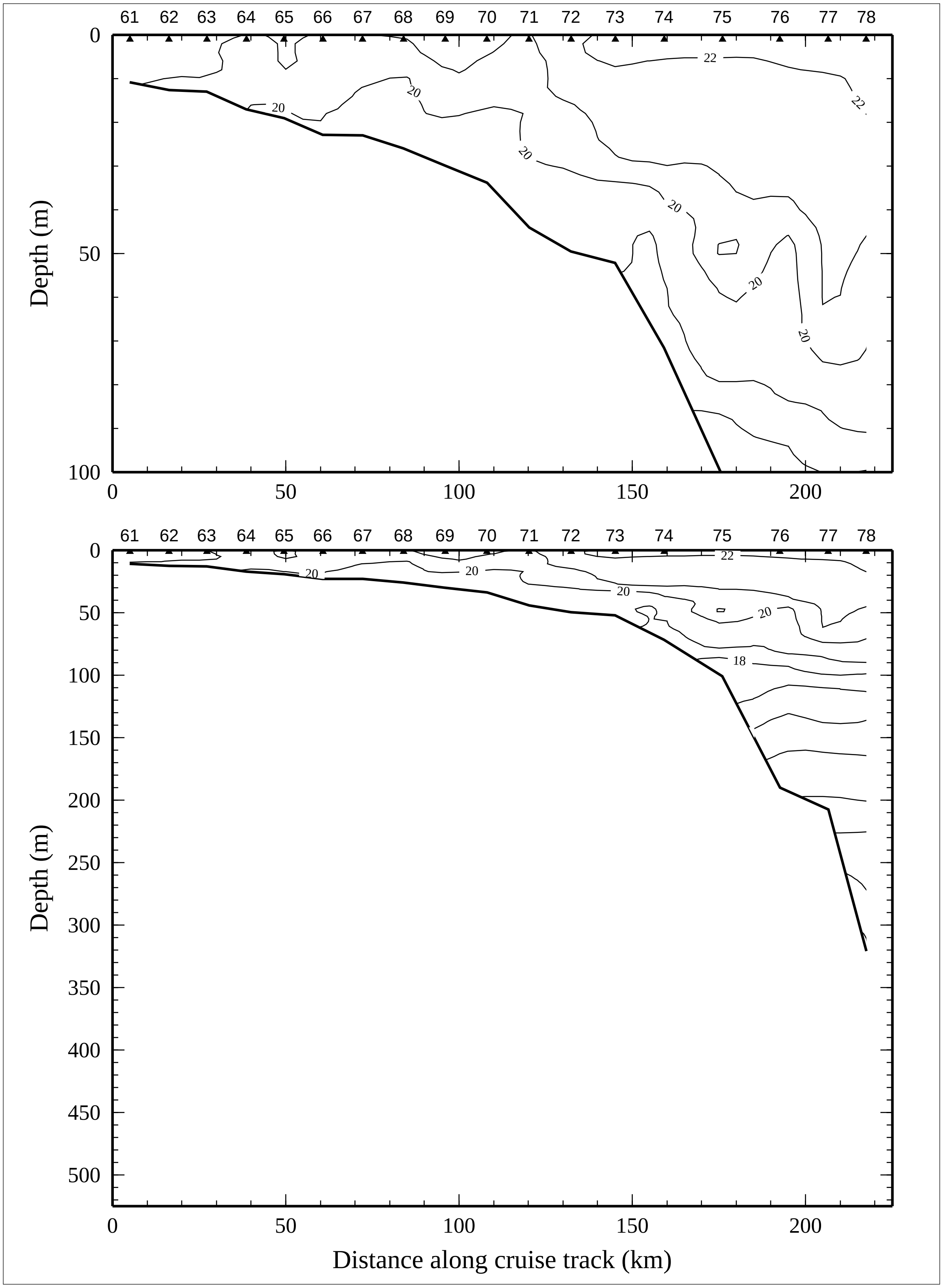

Figure 5.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H05,
25 April - 11 May 1993.

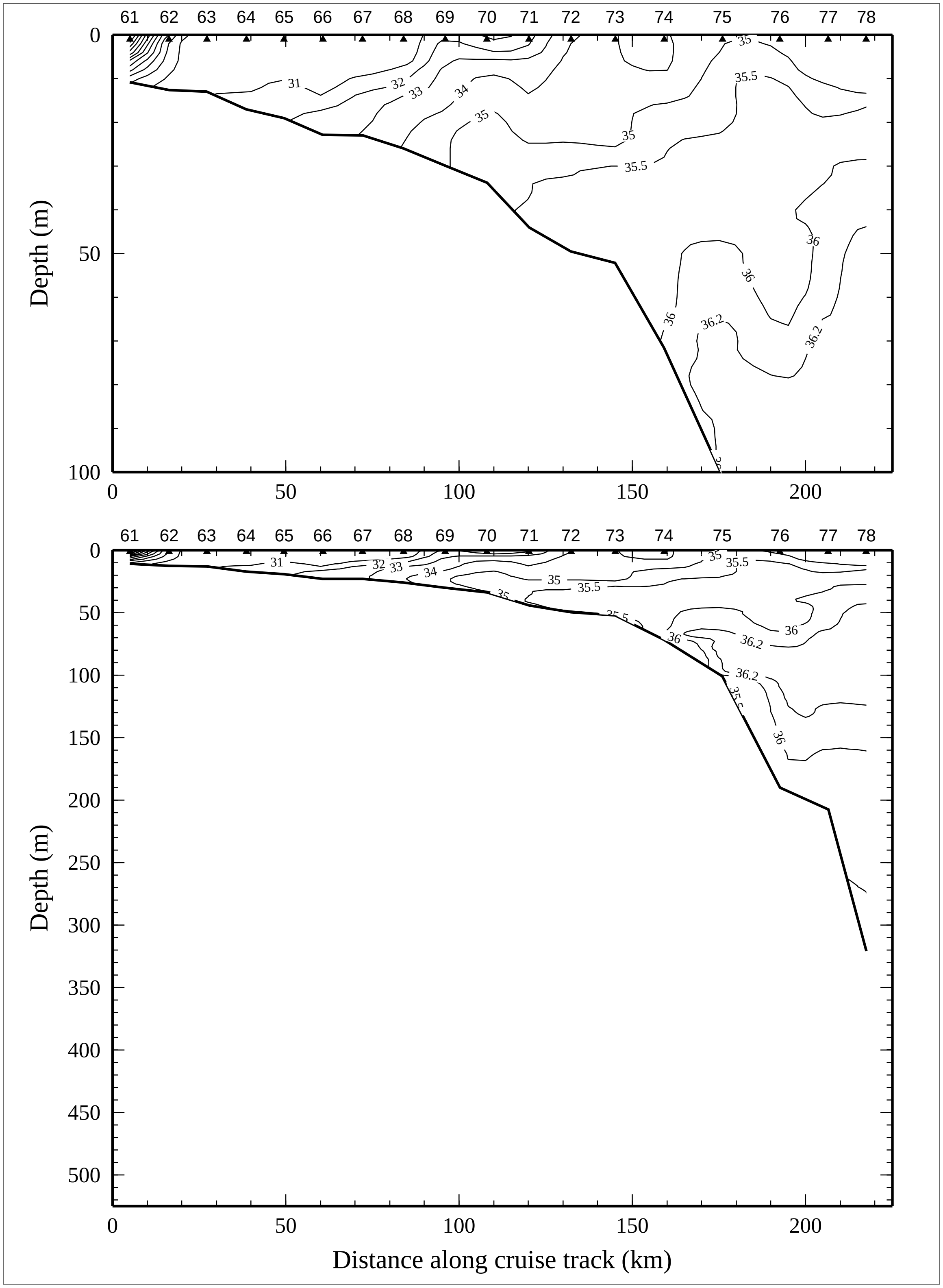

Figure 5.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

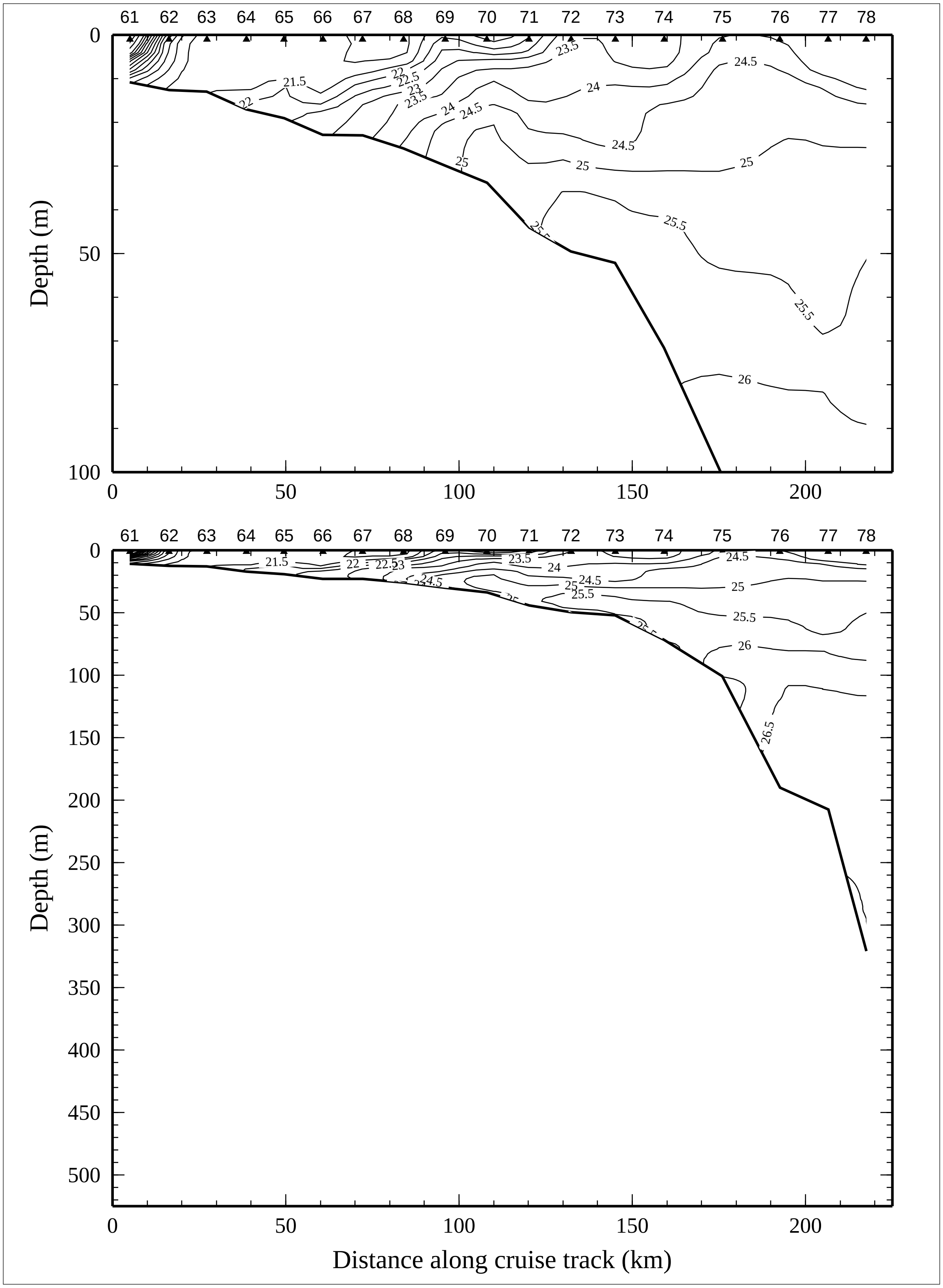

Figure 5.3.3. Density anomaly (σ_θ in kg·m^{-3}) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

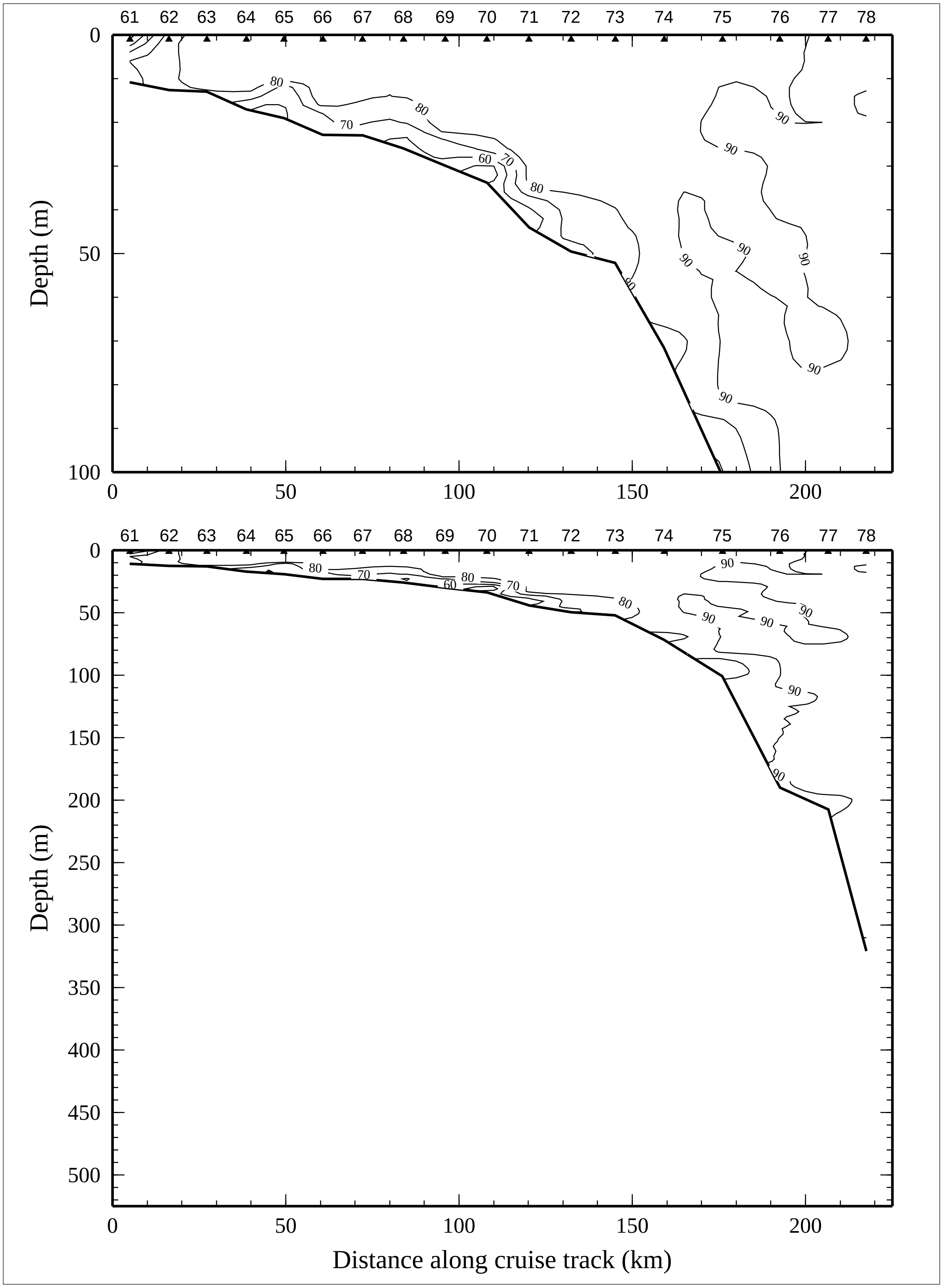

Figure 5.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

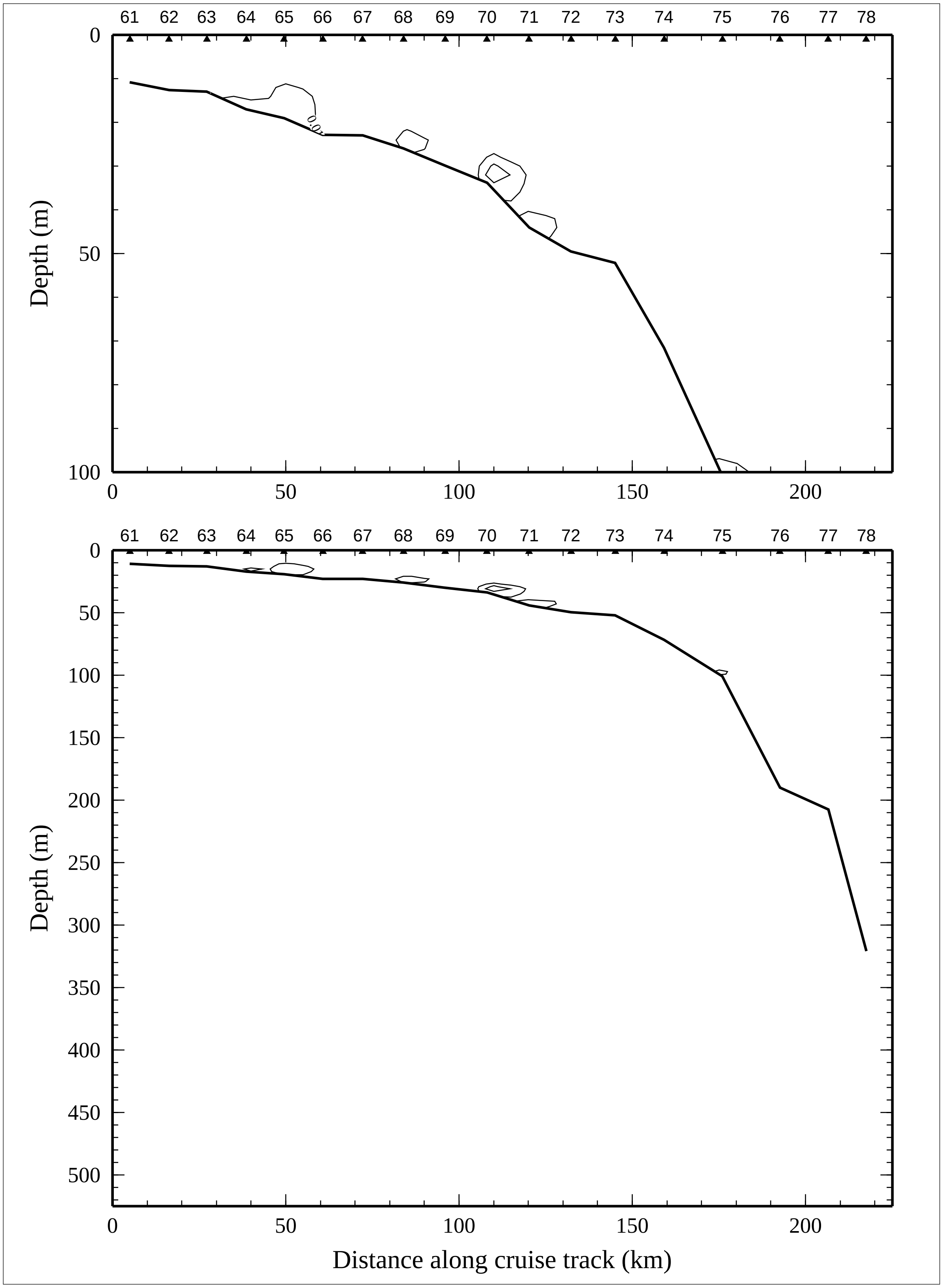

Figure 5.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

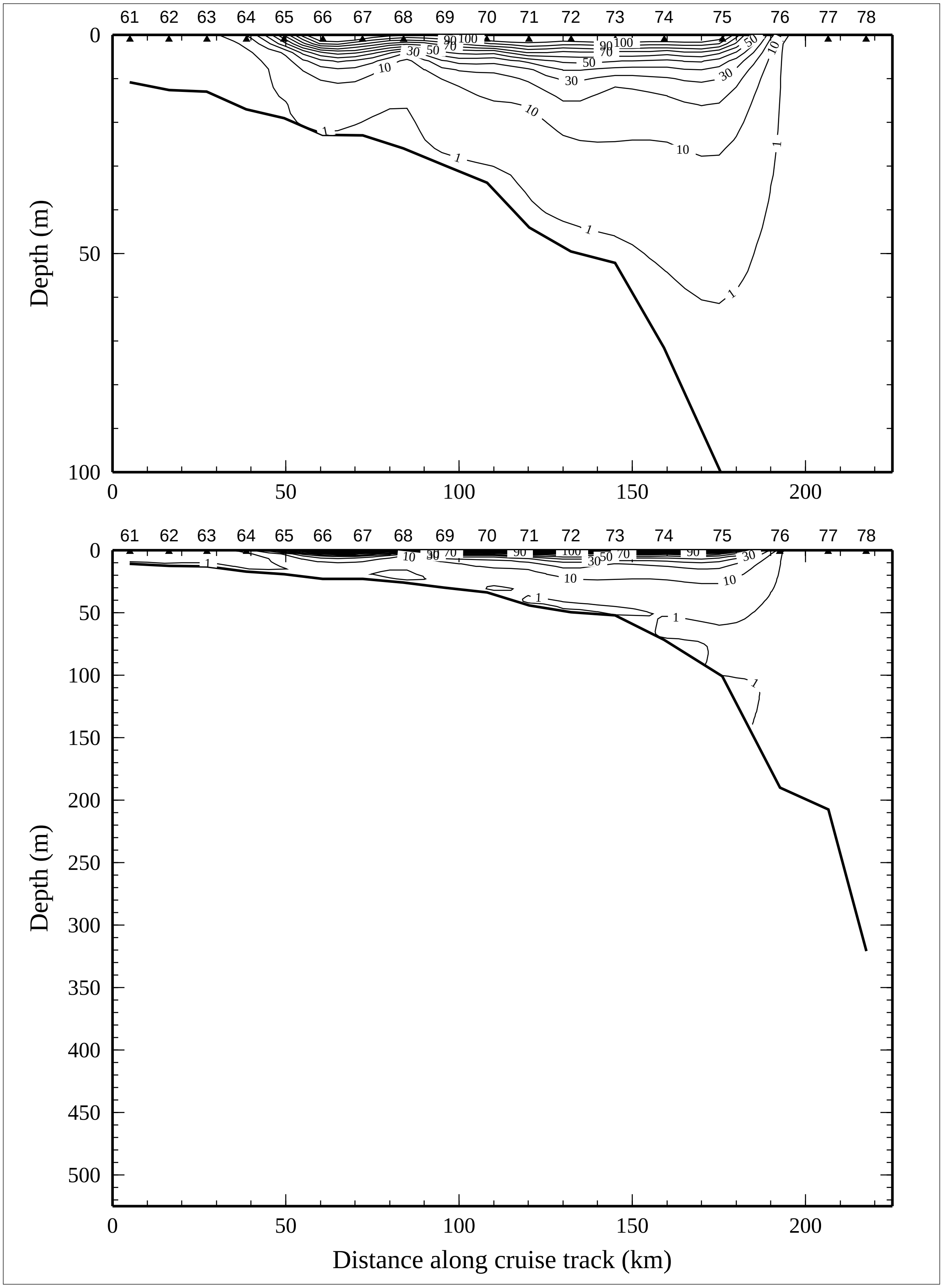

Figure 5.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

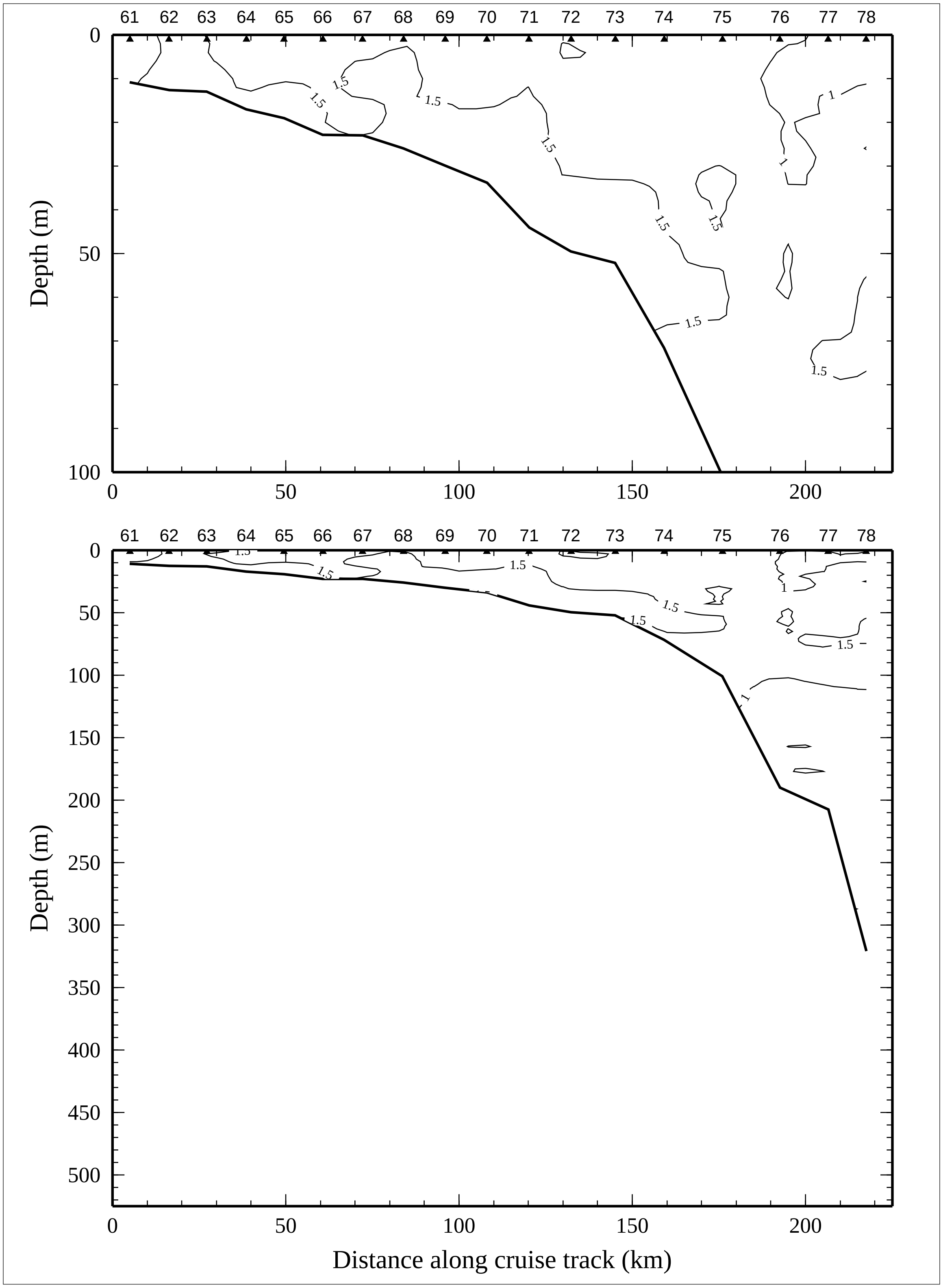

Figure 5.3.7. Relative fluorescence on line 3 of LATEX A survey H05,
25 April - 11 May 1993.

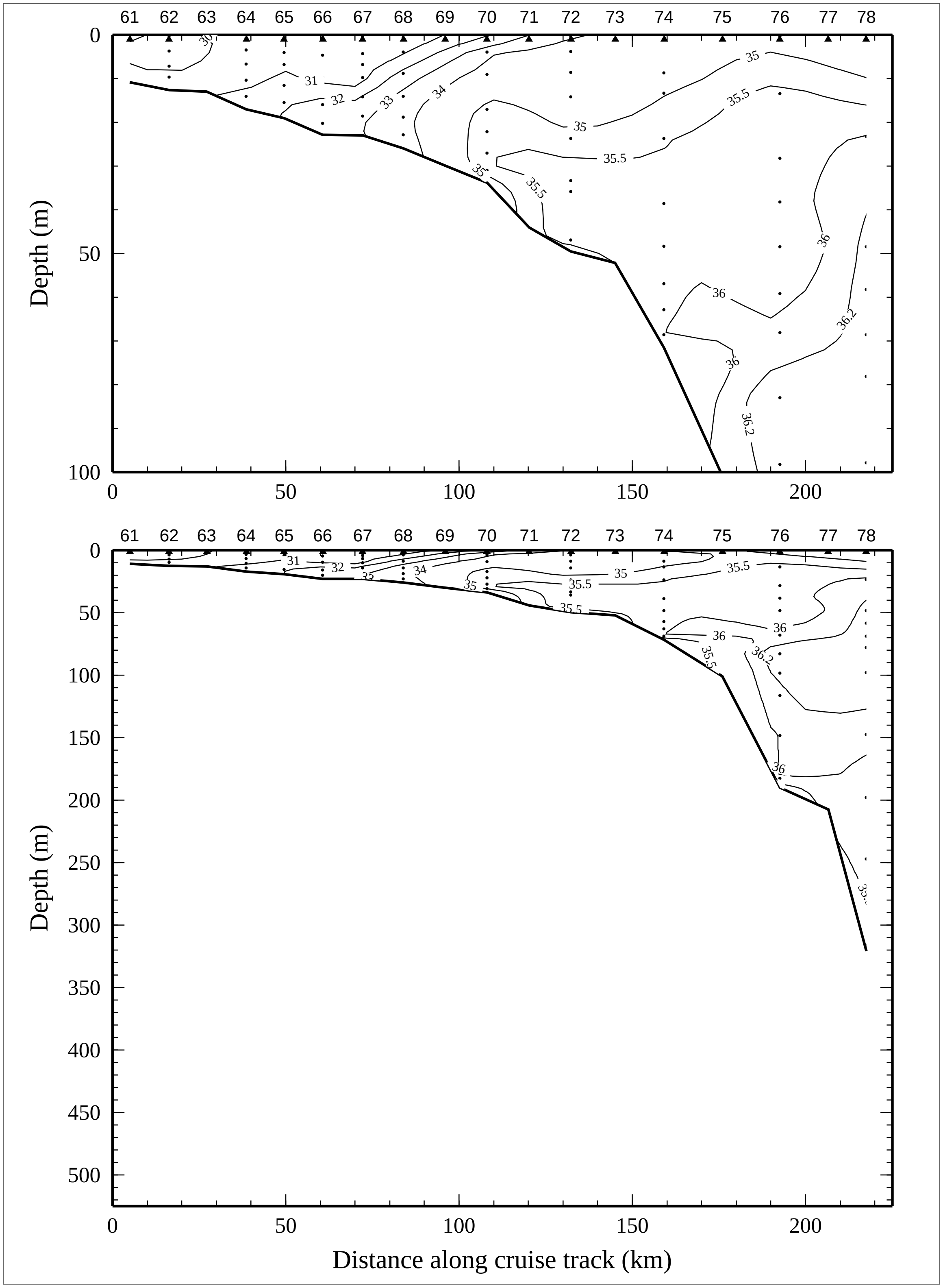

Figure 5.3.8. Bottle salinity on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

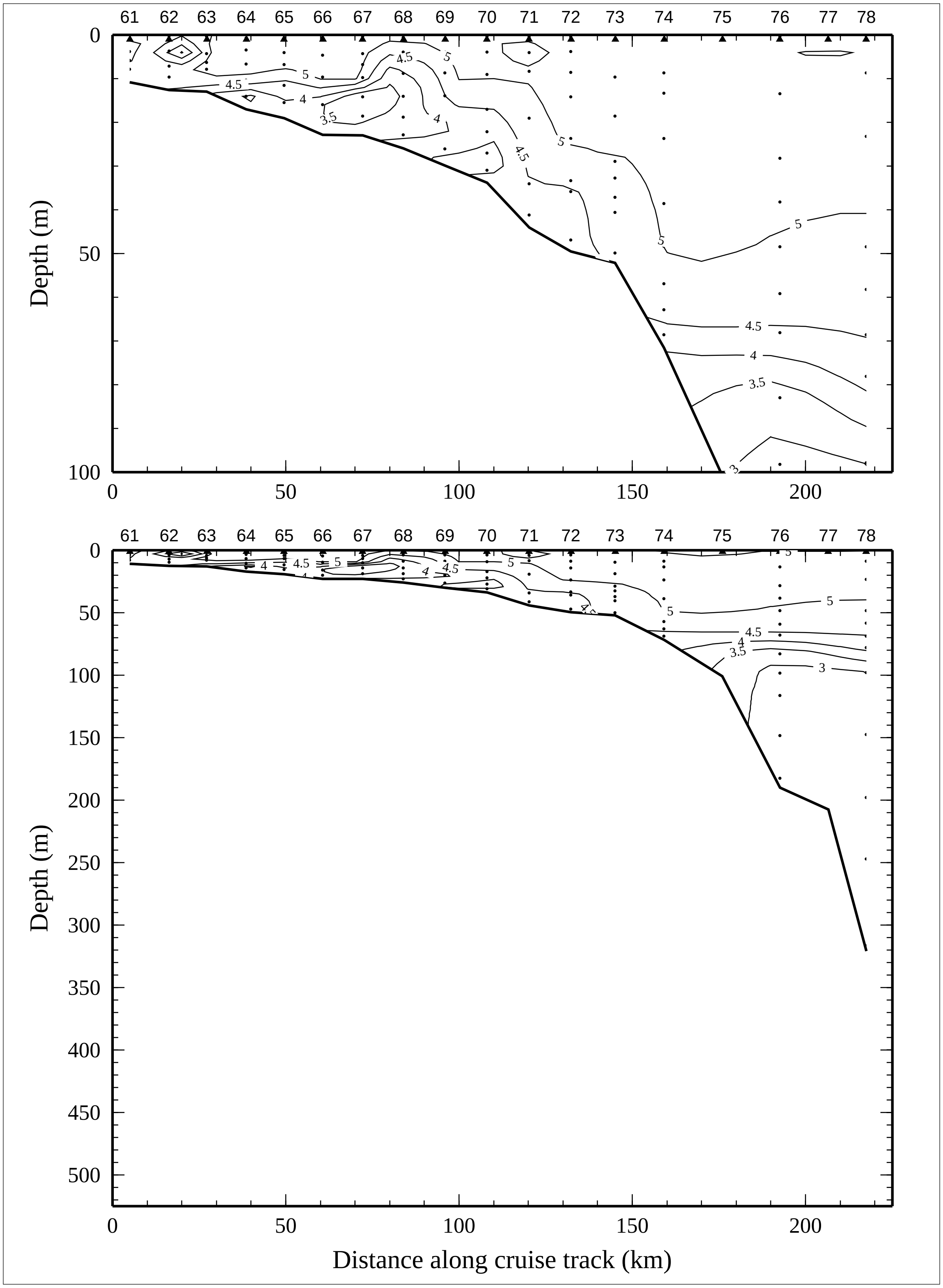

Figure 5.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

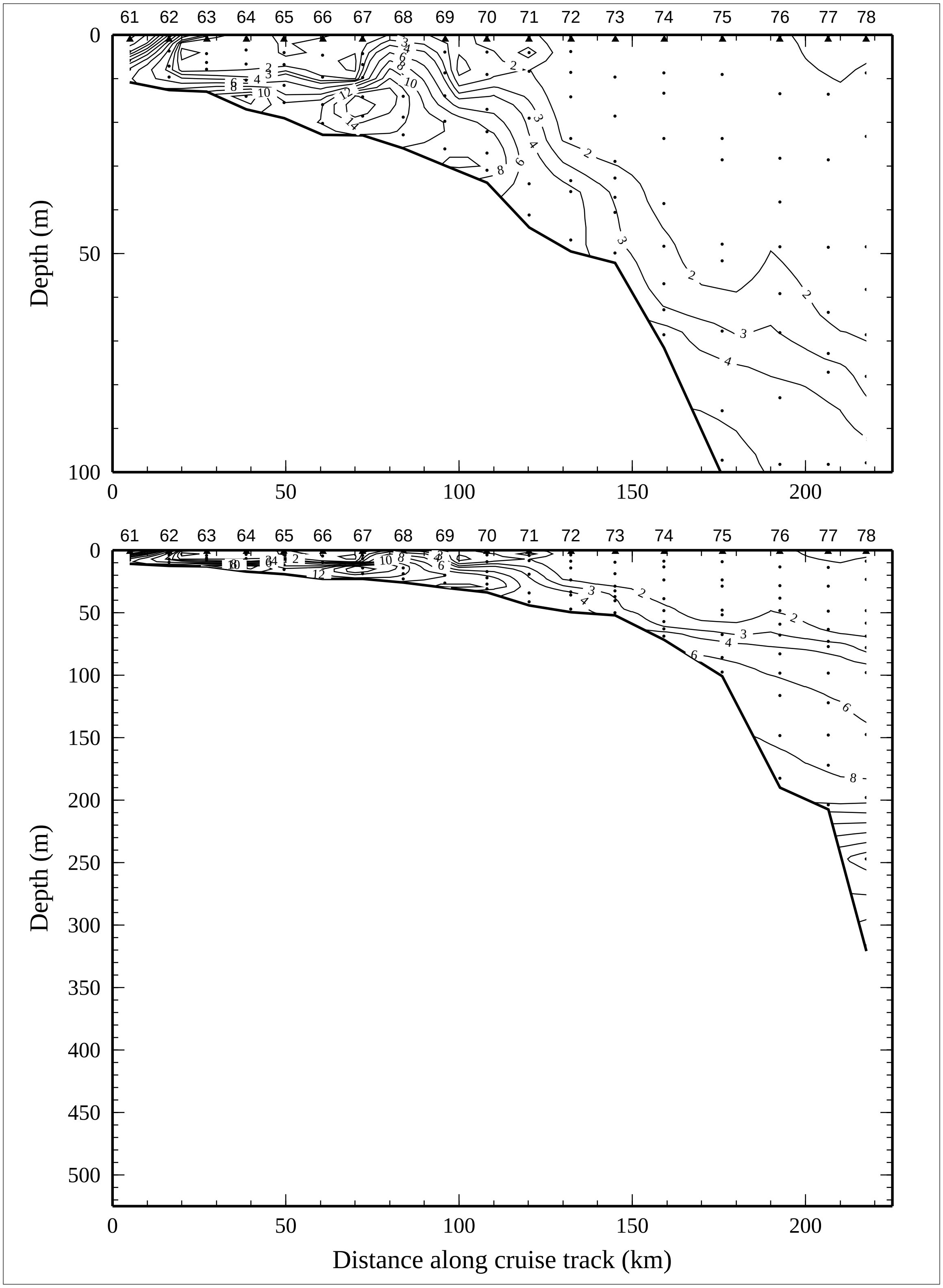

Figure 5.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

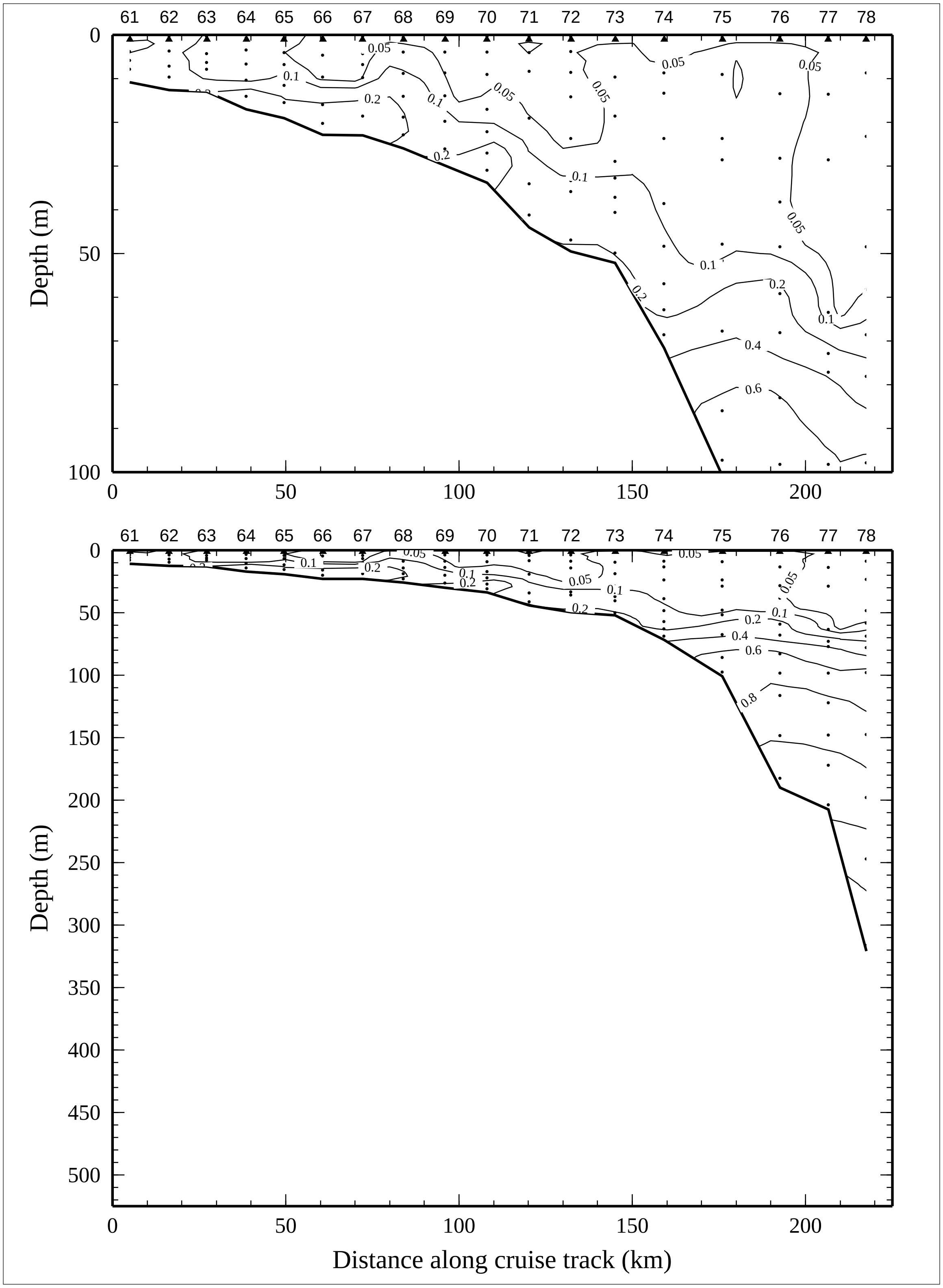

Figure 5.3.11. Phosphate (µmol·l^{-1}) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

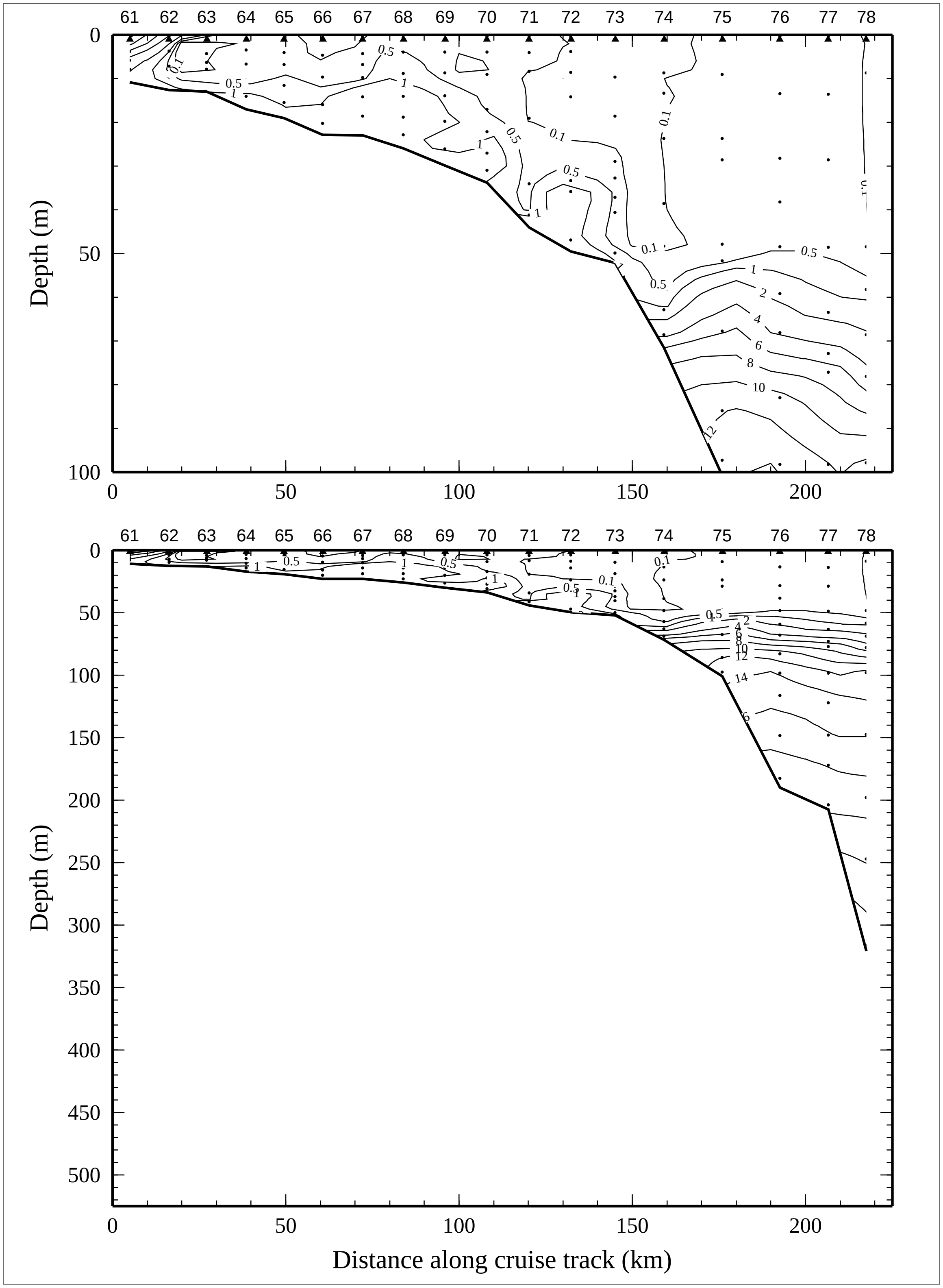

Figure 5.3.12. Nitrate (μmol·l⁻¹) on line 3 of LATEX A survey H05,
25 April - 11 May 1993.

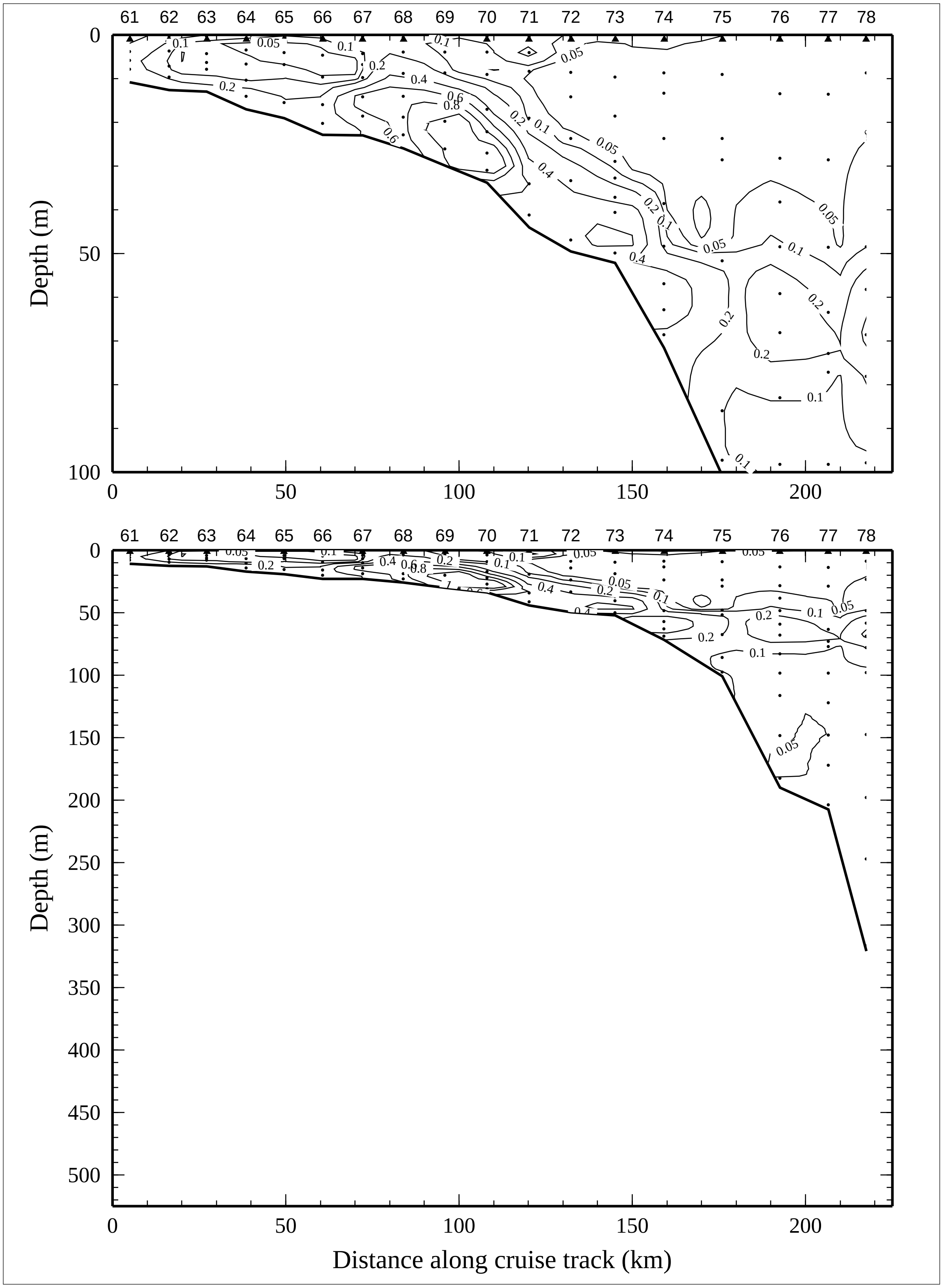

Figure 5.3.13. Nitrite (µmol·l-1) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

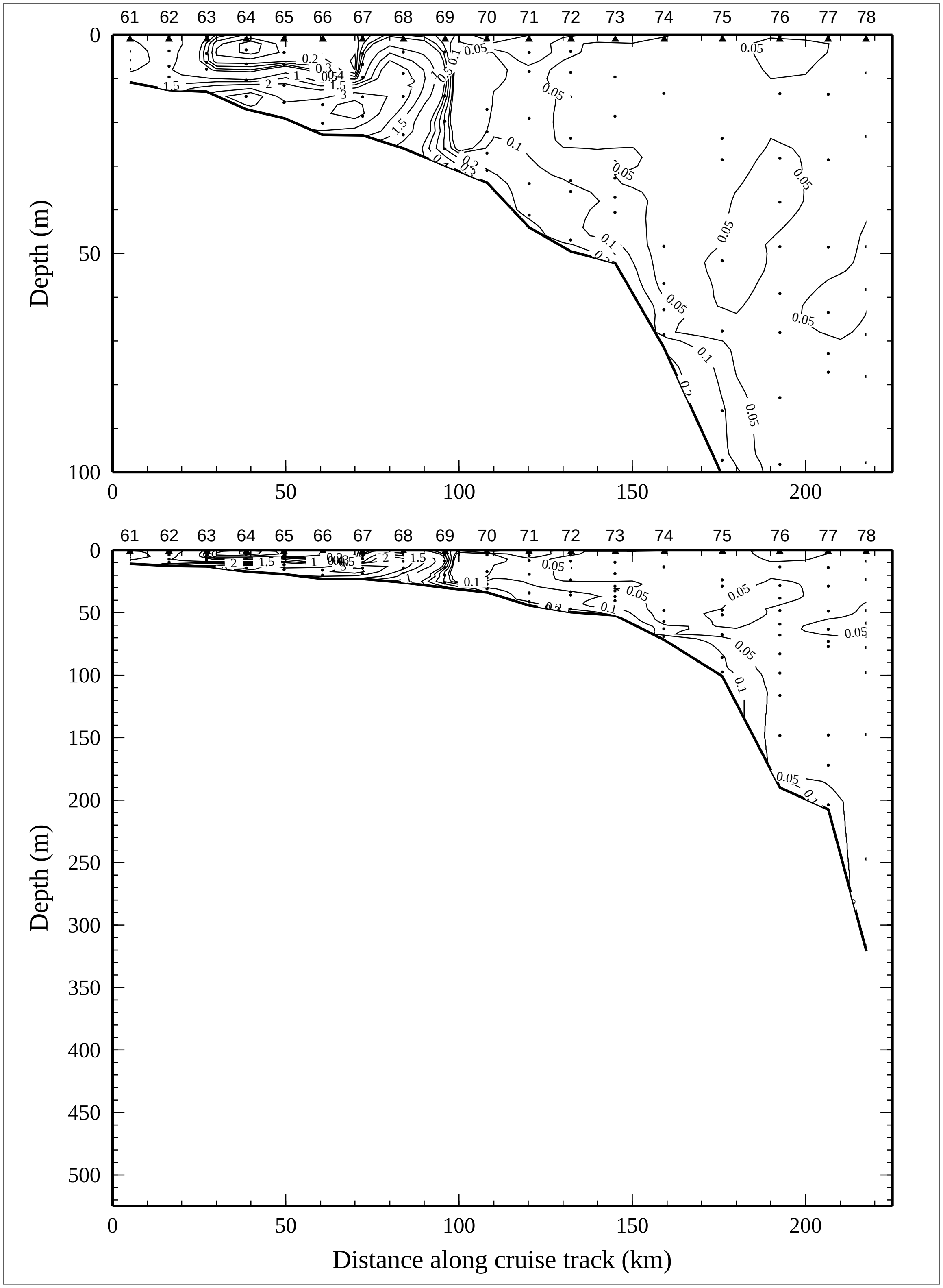

Figure 5.3.14. Ammonium (μmol·l^{-1}) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

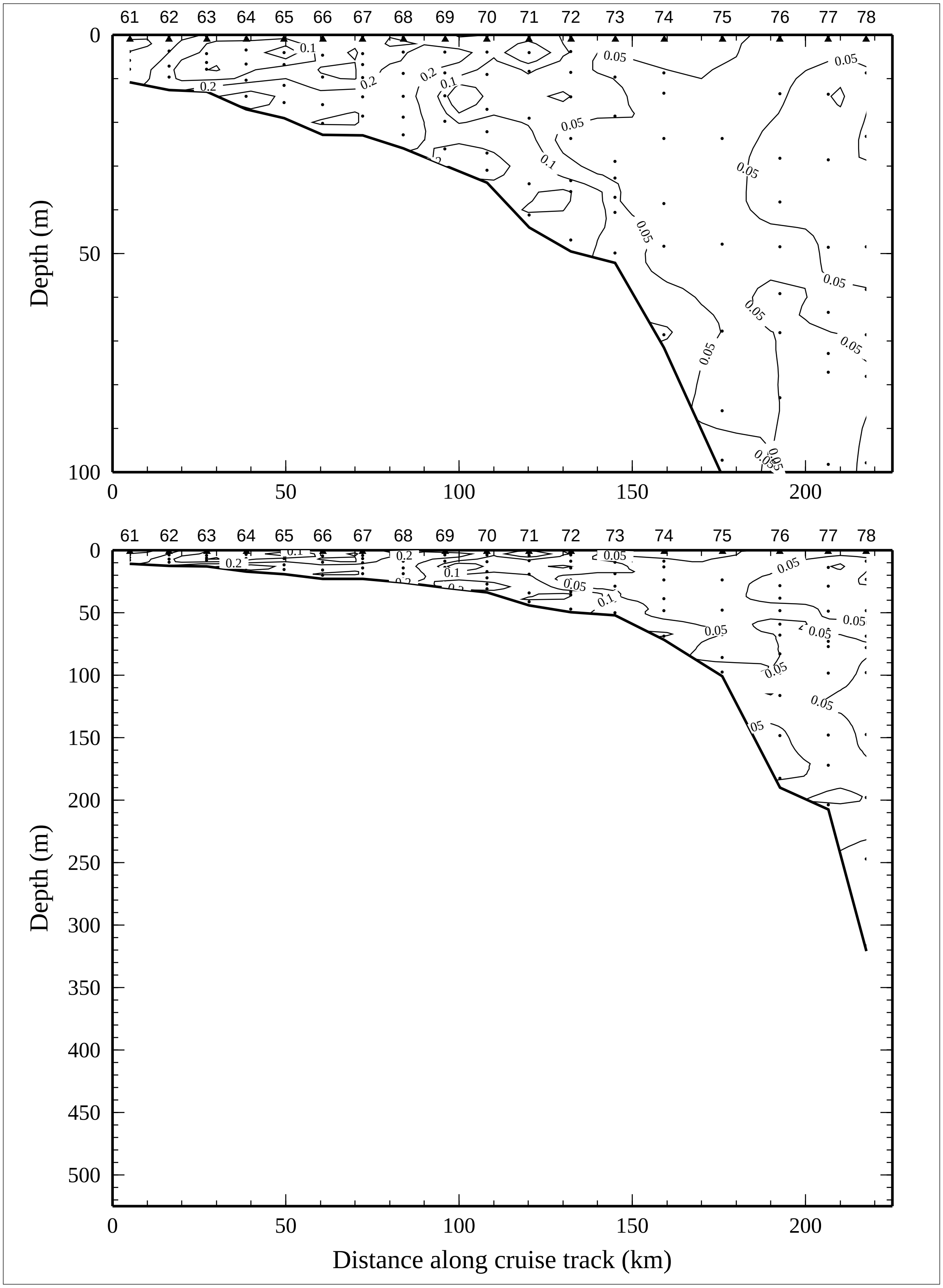

Figure 5.3.15. Urea ($\mu mol \cdot l^{-1}$) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

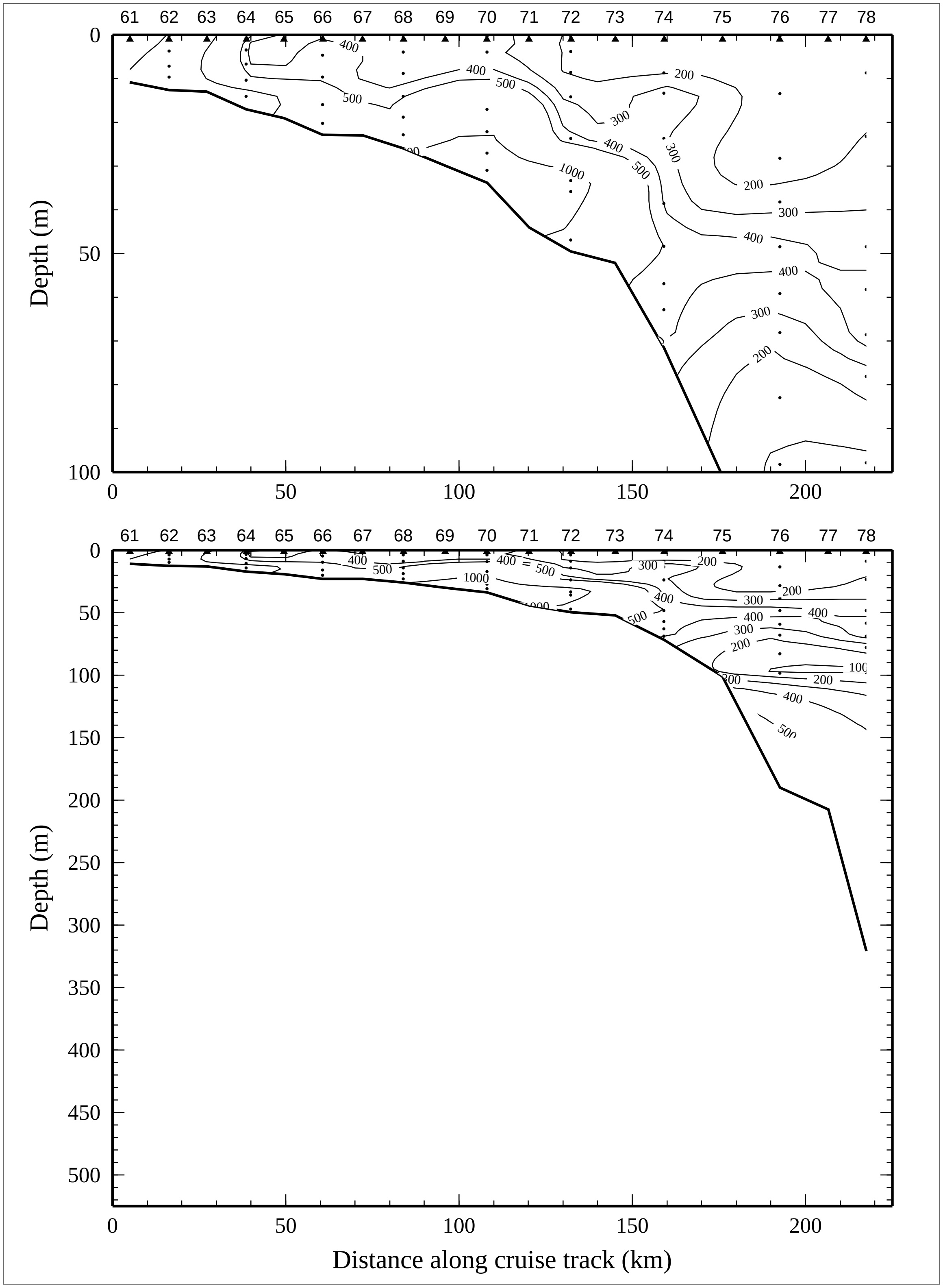

Figure 5.3.16. Chlorophyll a (ng·l-1) on line 3 of LATEX A survey H05, 25 April - 11 May 1993.

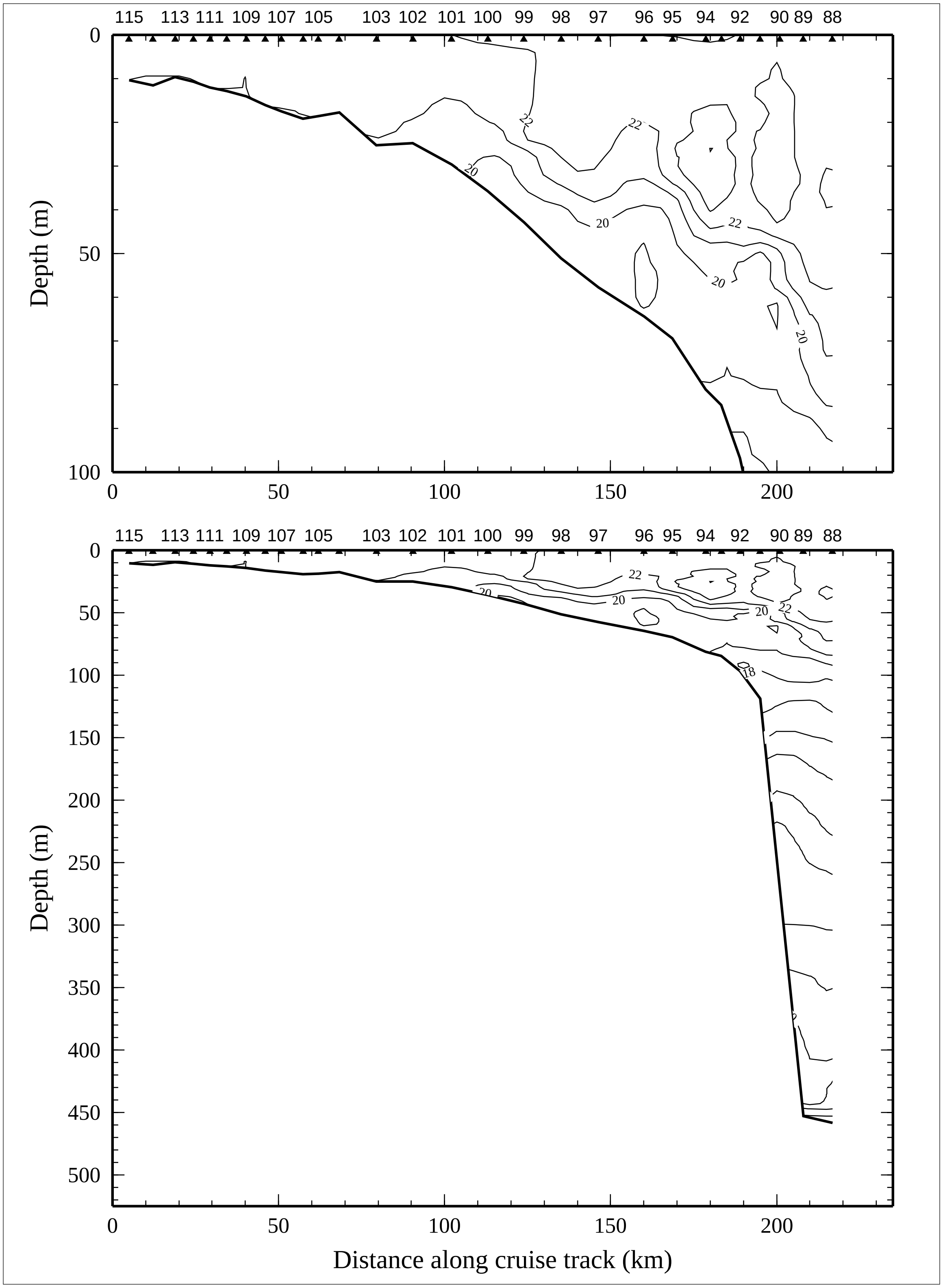

Figure 5.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

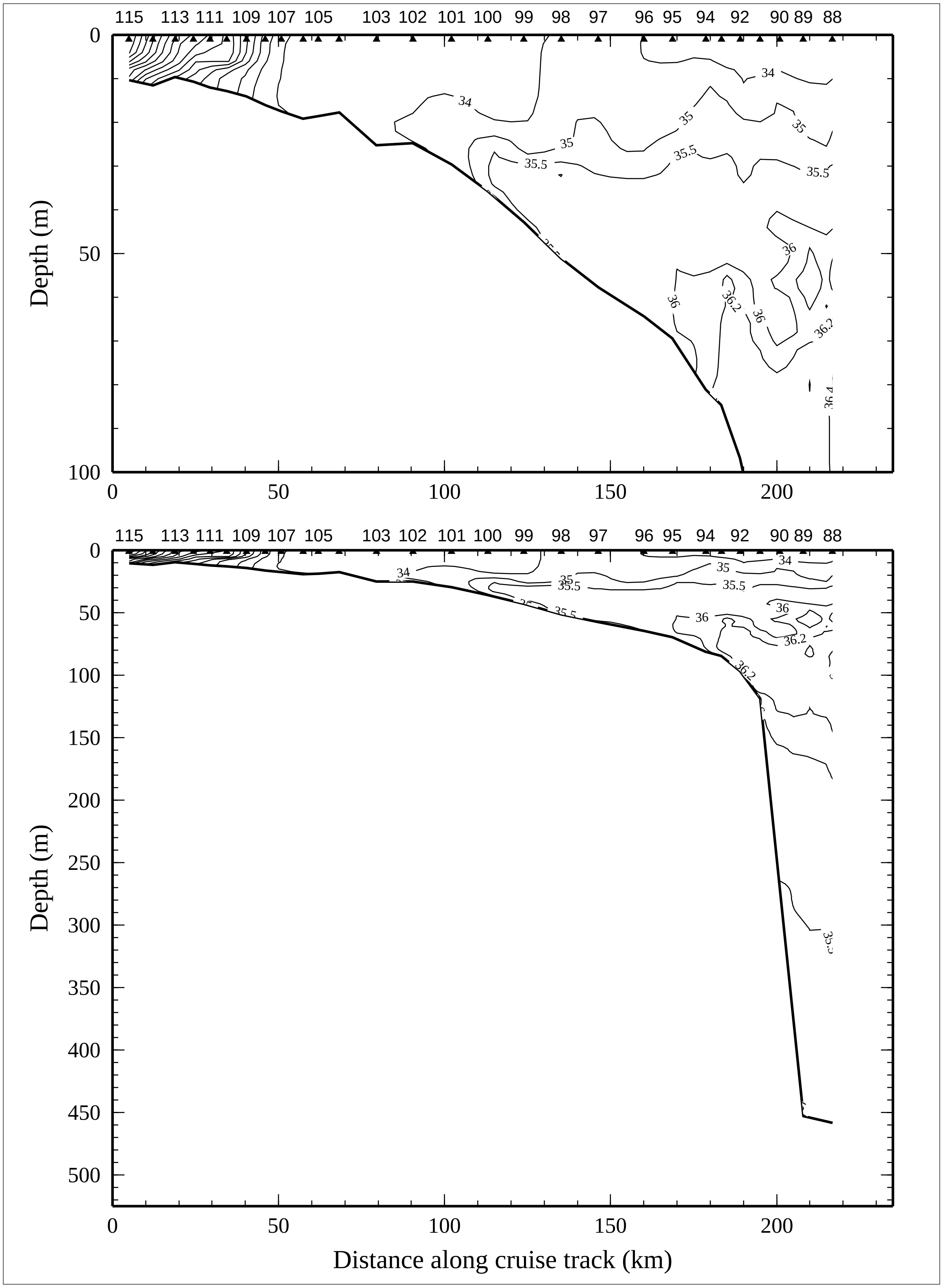

Figure 5.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

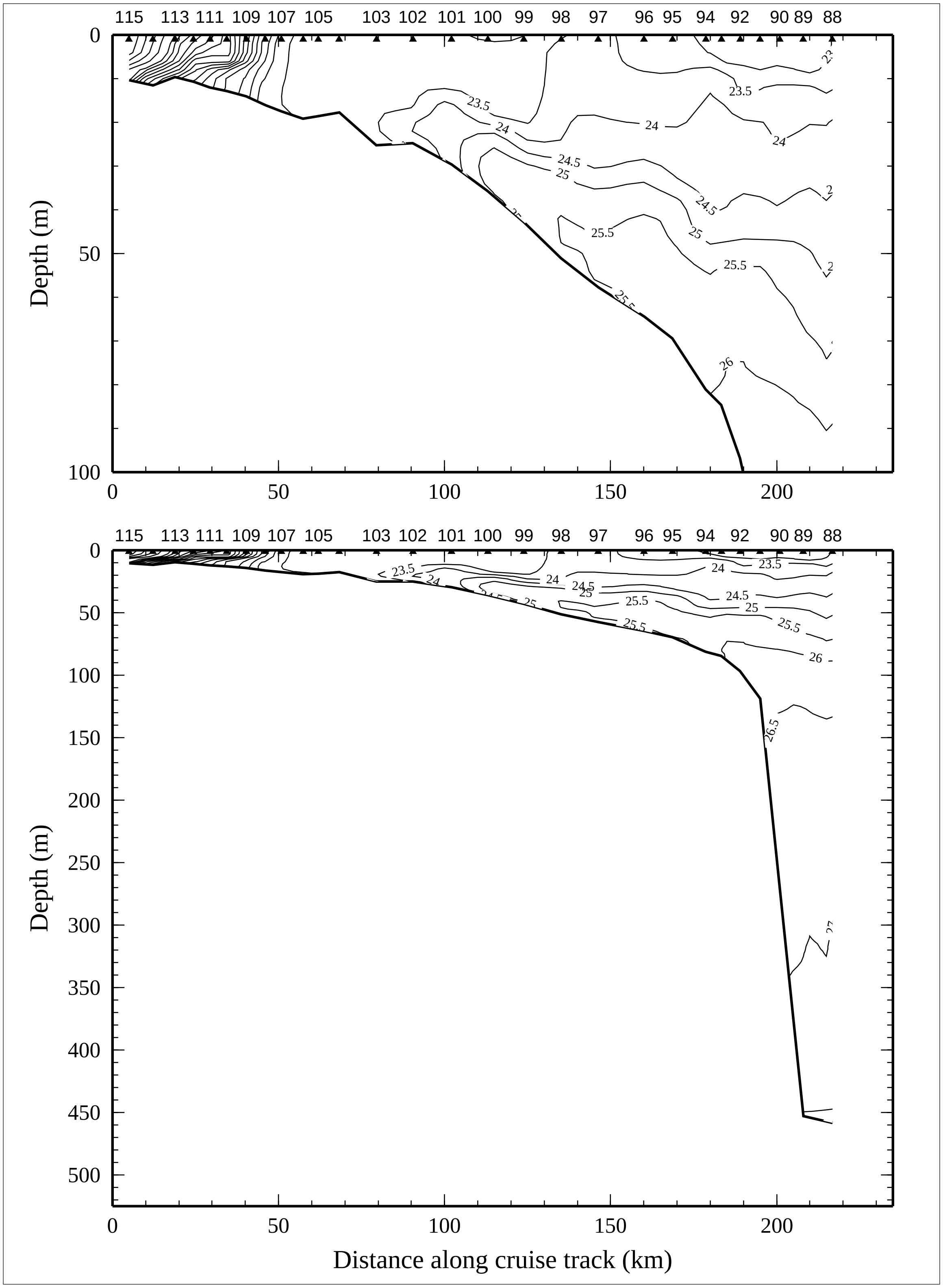

Figure 5.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

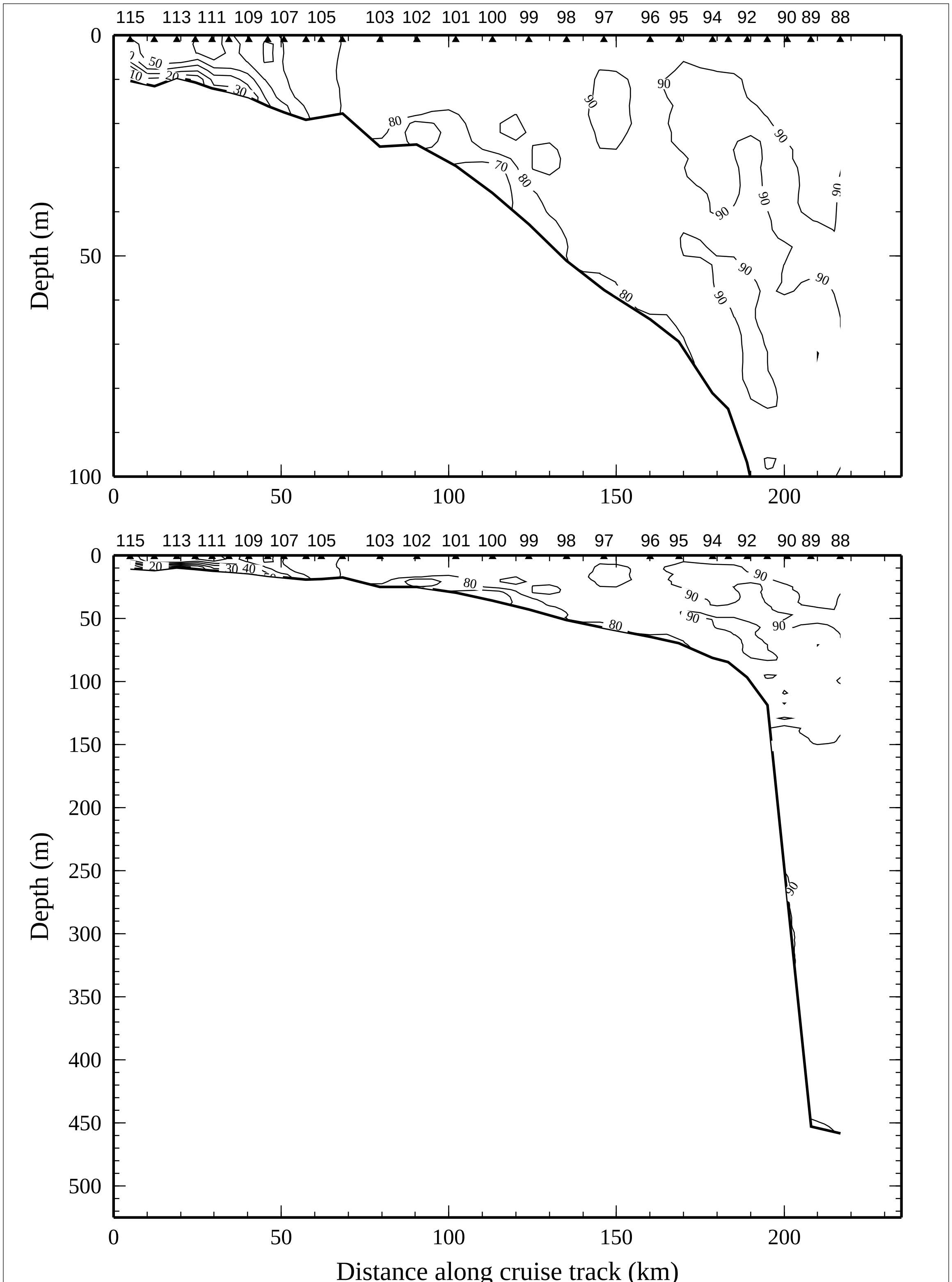

Figure 5.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

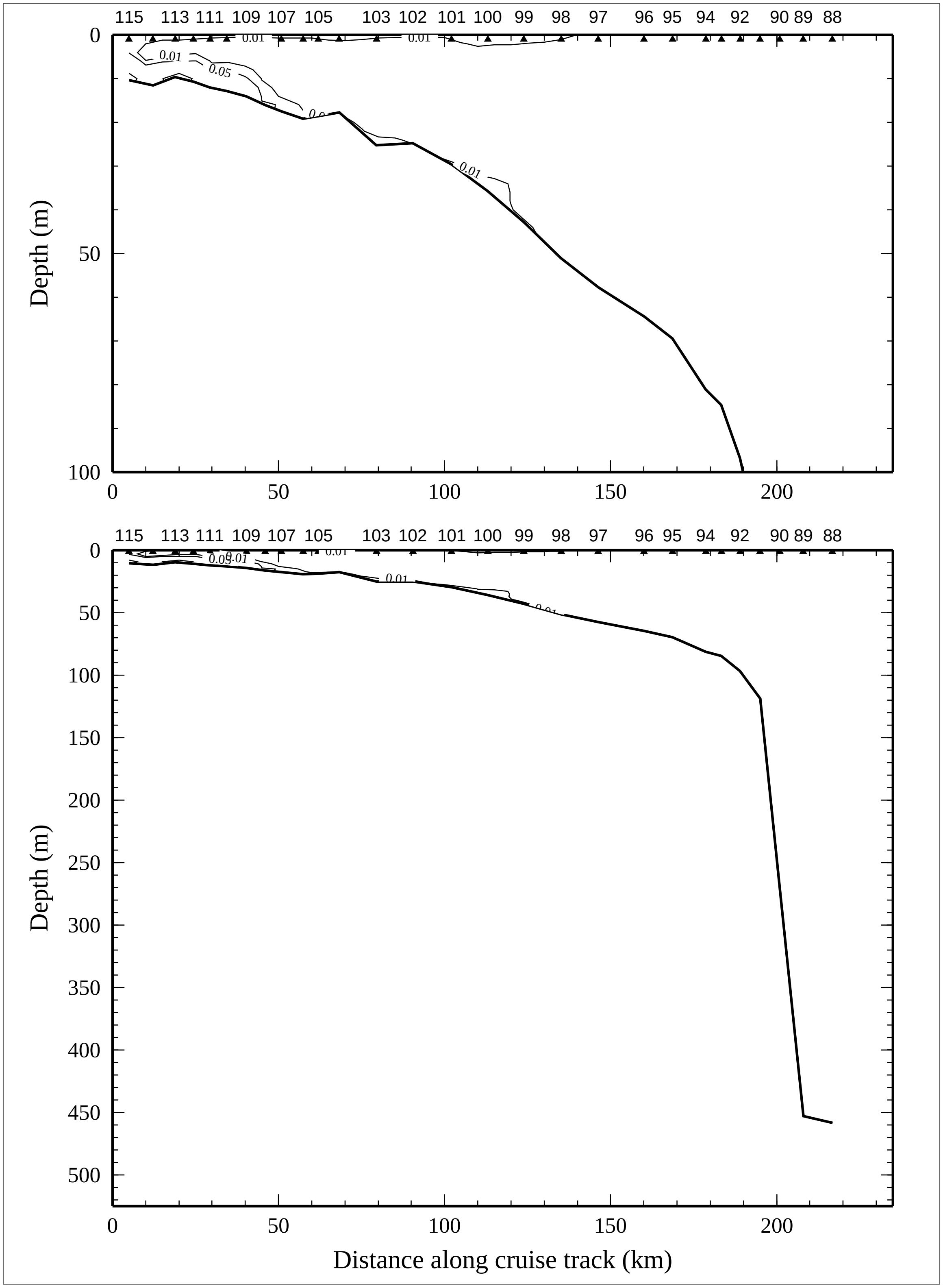

Figure 5.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

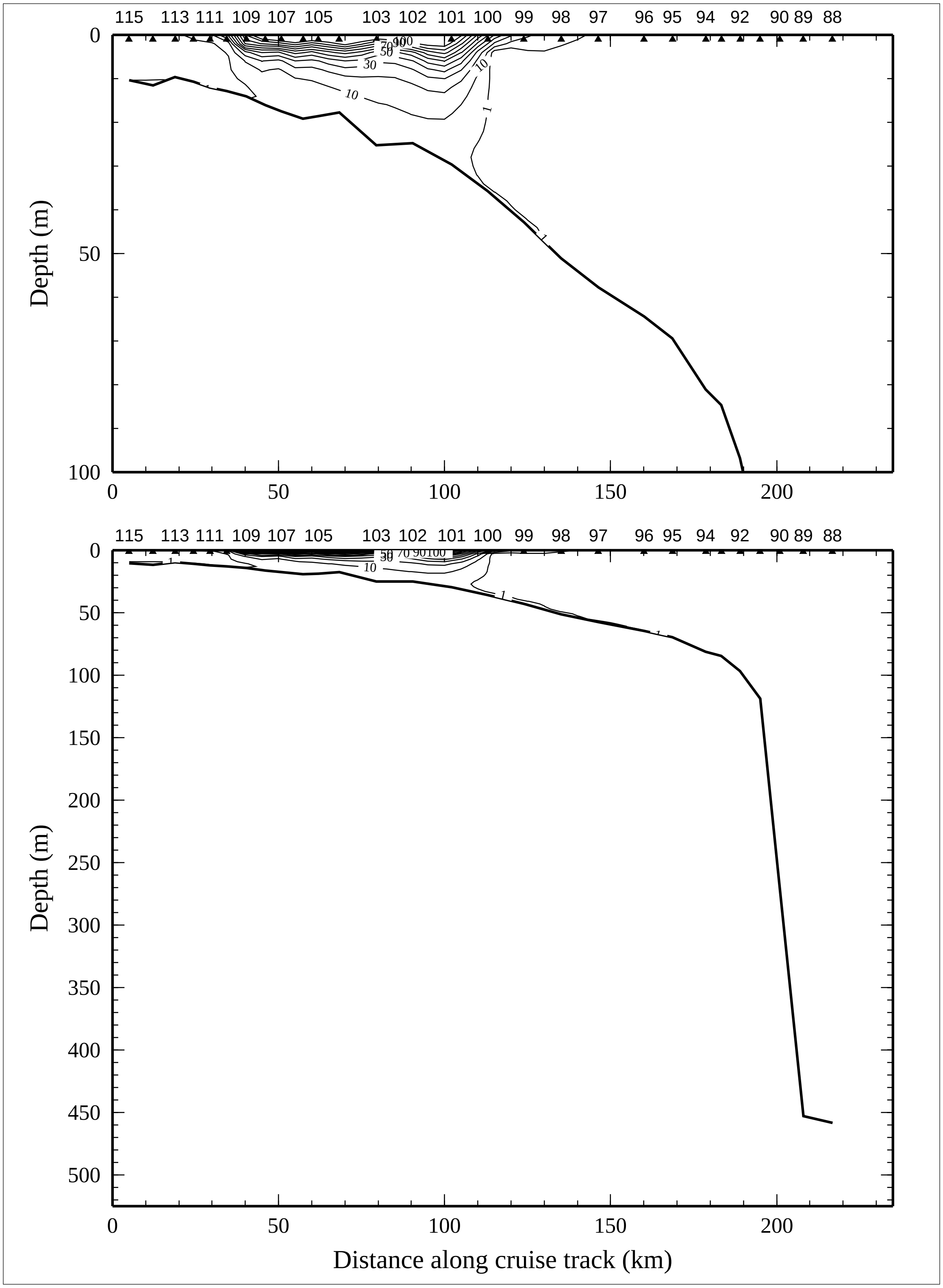

Figure 5.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

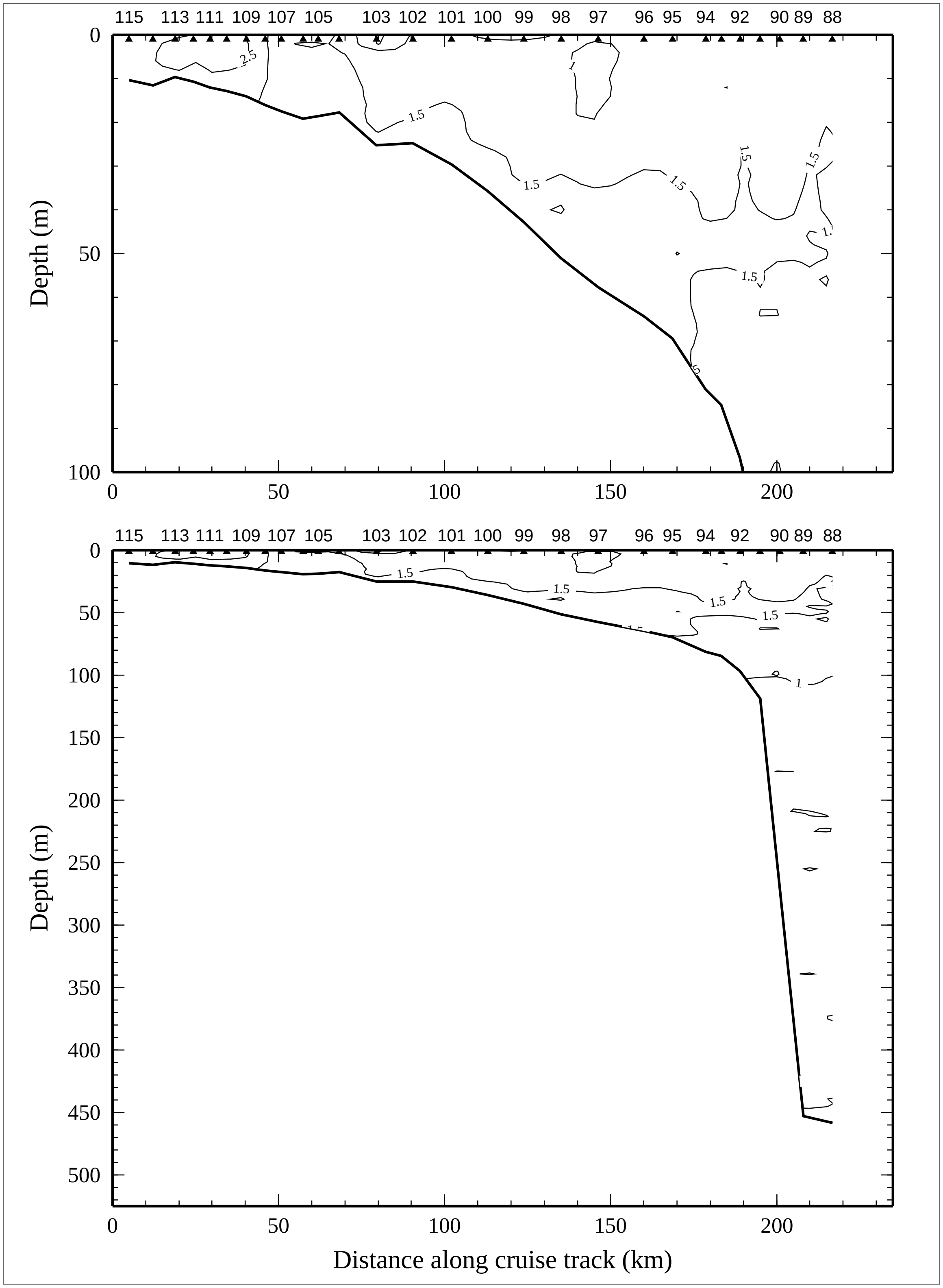

Figure 5.4.7. Relative fluorescence on line 4 of LATEX A survey H05,
25 April - 11 May 1993.

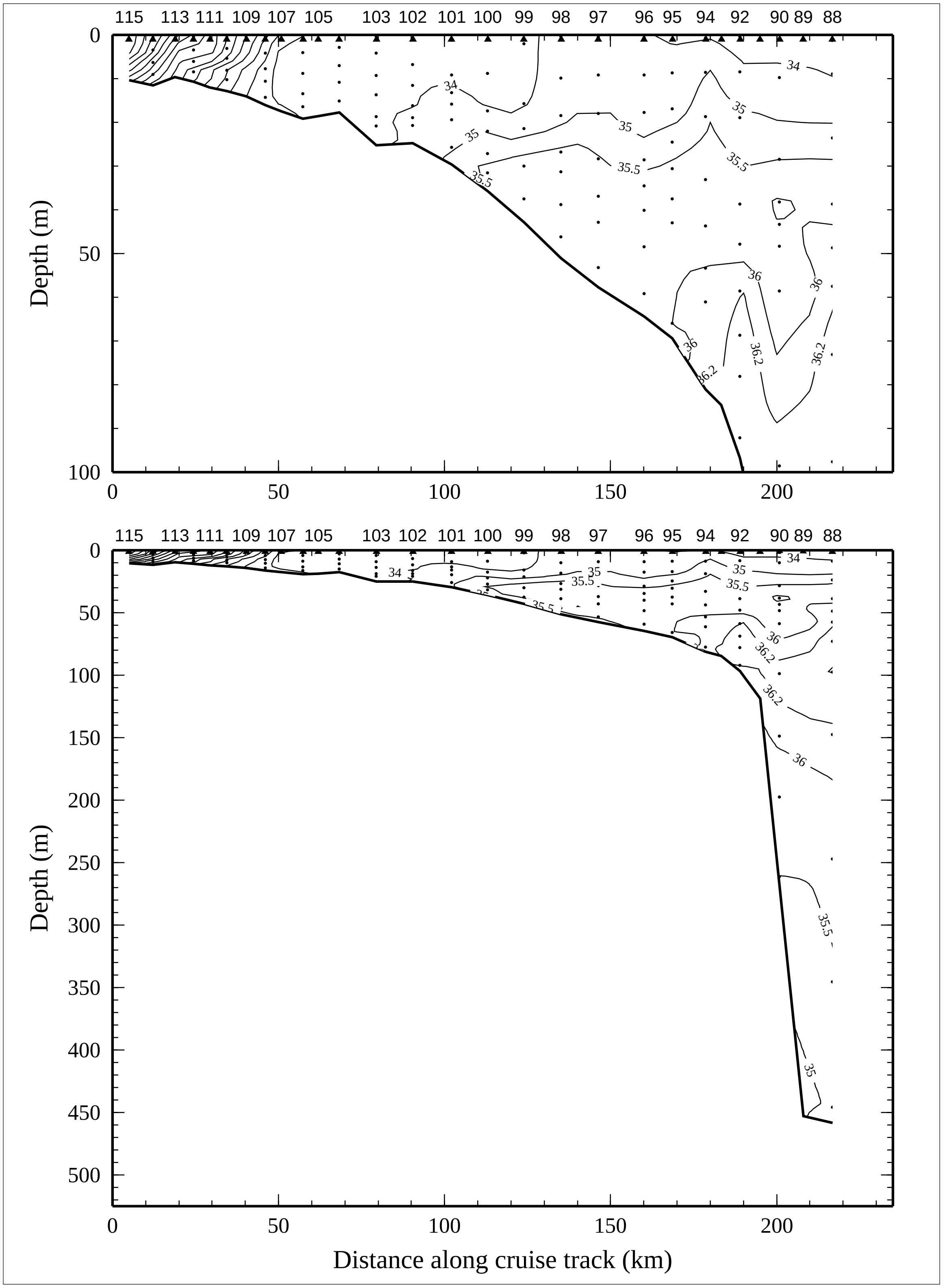

Figure 5.4.8. Bottle salinity on line 4 of LATEX A survey H05,
25 April - 11 May 1993.

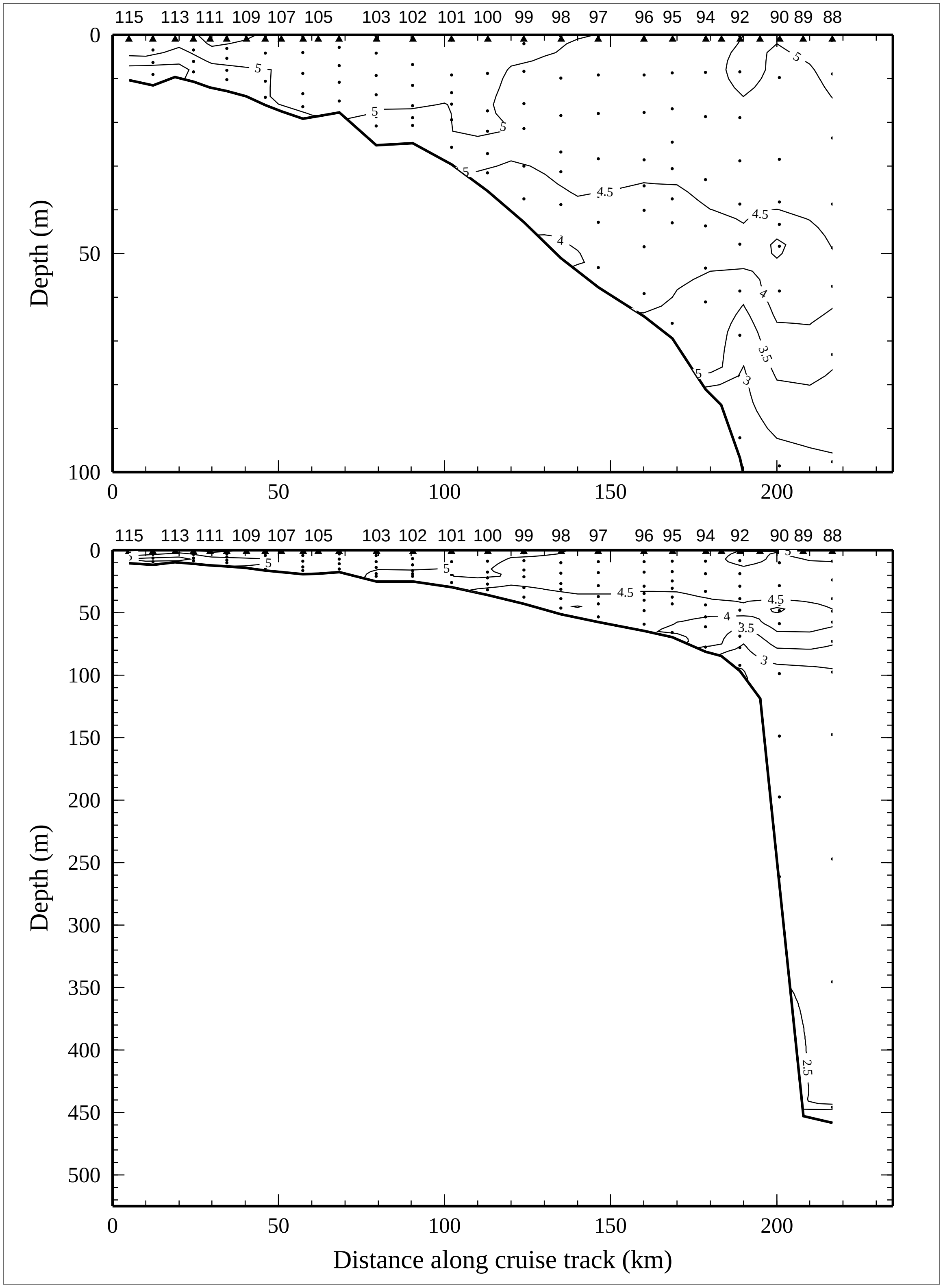

Figure 5.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

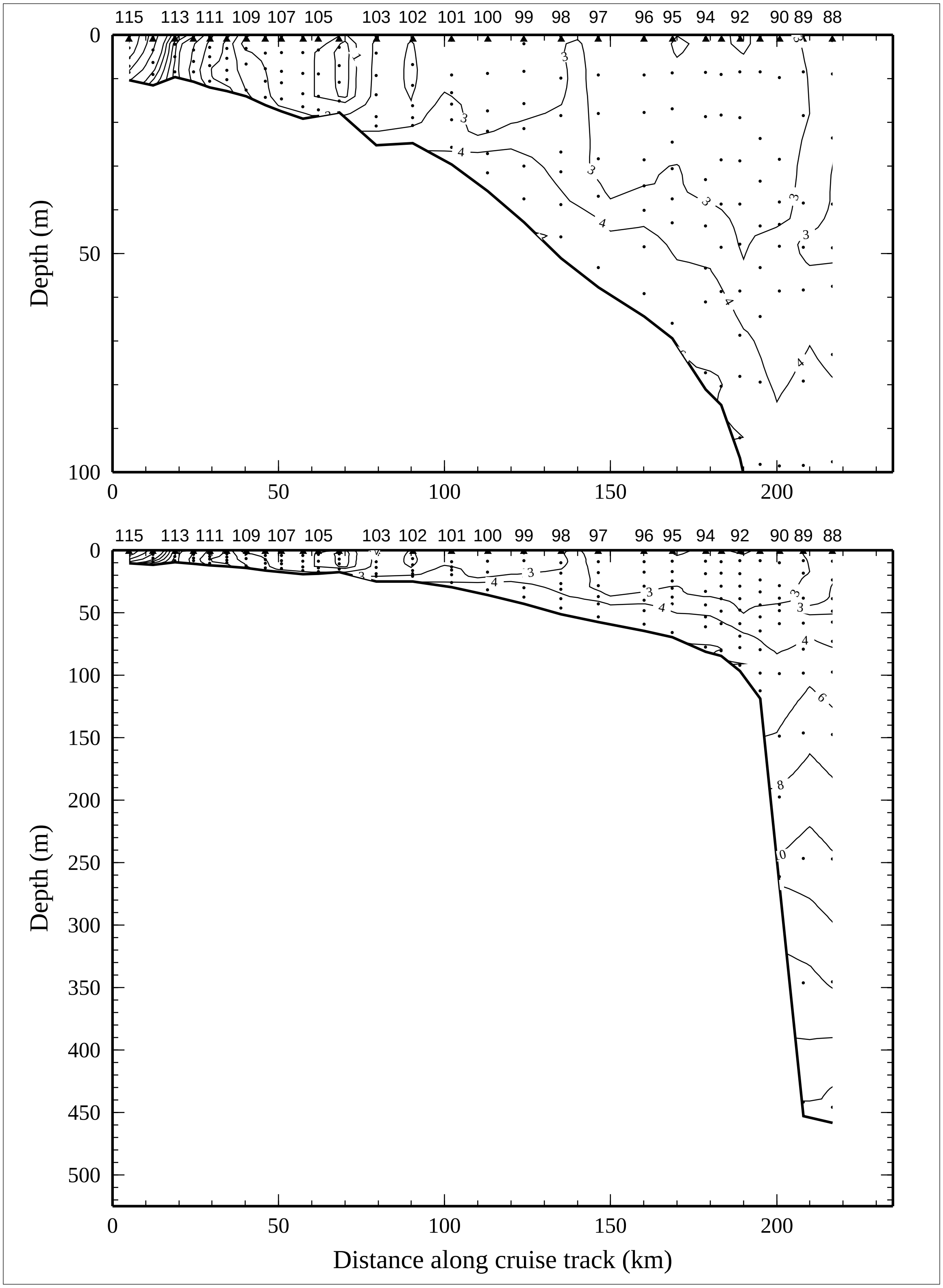

Figure 5.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H05,
25 April - 11 May 1993.

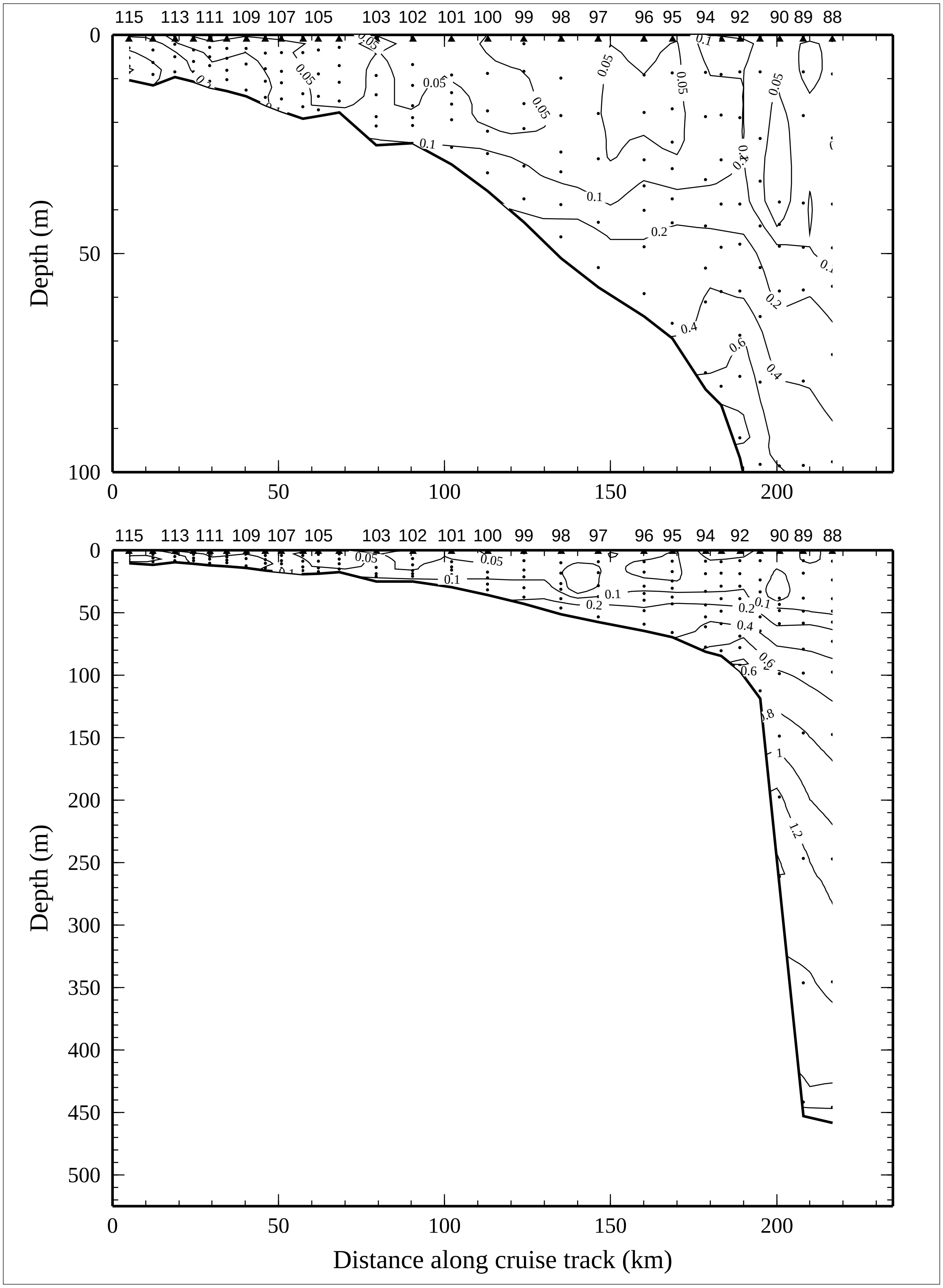

Figure 5.4.11. Phosphate (μmol·l^{-1}) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

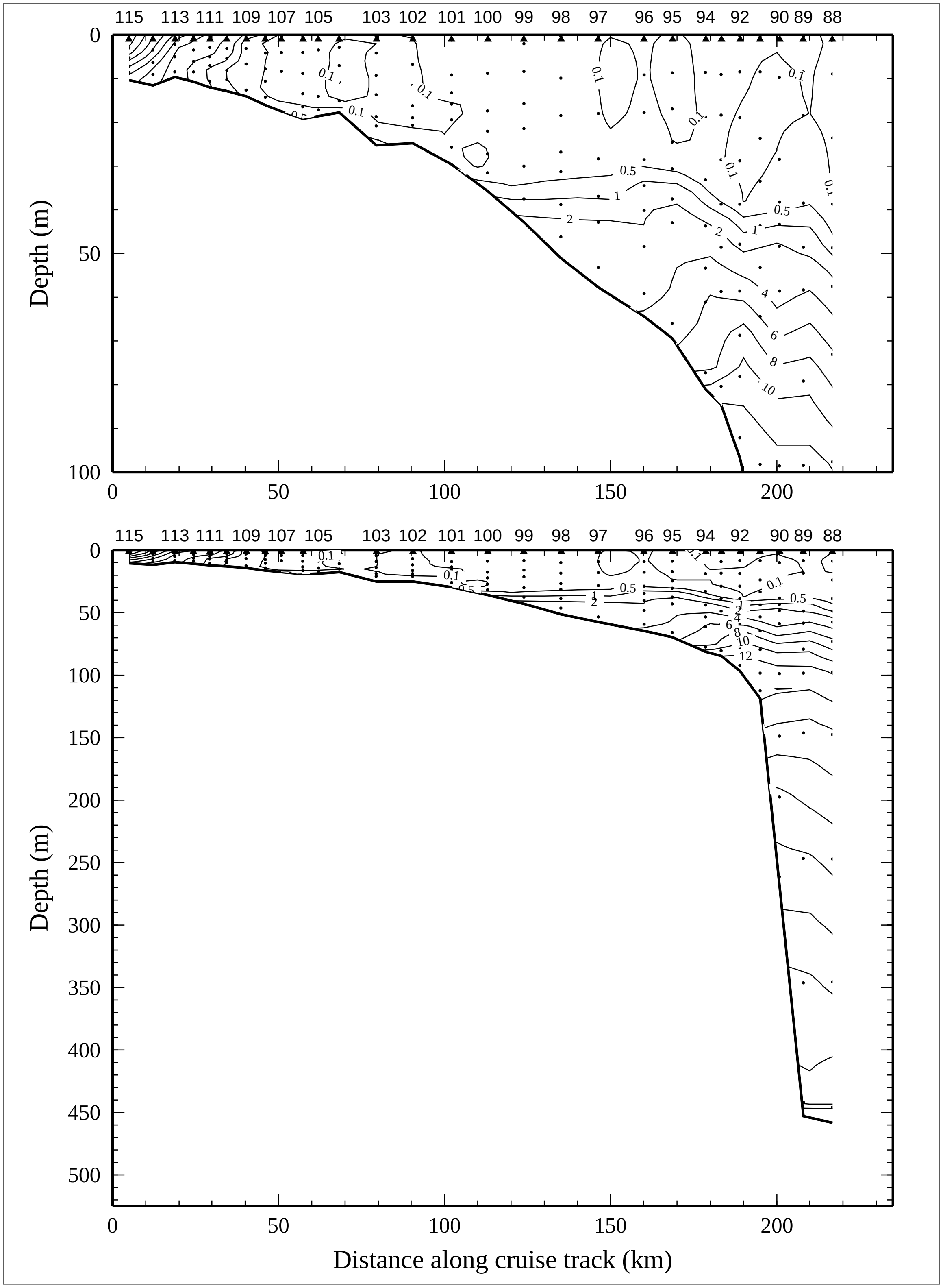

Figure 5.4.12. Nitrate (μmol·l⁻¹) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

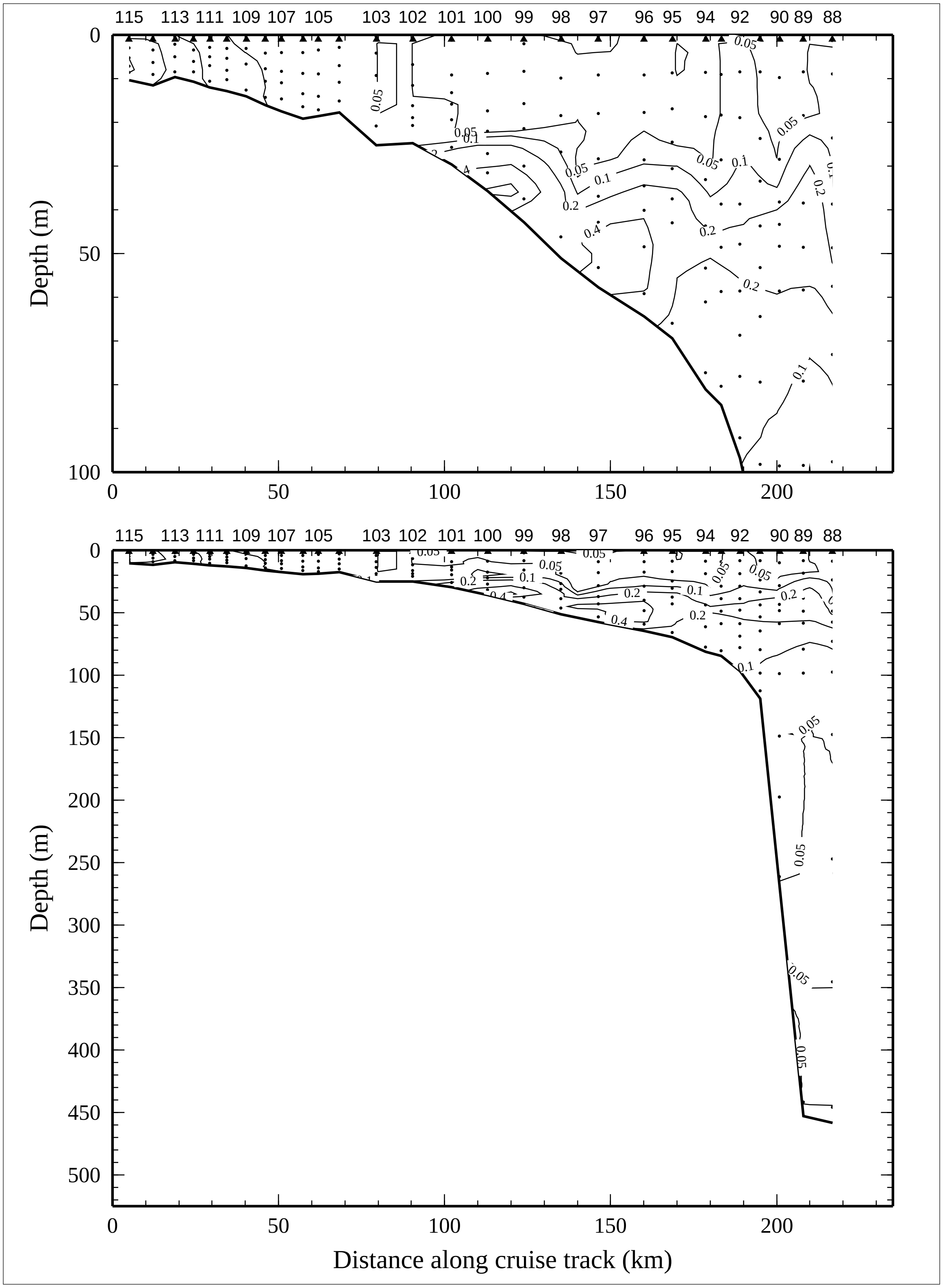

Figure 5.4.13. Nitrite (μmol·l-1) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

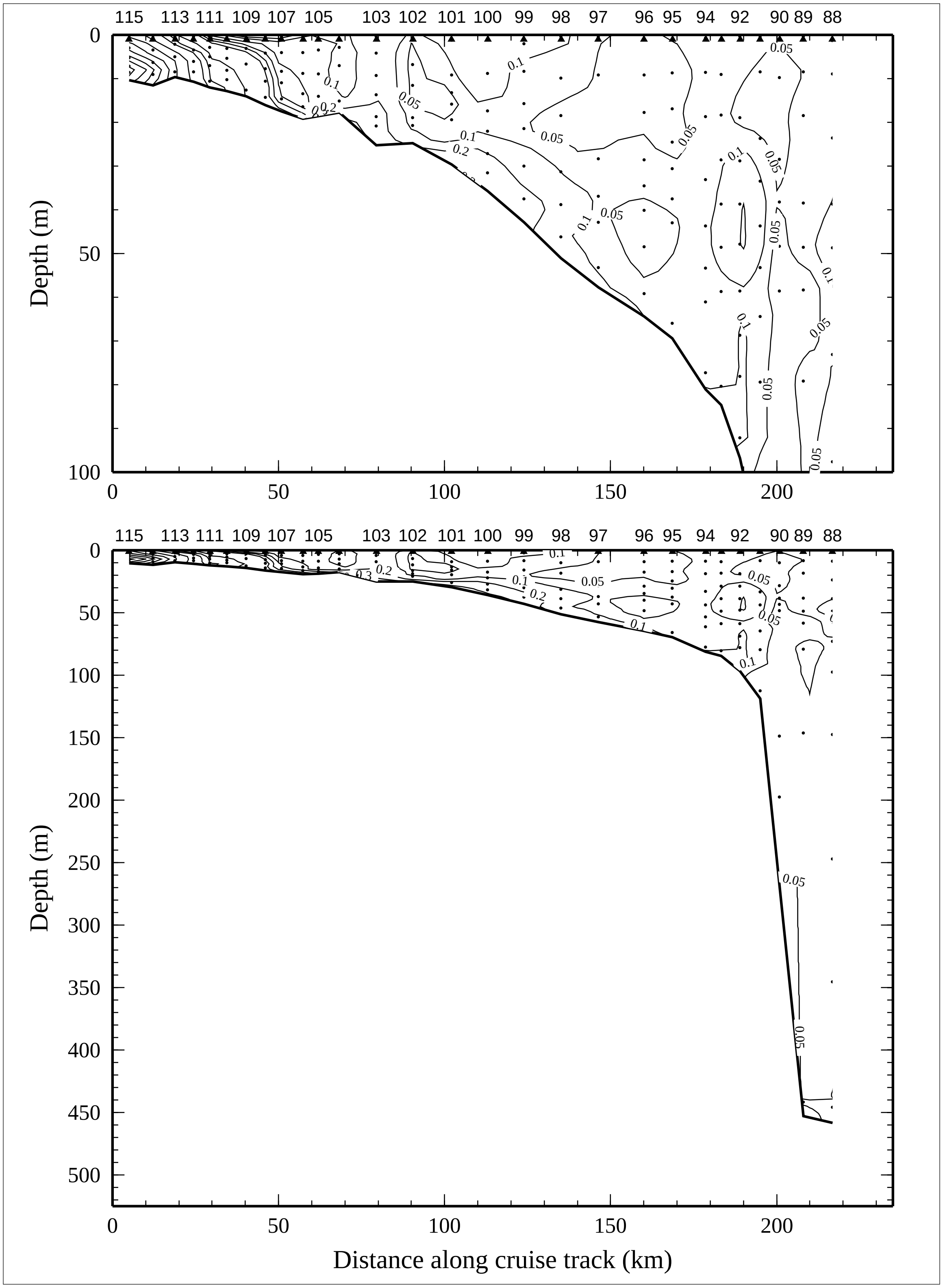

Figure 5.4.14. Ammonium (μmol·l-1) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

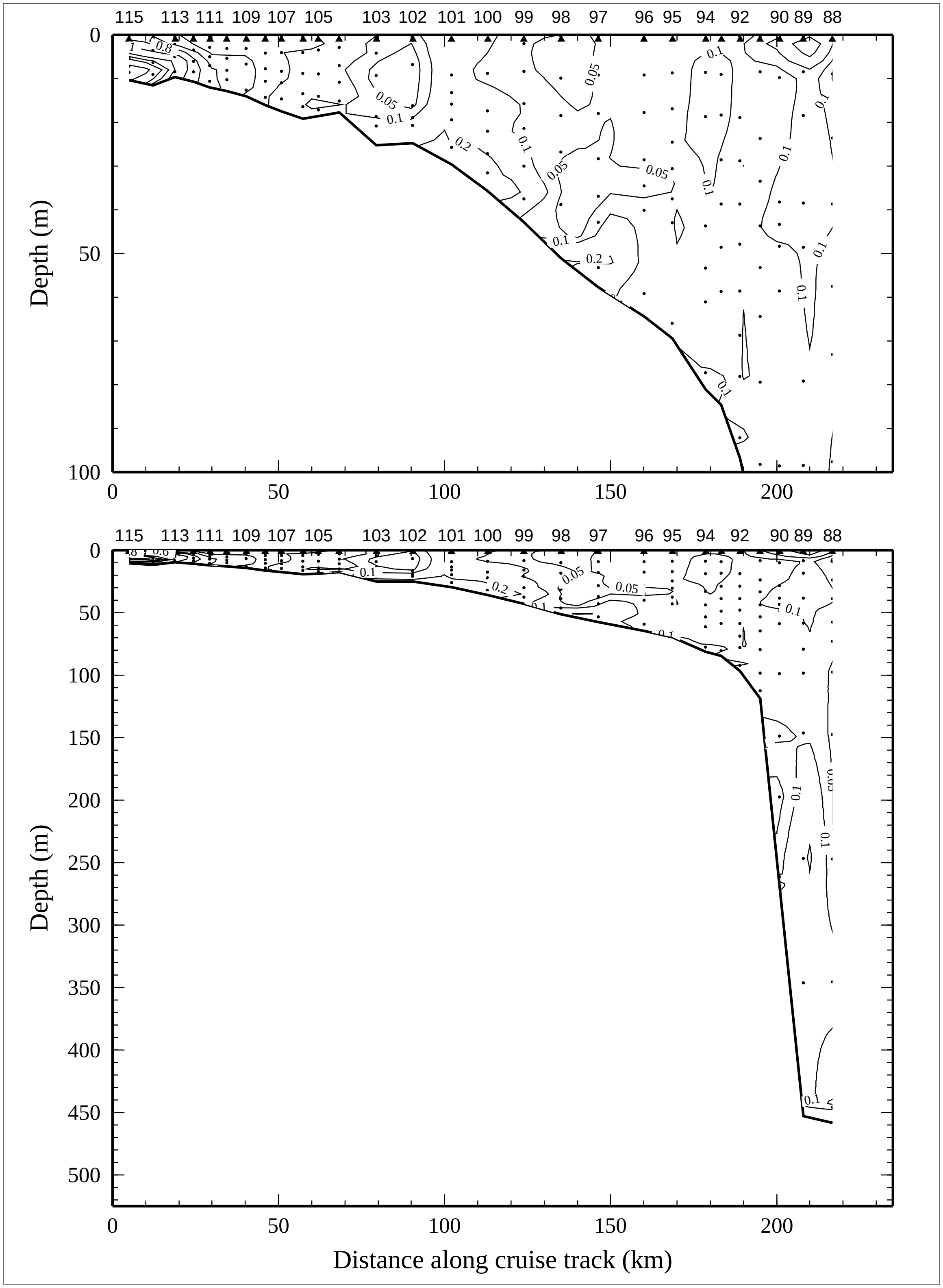

Figure 5.4.15. Urea (μmol·l^{-1}) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

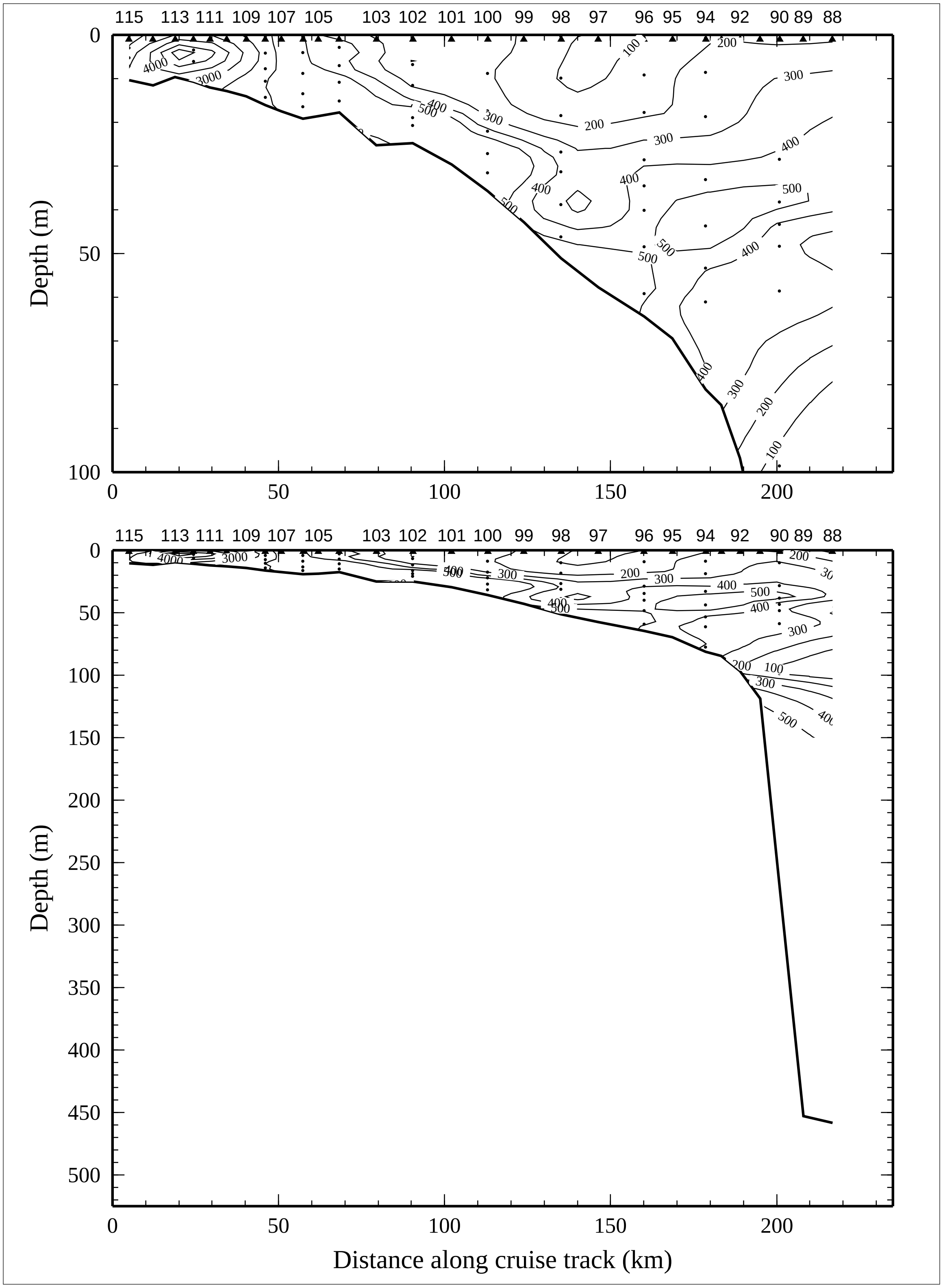

Figure 5.4.16. Chlorophyll a (ng·l^{-1}) on line 4 of LATEX A survey H05, 25 April - 11 May 1993.

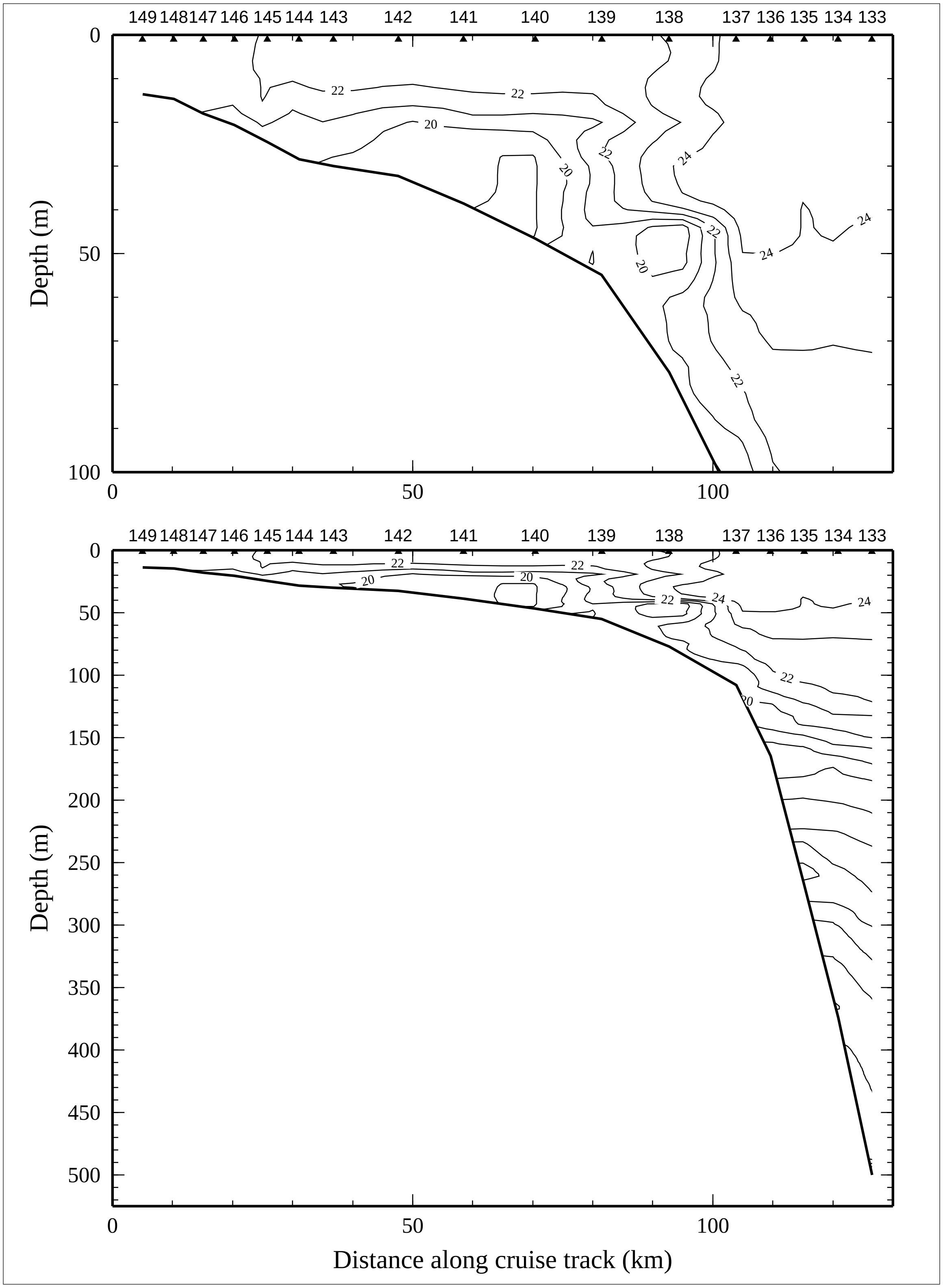

Figure 5.5.1. Potential temperature (˚C) on line 5 of LATEX A survey H05,
25 April - 11 May 1993.

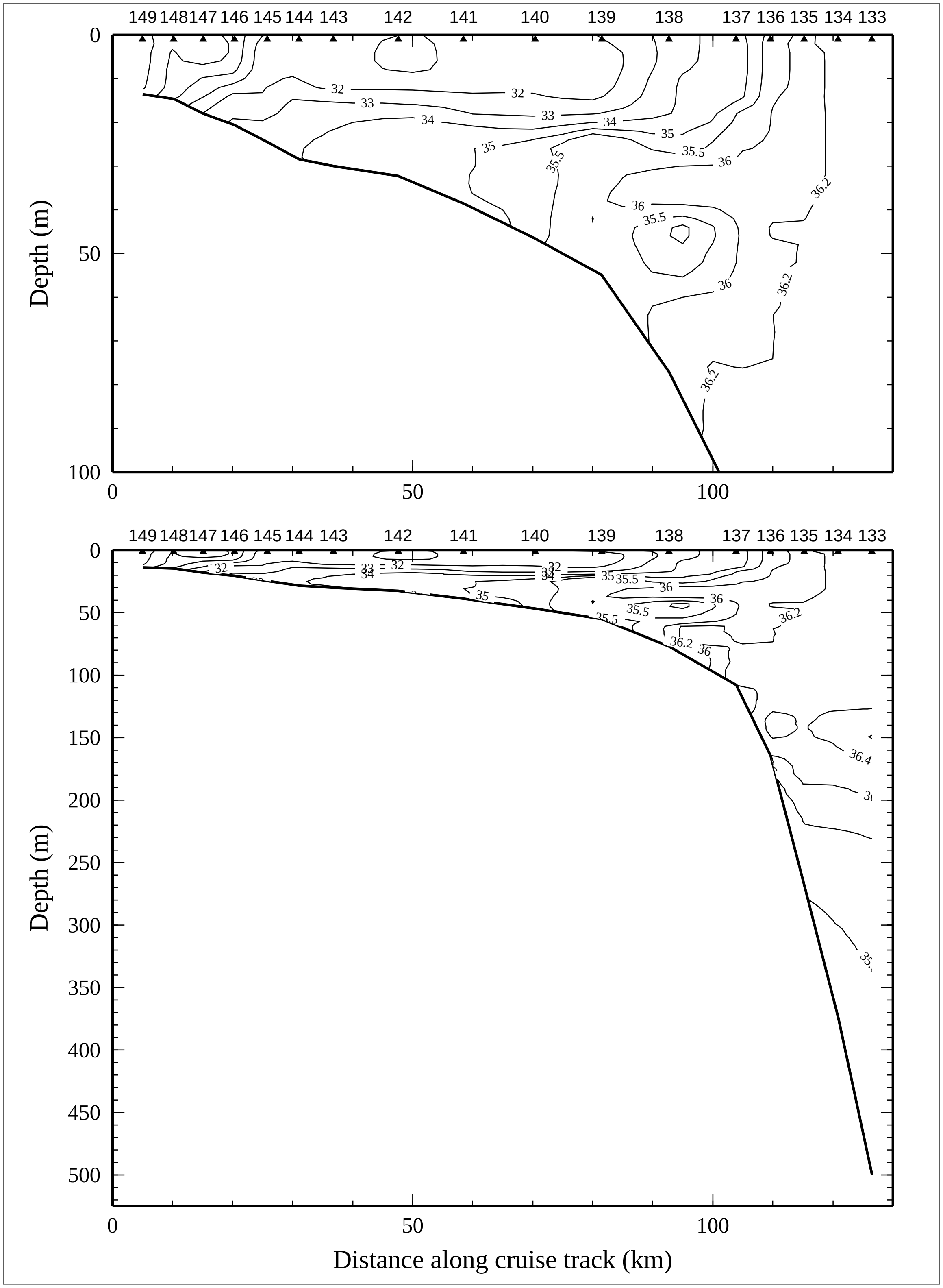

Figure 5.5.2. Salinity, derived from CTD data, on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

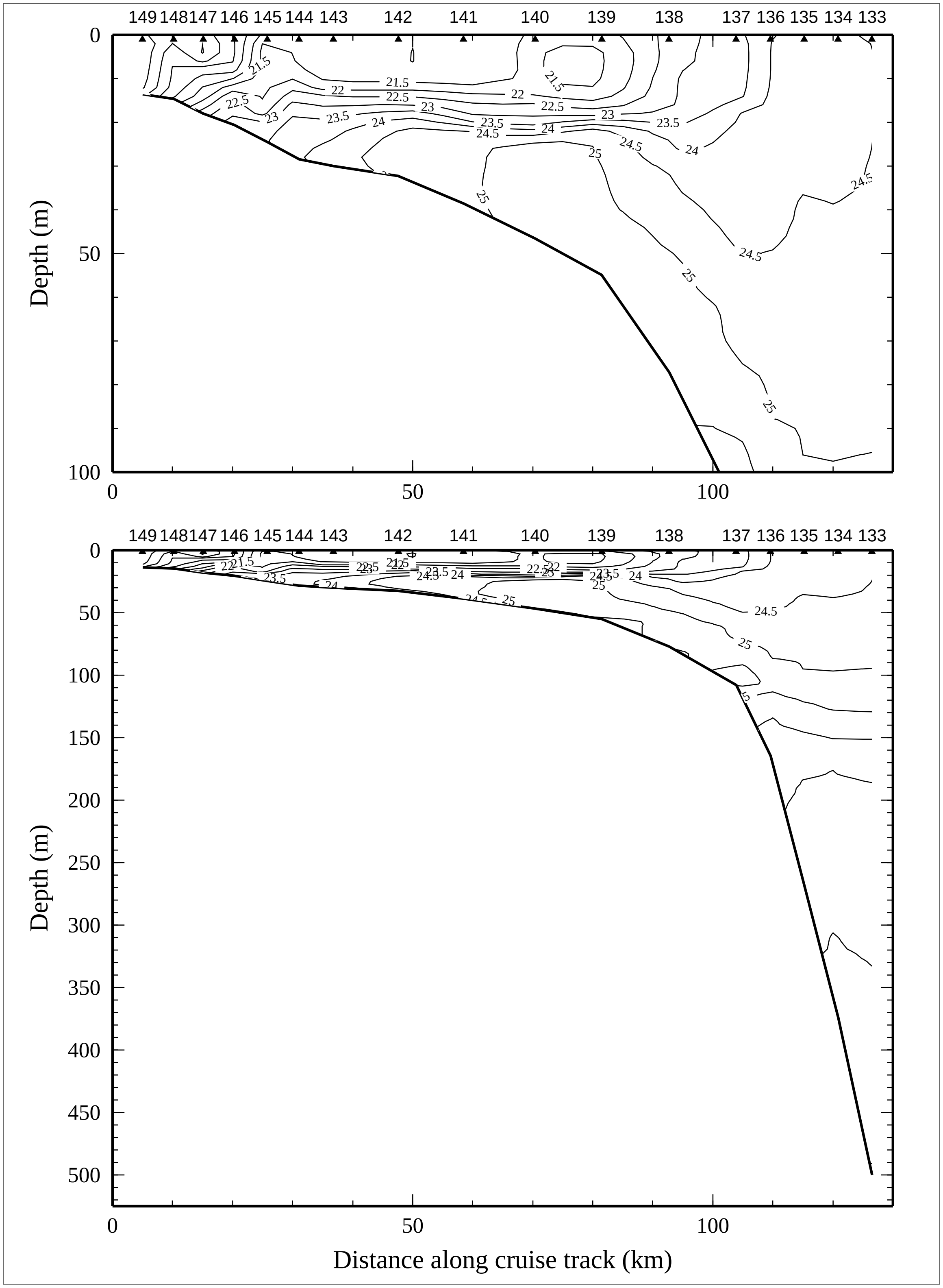

Figure 5.5.3. Density anomaly (σ_θ in kg·m^{-3}) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

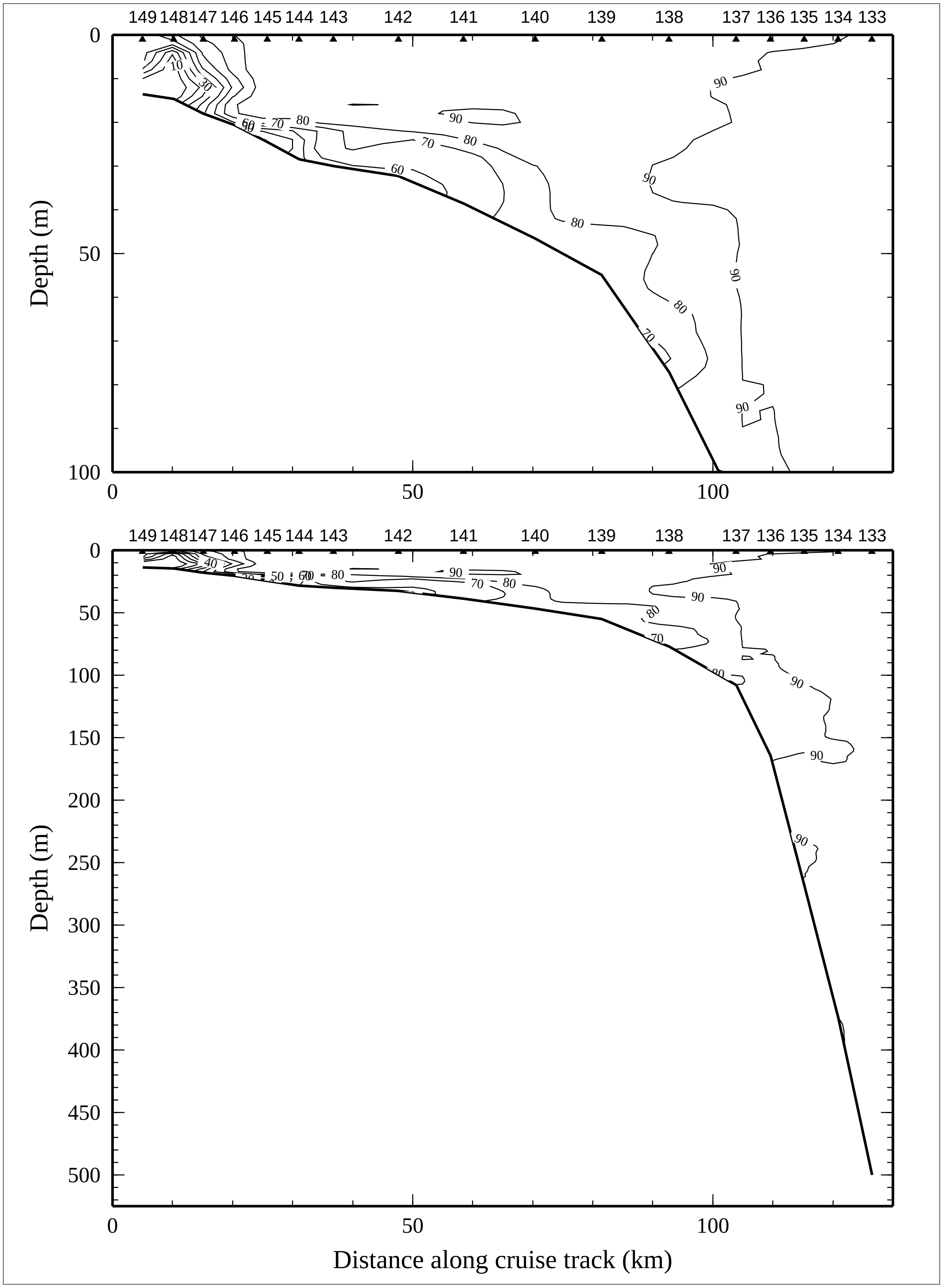

Figure 5.5.4. Percent transmission (660 nm wave length; 25-cm path length) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

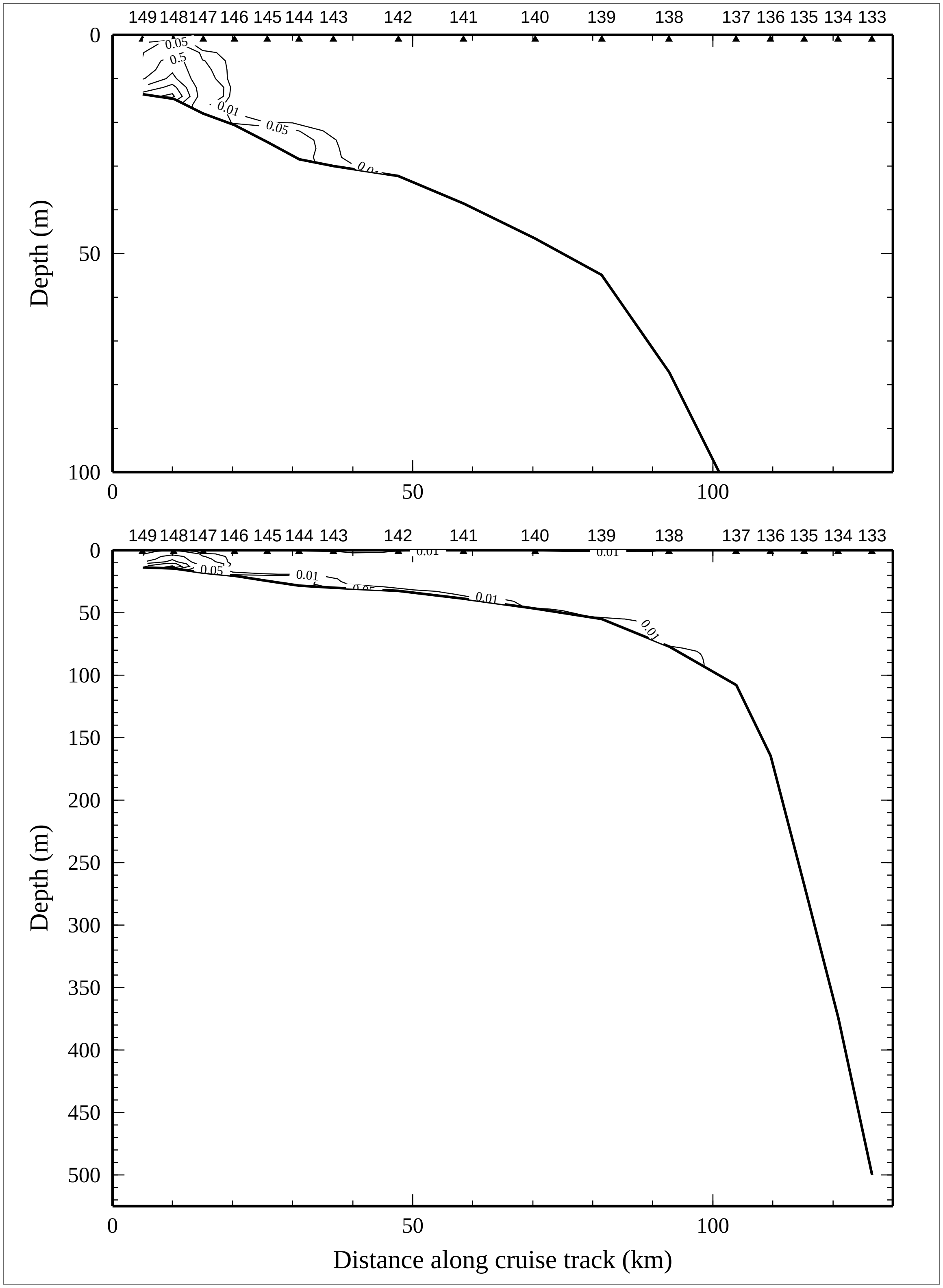

Figure 5.5.5. Optical backscatterance (voltage) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

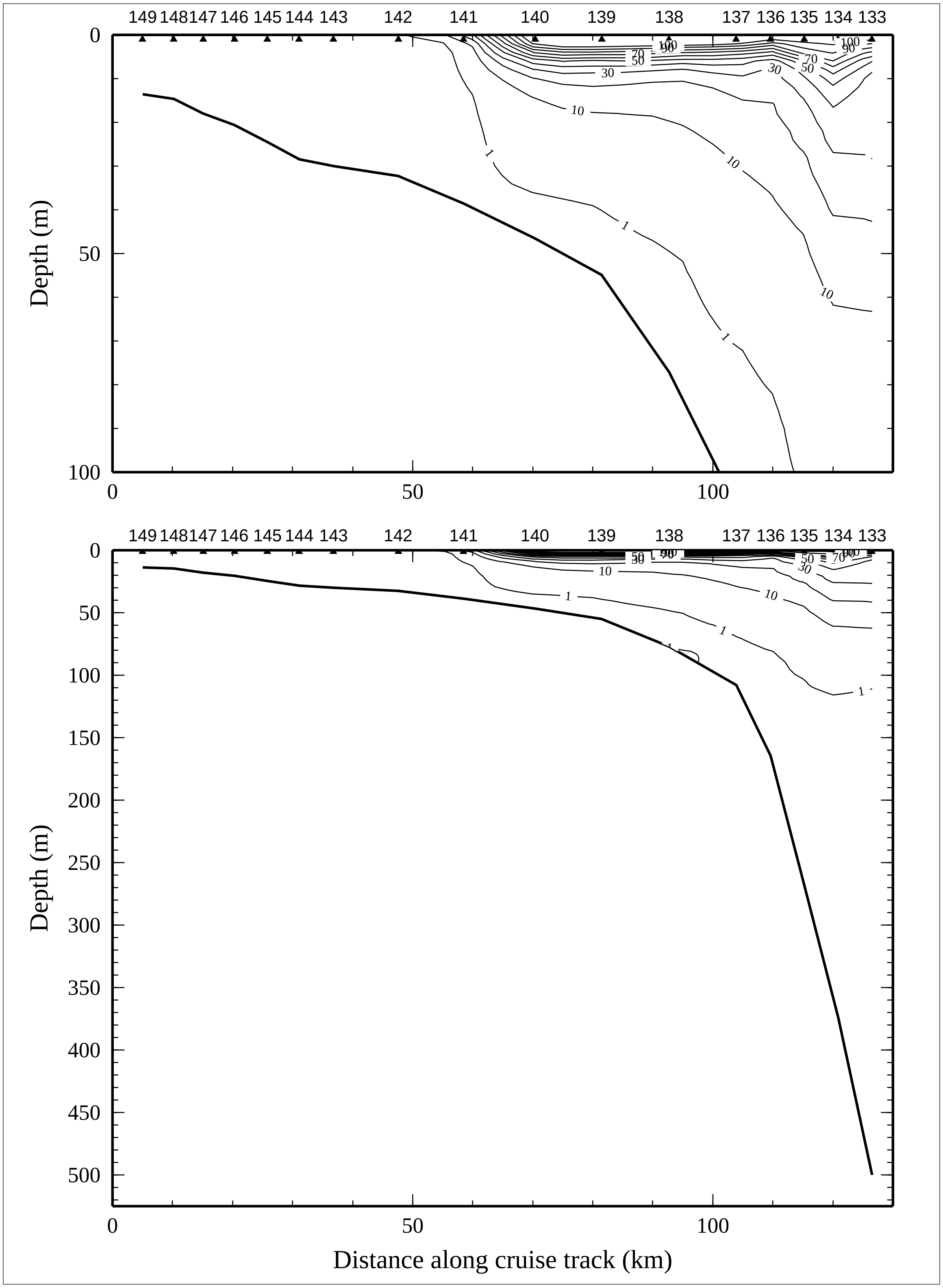

Figure 5.5.6. Downwelling irradiance as percent of surface irradiance on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

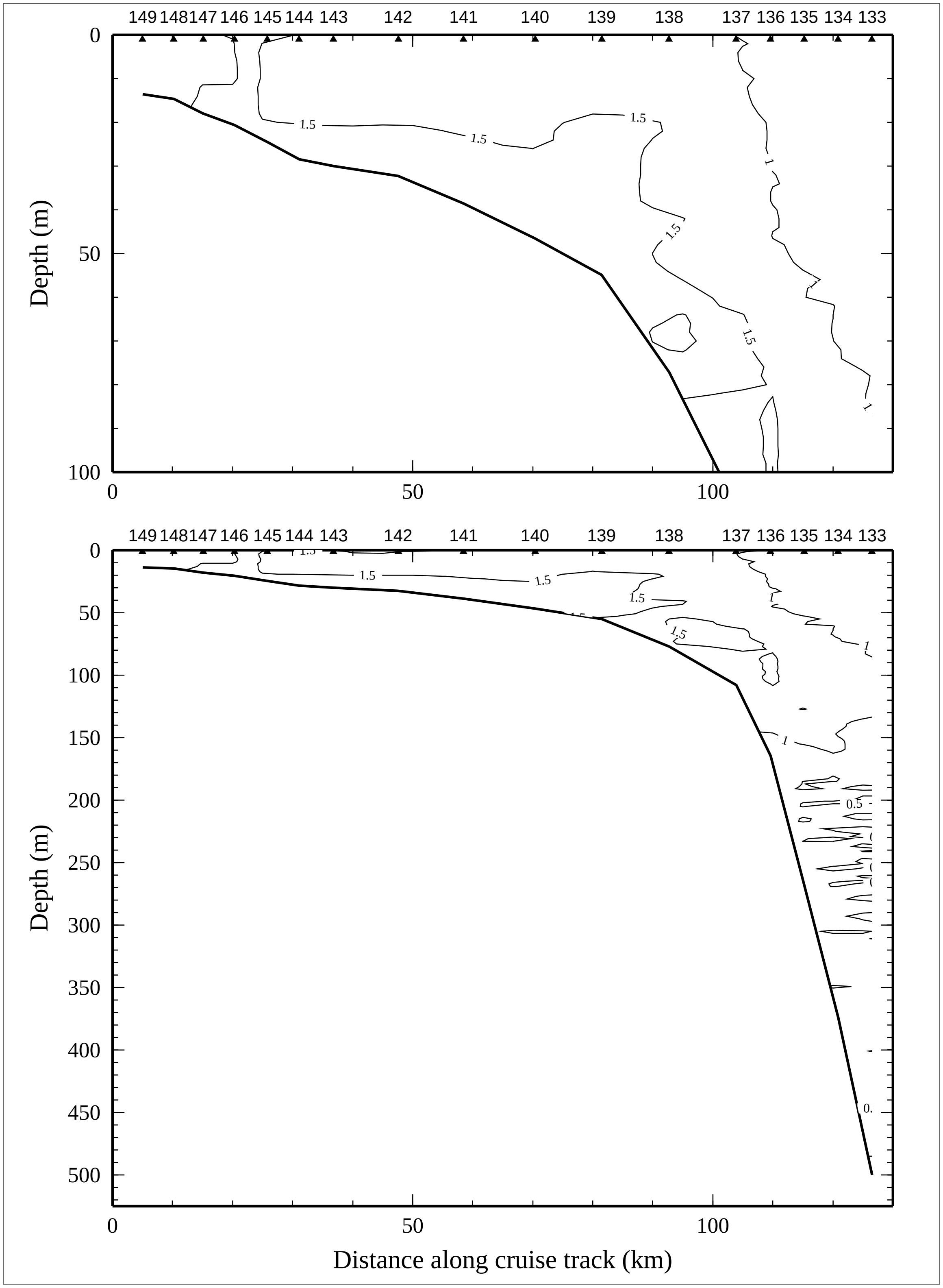

Figure 5.5.7. Relative fluorescence on line 5 of LATEX A survey H05,
25 April - 11 May 1993.

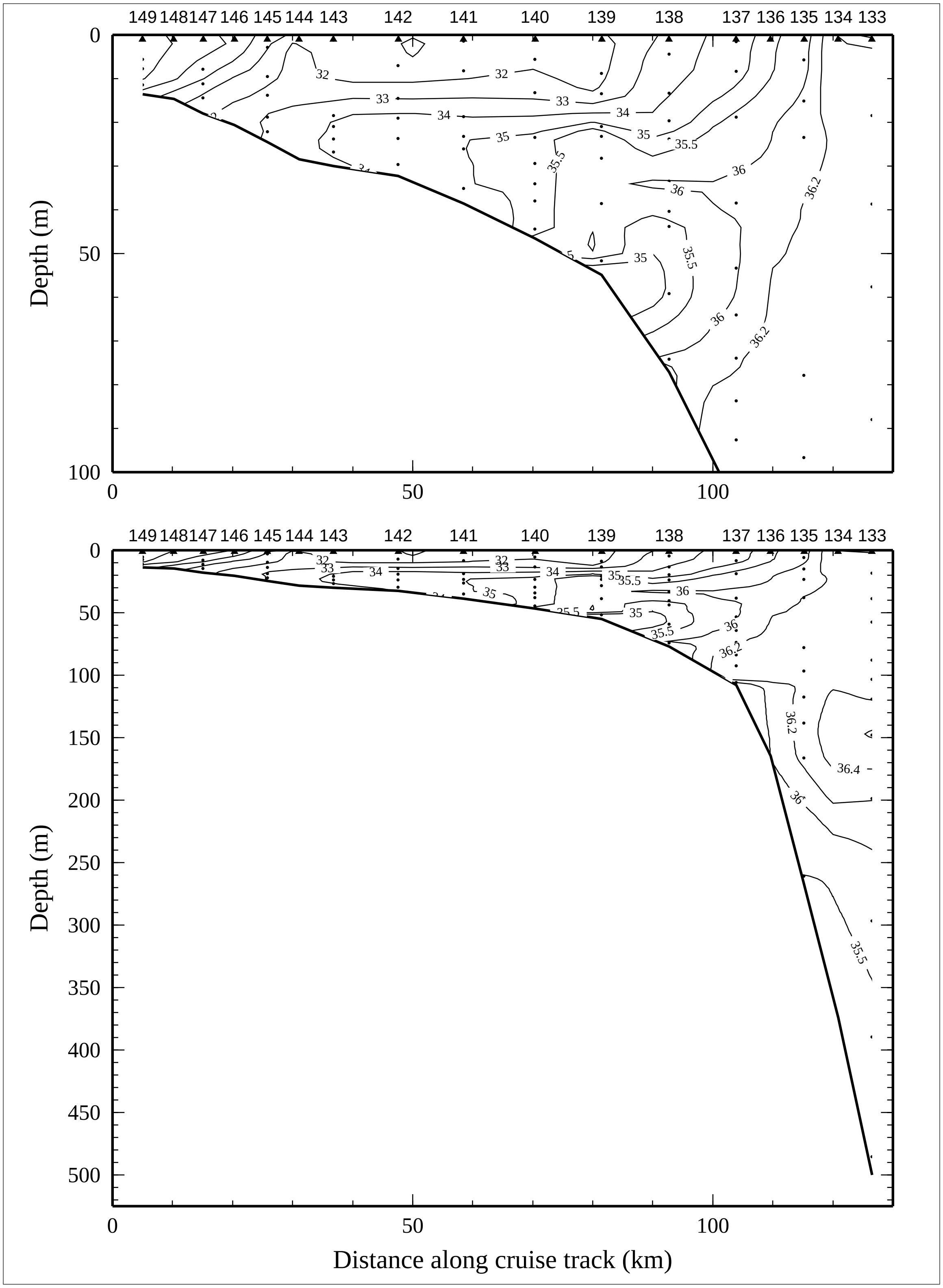

Figure 5.5.8. Bottle salinity on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

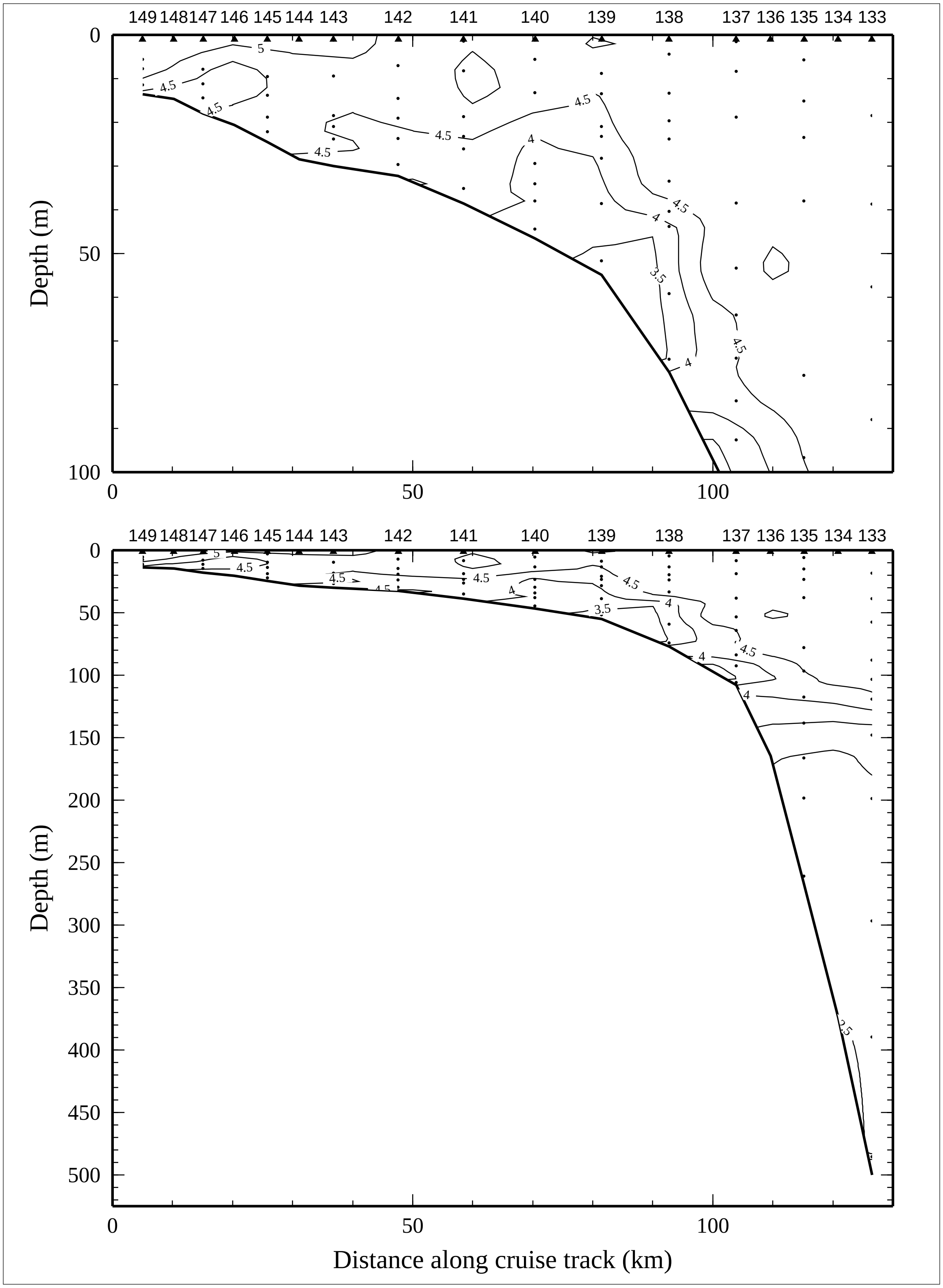

Figure 5.5.9. Dissolved oxygen (ml·l^{-1}) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

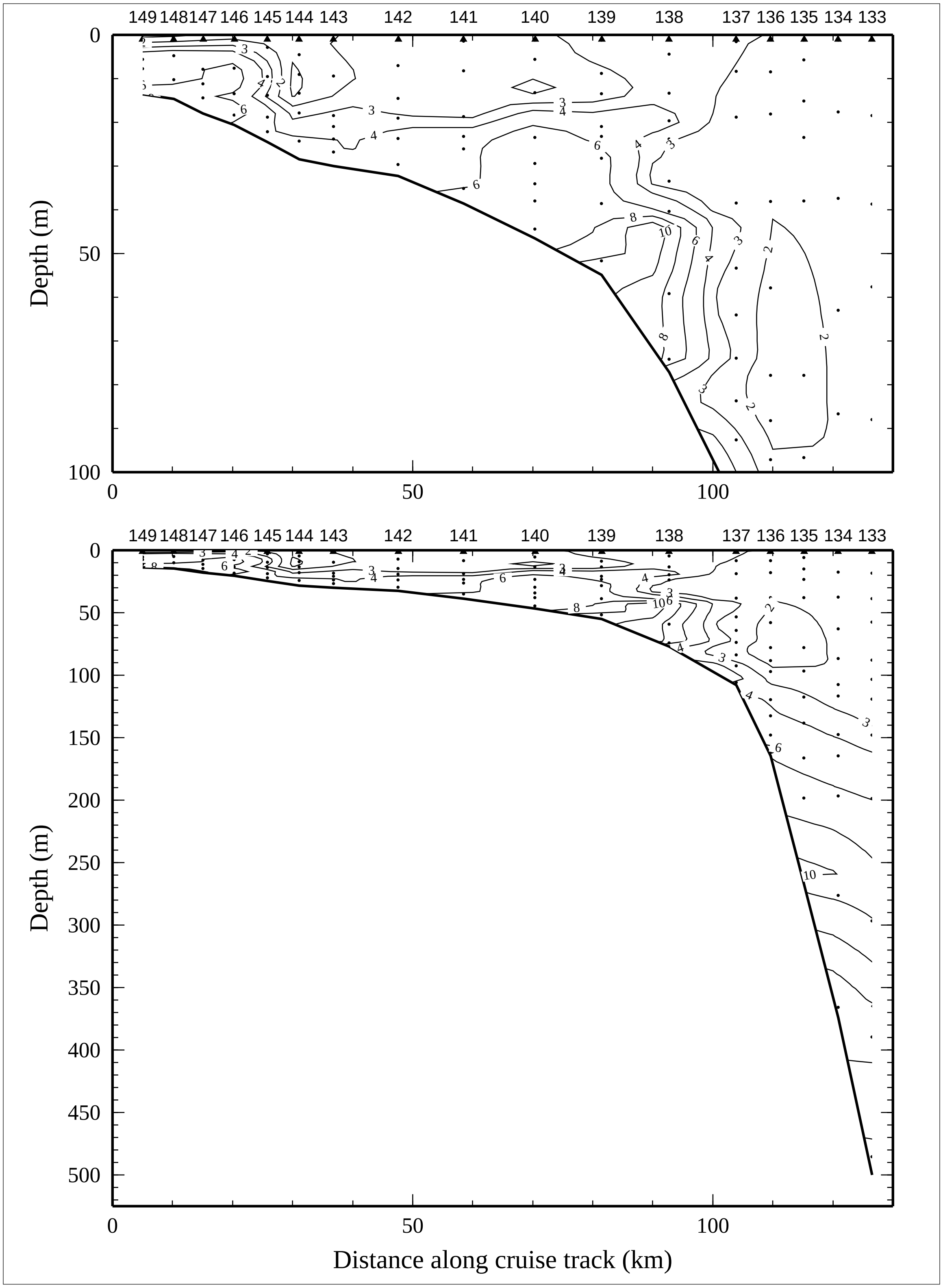

Figure 5.5.10. Silicate (μmol·l-1) on line 5 of LATEX A survey H05,
25 April - 11 May 1993.

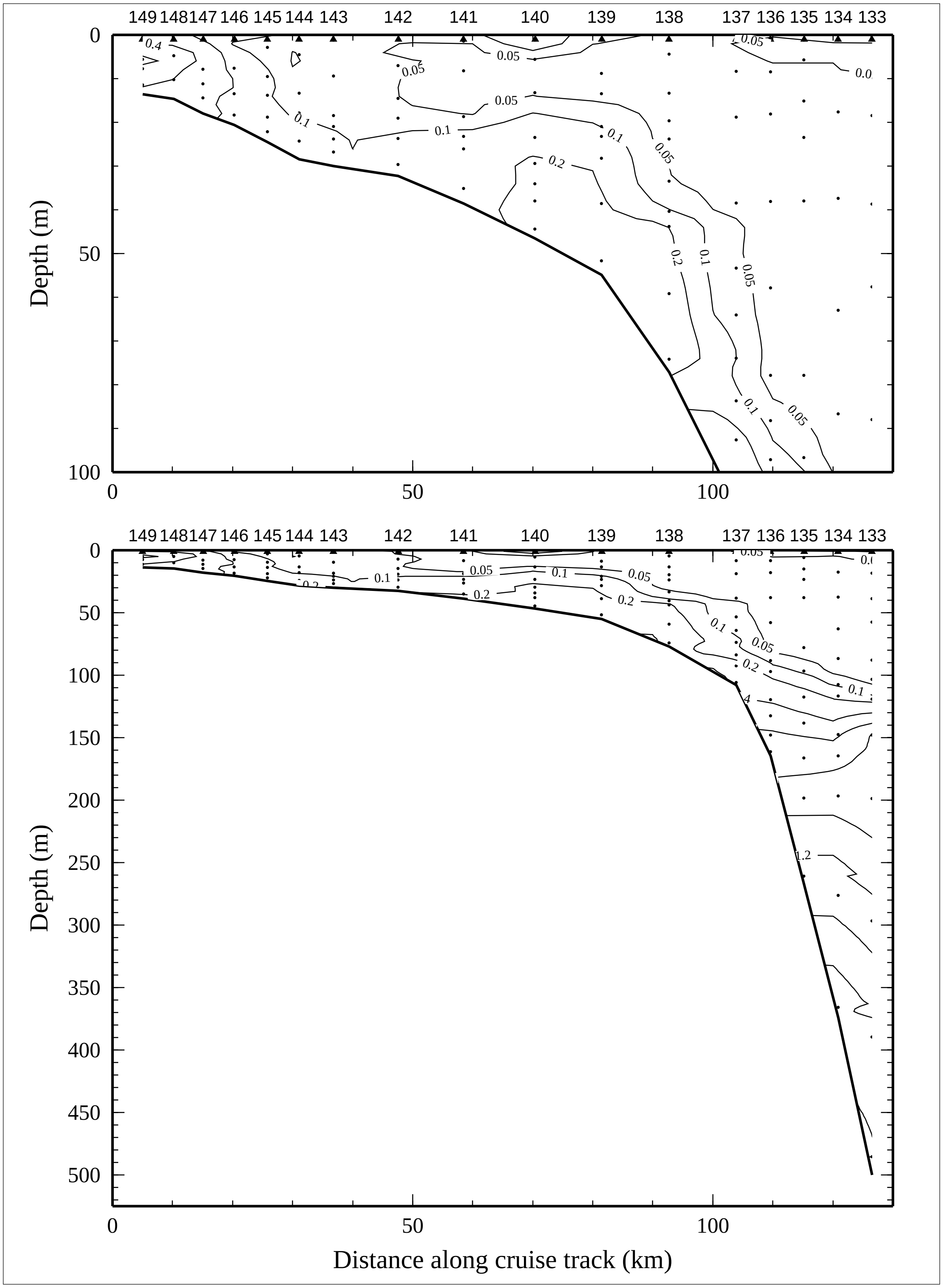

Figure 5.5.11. Phosphate (μmol·l^{-1}) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

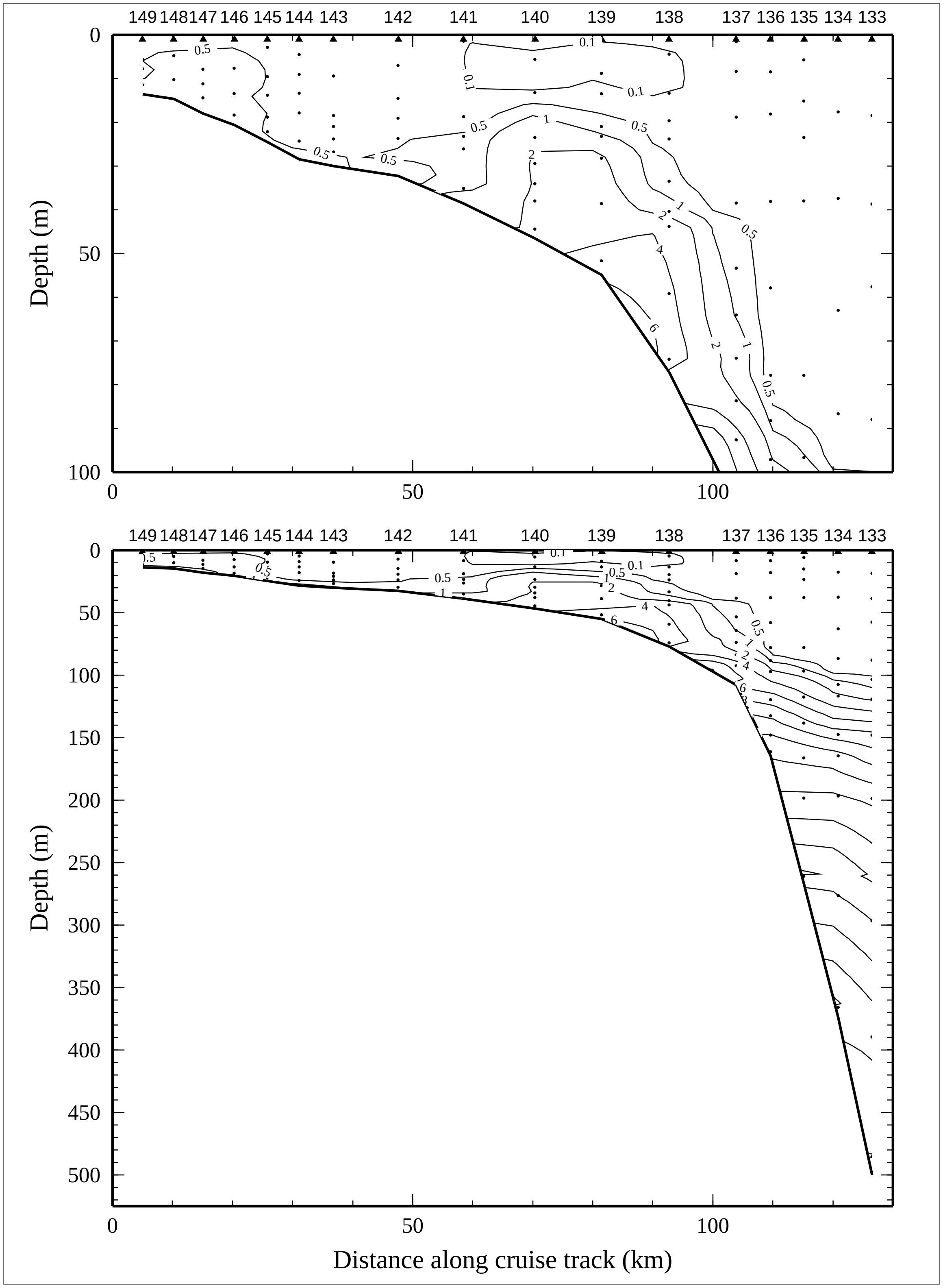

Figure 5.5.12. Nitrate (μmol·l^{-1}) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

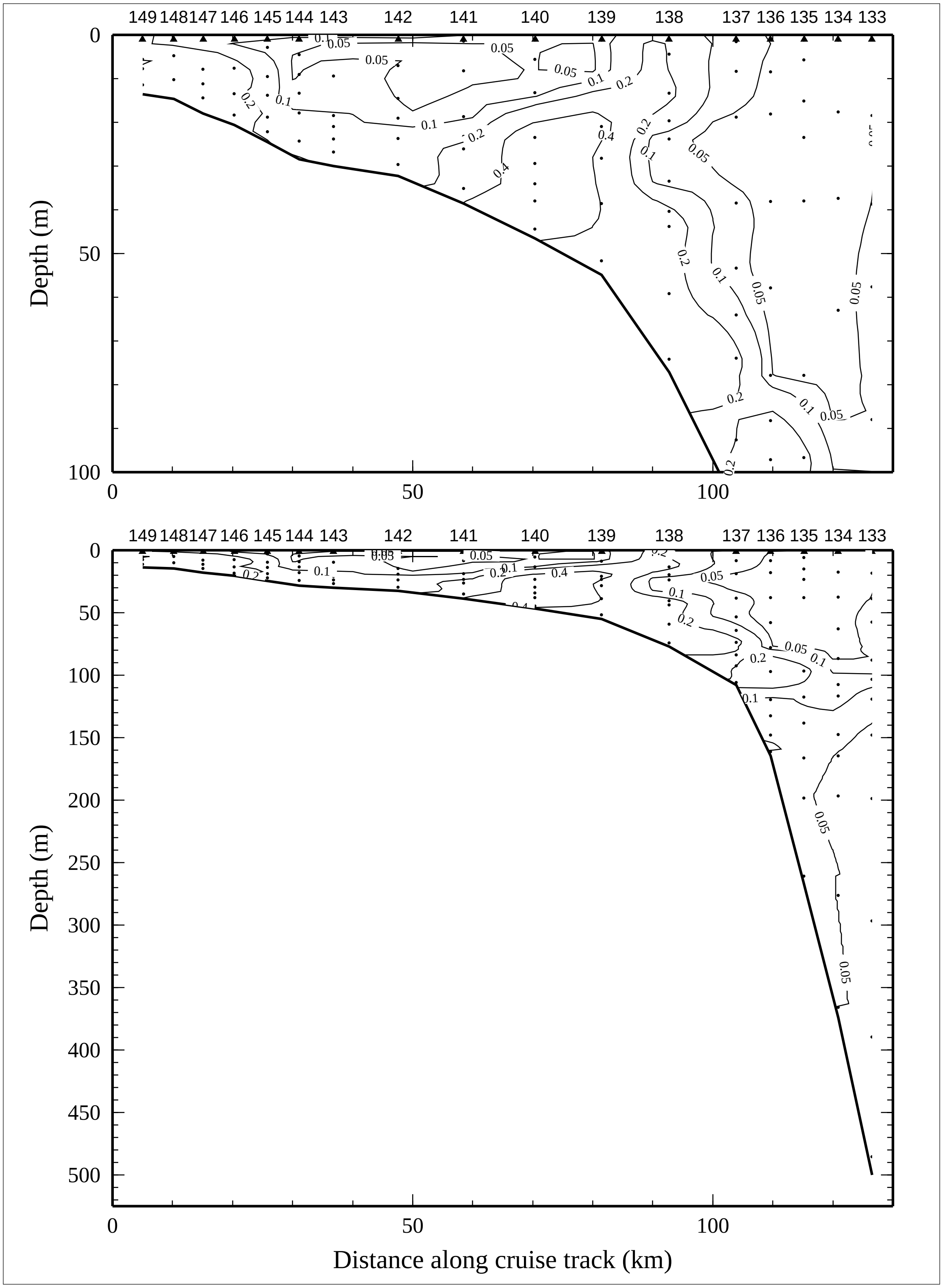

Figure 5.5.13. Nitrite (µmol·l^{-1}) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

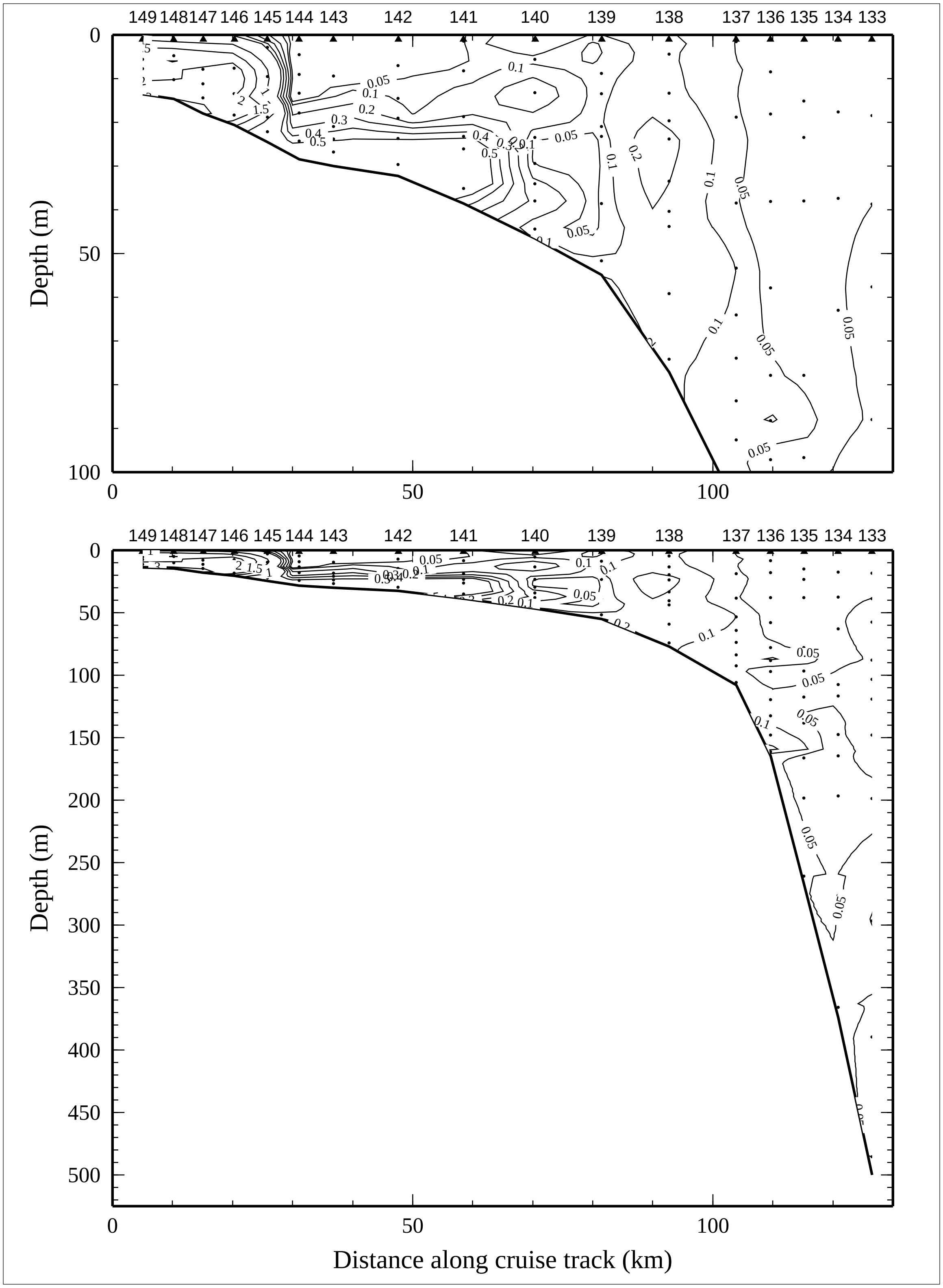

Figure 5.5.14. Ammonium (μmol·l^{-1}) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

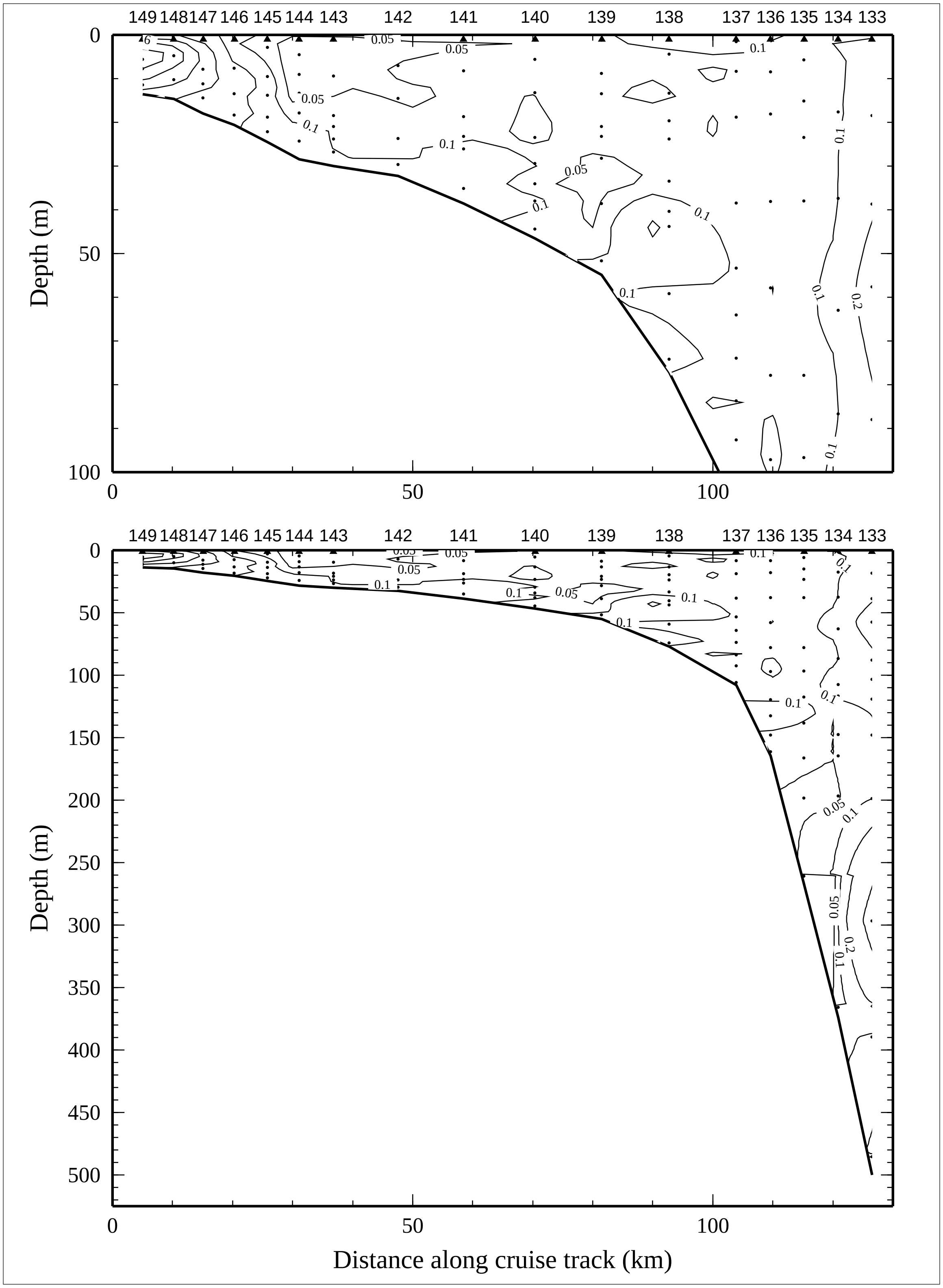

Figure 5.5.15. Urea (μmol·l^{-1}) on line 5 of LATEX A survey H05,
25 April - 11 May 1993.

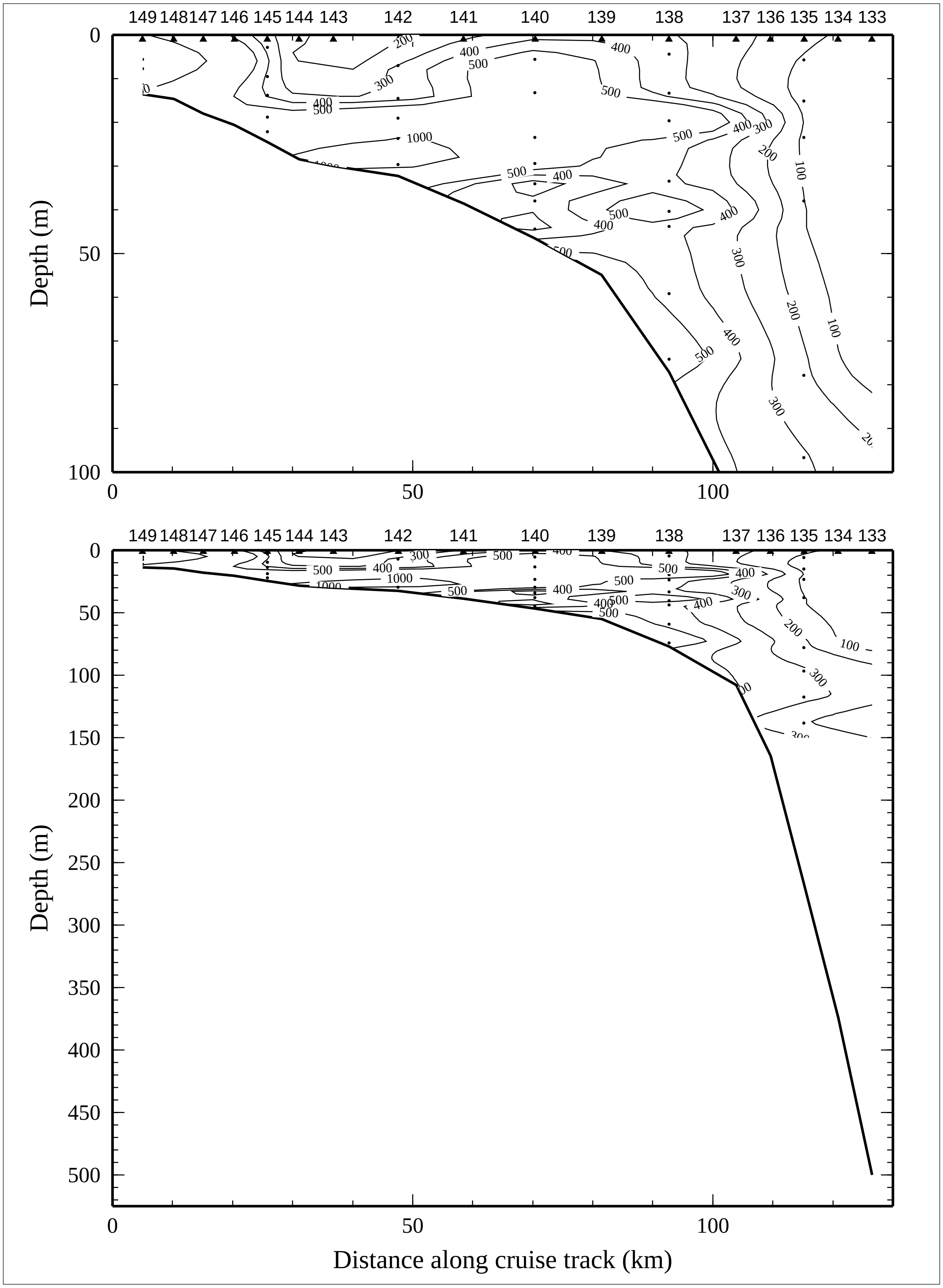

Figure 5.5.16. Chlorophyll a (ng·l-1) on line 5 of LATEX A survey H05, 25 April - 11 May 1993.

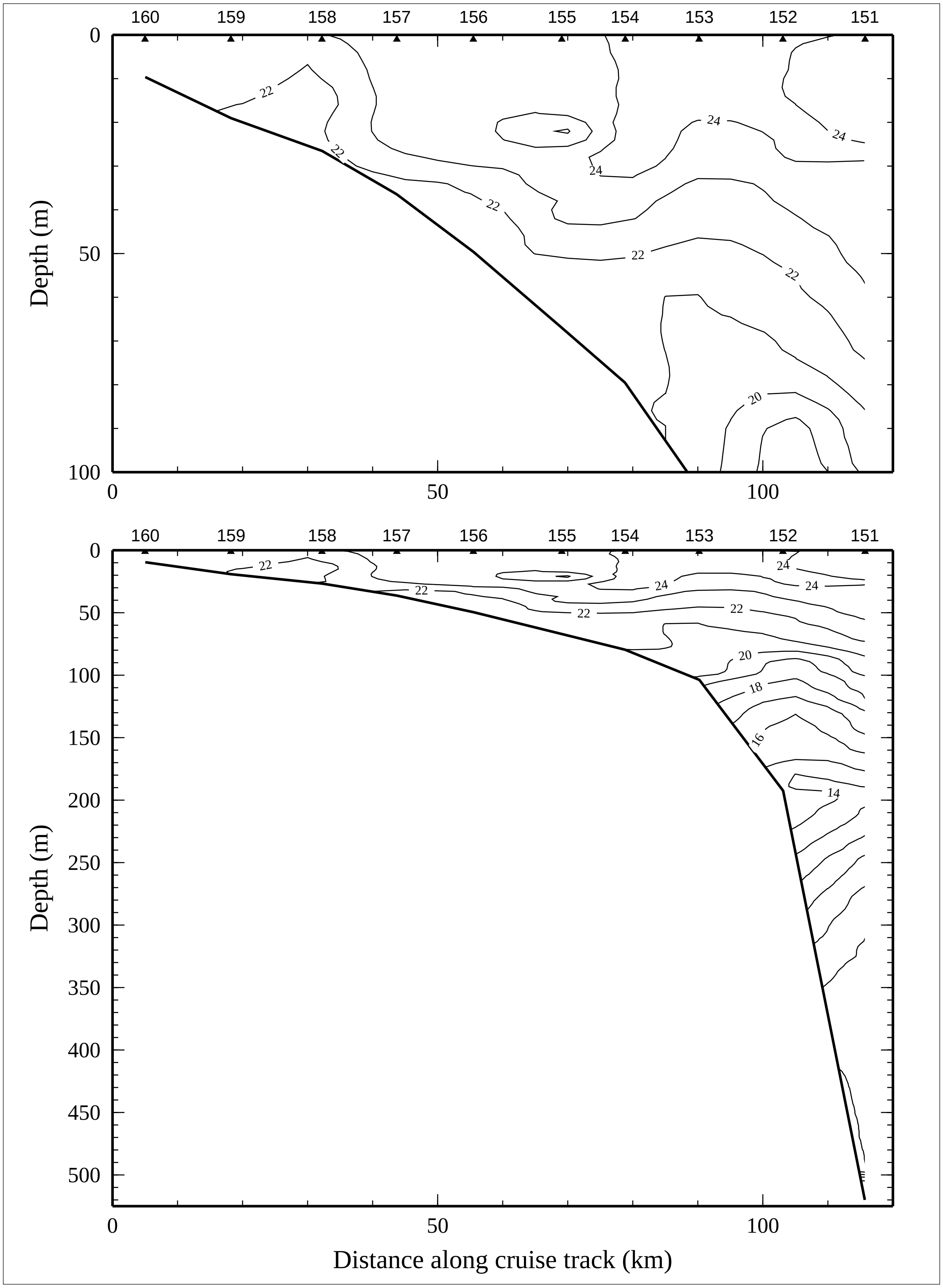

Figure 5.6.1. Potential temperature (˚C) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

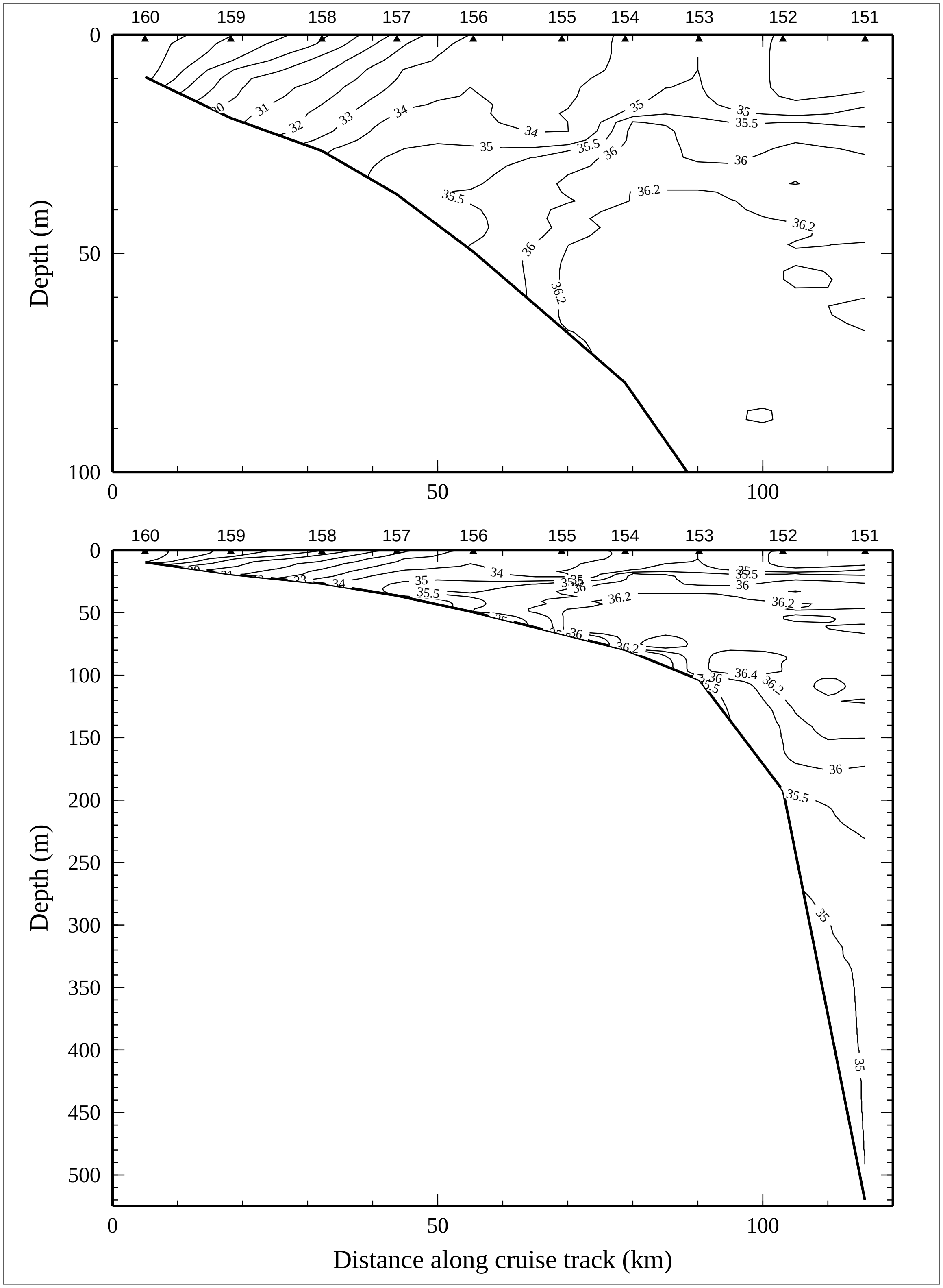

Figure 5.6.2. Salinity, derived from CTD data, on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

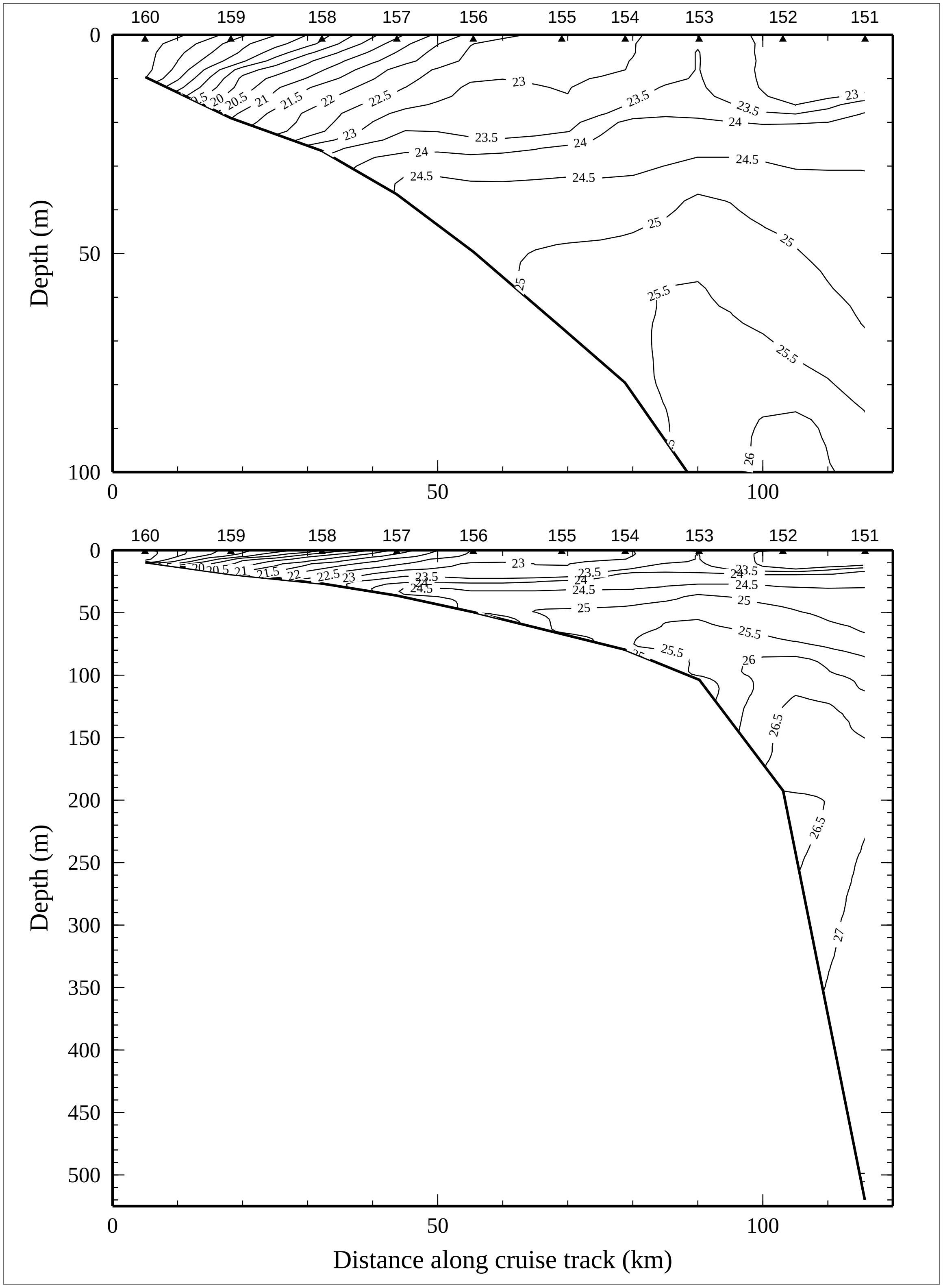

Figure 5.6.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

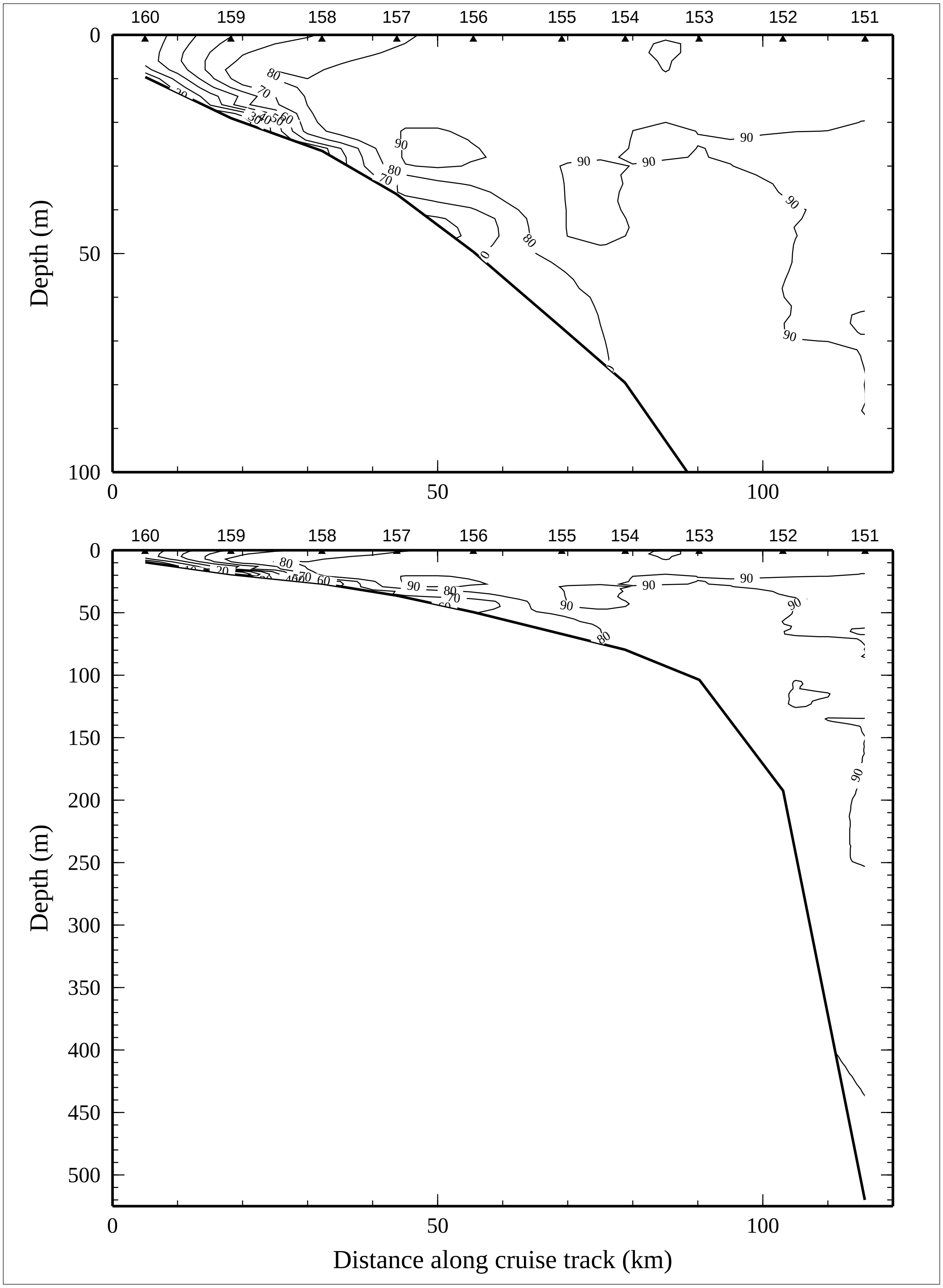

Figure 5.6.4. Percent transmission (660 nm wave length; 25-cm path length) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

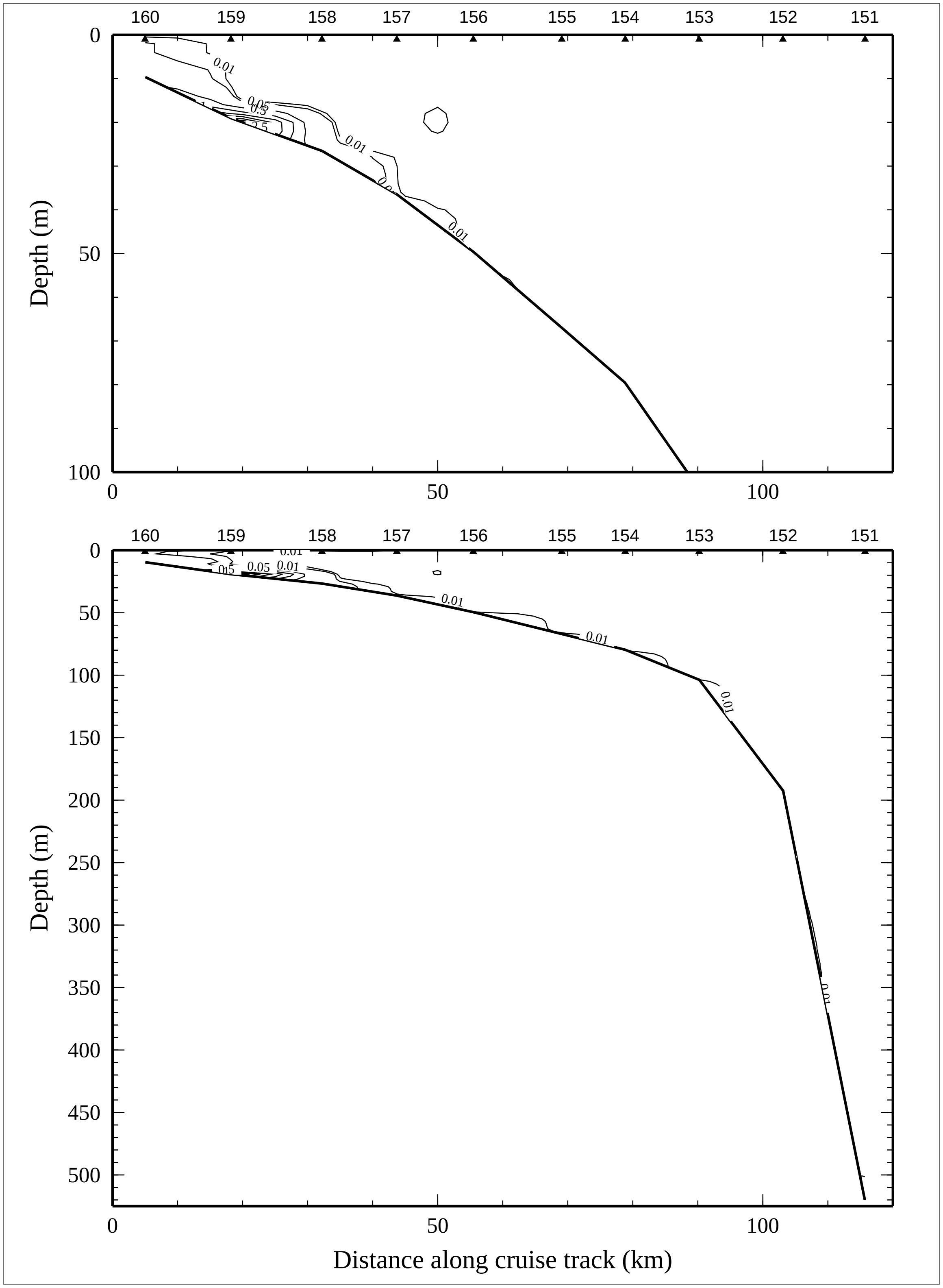

Figure 5.6.5. Optical backscatterance (voltage) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

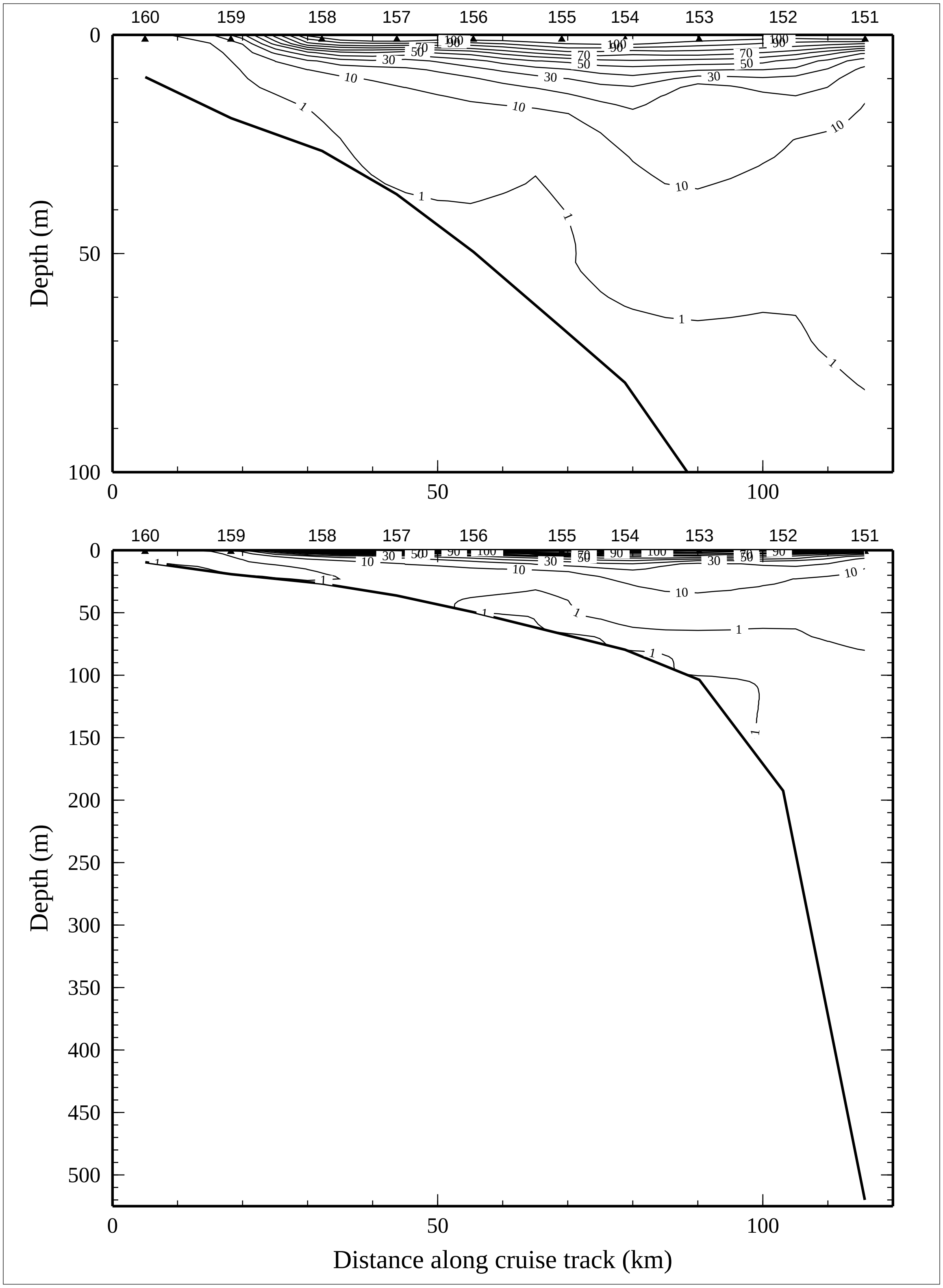

Figure 5.6.6. Downwelling irradiance as percent of surface irradiance on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

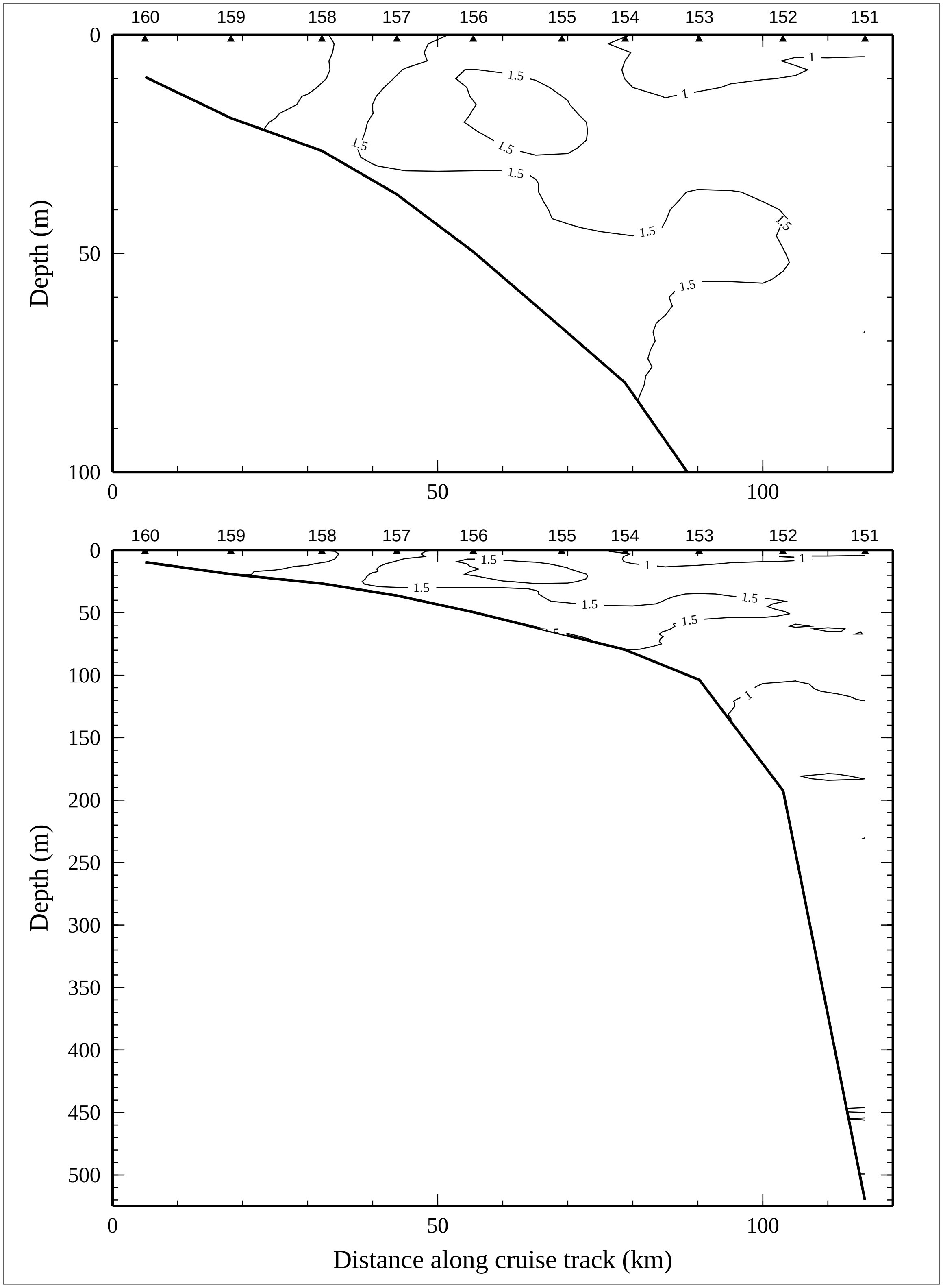

Figure 5.6.7. Relative fluorescence on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

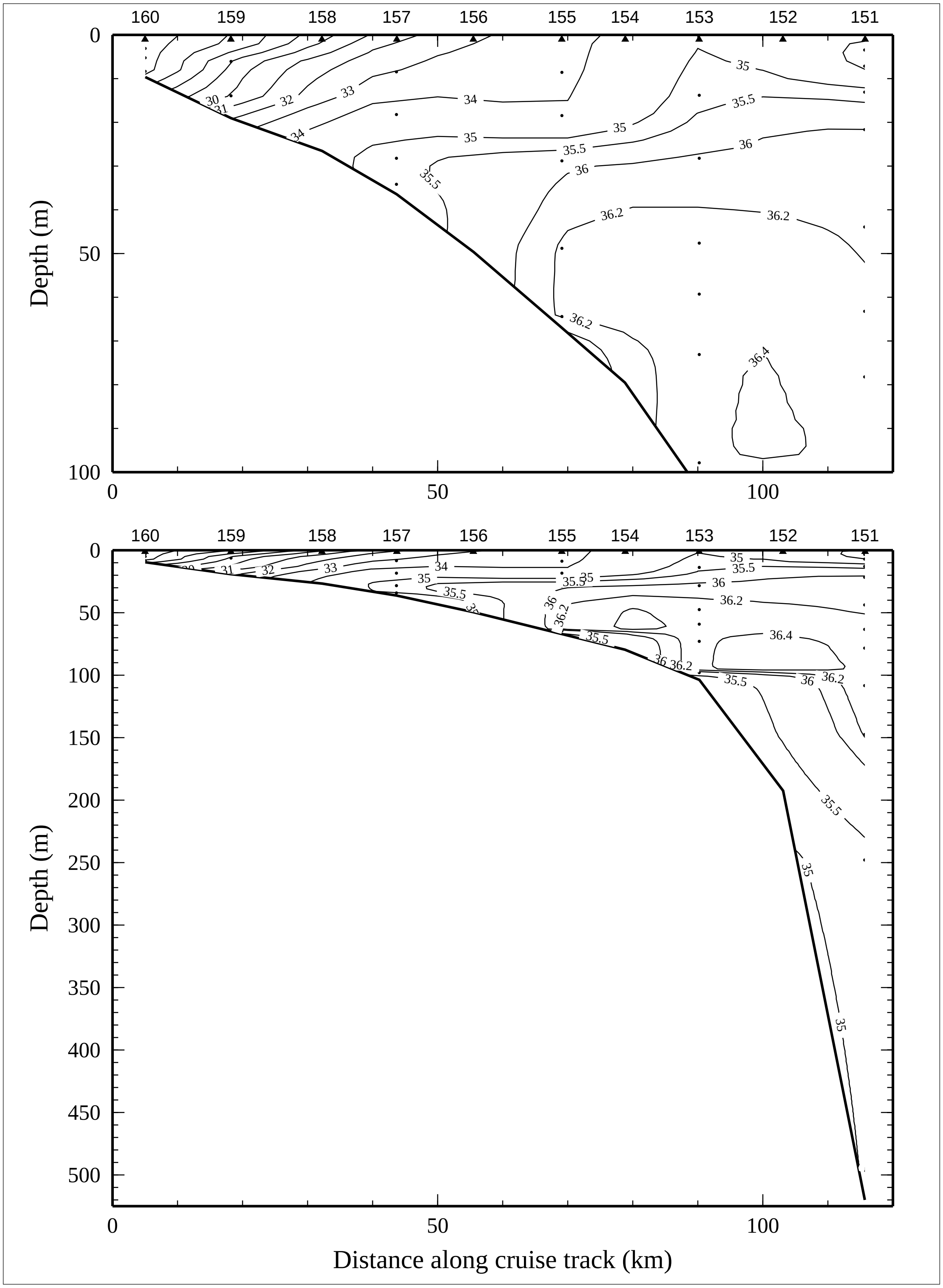

Figure 5.6.8. Bottle salinity on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

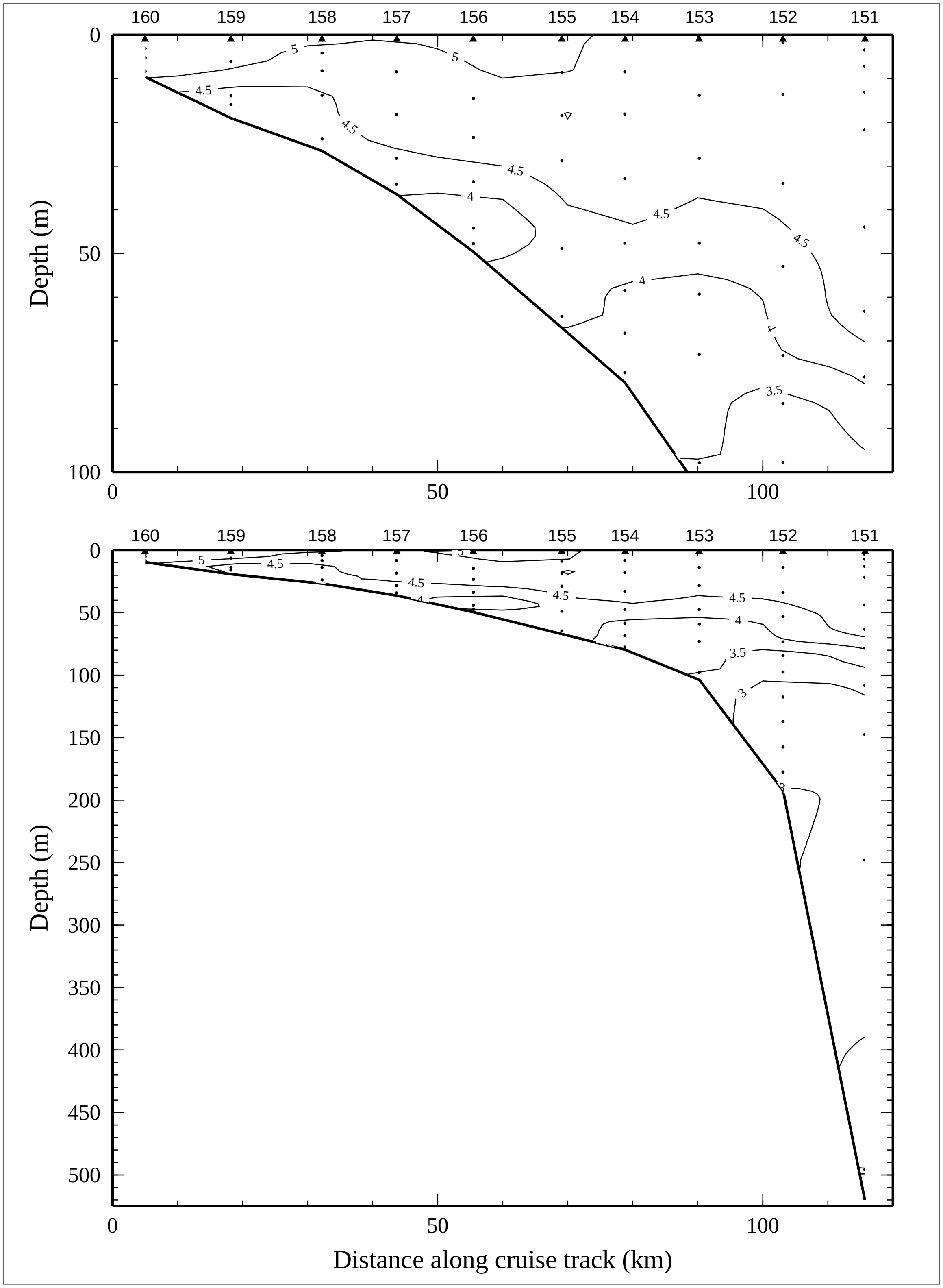

Figure 5.6.9. Dissolved oxygen (ml·l^{-1}) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

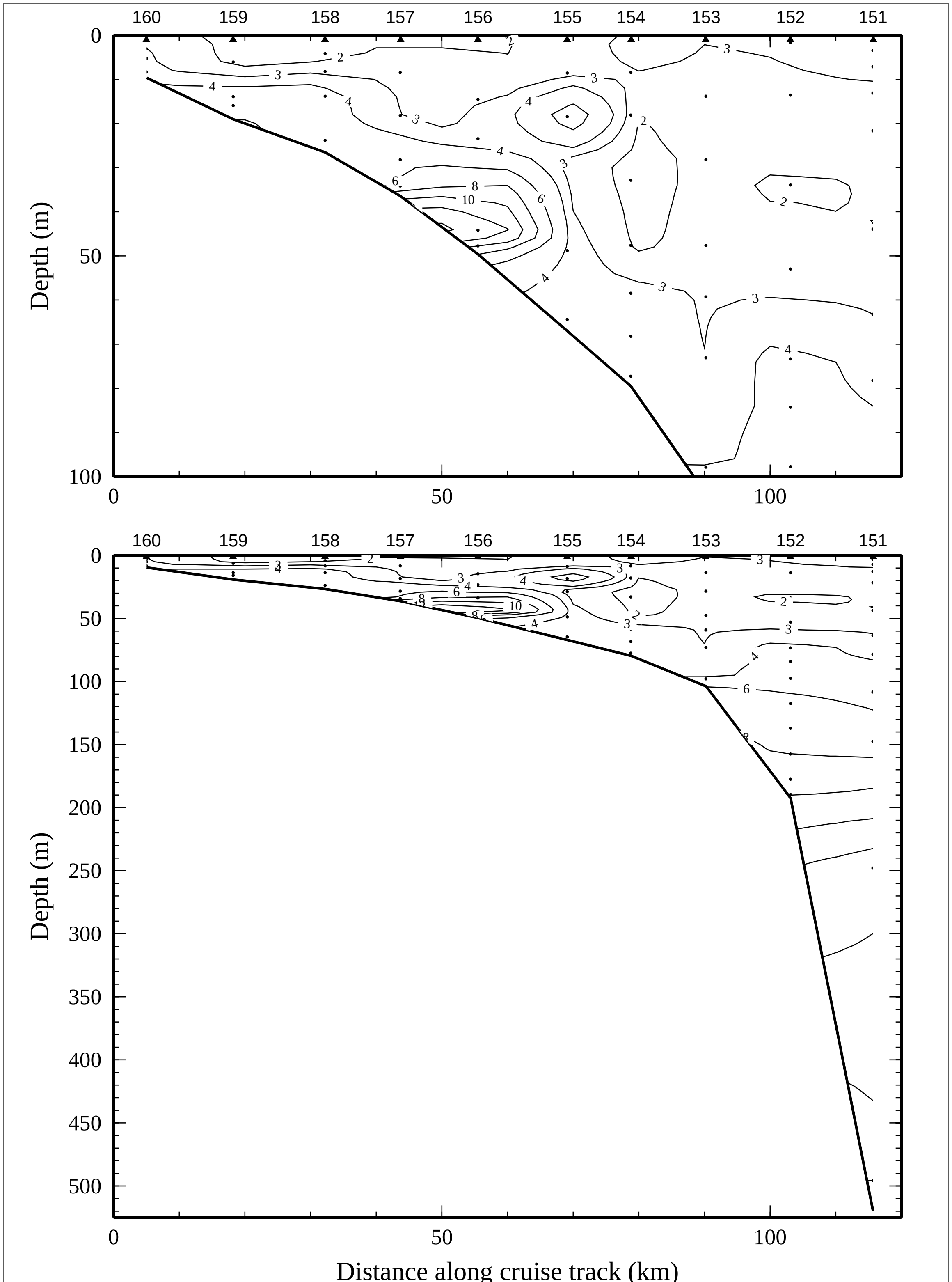

Figure 5.6.10. Silicate (μmol·l^{-1}) on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

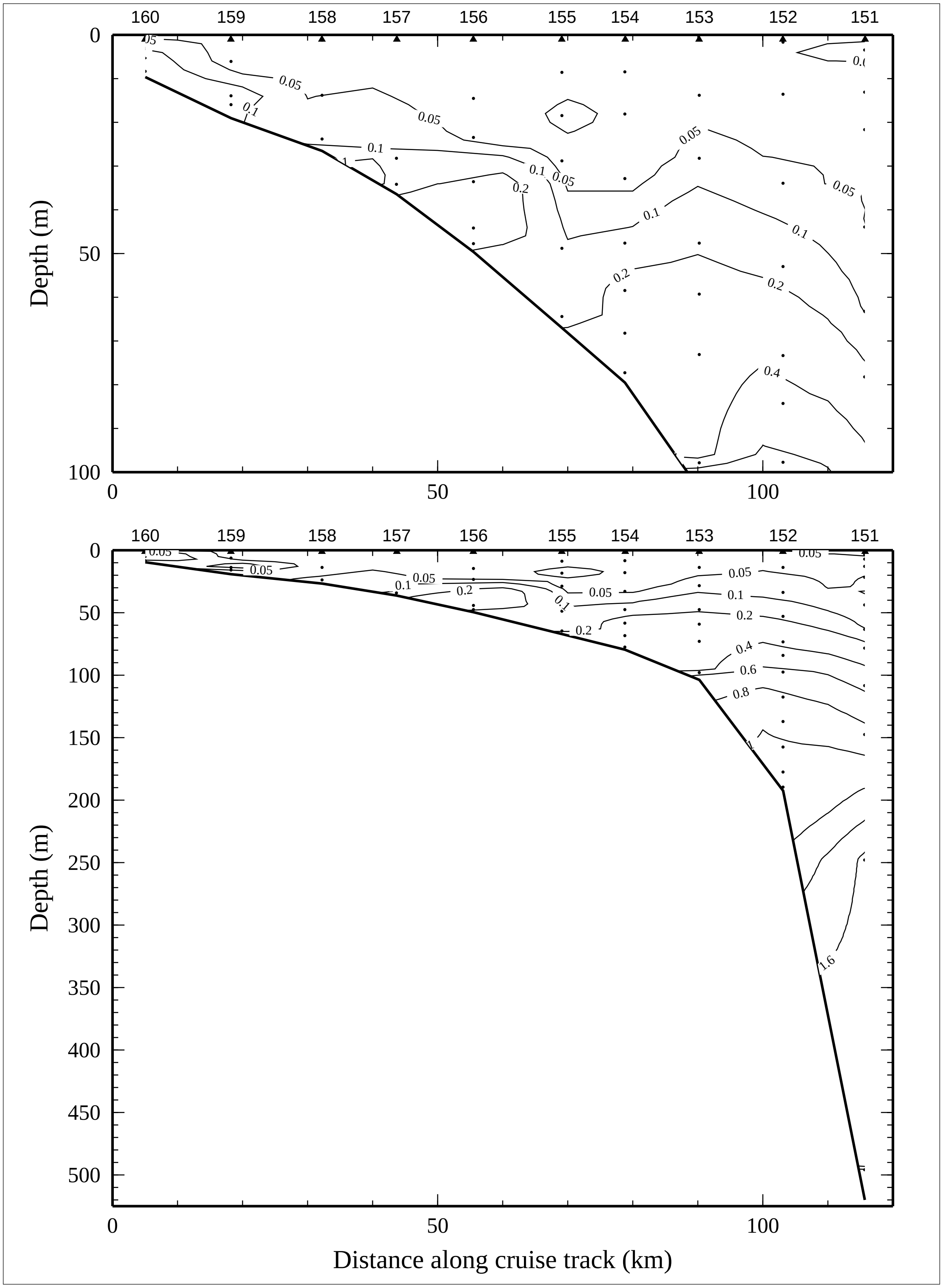

Figure 5.6.11. Phosphate (μmol·l^{-1}) on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

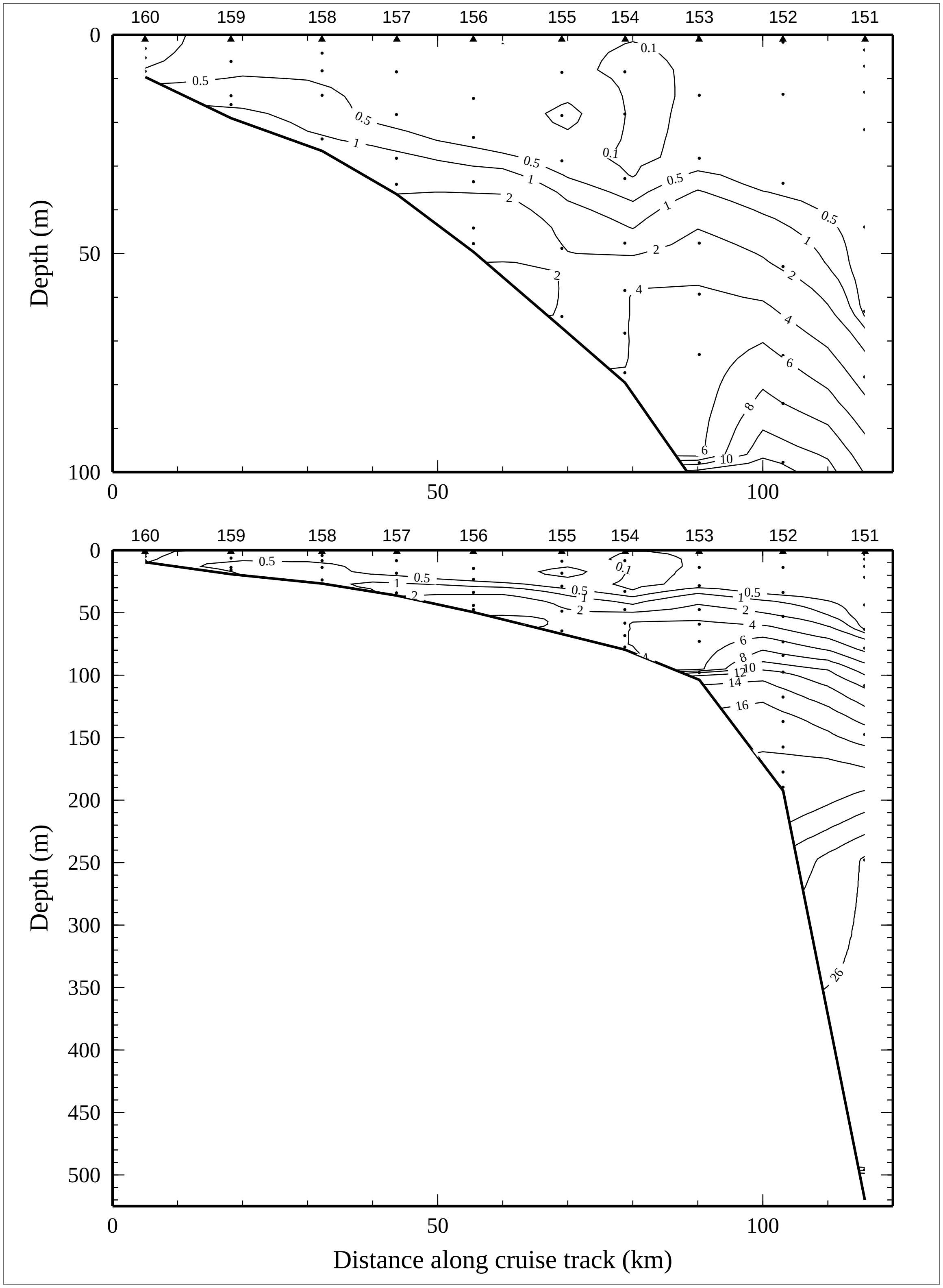

Figure 5.6.12. Nitrate (μmol·l-1) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

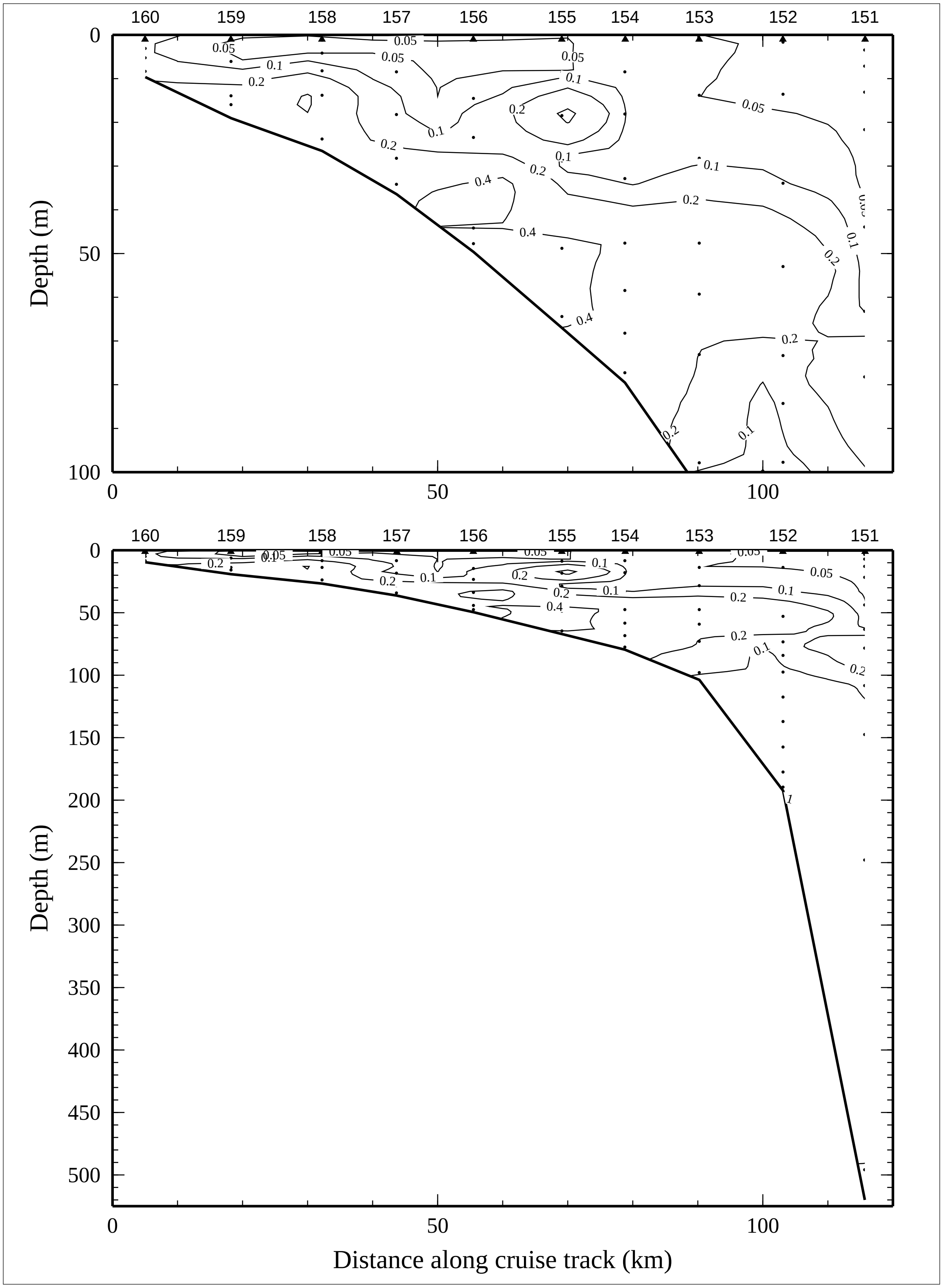

Figure 5.6.13. Nitrite (μmol·l-1) on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

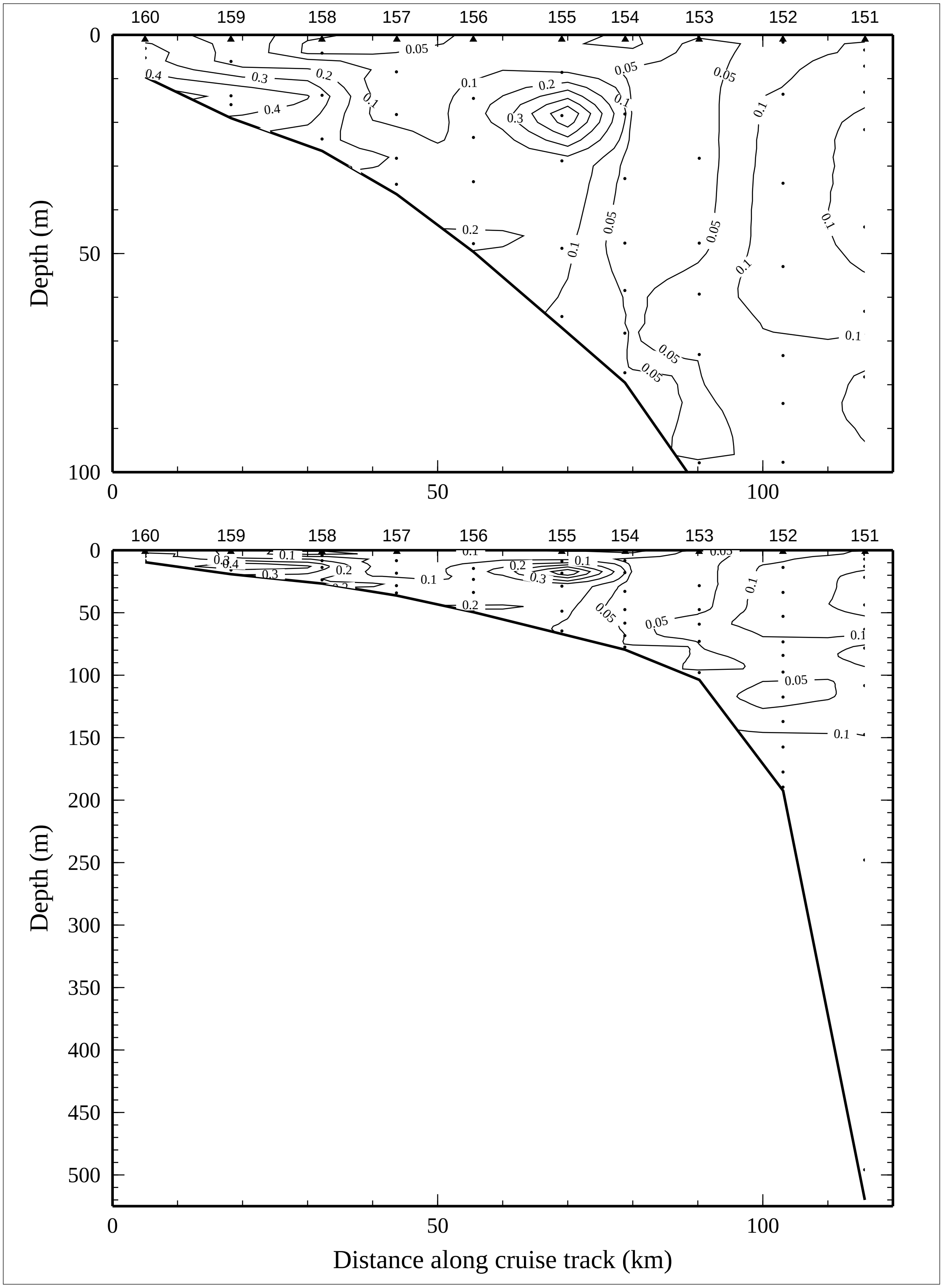

Figure 5.6.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 6 of LATEX A survey H05, 25 April - 11 May 1993.

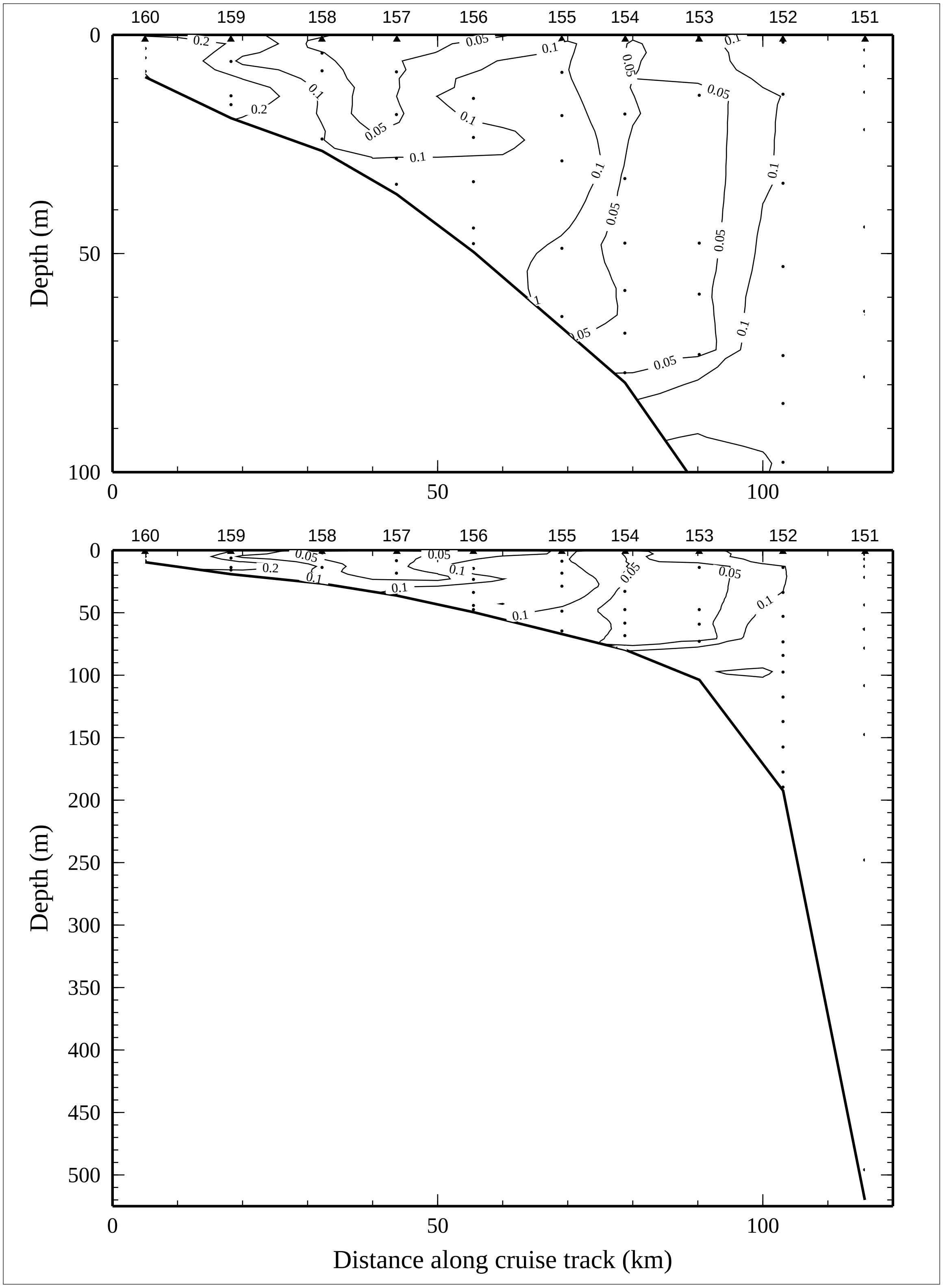

Figure 5.6.15. Urea (μmol·l^{-1}) on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

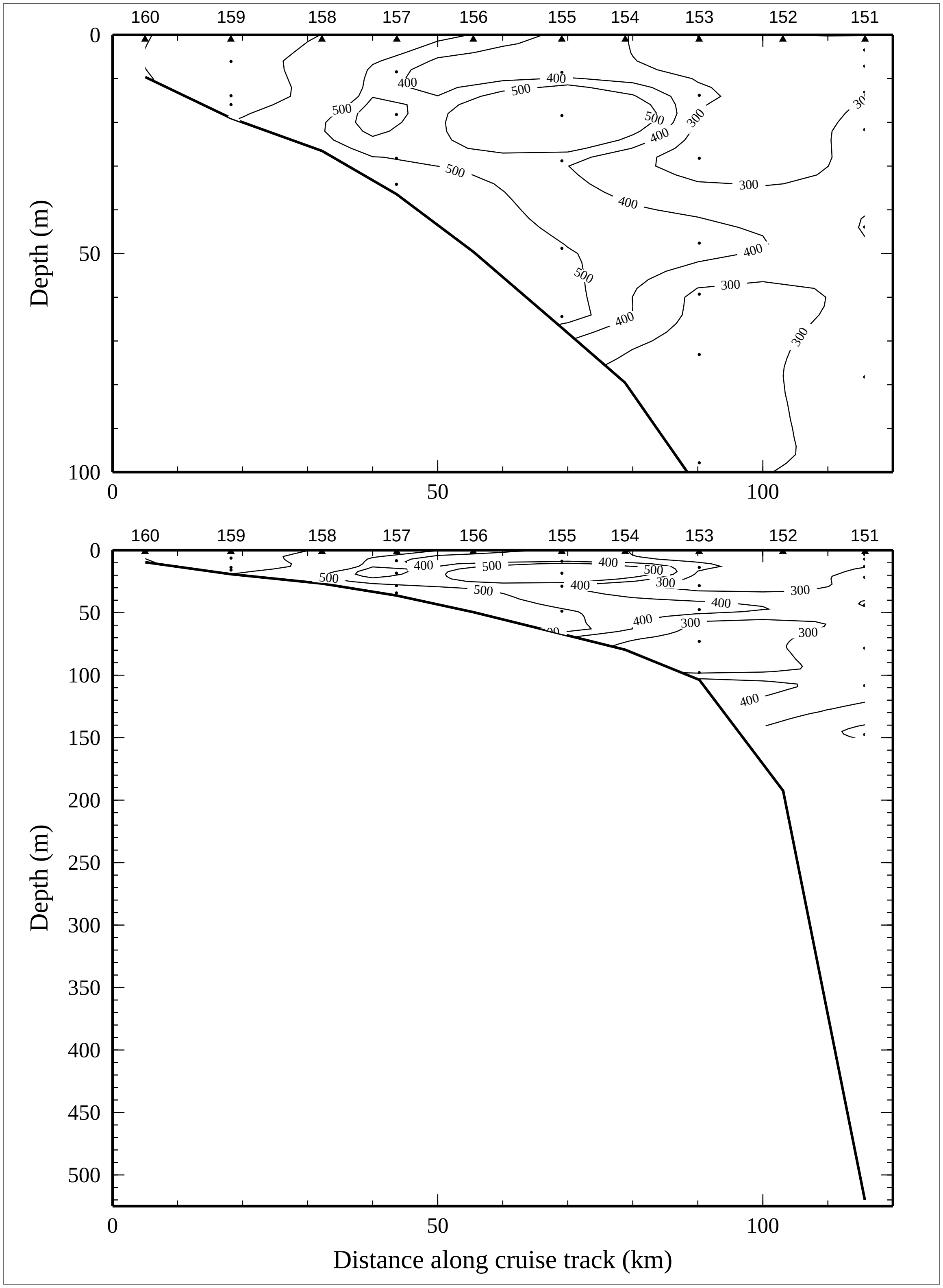

Figure 5.6.16. Chlorophyll a (ng·l^{-1}) on line 6 of LATEX A survey H05,
25 April - 11 May 1993.

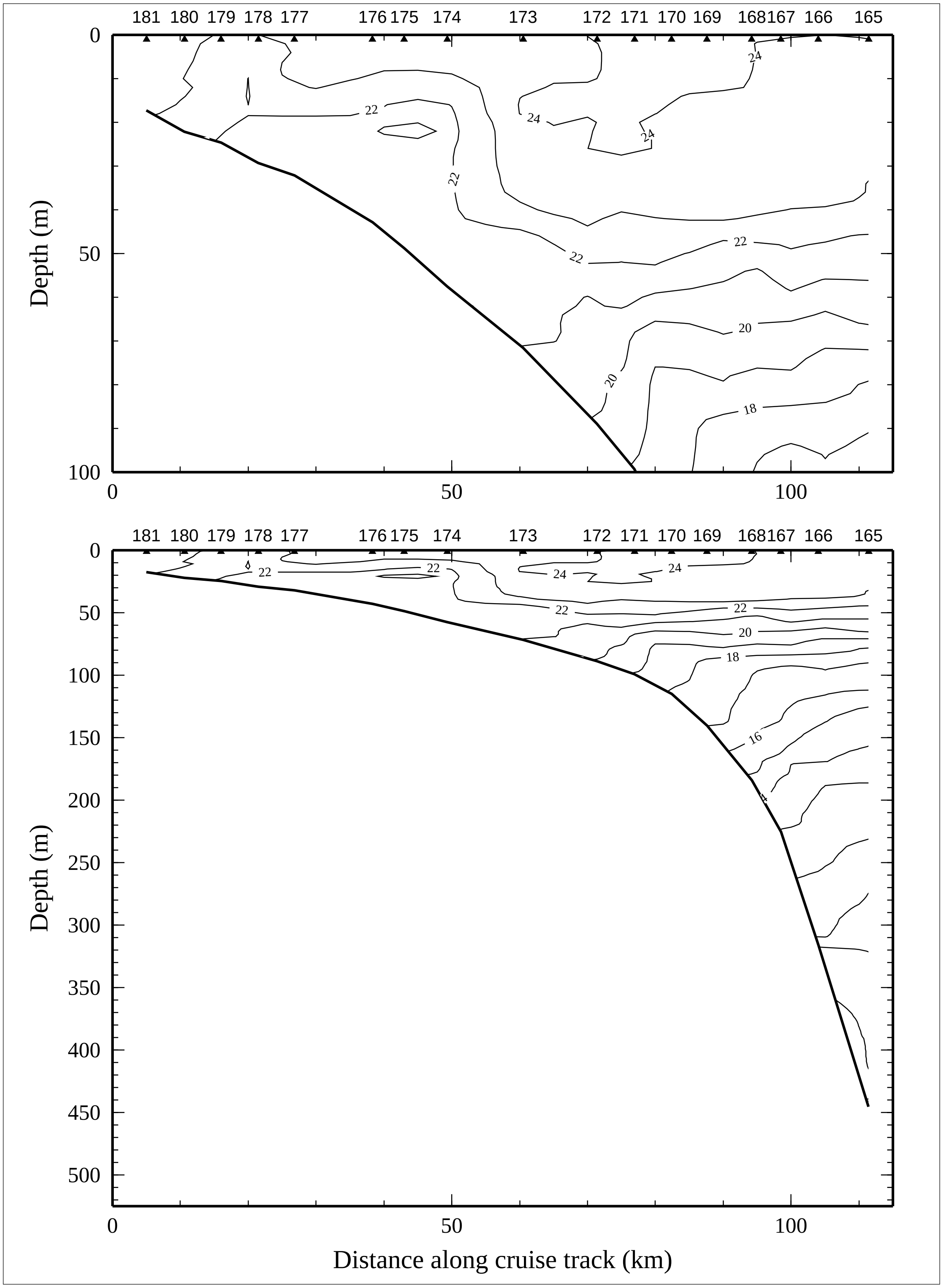

Figure 5.7.1. Potential temperature (˚C) on line 7 of LATEX A survey H05,
25 April - 11 May 1993.

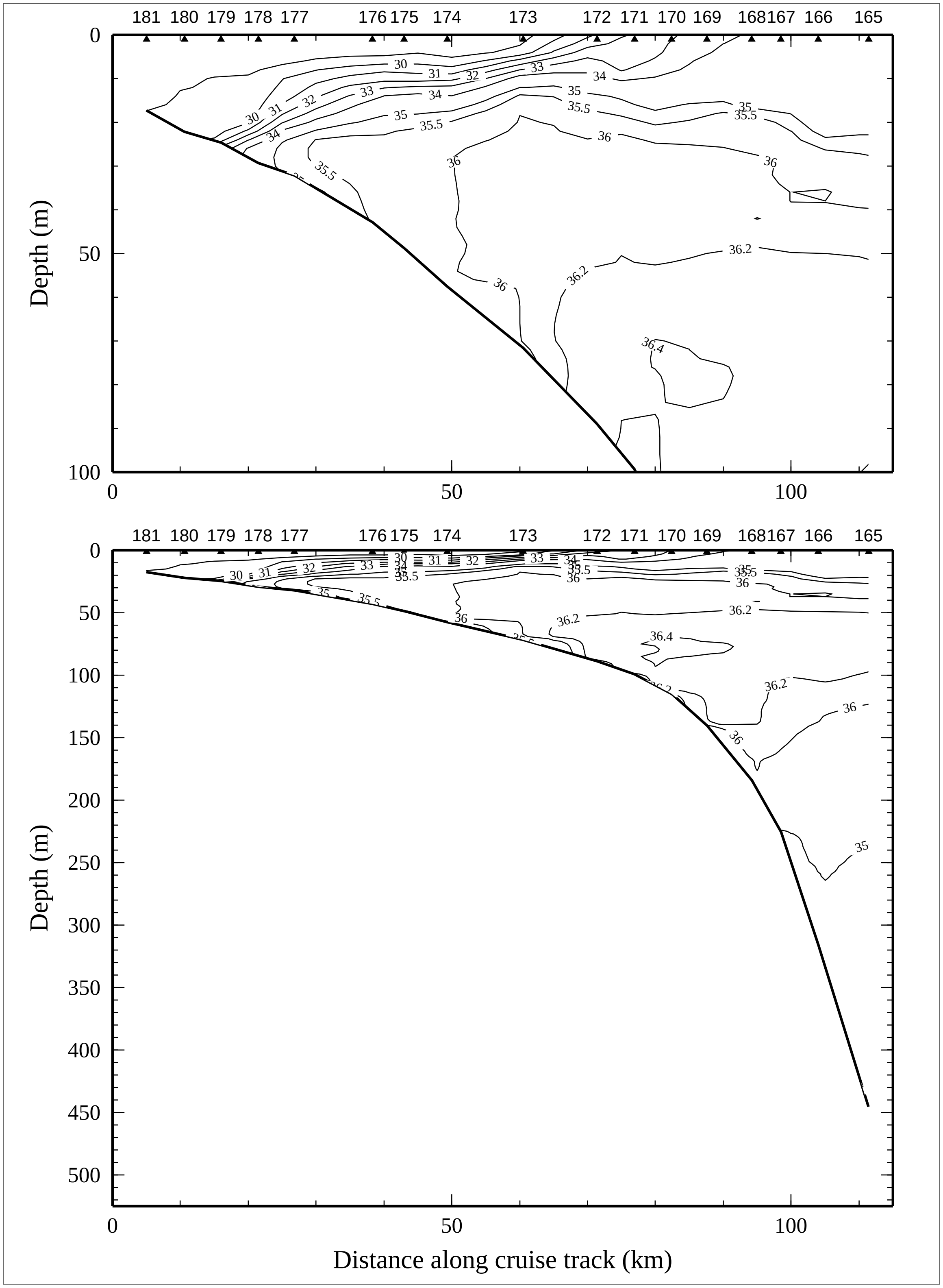

Figure 5.7.2. Salinity, derived from CTD data, on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

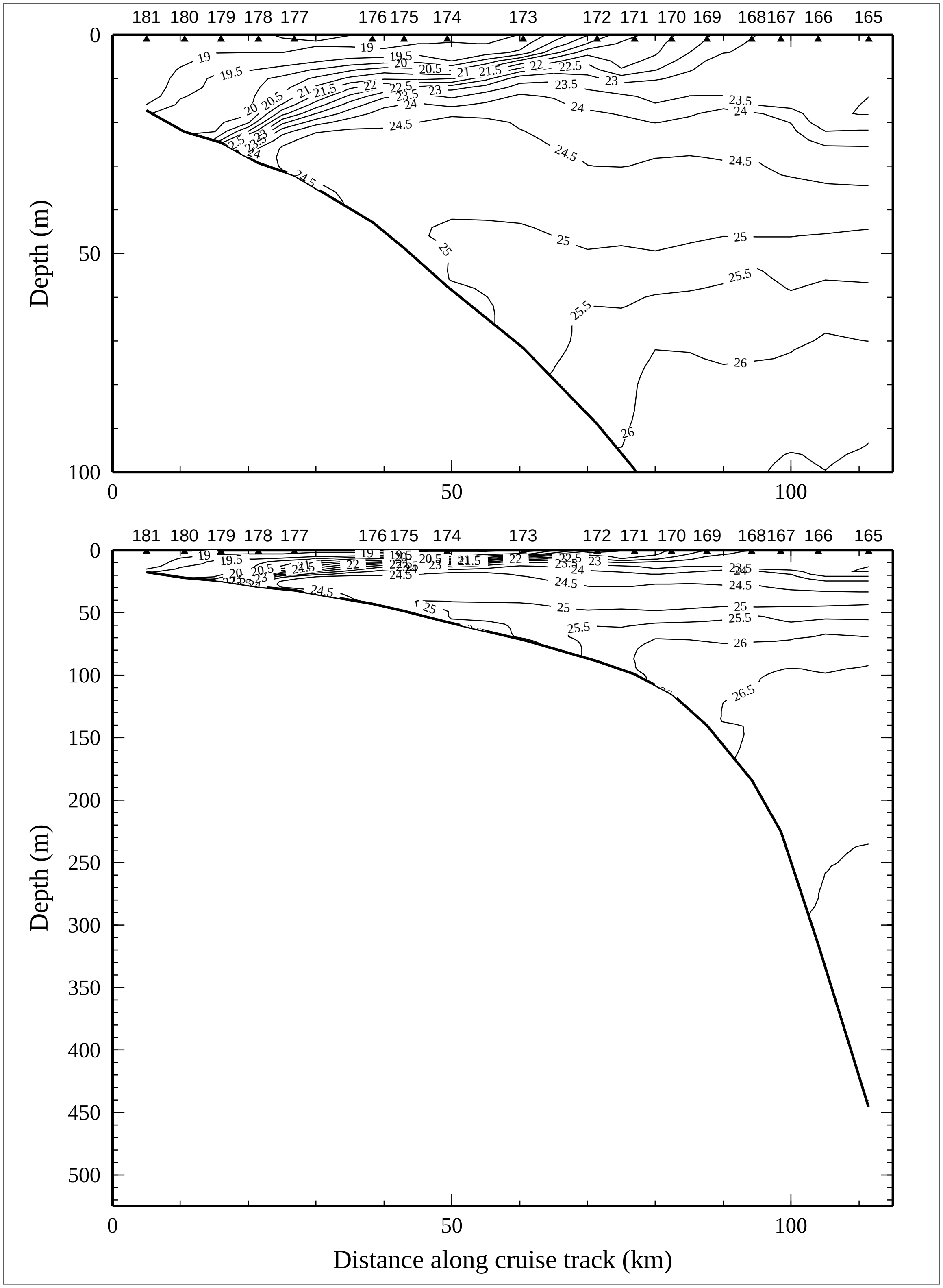

Figure 5.7.3. Density anomaly (σ_θ in kg·m^{-3}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

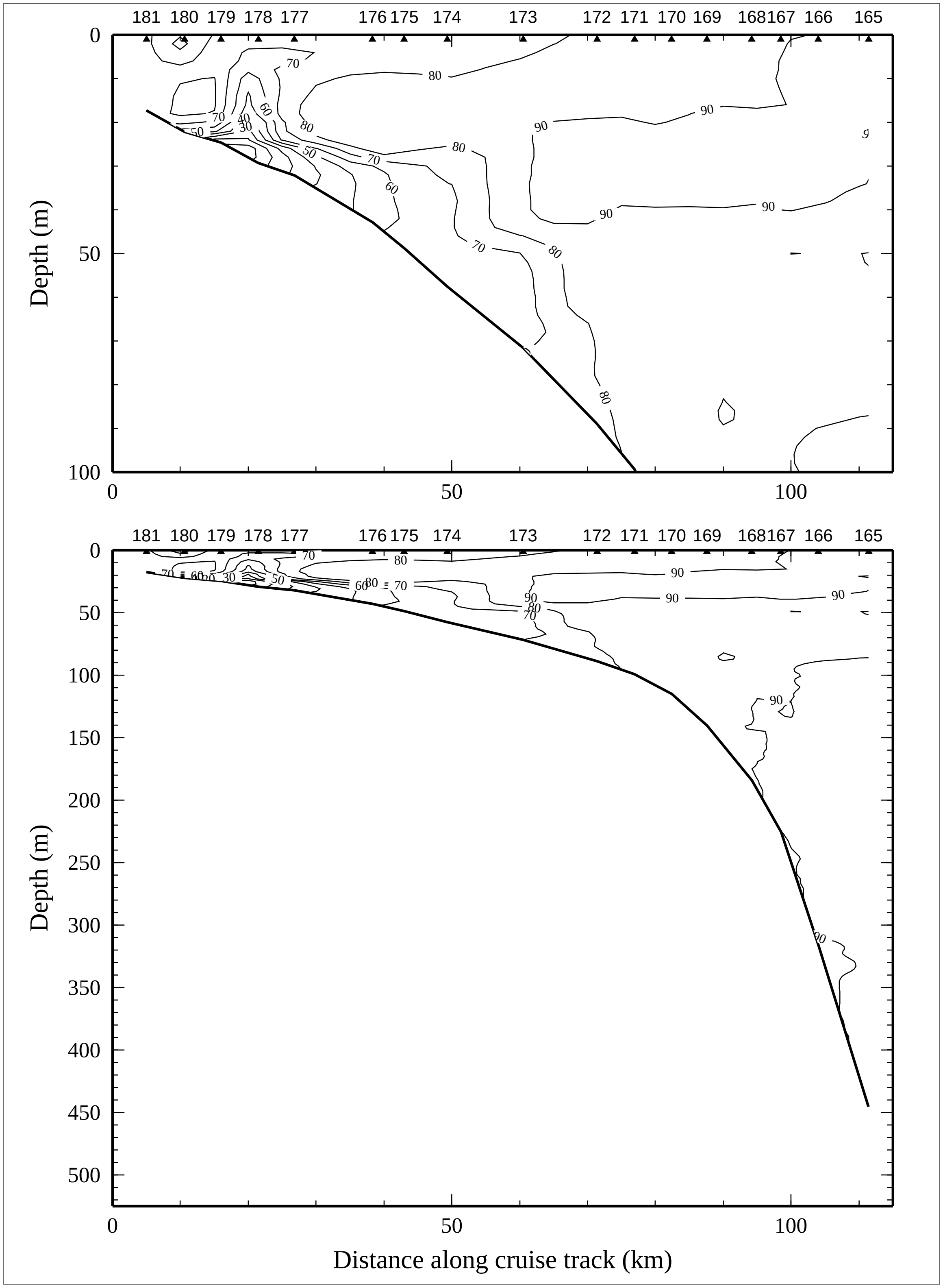

Figure 5.7.4. Percent transmission (660 nm wave length; 25-cm path length) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

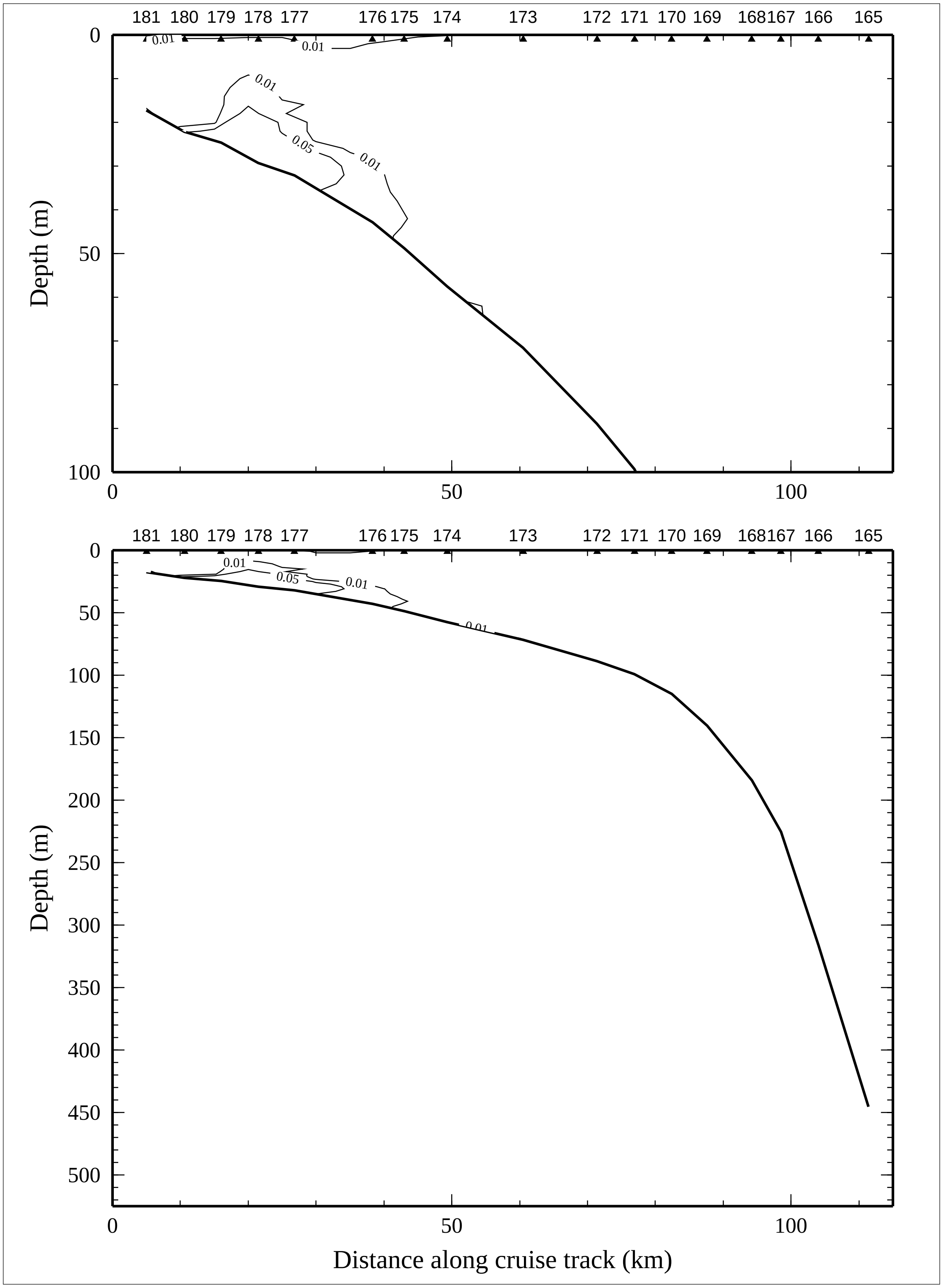

Figure 5.7.5. Optical backscatterance (voltage) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

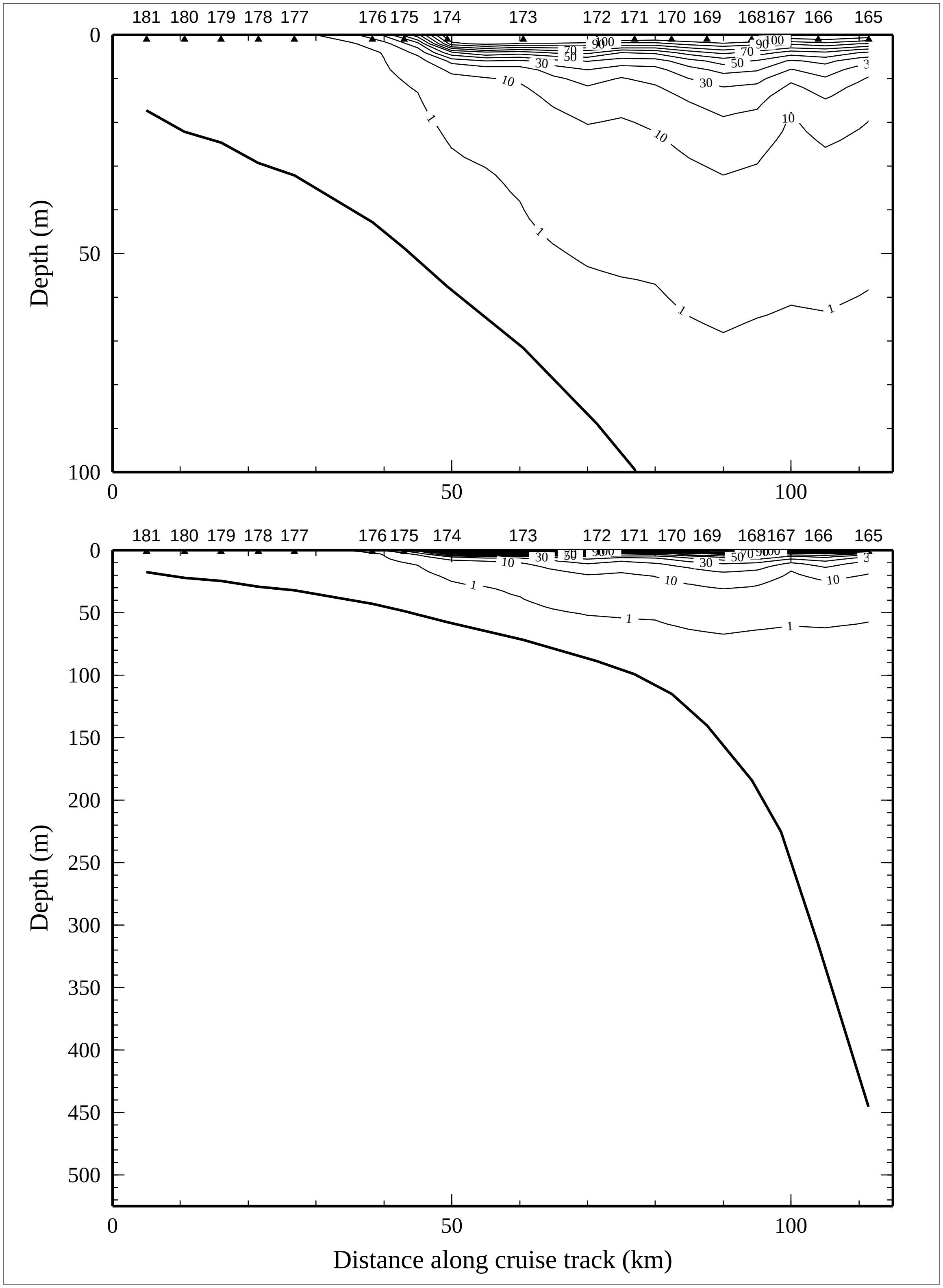

Figure 5.7.6. Downwelling irradiance as percent of surface irradiance on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

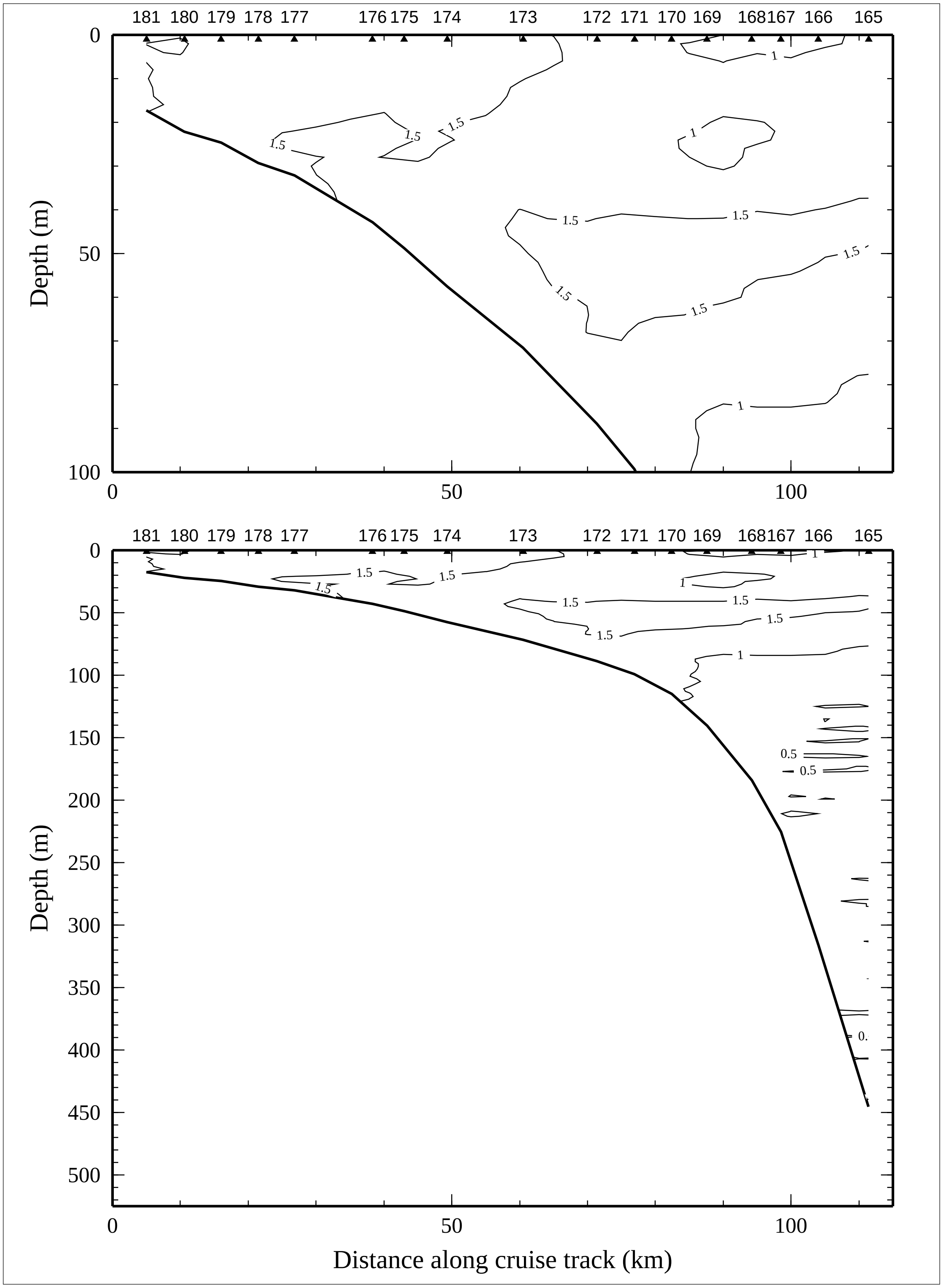

Figure 5.7.7. Relative fluorescence on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

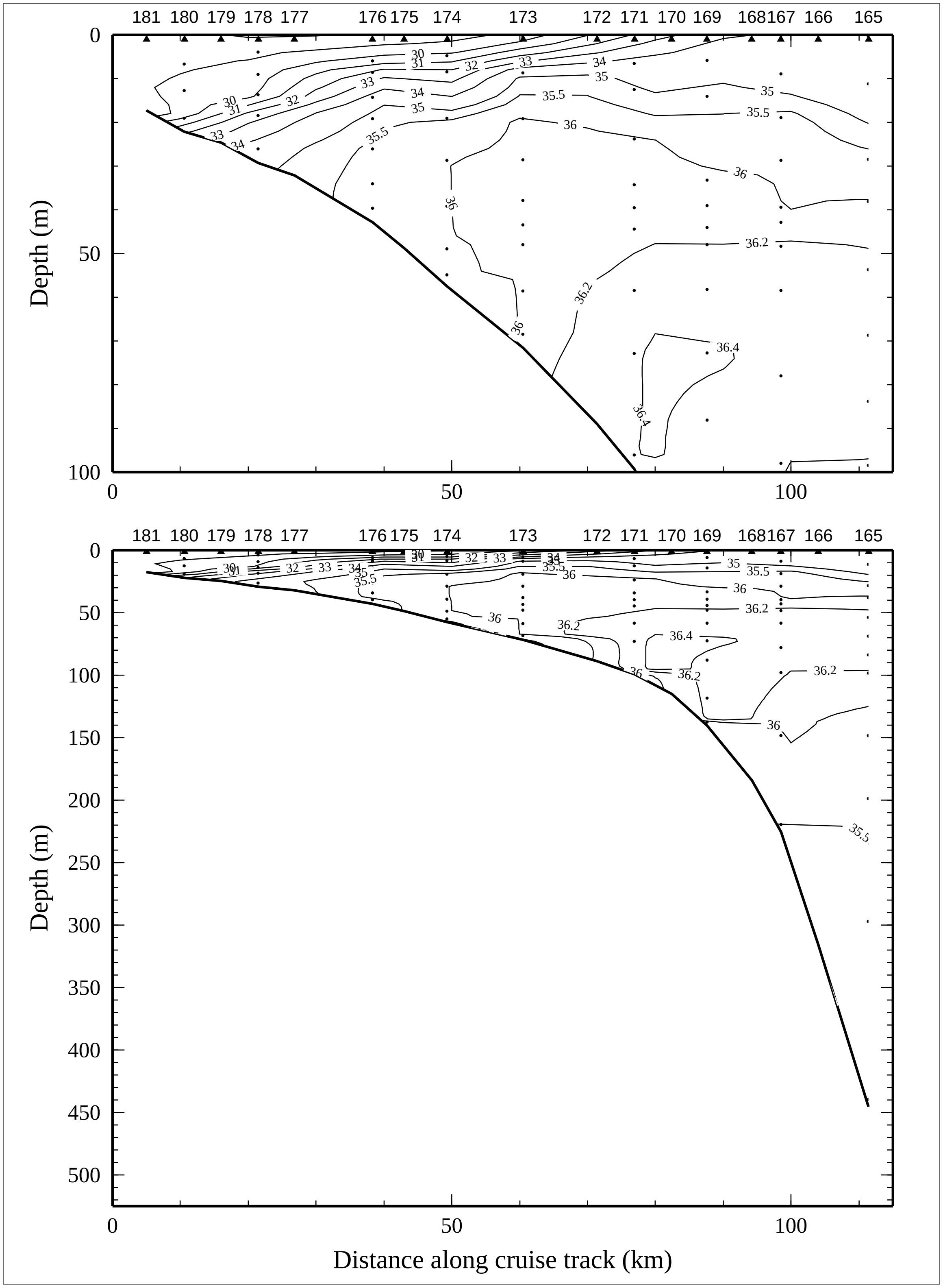

Figure 5.7.8. Bottle salinity on line 7 of LATEX A survey H05,
25 April - 11 May 1993.

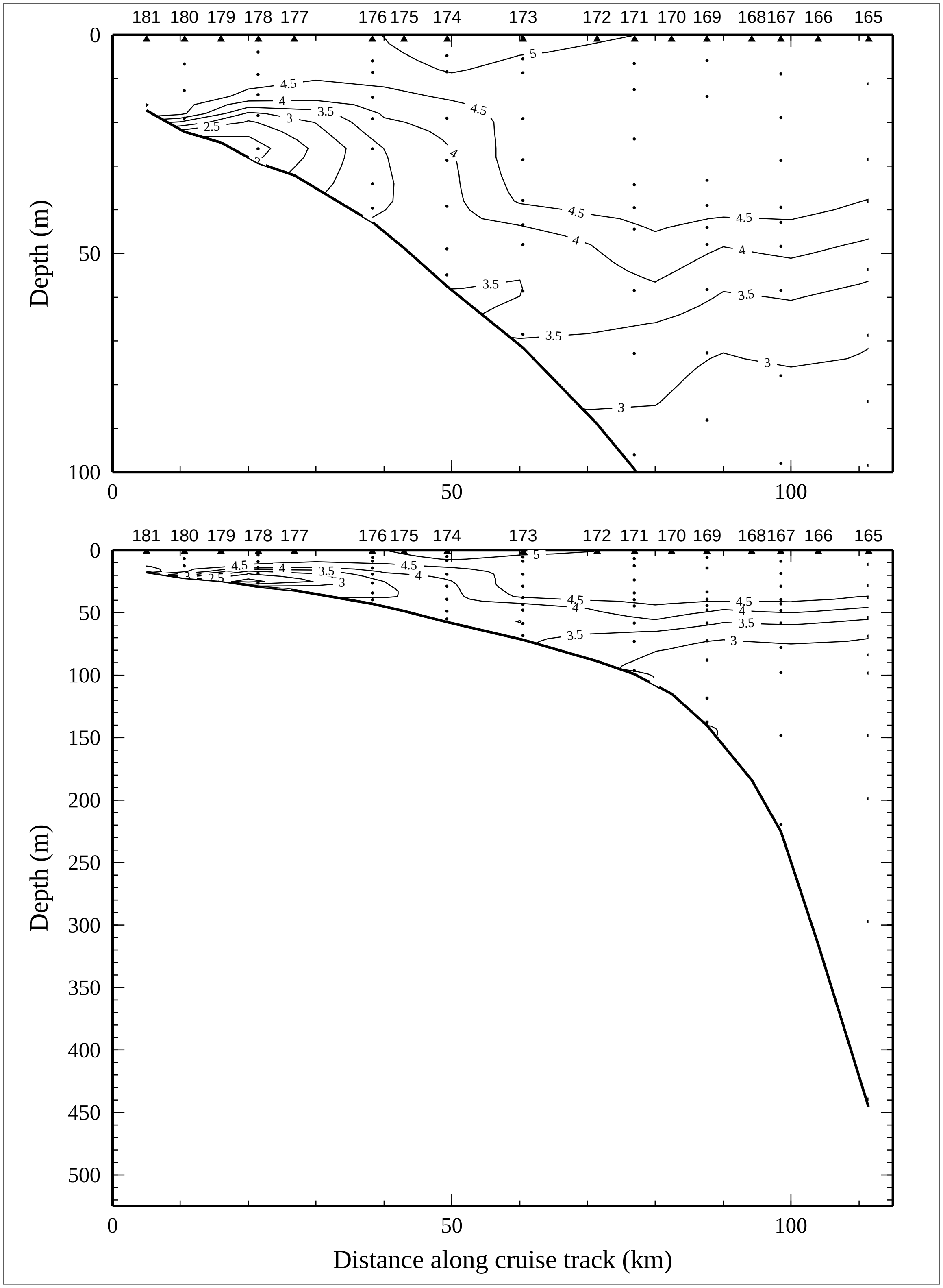

Figure 5.7.9. Dissolved oxygen (ml·l^{-1}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

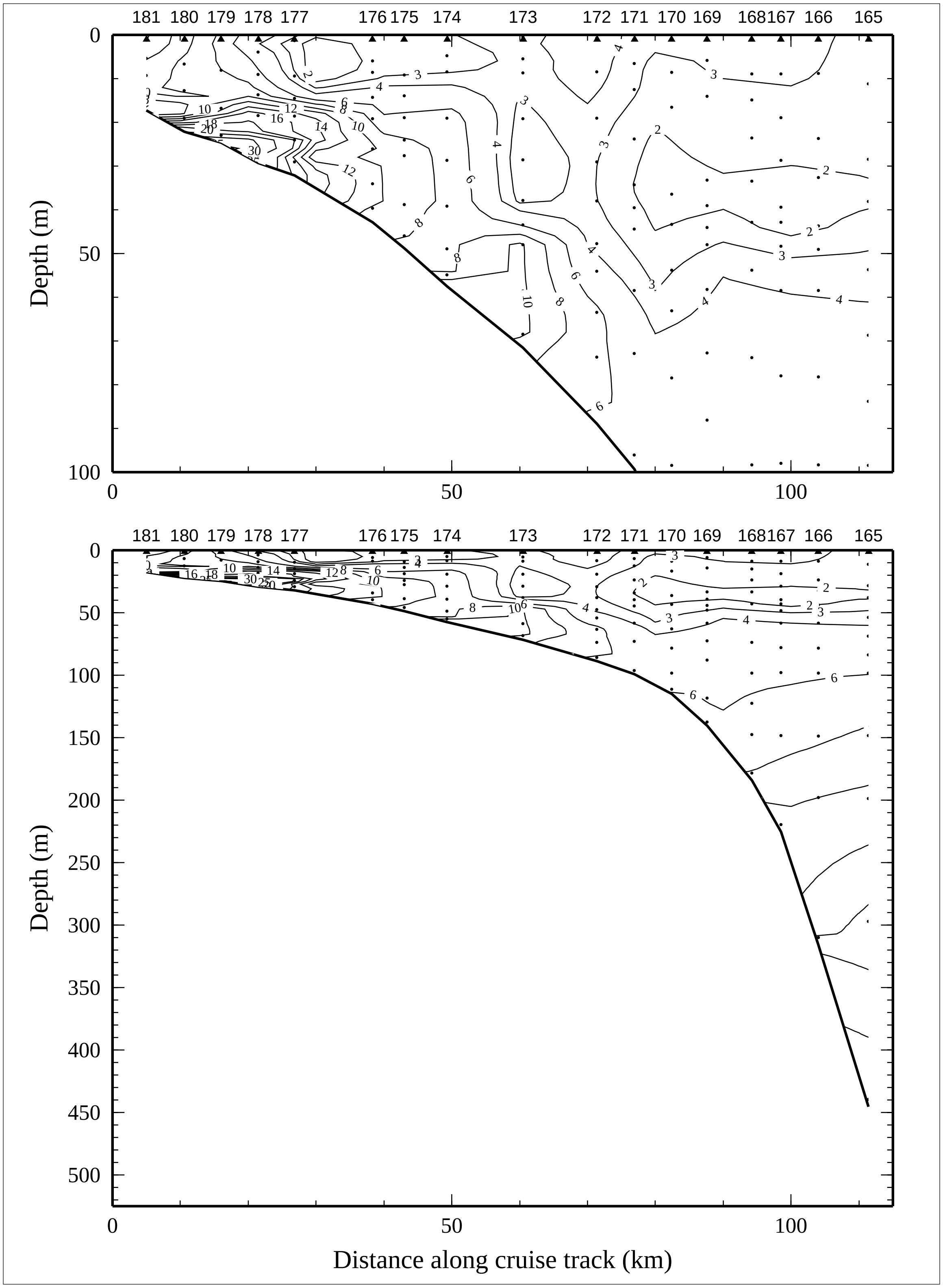

Figure 5.7.10. Silicate (μmol·l^{-1}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

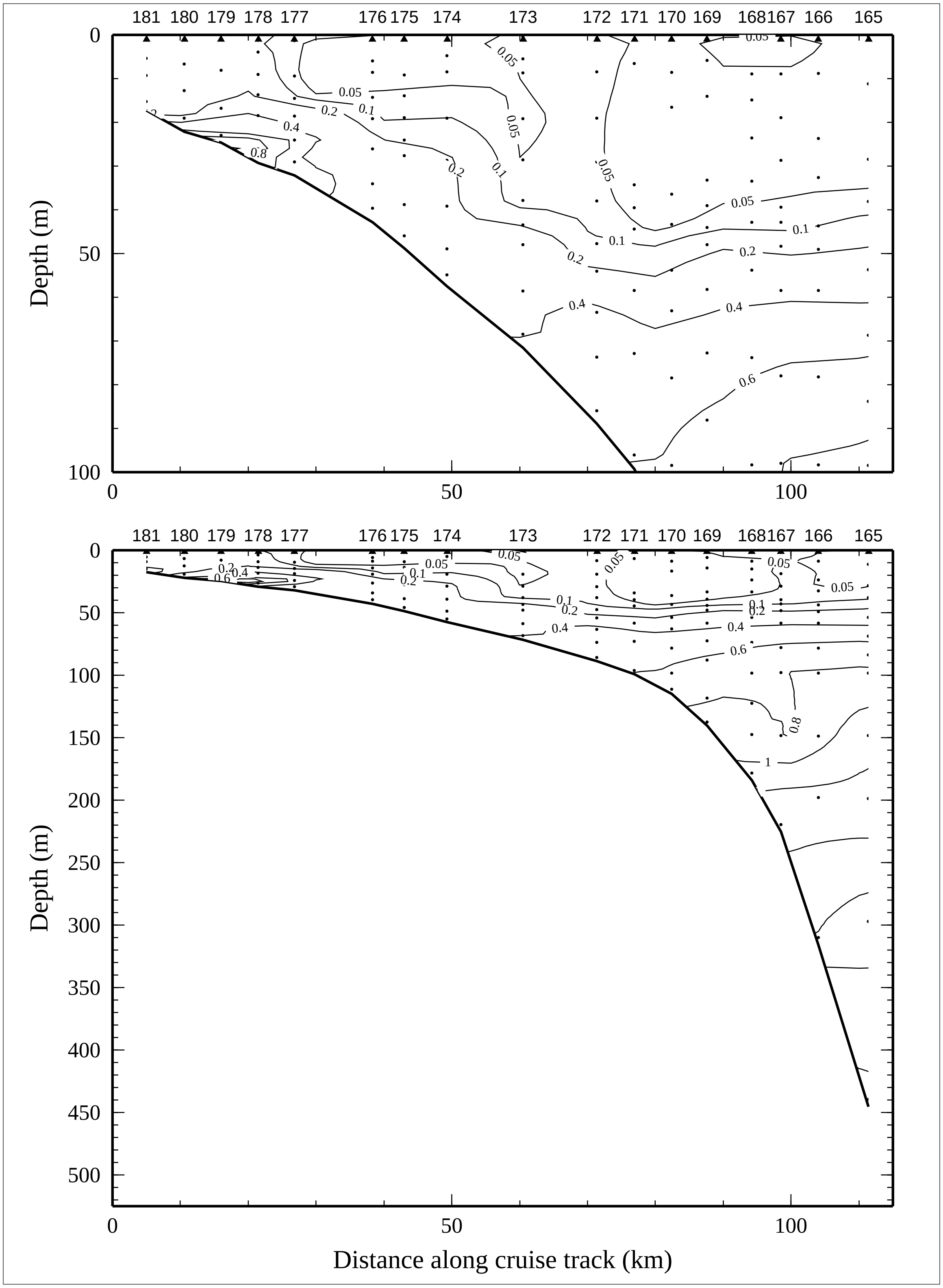

Figure 5.7.11. Phosphate (µmol·l⁻¹) on line 7 of LATEX A survey H05,
25 April - 11 May 1993.

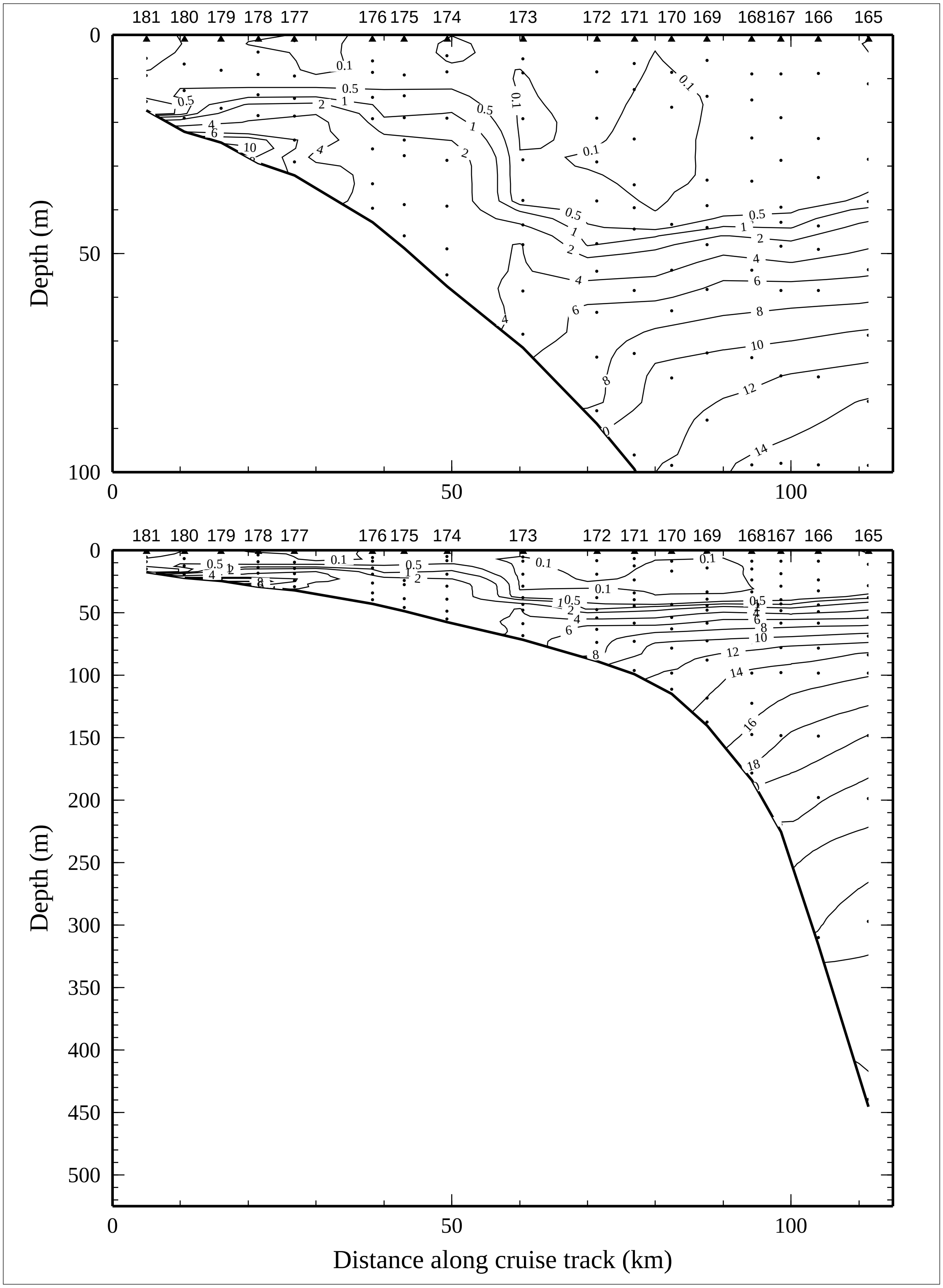

Figure 5.7.12. Nitrate (μmol·l⁻¹) on line 7 of LATEX A survey H05,
25 April - 11 May 1993.

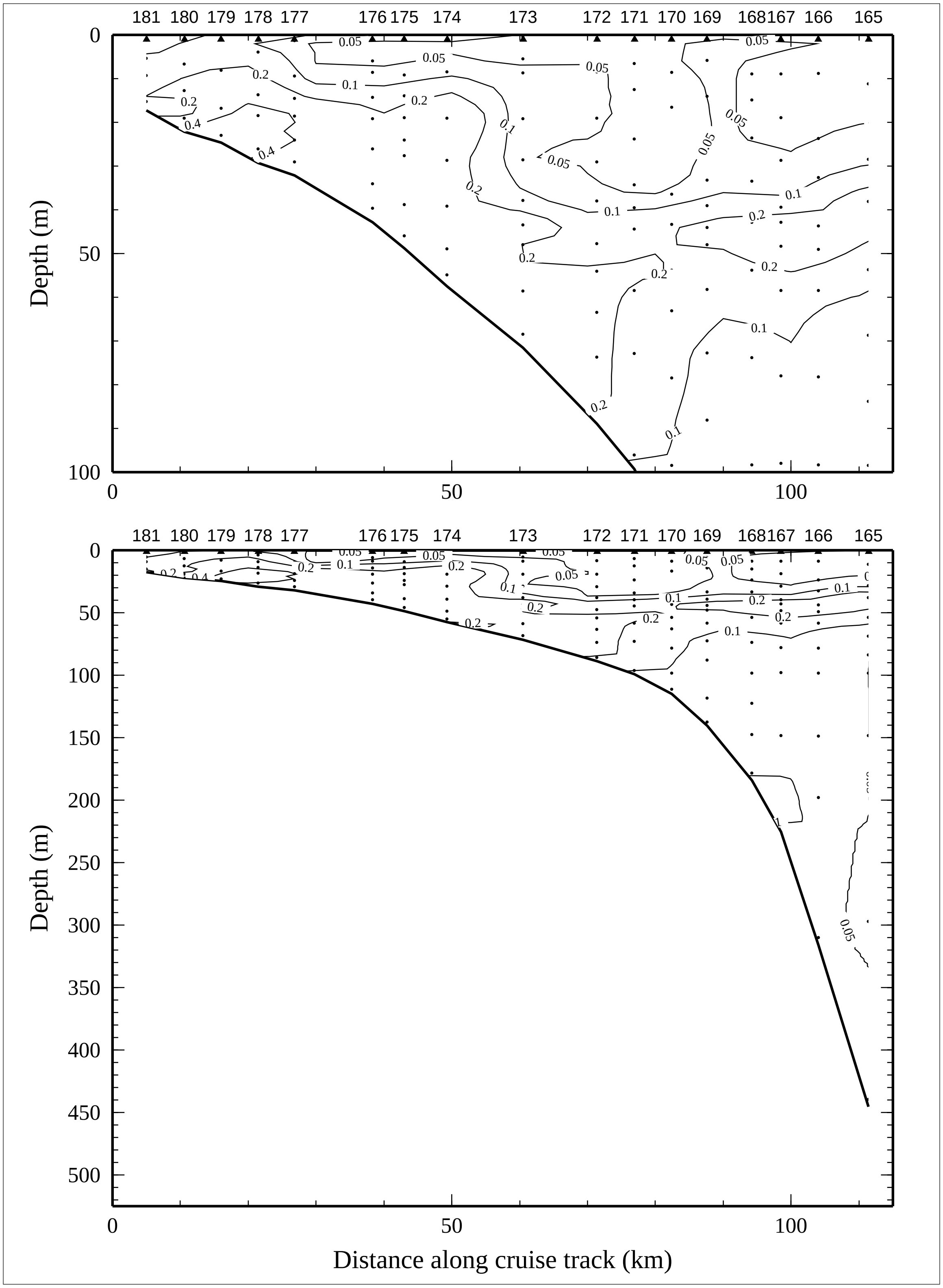

Figure 5.7.13. Nitrite (μmol·l^{-1}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

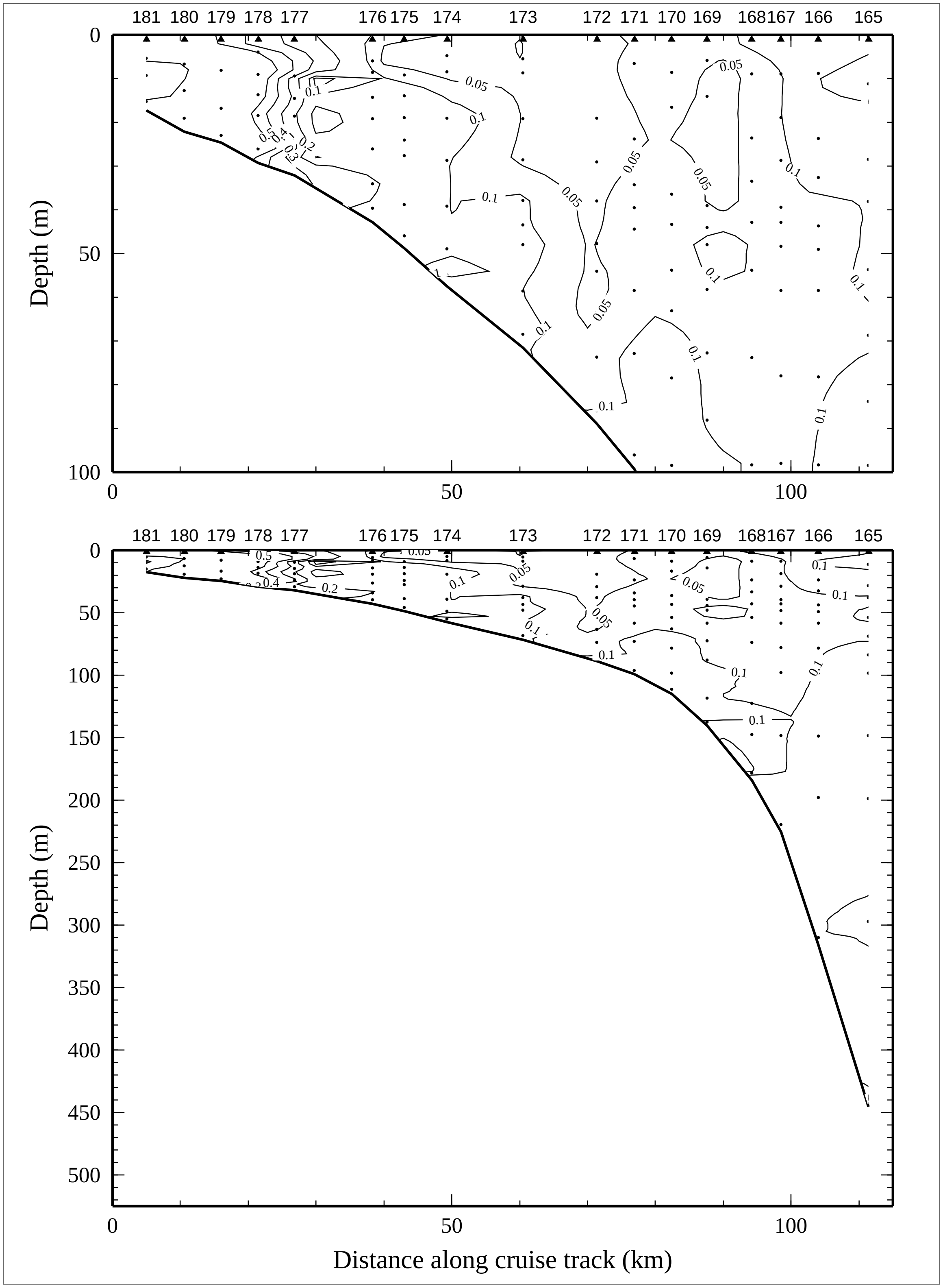

Figure 5.7.14. Ammonium (μmol·l^{-1}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

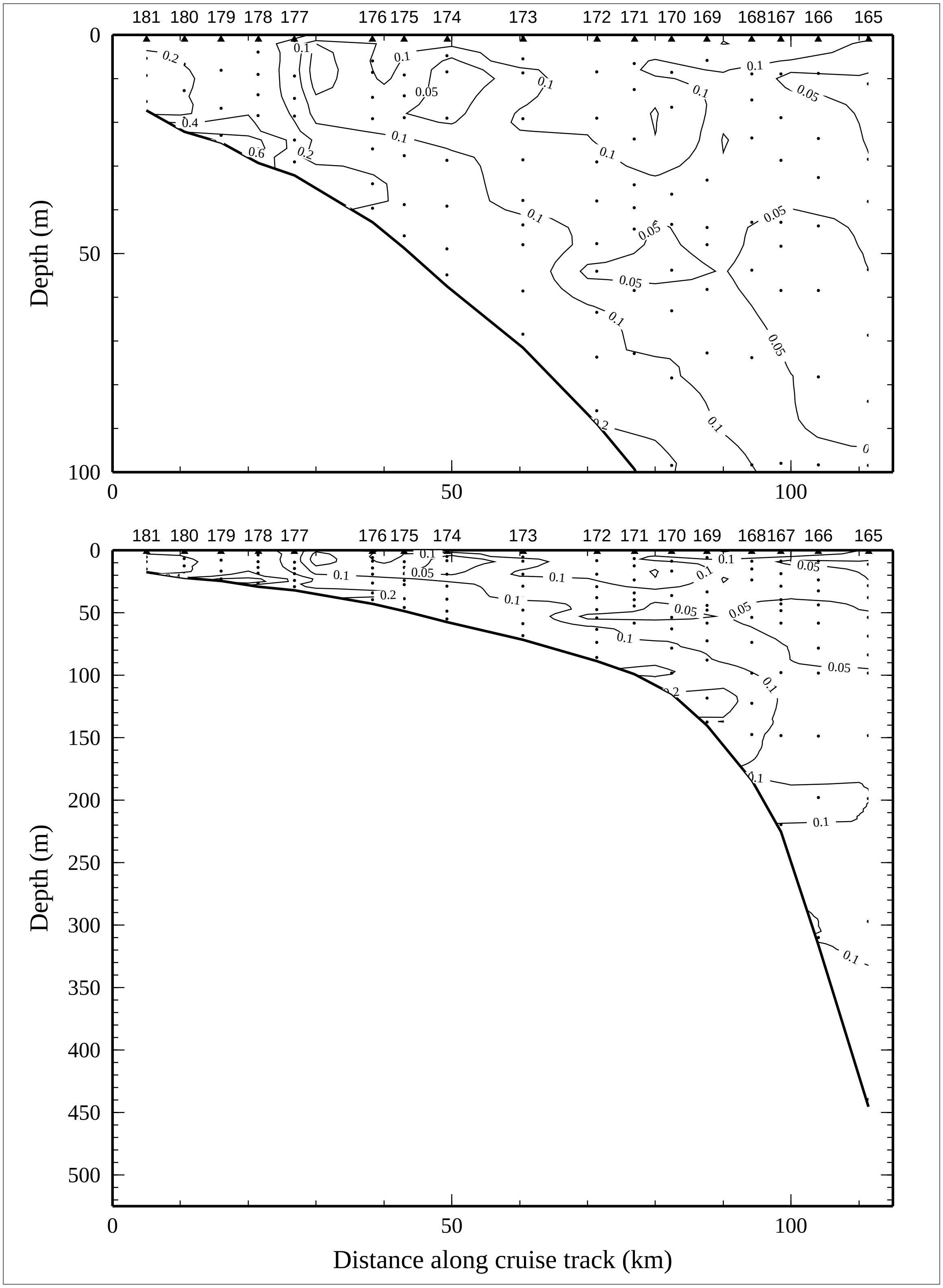

Figure 5.7.15. Urea (μmol·l^{-1}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

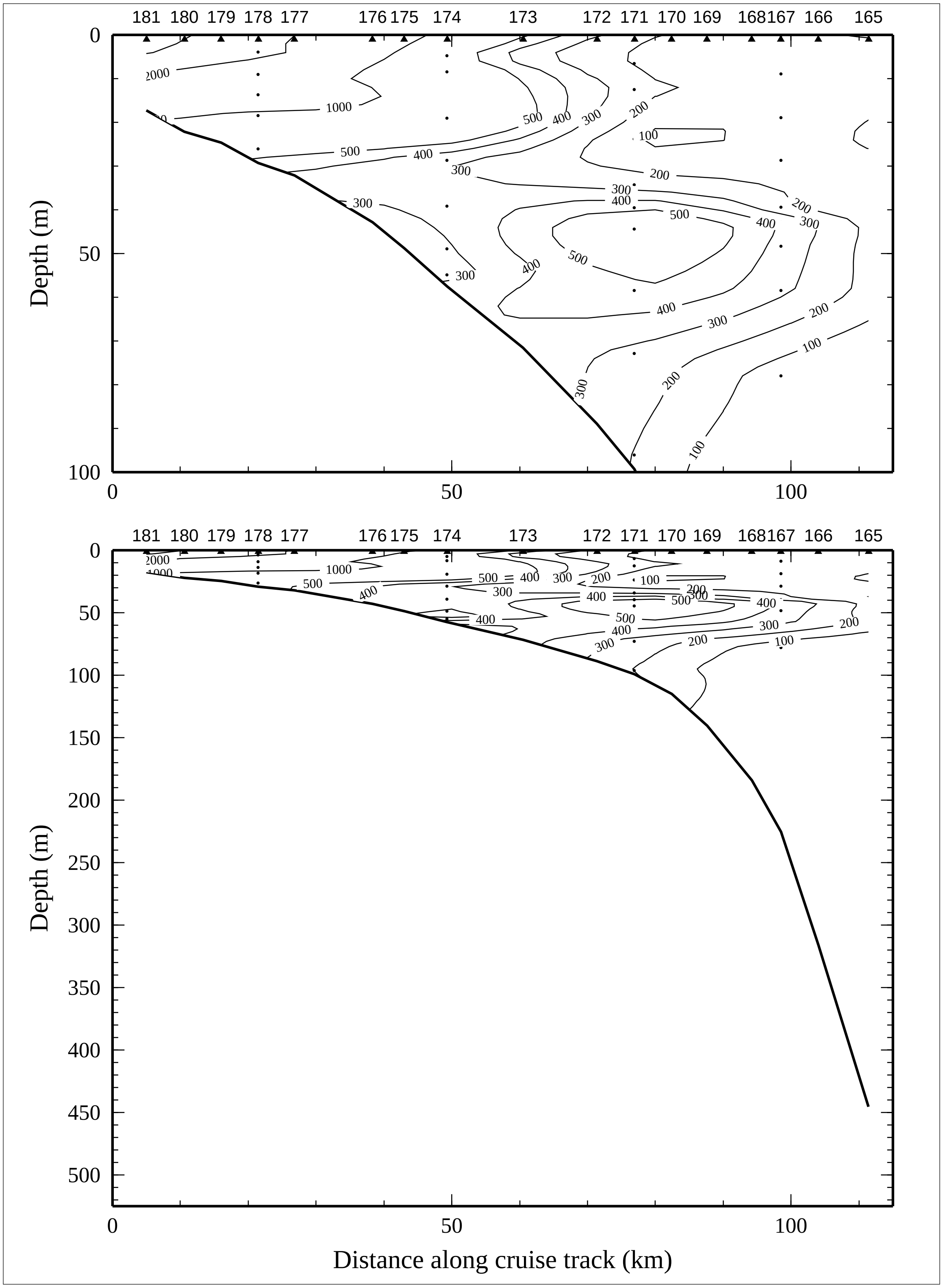

Figure 5.7.16. Chlorophyll a (ng·l^{-1}) on line 7 of LATEX A survey H05, 25 April - 11 May 1993.

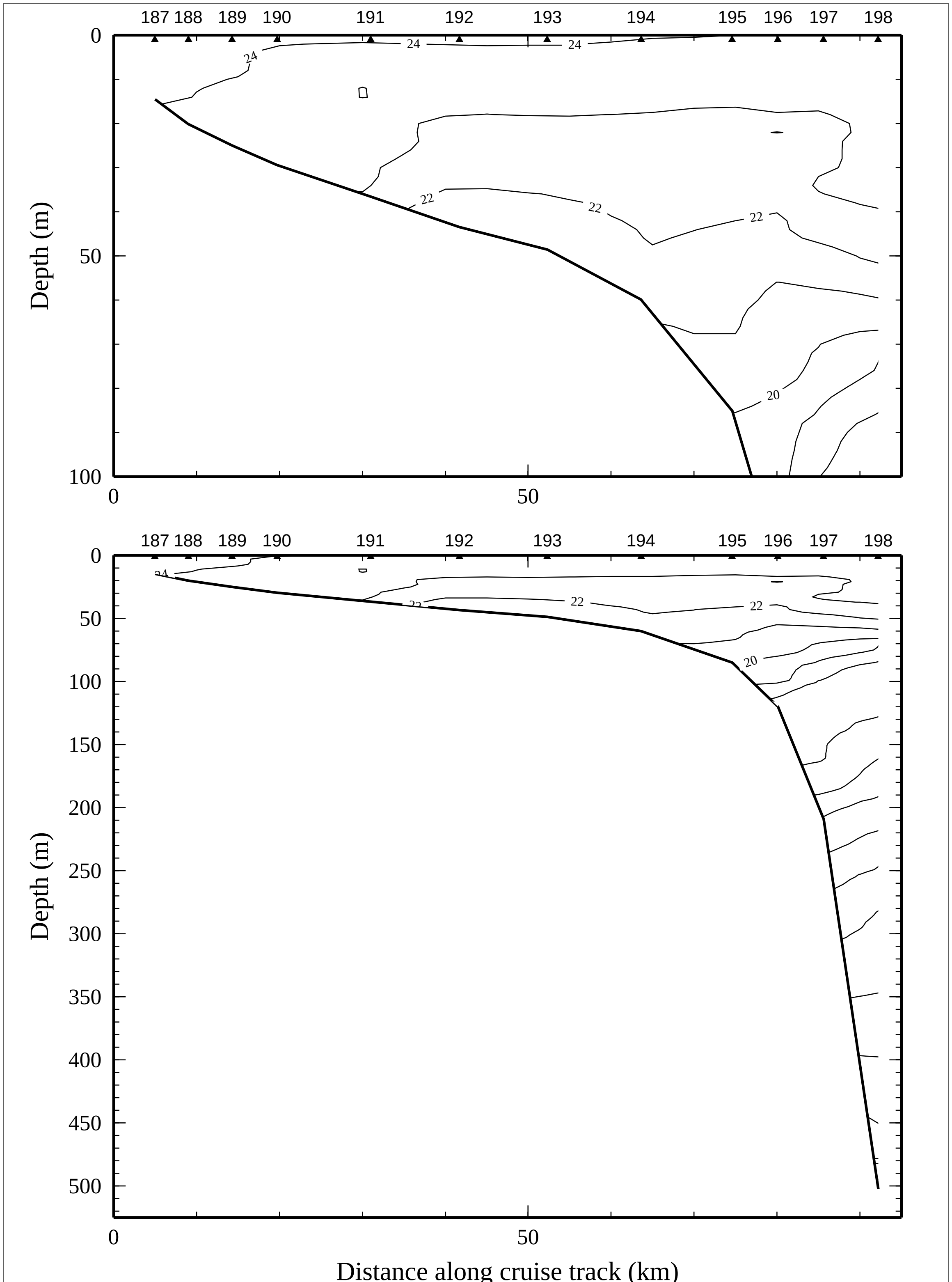

Figure 5.8.1. Potential temperature (˚C) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

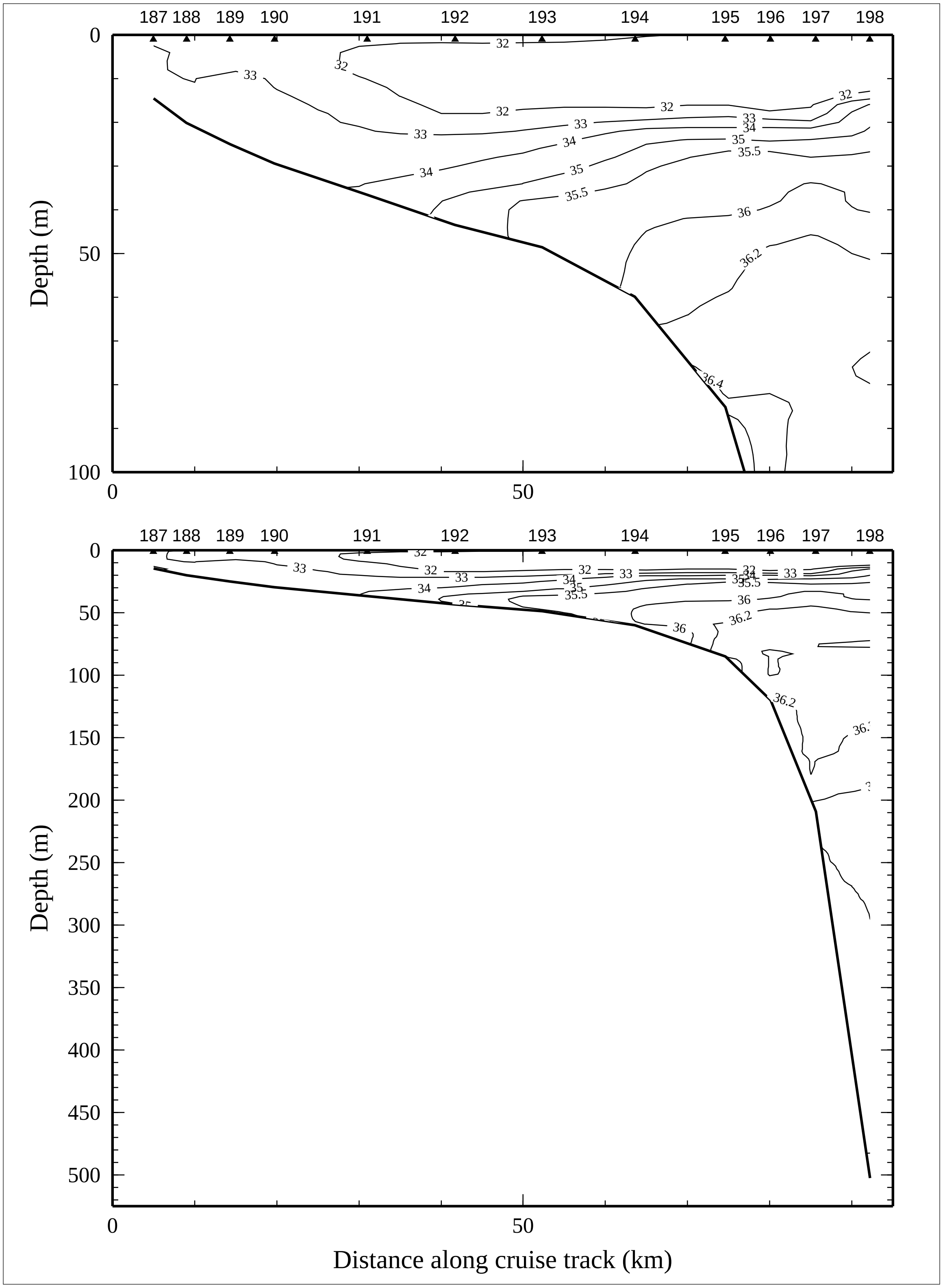

Figure 5.8.2. Salinity, derived from CTD data, on line 8 of LATEX A survey H05,
25 April - 11 May 1993.

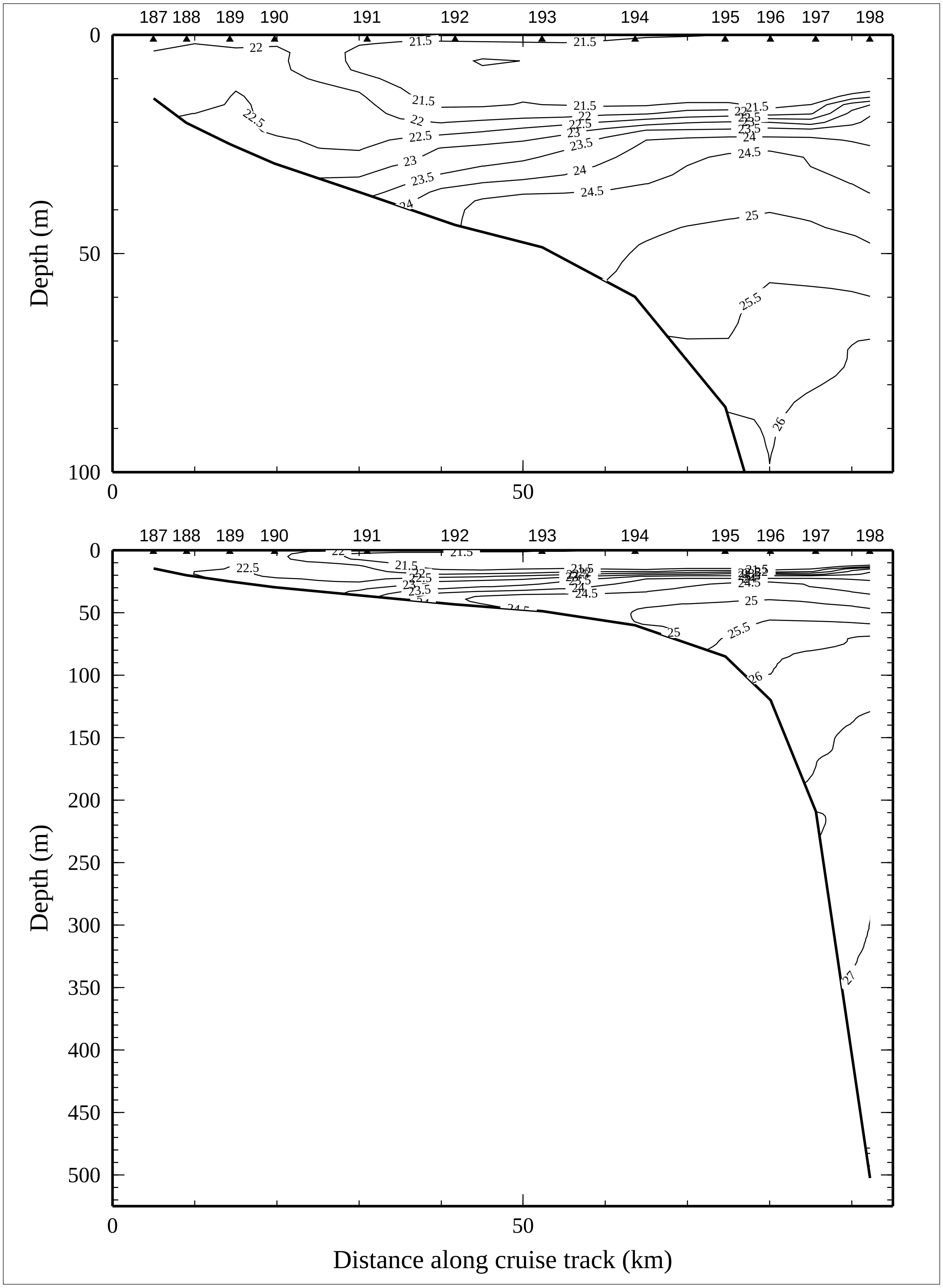

Figure 5.8.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

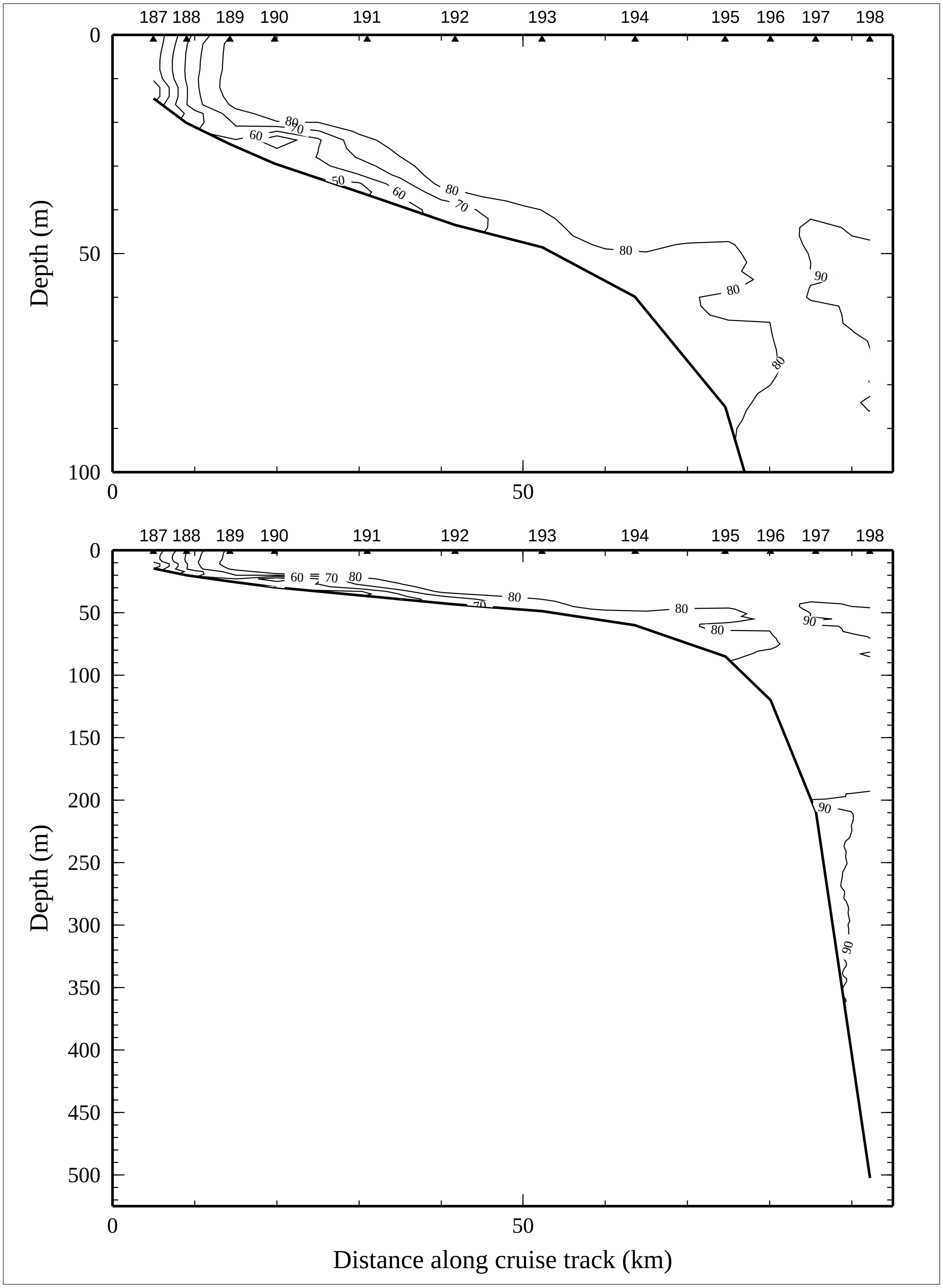

Figure 5.8.4. Percent transmission (660 nm wave length; 25-cm path length) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

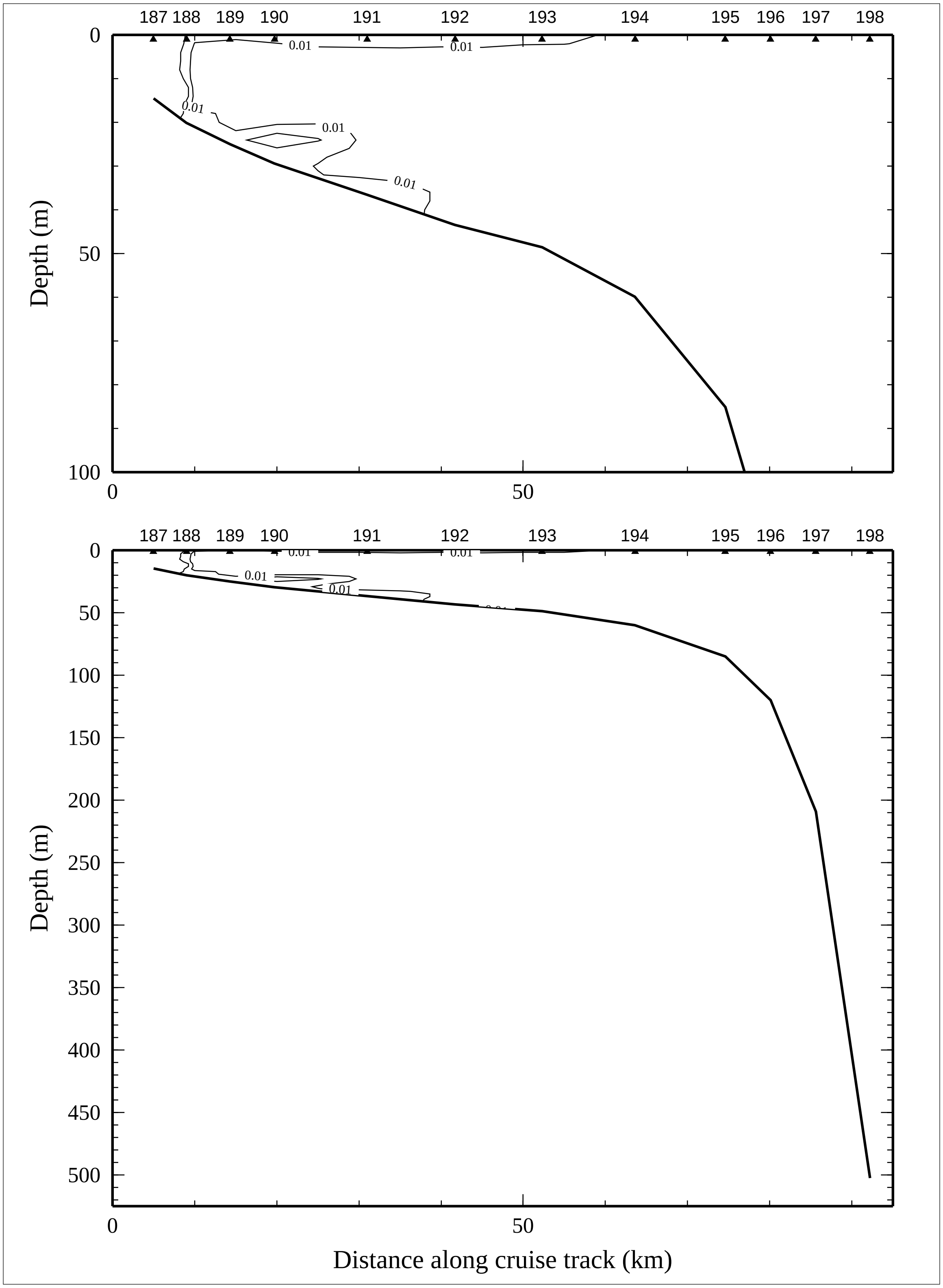

Figure 5.8.5. Optical backscatterance (voltage) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

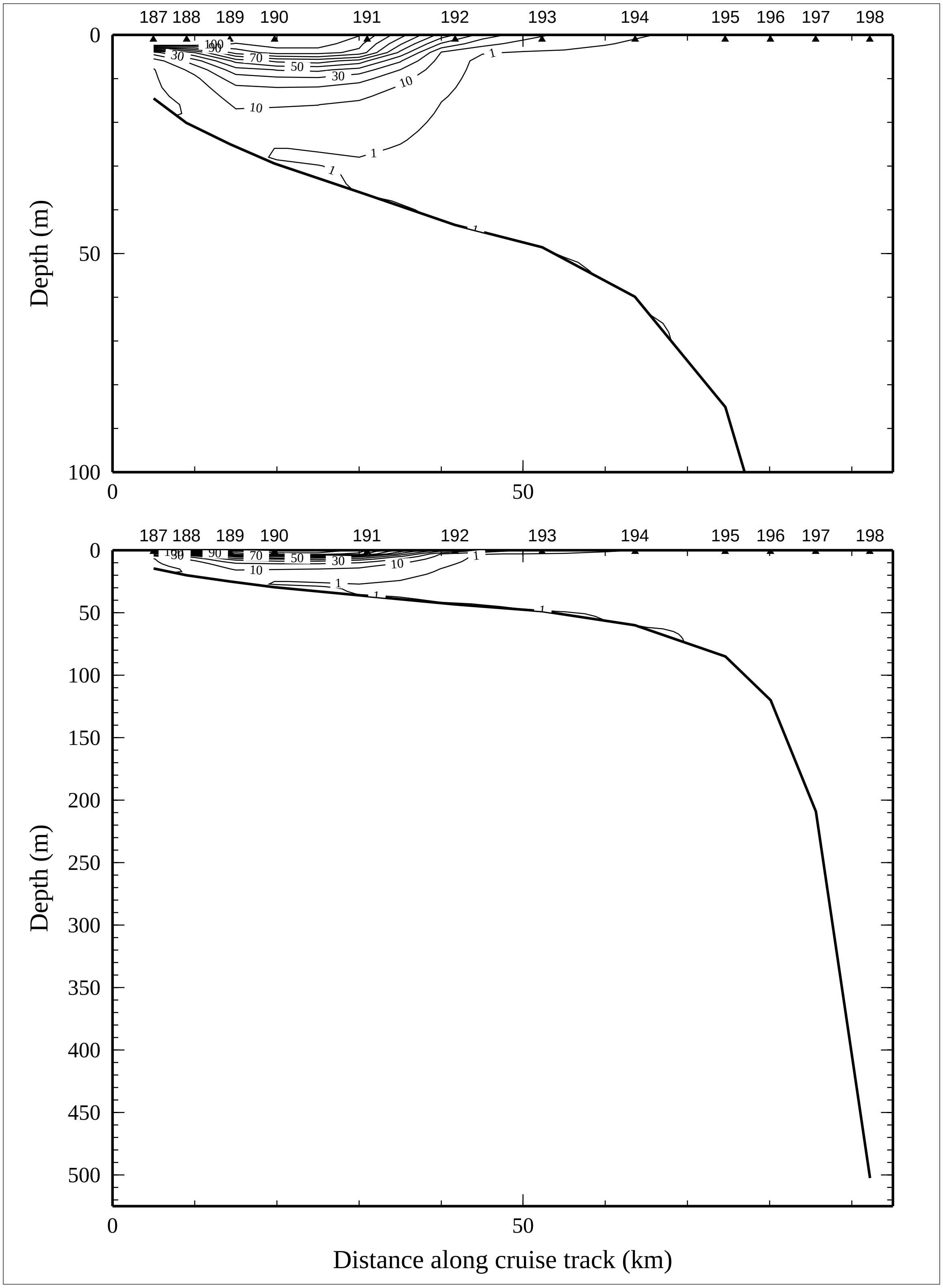

Figure 5.8.6. Downwelling irradiance as percent of surface irradiance on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

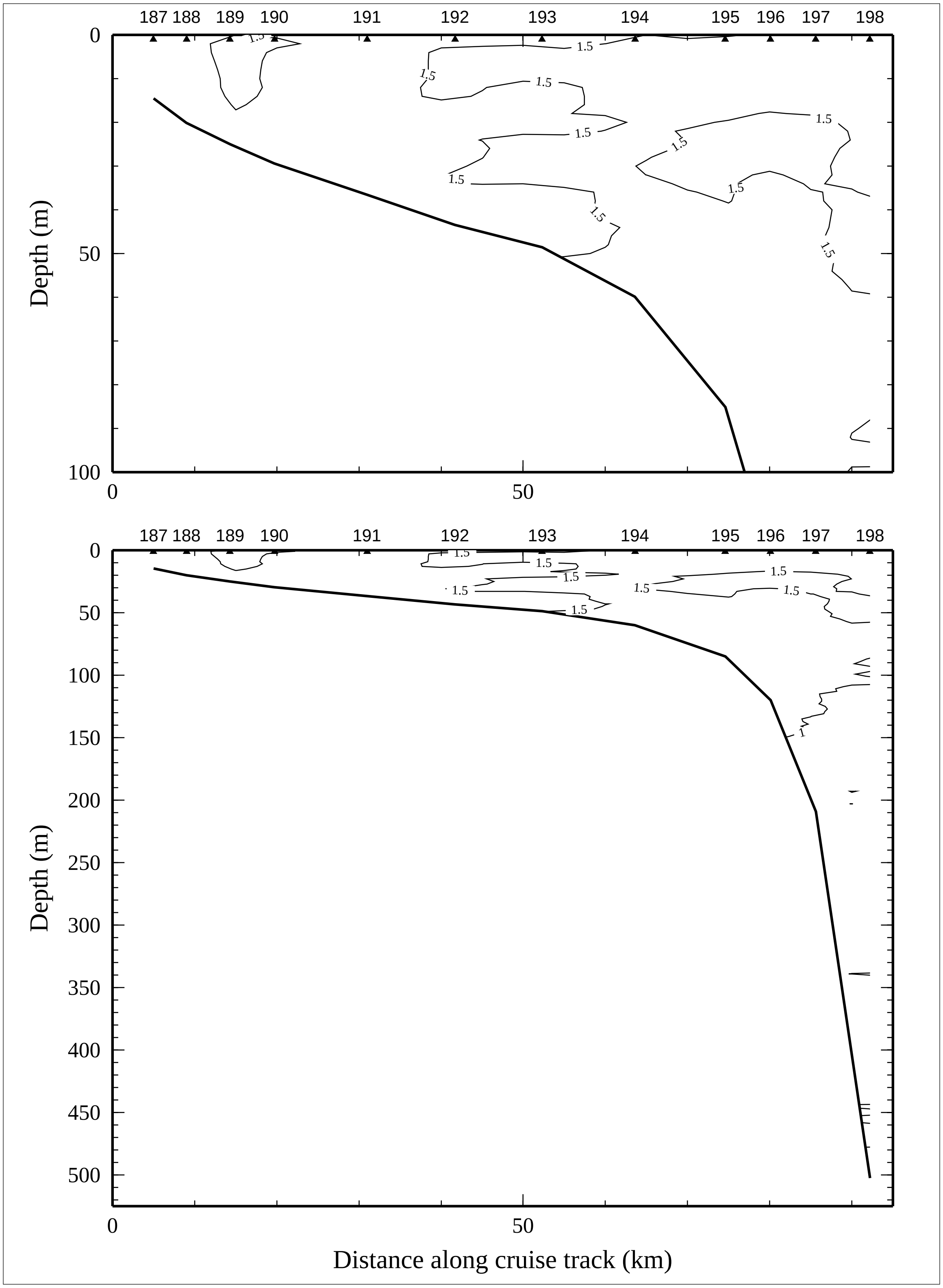

Figure 5.8.7. Relative fluorescence on line 8 of LATEX A survey H05,
25 April - 11 May 1993.

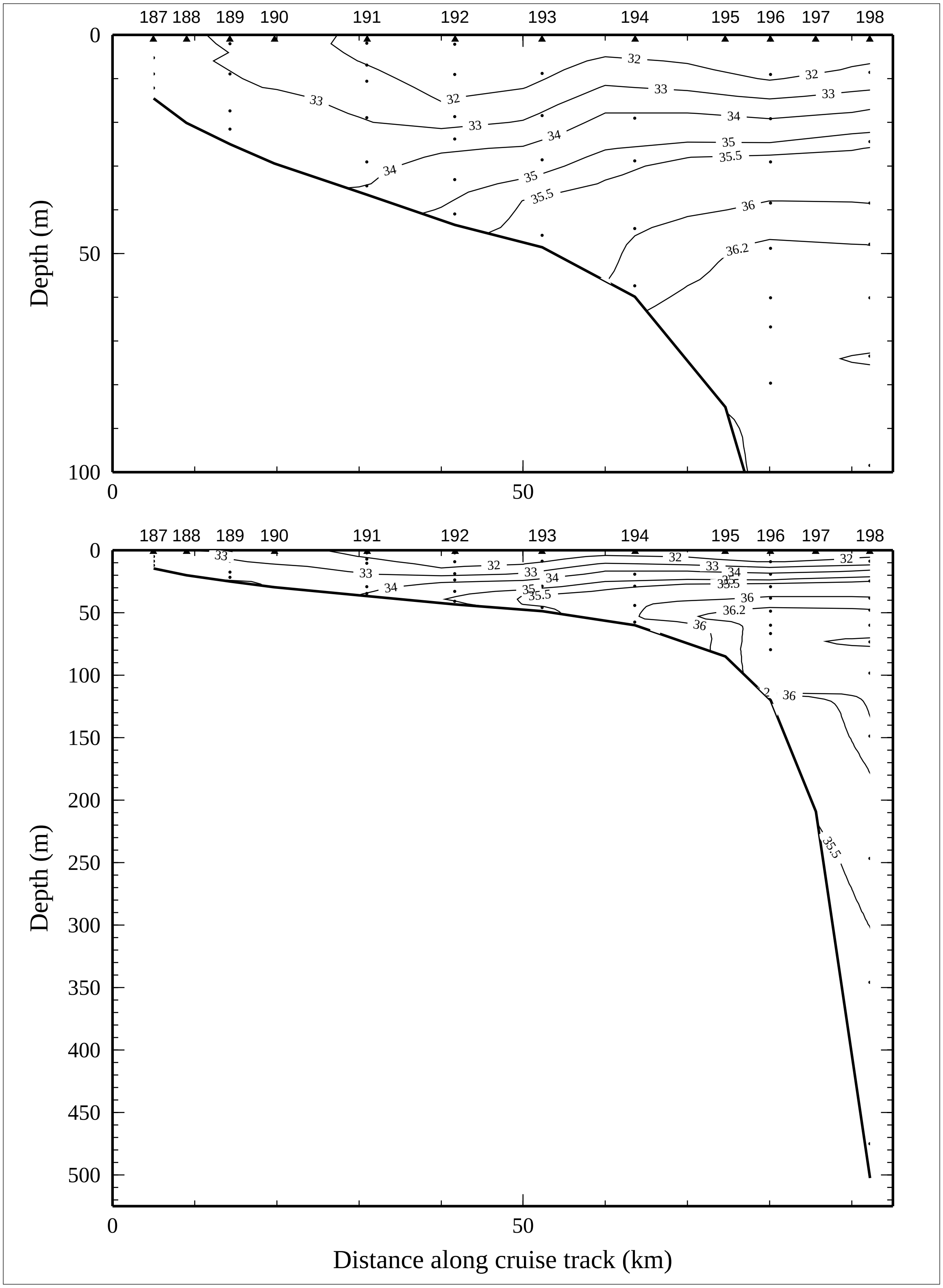

Figure 5.8.8. Bottle salinity on line 8 of LATEX A survey H05,
25 April - 11 May 1993.

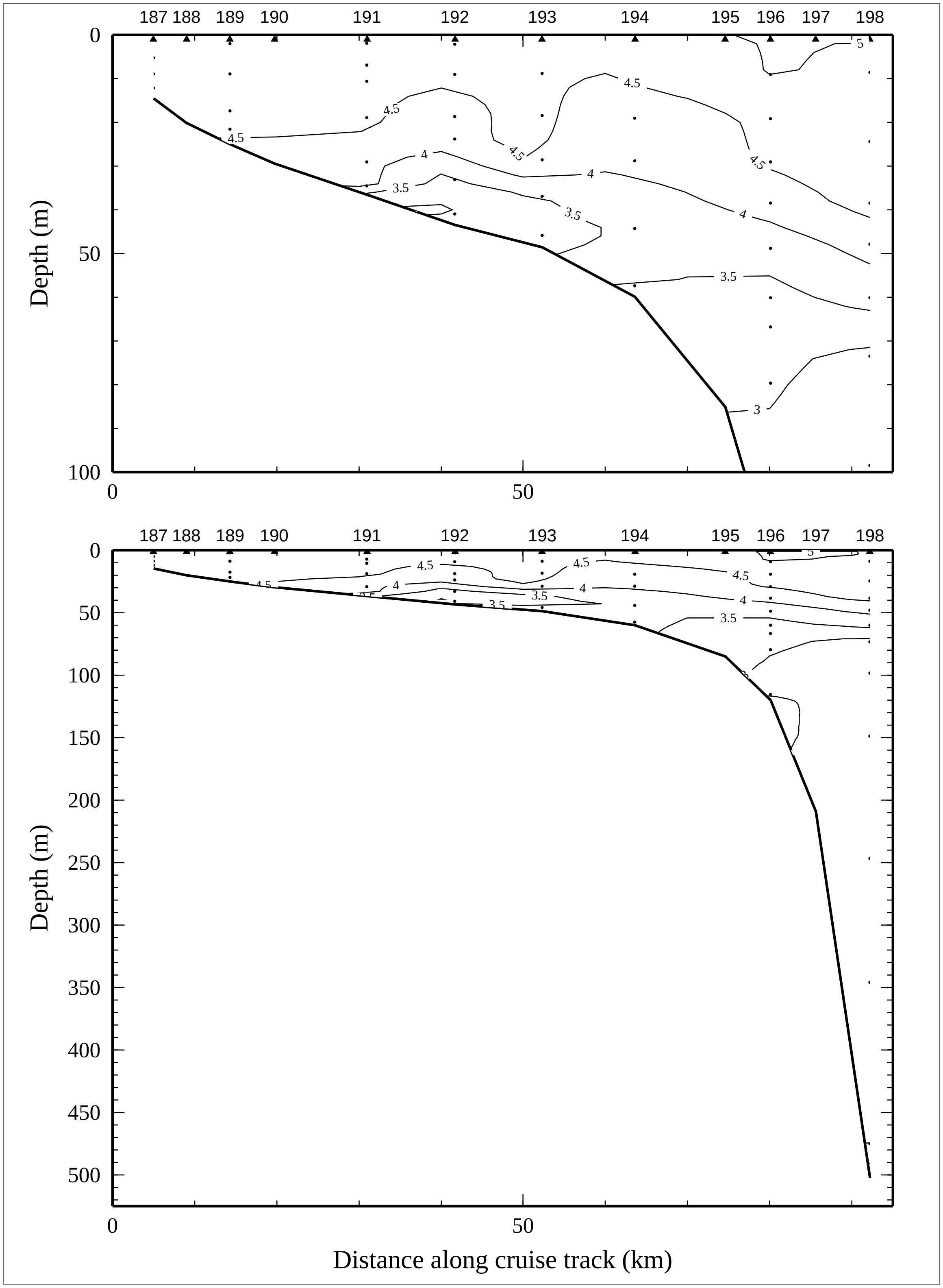

Figure 5.8.9. Dissolved oxygen (ml·l^{-1}) on line 8 of LATEX A survey H05,
25 April - 11 May 1993.

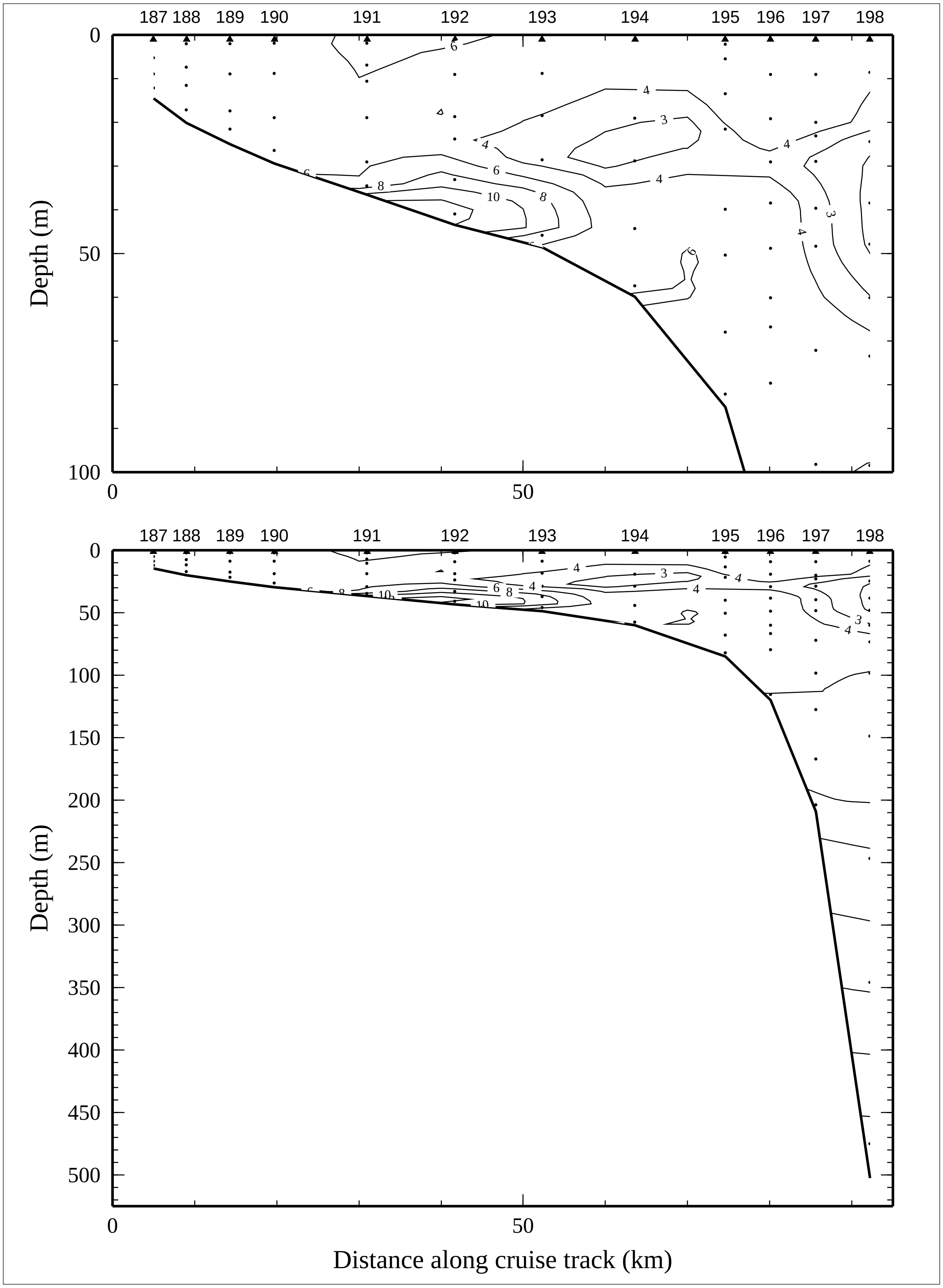

Figure 5.8.10. Silicate (μmol·l⁻¹) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

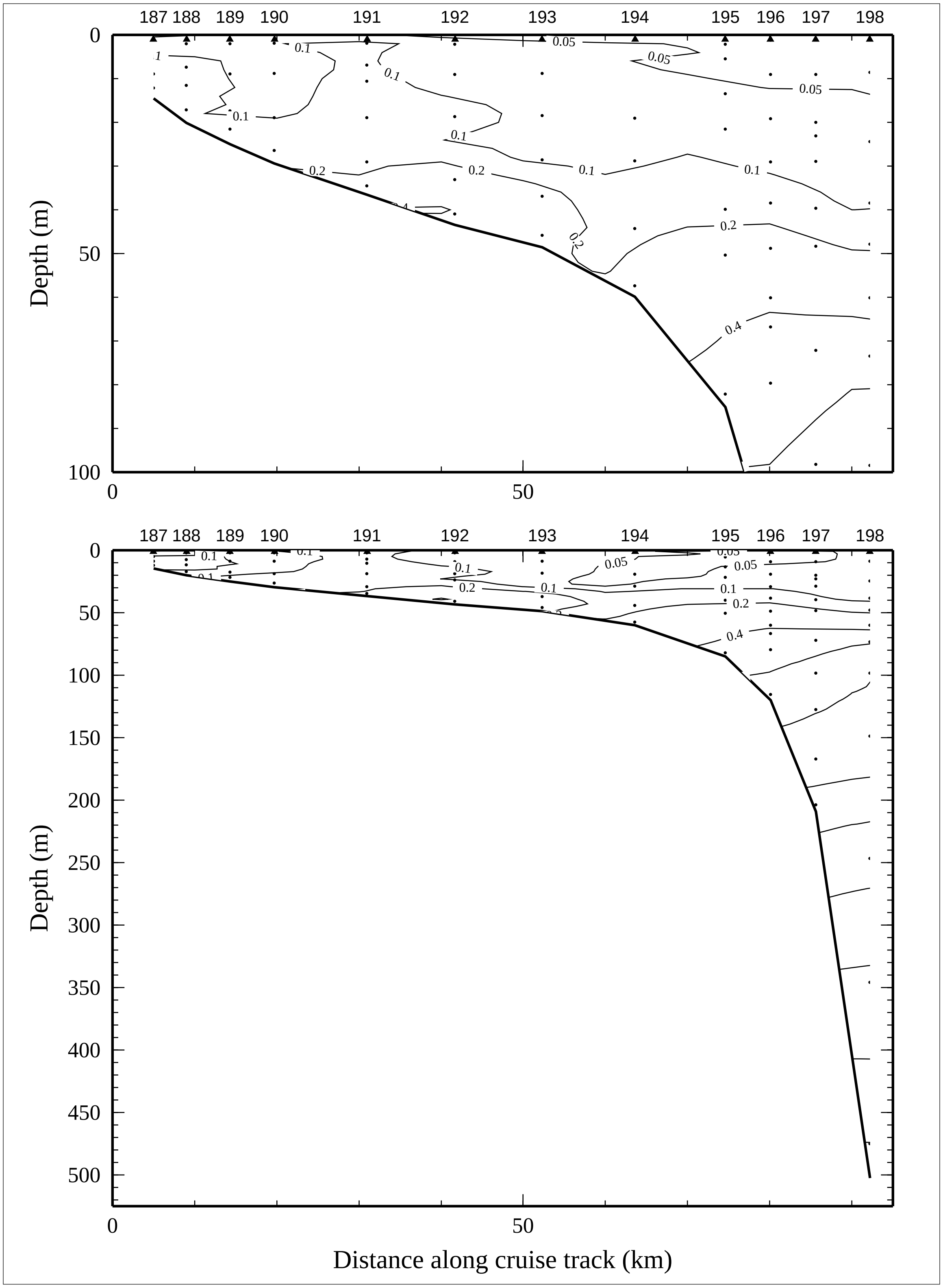

Figure 5.8.11. Phosphate (μmol·l^{-1}) on line 8 of LATEX A survey H05,
25 April - 11 May 1993.

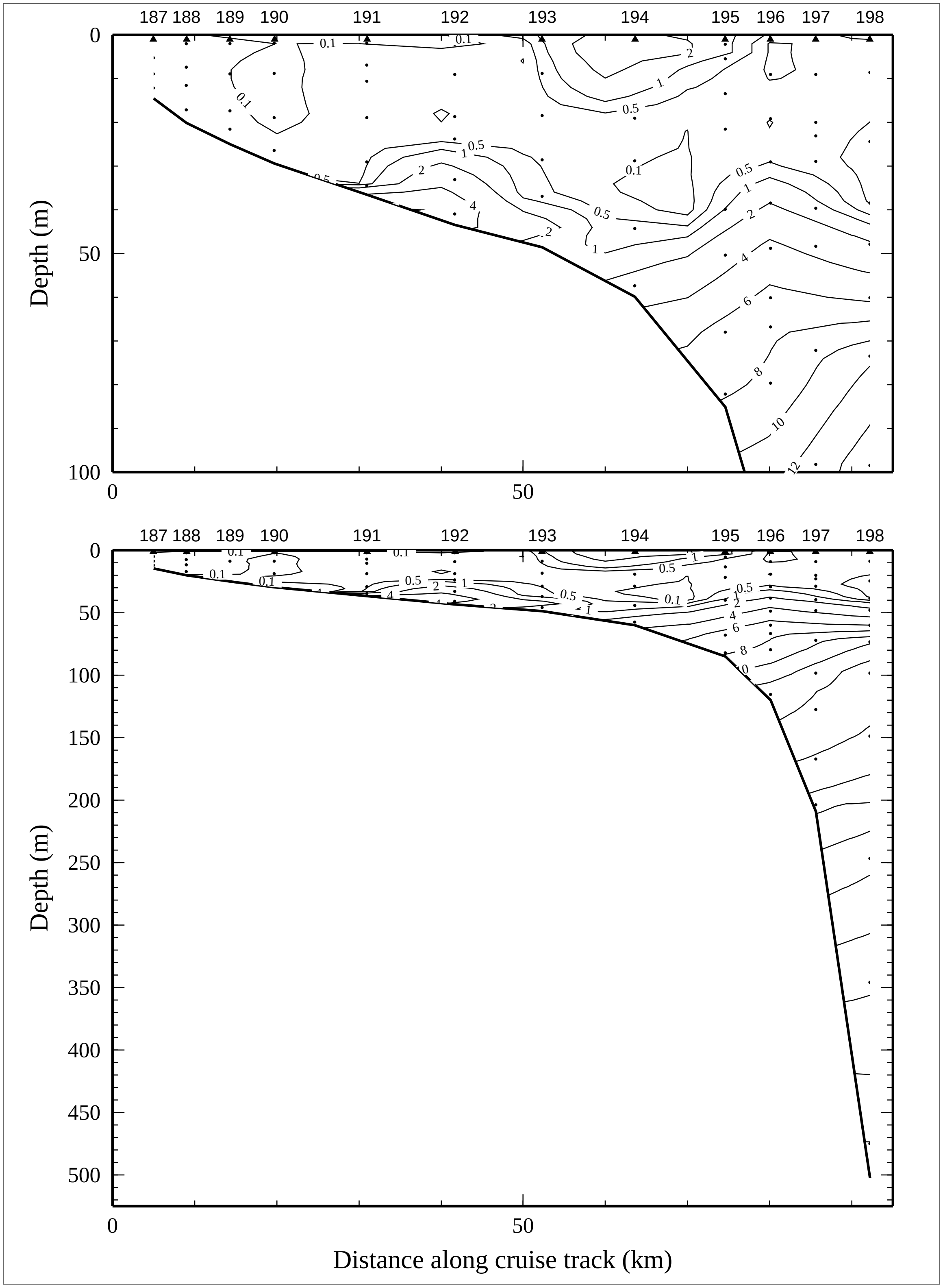

Figure 5.8.12. Nitrate (μmol·l^{-1}) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

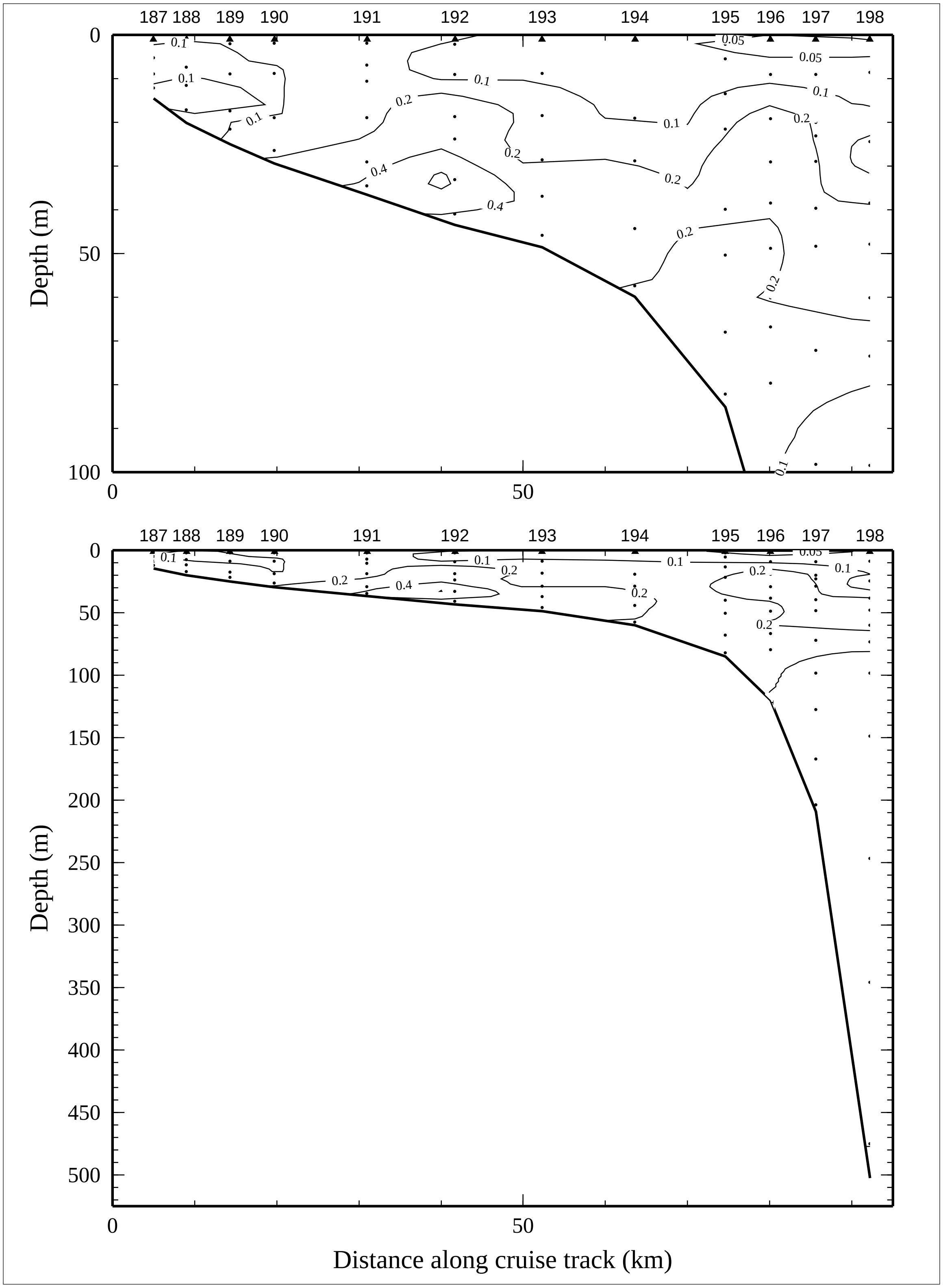

Figure 5.8.13. Nitrite (μmol·l⁻¹) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

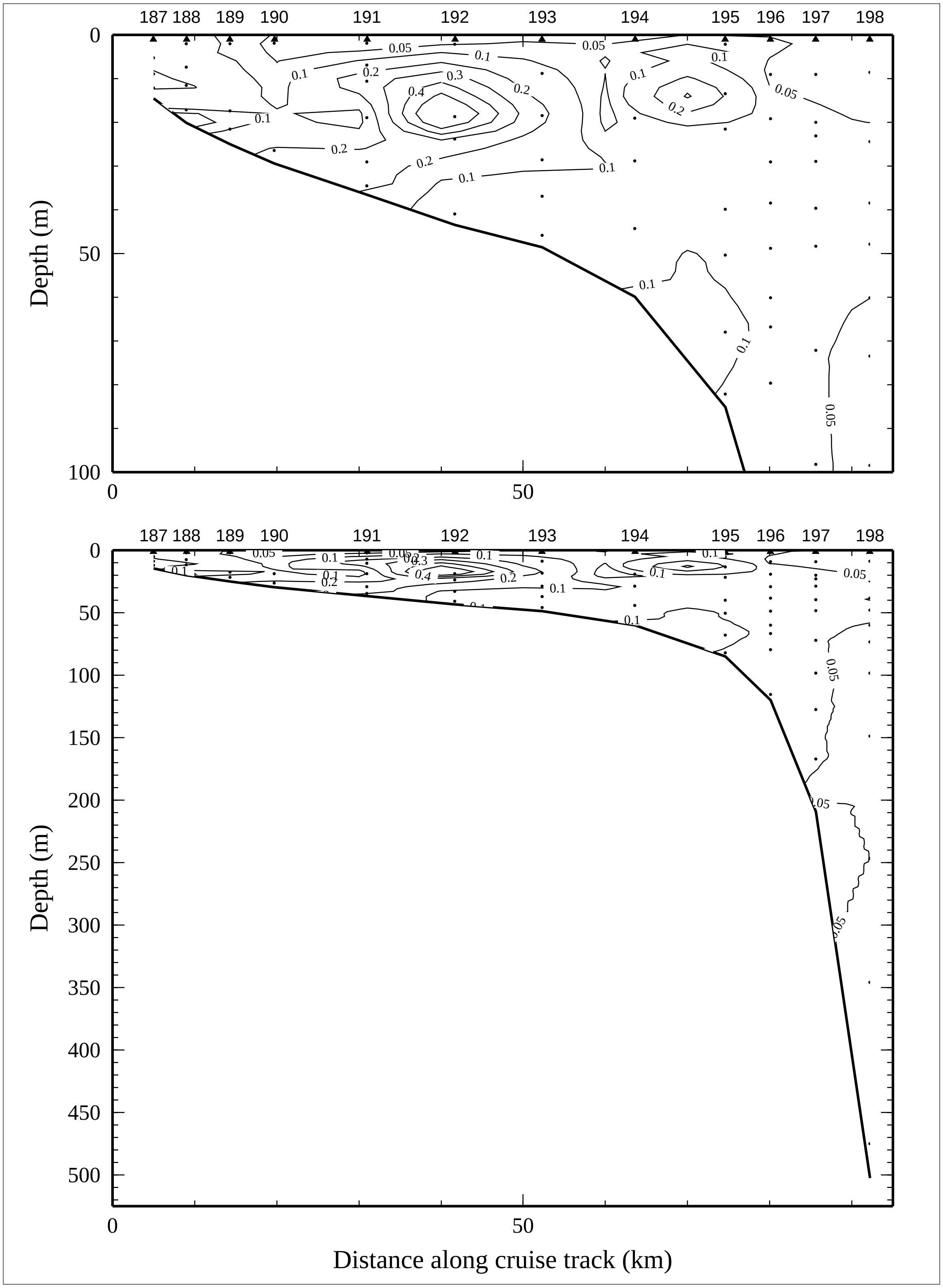

Figure 5.8.14. Ammonium (μmol·l-1) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

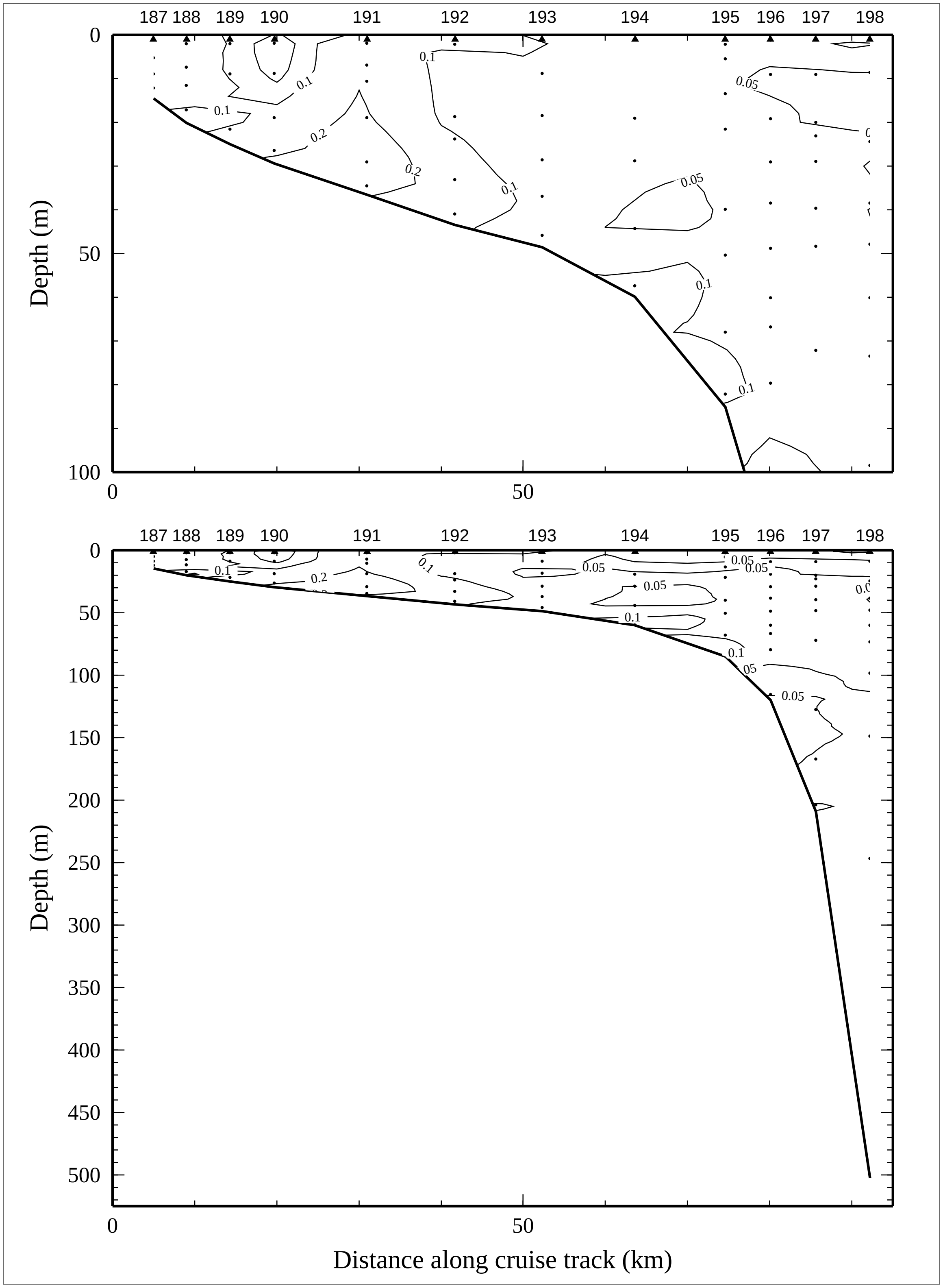

Figure 5.8.15. Urea (μmol·l^{-1}) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

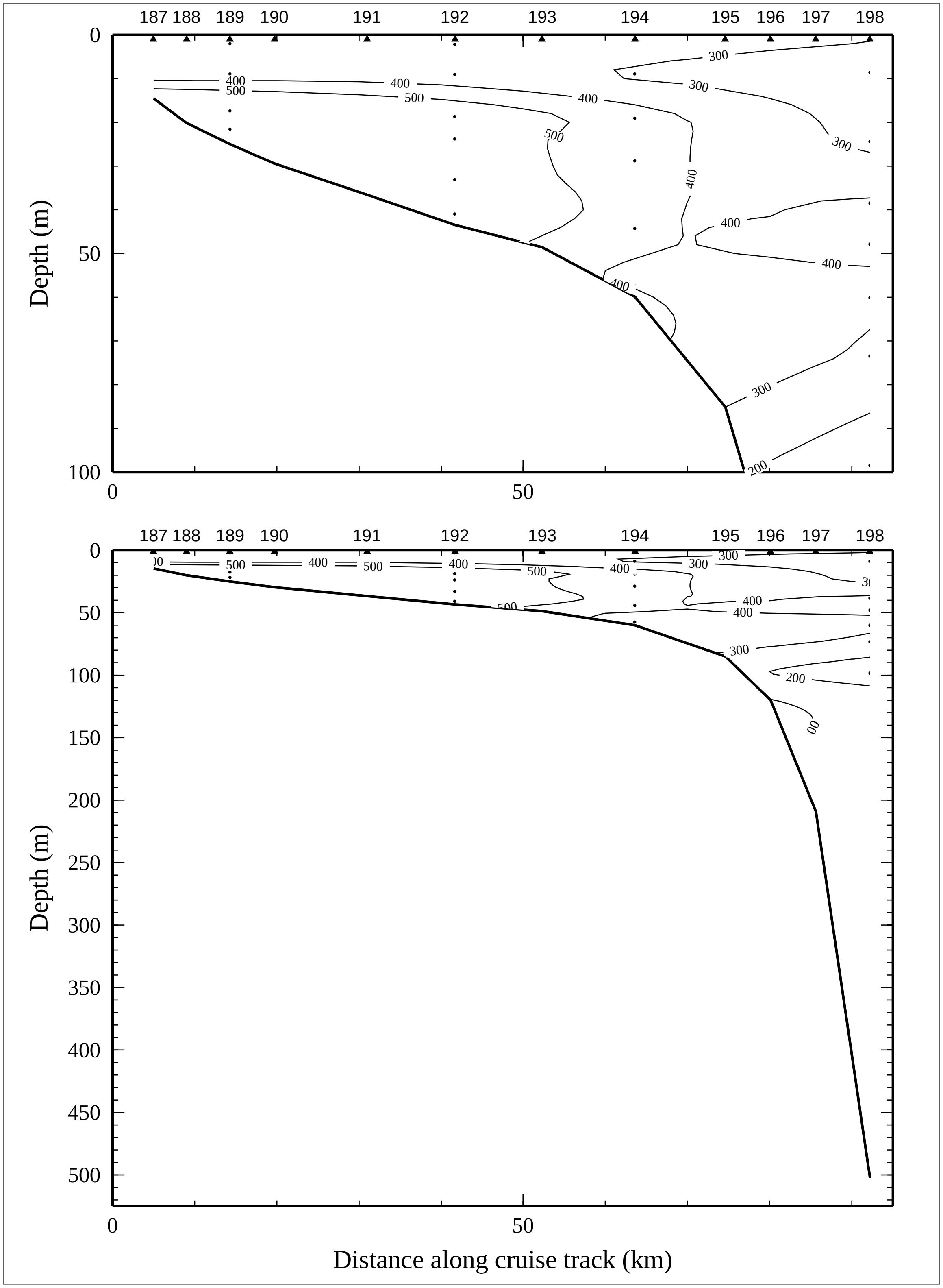

Figure 5.8.16. Chlorophyll a (ng·l^{-1}) on line 8 of LATEX A survey H05, 25 April - 11 May 1993.

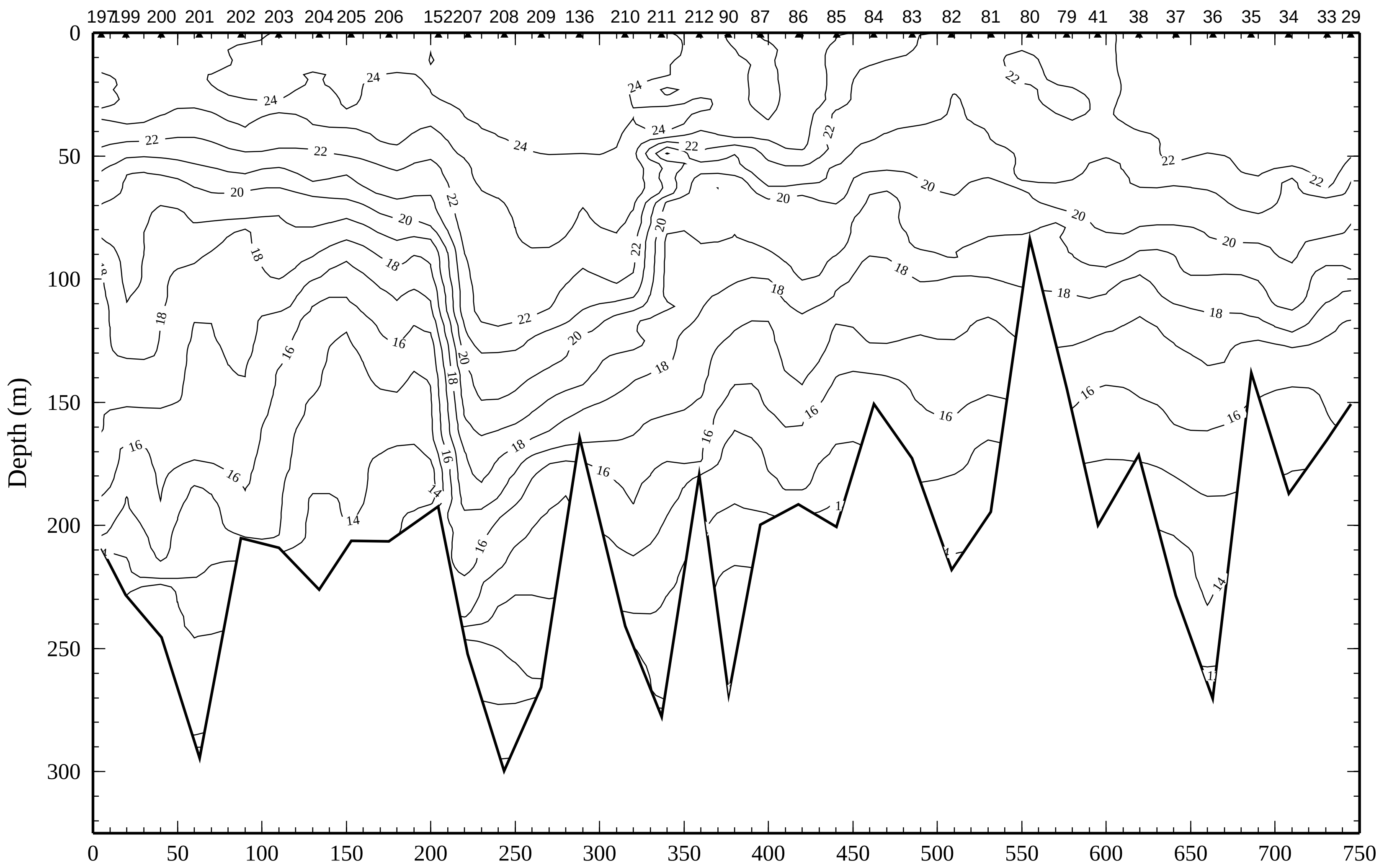

Figure 5.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

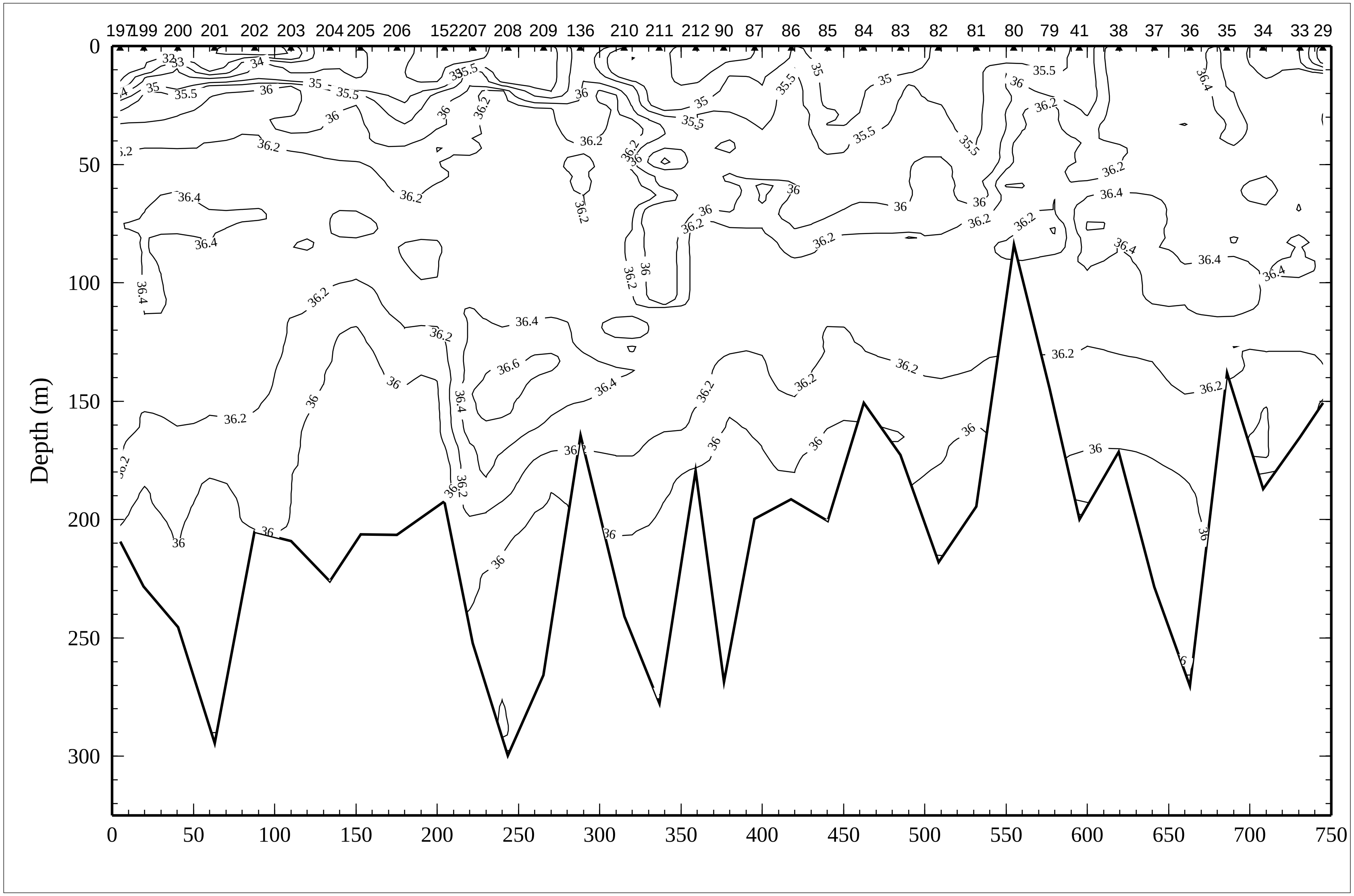

Figure 5.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

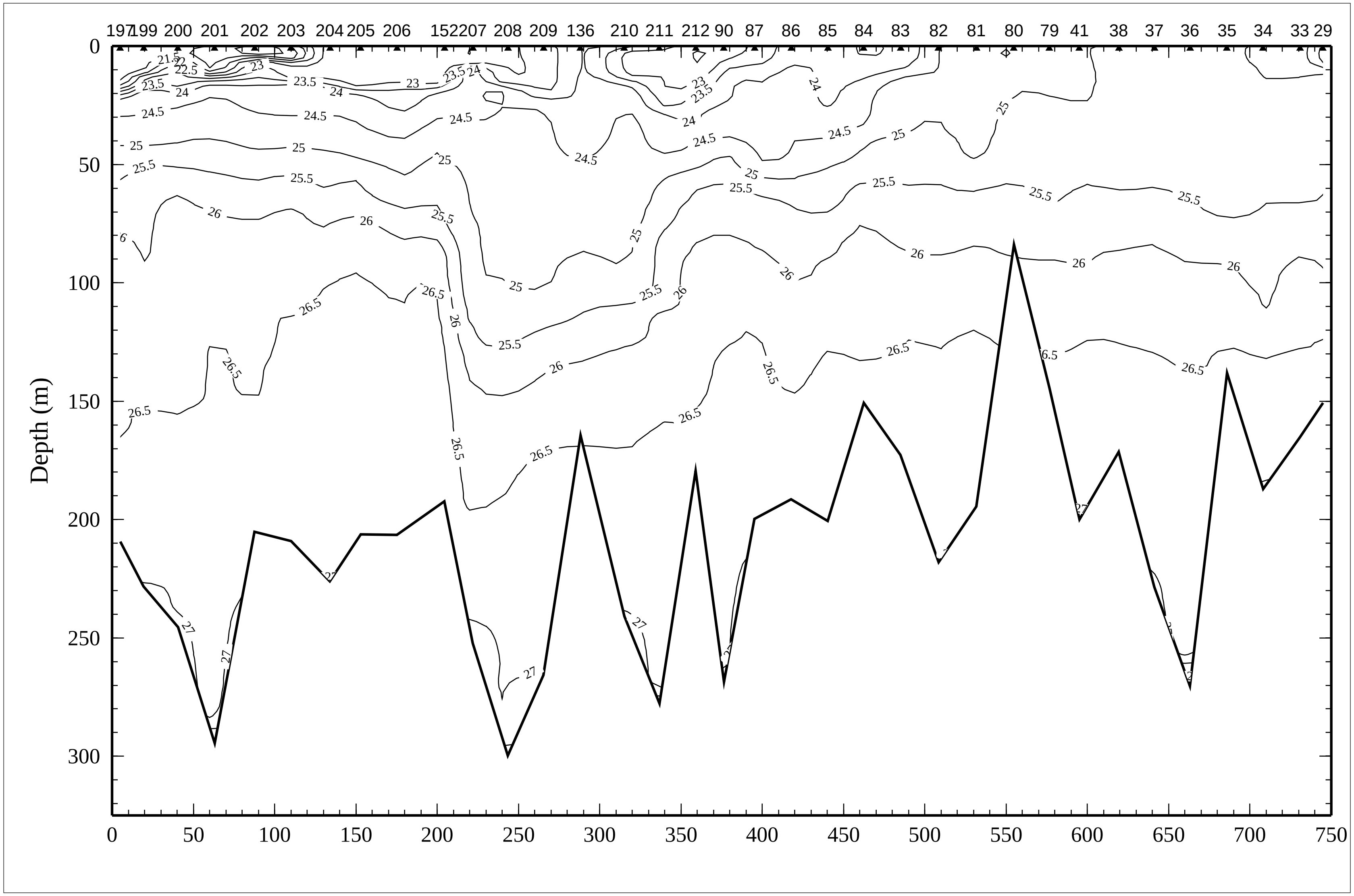

Figure 5.9.3. Density anomaly (σ_θ in kg·m^{-3}) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

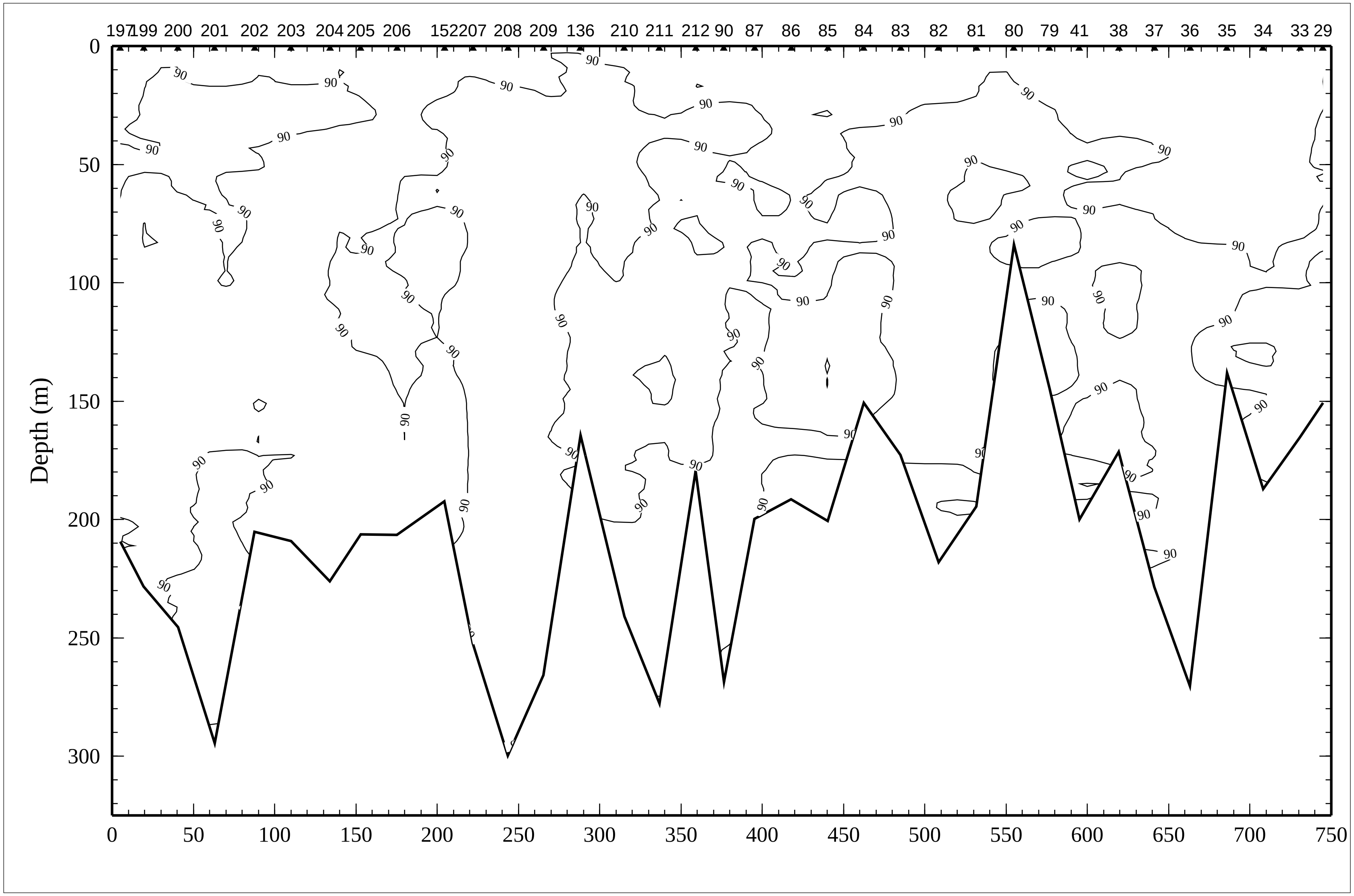

Figure 5.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

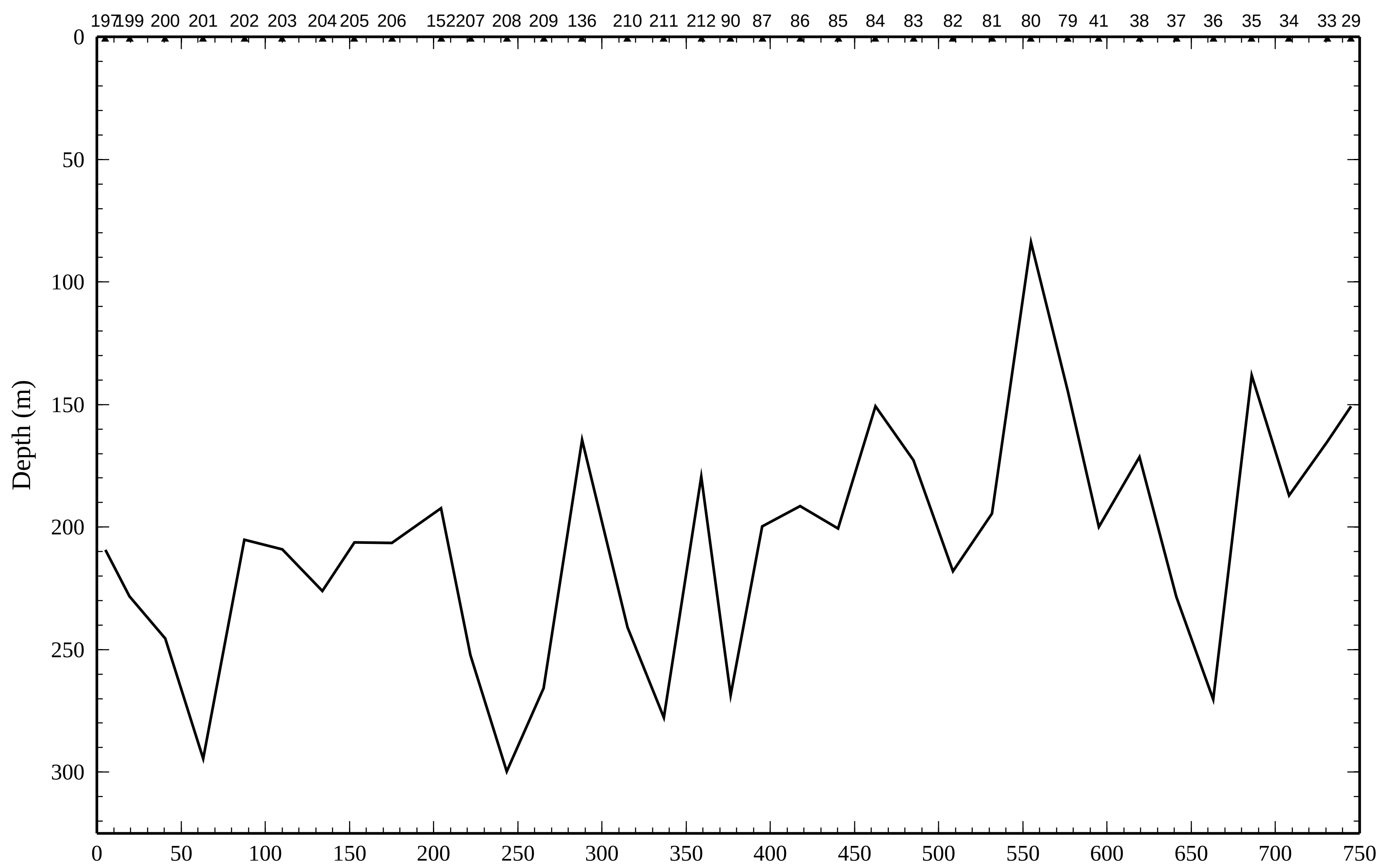

Figure 5.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H05, 25 April - 11 May 1993. All values were less than 0.05.

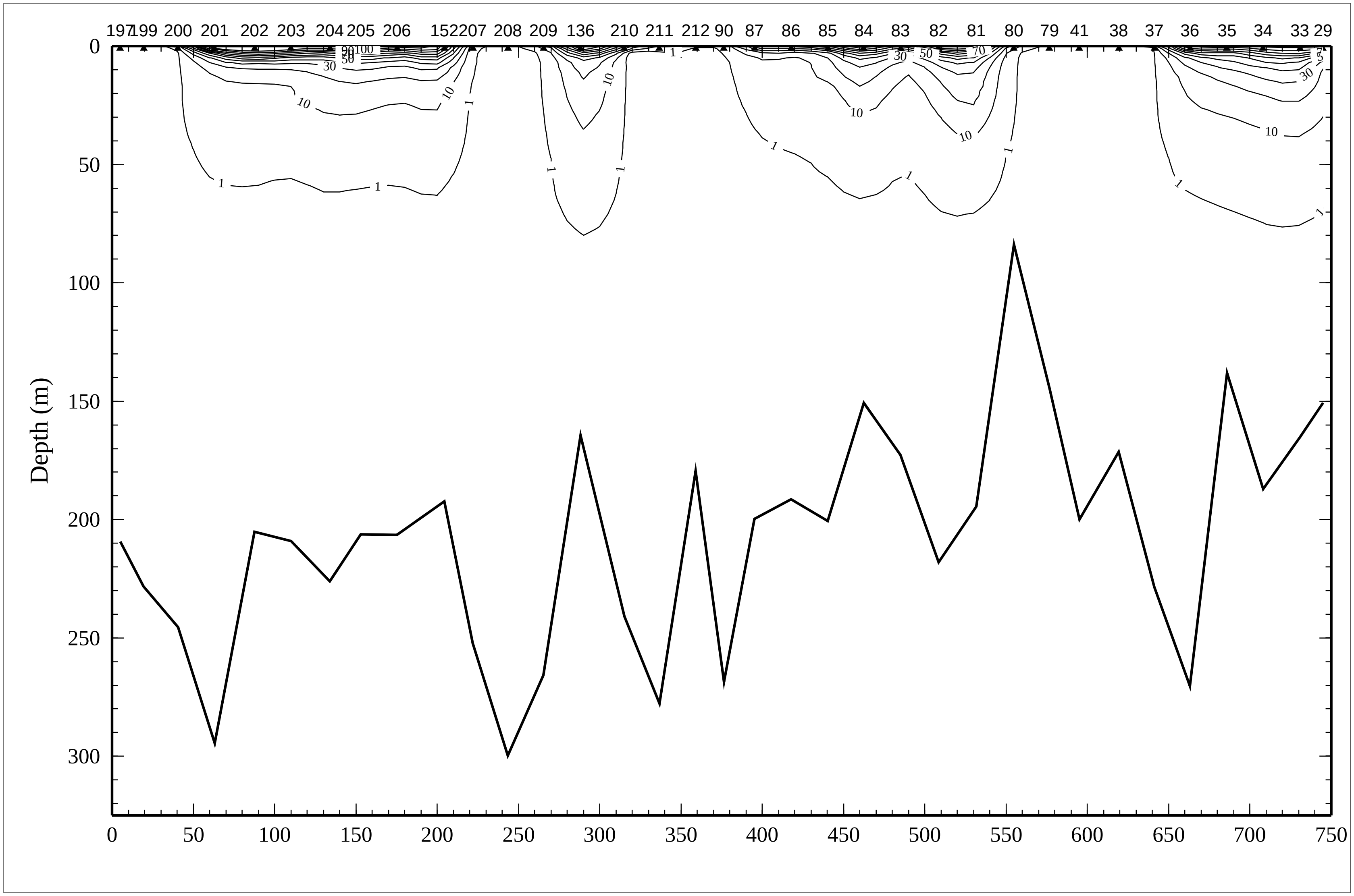

Figure 5.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

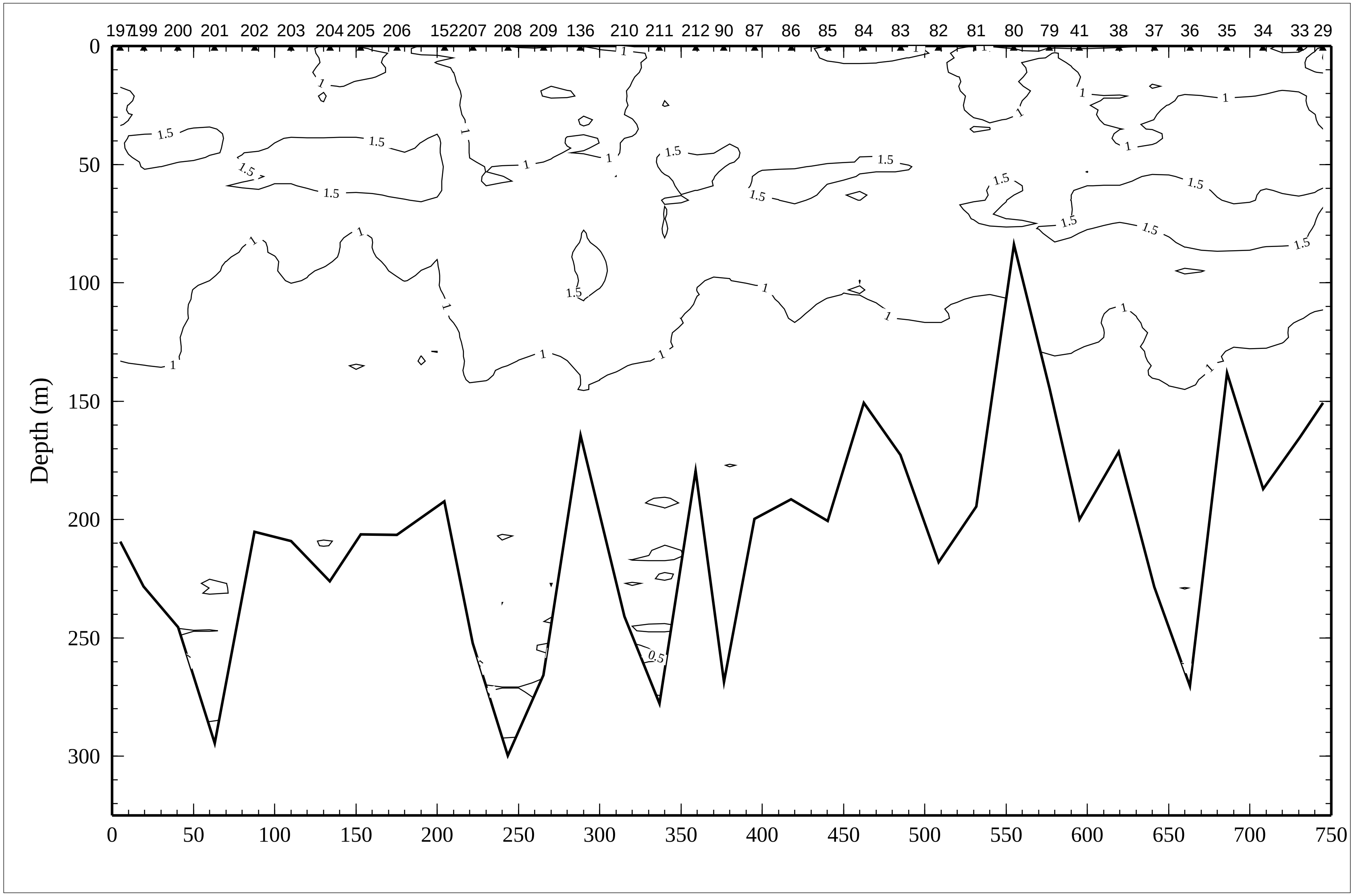

Figure 5.9.7. Relative fluorescence on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

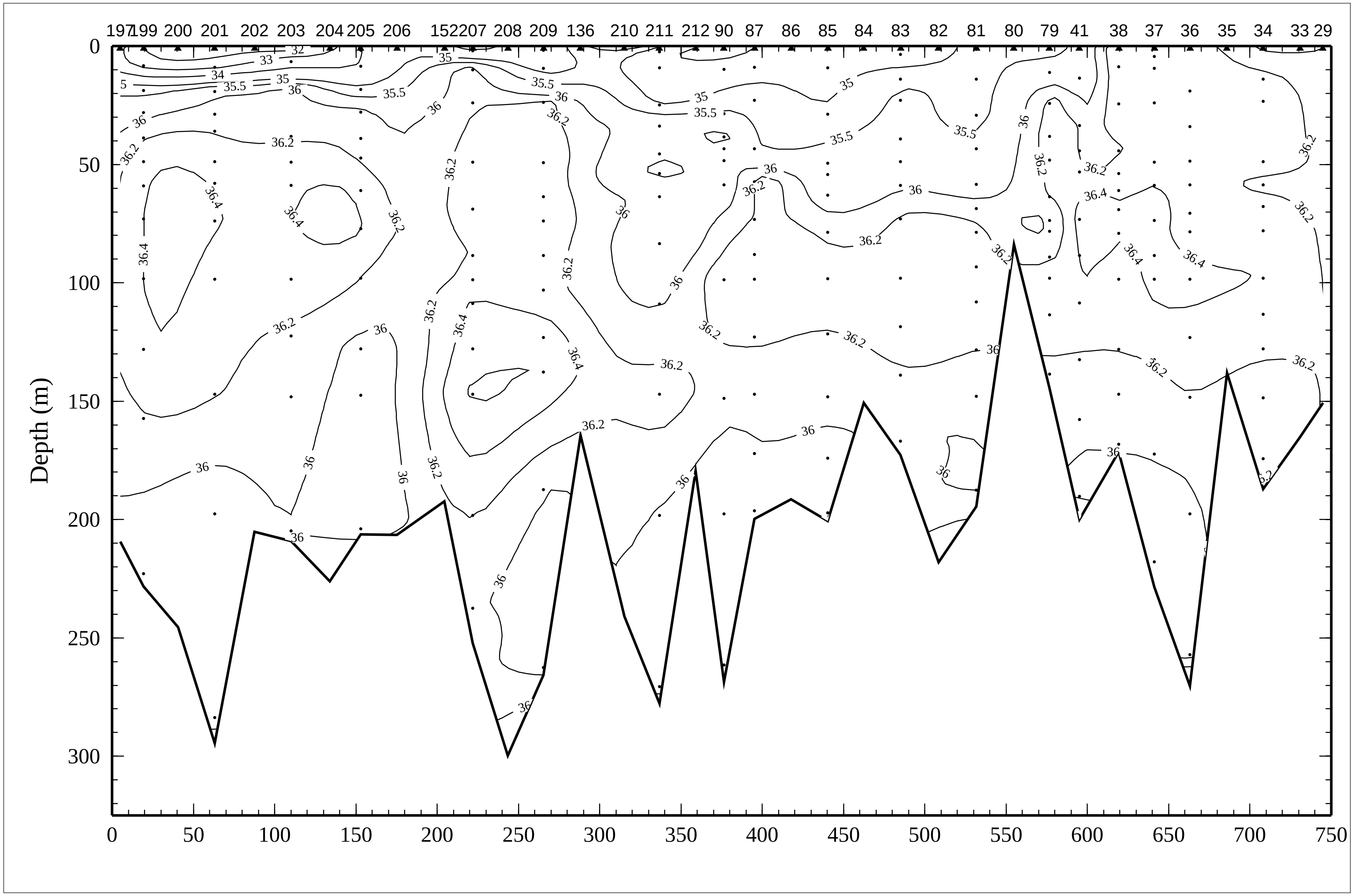

Figure 5.9.8. Bottle salinity on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

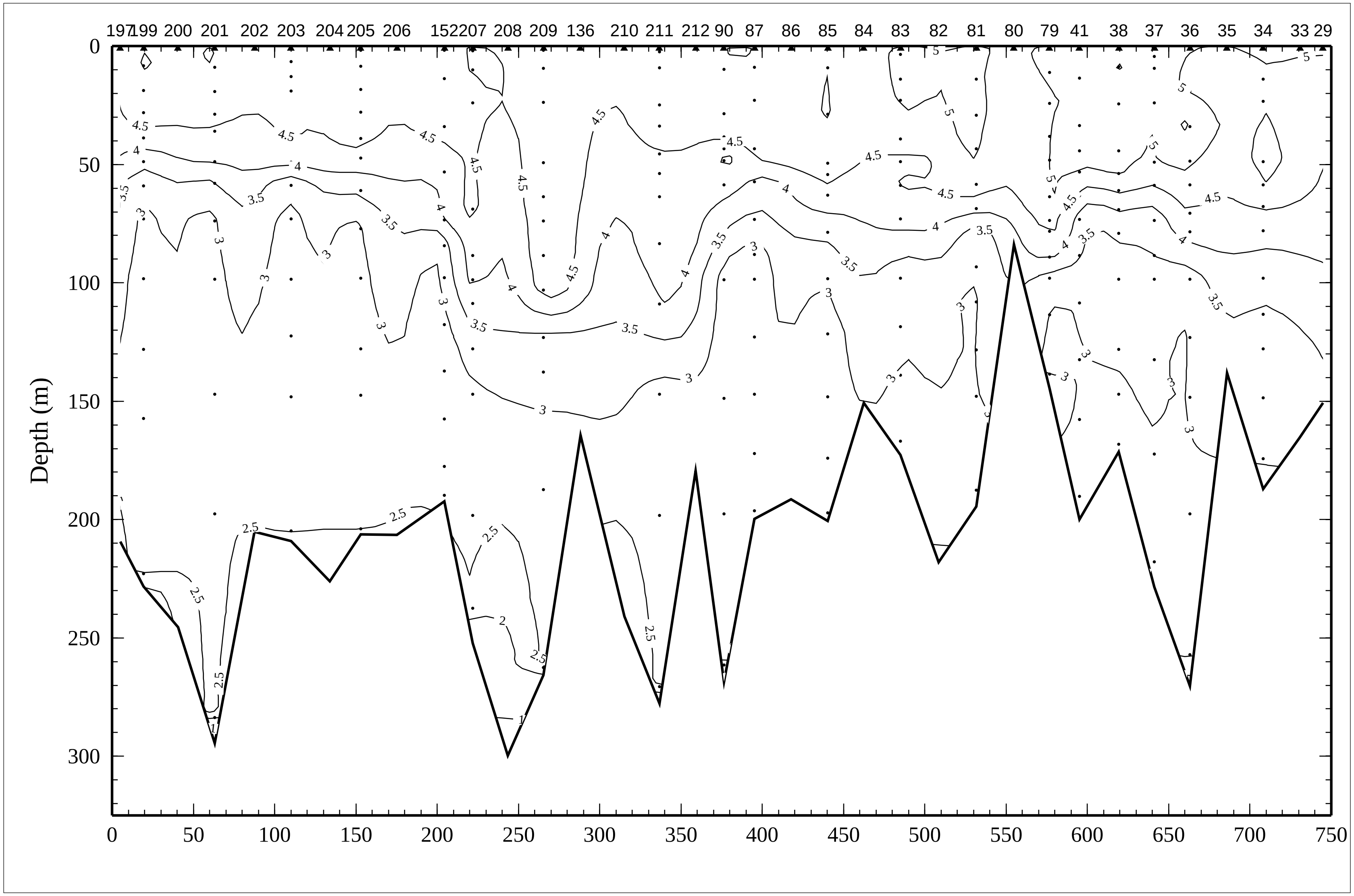

Figure 5.9.9. Dissolved oxygen ($ml \cdot l^{-1}$) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

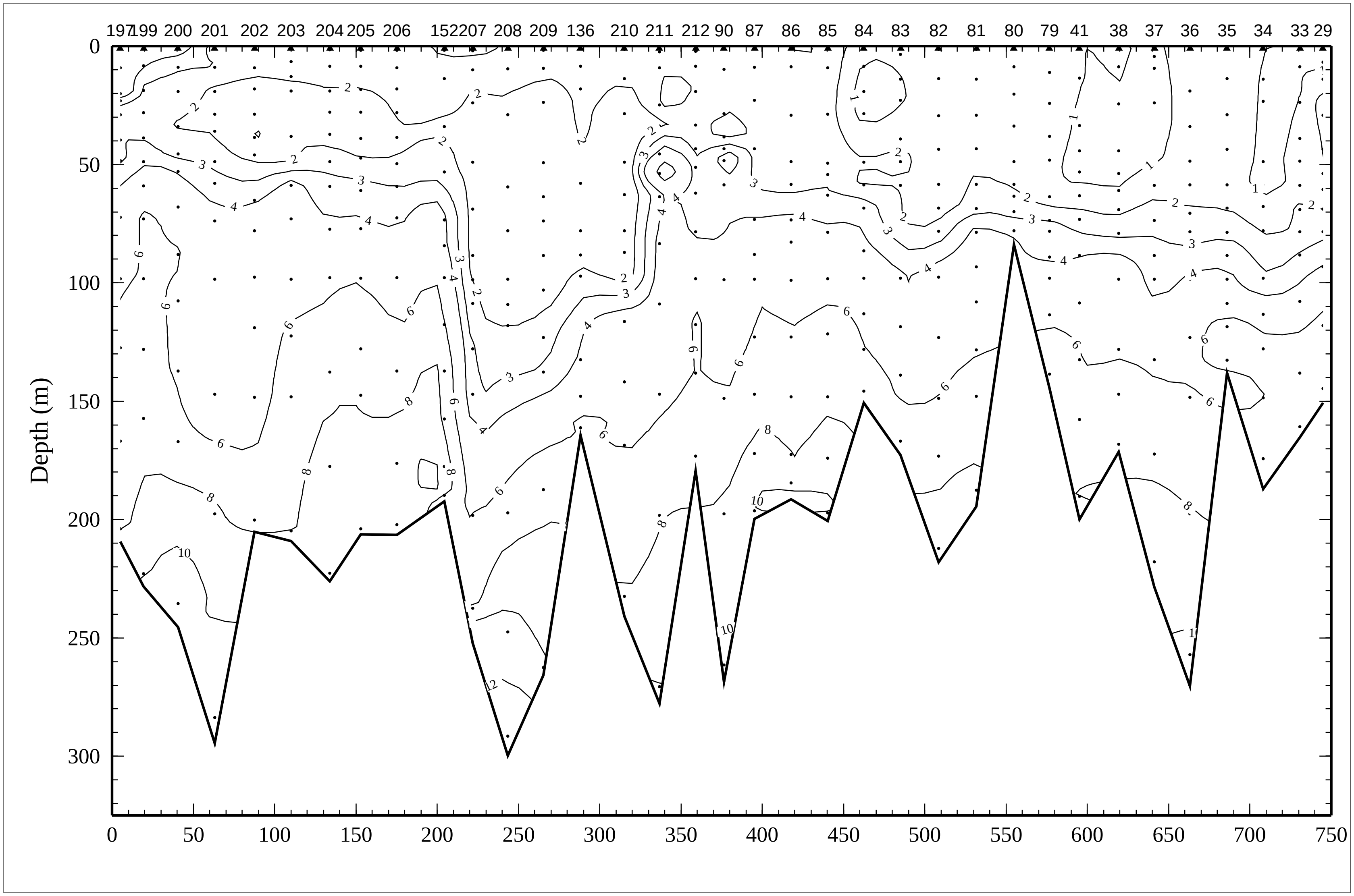

Figure 5.9.10. Silicate (μmol·l^{-1}) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

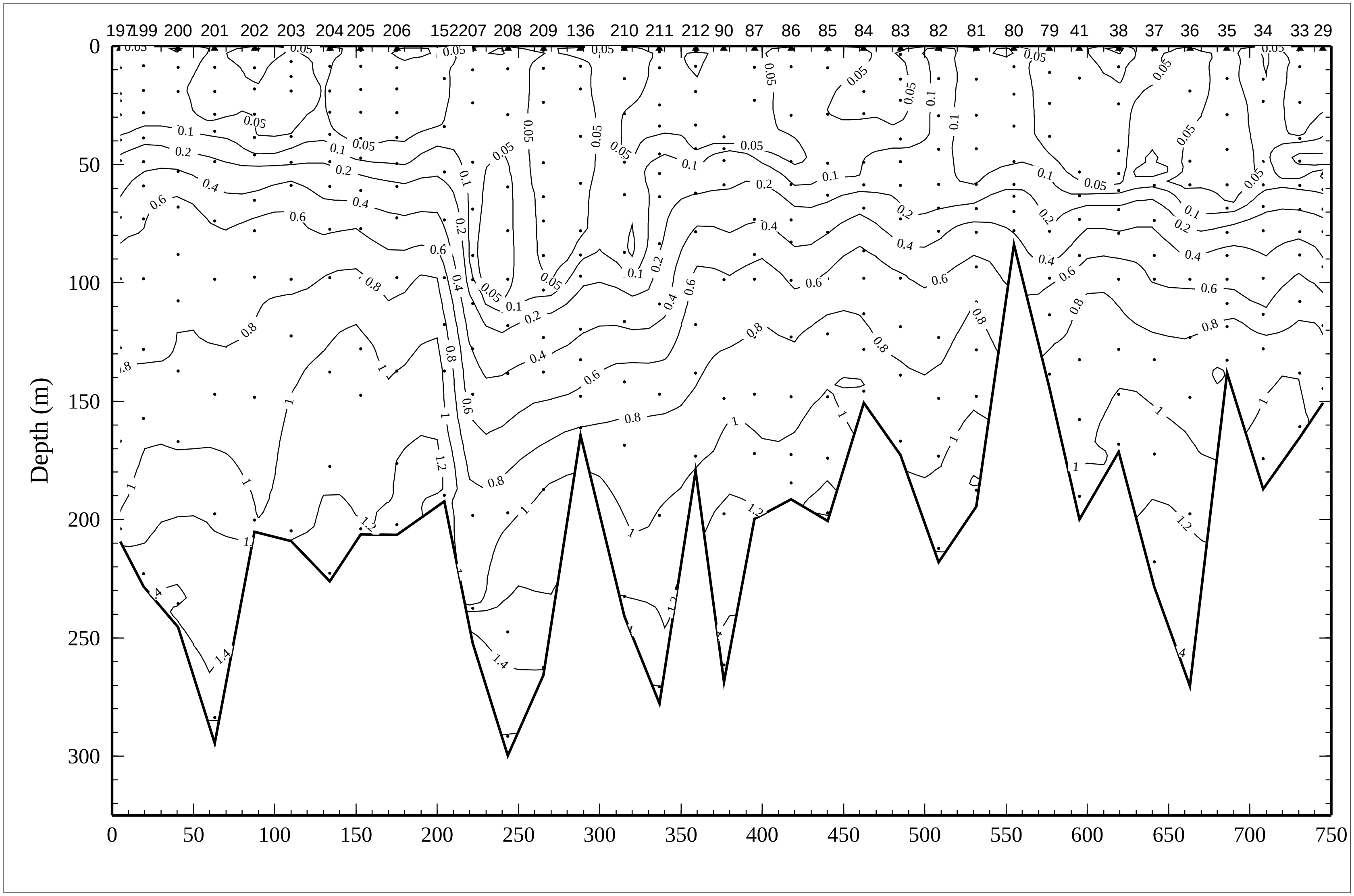

Figure 5.9.11. Phosphate (μmol·l^{-1}) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

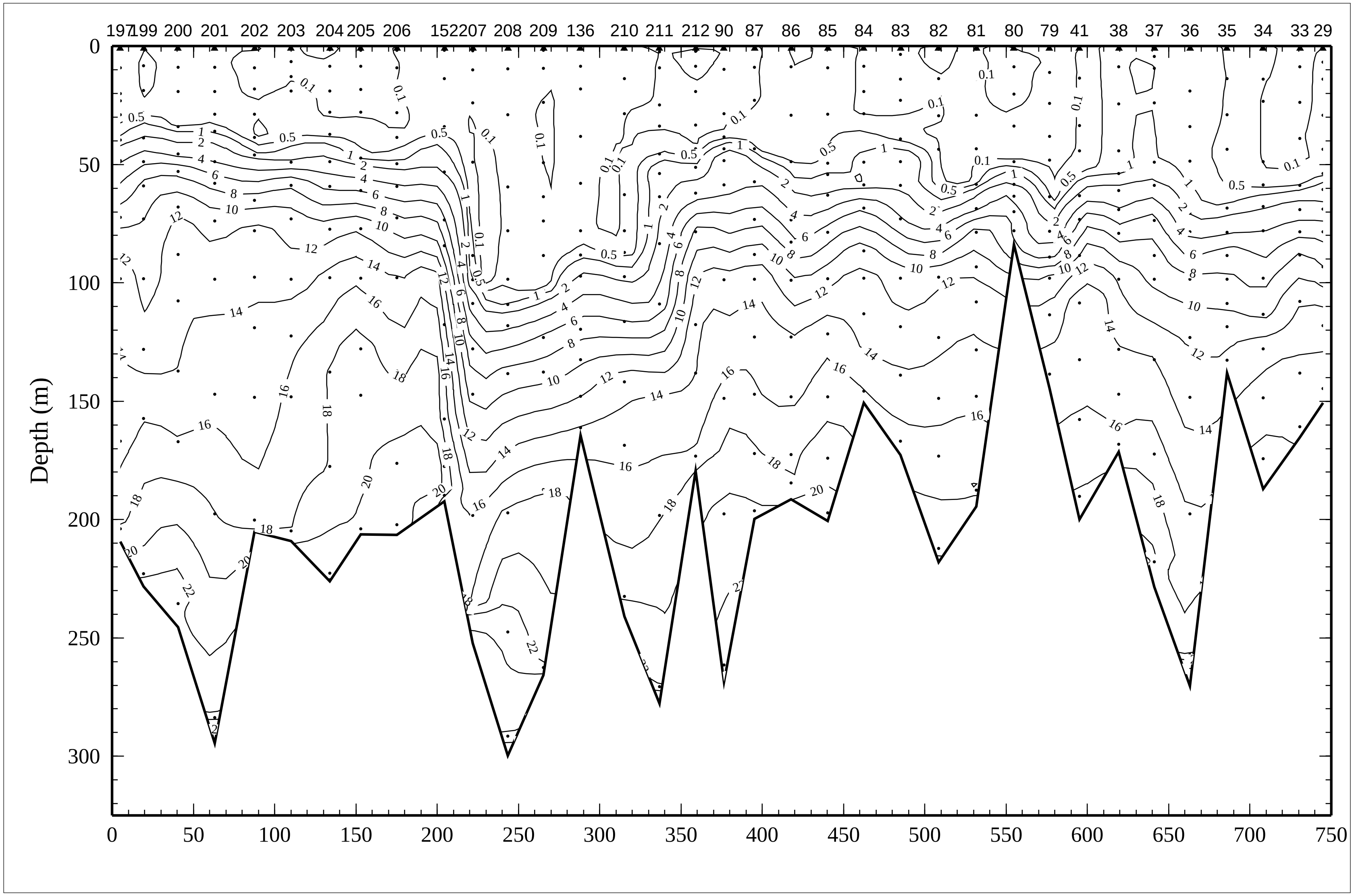

Figure 5.9.12. Nitrate (μmol·l^{-1}) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

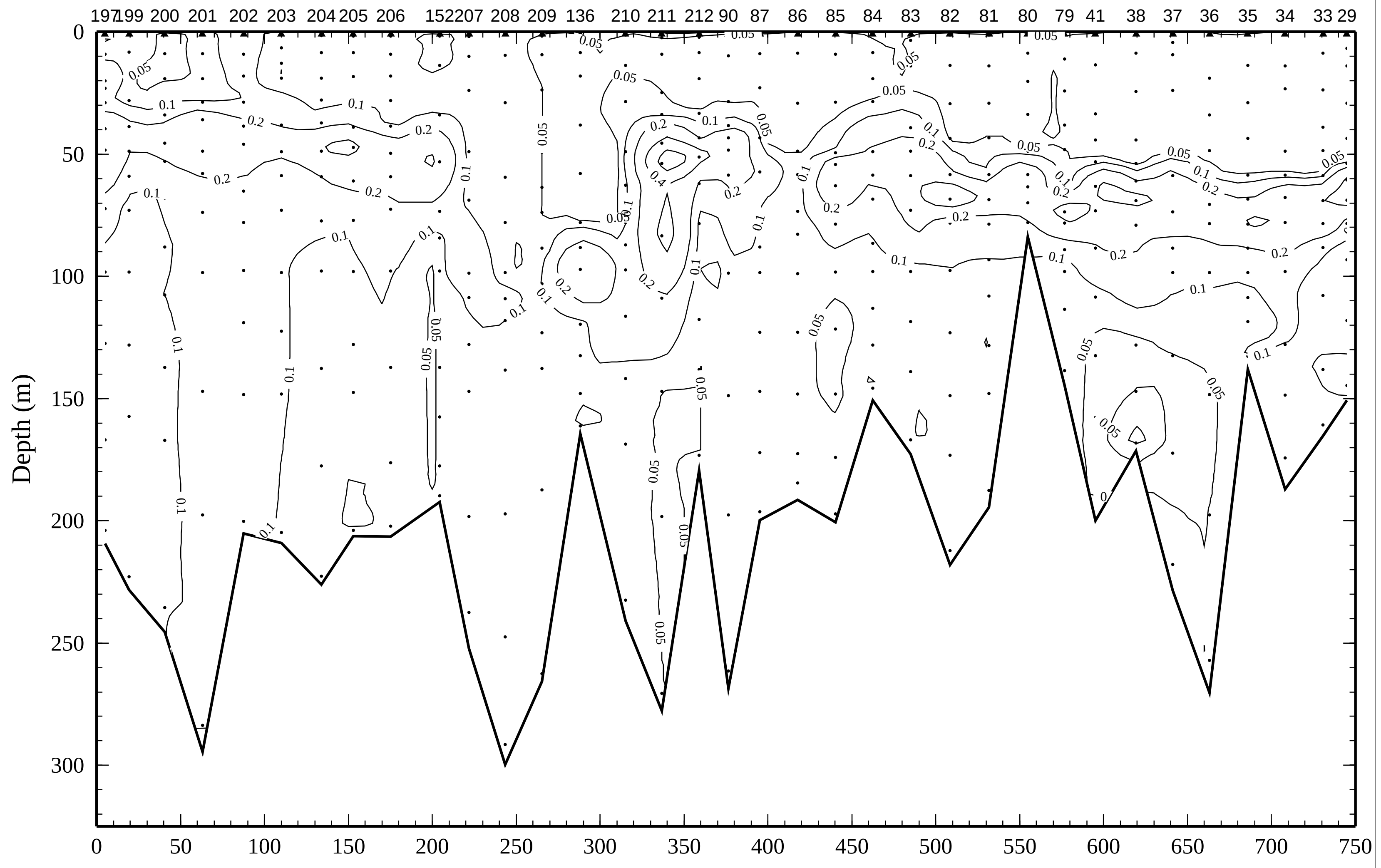

Figure 5.9.13. Nitrite (µmol·l^{-1}) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

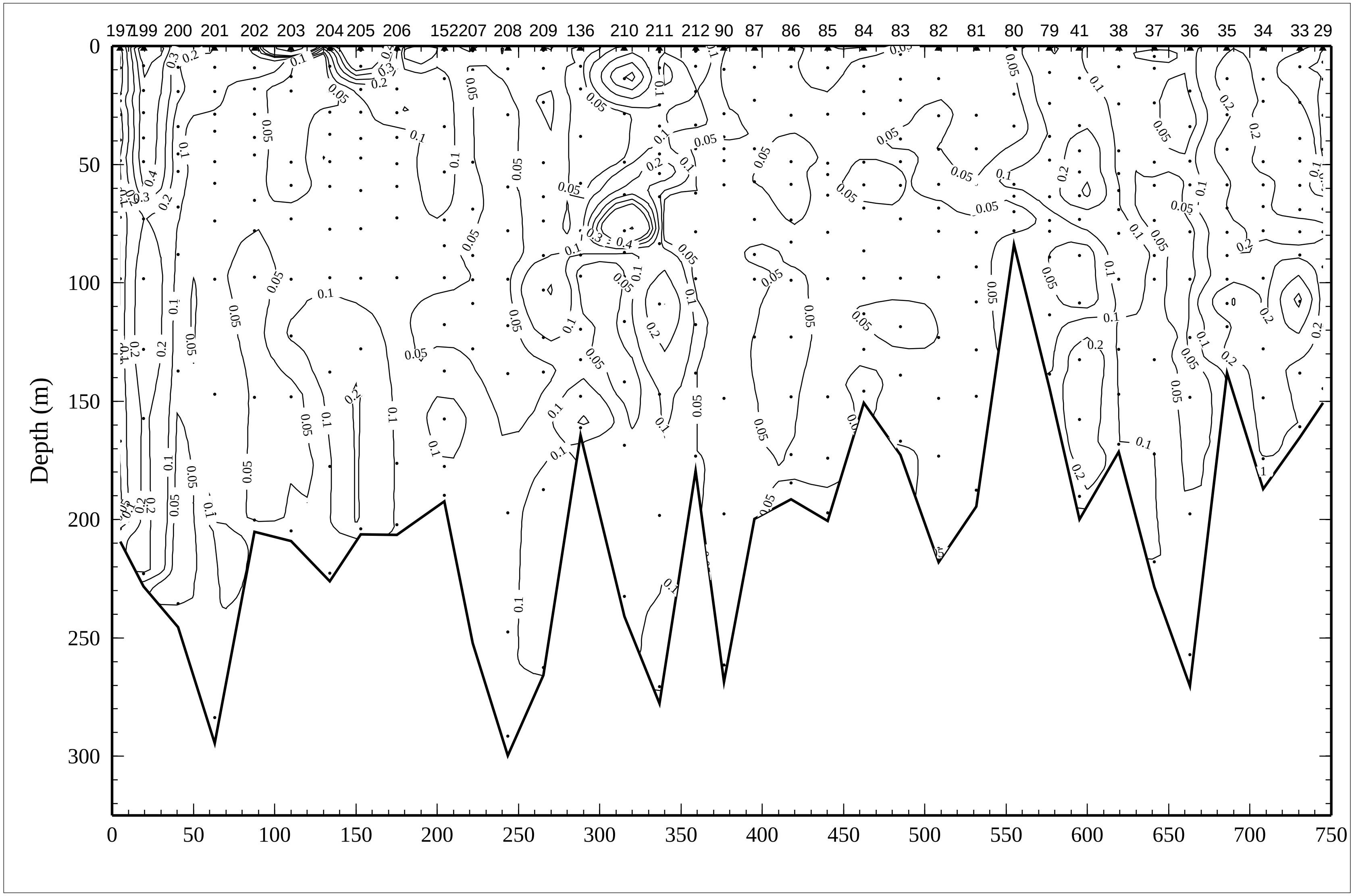

Figure 5.9.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

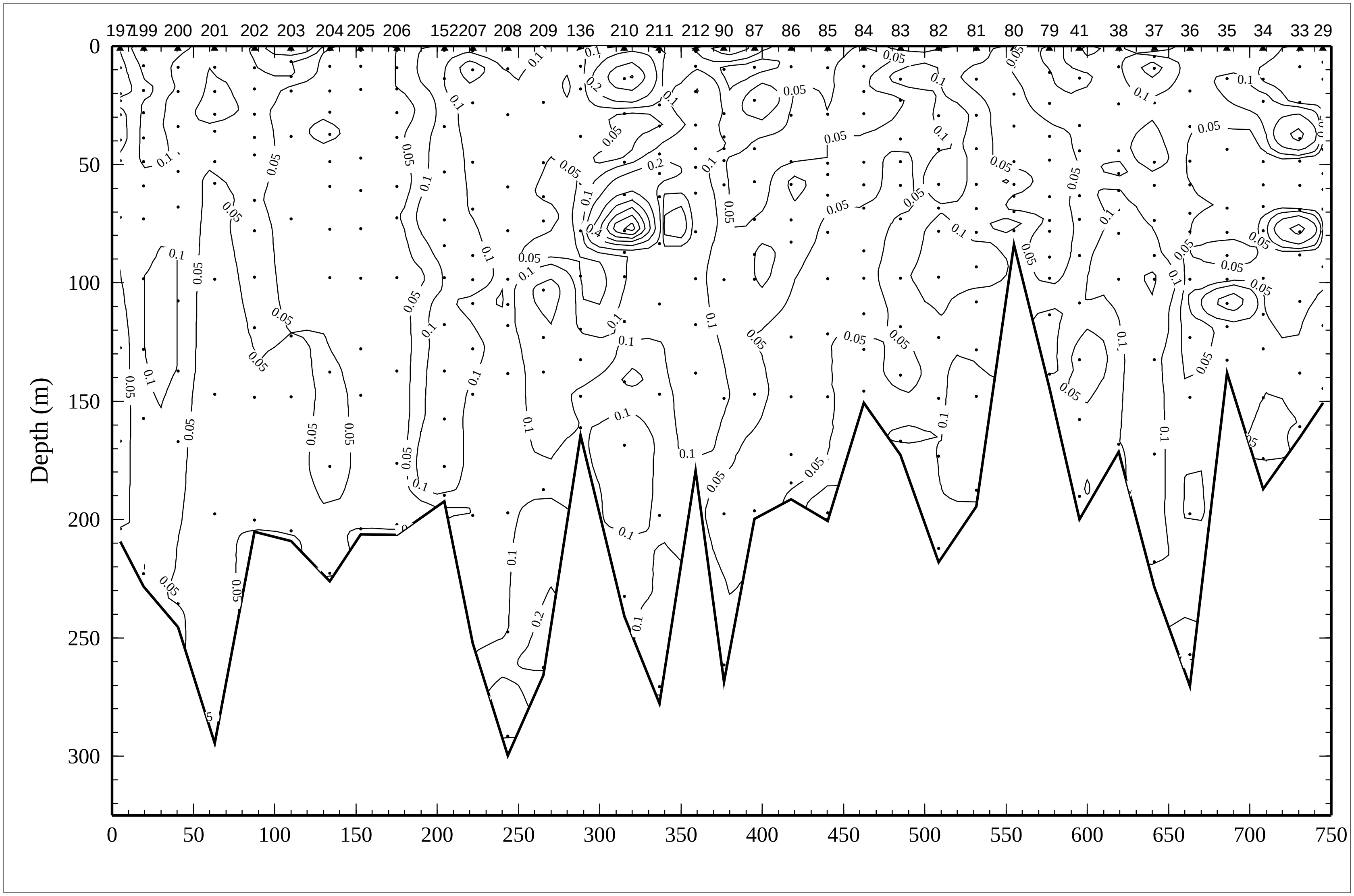

Figure 5.9.15. Urea (μmol·l⁻¹) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

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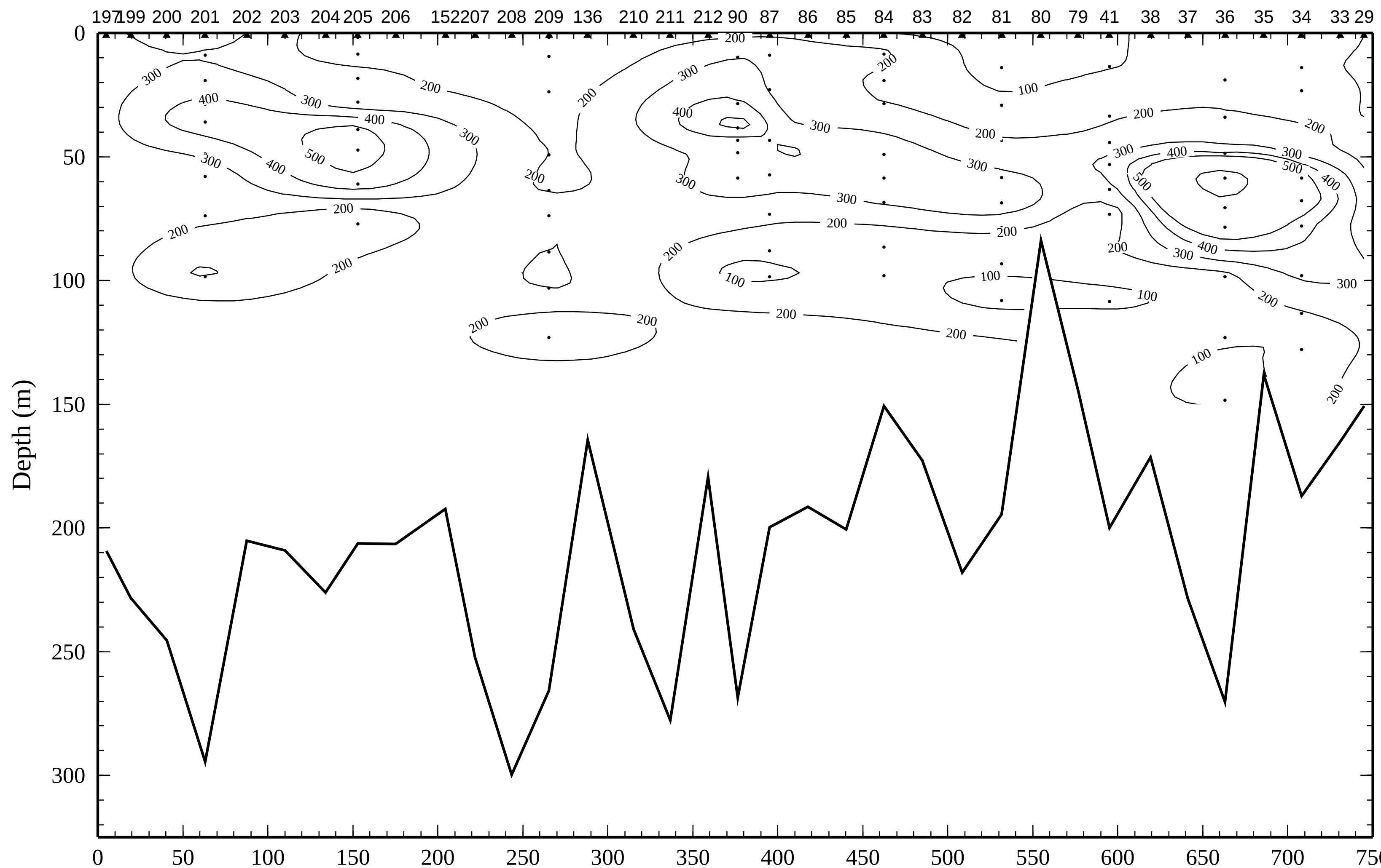

Figure 5.9.16. Chlorophyll a (ng·l^{-1}) on line 9 of LATEX A survey H05, 25 April - 11 May 1993.

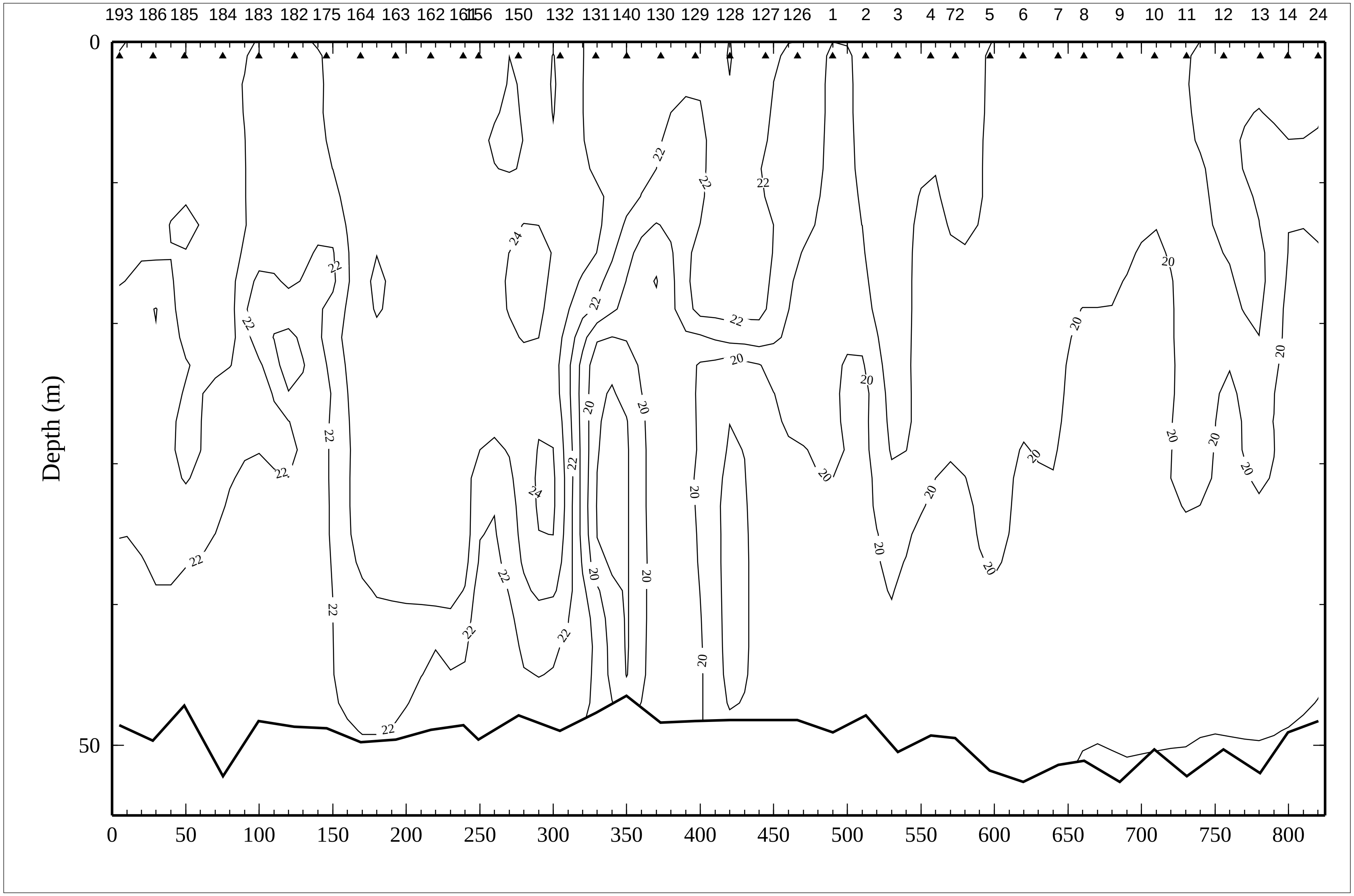

Figure 5.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

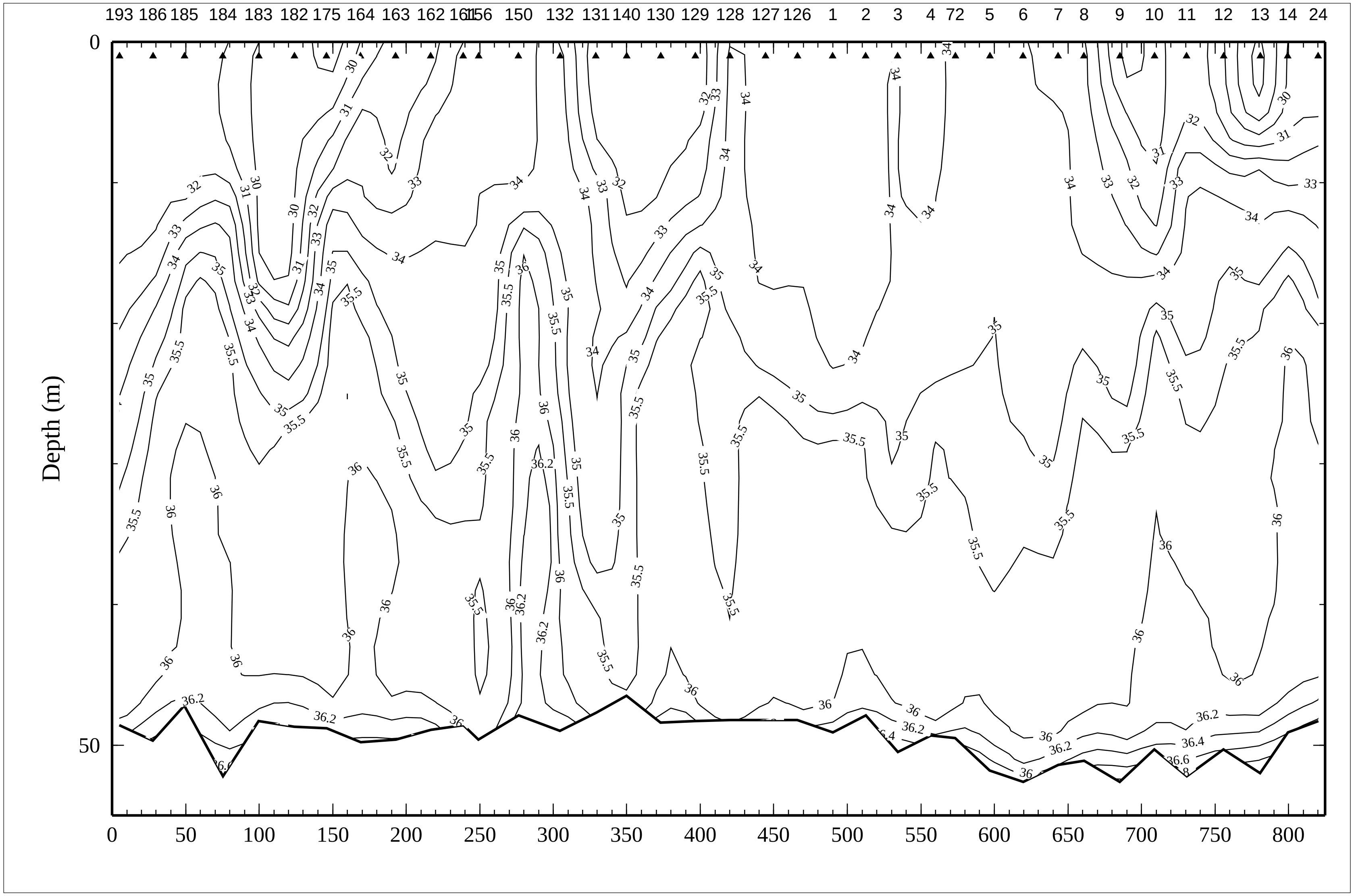

Figure 5.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

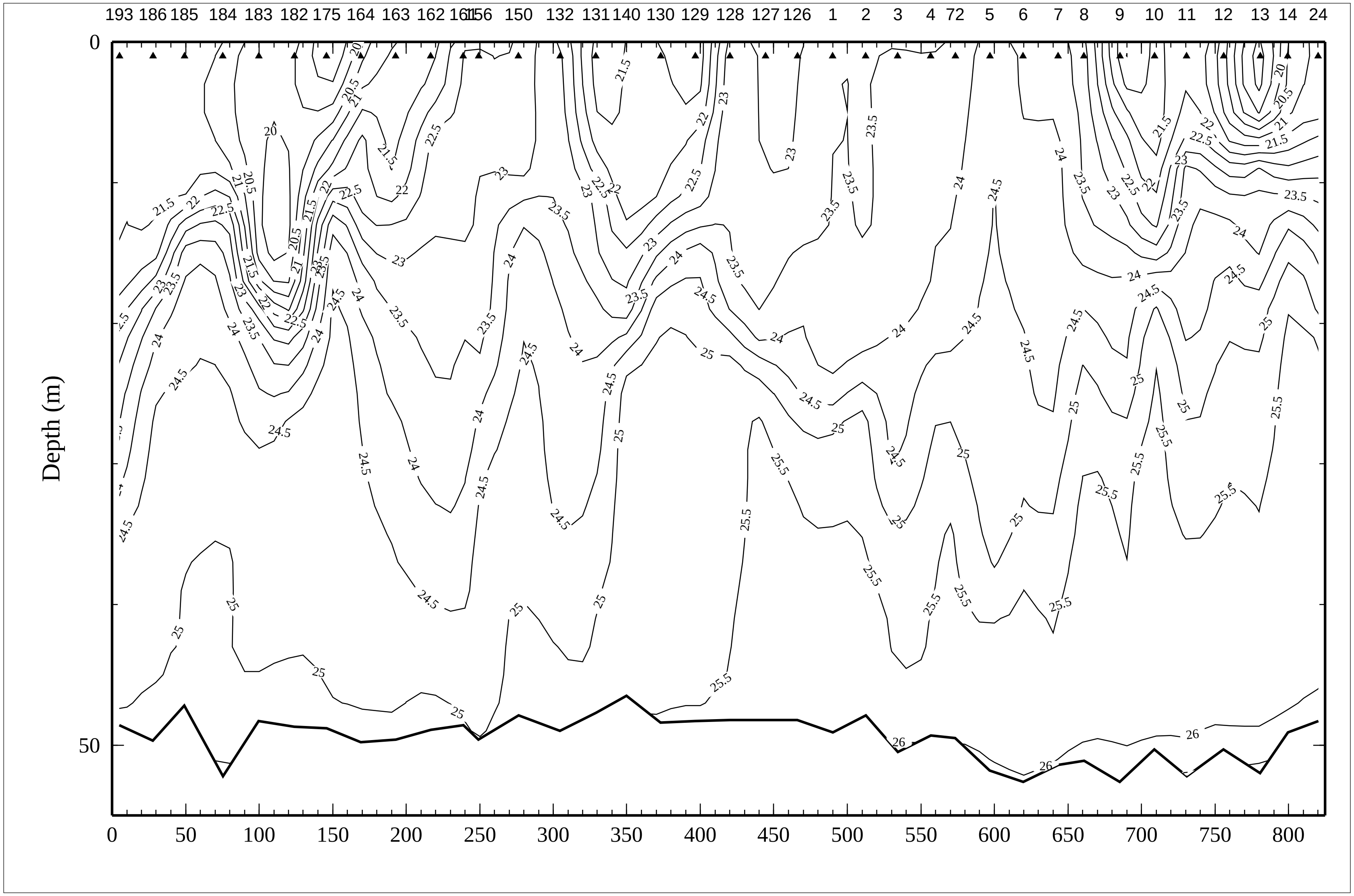

Figure 5.10.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

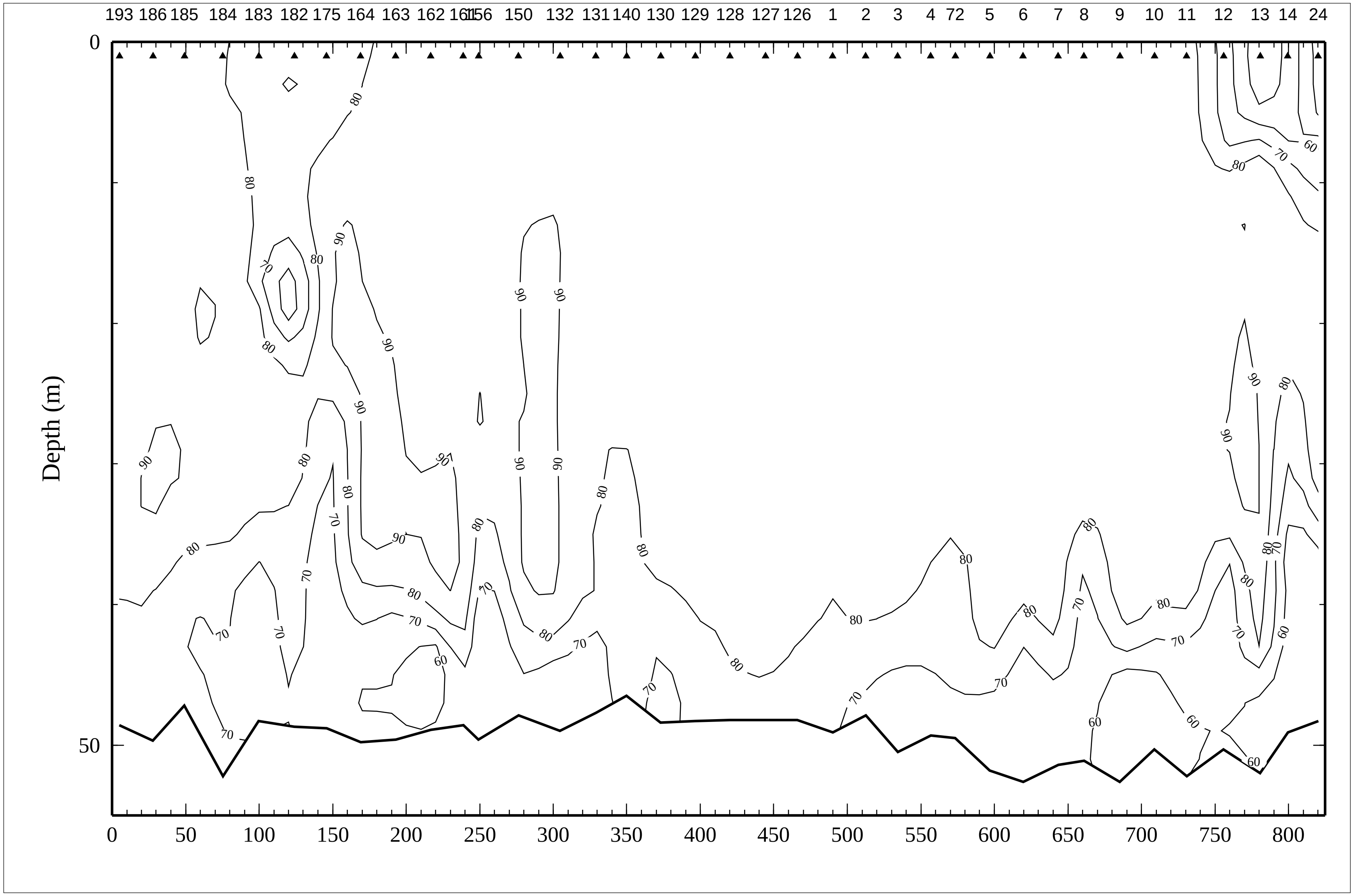

Figure 5.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

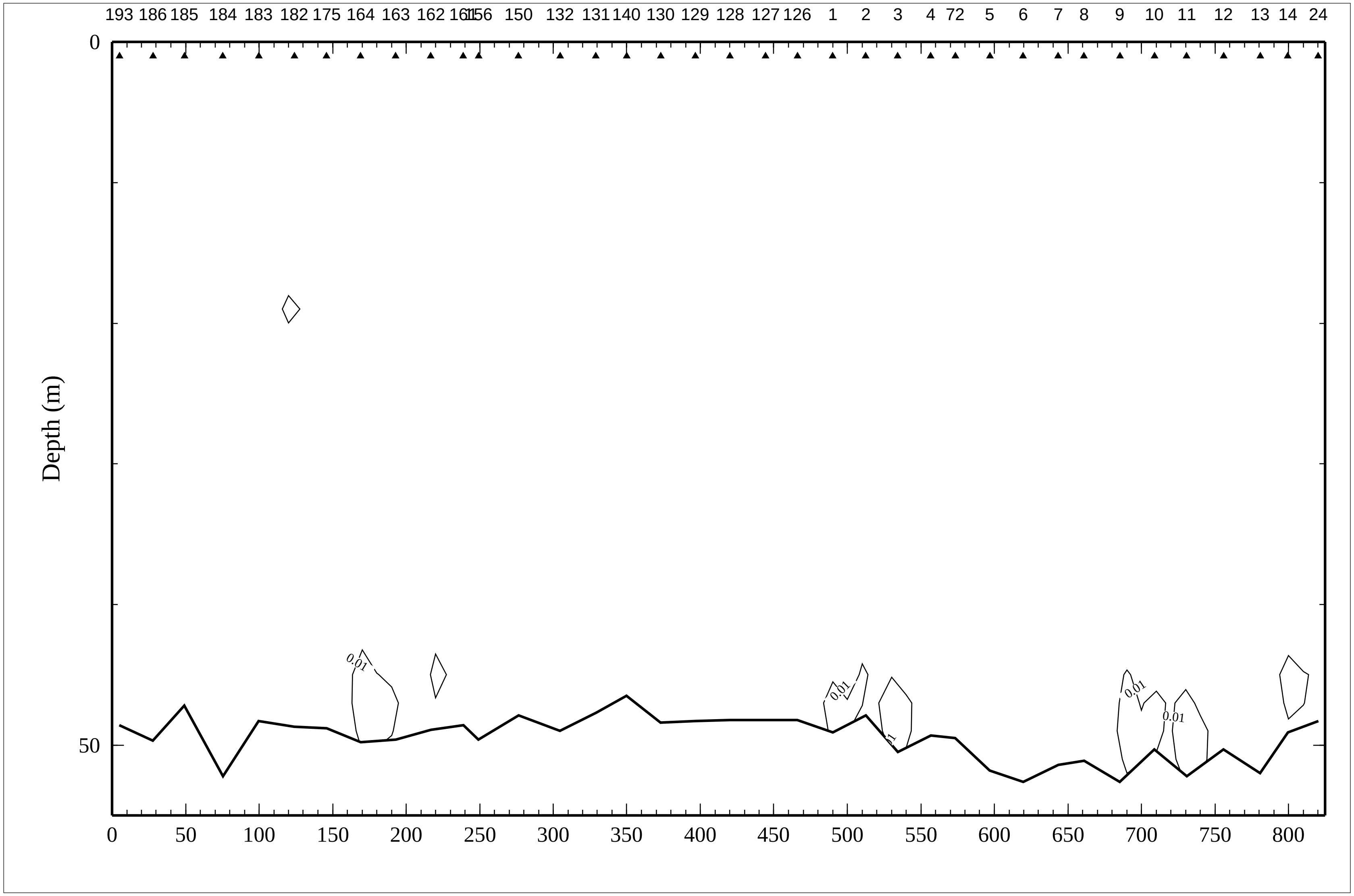

Figure 5.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

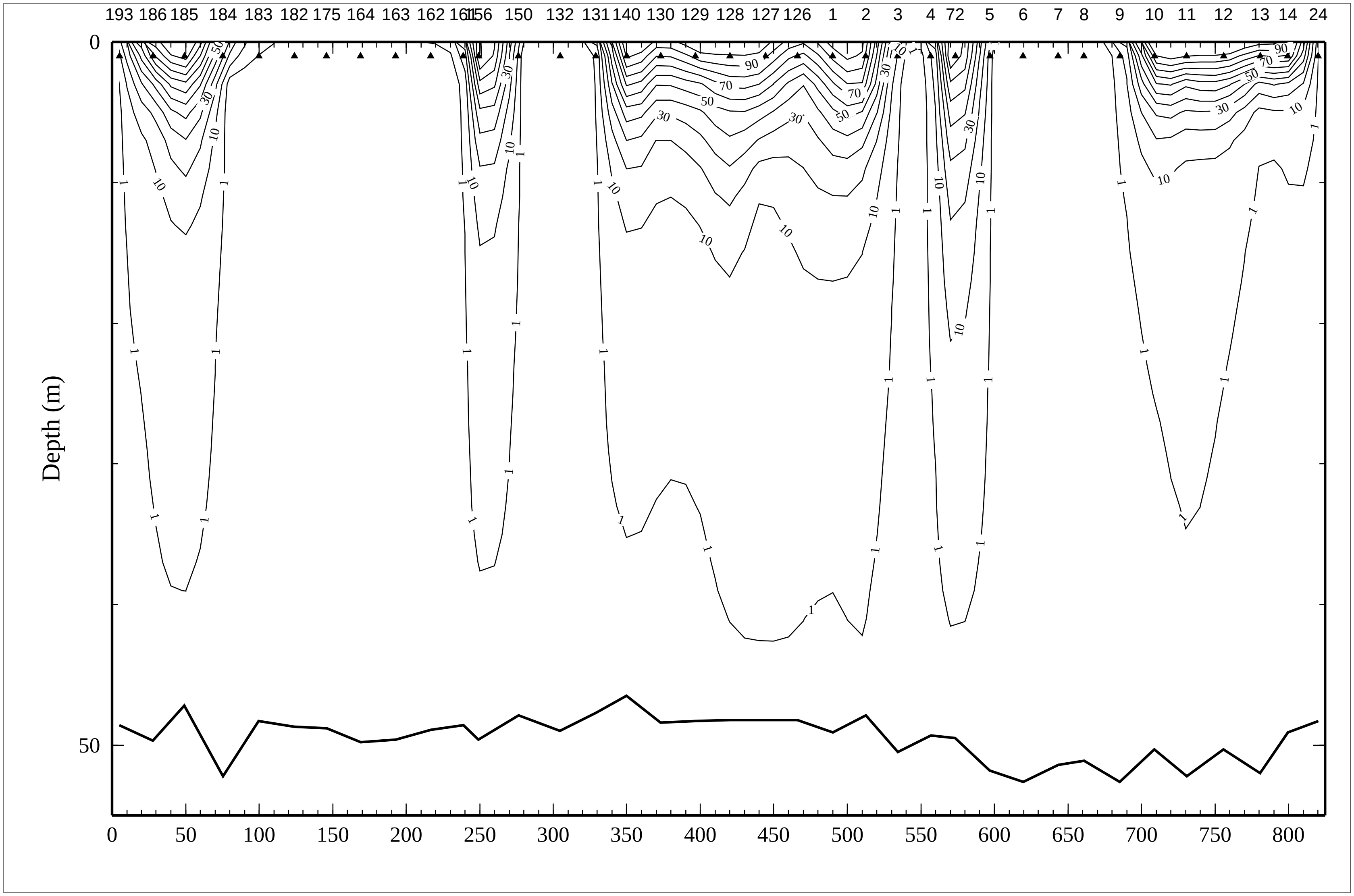

Figure 5.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

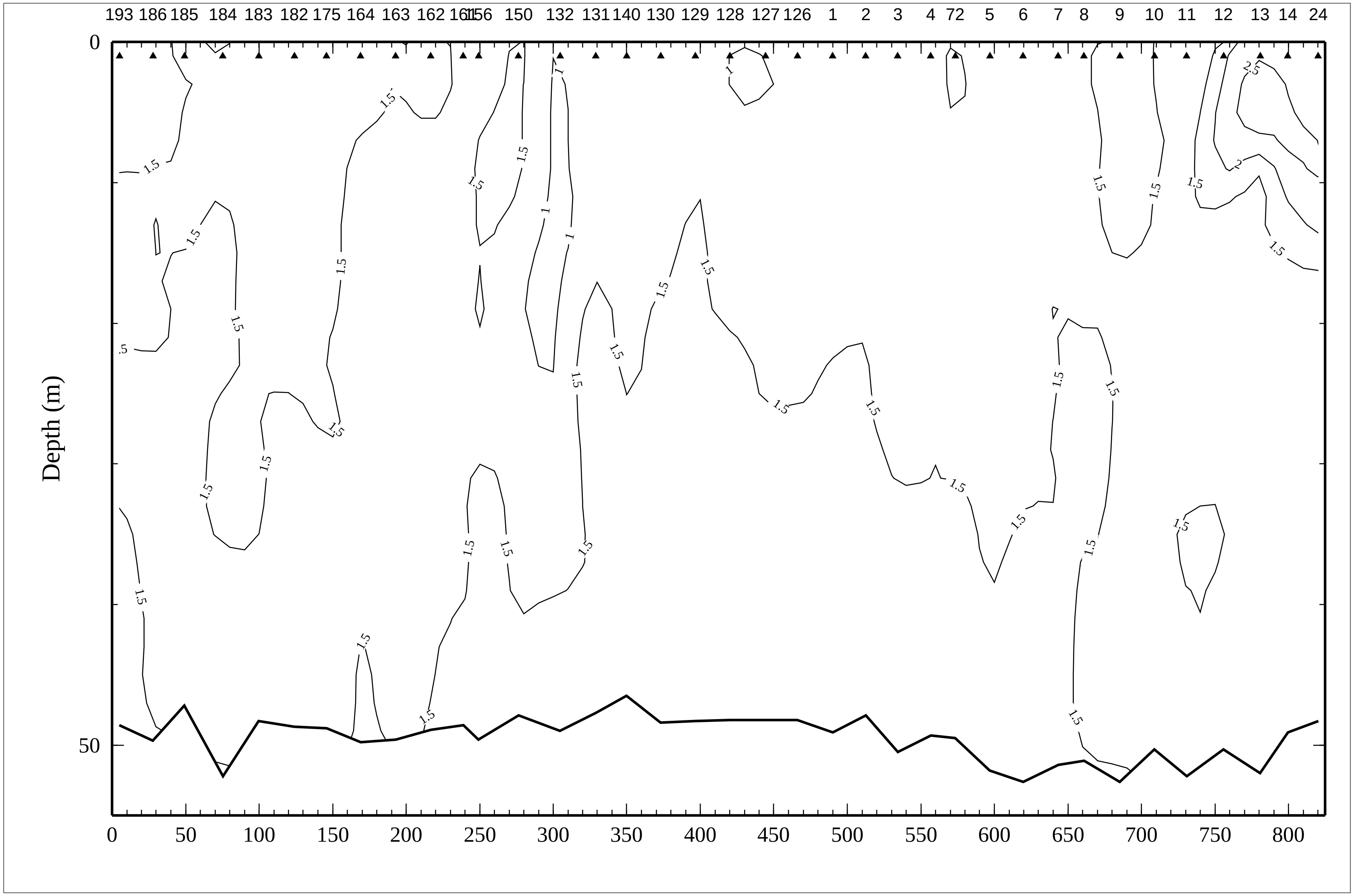

Figure 5.10.7. Relative fluorescence on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

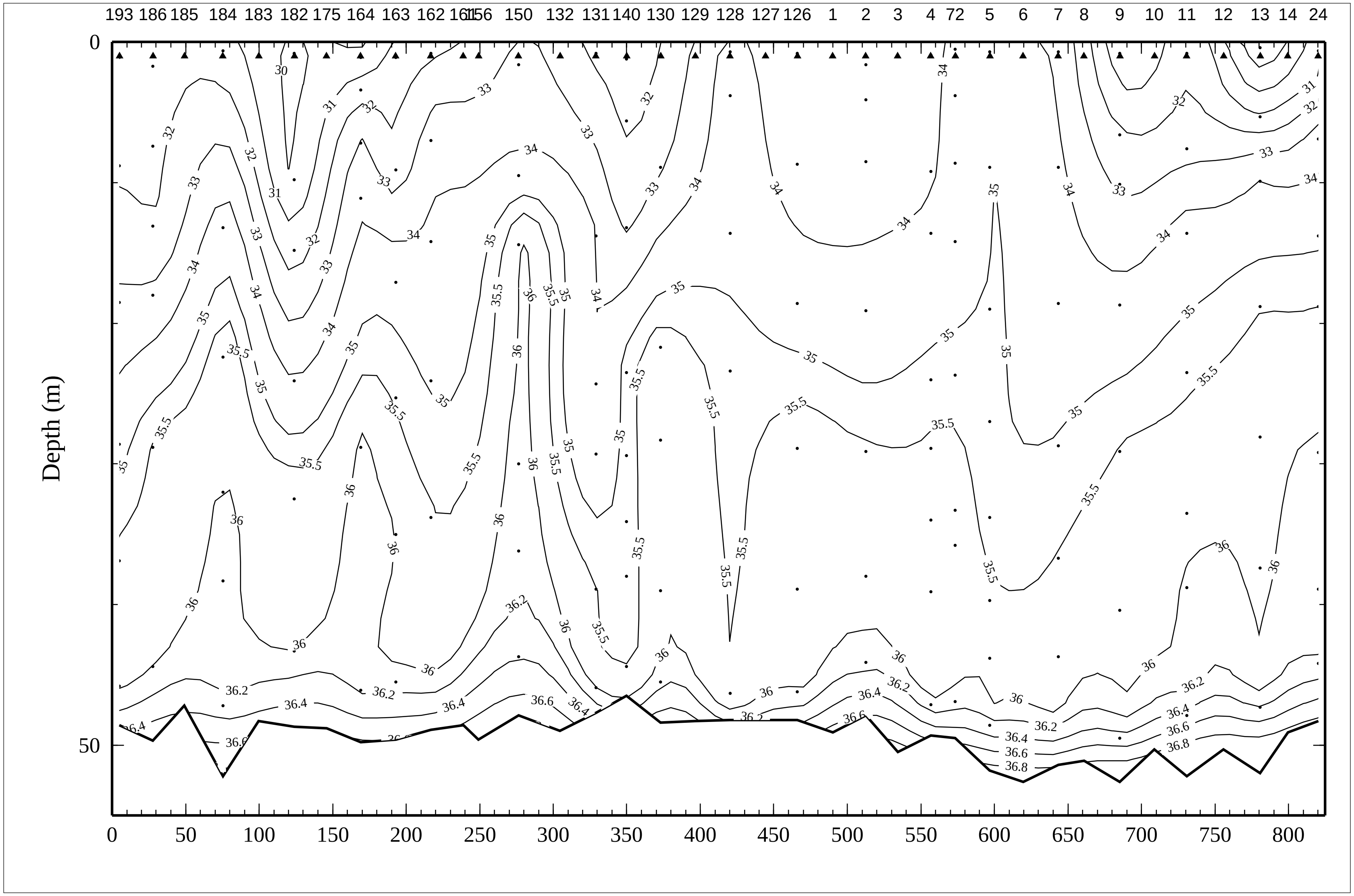

Figure 5.10.8. Bottle salinity on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

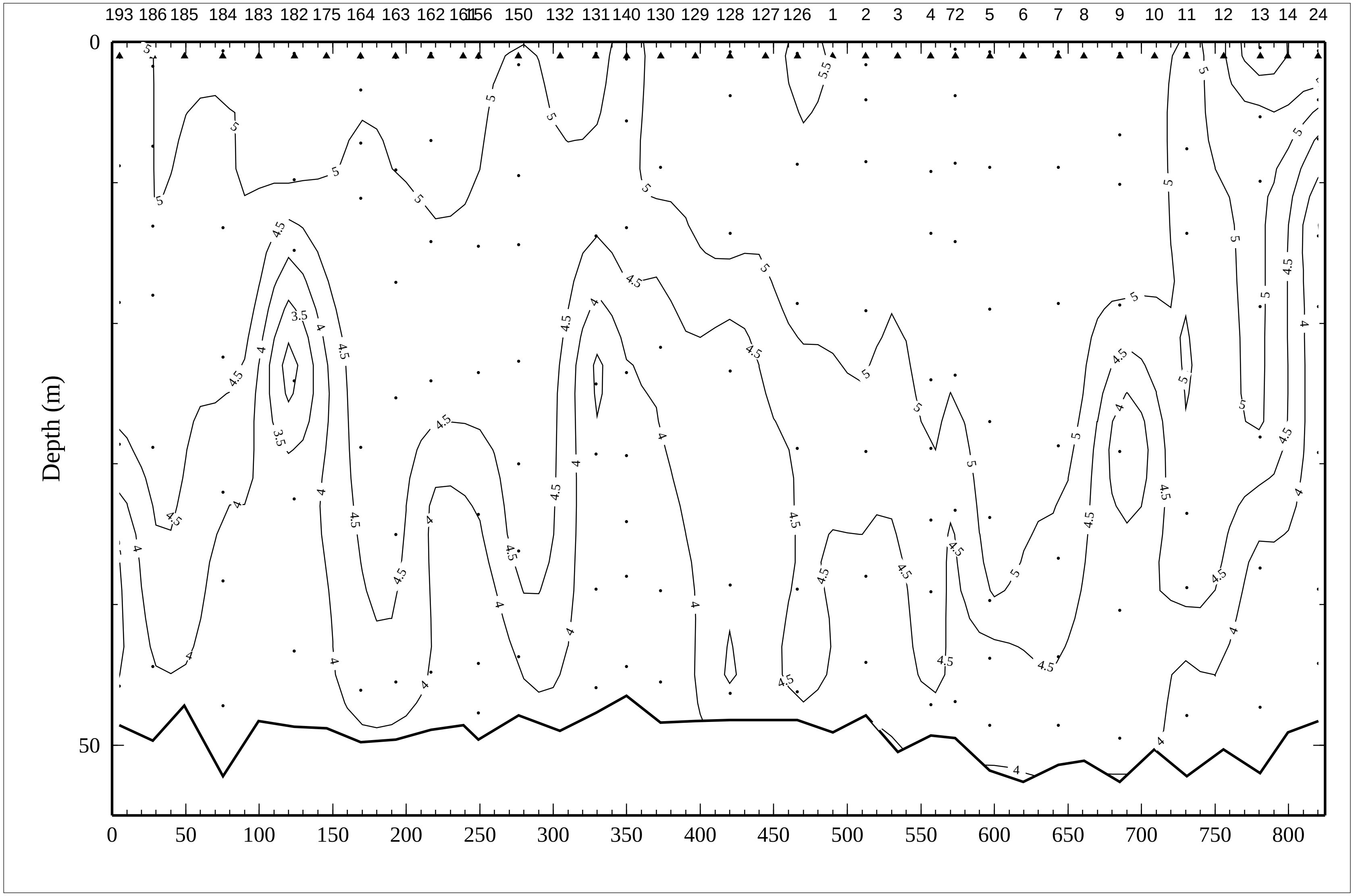

Figure 5.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

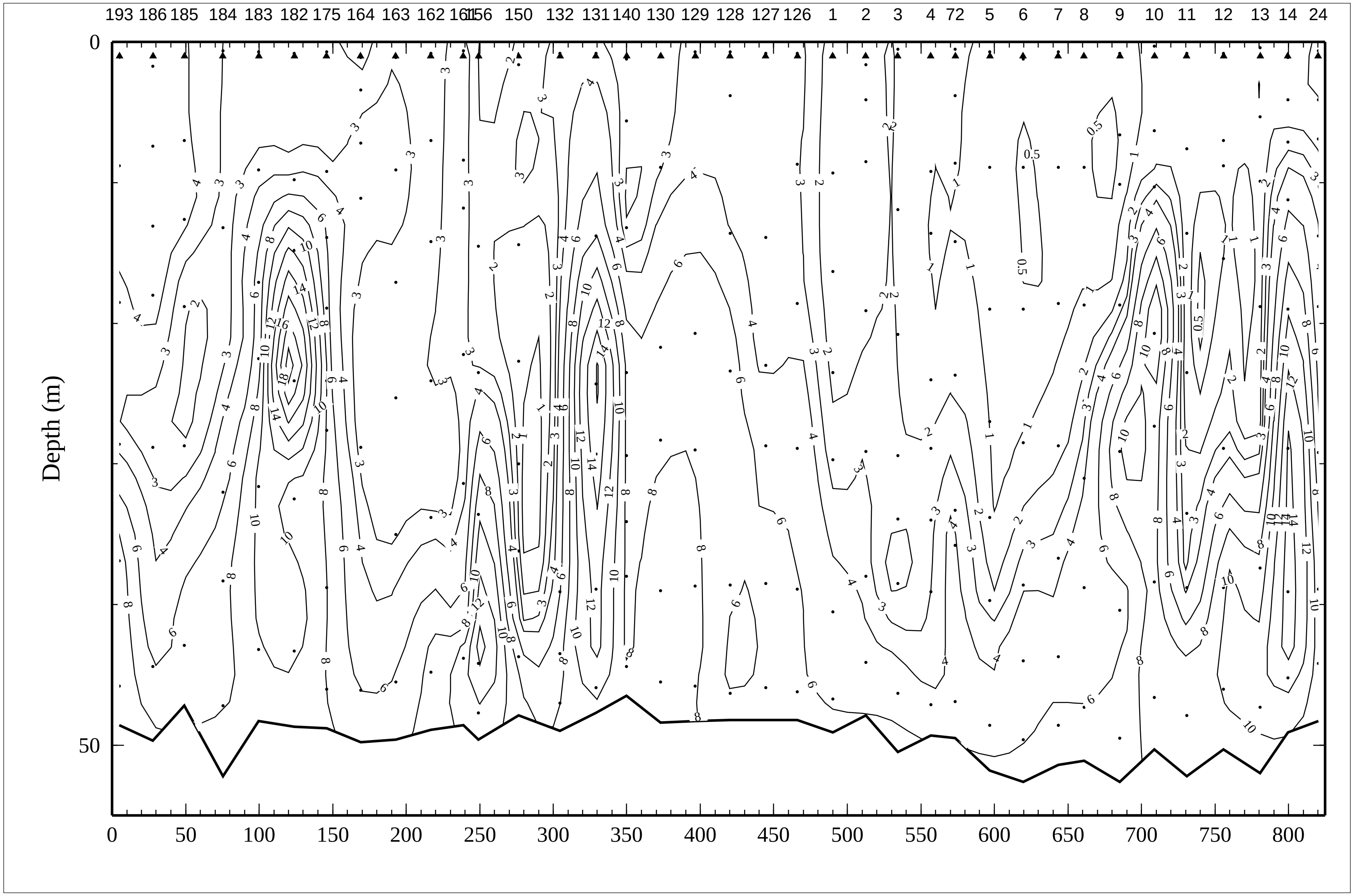

Figure 5.10.10. Silicate (µmol·l^{-1}) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

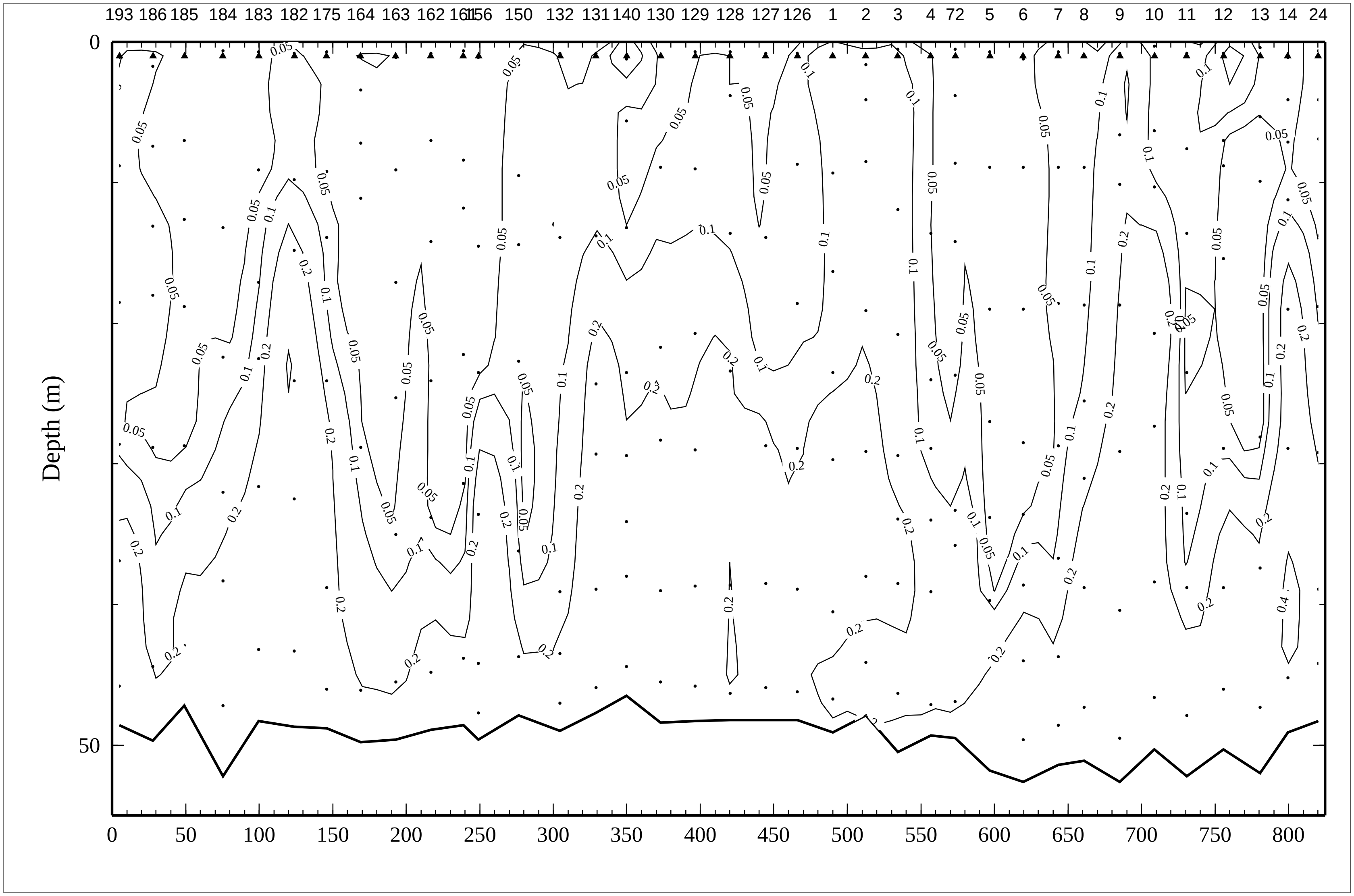

Figure 5.10.11. Phosphate (μmol·l^{-1}) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

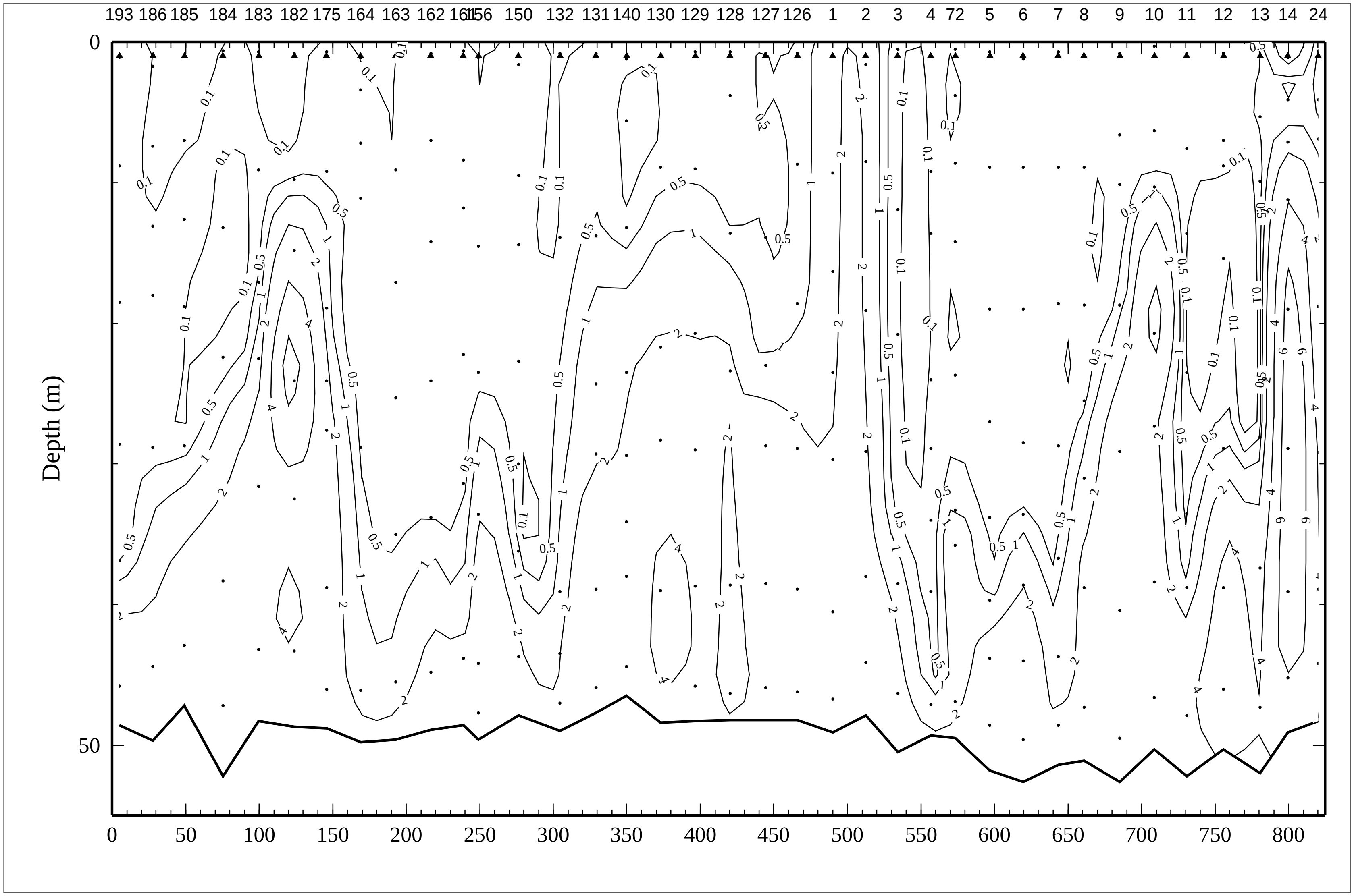

Figure 5.10.12. Nitrate (μmol·l^{-1}) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

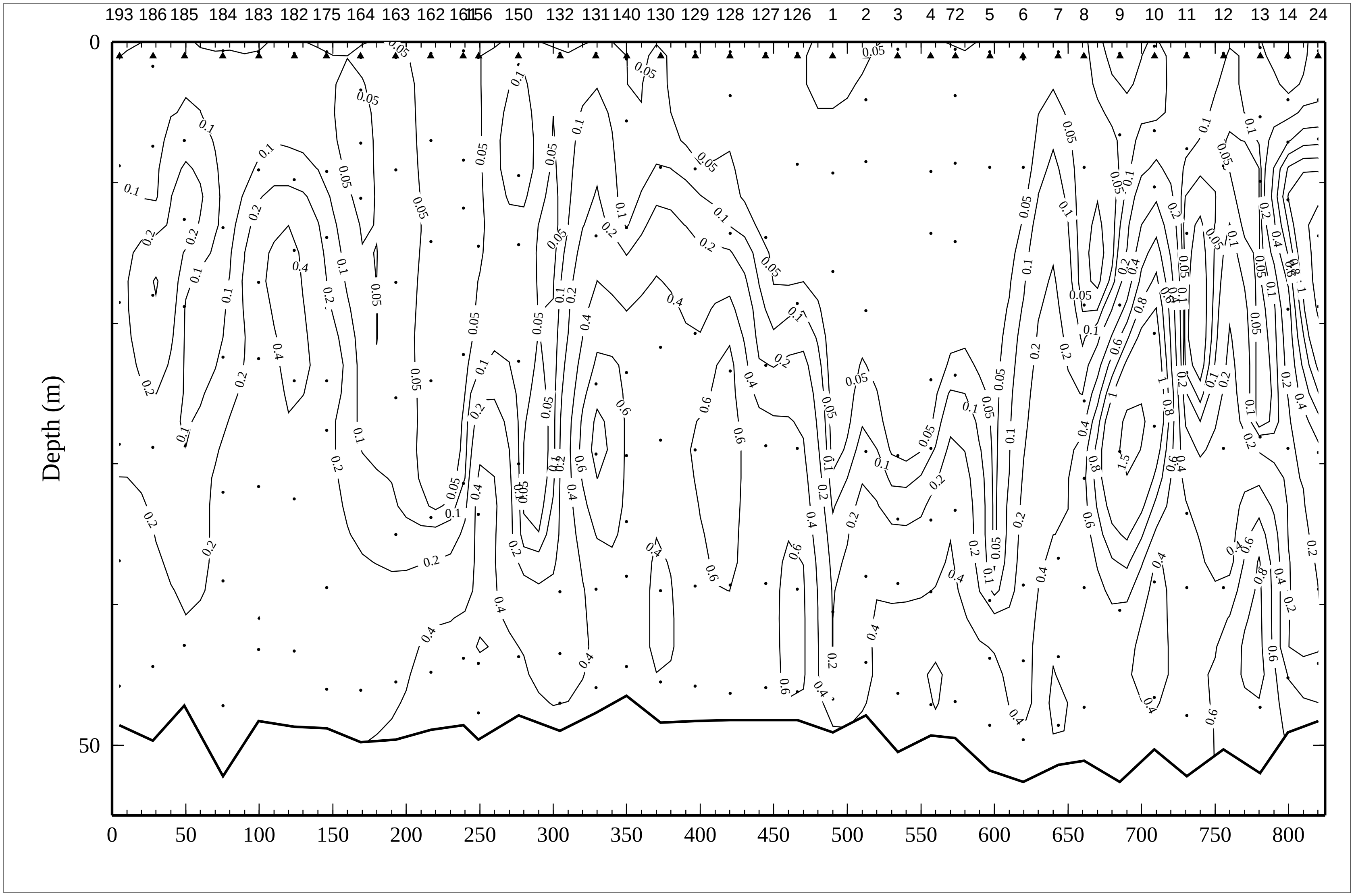

Figure 5.10.13. Nitrite (μmol·l^{-1}) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

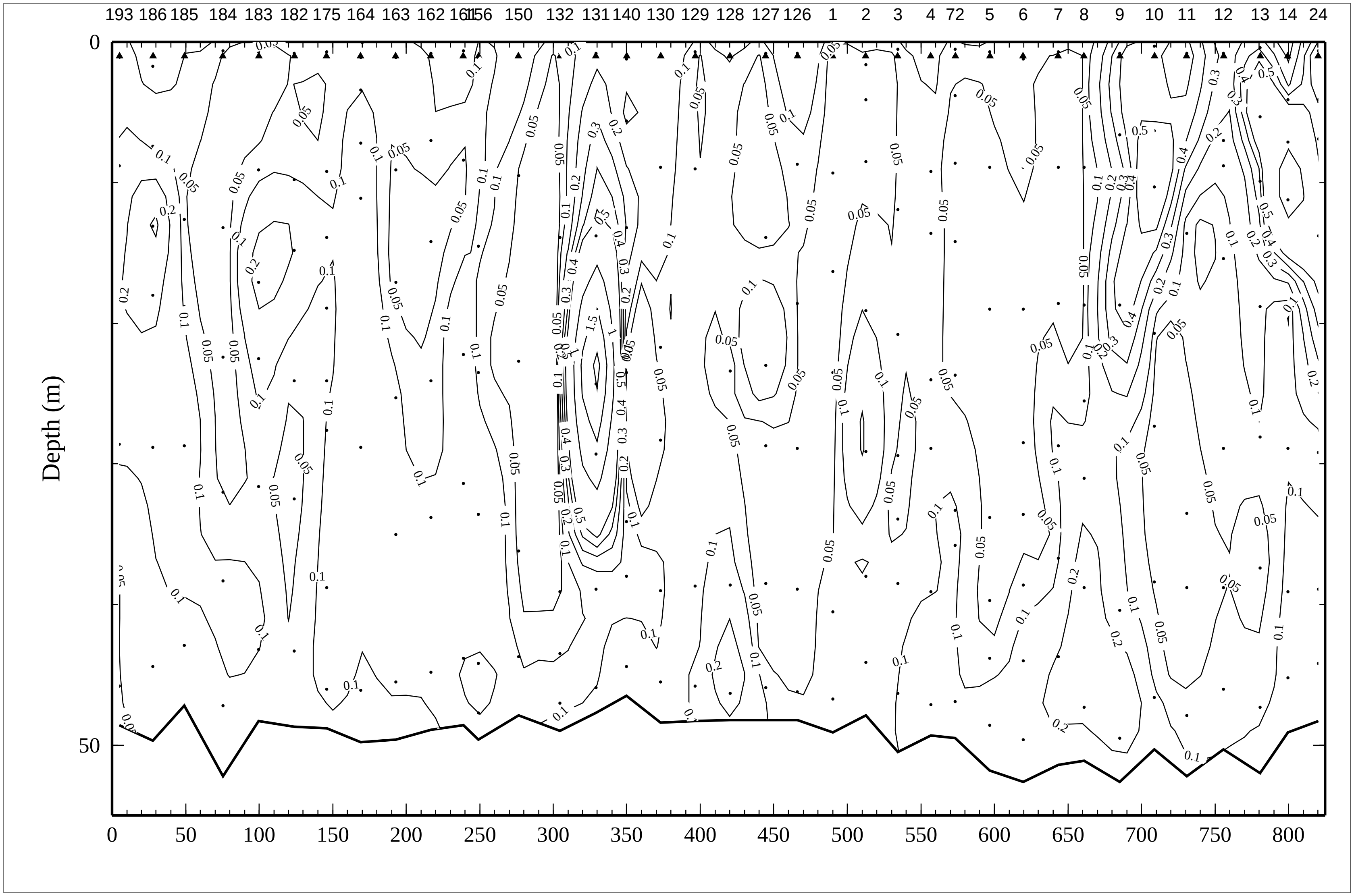

Figure 5.10.14. Ammonium (μmol·l⁻¹) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

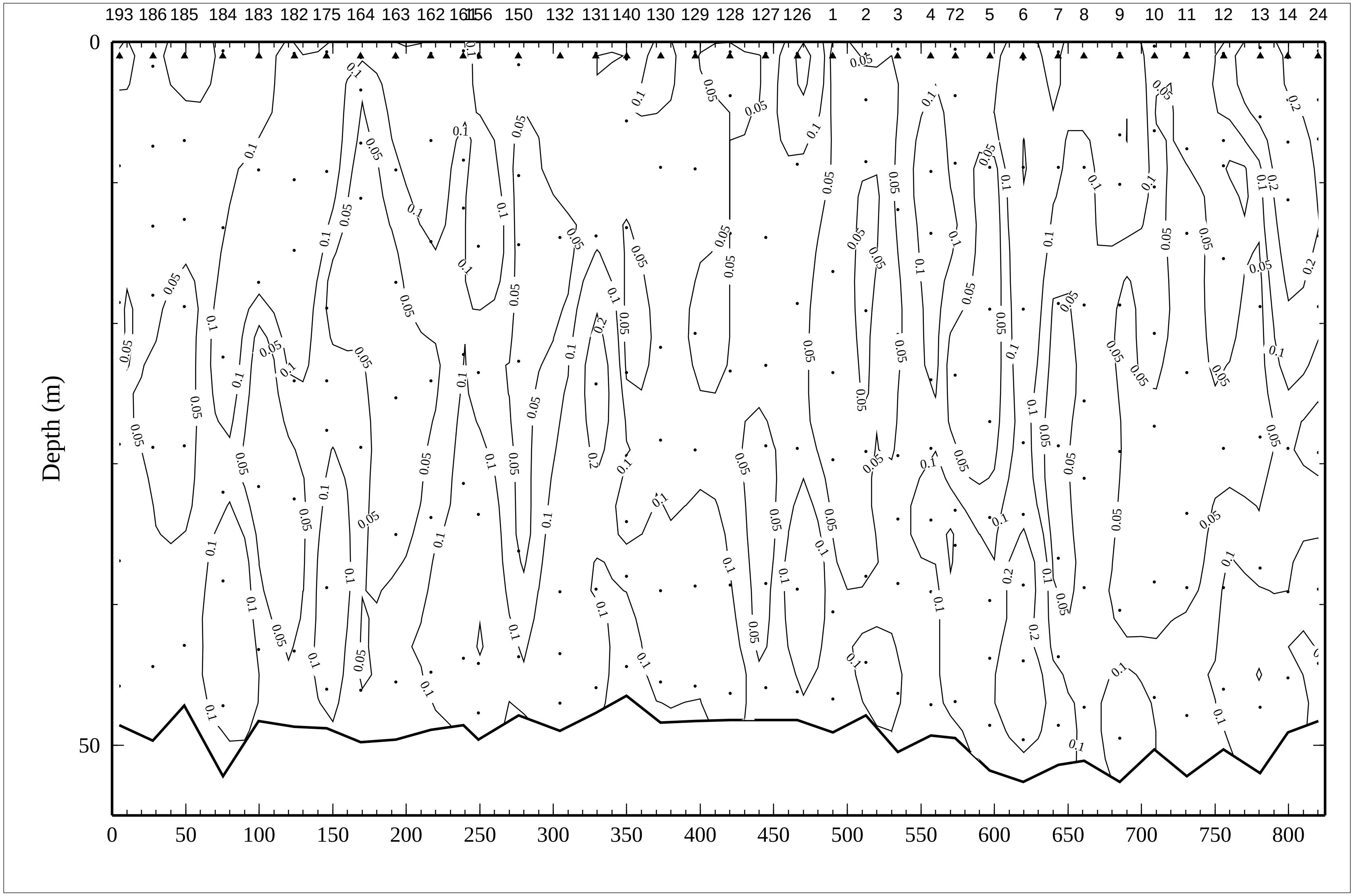

Figure 5.10.15. Urea (μmol·l^{-1}) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

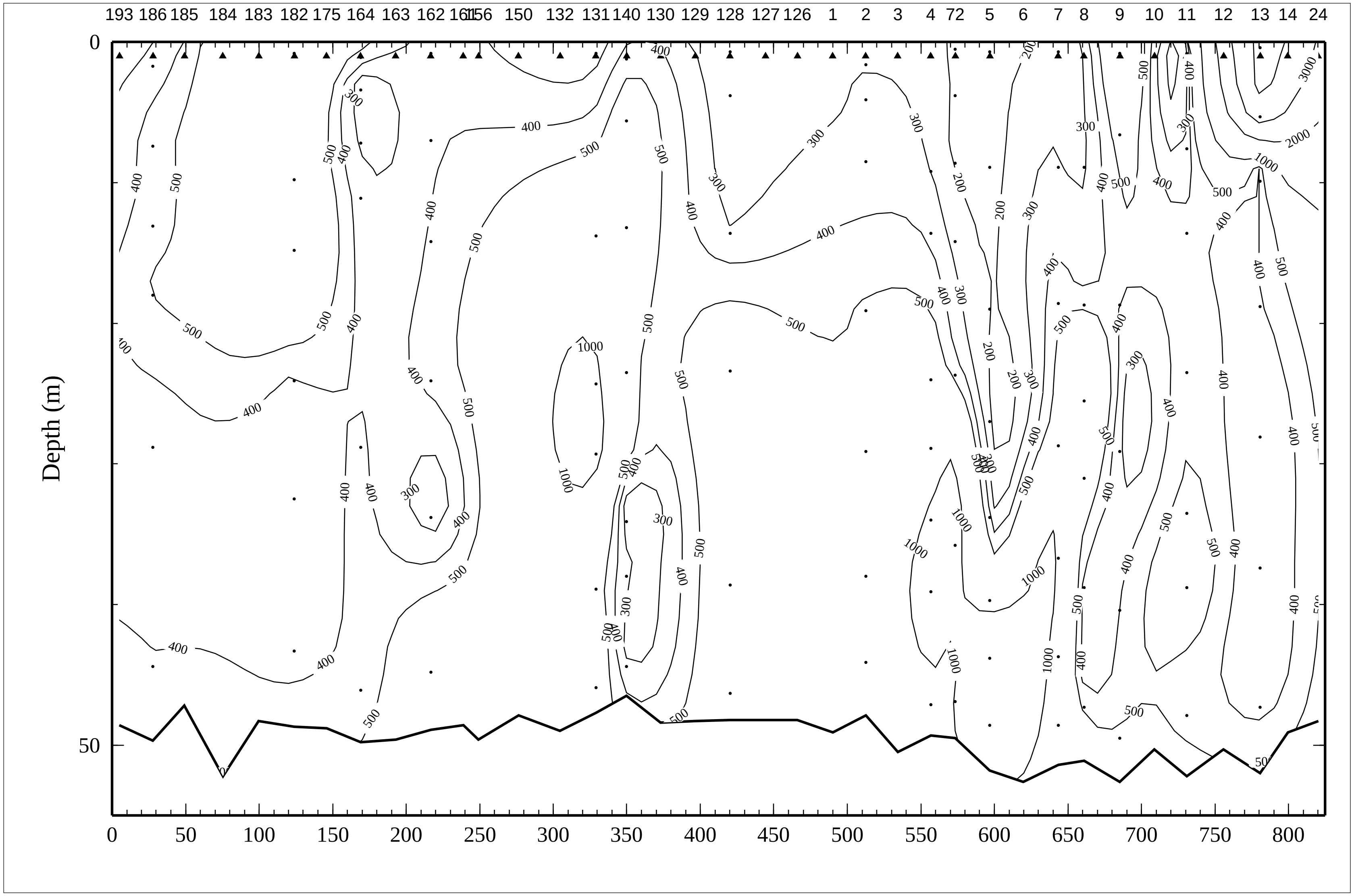

Figure 5.10.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 10 of LATEX A survey H05, 25 April - 11 May 1993.

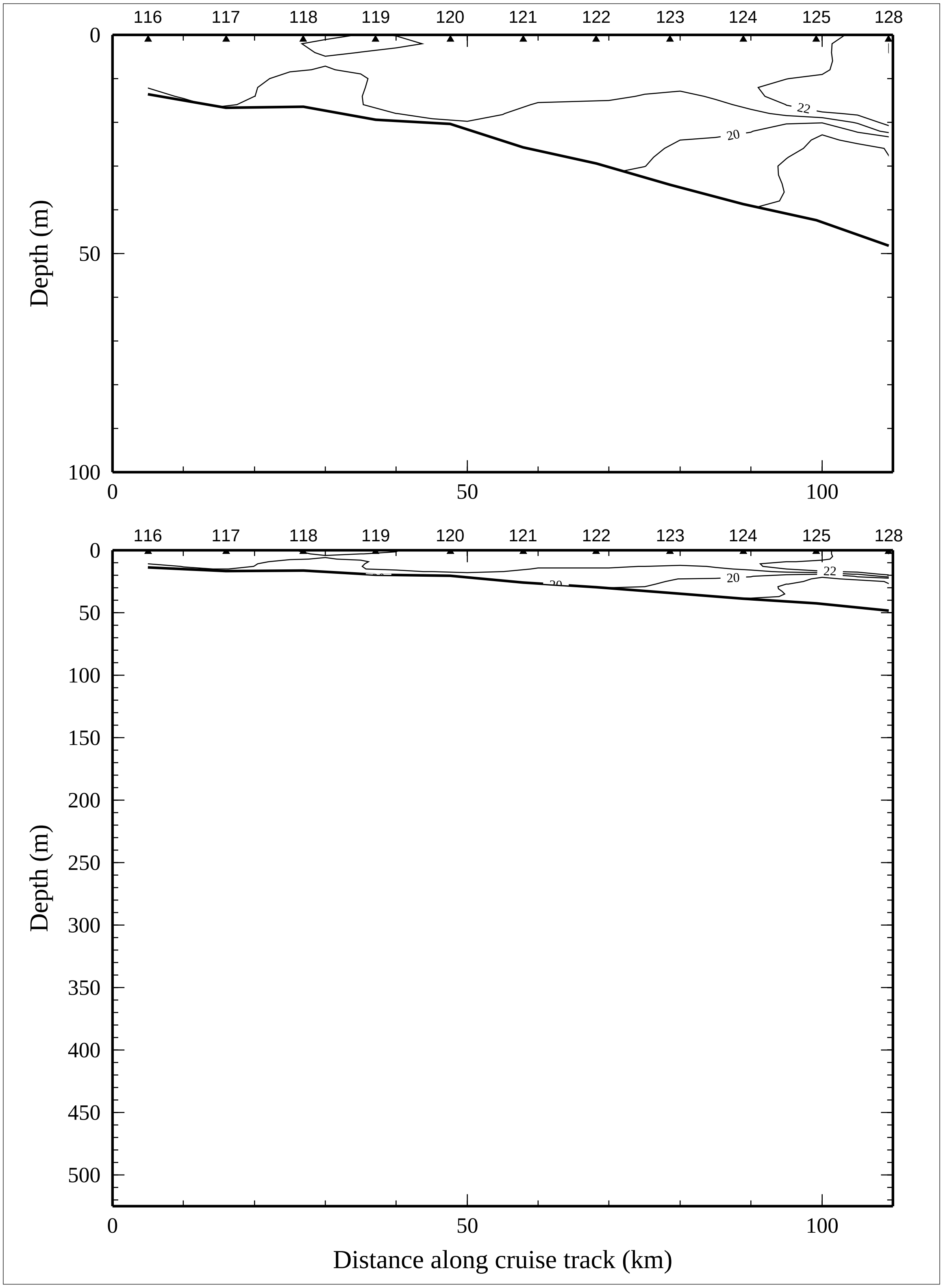

Figure 5.11.1. Potential temperature (˚C) on line 11 of LATEX A survey H05,
25 April - 11 May 1993.

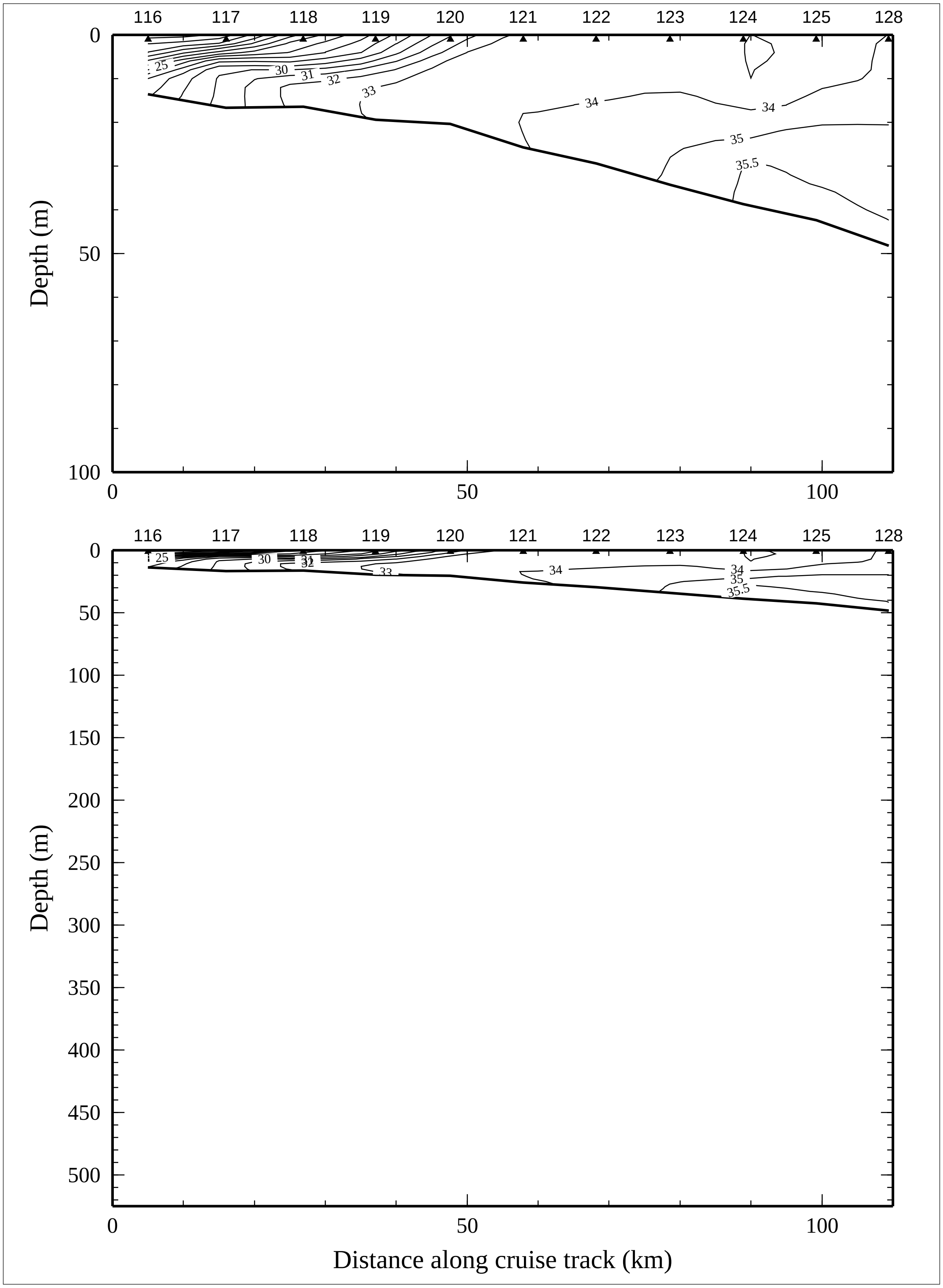

Figure 5.11.2. Salinity, derived from CTD data, on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

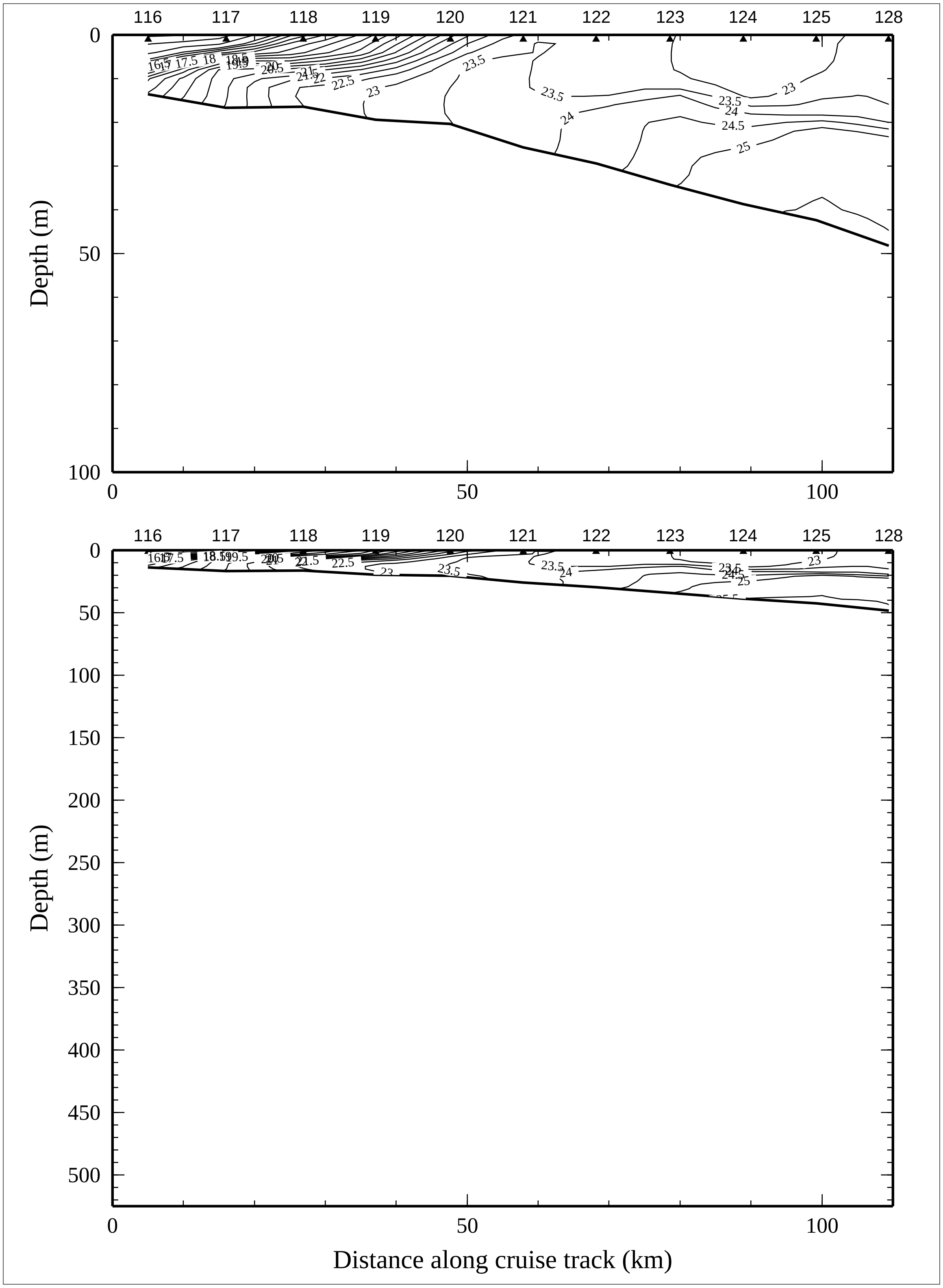

Figure 5.11.3. Density anomaly (σ_θ in kg·m^{-3}) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

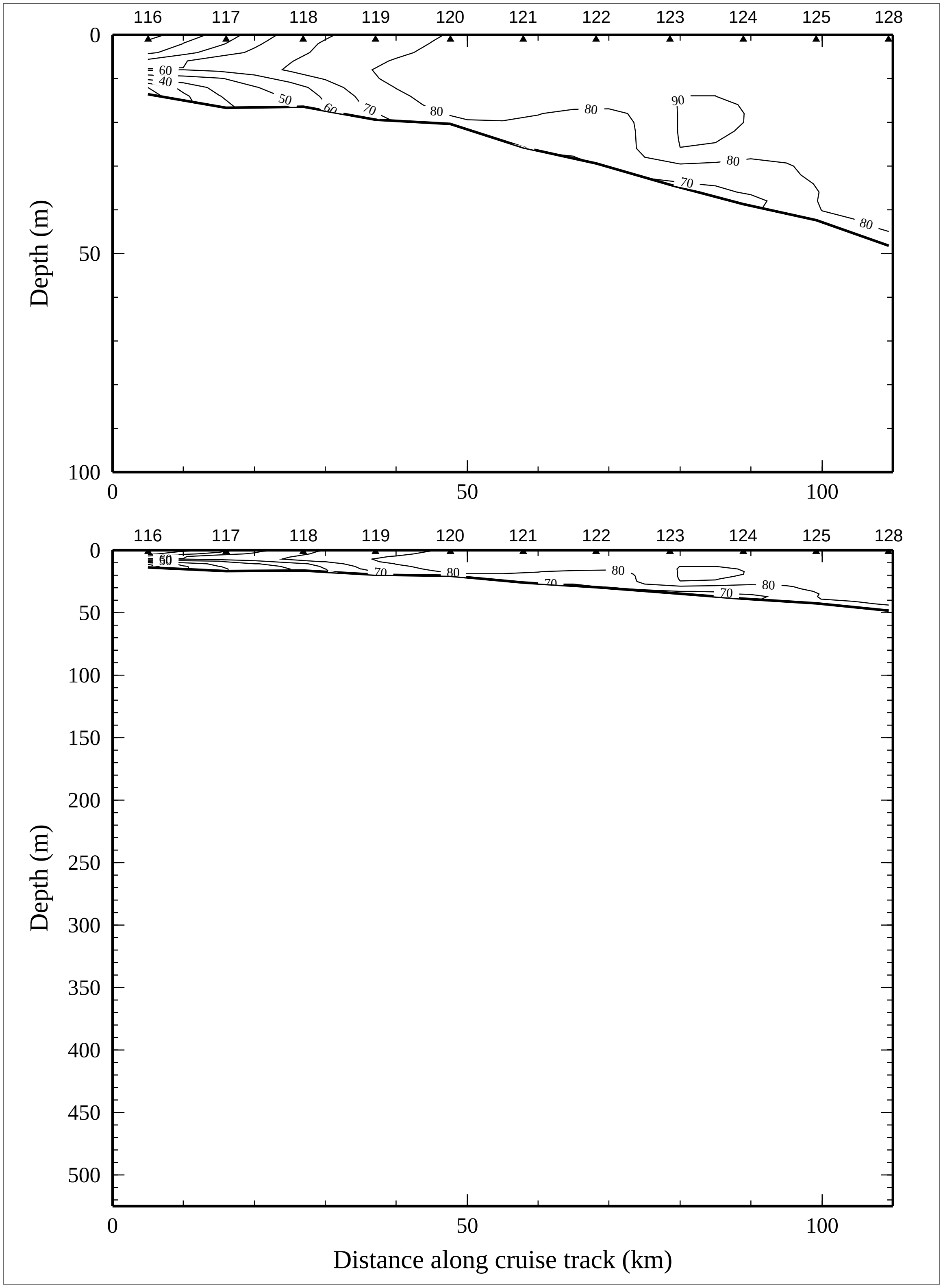

Figure 5.11.4. Percent transmission (660 nm wave length; 25-cm path length) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

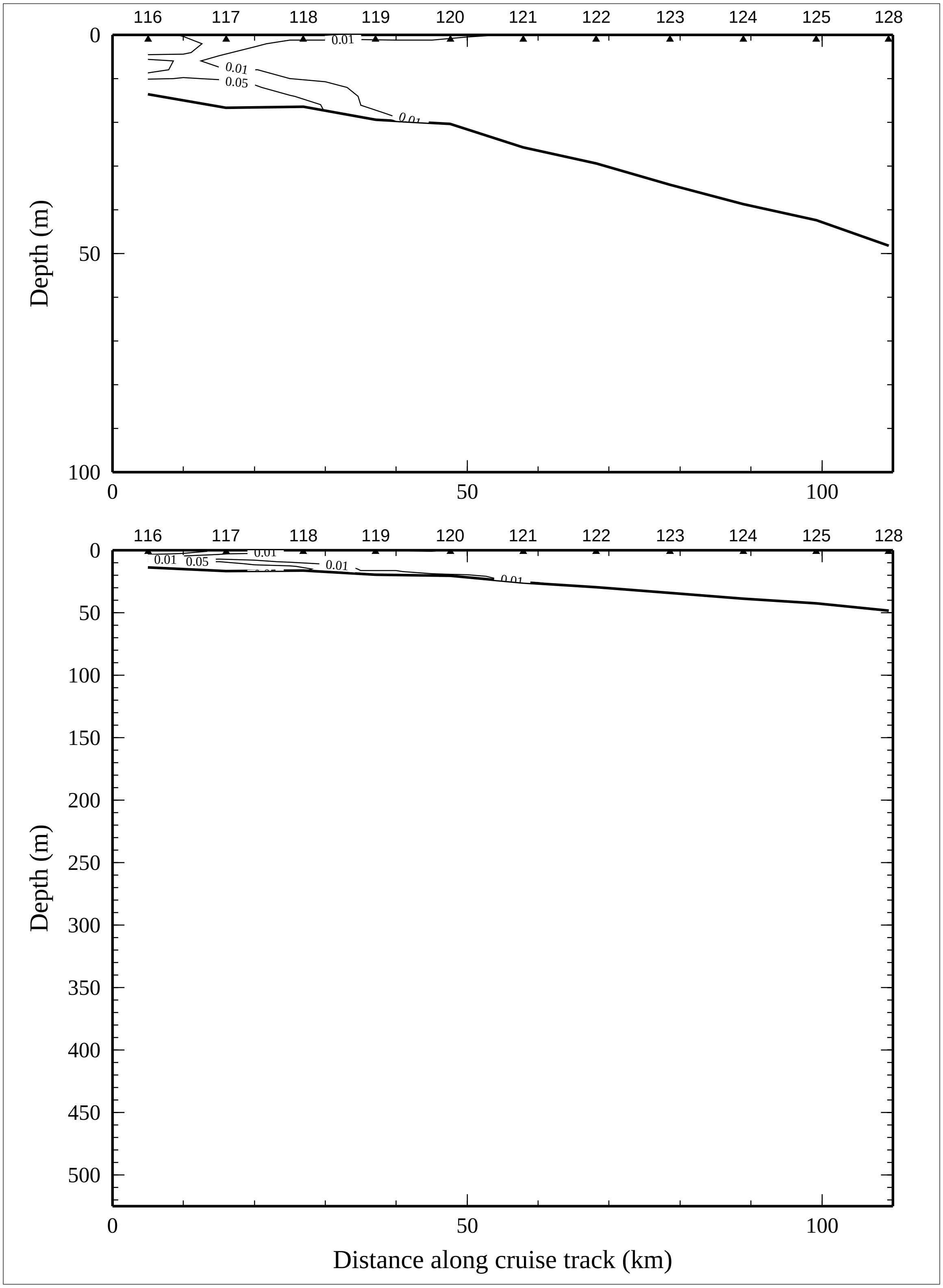

Figure 5.11.5. Optical backscatterance (voltage) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

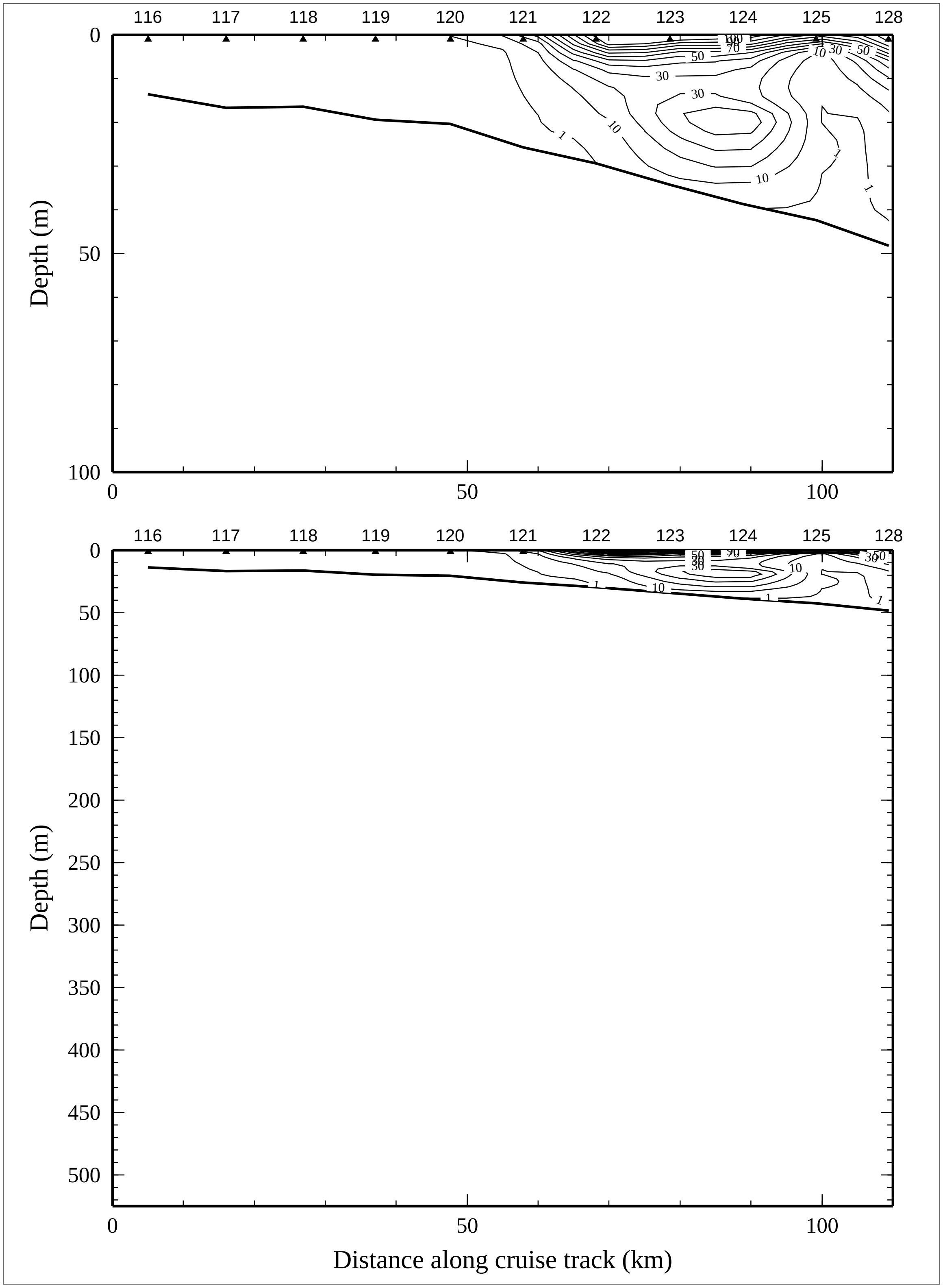

Figure 5.11.6. Downwelling irradiance as percent of surface irradiance on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

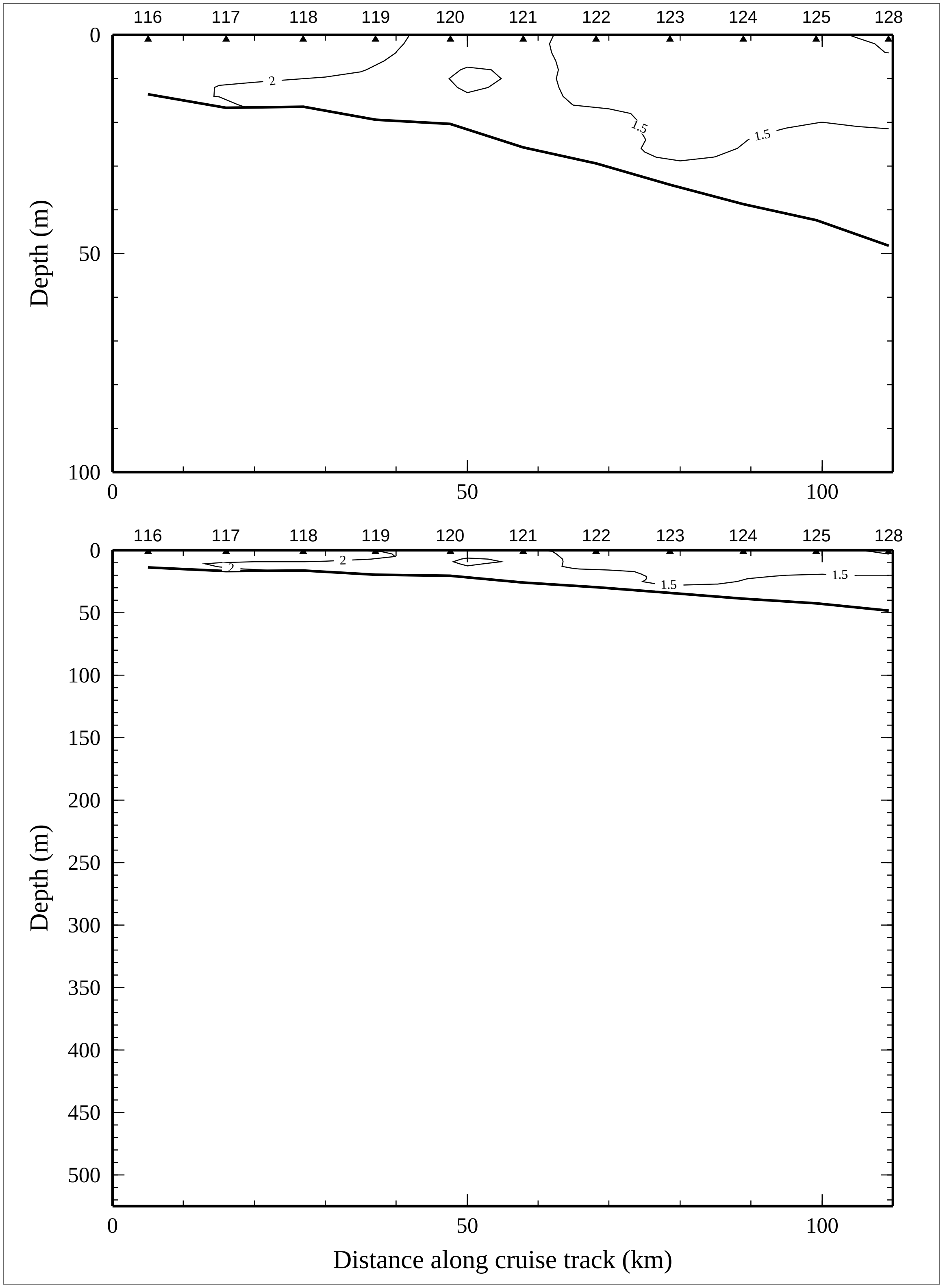

Figure 5.11.7. Relative fluorescence on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

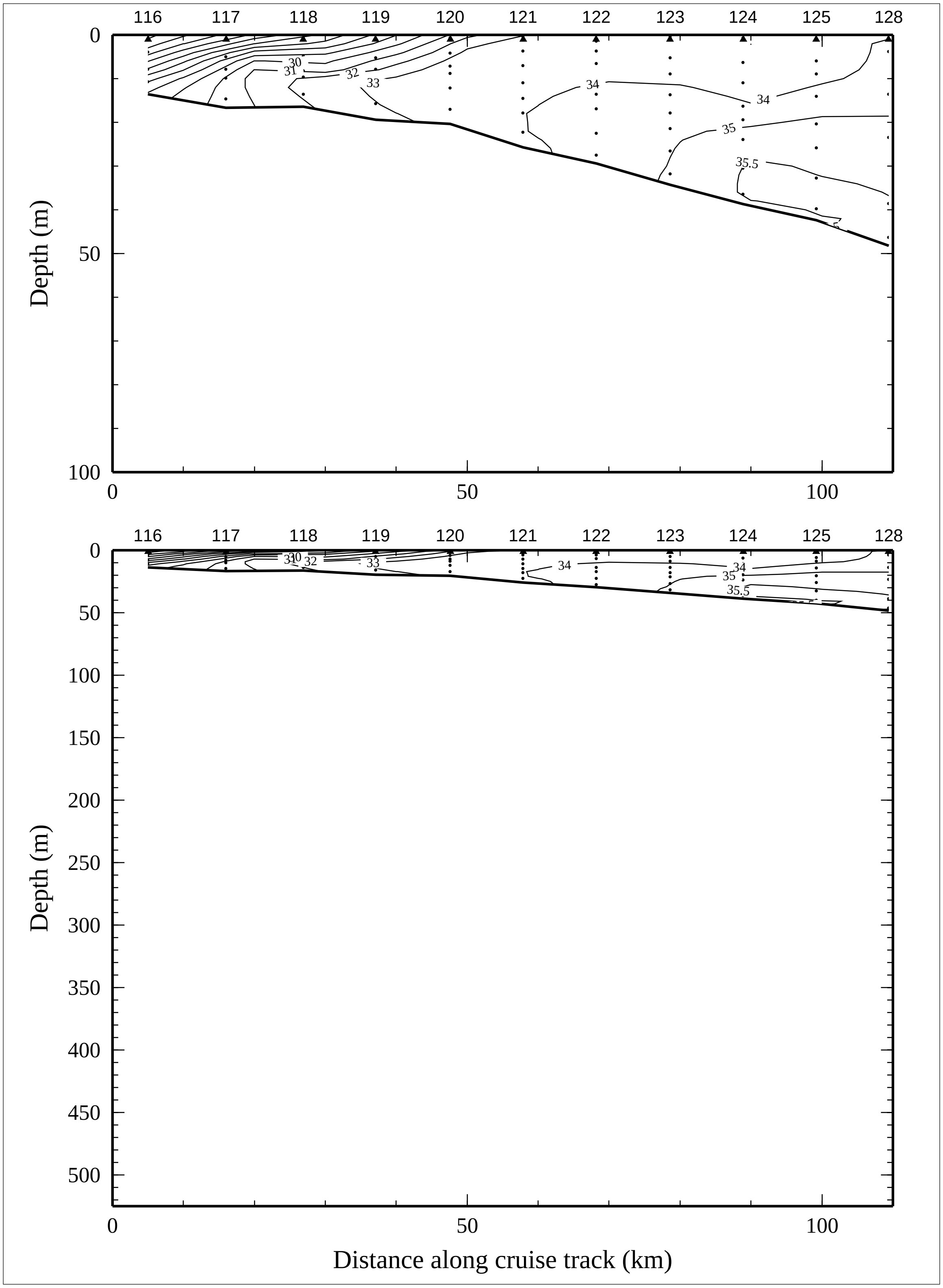

Figure 5.11.8. Bottle salinity on line 11 of LATEX A survey H05,
25 April - 11 May 1993.

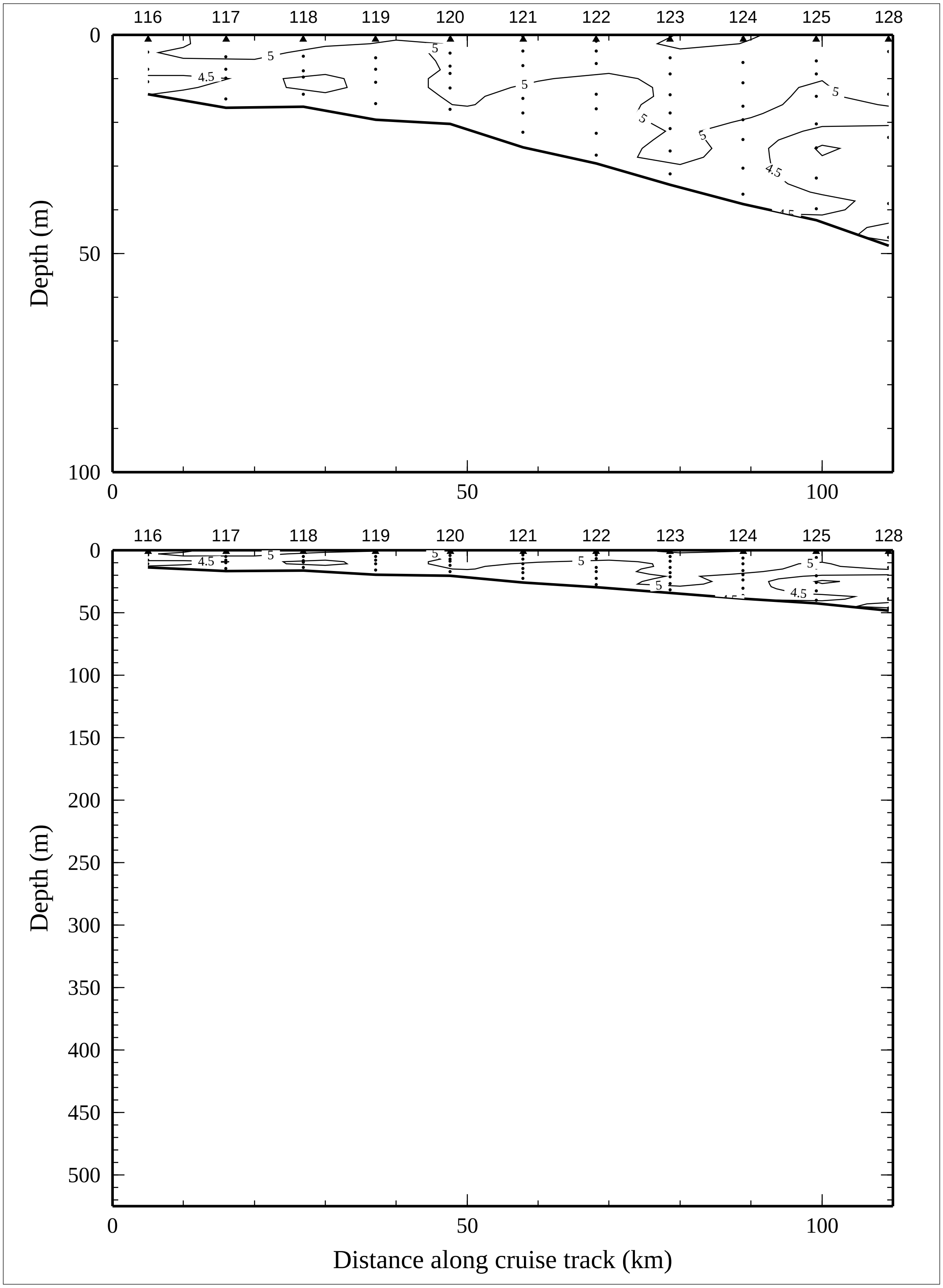

Figure 5.11.9. Dissolved oxygen ($ml \cdot l^{-1}$) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

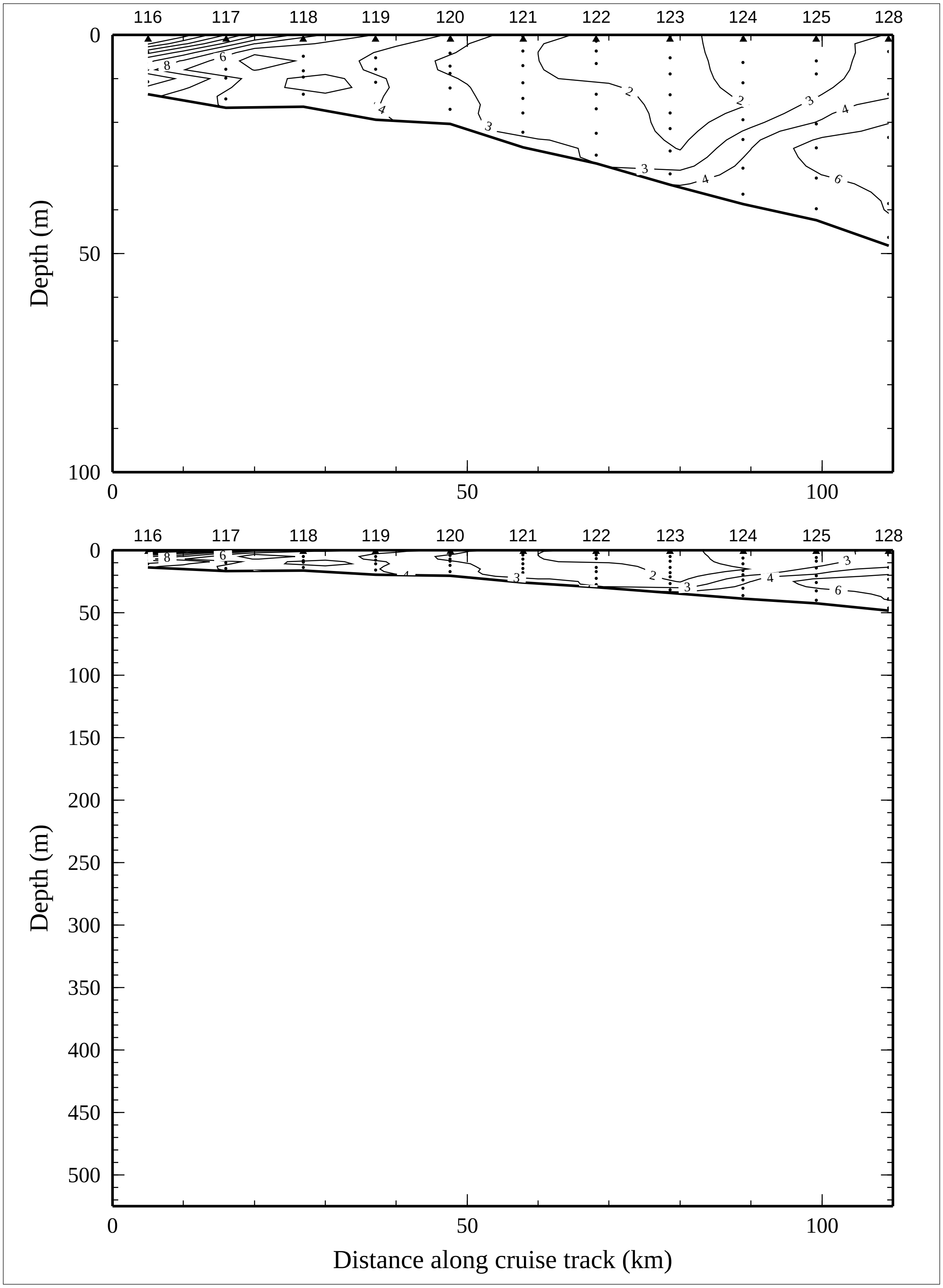

Figure 5.11.10. Silicate (μmol·l^{-1}) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

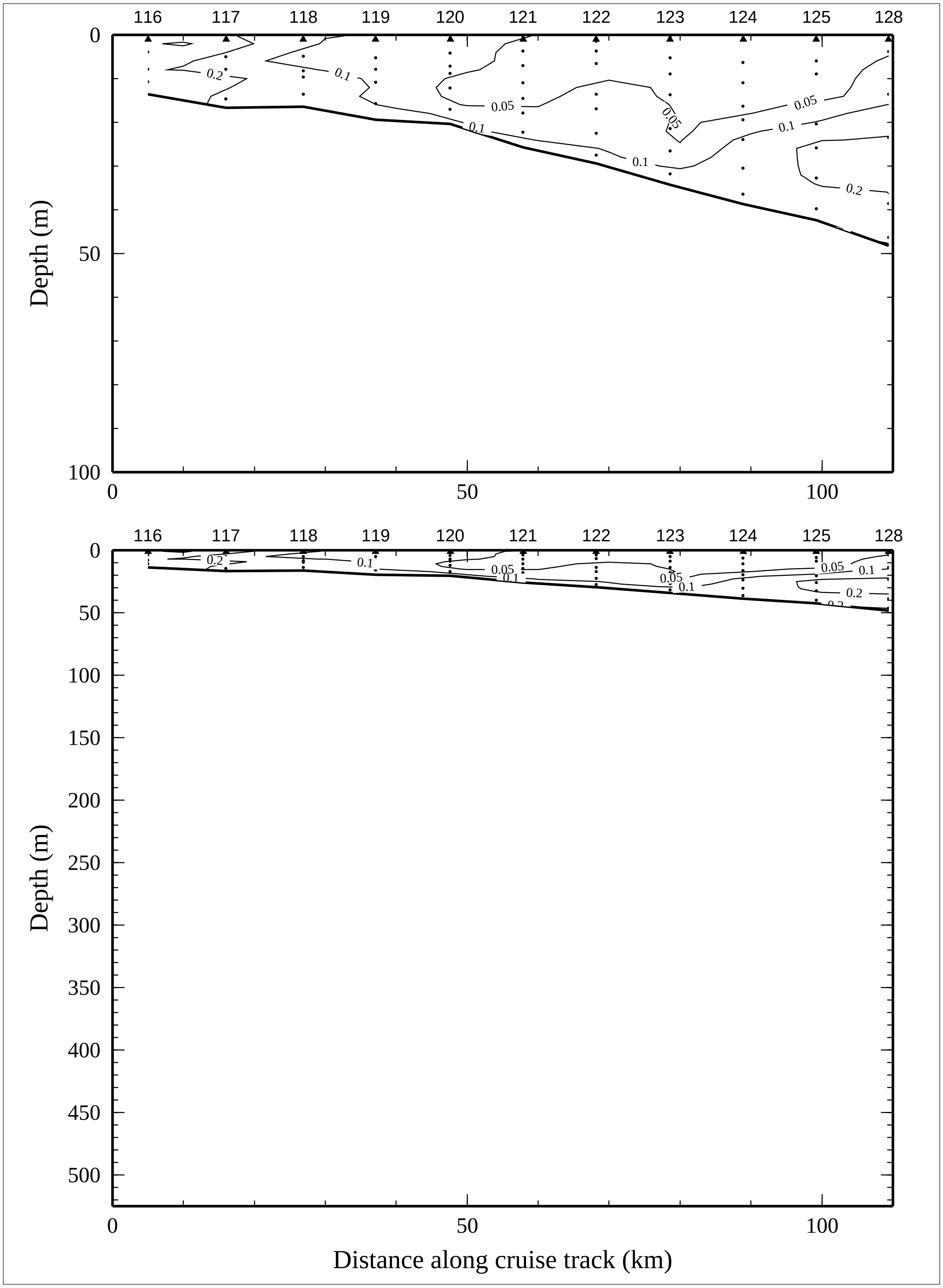

Figure 5.11.11. Phosphate (μmol·l^{-1}) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

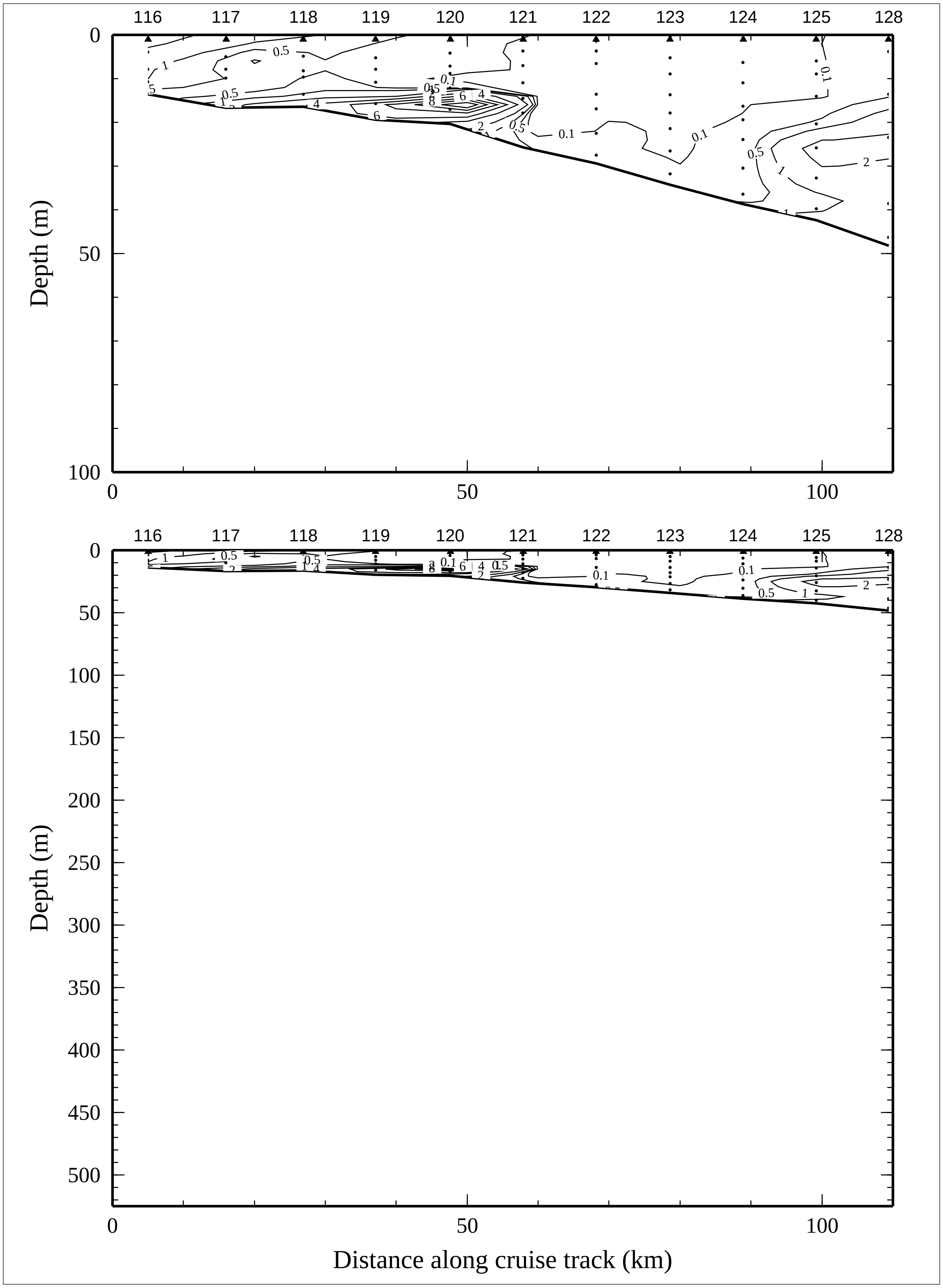

Figure 5.11.12. Nitrate (μmol·l^{-1}) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

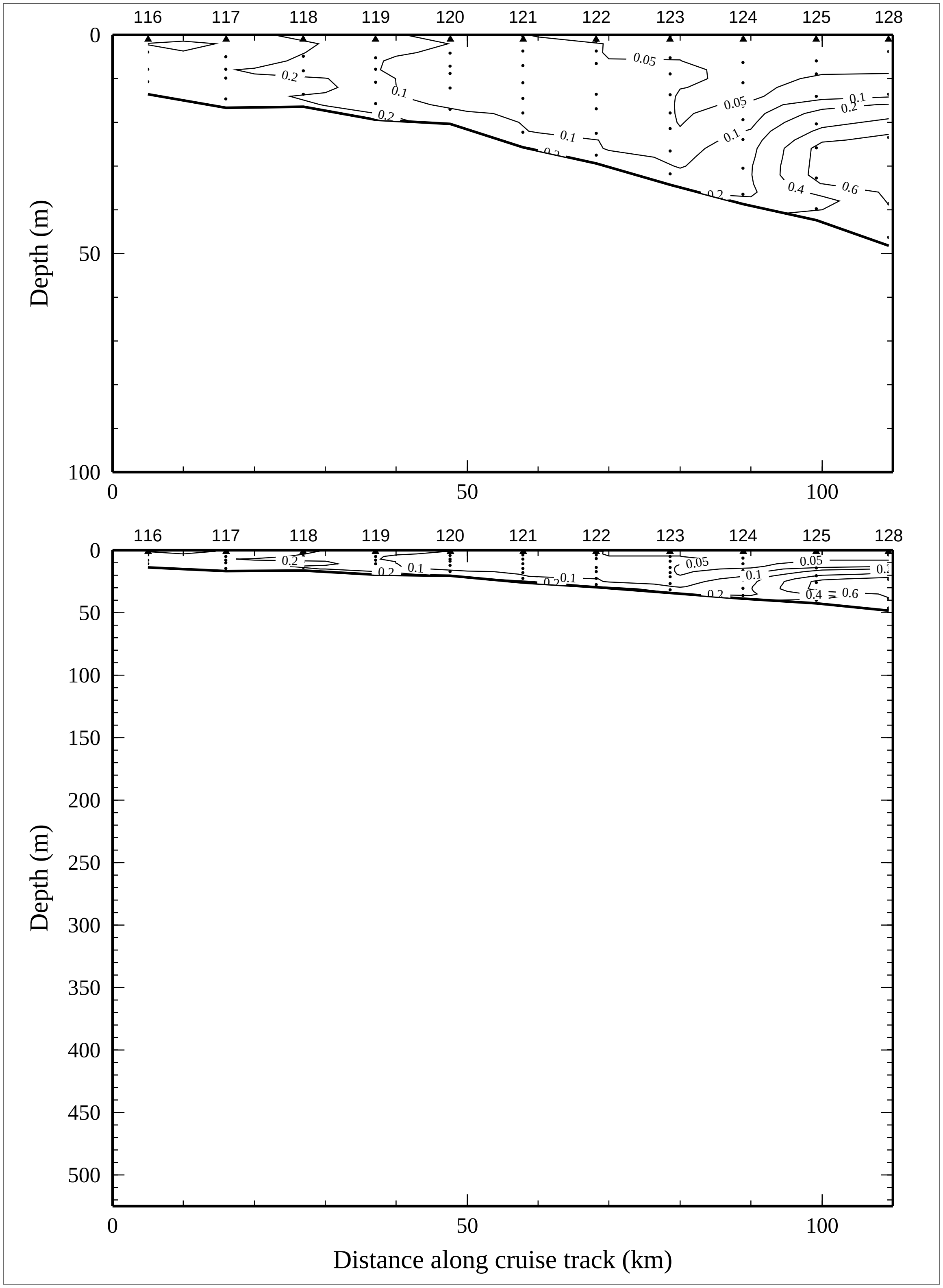

Figure 5.11.13. Nitrite (μmol·l-1) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

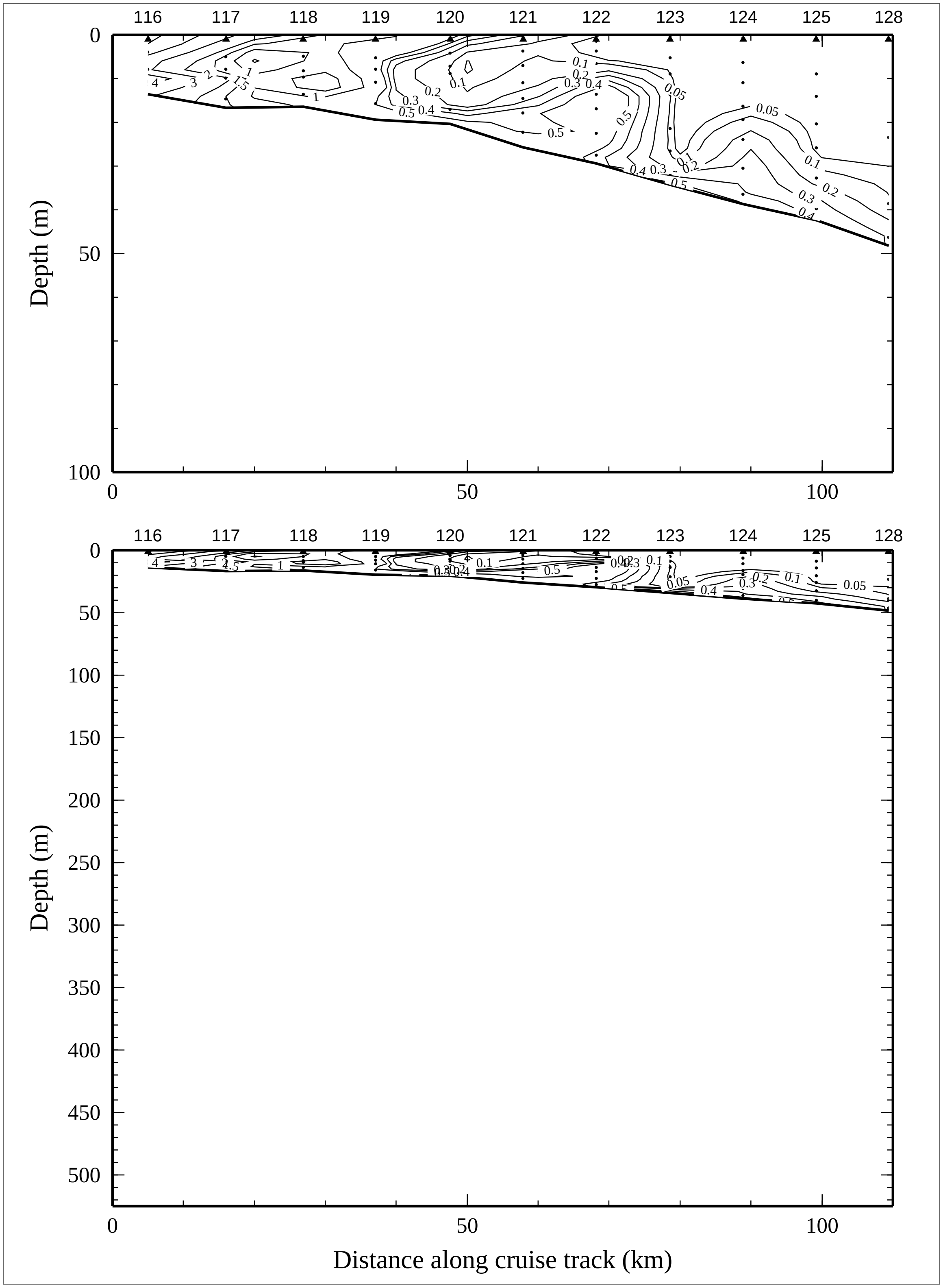

Figure 5.11.14. Ammonium (μmol·l^{-1}) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

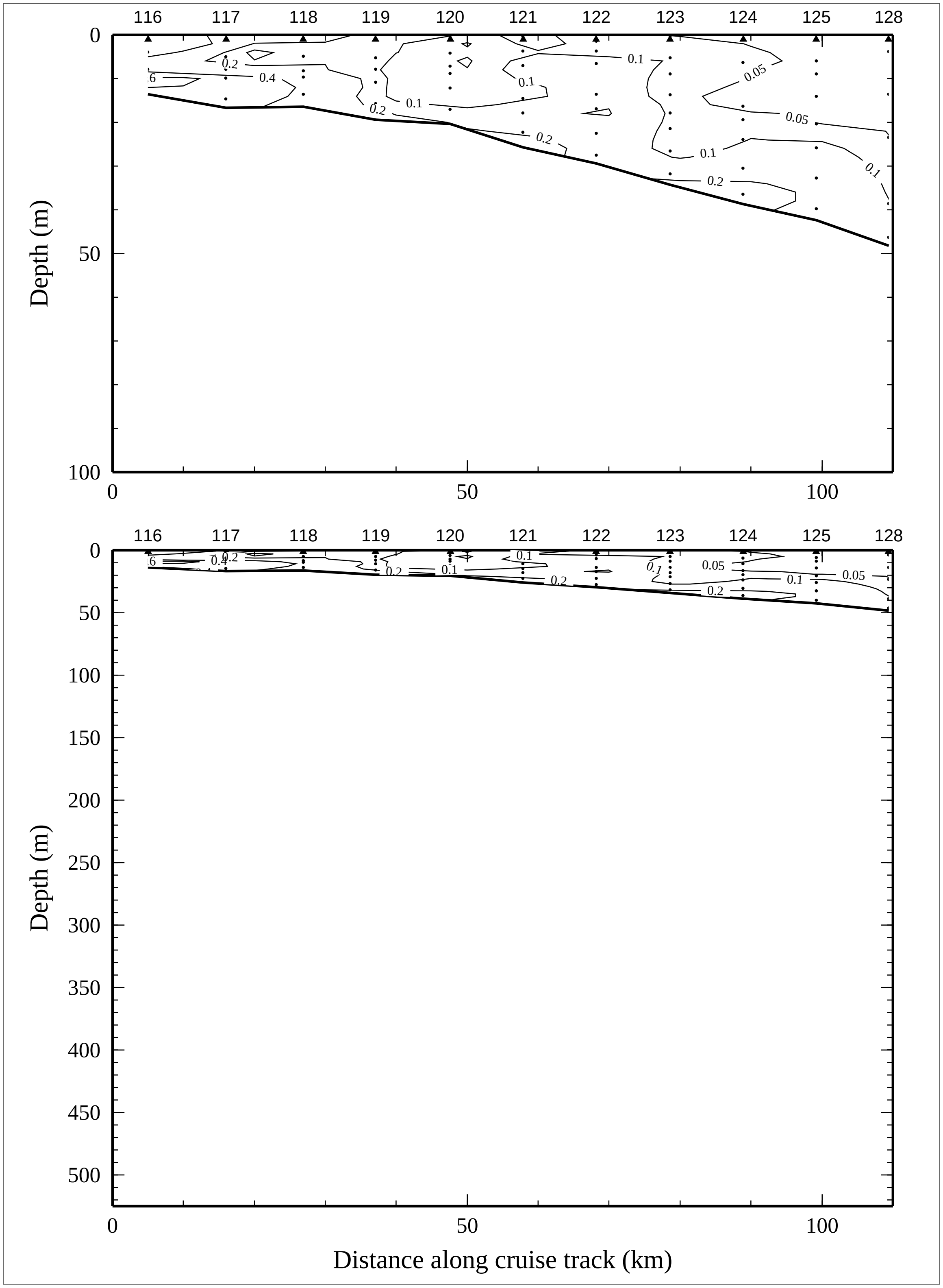

Figure 5.11.15. Urea (μmol·l⁻¹) on line 11 of LATEX A survey H05,
25 April - 11 May 1993.

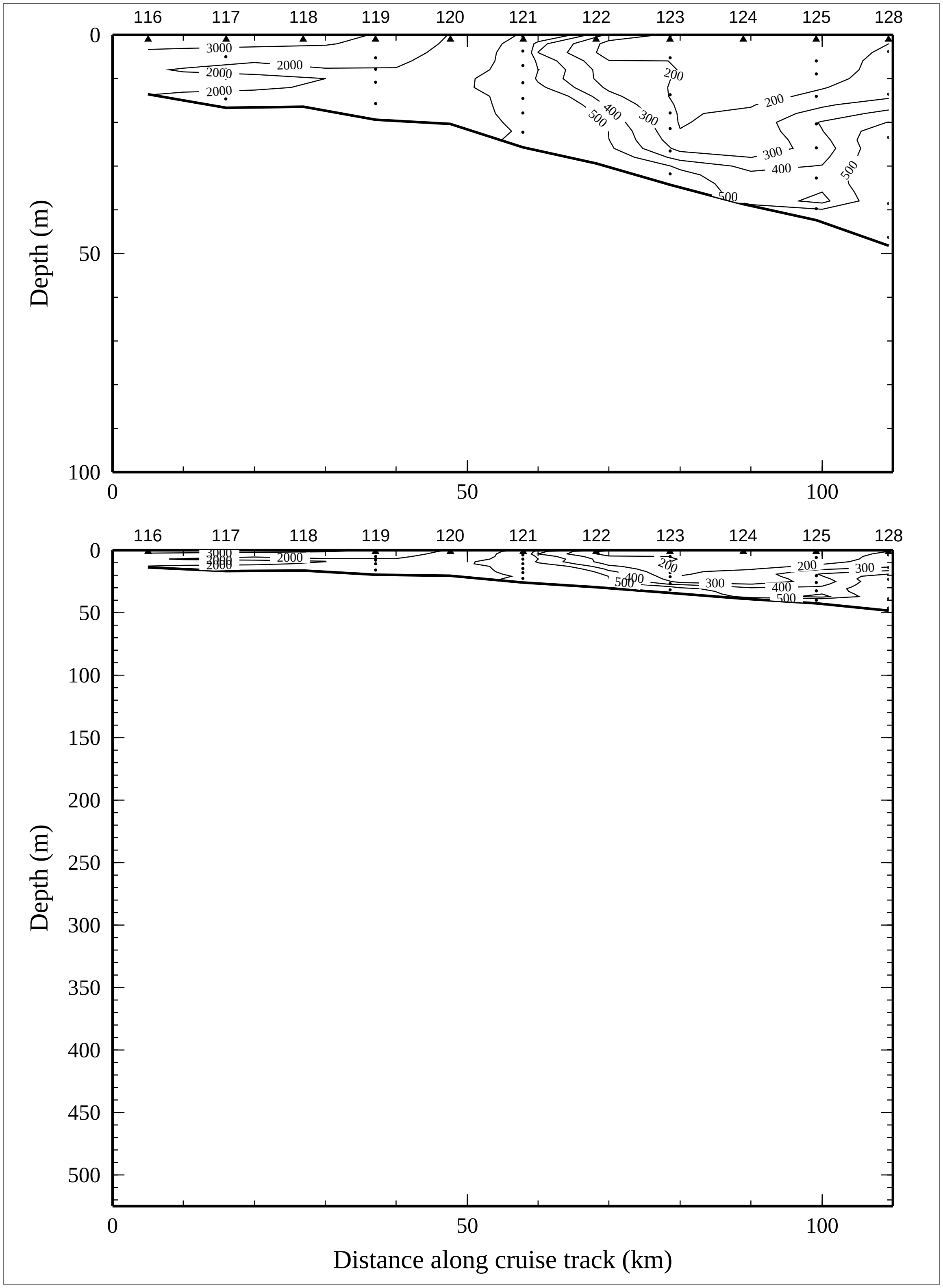

Figure 5.11.16. Chlorophyll a (ng·l^{-1}) on line 11 of LATEX A survey H05, 25 April - 11 May 1993.

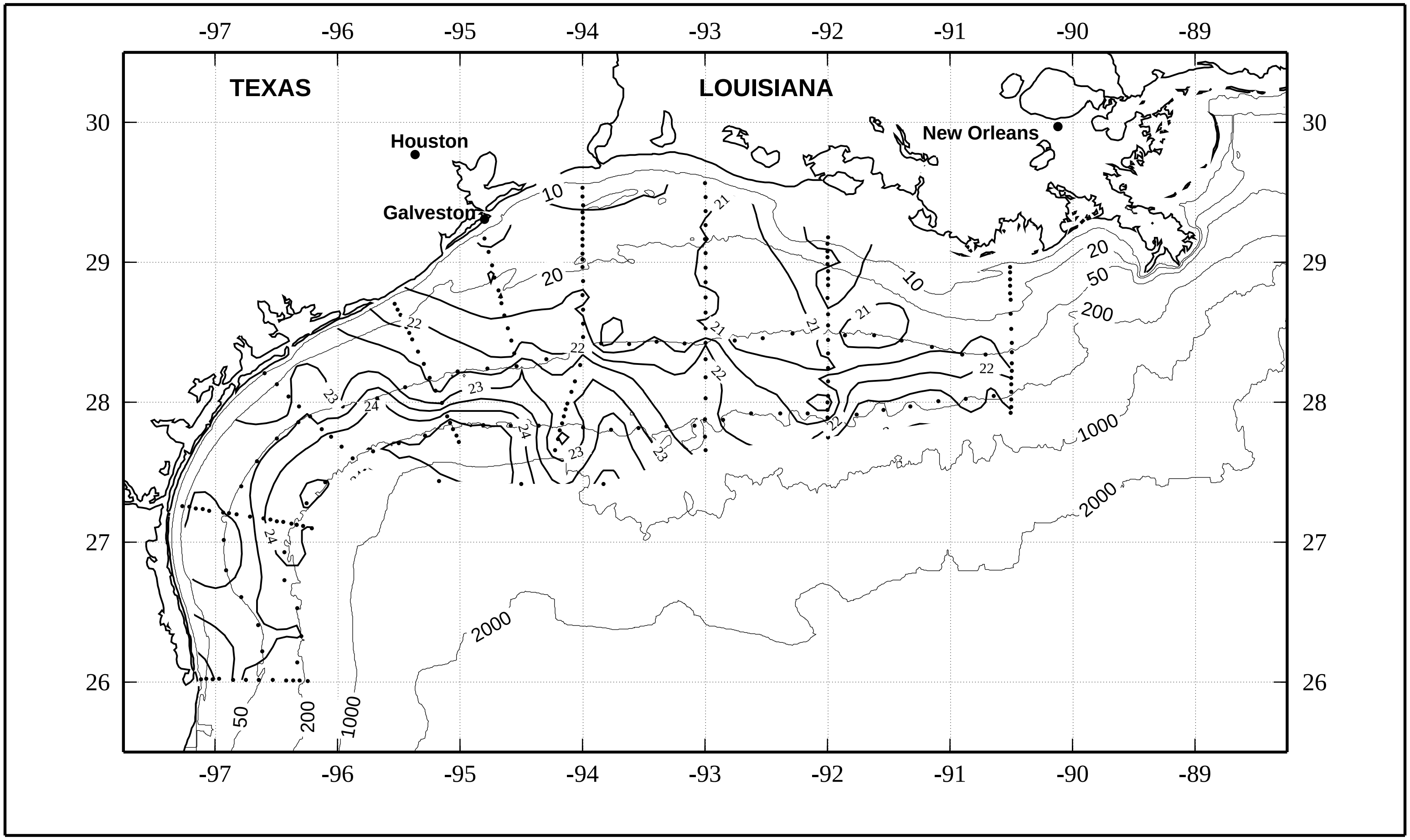

Figure 5.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

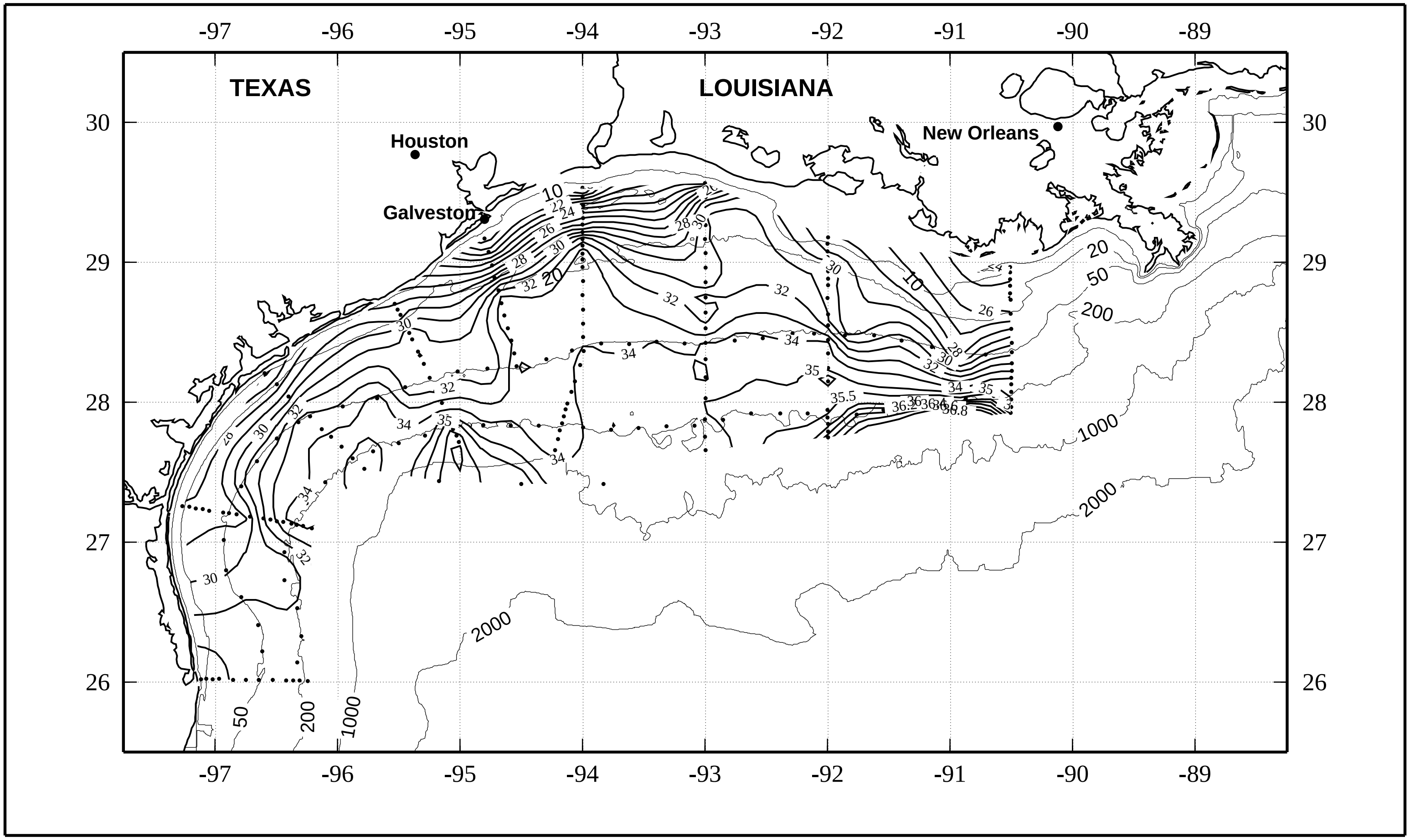

Figure 5.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

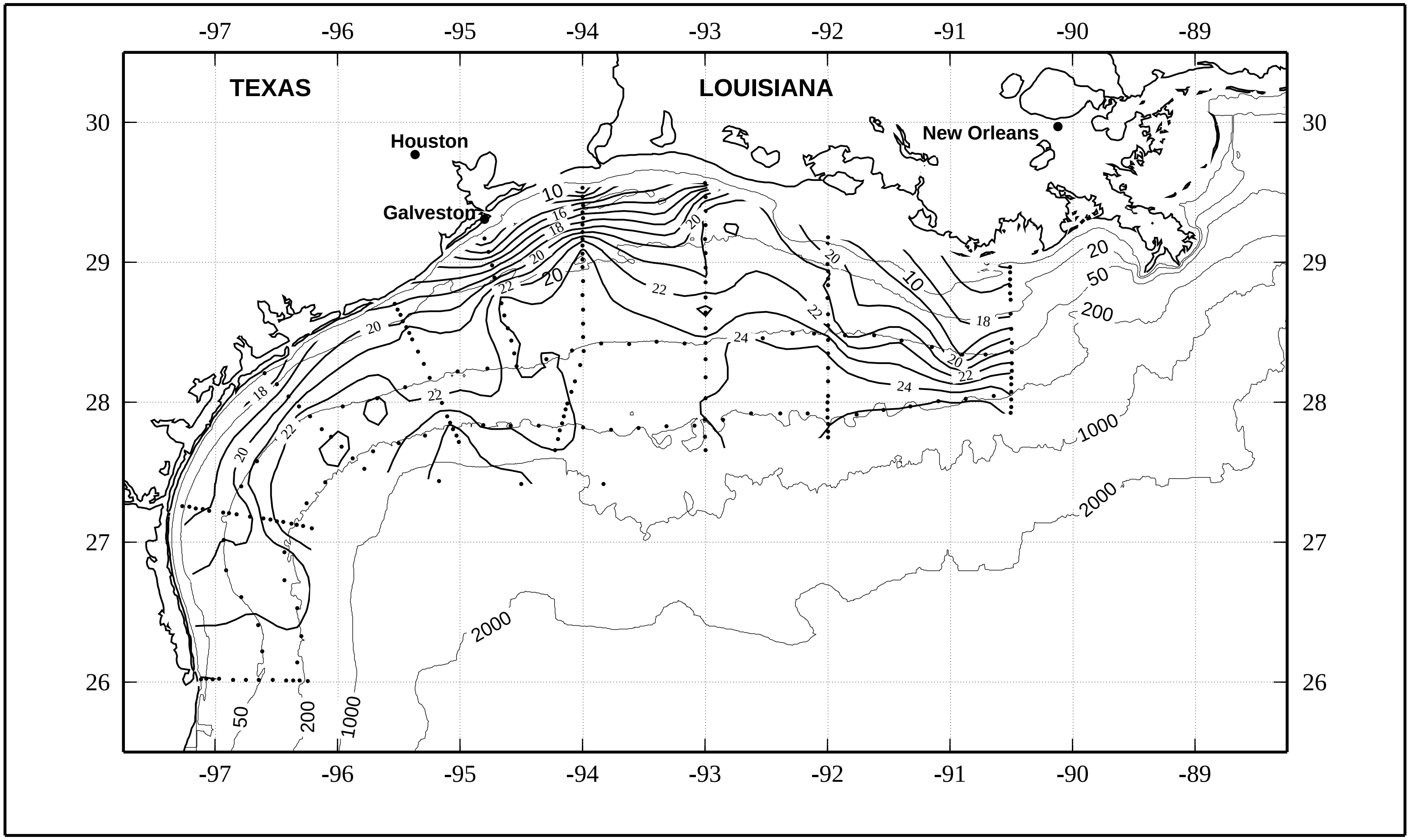

Figure 5.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

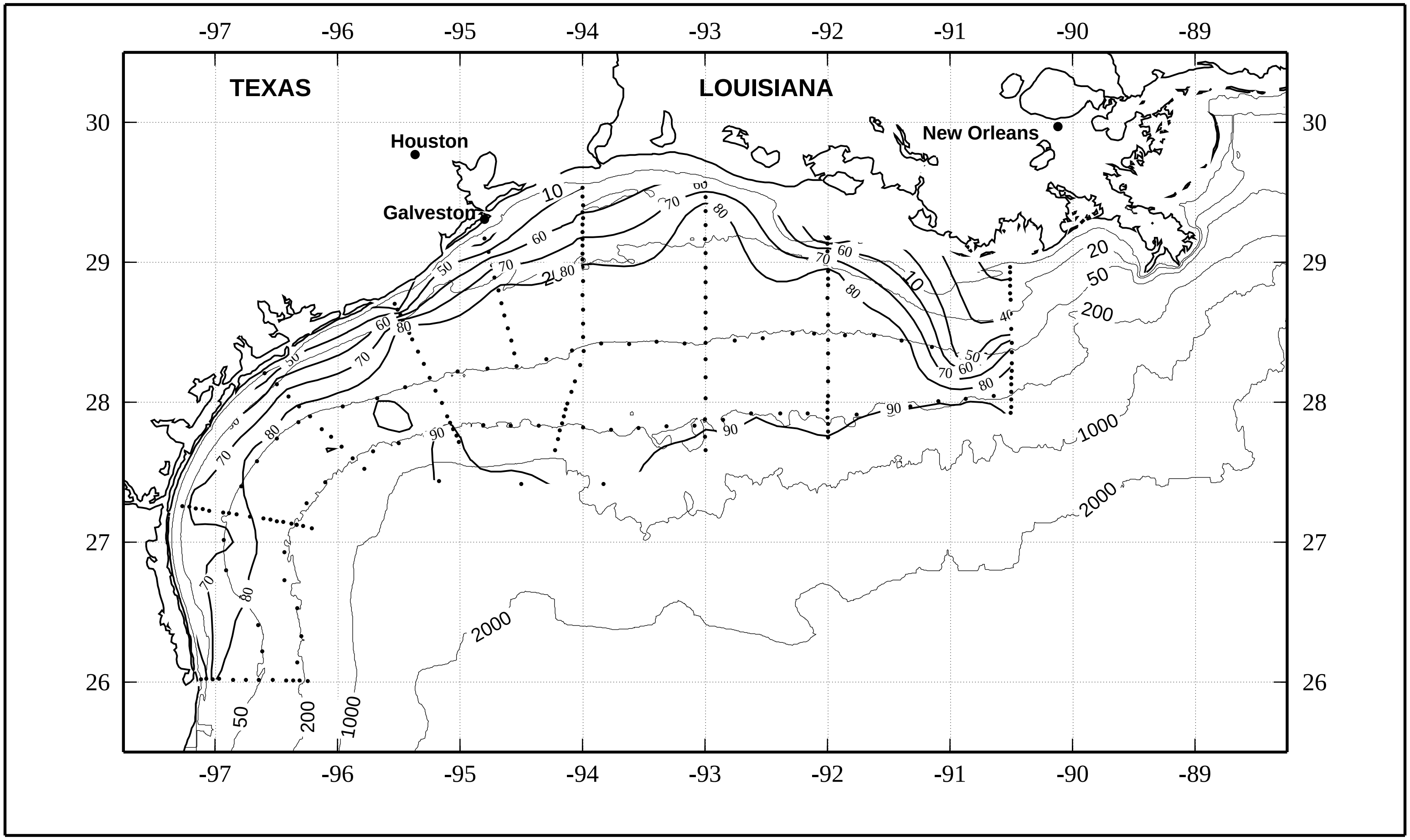

Figure 5.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

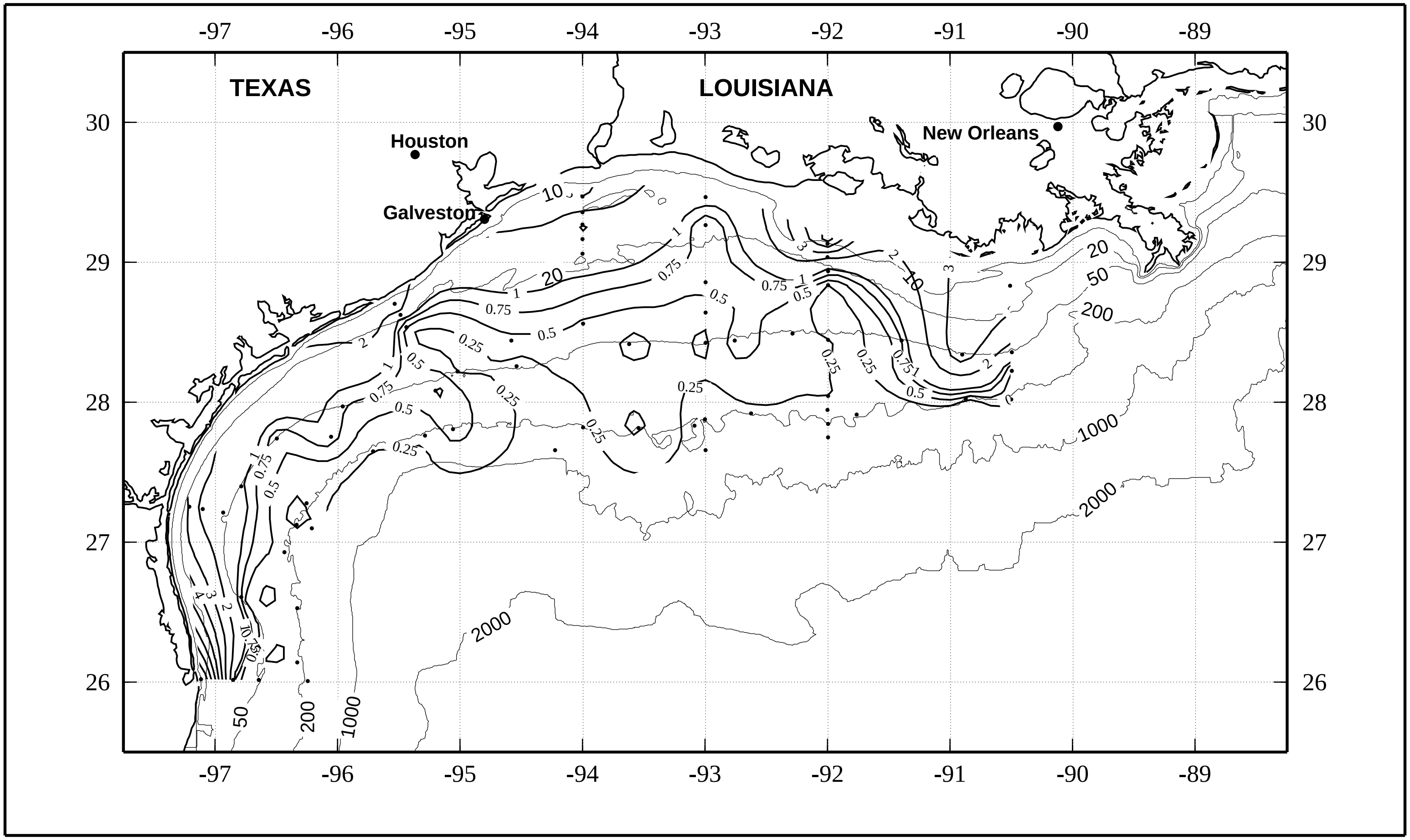

Figure 5.12.5. Suspended particulate material (mg·l-1) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

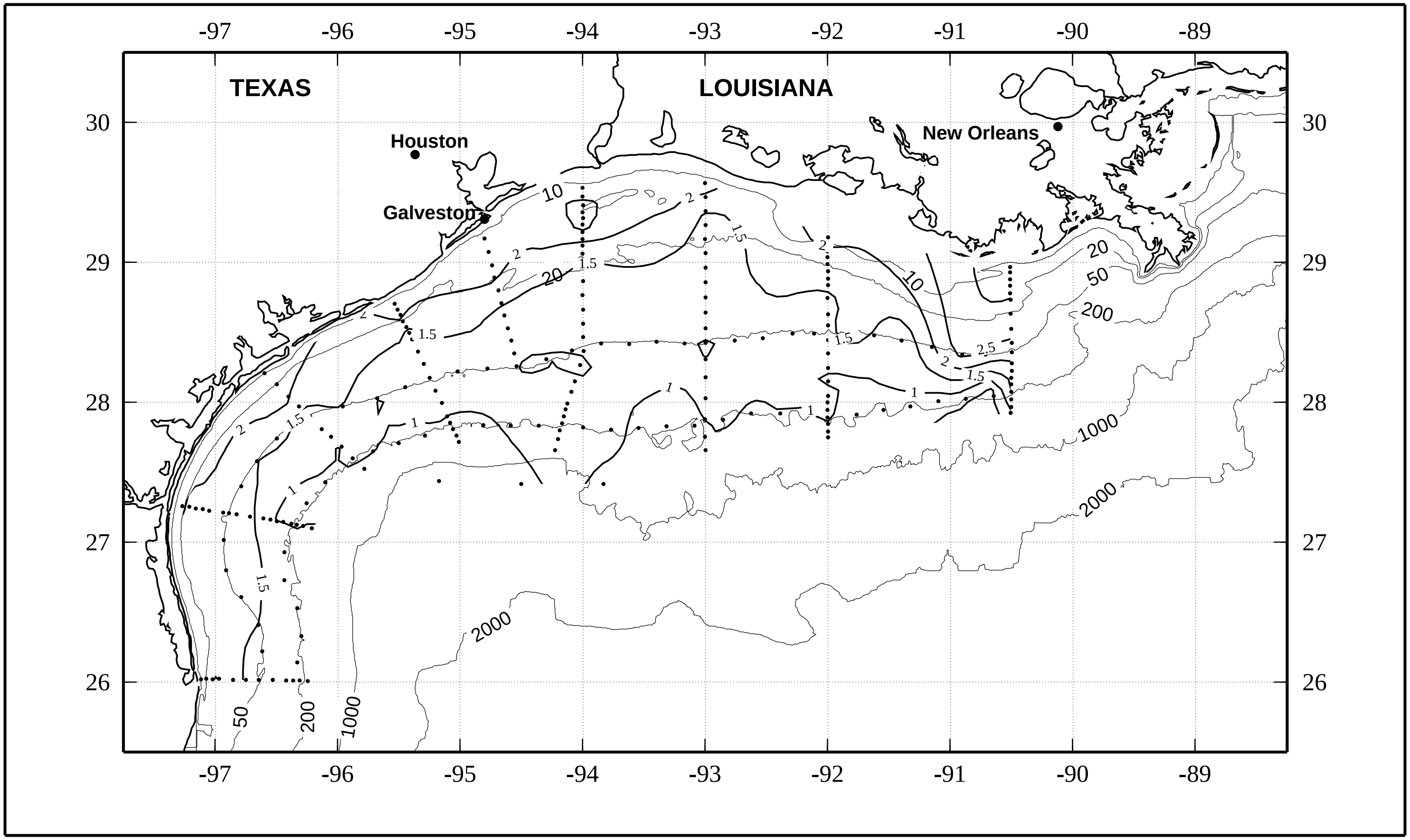

Figure 5.12.7. Relative fluorescence at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

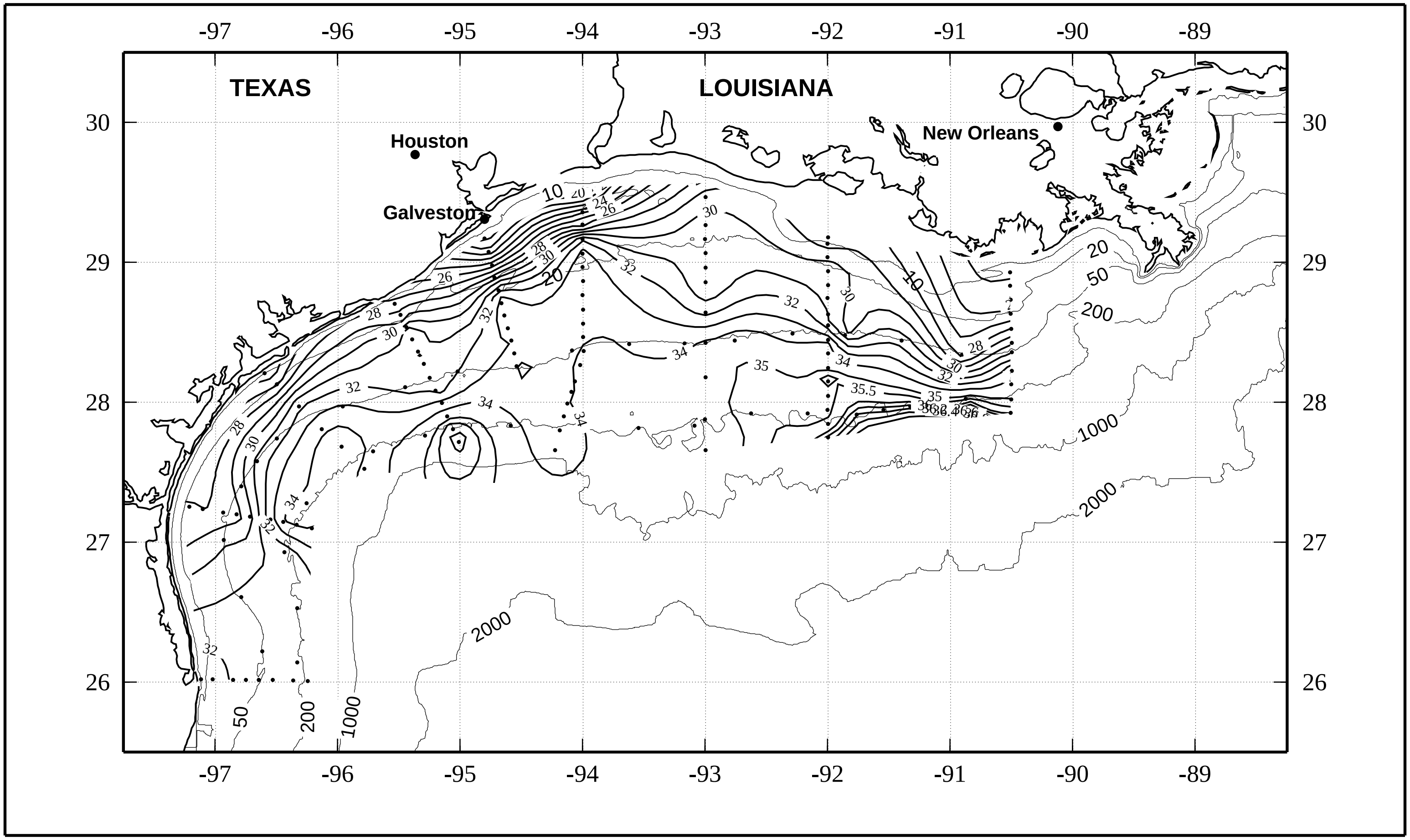

Figure 5.12.8. Bottle salinity at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

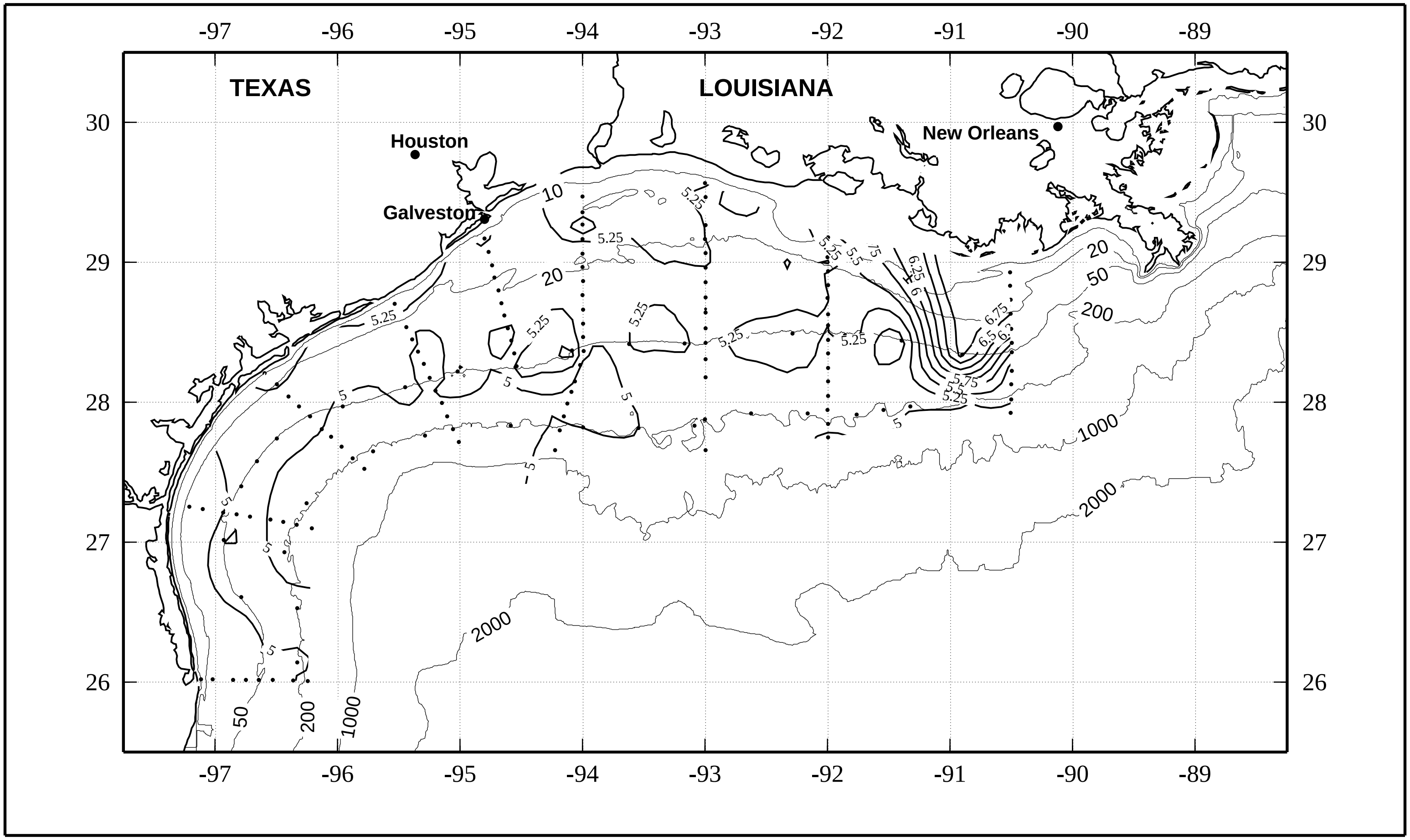

Figure 5.12.9. Dissolved oxygen ($ml \cdot l^{-1}$) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

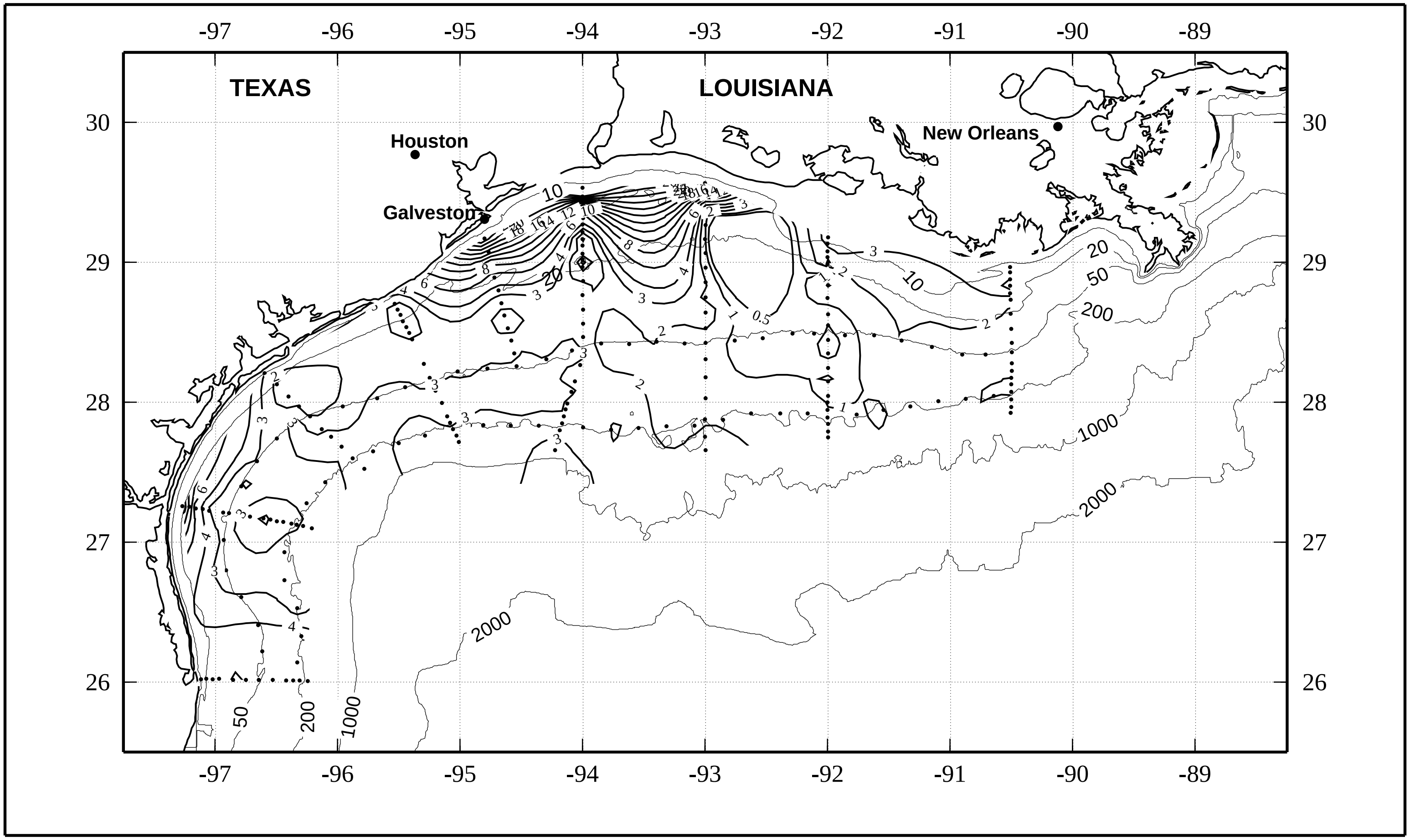

Figure 5.12.10. Silicate (µmol·l^{-1}) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

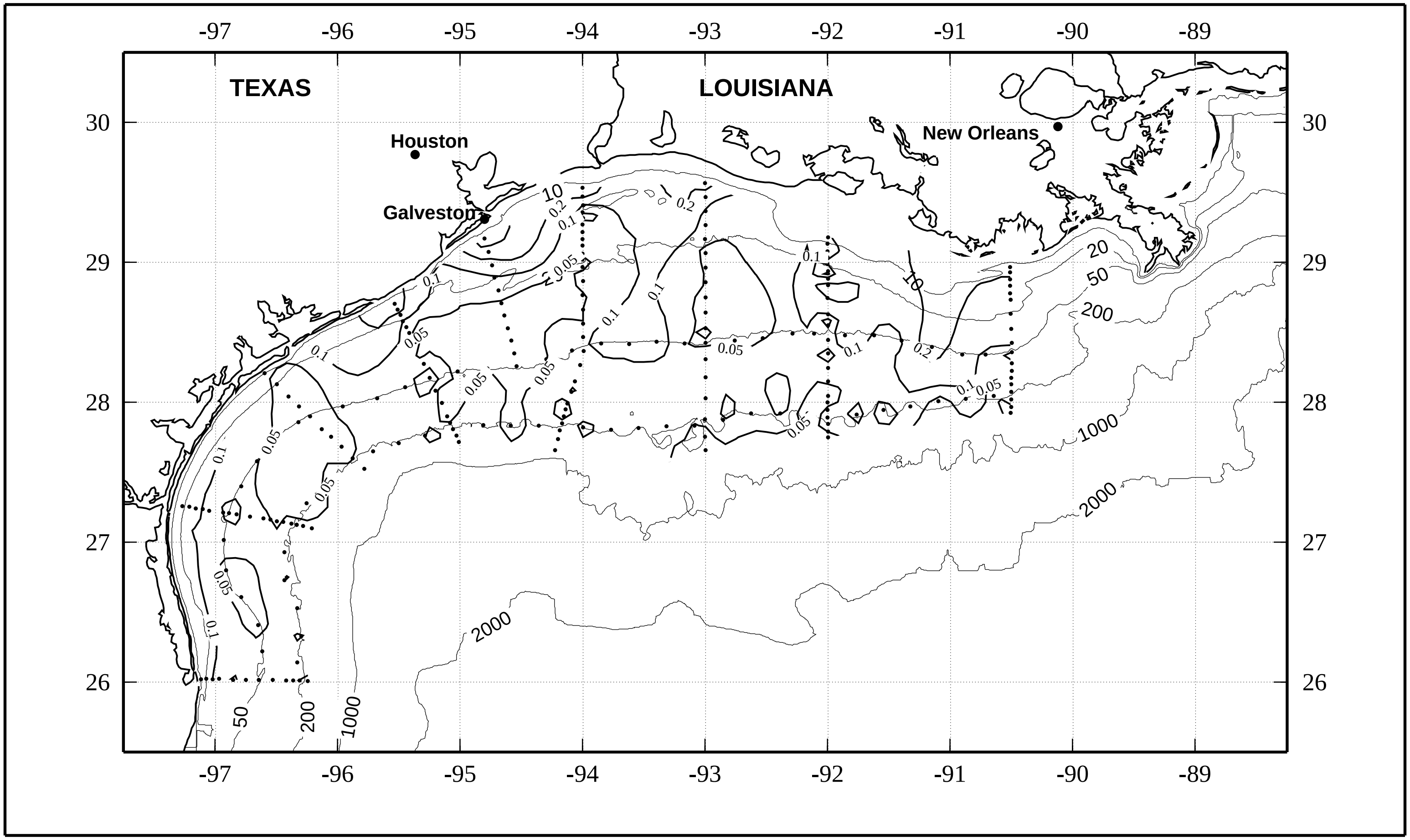

Figure 5.12.11. Phosphate (μmol·l^{-1}) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

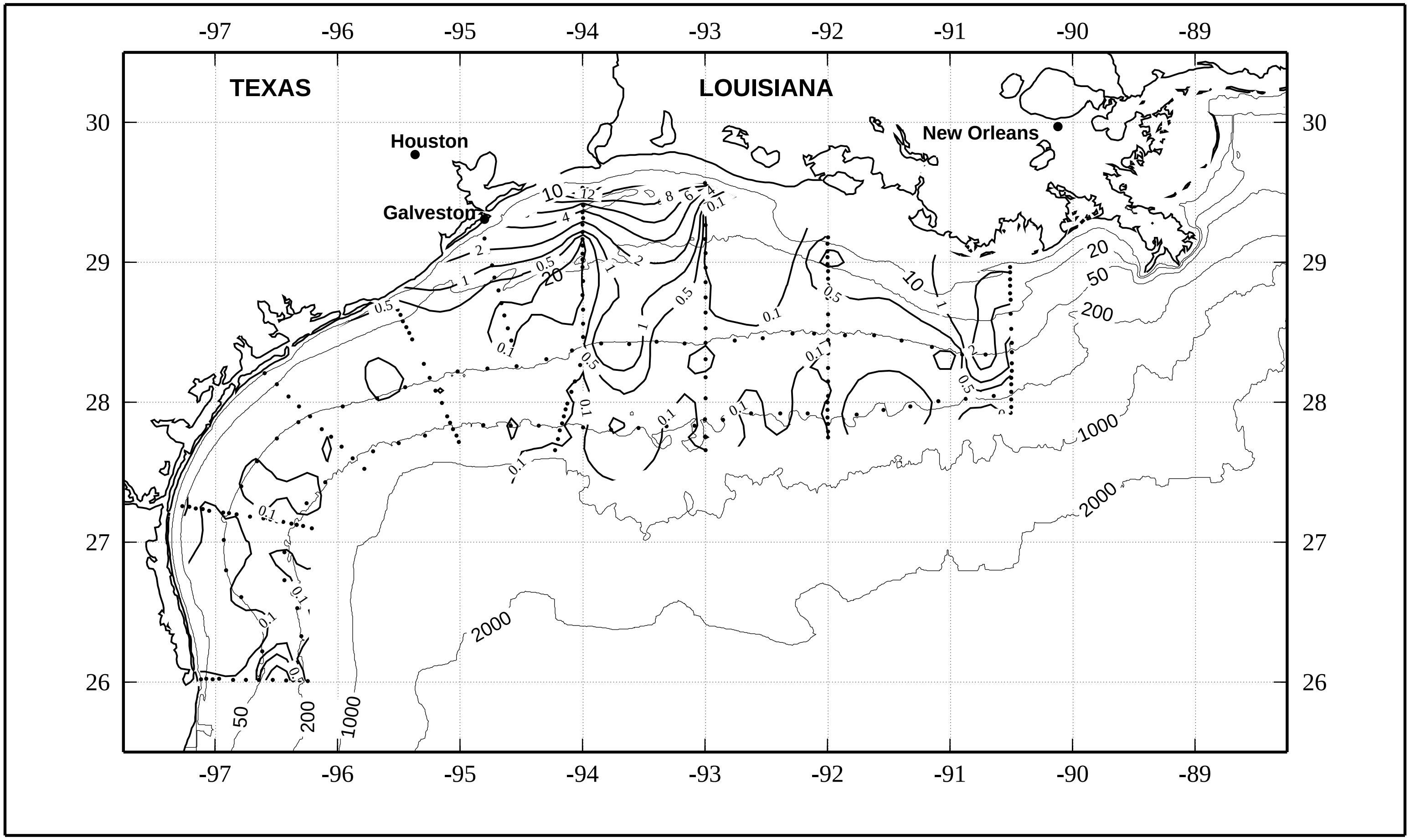

Figure 5.12.12. Nitrate ($\mu mol \cdot l^{-1}$) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

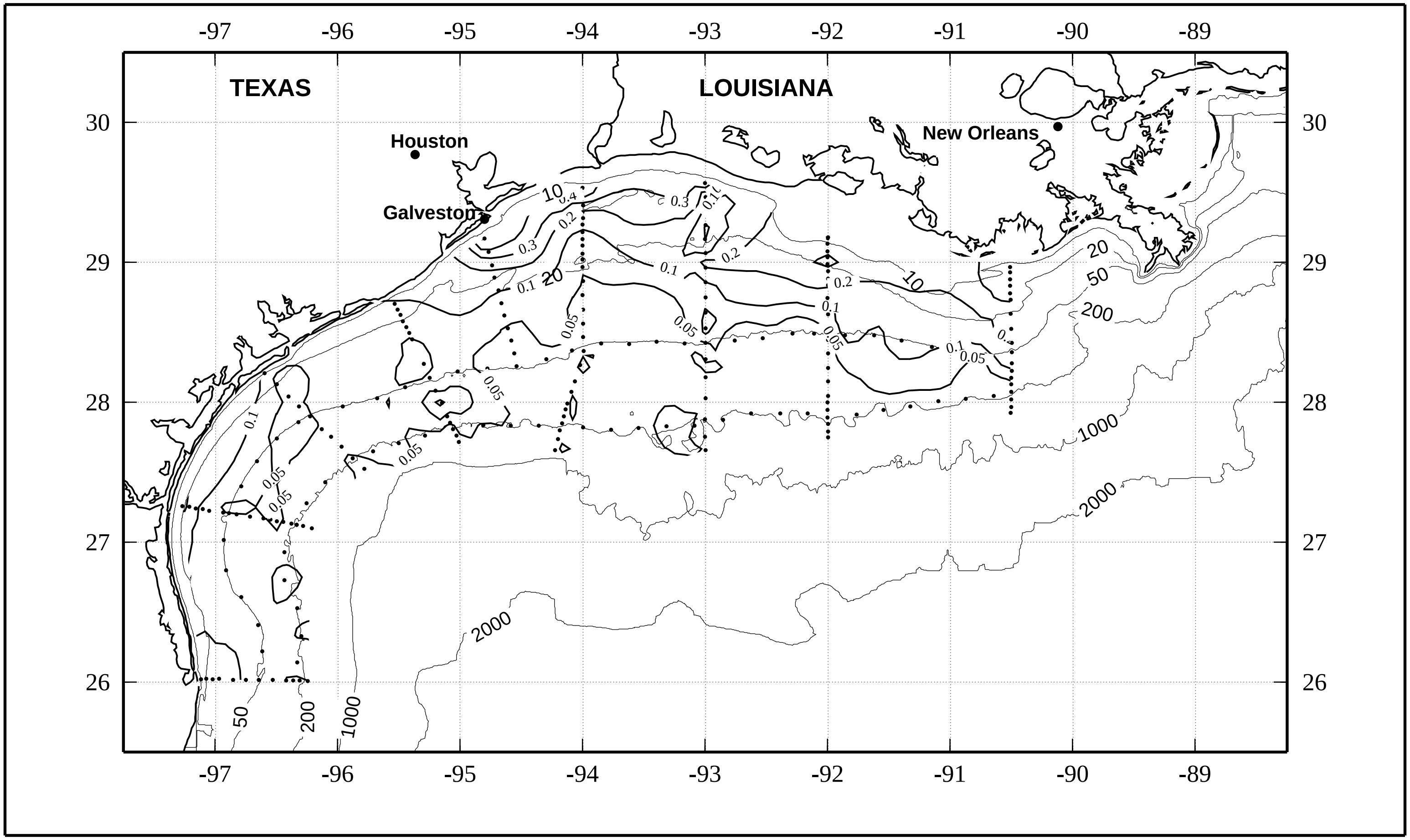

Figure 5.12.13. Nitrite (μmol·l-1) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

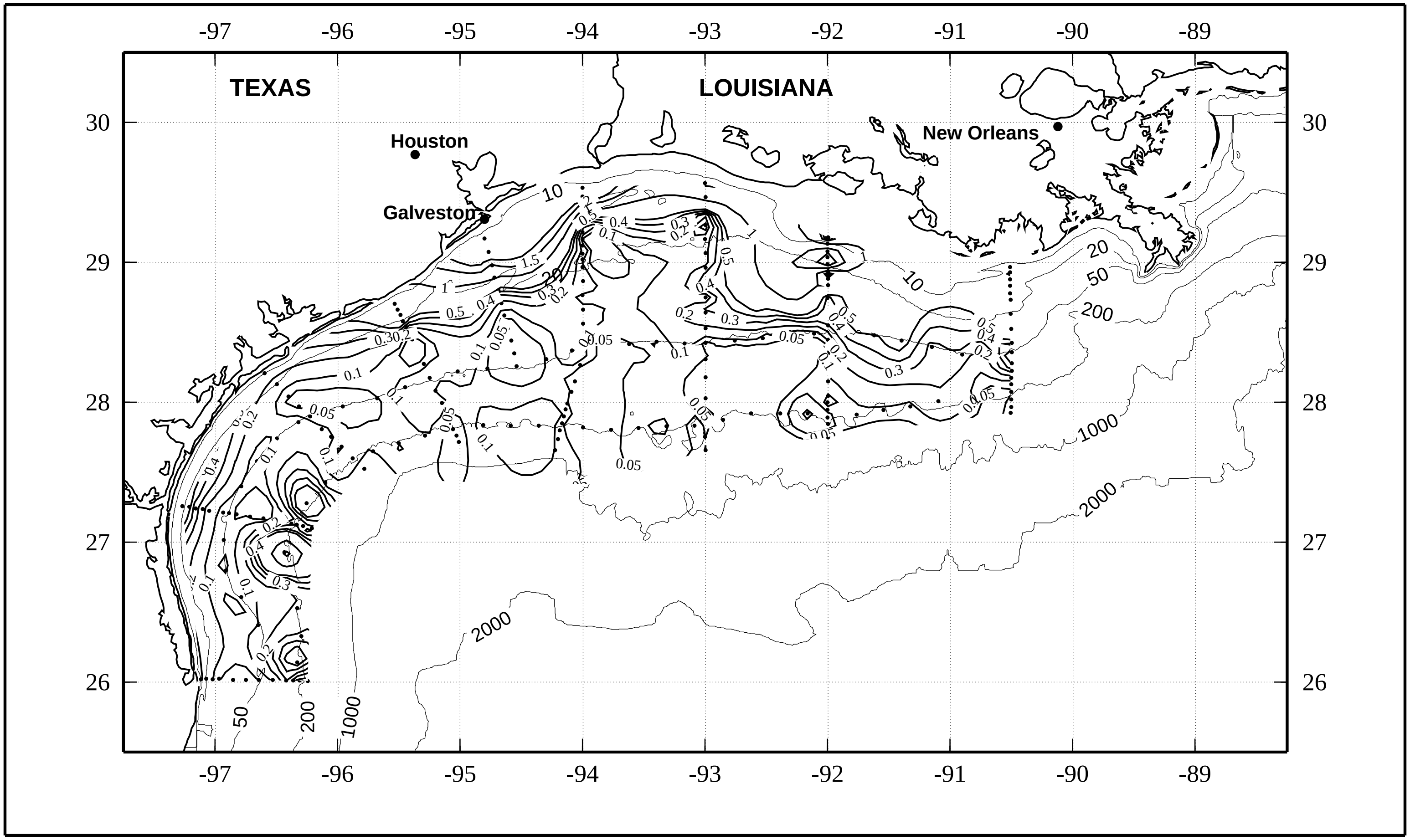

Figure 5.12.14. Ammonium ($\mu mol \cdot l^{-1}$) at 3 m on LATEX A survey H05, 25 April - 11 May 1993.

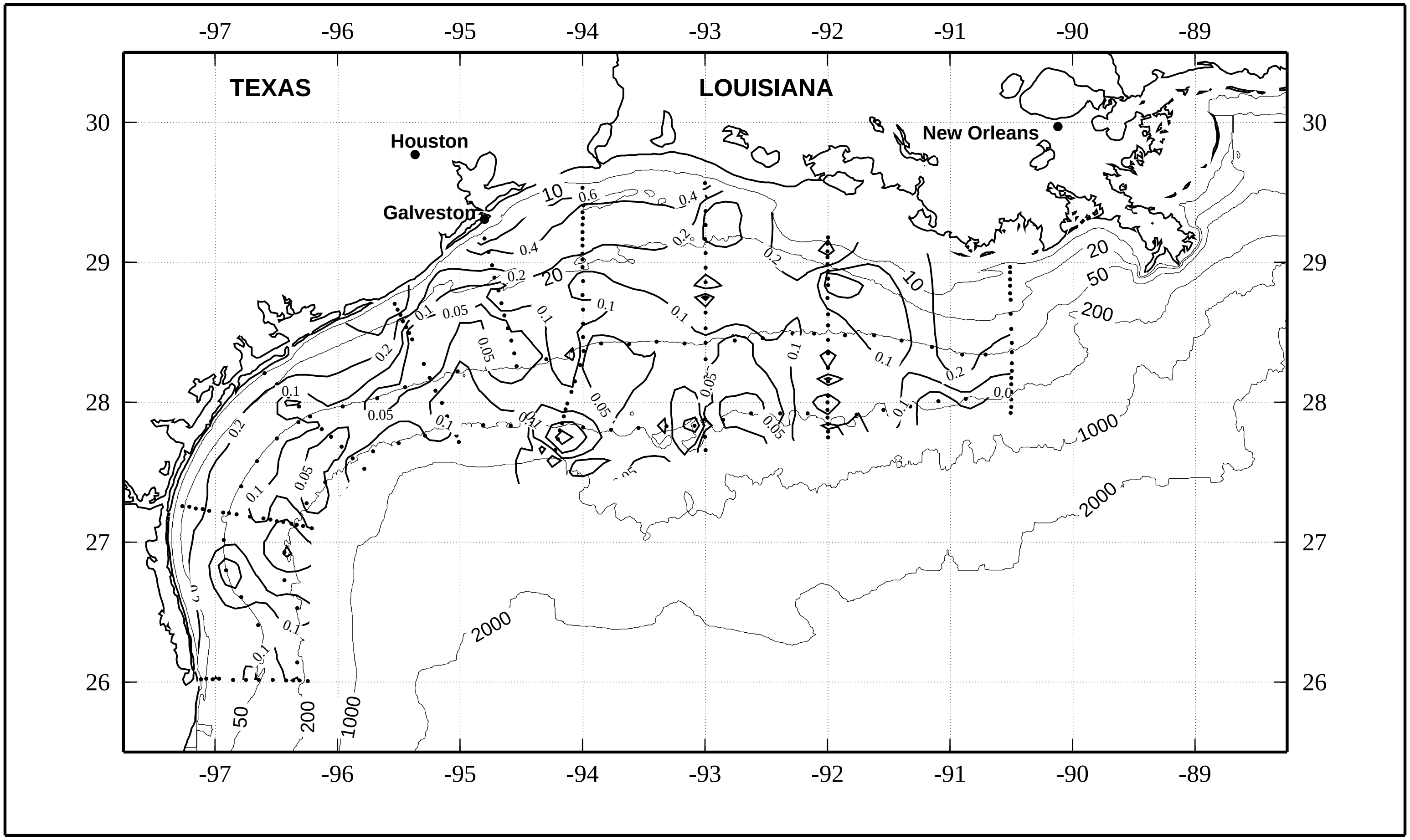

Figure 5.12.15. Urea (μmol·l⁻¹) on LATEX A survey H05, 25 April - 11 May 1993.

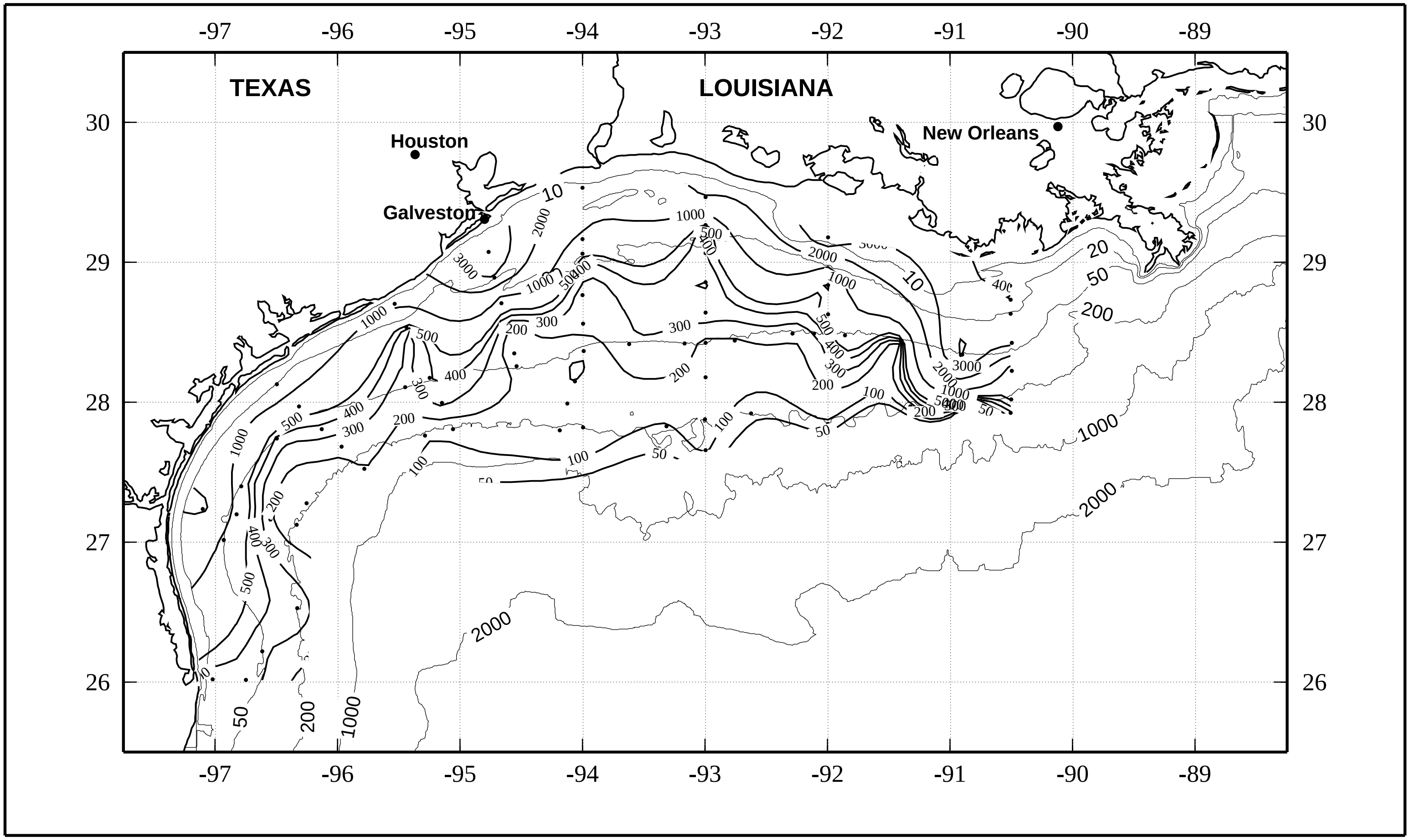

Figure 5.12.16. Chlorophyll a ($ng \cdot l^{-1}$) at maximum on LATEX A survey H05, 25 April - 11 May 1993.

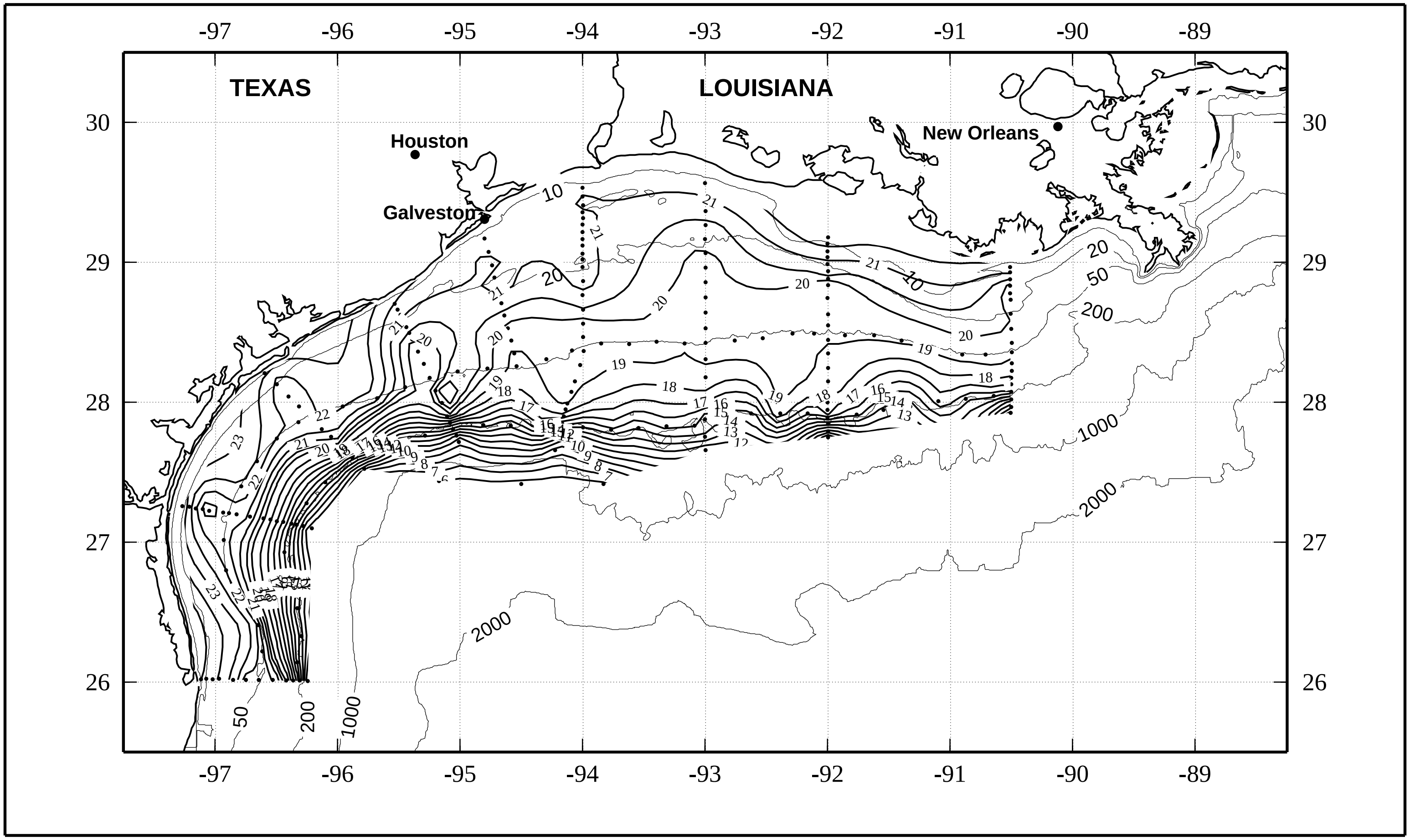

Figure 5.13.1. Potential temperature (˚C) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

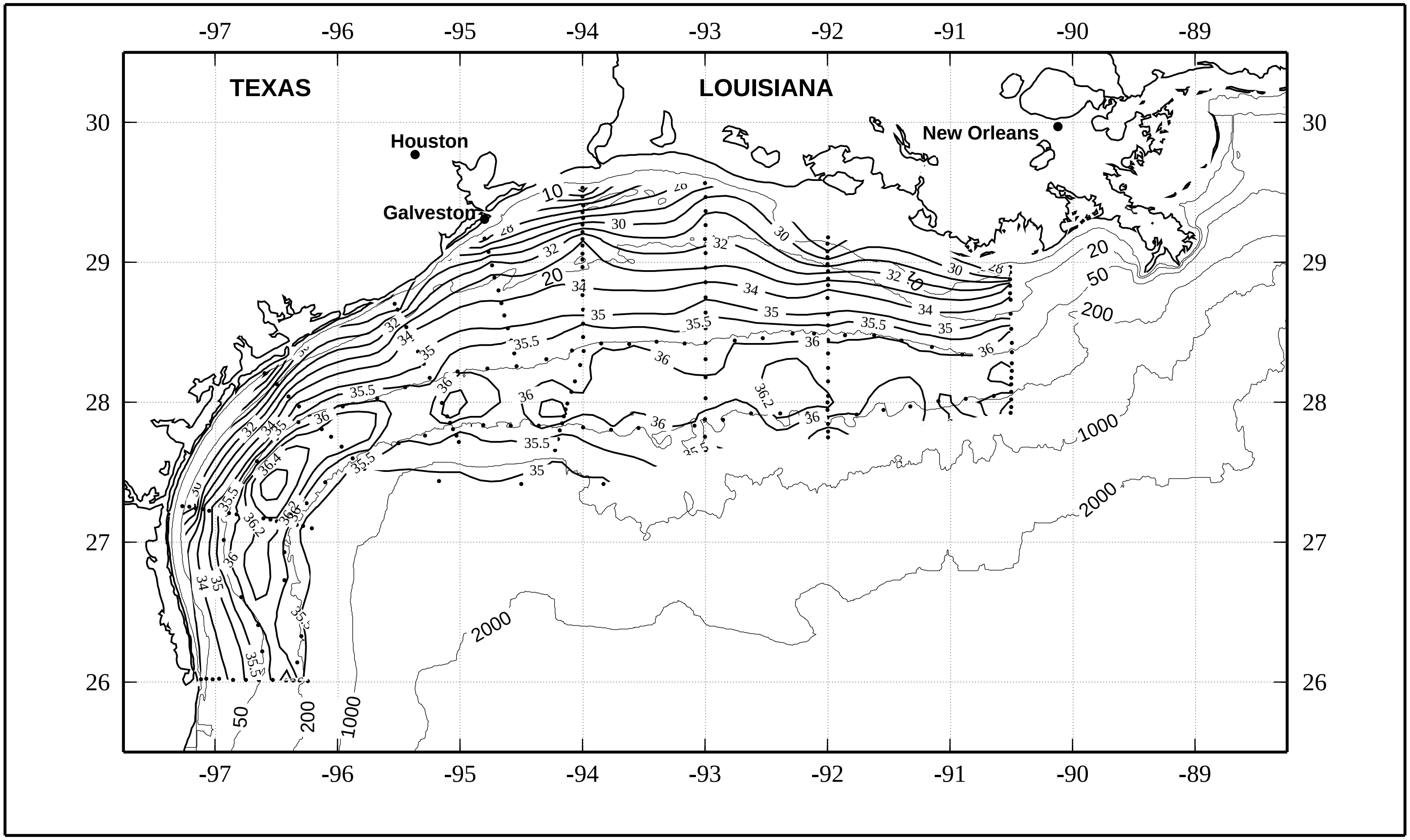

Figure 5.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H05, 25 April - 11 May 1993.

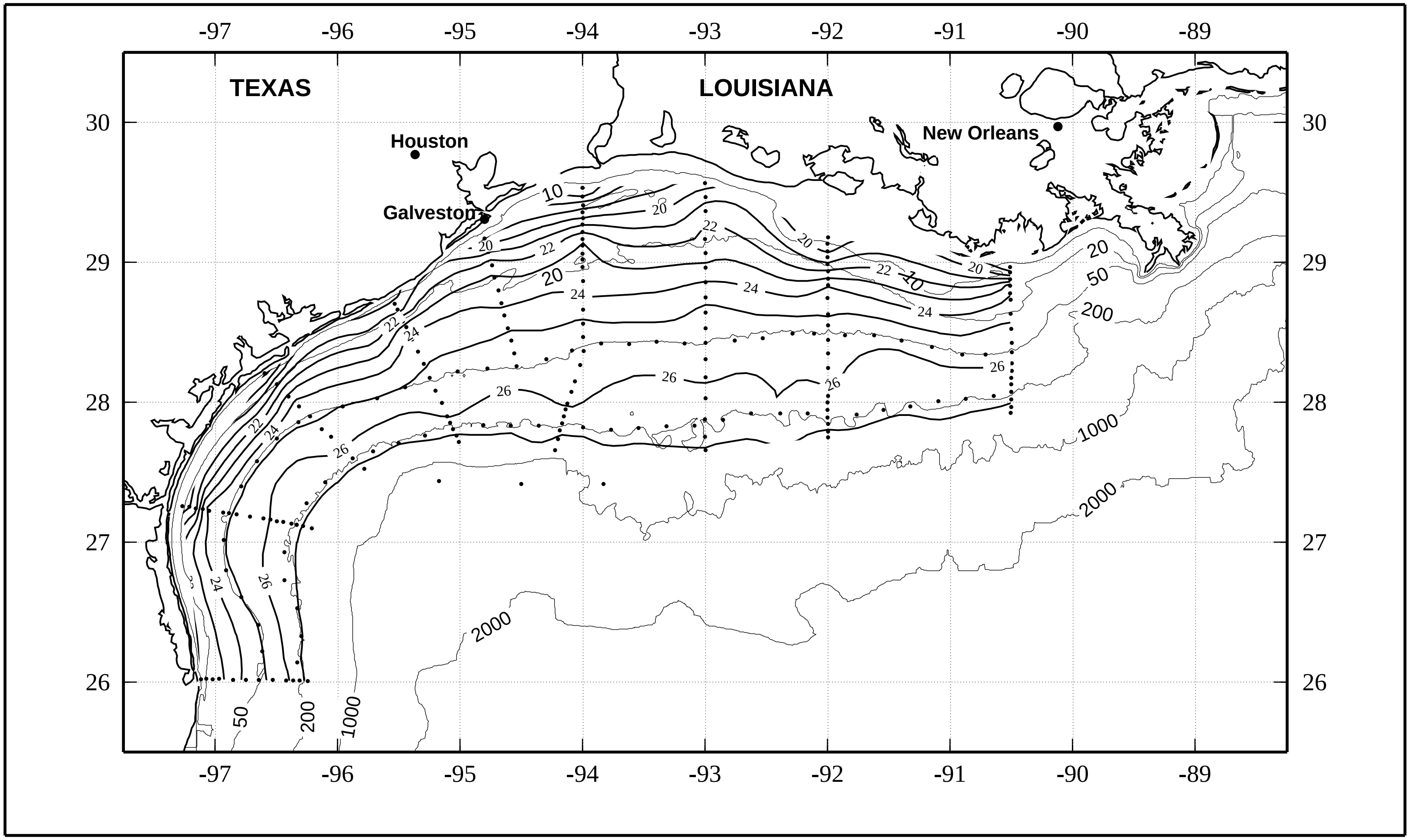

Figure 5.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

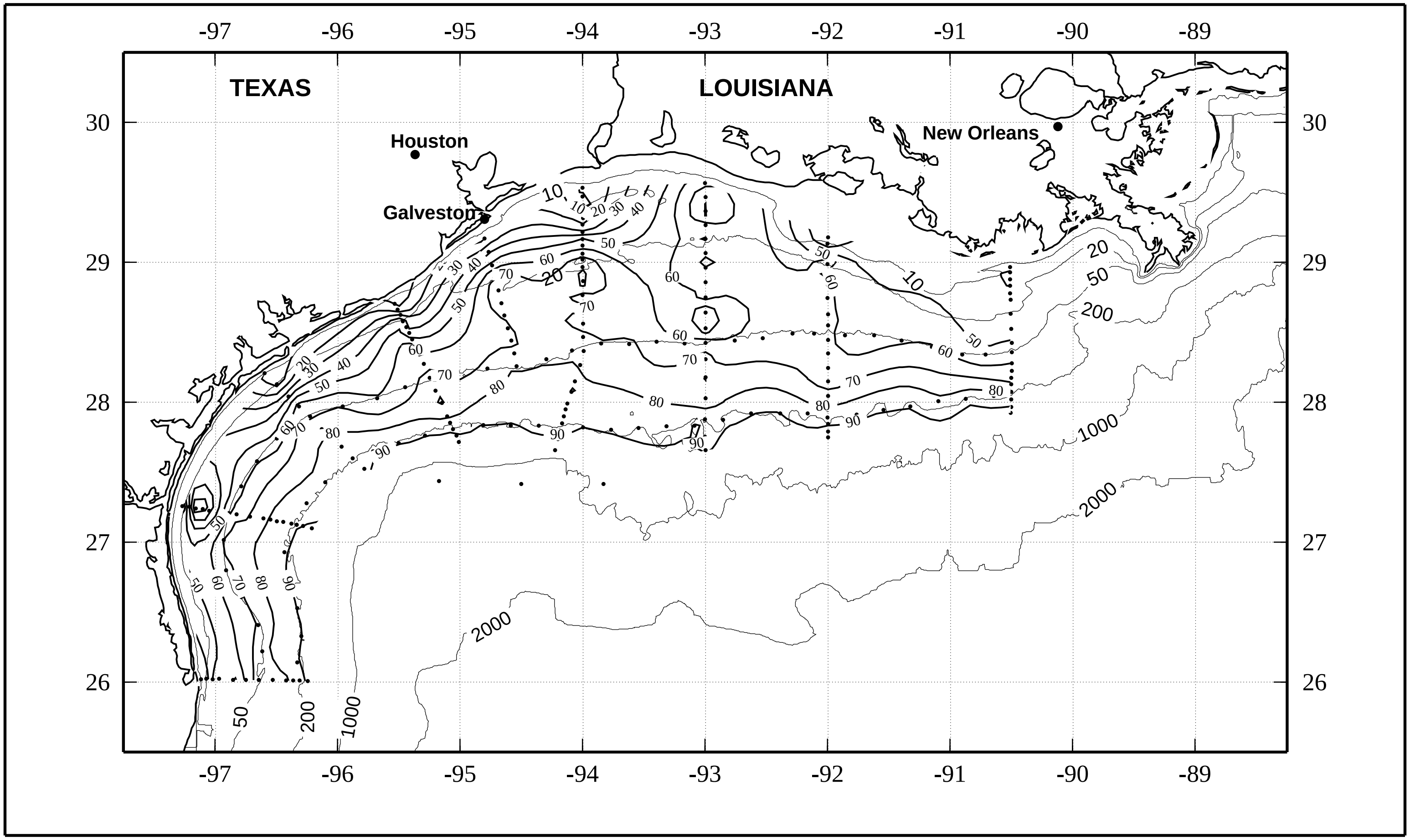

Figure 5.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

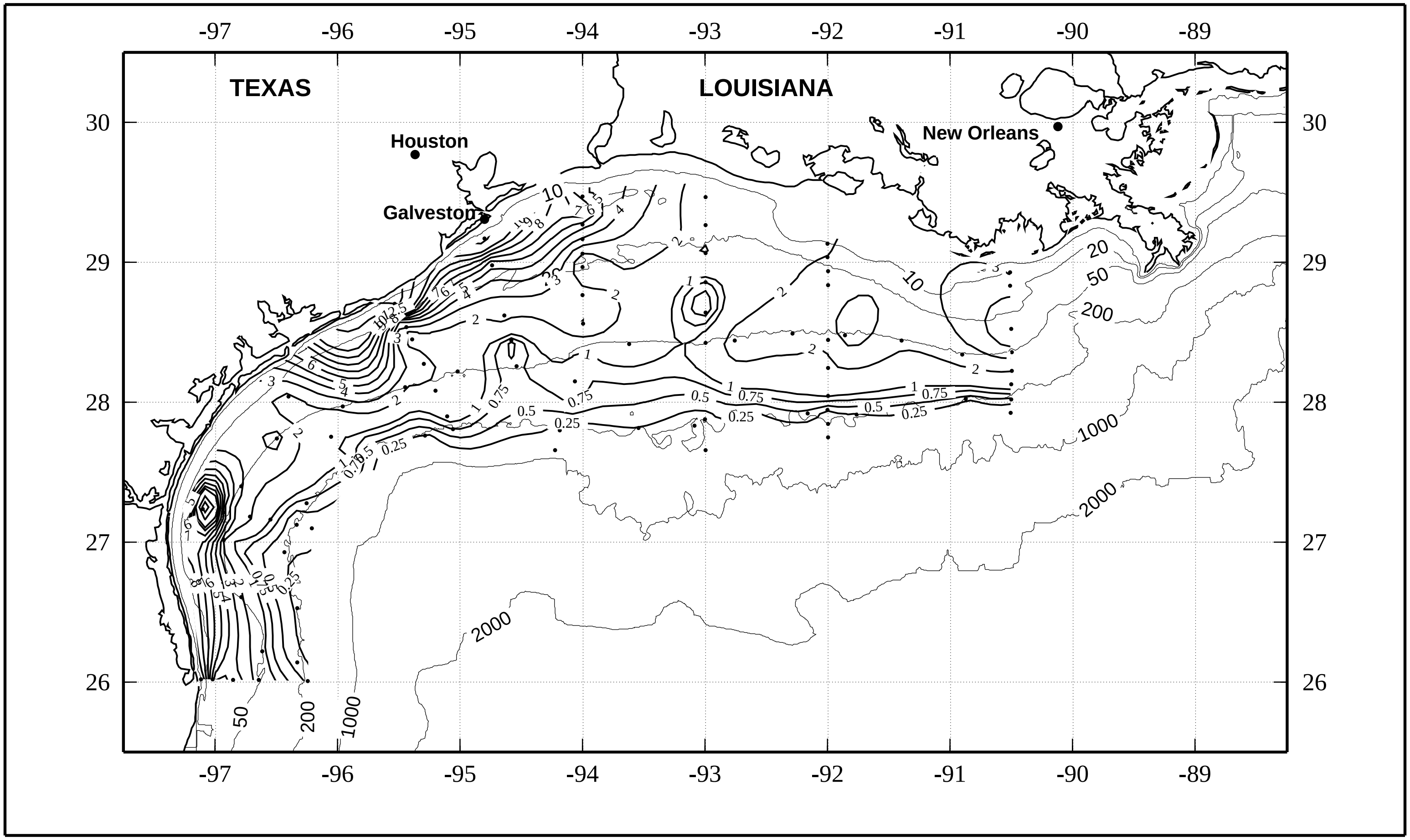

Figure 5.13.5. Suspended particulate material (mg·l-1) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

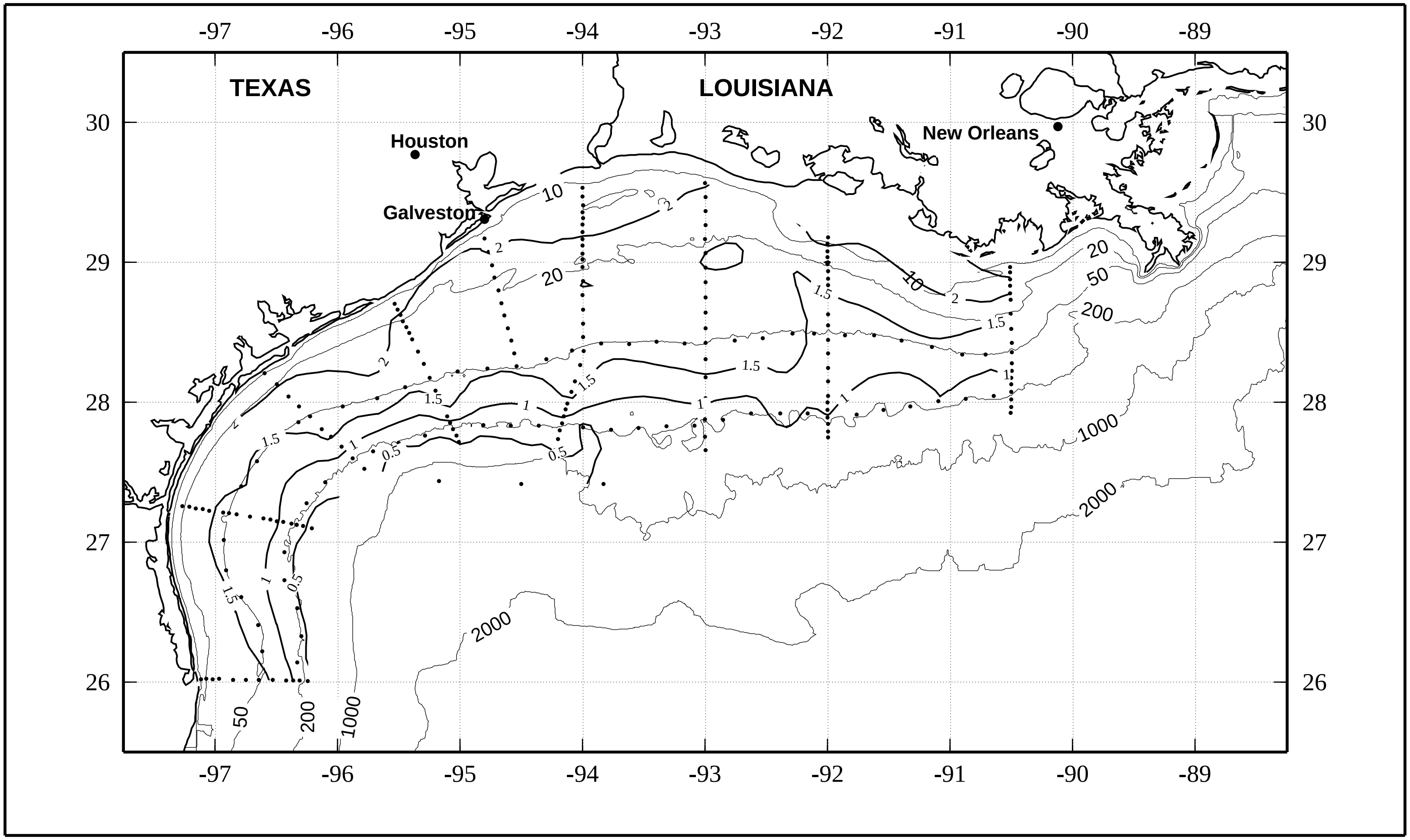

Figure 5.13.7. Relative fluorescence near bottom on LATEX A survey H05, 25 April - 11 May 1993.

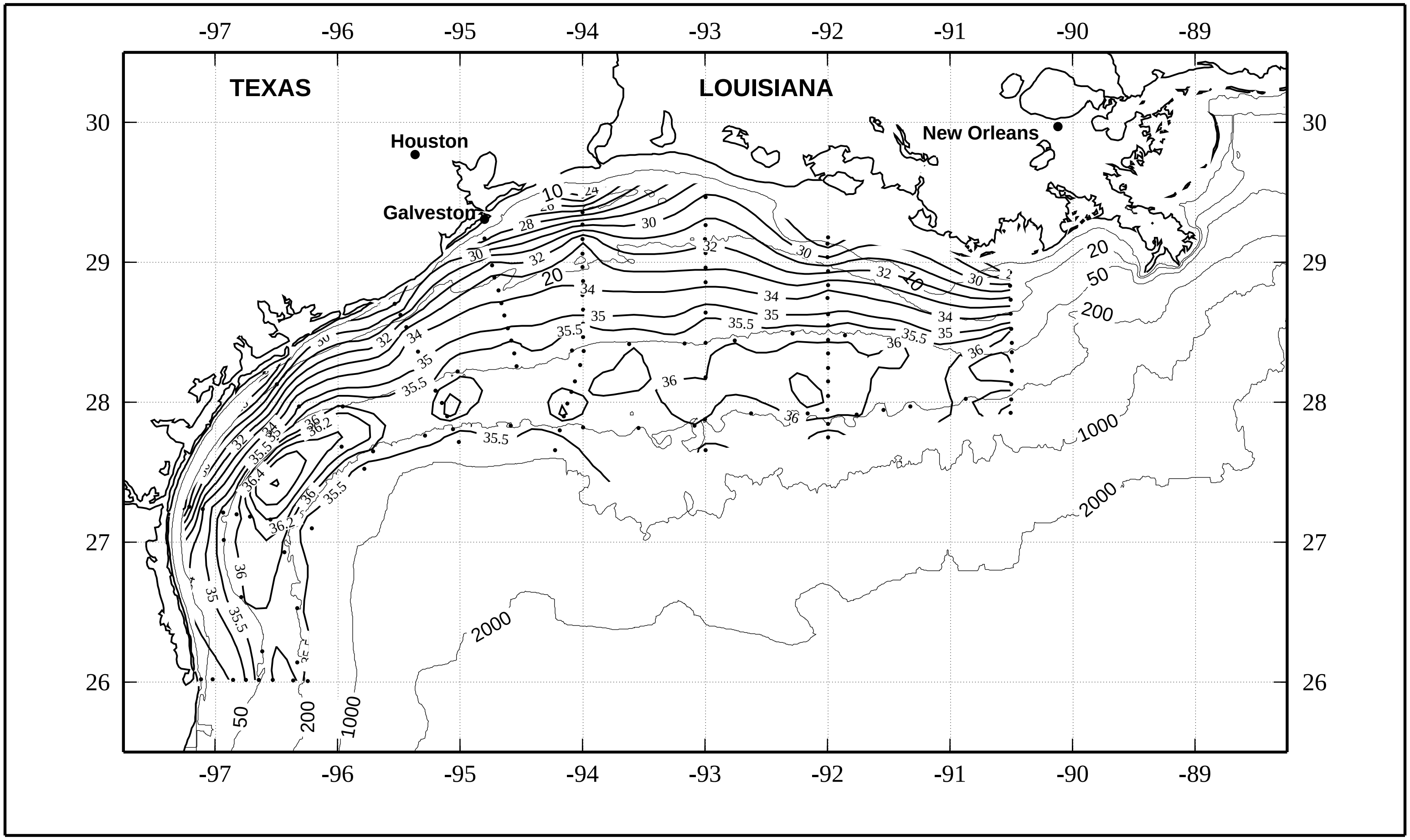

Figure 5.13.8. Bottle salinity near bottom on LATEX A survey H05, 25 April - 11 May 1993.

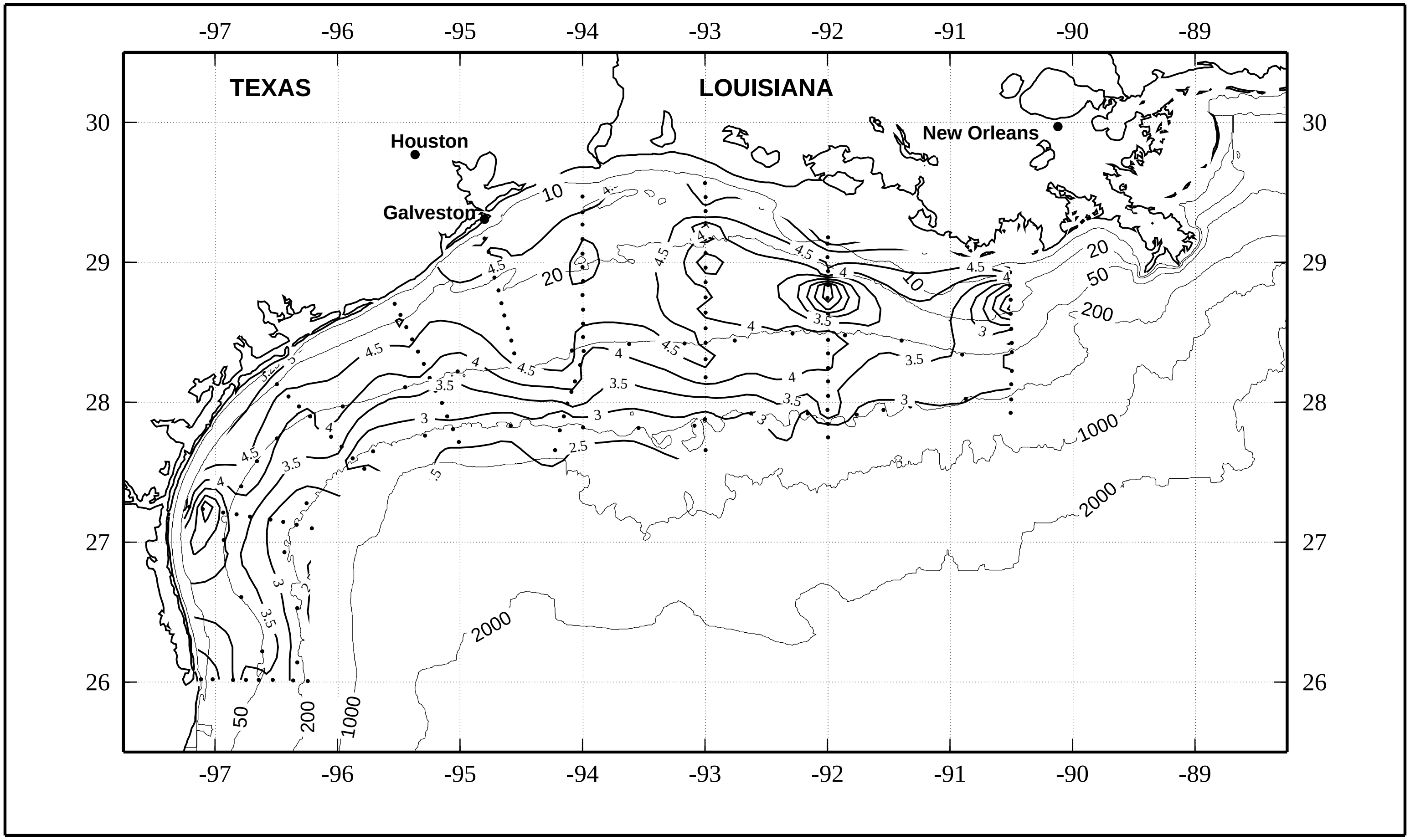

Figure 5.13.9. Dissolved oxygen ($ml \cdot l^{-1}$) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

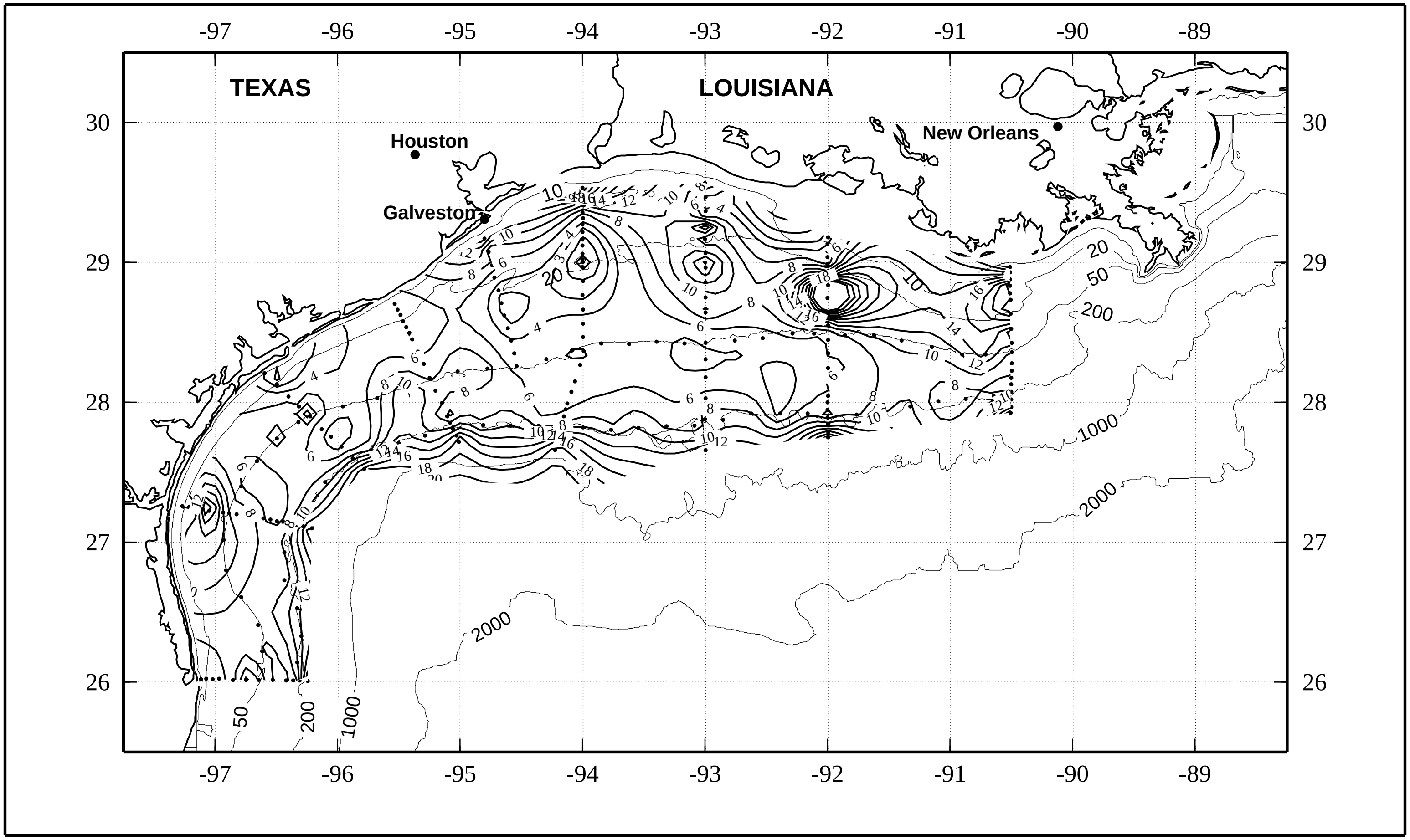

Figure 5.13.10. Silicate (µmol·l^{-1}) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

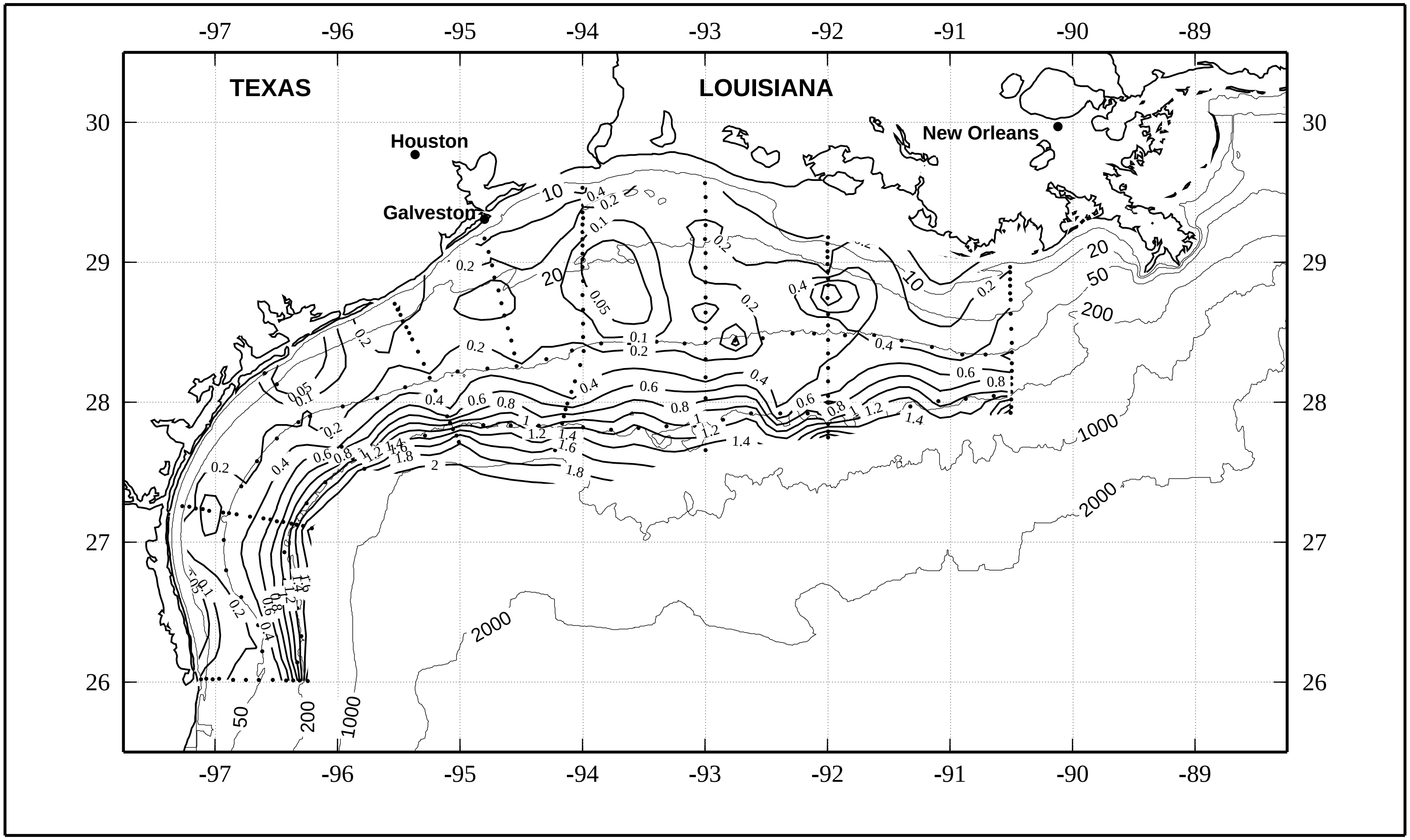

Figure 5.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

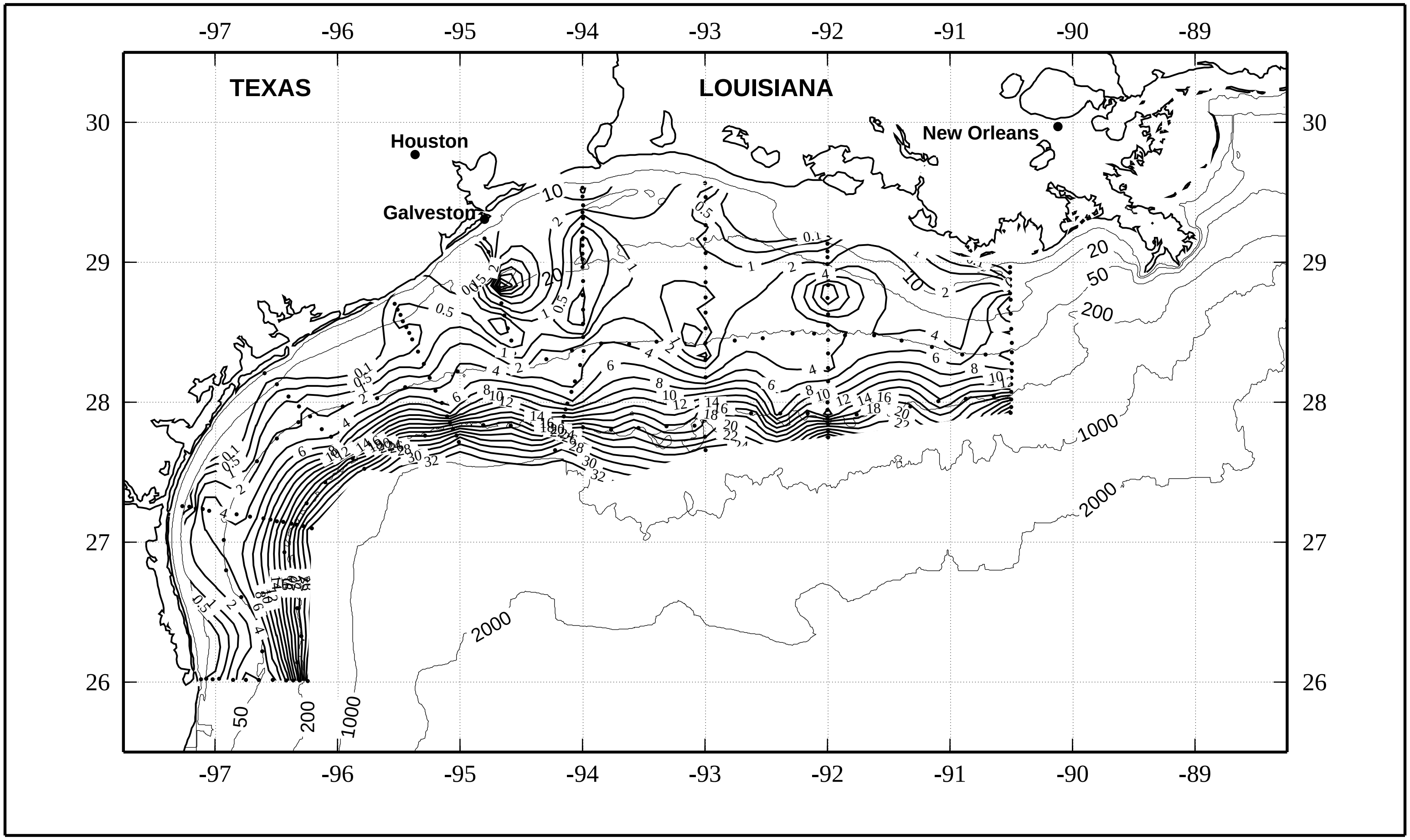

Figure 5.13.12. Nitrate ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

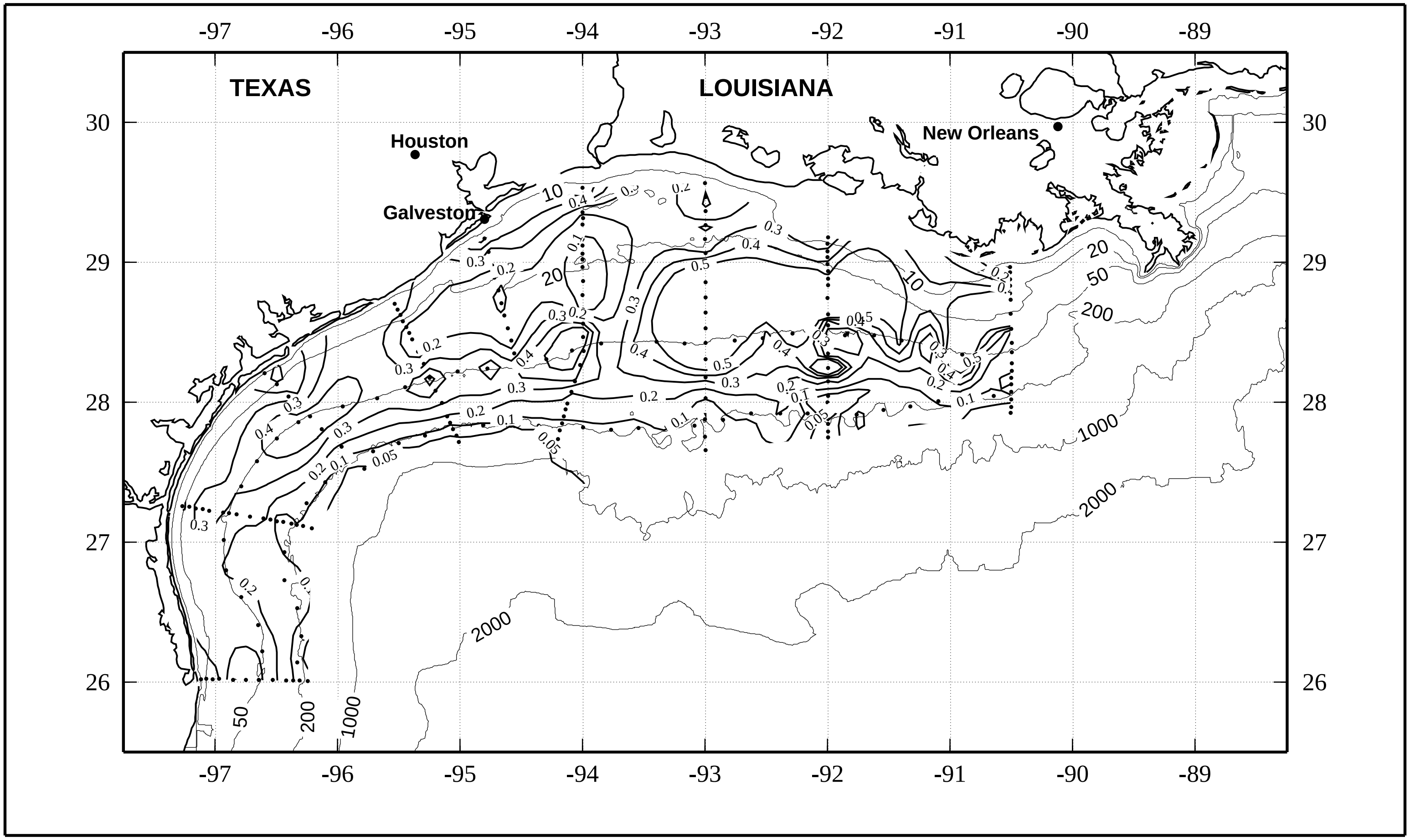

Figure 5.13.13. Nitrite ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

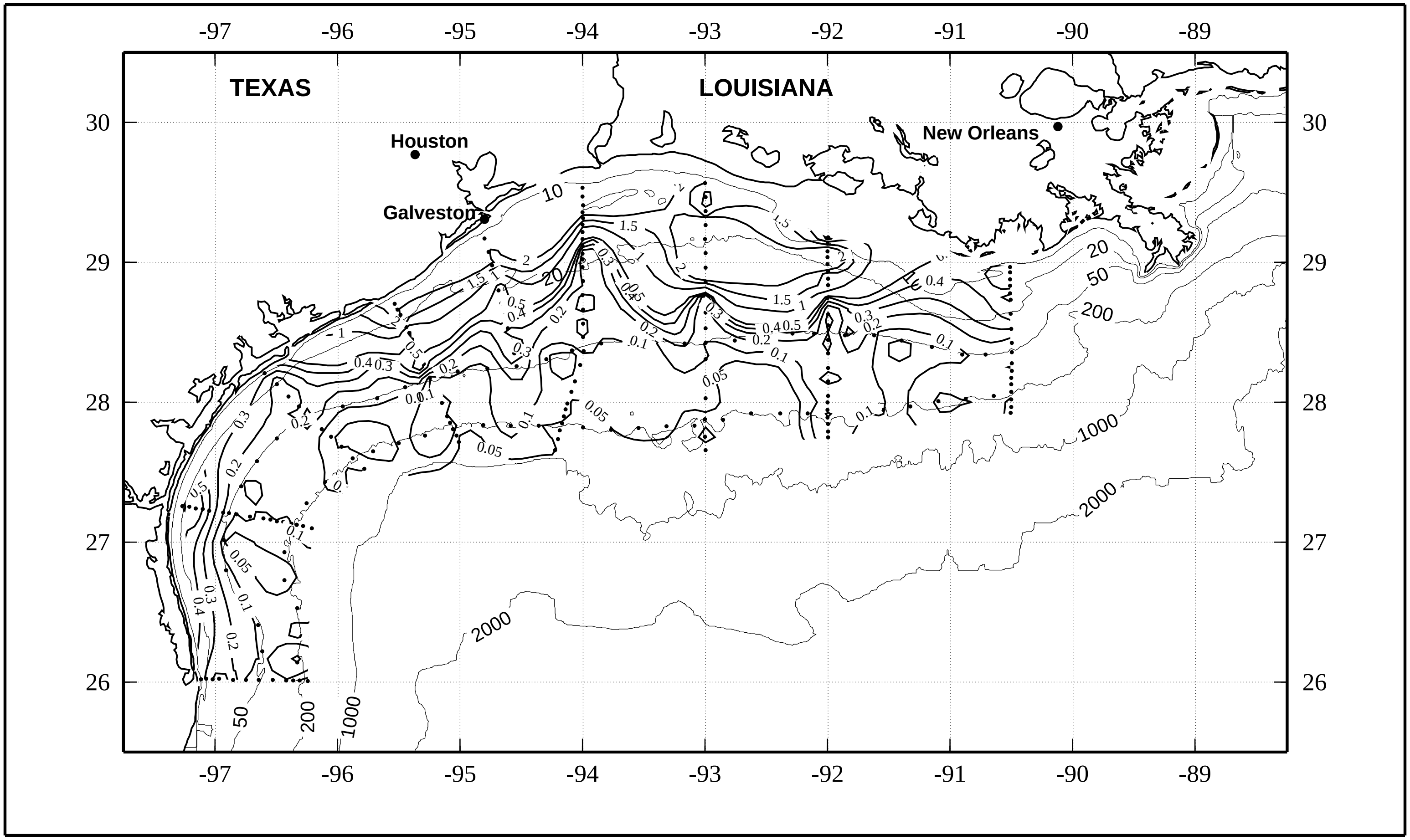

Figure 5.13.14. Ammonium ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H05, 25 April - 11 May 1993.

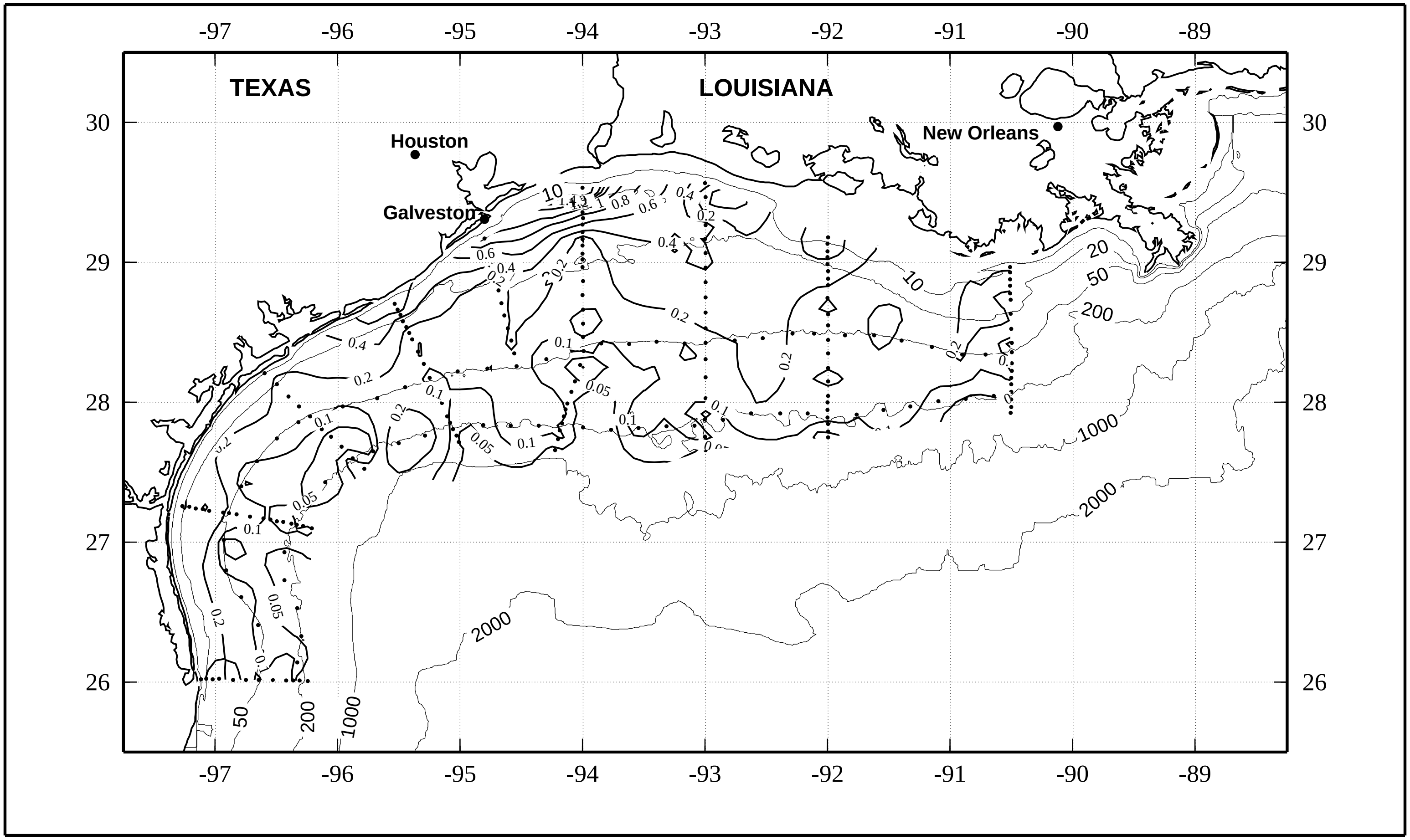

Figure 5.13.15. Urea (μmol·l^{-1}) on LATEX A survey H05, 25 April - 11 May 1993.

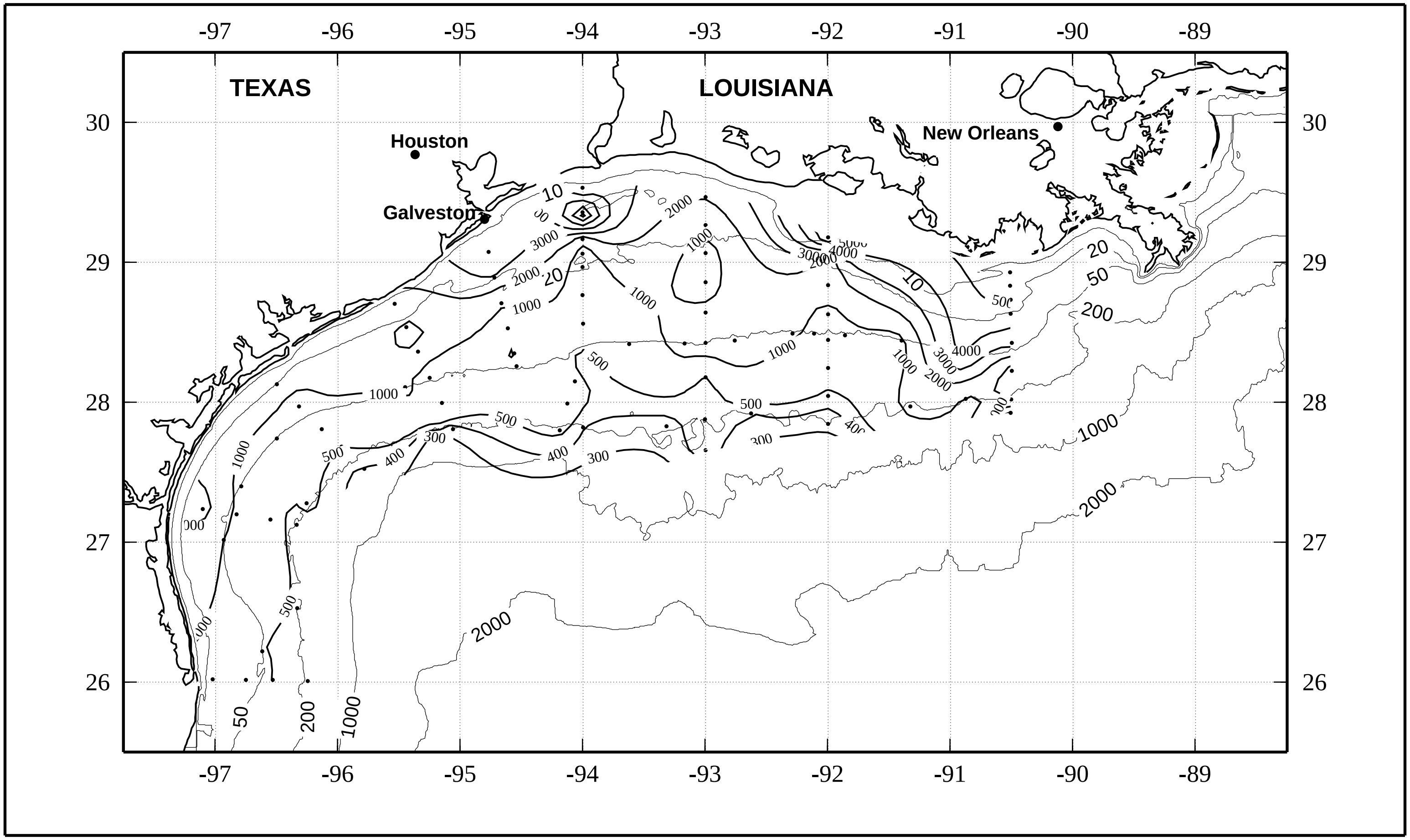

Figure 5.13.16. Chlorophyll a ($ng \cdot l^{-1}$) at the chlorophyll maximum on LATEX A survey H05, 25 April - 11 May 1993.

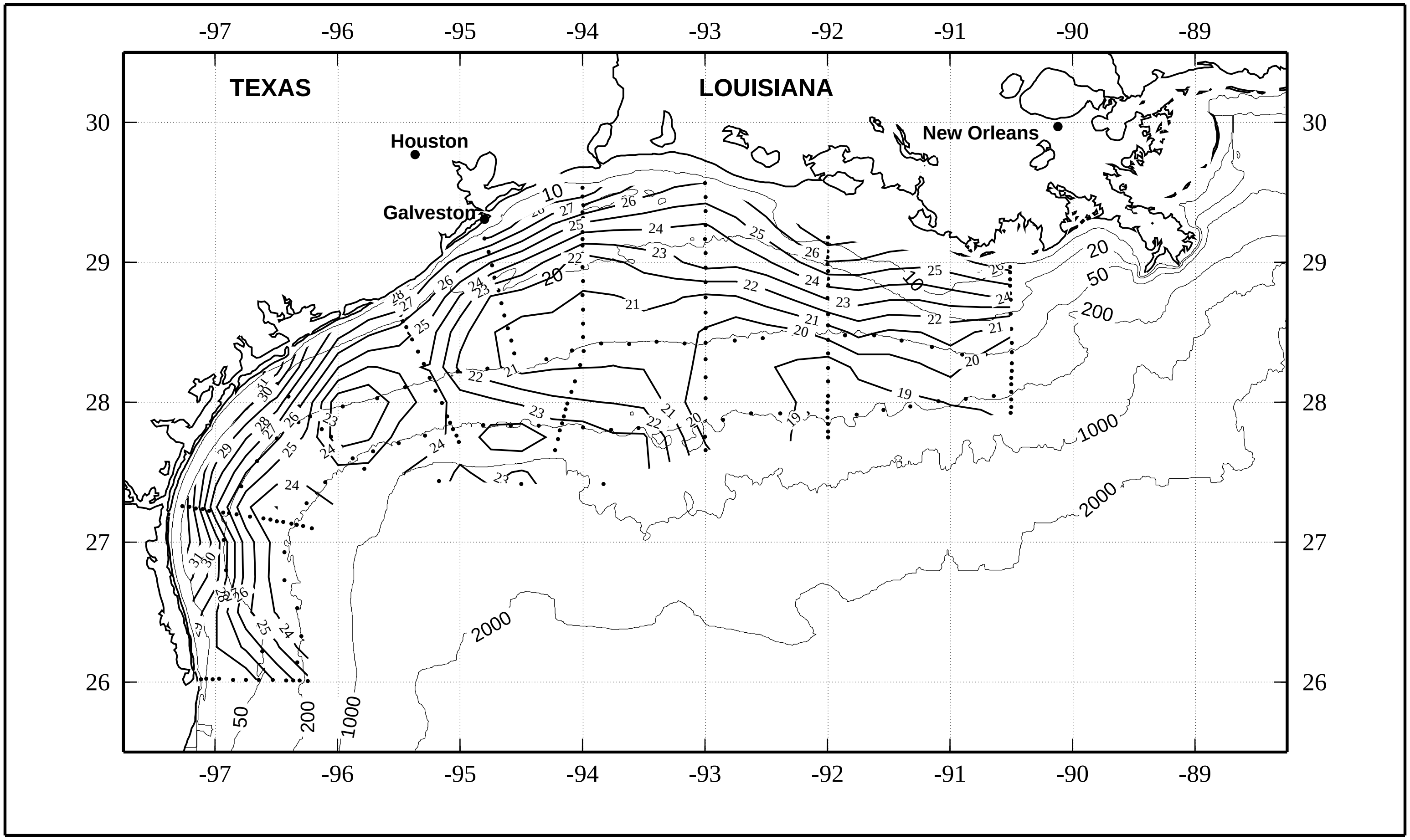

Figure 5.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H05, 25 April - 11 May 1993.

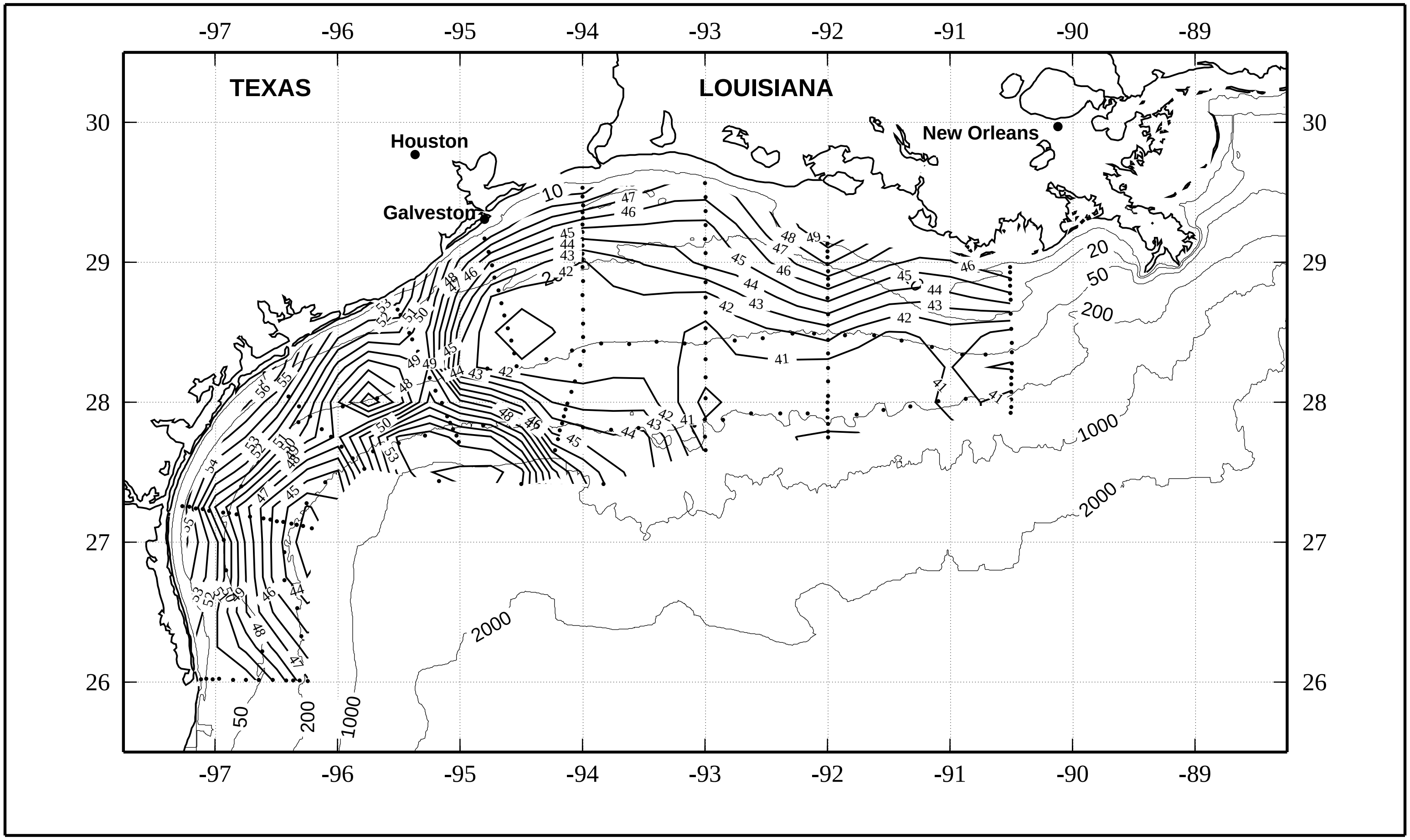

Figure 5.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H05, 25 April - 11 May 1993.

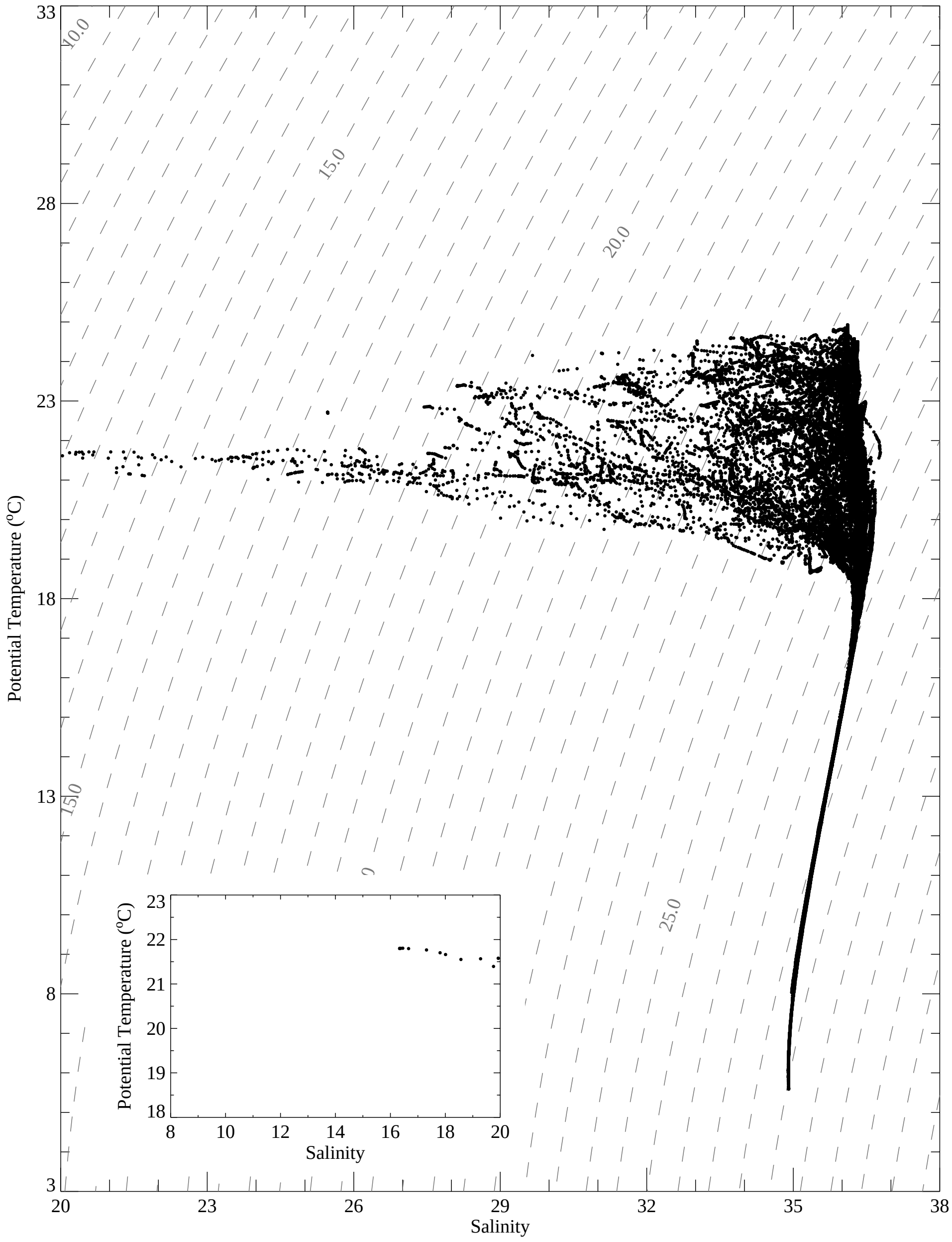

Figure 5.16. Composite potential temperature-salinity diagram for stations from cruise H05, 25 April - 11 May 1993. Inset shows points with salinity less than 20.

LATEX A Hydrographic Survey Data Report

APPENDIX F: Cruise H06
July/August 1993

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Technical Report No. 96-6-T
September 1998

Hydrographic Survey H06

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H06, which was conducted 25 July - 7 August 1993 aboard the *R/V J. W. Powell*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 6.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 6.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 6.12.6 or 6.13.6.

Table 6.1. Definitions for "x.y.z" figure numbering scheme for cruise H06.

cruise number (x):
6 = hydrographic survey H06

plot type (y):
0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 6.1. Definitions for "x.y.z" figure numbering scheme for cruise H06. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

At most pigment stations, only chlorophyll *a* and phaeopigments were determined, using a Turner fluorometer. At 28 stations, however, the concentrations of 20 pigments also were determined, using high performance liquid chromatography (HPLC). Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC. Only chlorophyll *a* is shown in the plots.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 6.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H06. Figure 6.0 shows the location map for the stations.

Following Figure 6.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

Bontempi, P. S. 1995. Phytoplankton distributions and species composition across the Texas-Louisiana continental shelf during two flow regimes of the Mississippi River. Master's Thesis, Department of Oceanography, Texas A&M University, College Station, TX. 137 pp.

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Smith, W. H. F., and P. Wessel. 1990. Gridding with continuous curvature splines in tension. *Geophysics*, 55:293-305.

Wessel, P., and W. H. F. Smith. 1991. Free software helps map and display data. *EOS Trans. Amer. Geophys. U.* 72: 441, 445-446.

Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 6.2. Station times and positions for LATEX A cruise H06.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	26-JUL-1993	1344	27˚58.20'	95˚57.59'	49.1	7
2	26-JUL-1993	1538	28˚01.80'	95˚40.78'	49.5	6
3	26-JUL-1993	1721	28˚06.60'	95˚26.96'	48.3	6
4	26-JUL-1993	1957	28˚13.20'	95˚01.20'	49.2	6
5	26-JUL-1993	2133	28˚14.40'	94˚46.80'	48.5	6
6	26-JUL-1993	2315	28˚15.59'	94˚32.40'	48.0	6
7	27-JUL-1993	0052	28˚18.60'	94˚18.01'	49.2	6
8	27-JUL-1993	0228	28˚22.21'	94˚05.41'	49.0	6
9	27-JUL-1993	0406	28˚25.30'	93˚51.02'	50.0	6
10	27-JUL-1993	0536	28˚25.06'	93˚37.26'	50.4	6
11	27-JUL-1993	0709	28˚25.98'	93˚23.98'	51.3	6
12	27-JUL-1993	0837	28˚25.32'	93˚10.20'	50.6	7
13	27-JUL-1993	1106	28˚26.48'	92˚45.68'	52.8	8
14	27-JUL-1993	1237	28˚27.62'	92˚31.79'	53.6	8
15	27-JUL-1993	1413	28˚29.40'	92˚17.36'	52.9	8
16	27-JUL-1993	1524	28˚29.39'	92˚06.59'	51.5	7
17	27-JUL-1993	1656	28˚28.80'	91˚51.60'	51.5	8
18	27-JUL-1993	1825	28˚28.76'	91˚37.22'	50.6	7
19	27-JUL-1993	1947	28˚26.40'	91˚24.02'	50.6	7
20	27-JUL-1993	2133	28˚23.70'	91˚08.91'	50.2	7
21	27-JUL-1993	2312	28˚20.45'	90˚54.14'	51.3	7
22	28-JUL-1993	0030	28˚20.41'	90˚42.58'	48.5	7
23	28-JUL-1993	0442	28˚58.08'	90˚30.60'	12.1	4
24	28-JUL-1993	0525	28˚55.74'	90˚30.86'	13.9	4
25	28-JUL-1993	0622	28˚52.70'	90˚30.60'	18.2	5
26	28-JUL-1993	0654	28˚49.97'	90˚30.59'	18.5	5
27	28-JUL-1993	0740	28˚46.69'	90˚30.62'	18.0	5
28	28-JUL-1993	0815	28˚43.93'	90˚30.35'	18.1	5
29	28-JUL-1993	0908	28˚37.95'	90˚30.27'	22.0	10
30	28-JUL-1993	1024	28˚31.63'	90˚30.16'	36.4	7
31	28-JUL-1993	1123	28˚25.43'	90˚29.96'	44.7	7
32	28-JUL-1993	1221	28˚21.61'	90˚29.97'	49.6	8
33	28-JUL-1993	1310	28˚16.82'	90˚29.98'	62.6	8
34	28-JUL-1993	1354	28˚13.54'	90˚30.02'	76.3	12
35	28-JUL-1993	1505	28˚10.48'	90˚30.13'	94.7	12
36	28-JUL-1993	1546	28˚07.67'	90˚30.13'	118.4	12
37	28-JUL-1993	1641	28˚04.64'	90˚30.20'	151.0	12
38	28-JUL-1993	1747	28˚01.28'	90˚30.06'	260.2	12
39	28-JUL-1993	1926	27˚57.98'	90˚30.17'	438.8	12
40	28-JUL-1993	2009	27˚55.43'	90˚30.46'	503.1	12
41	28-JUL-1993	2228	28˚02.72'	90˚38.61'	167.2	12
42	29-JUL-1993	0001	28˚01.35'	90˚52.40'	194.2	12
43	29-JUL-1993	0132	28˚00.38'	91˚05.83'	138.3	12
44	29-JUL-1993	0302	27˚58.15'	91˚19.49'	268.1	12

Table 6.2. Station times and positions for LATEX A cruise H06 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	29-JUL-1993	0438	27˚56.63'	91˚32.72'	230.1	12
46	29-JUL-1993	0618	27˚54.78'	91˚45.87'	173.1	12
47	29-JUL-1993	0814	27˚44.93'	91˚59.90'	496.3	12
48	29-JUL-1993	0927	27˚47.52'	92˚00.01'	387.5	12
49	29-JUL-1993	1014	27˚50.66'	91˚59.98'	201.1	12
50	29-JUL-1993	1053	27˚53.58'	92˚00.04'	170.1	12
51	29-JUL-1993	1203	27˚56.81'	92˚00.05'	103.2	10
52	29-JUL-1993	1304	27˚59.97'	92˚00.03'	121.0	12
53	29-JUL-1993	1351	28˚02.69'	91˚59.95'	106.1	11
54	29-JUL-1993	1447	28˚08.92'	91˚59.90'	83.1	10
55	29-JUL-1993	1541	28˚14.71'	91˚59.89'	69.5	7
56	29-JUL-1993	1653	28˚21.13'	91˚59.82'	61.1	8
57	29-JUL-1993	1744	28˚26.78'	91˚59.85'	55.8	8
58	29-JUL-1993	1853	28˚33.01'	91˚59.83'	44.9	7
59	29-JUL-1993	1941	28˚37.73'	91˚59.88'	39.5	6
60	29-JUL-1993	2039	28˚44.69'	92˚00.08'	31.9	6
61	29-JUL-1993	2144	28˚50.26'	91˚59.98'	26.3	6
62	29-JUL-1993	2213	28˚52.98'	92˚00.01'	24.1	6
63	29-JUL-1993	2251	28˚56.22'	91˚59.98'	21.4	5
64	29-JUL-1993	2334	28˚59.34'	92˚00.07'	19.0	5
65	30-JUL-1993	0004	29˚02.29'	92˚00.12'	16.2	5
66	30-JUL-1993	0032	29˚04.85'	92˚00.16'	12.9	4
67	30-JUL-1993	0110	29˚07.98'	92˚00.14'	10.1	4
68	30-JUL-1993	0145	29˚10.87'	92˚00.00'	6.4	4
69	30-JUL-1993	0826	29˚34.02'	93˚00.01'	12.0	4
70	30-JUL-1993	0923	29˚27.93'	92˚59.95'	14.7	4
71	30-JUL-1993	1023	29˚22.00'	92˚59.93'	15.5	4
72	30-JUL-1993	1128	29˚16.00'	92˚59.82'	17.3	5
73	30-JUL-1993	1312	29˚10.04'	93˚00.03'	18.9	5
74	30-JUL-1993	1415	29˚04.01'	92˚59.97'	23.7	5
75	30-JUL-1993	1510	28˚57.80'	93˚00.00'	23.4	5
76	30-JUL-1993	1604	28˚51.47'	92˚59.93'	25.9	6
77	30-JUL-1993	1705	28˚44.93'	92˚59.95'	30.5	7
78	30-JUL-1993	1757	28˚38.41'	92˚59.93'	34.5	7
79	30-JUL-1993	1850	28˚31.88'	92˚59.99'	43.7	7
80	30-JUL-1993	1942	28˚25.40'	92˚59.97'	49.7	8
81	30-JUL-1993	2053	28˚18.48'	92˚59.89'	53.3	8
82	30-JUL-1993	2152	28˚10.84'	92˚59.98'	71.3	8
83	30-JUL-1993	2314	28˚01.80'	92˚59.87'	101.3	9
84	31-JUL-1993	0021	27˚52.83'	93˚00.11'	192.3	12
85	31-JUL-1993	0222	27˚45.28'	93˚00.17'	204.2	12
86	31-JUL-1993	0320	27˚39.41'	92˚59.93'	317.2	12
87	31-JUL-1993	0858	27˚55.15'	92˚09.95'	146.6	12
88	31-JUL-1993	1037	27˚55.13'	92˚23.40'	82.3	9

Table 6.2. Station times and positions for LATEX A cruise H06 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	31-JUL-1993	1212	27˚55.13'	92˚37.45'	191.4	12
90	31-JUL-1993	1408	27˚52.48'	92˚51.37'	223.2	12
91	31-JUL-1993	1551	27˚50.07'	93˚05.29'	175.4	12
92	31-JUL-1993	1730	27˚49.86'	93˚19.15'	152.6	12
93	31-JUL-1993	1903	27˚49.00'	93˚32.57'	200.6	12
94	31-JUL-1993	2144	27˚48.29'	93˚46.27'	191.0	12
95	31-JUL-1993	2317	27˚49.26'	94˚00.02'	202.4	12
96	01-AUG-1993	0105	27˚39.63'	94˚13.47'	458.0	12
97	01-AUG-1993	0227	27˚44.25'	94˚12.22'	450.3	12
98	01-AUG-1993	0321	27˚47.99'	94˚11.44'	266.4	12
99	01-AUG-1993	0410	27˚50.98'	94˚10.26'	119.2	10
100	01-AUG-1993	0448	27˚54.14'	94˚09.34'	95.9	10
101	01-AUG-1993	0529	27˚57.06'	94˚08.33'	84.3	8
102	01-AUG-1993	0556	27˚59.54'	94˚07.49'	81.1	8
103	01-AUG-1993	0643	28˚04.65'	94˚05.45'	69.5	8
104	01-AUG-1993	0721	28˚08.95'	94˚03.76'	65.5	8
105	01-AUG-1993	0828	28˚16.01'	94˚01.29'	58.8	7
106	01-AUG-1993	0914	28˚21.92'	93˚59.61'	52.1	7
107	01-AUG-1993	1000	28˚27.91'	93˚59.98'	43.5	6
108	01-AUG-1993	1047	28˚33.80'	93˚59.95'	36.7	5
109	01-AUG-1993	1147	28˚39.65'	93˚59.93'	30.0	6
110	01-AUG-1993	1242	28˚46.03'	94˚00.08'	25.0	6
111	01-AUG-1993	1333	28˚51.92'	93˚59.97'	25.0	6
112	01-AUG-1993	1424	28˚57.93'	94˚00.13'	18.1	5
113	01-AUG-1993	1459	29˚01.30'	94˚00.05'	19.7	4
114	01-AUG-1993	1528	29˚03.78'	94˚00.13'	18.8	5
115	01-AUG-1993	1611	29˚07.34'	94˚00.05'	17.5	5
116	01-AUG-1993	1643	29˚09.97'	94˚00.06'	16.6	5
117	01-AUG-1993	1718	29˚13.02'	94˚00.15'	15.2	4
118	01-AUG-1993	1750	29˚16.17'	94˚00.08'	12.9	5
119	01-AUG-1993	1817	29˚18.97'	93˚59.91'	12.5	5
120	01-AUG-1993	1849	29˚21.62'	94˚00.14'	10.9	4
121	01-AUG-1993	1918	29˚24.60'	94˚00.03'	10.5	4
122	01-AUG-1993	1954	29˚28.15'	94˚00.11'	12.0	4
123	01-AUG-1993	2036	29˚32.03'	94˚00.15'	11.1	4
124	02-AUG-1993	0137	29˚10.21'	94˚47.97'	13.3	4
125	02-AUG-1993	0232	29˚04.50'	94˚46.18'	17.5	4
126	02-AUG-1993	0317	28˚58.78'	94˚44.36'	16.6	4
127	02-AUG-1993	0401	28˚53.39'	94˚43.22'	19.5	5
128	02-AUG-1993	0446	28˚48.00'	94˚41.41'	20.0	5
129	02-AUG-1993	0541	28˚42.59'	94˚39.89'	26.0	6
130	02-AUG-1993	0633	28˚37.20'	94˚38.40'	30.1	6
131	02-AUG-1993	0720	28˚31.81'	94˚36.58'	34.6	7
132	02-AUG-1993	0805	28˚26.40'	94˚35.11'	39.7	7

Table 6.2. Station times and positions for LATEX A cruise H06 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
133	02-AUG-1993	0909	28˚21.00'	94˚33.59'	42.5	7
134	02-AUG-1993	1451	27˚43.02'	95˚00.66'	501.3	11
135	02-AUG-1993	1610	27˚45.81'	95˚01.94'	371.5	12
136	02-AUG-1993	1707	27˚48.55'	95˚03.56'	267.6	12
137	02-AUG-1993	1756	27˚51.29'	95˚04.89'	165.8	10
138	02-AUG-1993	1846	27˚54.08'	95˚06.38'	108.2	10
139	02-AUG-1993	1947	27˚59.67'	95˚09.16'	78.1	10
140	02-AUG-1993	2044	28˚05.04'	95˚12.10'	55.4	7
141	02-AUG-1993	2151	28˚10.51'	95˚15.02'	47.6	8
142	02-AUG-1993	2246	28˚16.36'	95˚17.84'	38.5	8
143	02-AUG-1993	2339	28˚21.65'	95˚20.82'	33.2	7
144	03-AUG-1993	0033	28˚27.01'	95˚23.47'	30.0	6
145	03-AUG-1993	0114	28˚29.68'	95˚25.04'	27.5	6
146	03-AUG-1993	0143	28˚32.38'	95˚26.35'	24.8	9
147	03-AUG-1993	0213	28˚34.83'	95˚28.18'	21.7	5
148	03-AUG-1993	0242	28˚37.42'	95˚29.31'	18.0	4
149	03-AUG-1993	0310	28˚39.68'	95˚30.79'	13.7	4
150	03-AUG-1993	0340	28˚42.31'	95˚32.18'	13.8	4
151	03-AUG-1993	1330	27˚31.50'	95˚47.09'	521.0	12
152	03-AUG-1993	1444	27˚36.12'	95˚52.69'	192.3	12
153	03-AUG-1993	1556	27˚41.10'	95˚58.21'	104.3	9
154	03-AUG-1993	1653	27˚45.29'	96˚03.29'	79.9	9
155	03-AUG-1993	1744	27˚48.60'	96˚07.84'	67.0	7
156	03-AUG-1993	1906	27˚53.97'	96˚13.48'	50.7	6
157	03-AUG-1993	2005	27˚58.19'	96˚18.92'	37.0	6
158	03-AUG-1993	2058	28˚02.38'	96˚24.04'	27.8	5
159	03-AUG-1993	2159	28˚07.81'	96˚30.02'	19.6	4
160	03-AUG-1993	2256	28˚12.57'	96˚35.98'	10.3	4
161	04-AUG-1993	0154	27˚51.57'	96˚19.20'	49.2	6
162	04-AUG-1993	0317	27˚44.41'	96˚29.99'	49.6	6
163	04-AUG-1993	0448	27˚34.79'	96˚39.62'	49.5	6
164	04-AUG-1993	0614	27˚24.01'	96˚47.40'	49.9	6
165	04-AUG-1993	1015	27˚05.98'	96˚12.58'	446.3	12
166	04-AUG-1993	1149	27˚06.88'	96˚16.96'	315.5	12
167	04-AUG-1993	1313	27˚07.59'	96˚20.20'	224.9	12
168	04-AUG-1993	1401	27˚08.08'	96˚22.77'	185.6	12
169	04-AUG-1993	1450	27˚08.85'	96˚26.73'	140.0	12
170	04-AUG-1993	1623	27˚09.09'	96˚29.79'	115.0	11
171	04-AUG-1993	1704	27˚09.68'	96˚33.12'	99.7	10
172	04-AUG-1993	1806	27˚10.17'	96˚36.35'	90.0	10
173	04-AUG-1993	1907	27˚11.04'	96˚42.93'	72.8	10
174	04-AUG-1993	2007	27˚11.92'	96˚49.59'	57.5	8
175	04-AUG-1993	2046	27˚12.58'	96˚53.41'	49.4	8
176	04-AUG-1993	2149	27˚12.71'	96˚56.23'	43.5	8

Table 6.2. Station times and positions for LATEX A cruise H06 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
177	04-AUG-1993	2253	27˚13.55'	97˚03.17'	32.7	7
178	04-AUG-1993	2325	27˚14.30'	97˚06.25'	29.0	5
179	04-AUG-1993	2357	27˚14.39'	97˚09.58'	25.5	5
180	05-AUG-1993	0029	27˚15.39'	97˚12.64'	22.5	5
181	05-AUG-1993	0106	27˚15.43'	97˚16.05'	17.8	4
182	05-AUG-1993	0348	27˚01.01'	96˚55.77'	49.5	6
183	05-AUG-1993	0530	26˚47.98'	96˚54.63'	49.0	6
184	05-AUG-1993	0711	26˚36.58'	96˚47.26'	52.3	6
185	05-AUG-1993	0855	26˚24.60'	96˚39.00'	47.6	6
186	05-AUG-1993	1137	26˚13.22'	96˚37.06'	50.3	6
187	05-AUG-1993	1502	26˚01.30'	97˚06.98'	14.3	4
188	05-AUG-1993	1540	26˚01.38'	97˚04.53'	19.6	4
189	05-AUG-1993	1612	26˚01.20'	97˚01.35'	24.8	5
190	05-AUG-1993	1644	26˚01.53'	96˚58.10'	29.0	6
191	05-AUG-1993	1736	26˚00.99'	96˚51.44'	37.4	6
192	05-AUG-1993	1837	26˚00.99'	96˚44.98'	45.1	6
193	05-AUG-1993	1924	26˚00.98'	96˚38.62'	48.9	7
194	05-AUG-1993	2018	26˚00.98'	96˚31.84'	60.6	7
195	05-AUG-1993	2123	26˚00.71'	96˚25.25'	86.9	9
196	05-AUG-1993	2156	26˚00.83'	96˚21.94'	124.8	10
197	05-AUG-1993	2248	26˚00.81'	96˚18.67'	218.8	12
198	05-AUG-1993	2334	26˚00.59'	96˚14.68'	502.5	12
199	06-AUG-1993	0122	26˚08.63'	96˚19.91'	229.8	12
200	06-AUG-1993	0254	26˚19.82'	96˚17.81'	247.6	12
201	06-AUG-1993	0430	26˚31.83'	96˚19.94'	272.0	12
202	06-AUG-1993	0616	26˚43.80'	96˚26.21'	206.3	12
203	06-AUG-1993	0747	26˚55.83'	96˚26.19'	211.1	12
204	06-AUG-1993	1010	27˚16.78'	96˚15.20'	205.2	12
205	06-AUG-1993	1140	27˚25.79'	96˚06.21'	207.7	12
206	06-AUG-1993	1426	27˚39.03'	95˚42.68'	239.0	12
207	06-AUG-1993	1619	27˚42.50'	95˚30.12'	301.0	12
208	06-AUG-1993	1749	27˚45.68'	95˚17.19'	265.8	12
209	06-AUG-1993	2033	27˚50.13'	94˚48.59'	246.2	12
210	06-AUG-1993	2204	27˚50.12'	94˚35.30'	277.1	12
211	06-AUG-1993	2346	27˚50.05'	94˚21.68'	173.6	12
212	07-AUG-1993	0056	27˚56.01'	94˚27.71'	107.2	12
213	07-AUG-1993	0140	28˚00.94'	94˚29.03'	67.3	7
214	07-AUG-1993	0225	28˚05.46'	94˚29.99'	57.3	6
215	07-AUG-1993	0303	28˚10.20'	94˚31.51'	56.5	6

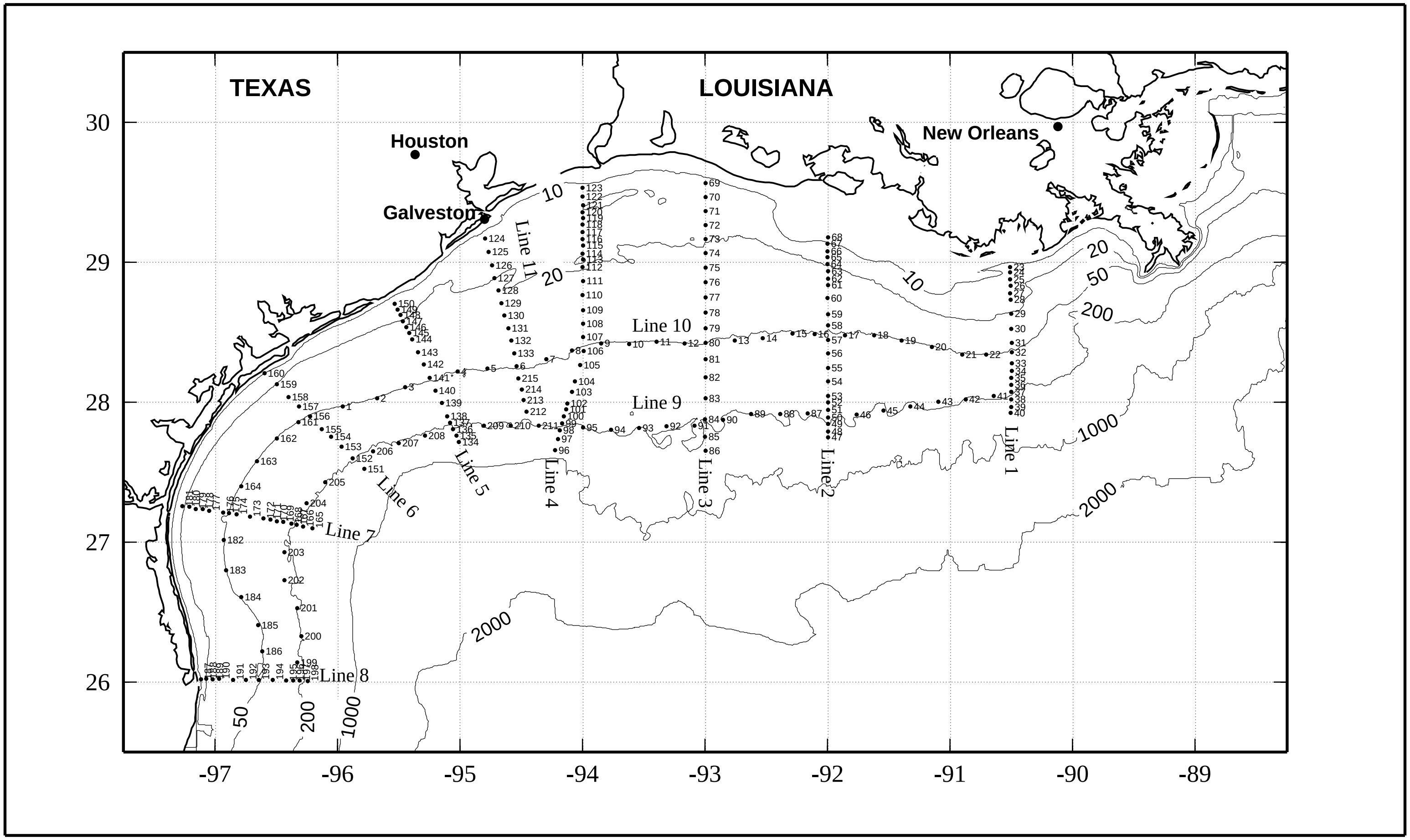

Figure 6.0. Cruise track and station locations for LATEX A Hydrographic Survey H06, 25 July - 7 August 1993.

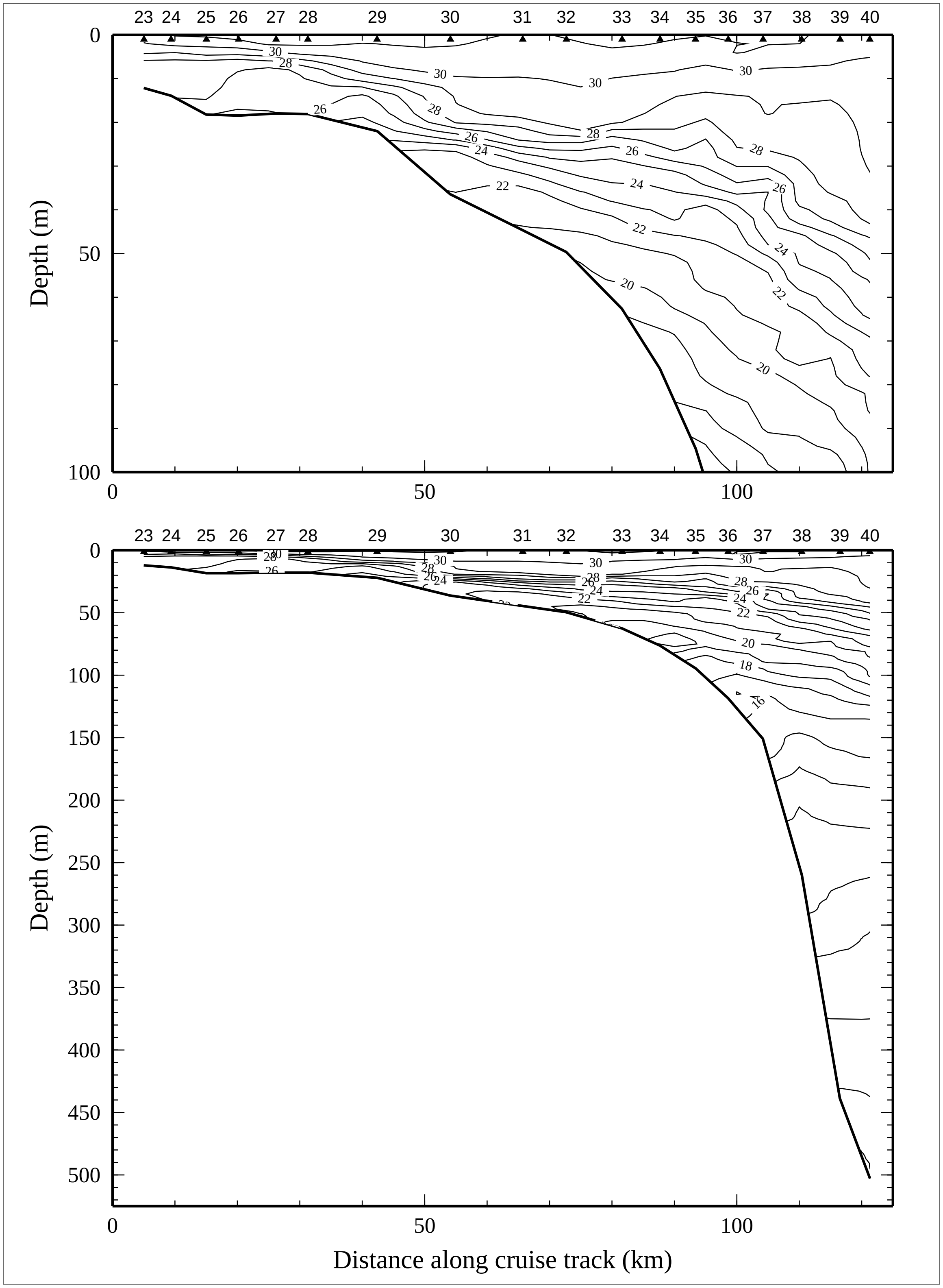

Figure 6.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

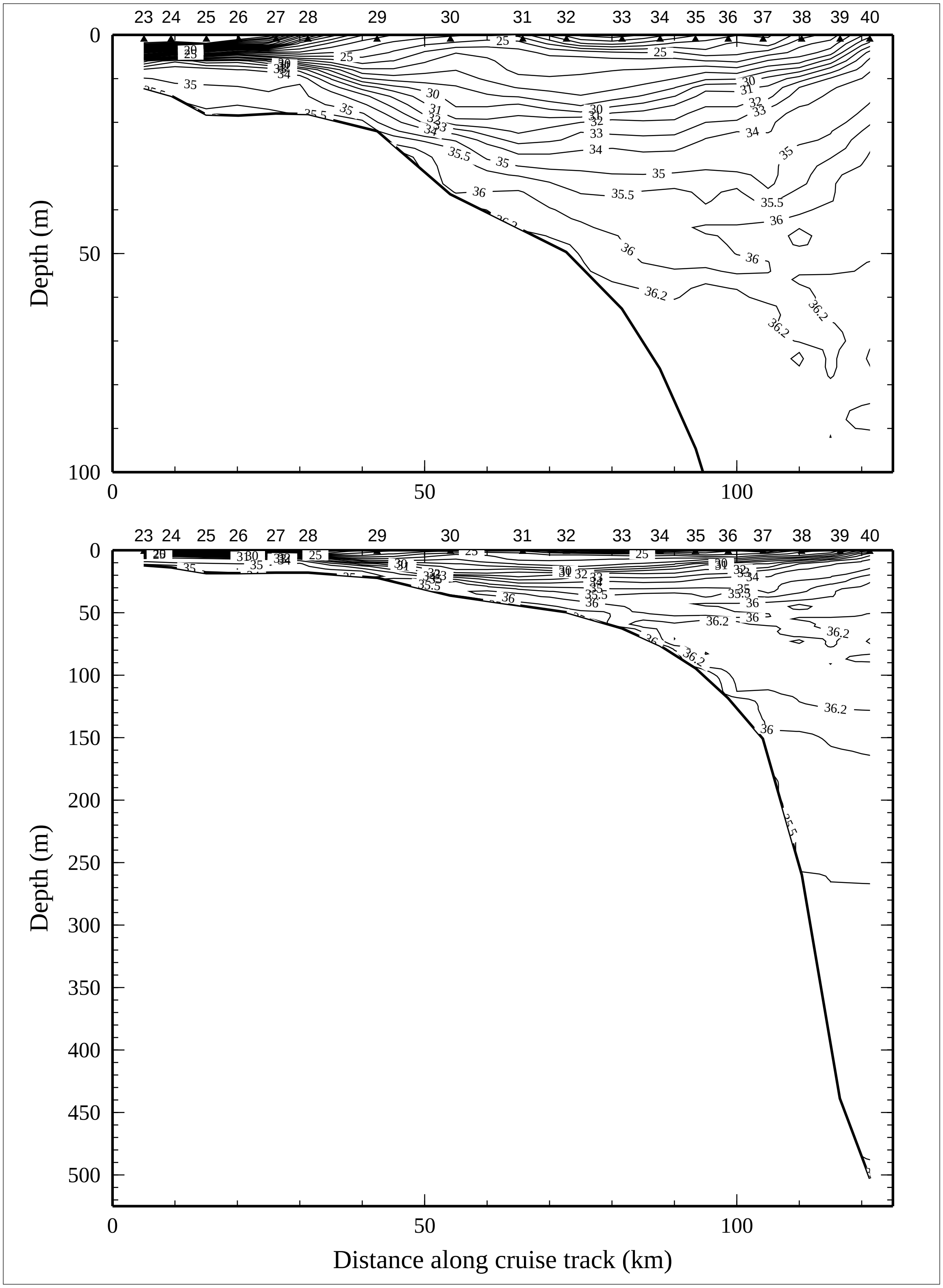

Figure 6.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

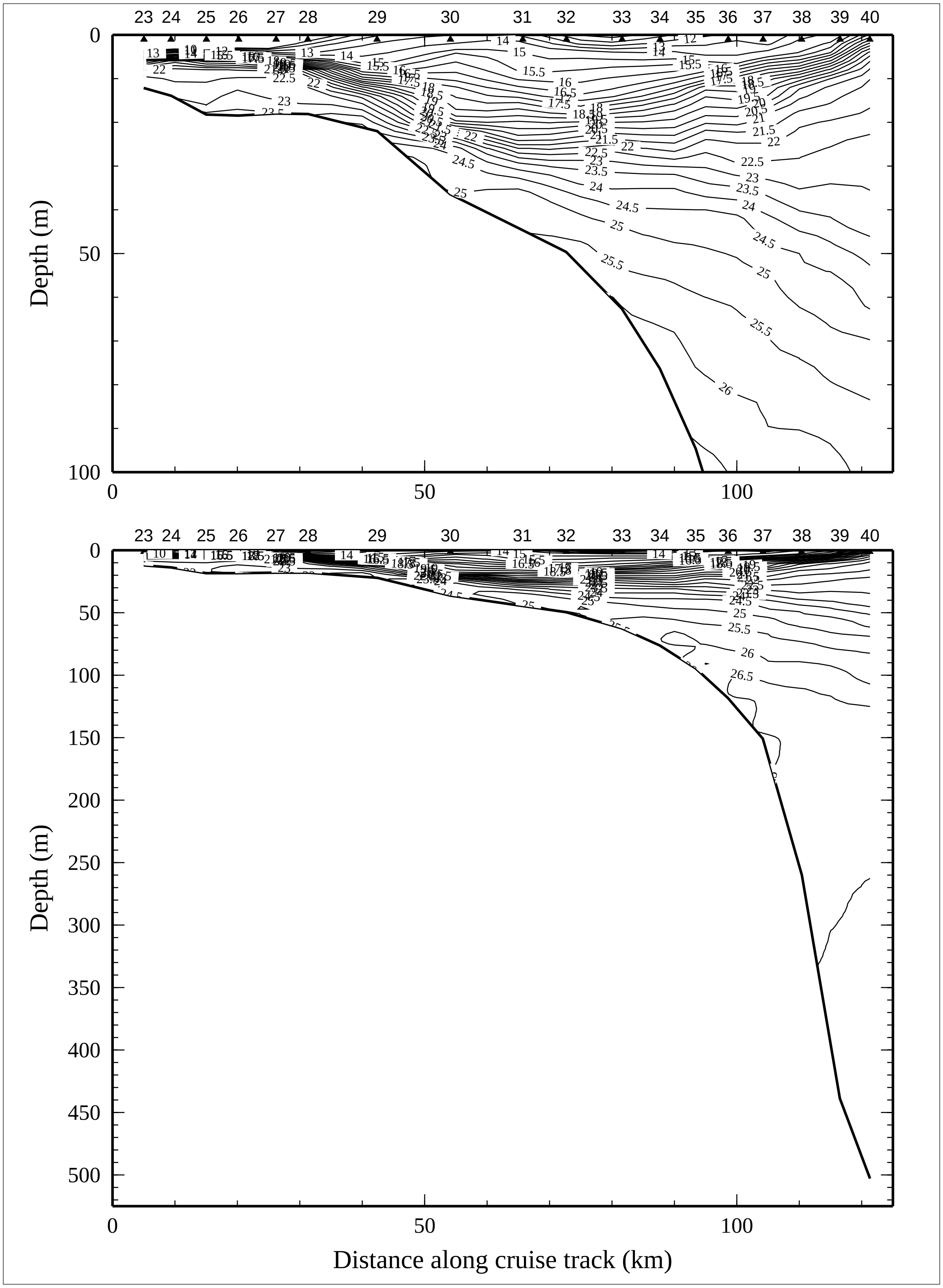

Figure 6.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

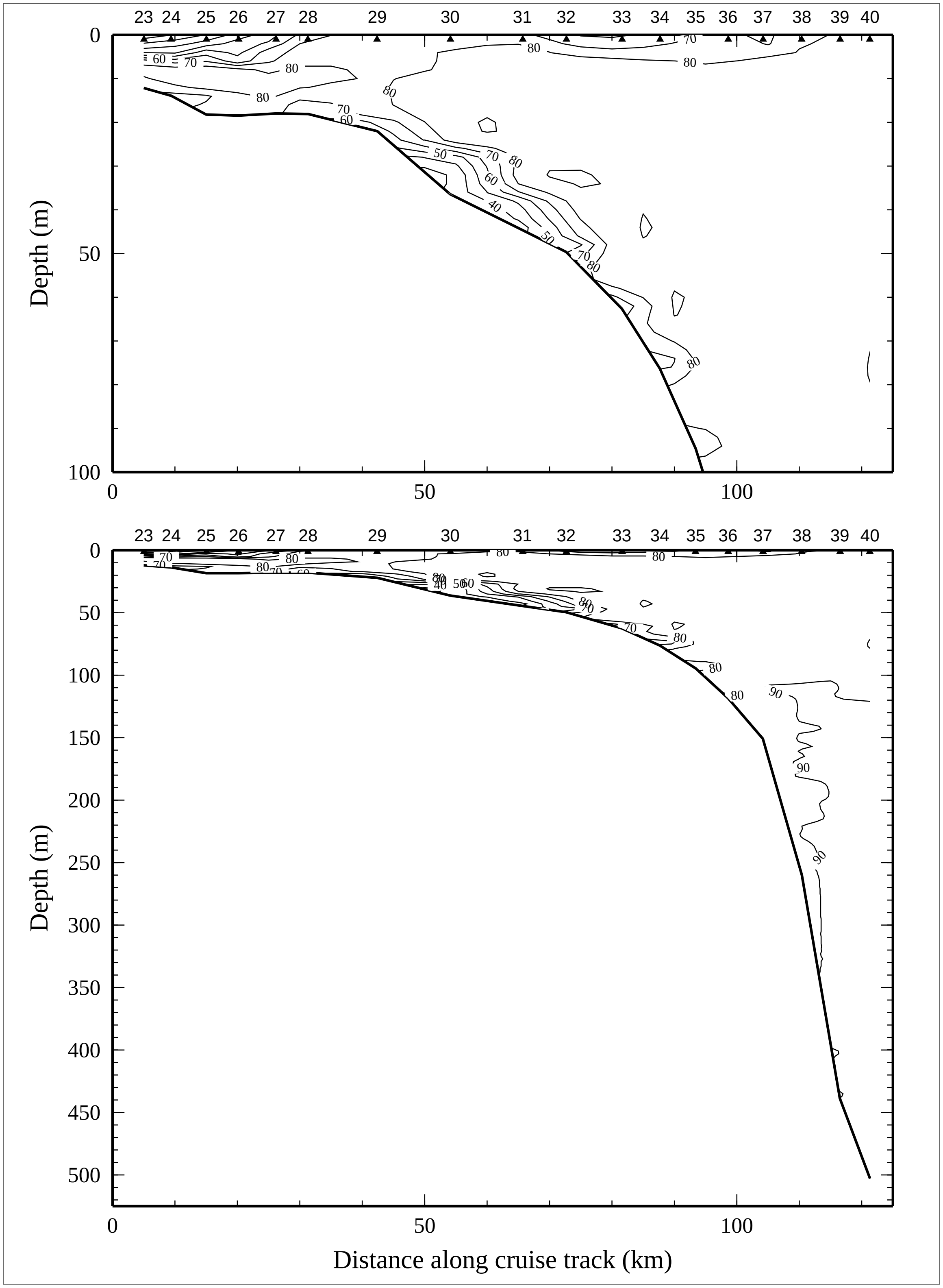

Figure 6.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

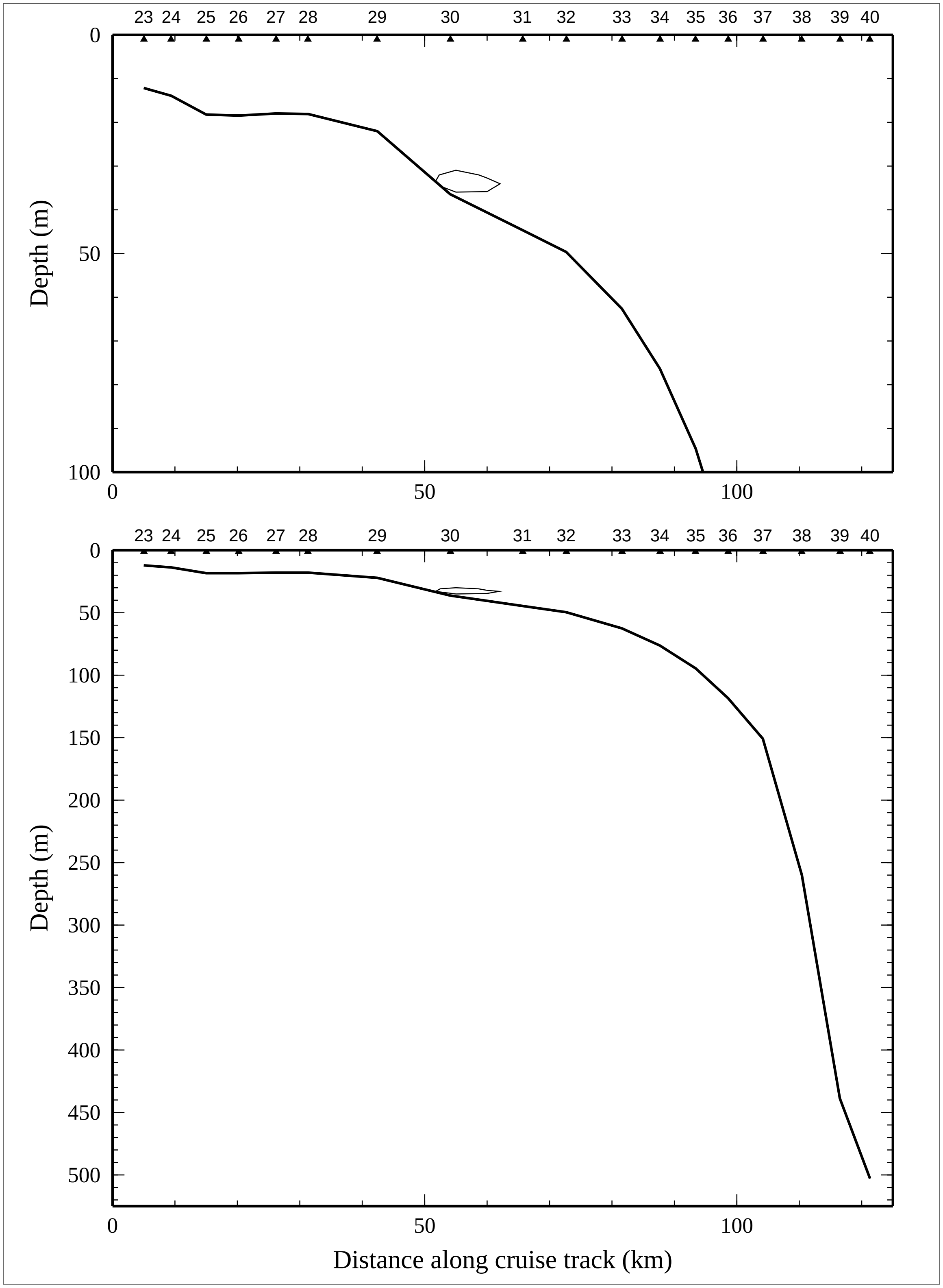

Figure 6.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

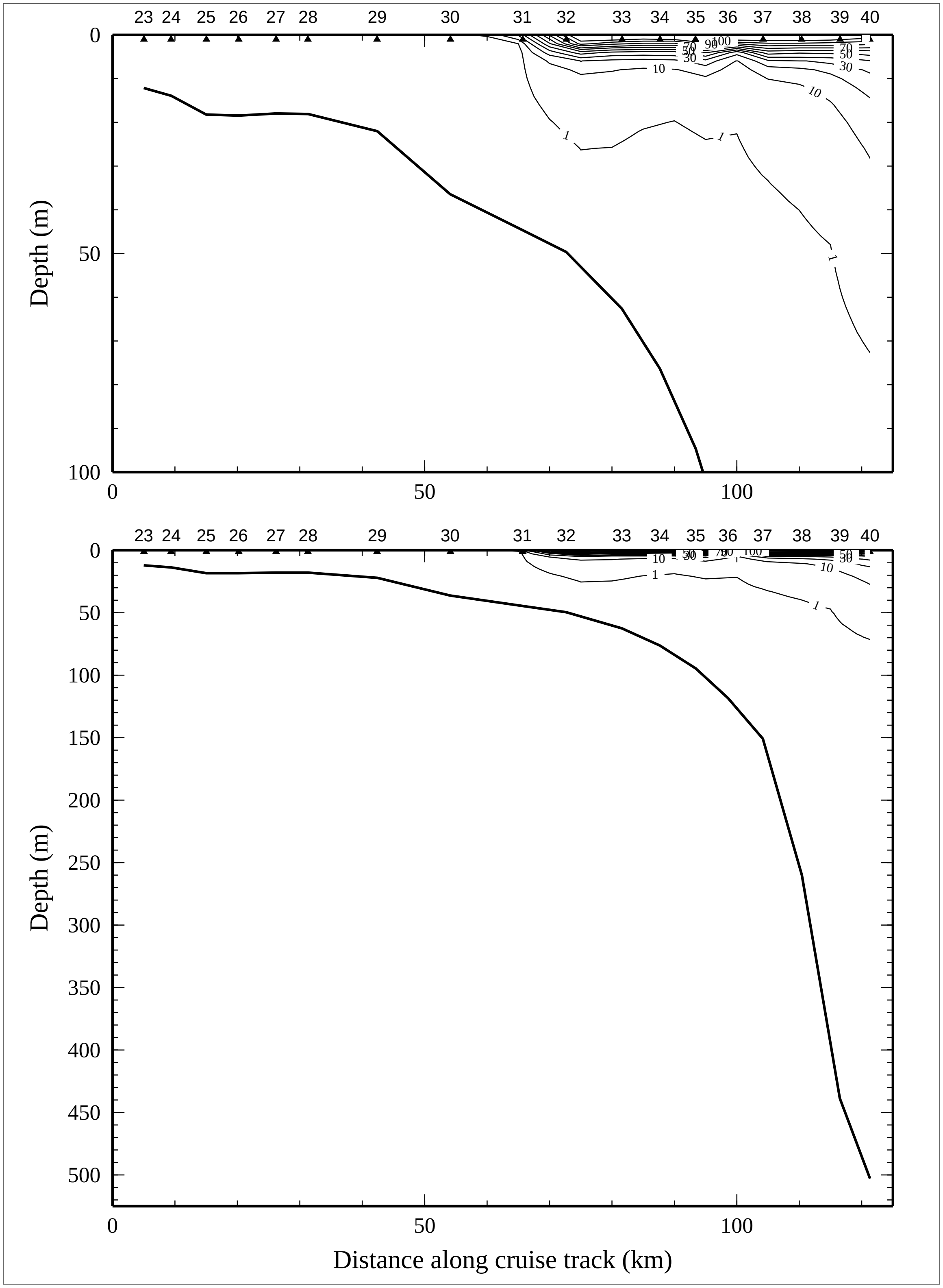

Figure 6.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

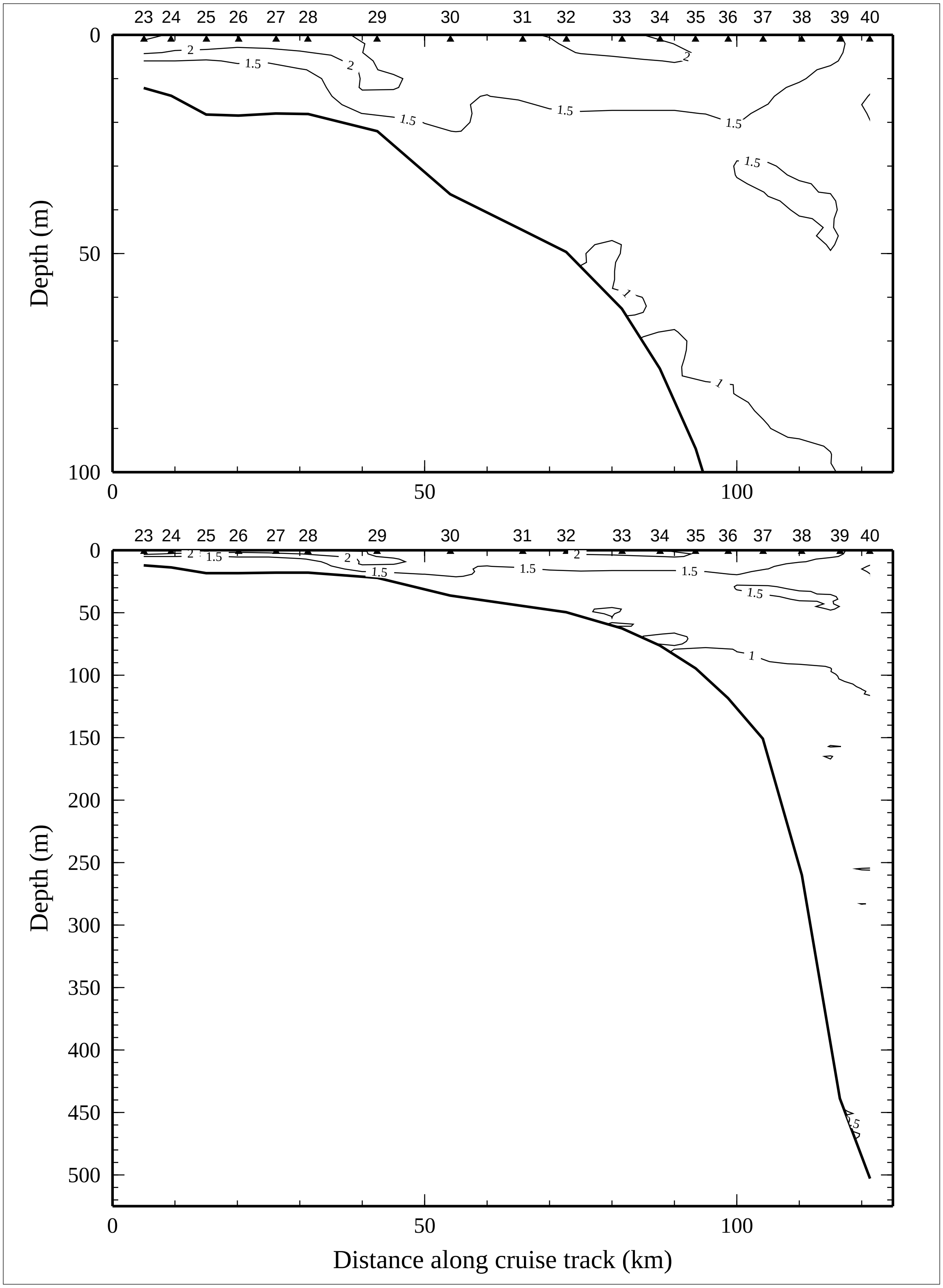

Figure 6.1.7. Relative fluorescence on line 1 of LATEX A survey H06,
25 July - 7 August 1993.

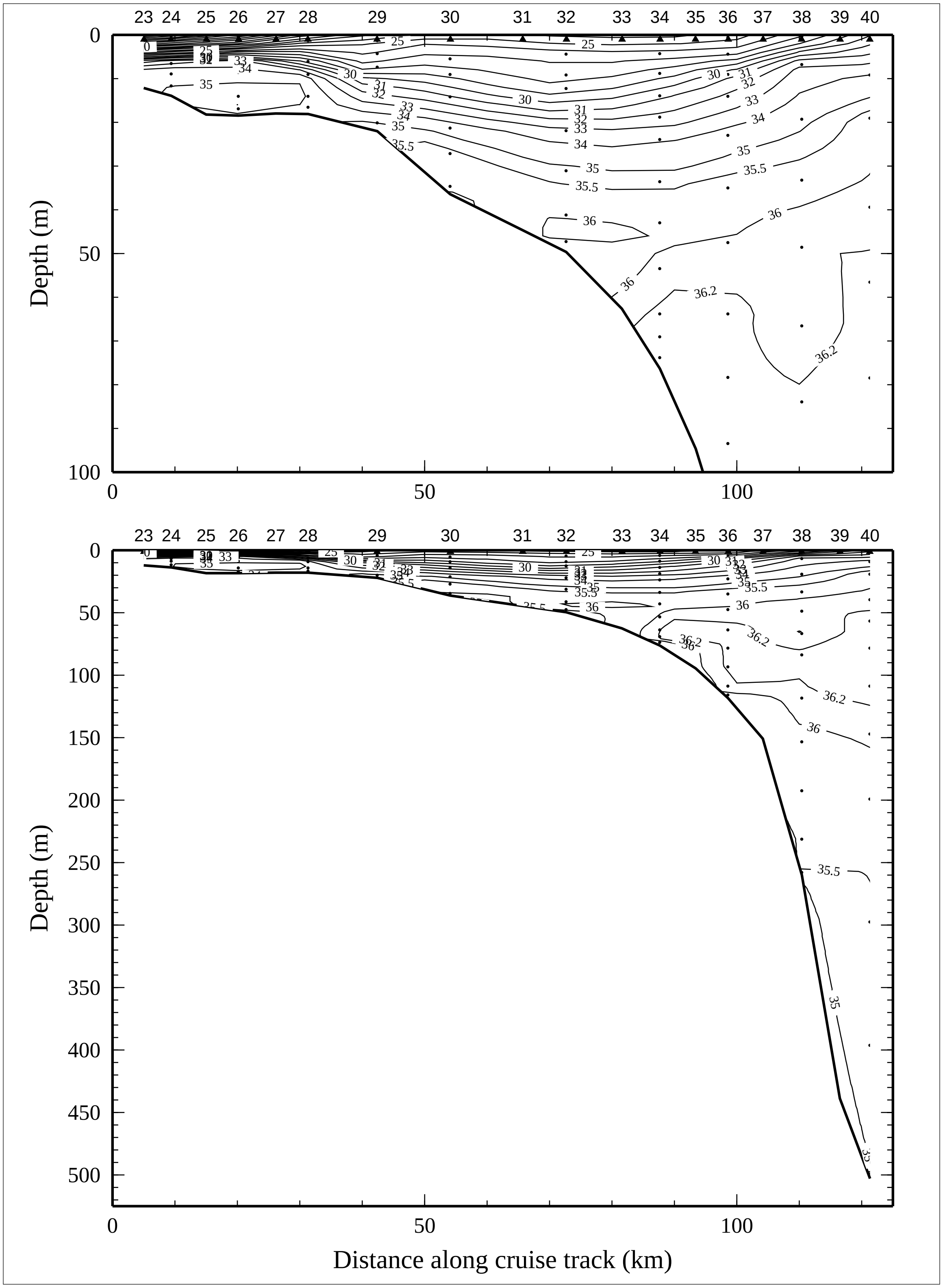

Figure 6.1.8. Bottle salinity on line 1 of LATEX A survey H06,
25 July - 7 August 1993.

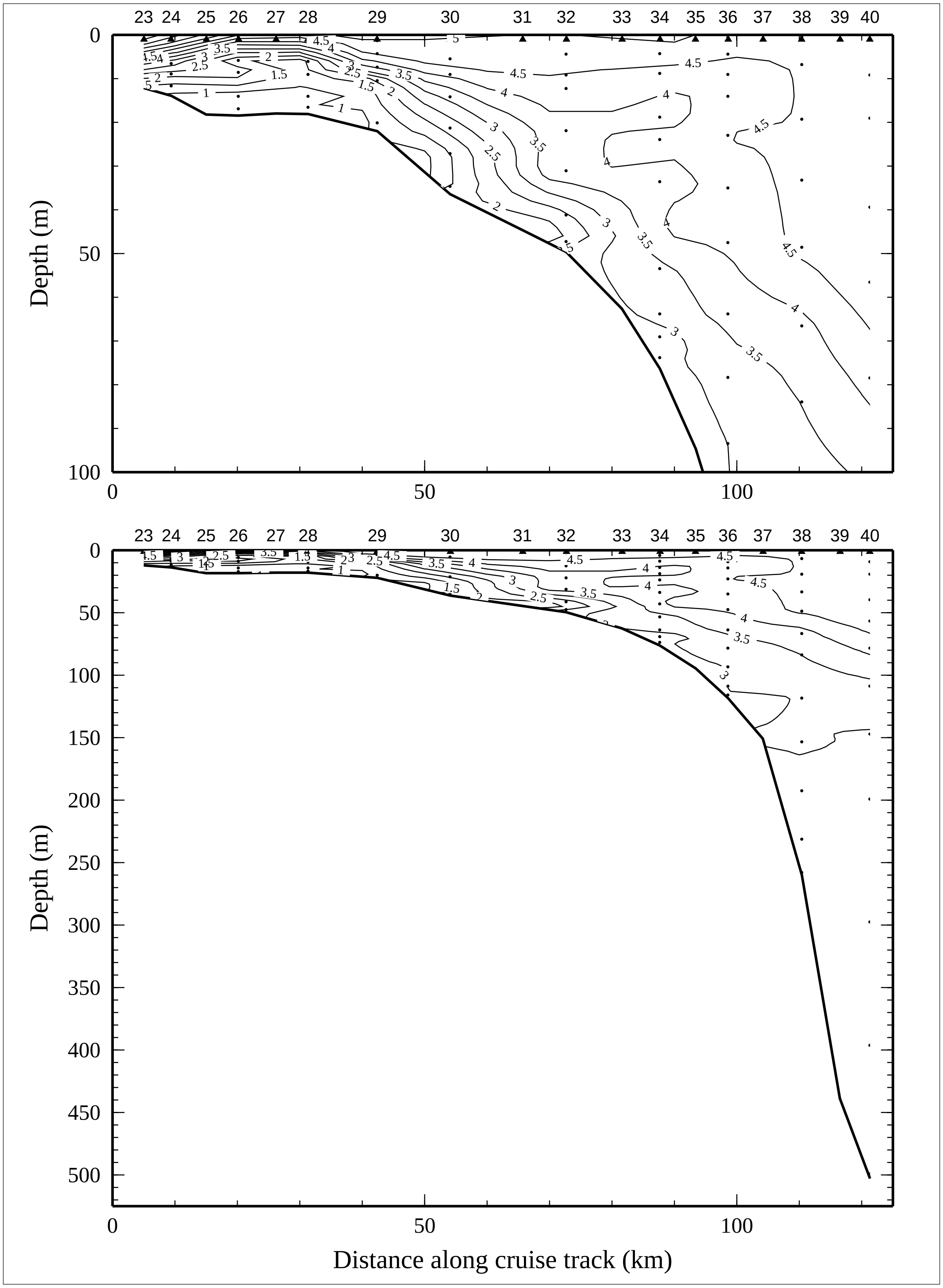

Figure 6.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

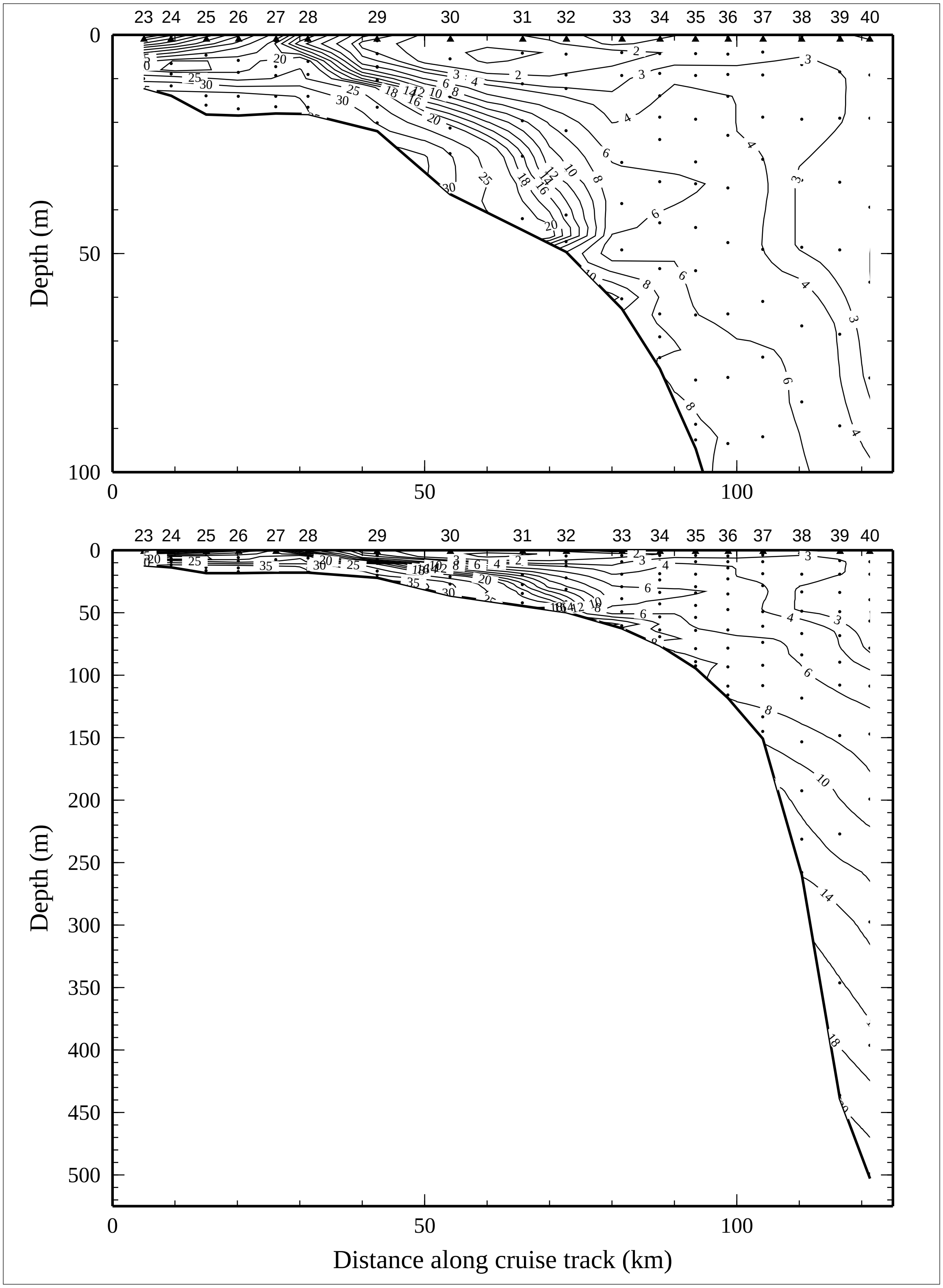

Figure 6.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

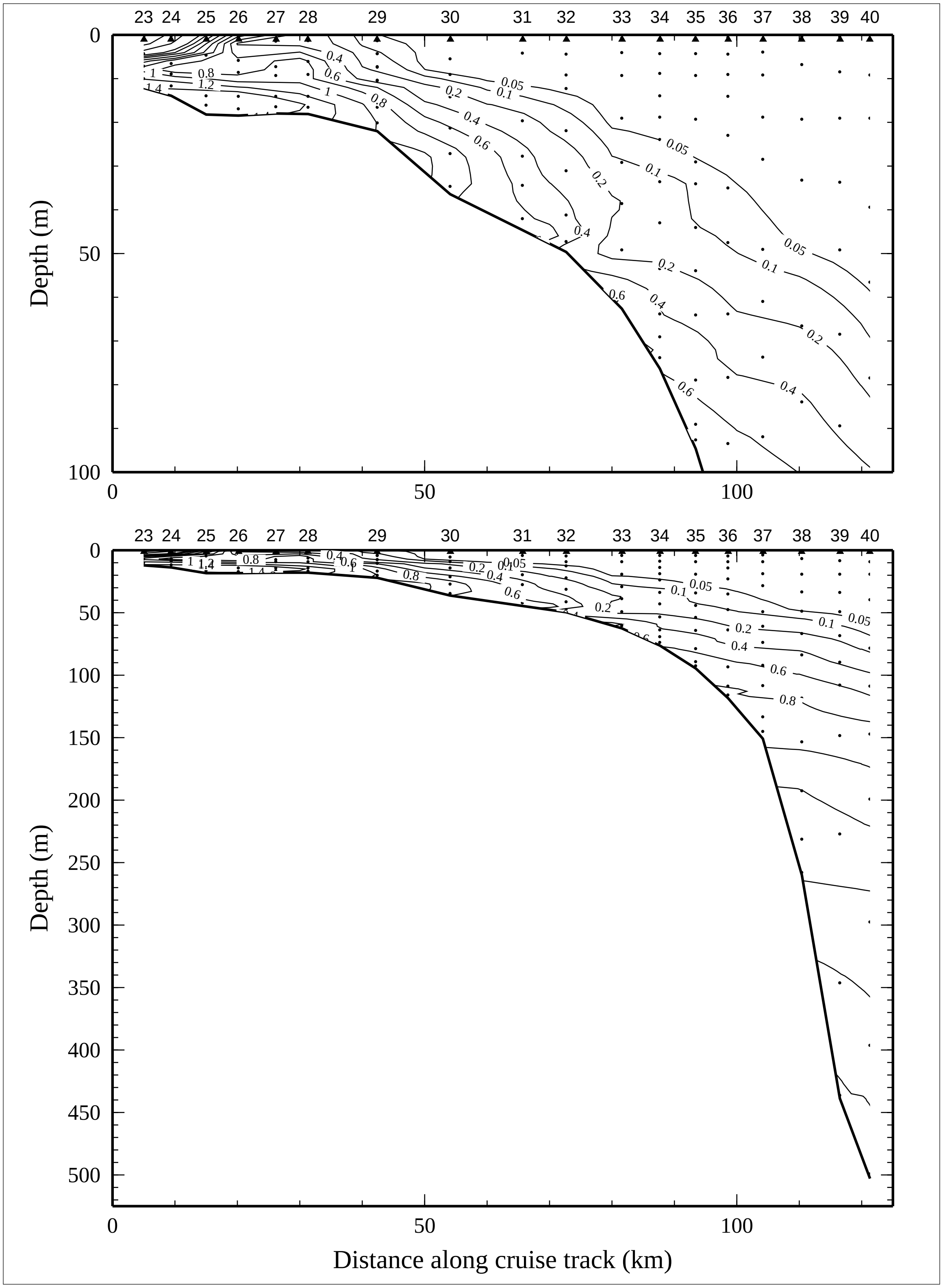

Figure 6.1.11. Phosphate (μmol·l⁻¹) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

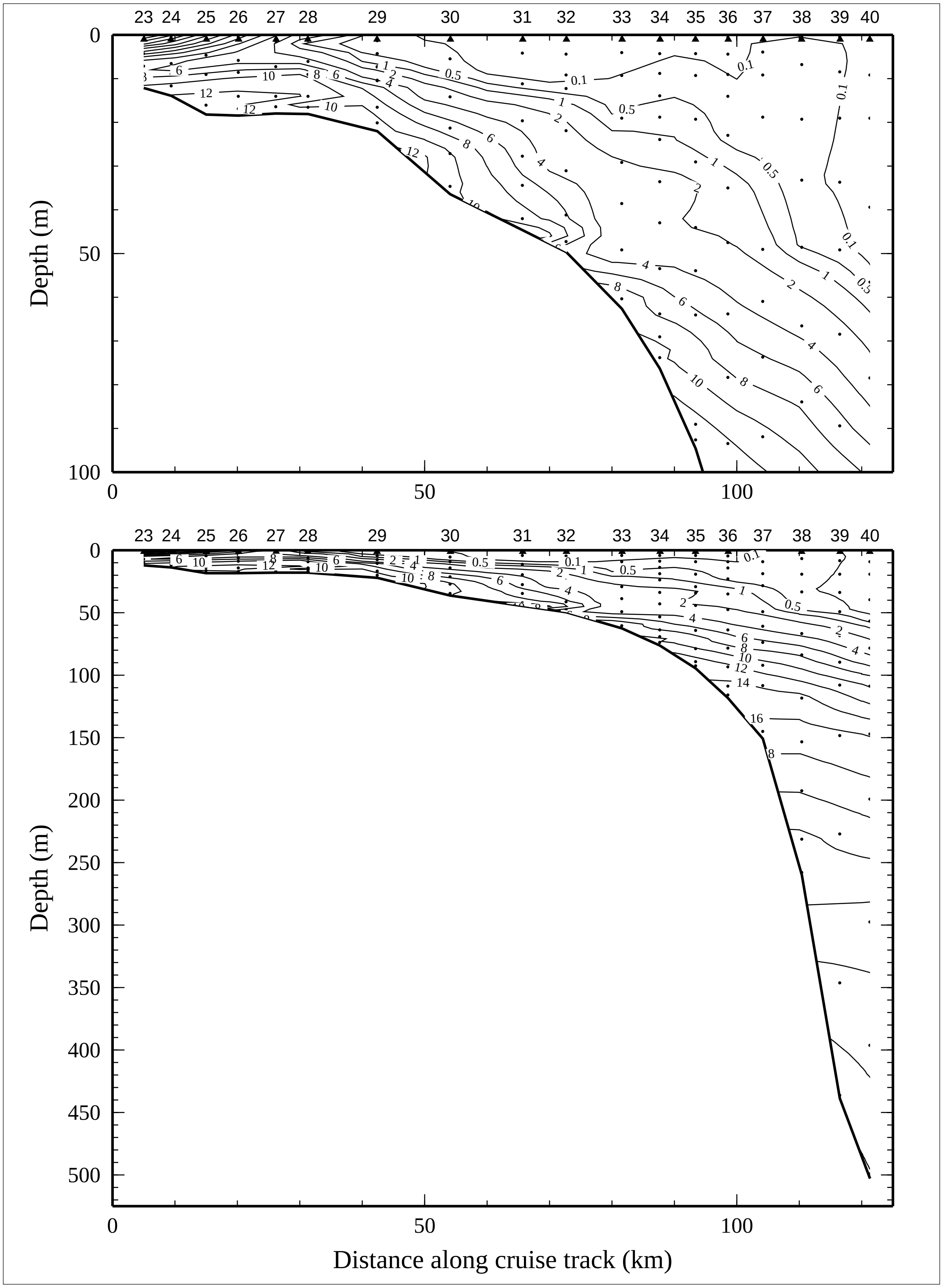

Figure 6.1.12. Nitrate (μmol·l⁻¹) on line 1 of LATEX A survey H06,
25 July - 7 August 1993.

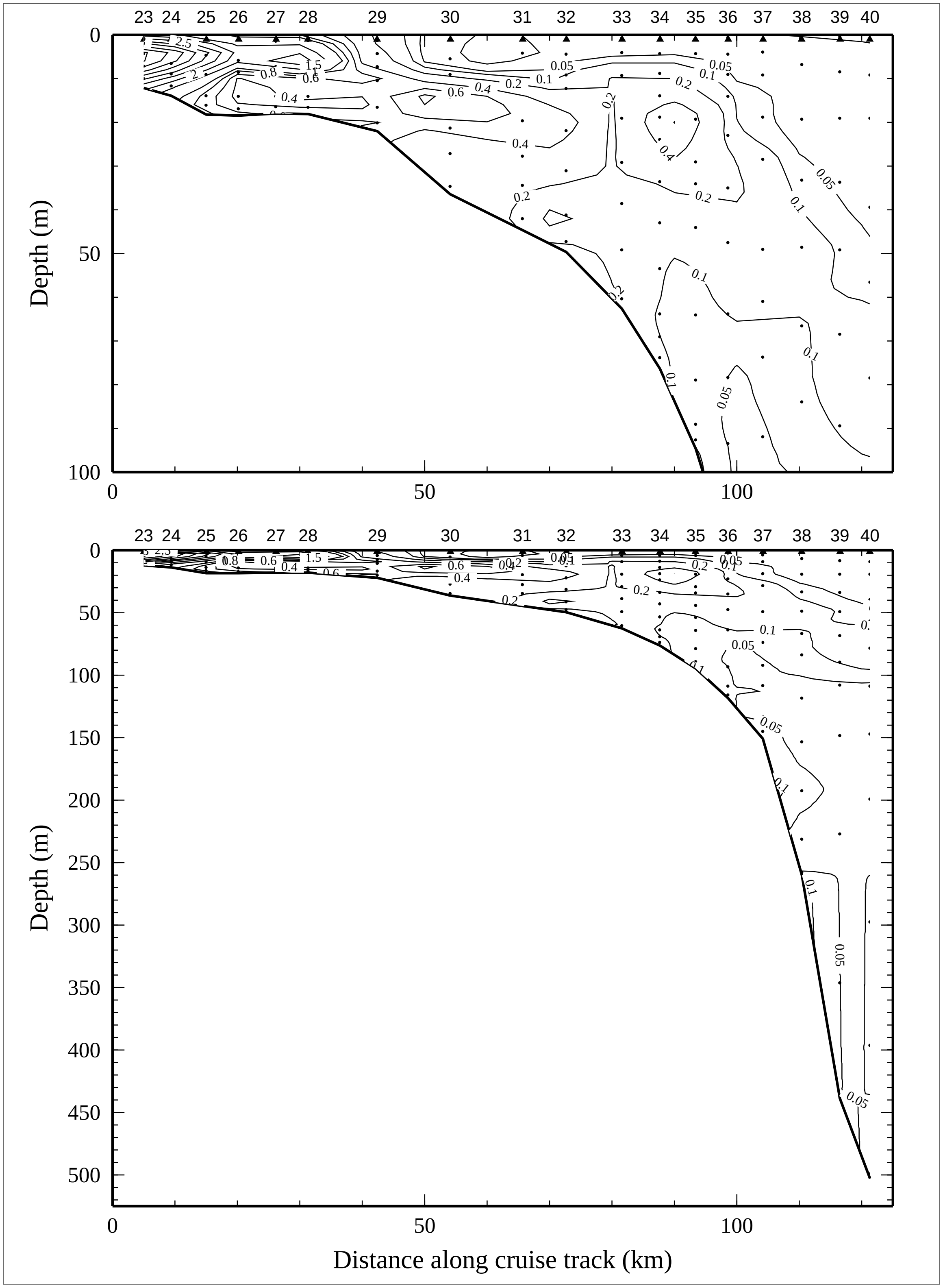

Figure 6.1.13. Nitrite (µmol·l^{-1}) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

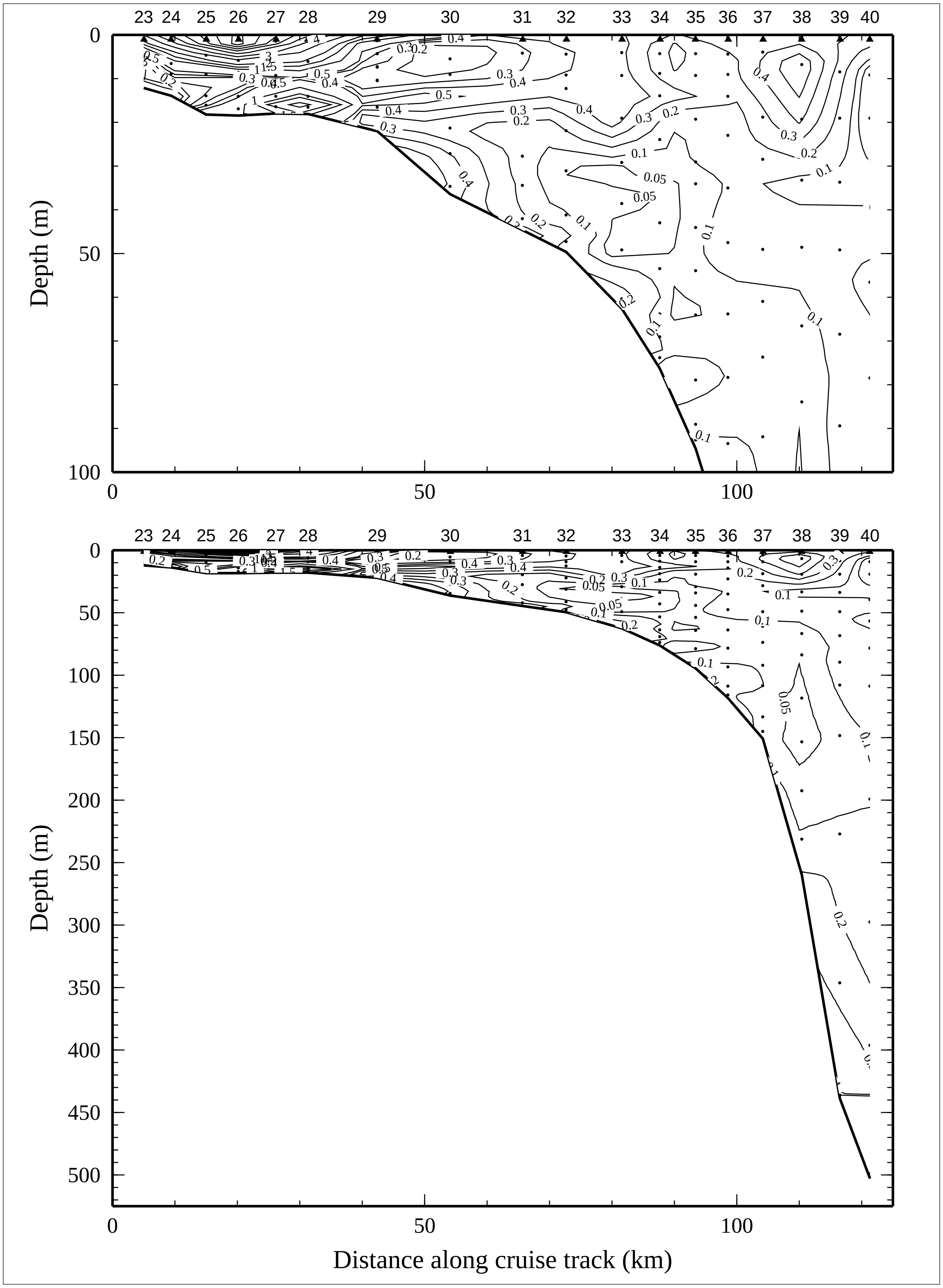

Figure 6.1.14. Ammonium (μmol·l-1) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

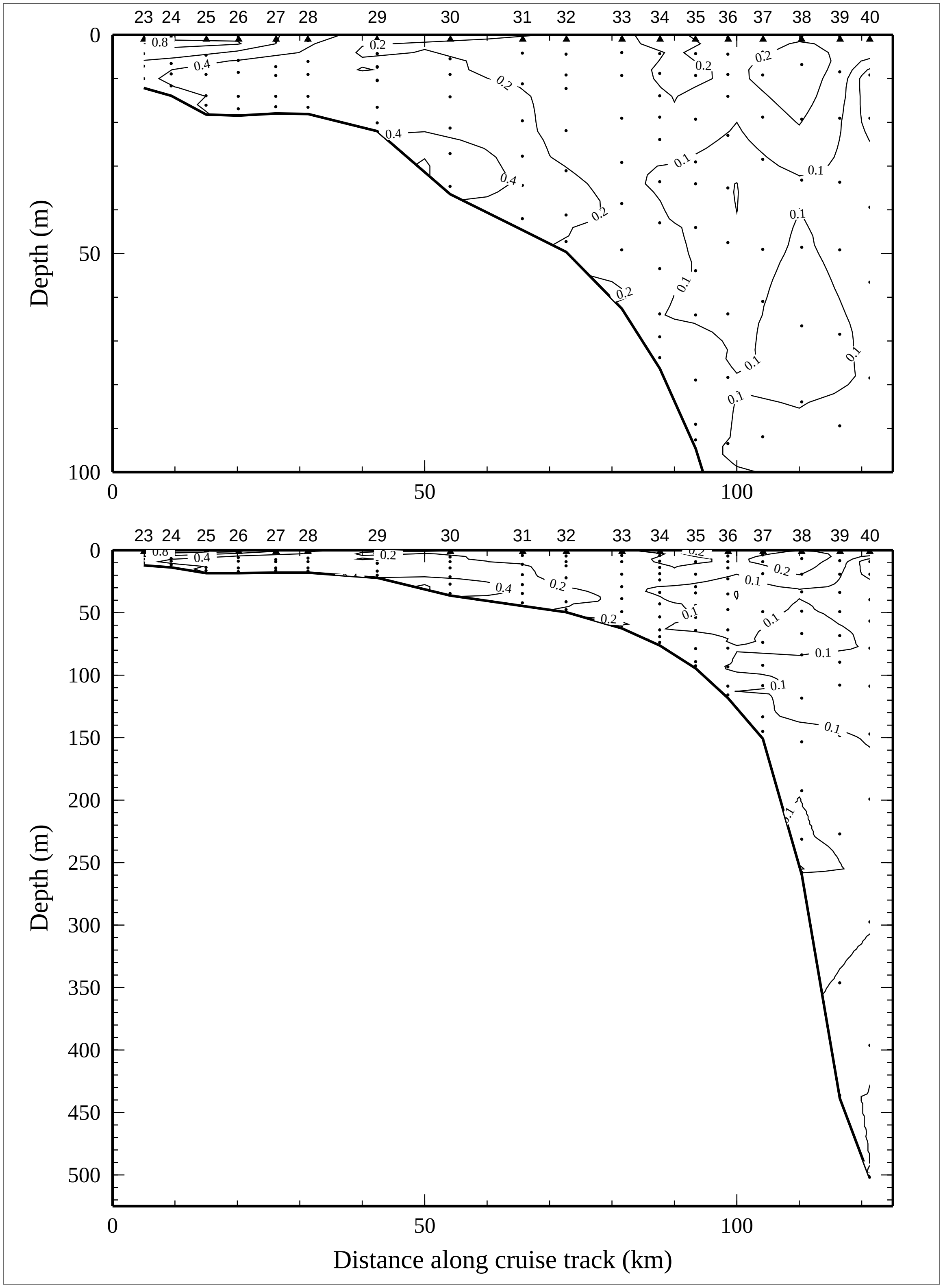

Figure 6.1.15. Urea ($\mu mol \cdot l^{-1}$) on line 1 of LATEX A survey H06, 25 July - 7 August 1993.

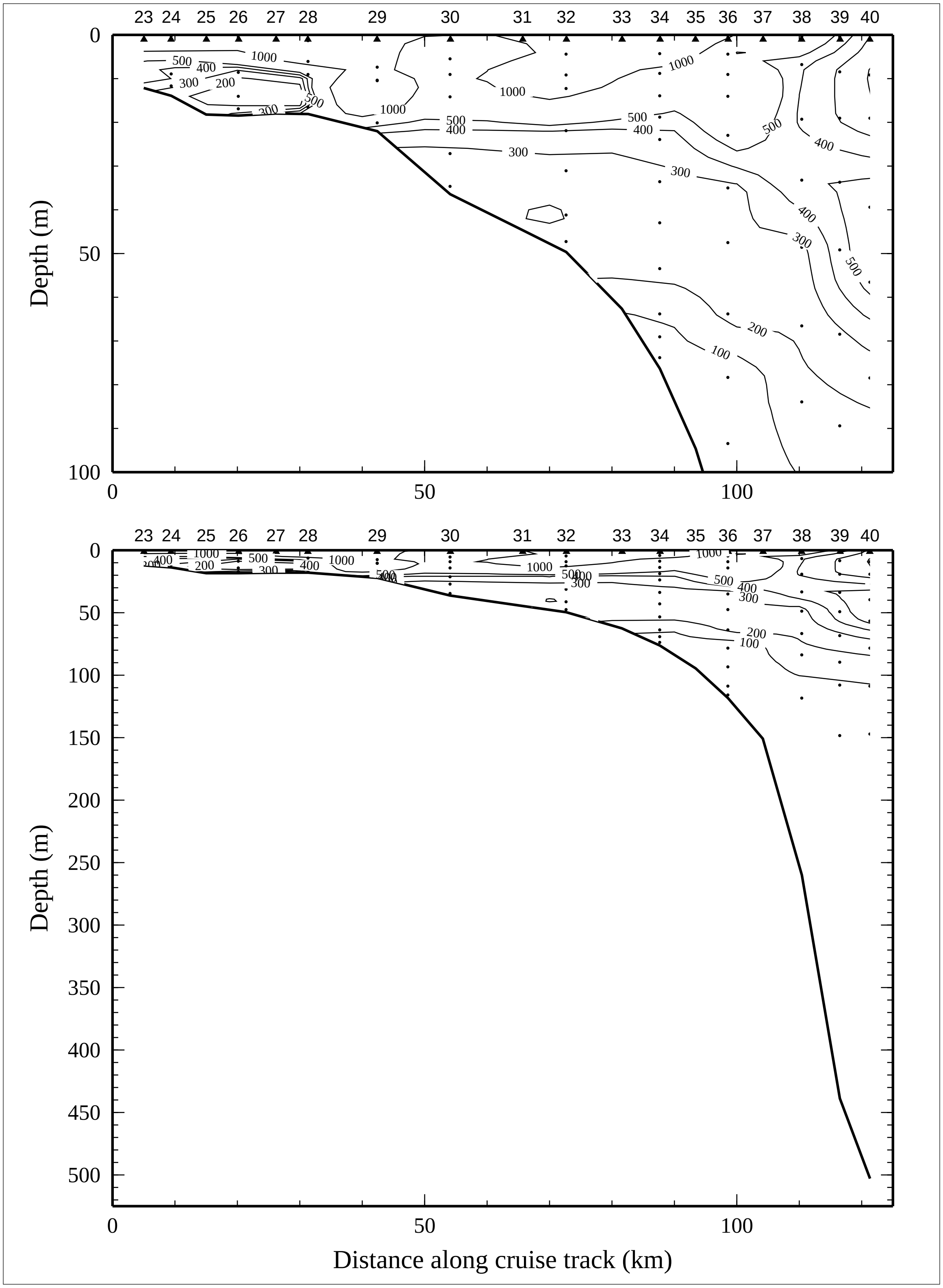

Figure 6.1.16. Chlorophyll a (ng·l-1) on line 1 of LATEX A survey H06,
25 July - 7 August 1993.

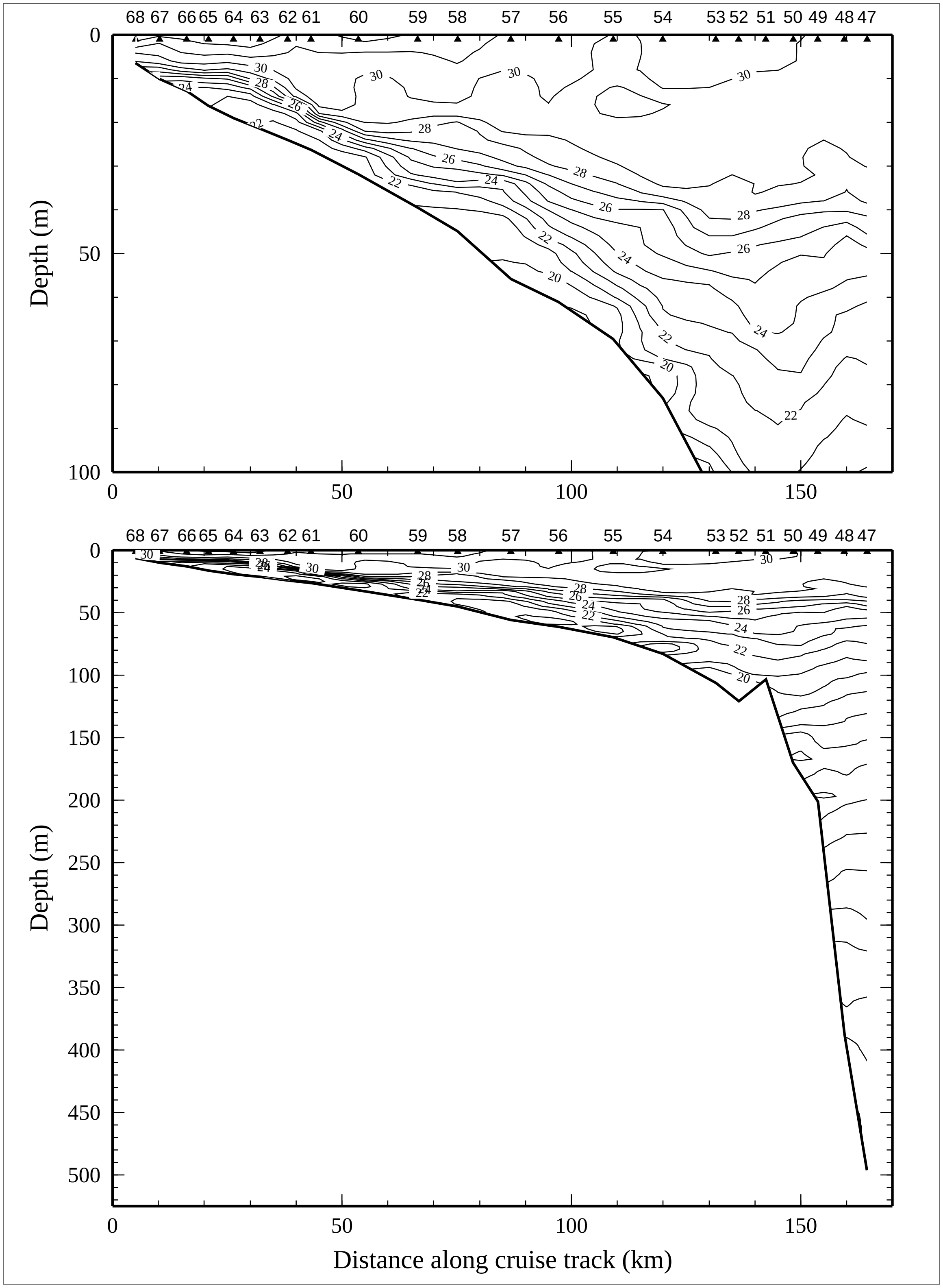

Figure 6.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

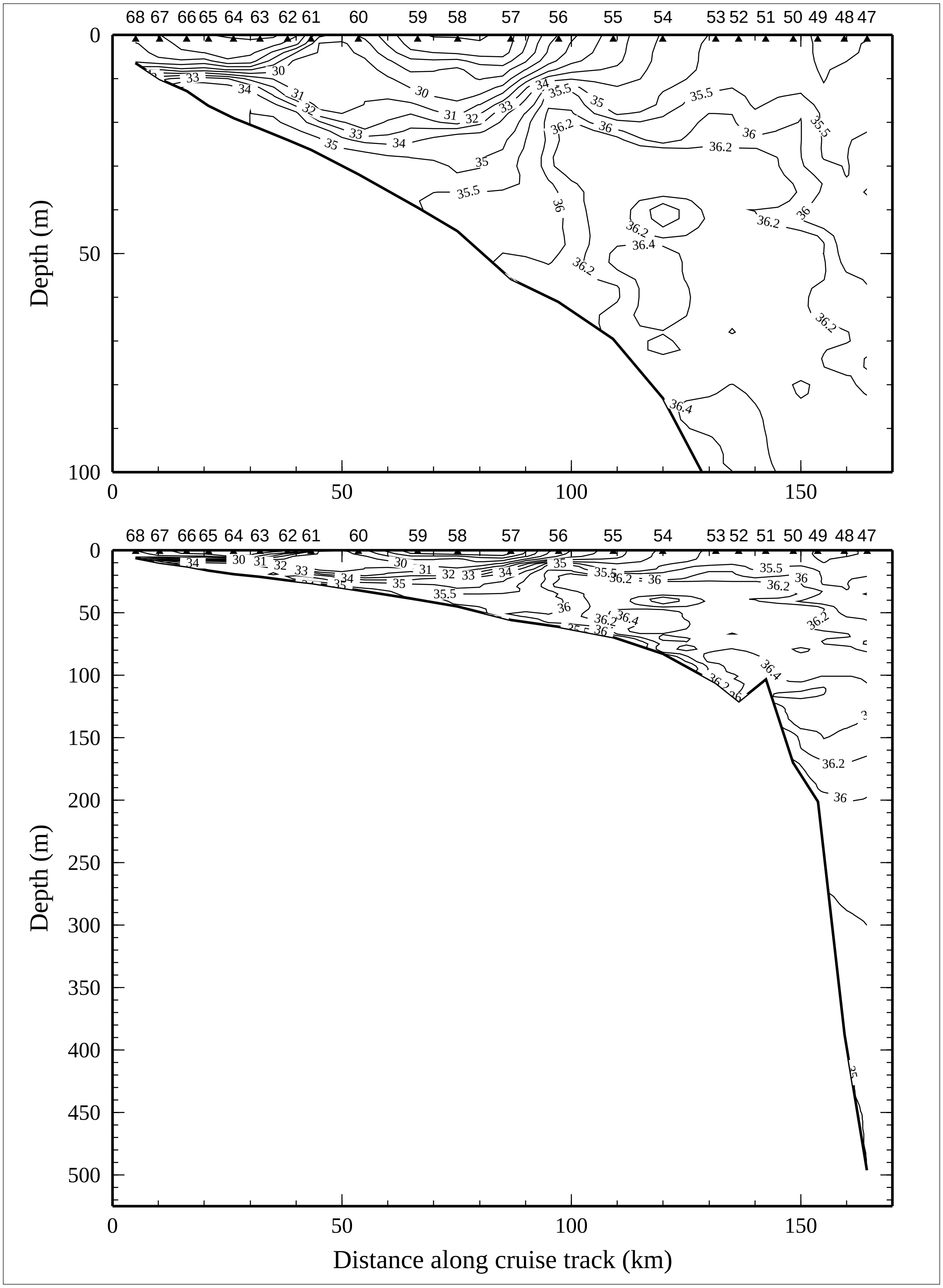

Figure 6.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

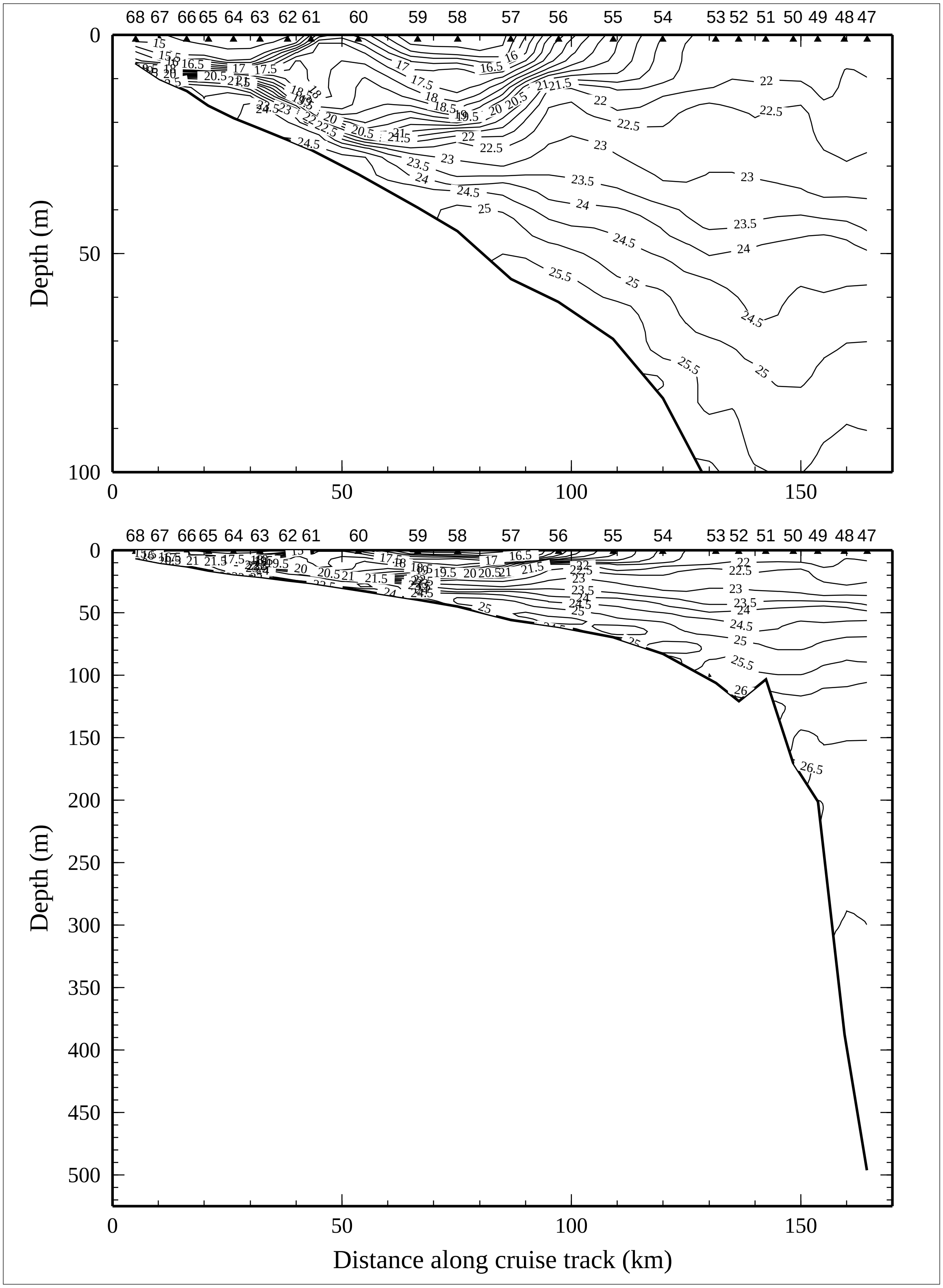

Figure 6.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

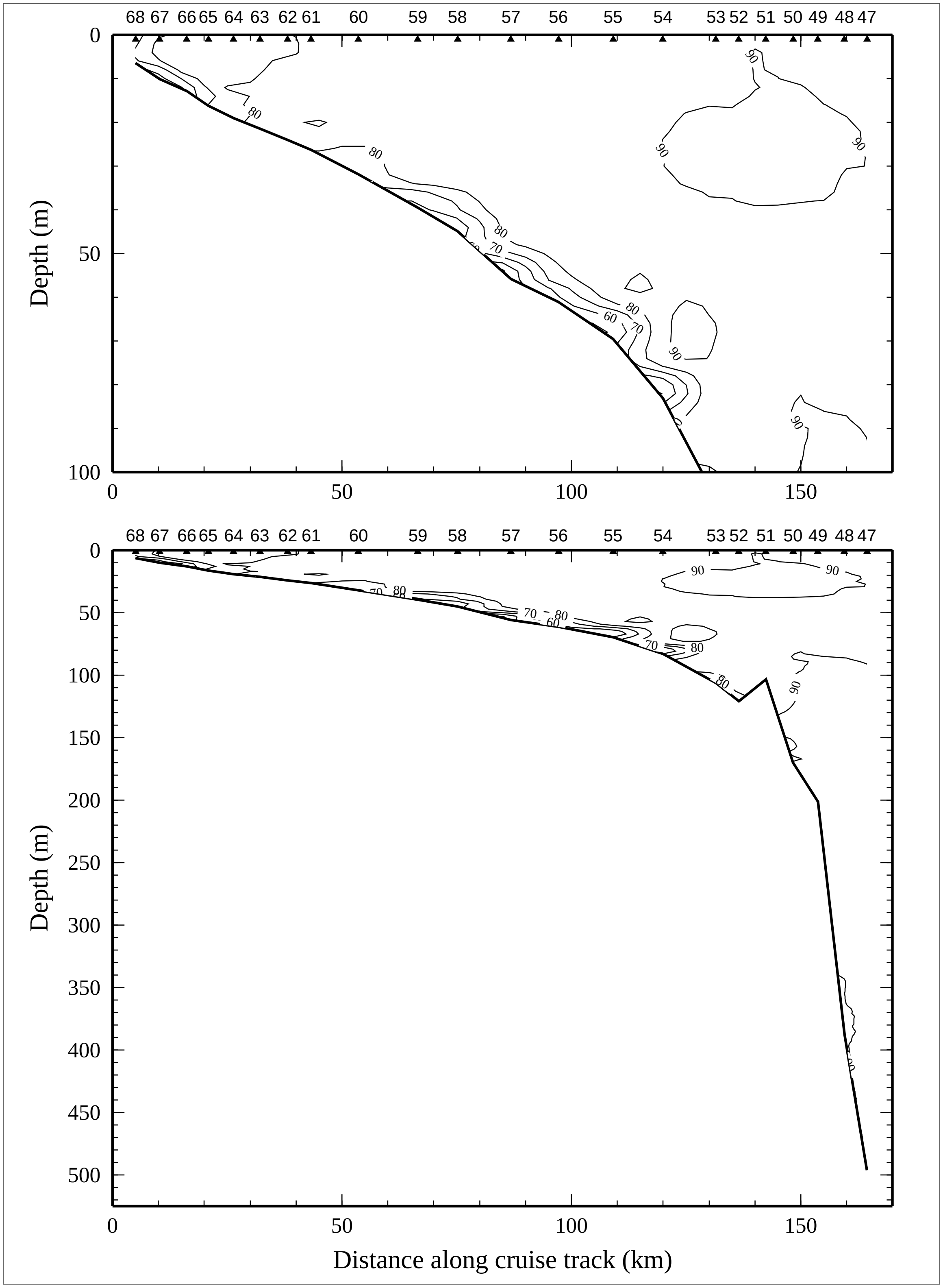

Figure 6.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

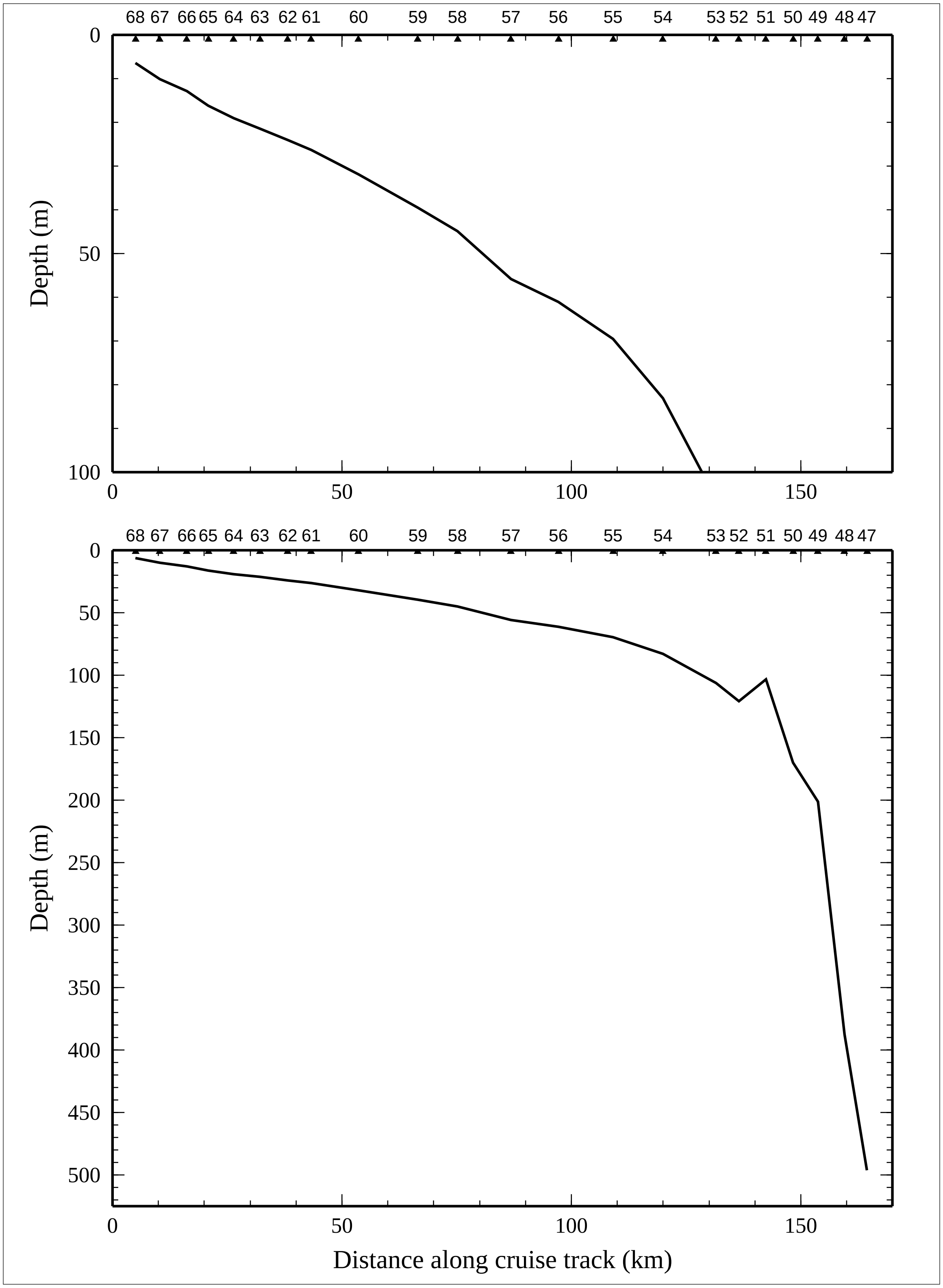

Figure 6.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H06, 25 July - 7 August 1993. Values were less than 0.05

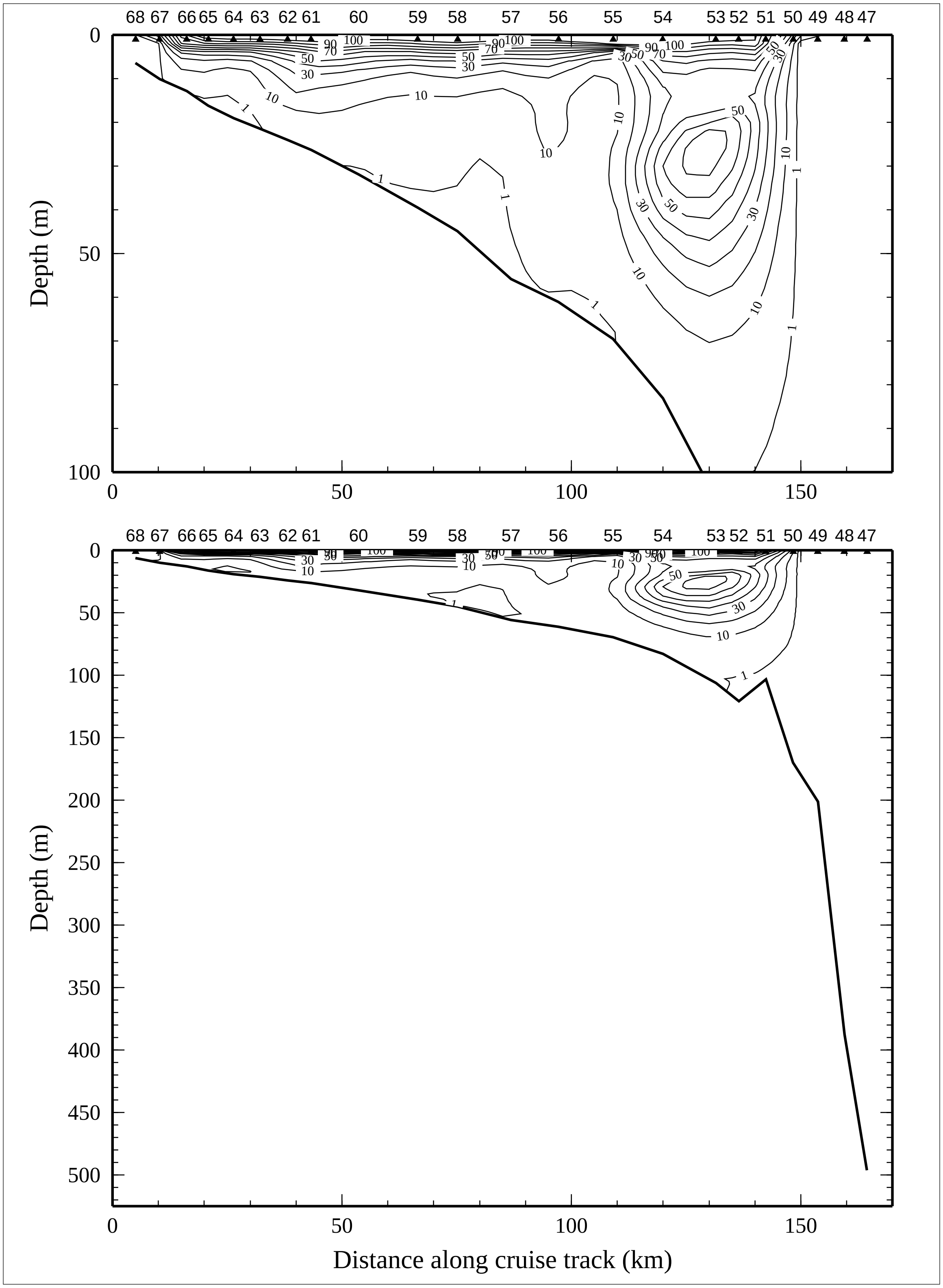

Figure 6.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

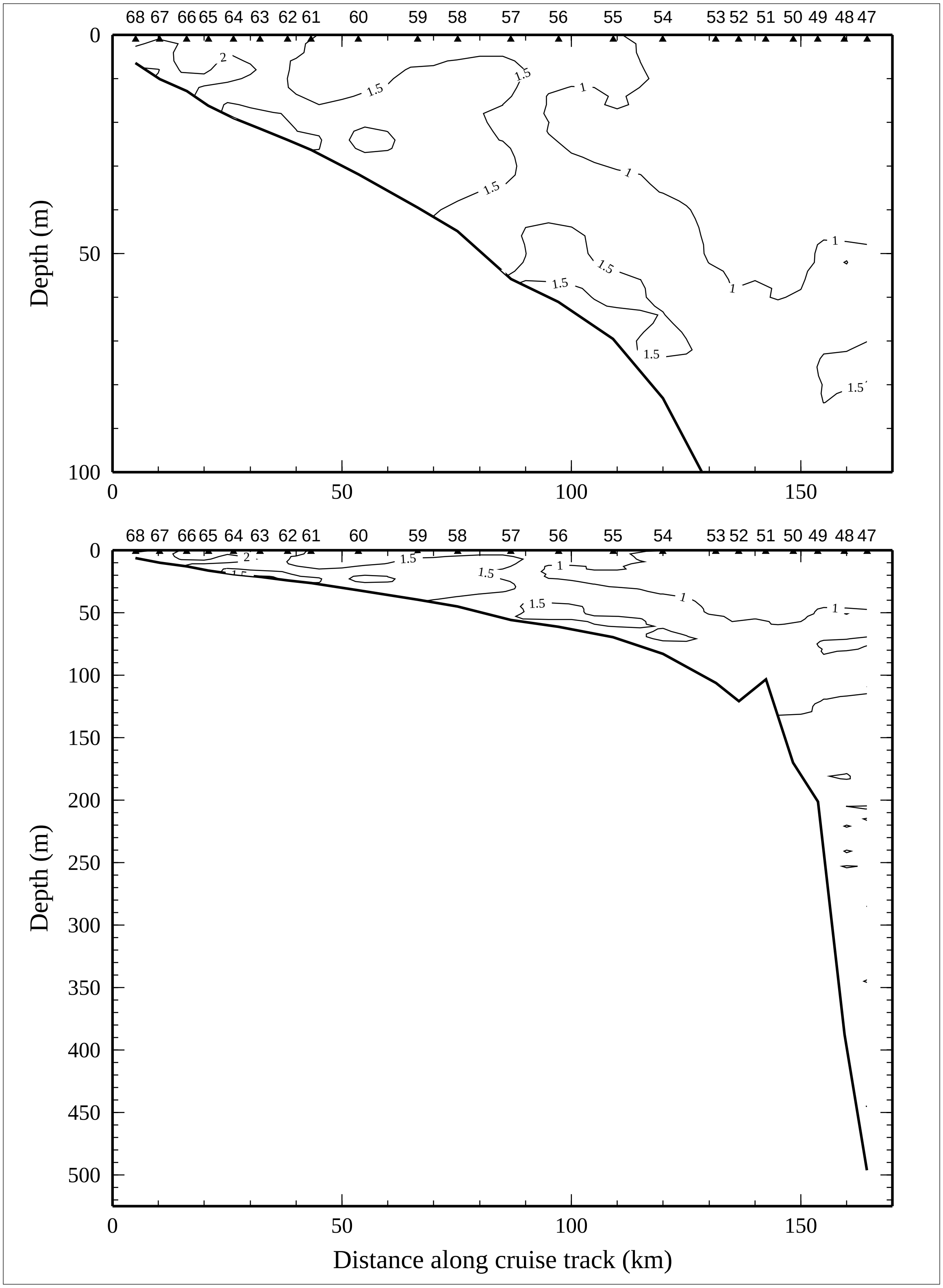

Figure 6.2.7. Relative fluorescence on line 2 of LATEX A survey H06,
25 July - 7 August 1993.

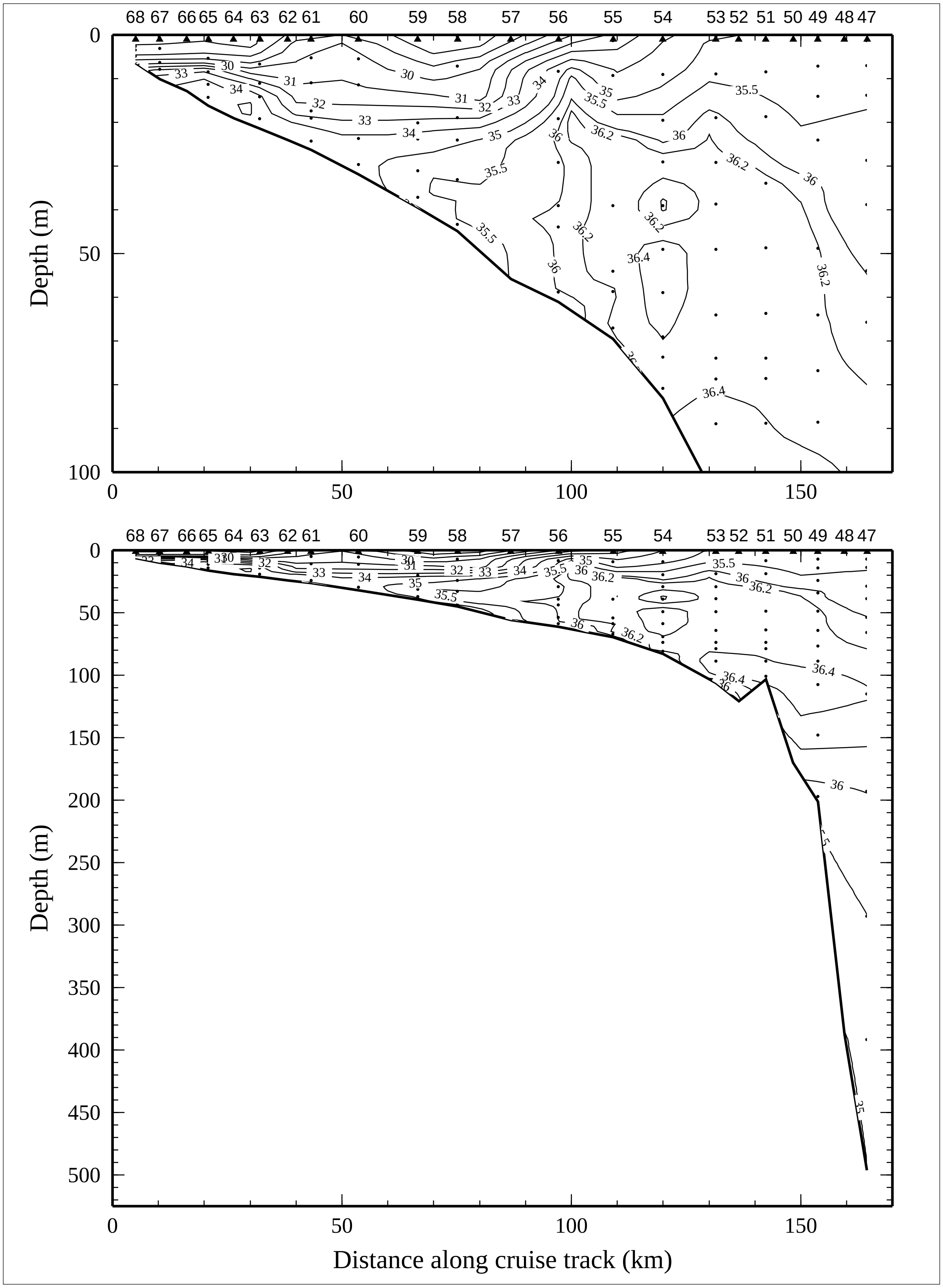

Figure 6.2.8. Bottle salinity on line 2 of LATEX A survey H06,
25 July - 7 August 1993.

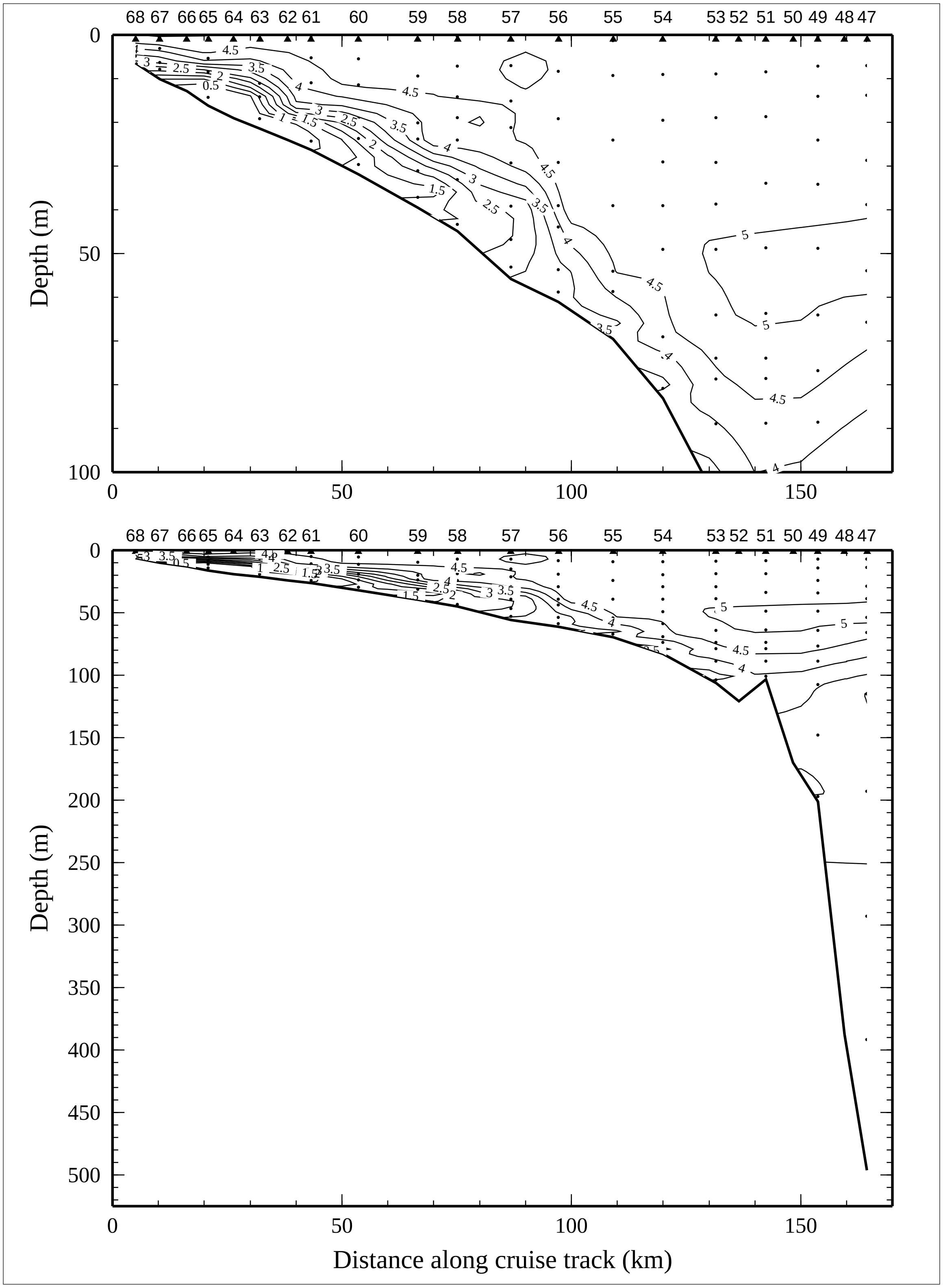

Figure 6.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

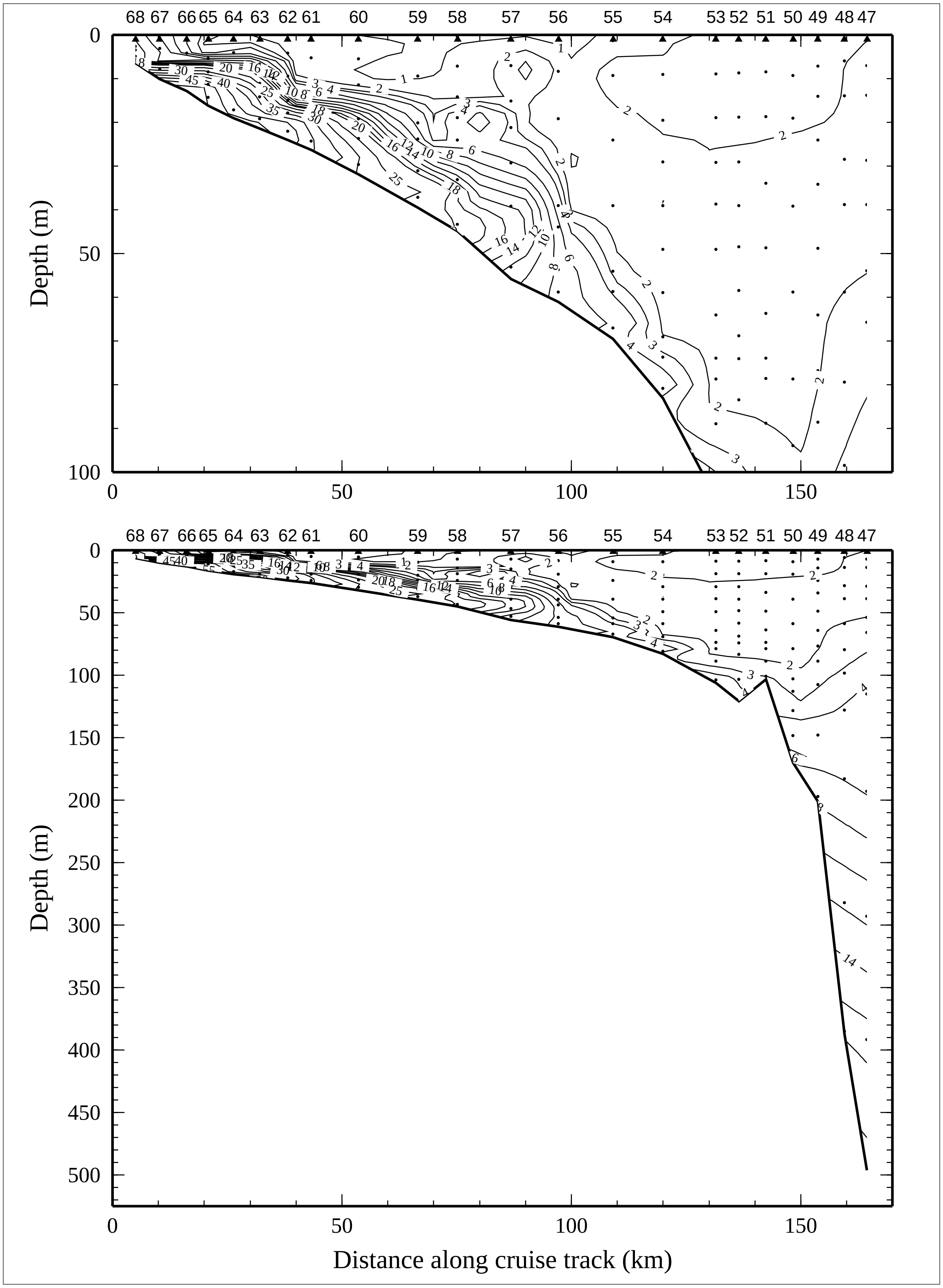

Figure 6.2.10. Silicate (μmol·l-1) on line 2 of LATEX A survey H06,
25 July - 7 August 1993.

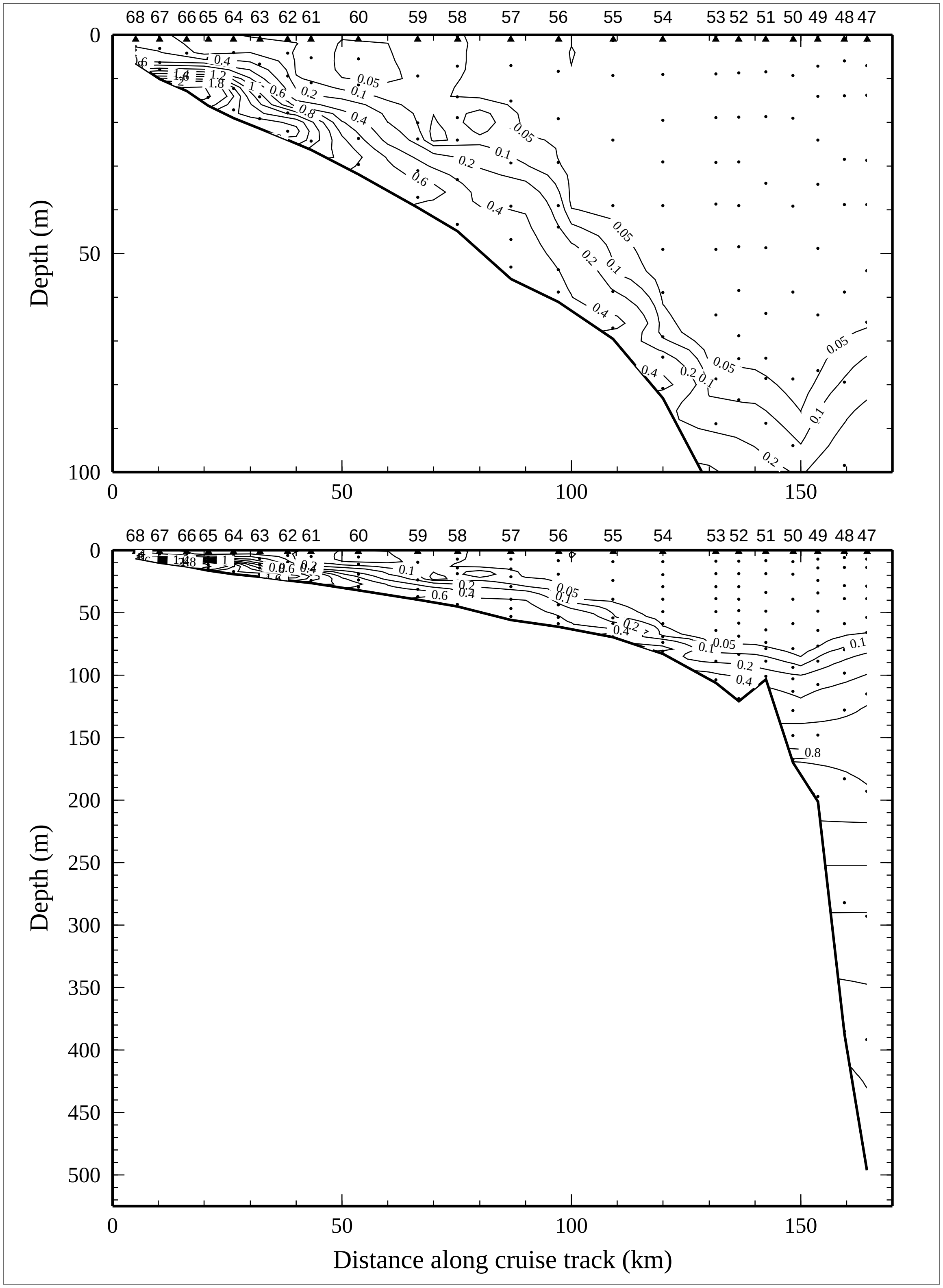

Figure 6.2.11. Phosphate (μmol·l⁻¹) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

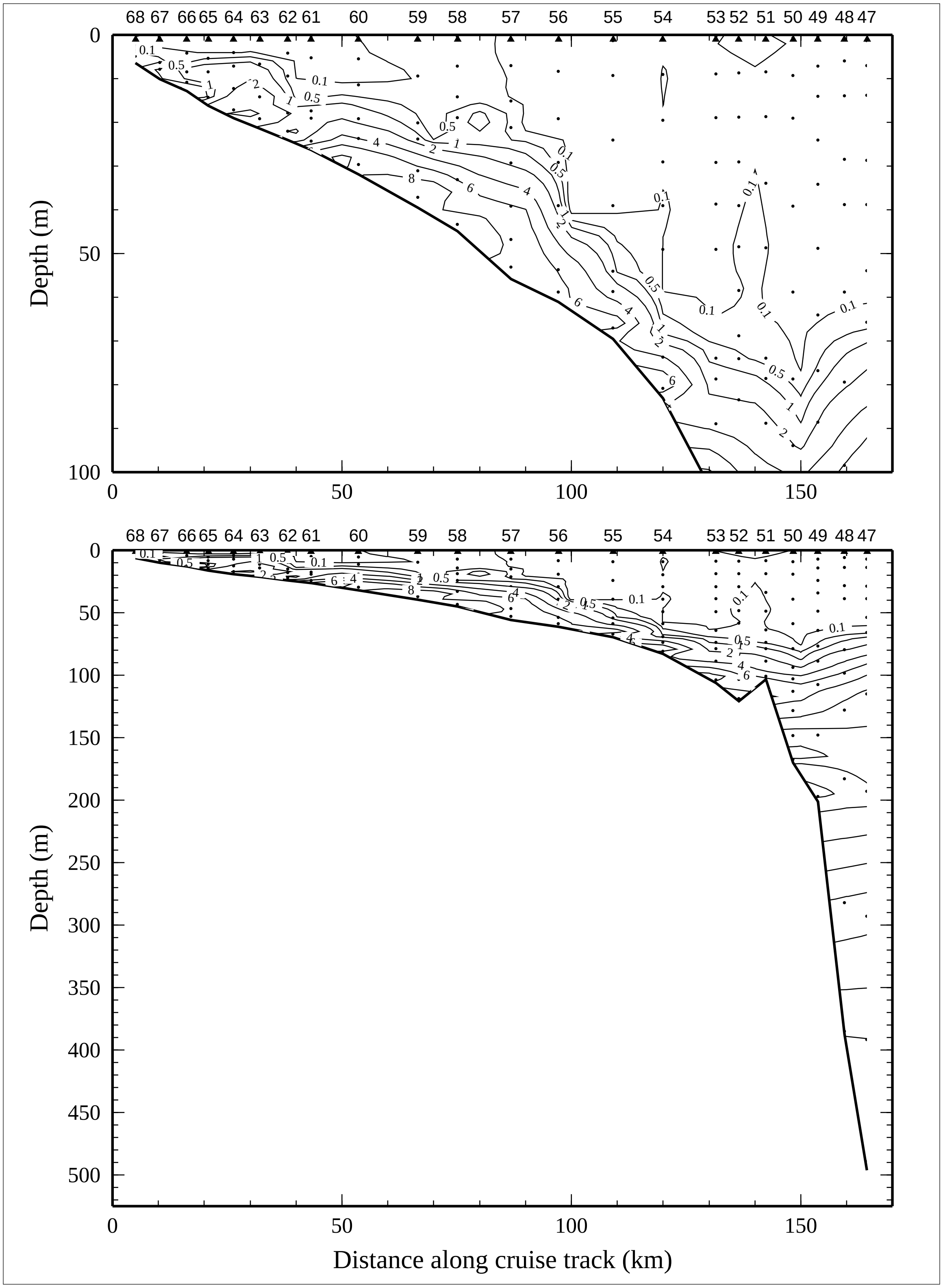

Figure 6.2.12. Nitrate (μmol·l^{-1}) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

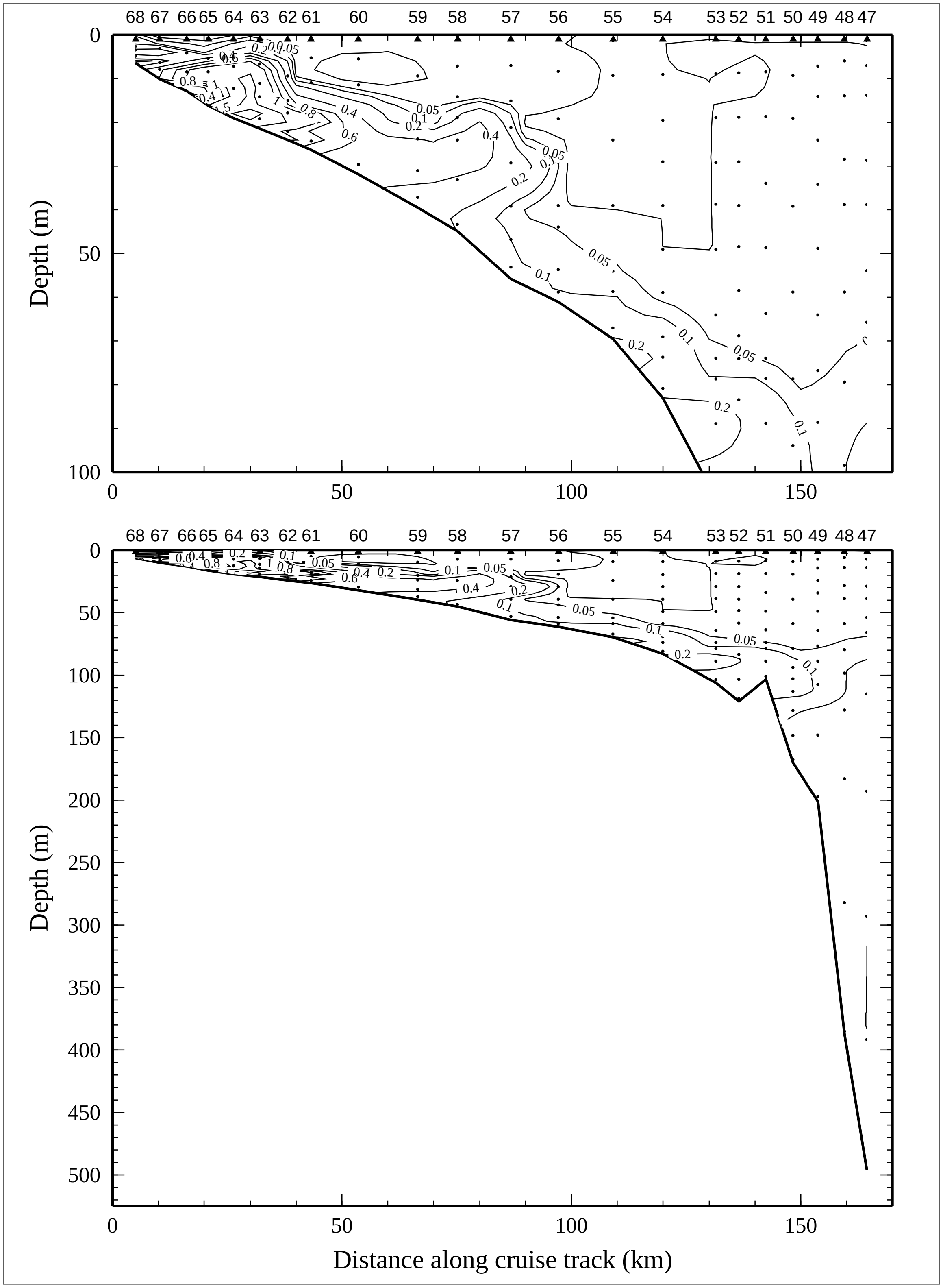

Figure 6.2.13. Nitrite (μmol·l^{-1}) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

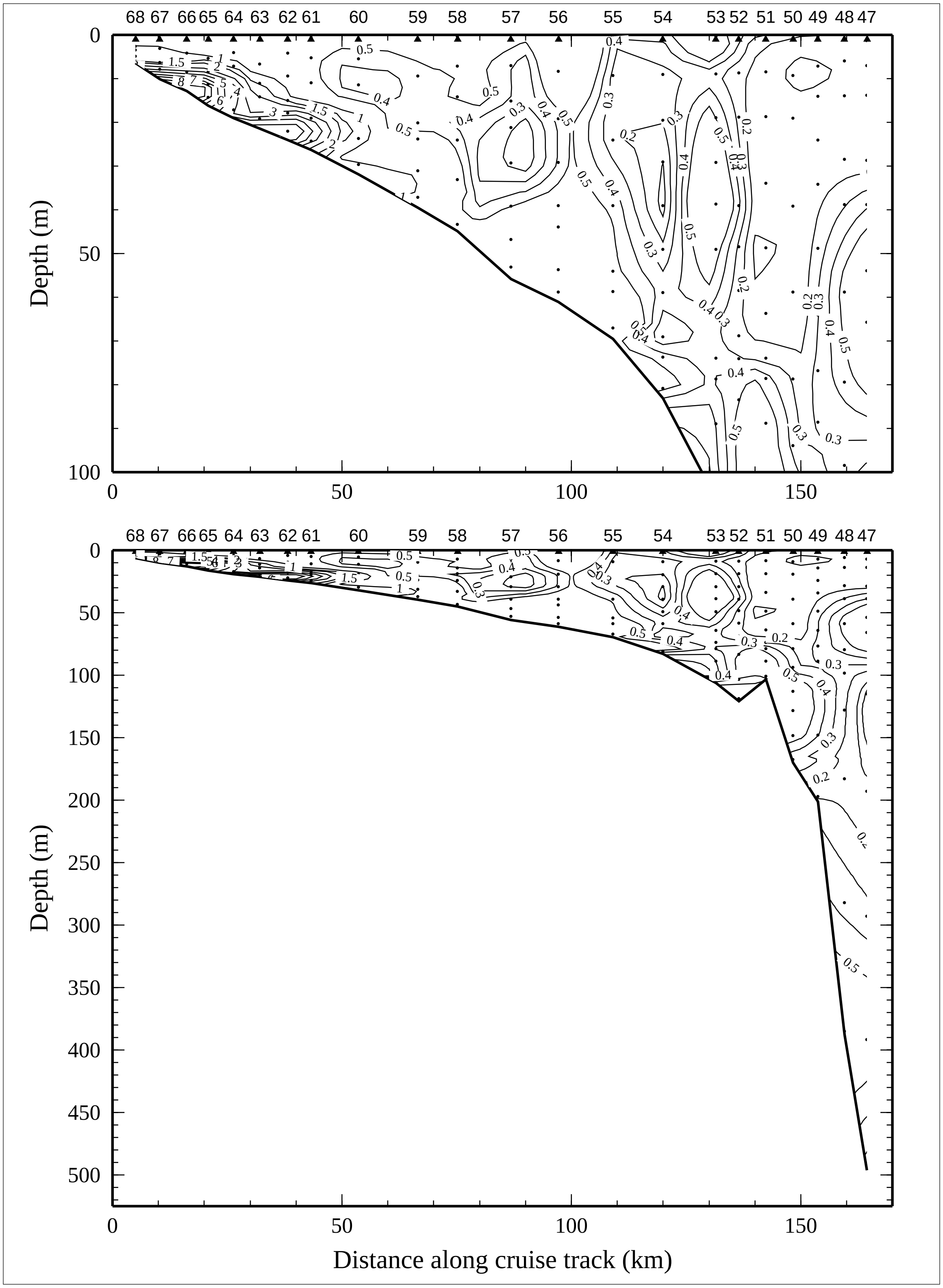

Figure 6.2.14. Ammonium (μmol·l^{-1}) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

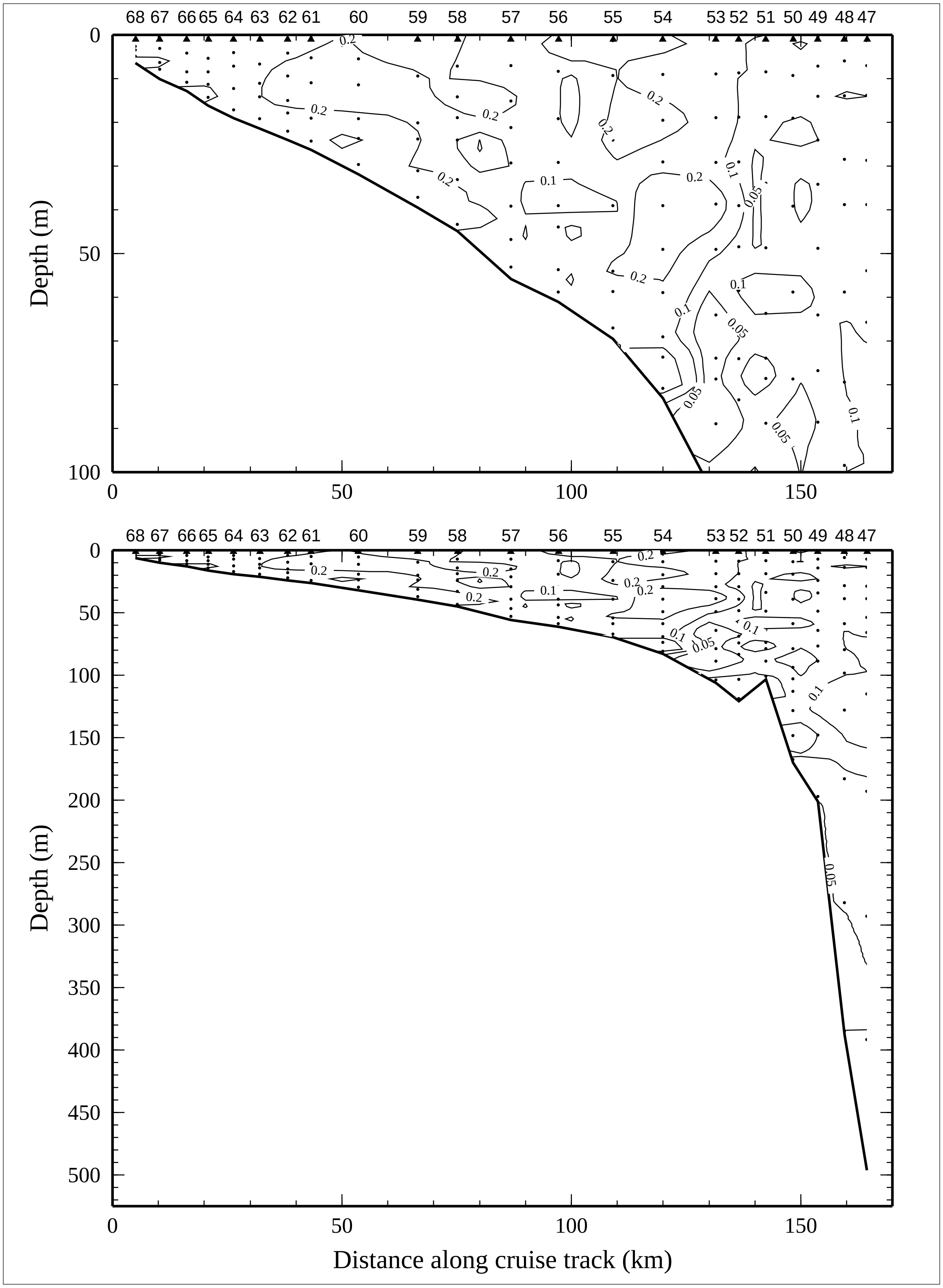

Figure 6.2.15. Urea (μmol·l-1) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

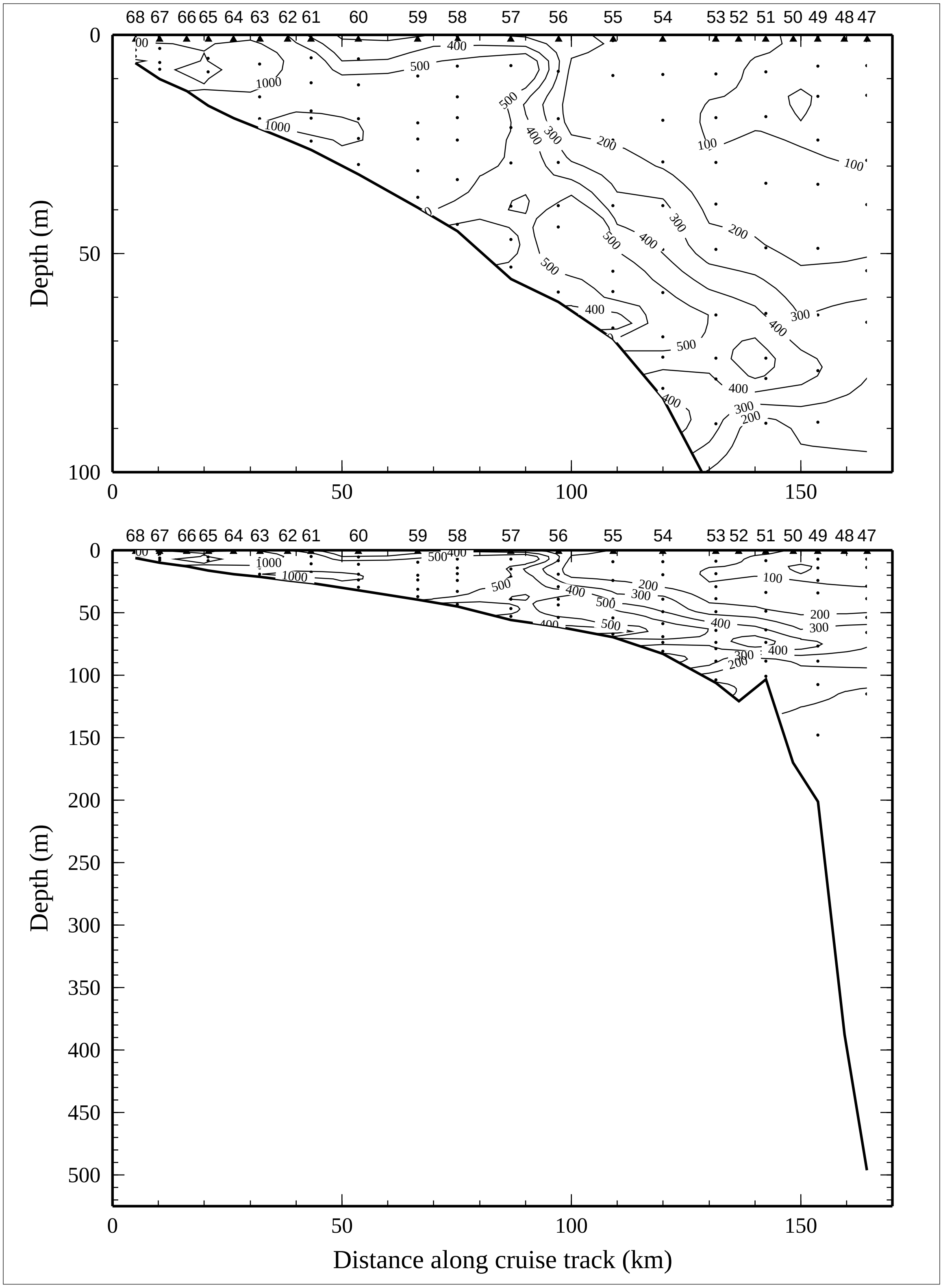

Figure 6.2.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 2 of LATEX A survey H06, 25 July - 7 August 1993.

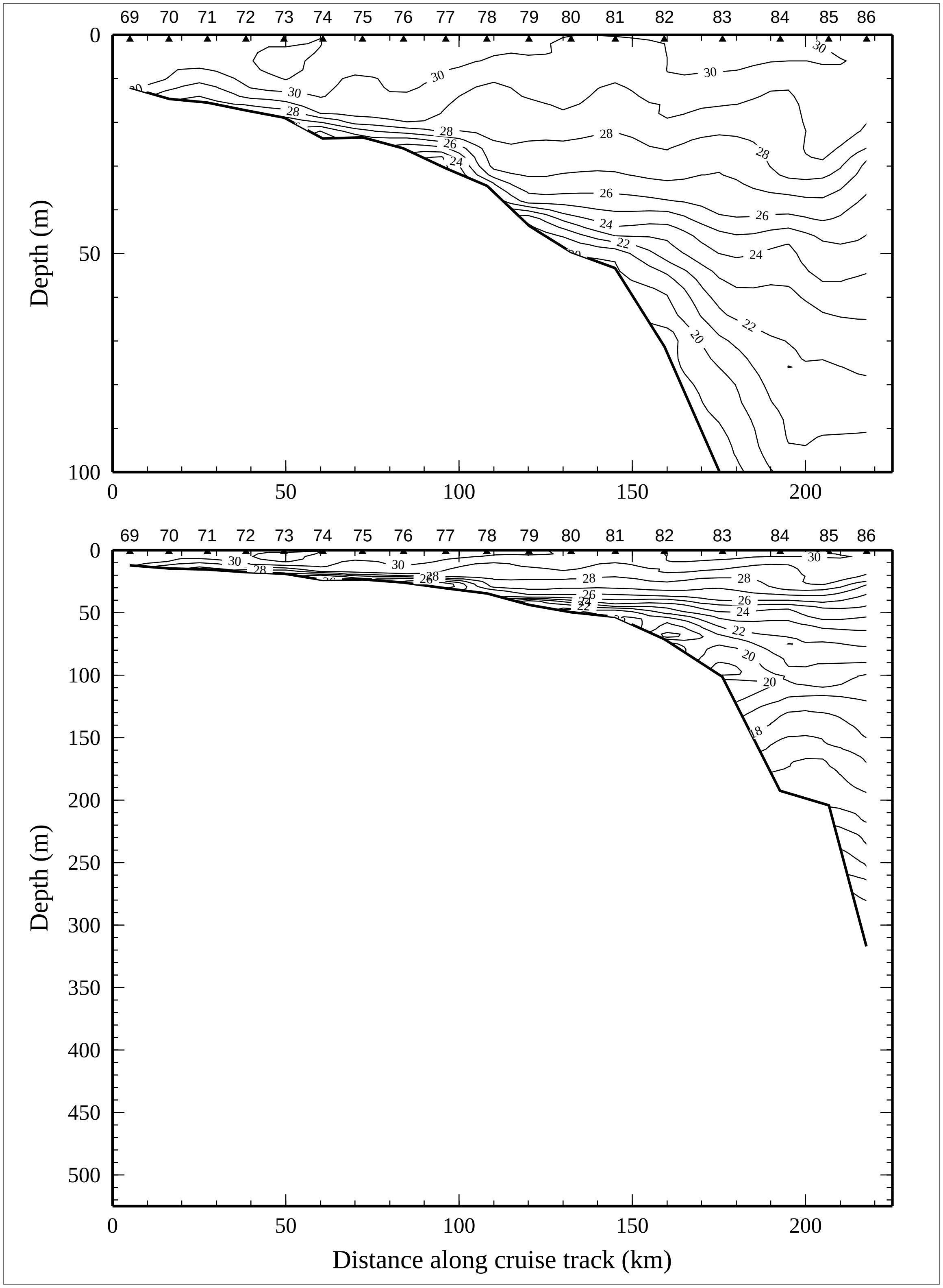

Figure 6.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H06,
25 July - 7 August 1993.

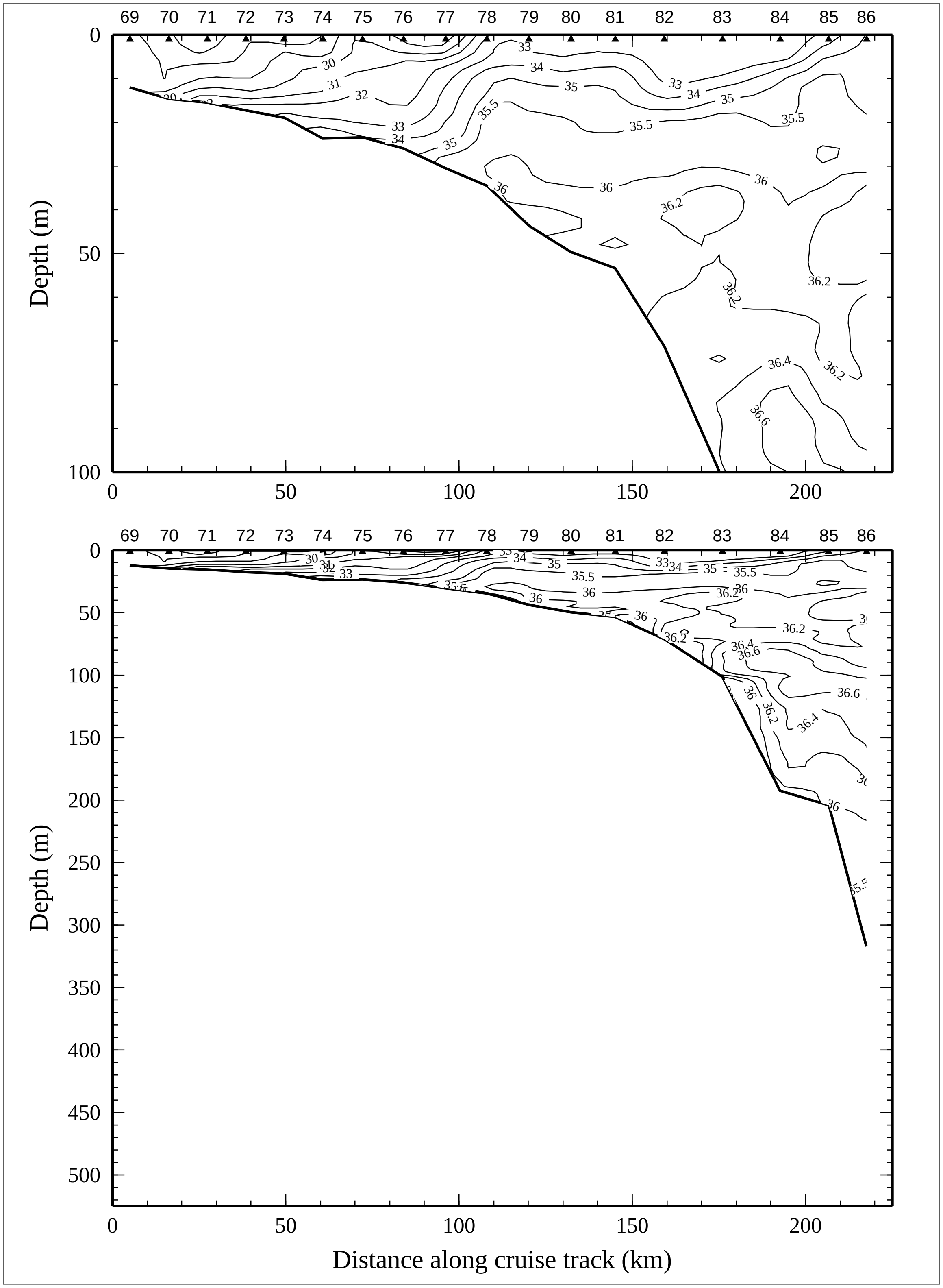

Figure 6.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

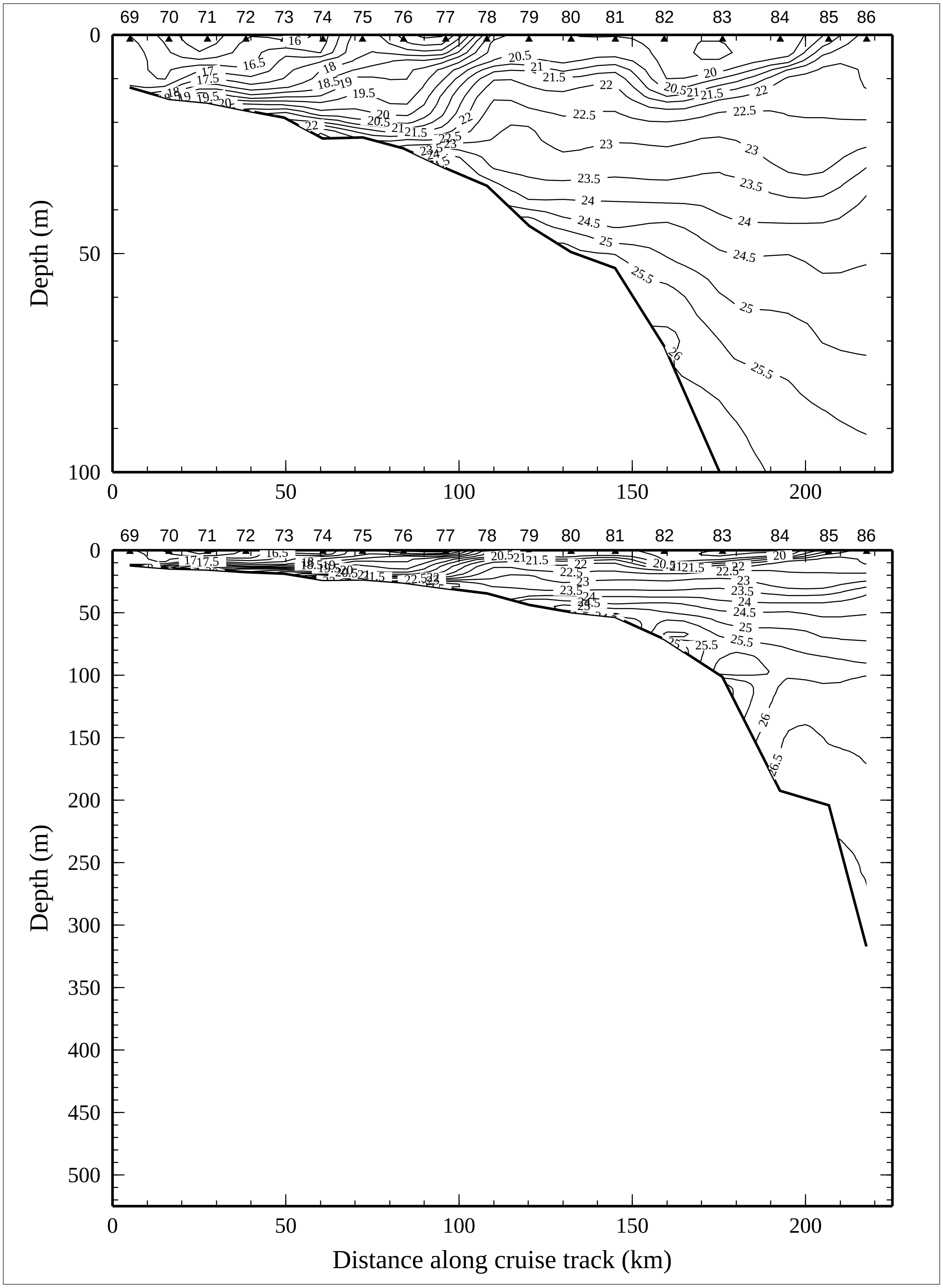

Figure 6.3.3. Density anomaly (σ_θ in kg·m^{-3}) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

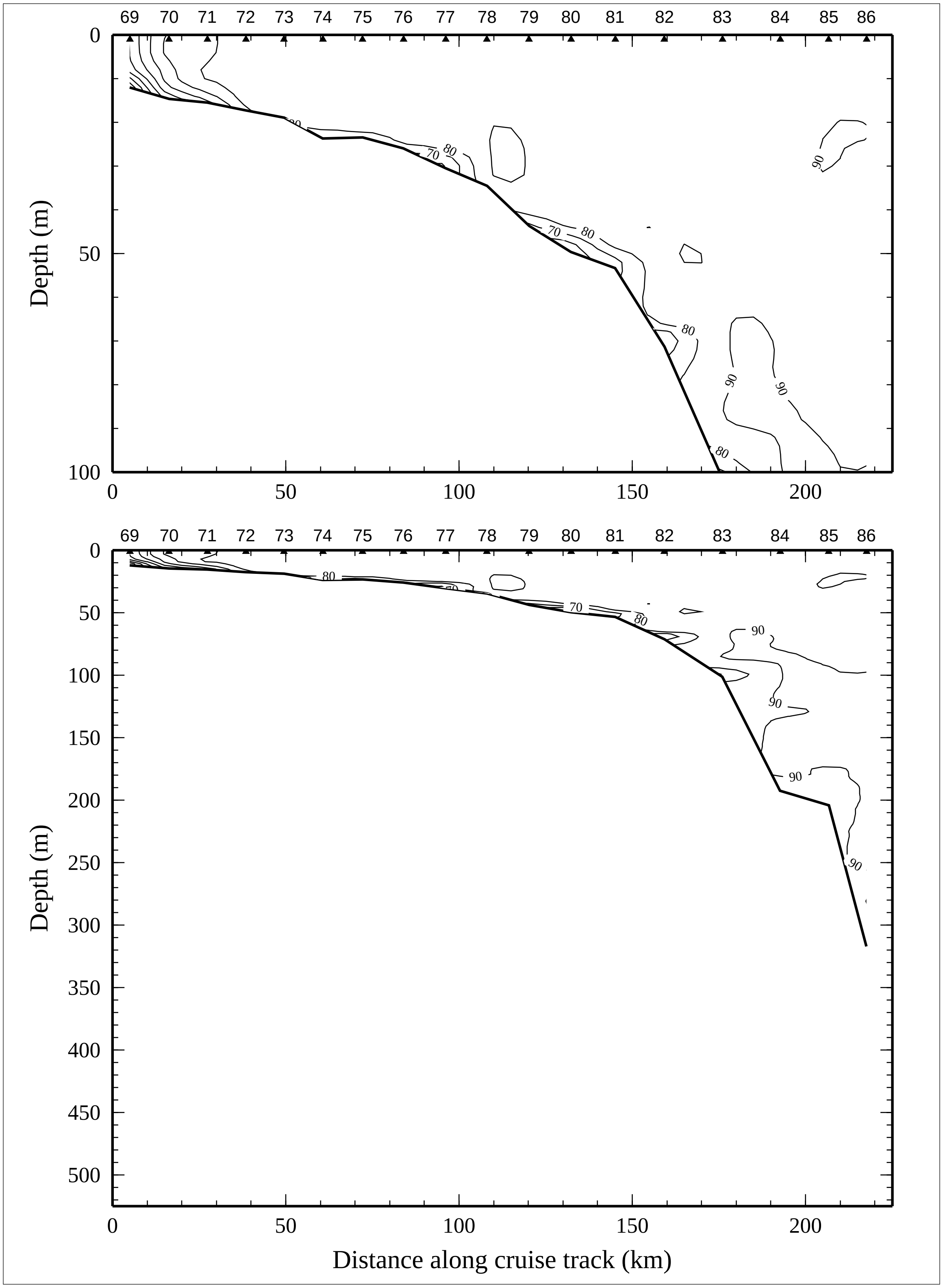

Figure 6.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

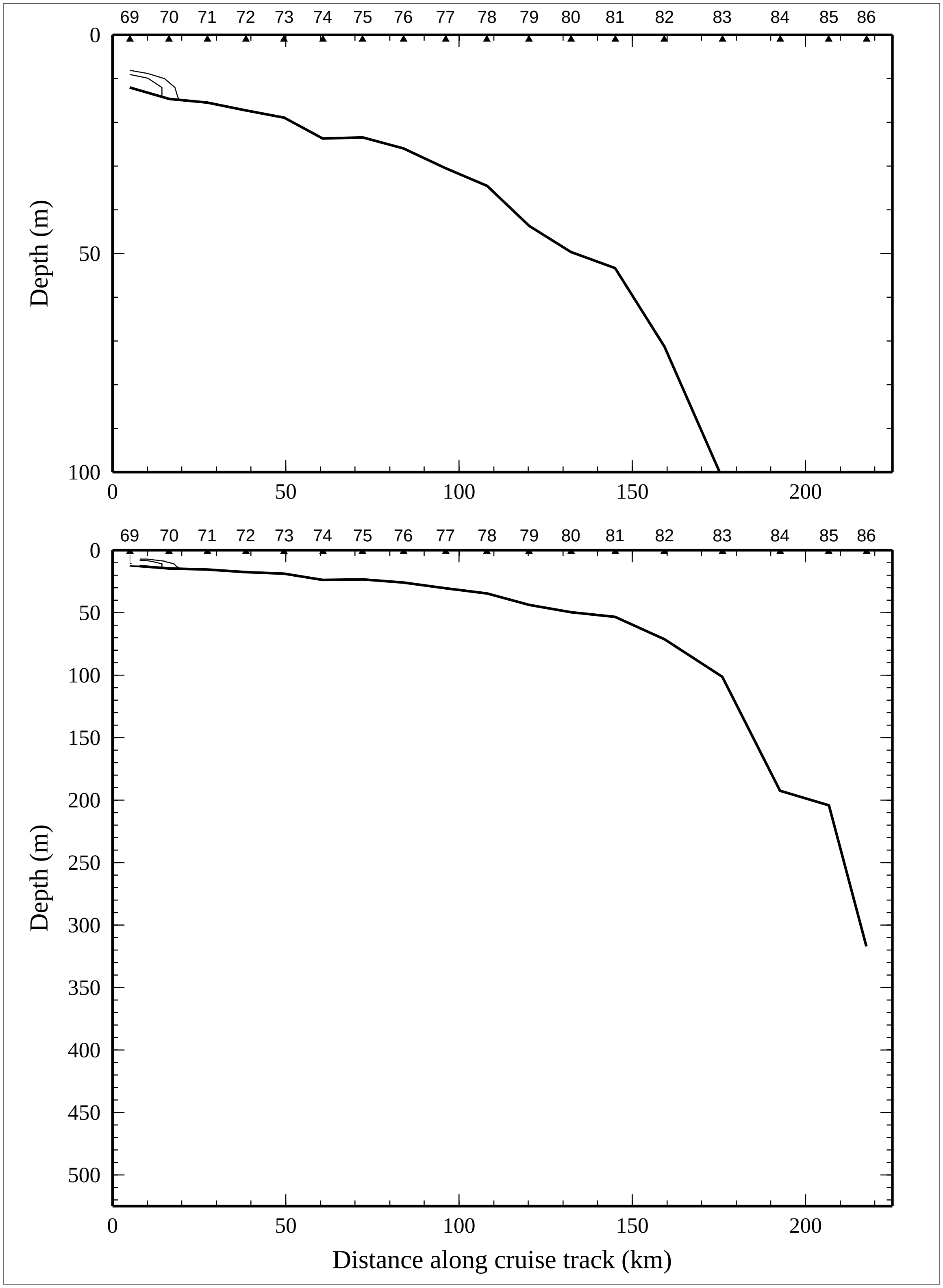

Figure 6.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

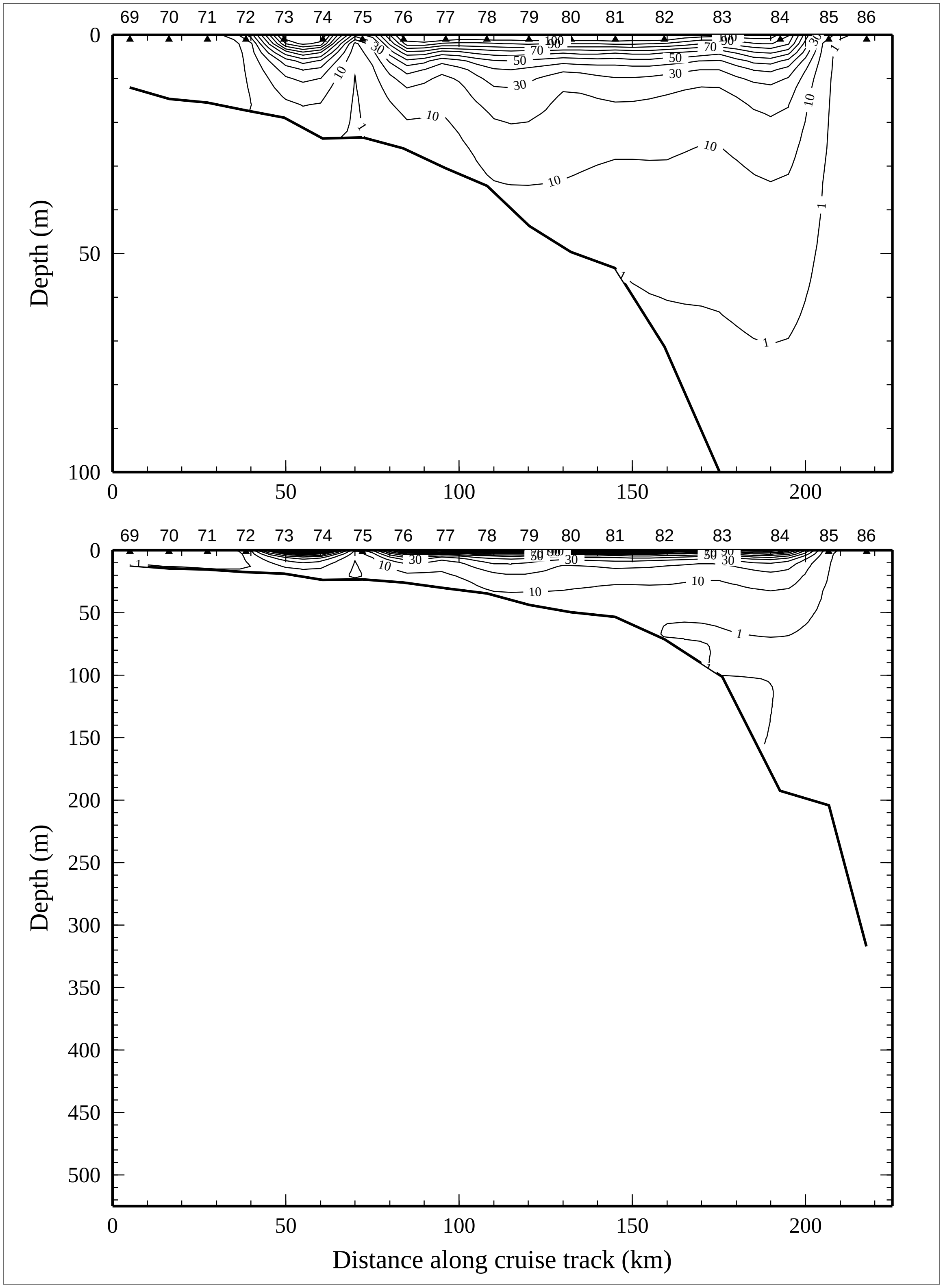

Figure 6.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

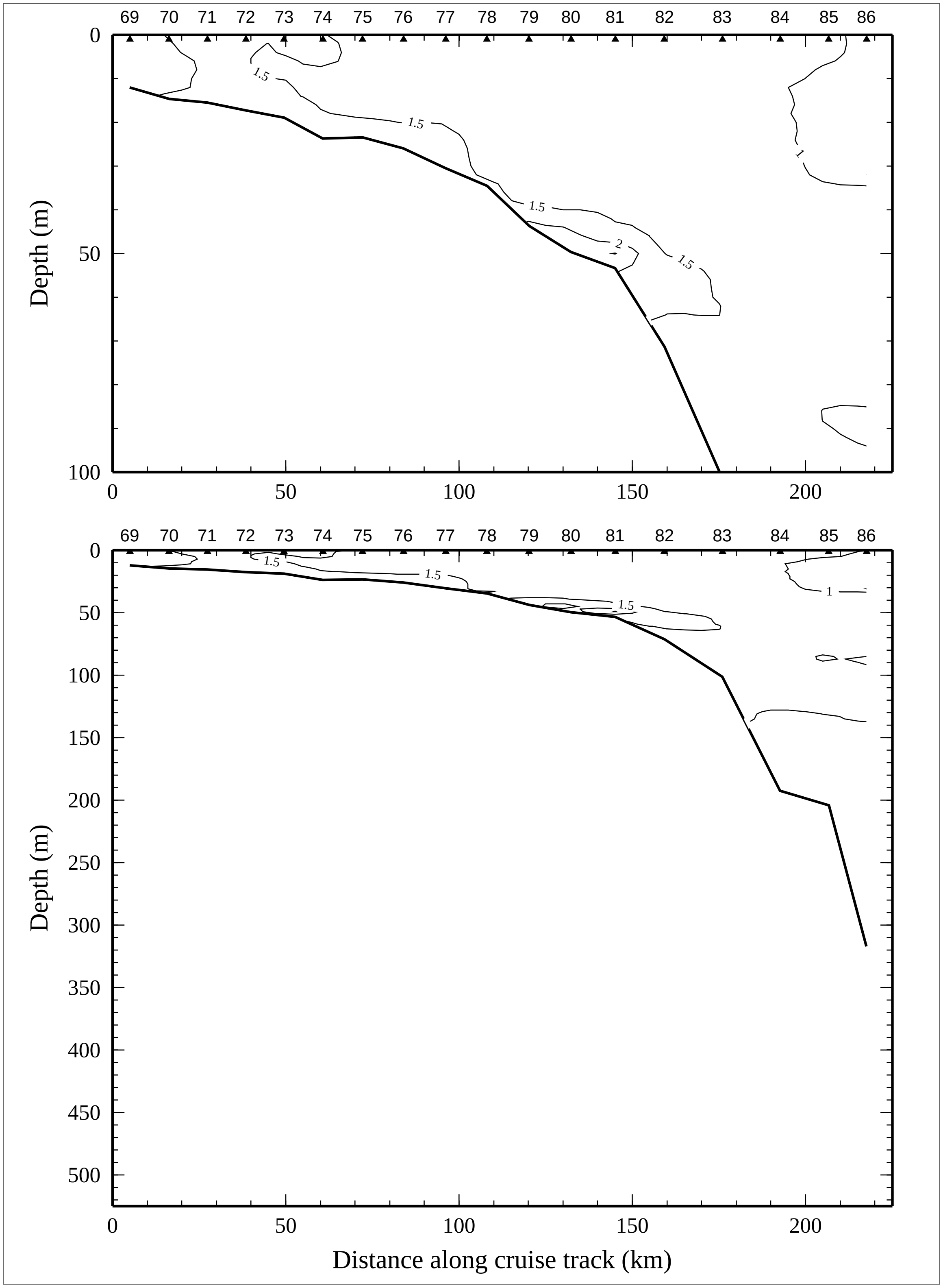

Figure 6.3.7. Relative fluorescence on line 3 of LATEX A survey H06,
25 July - 7 August 1993.

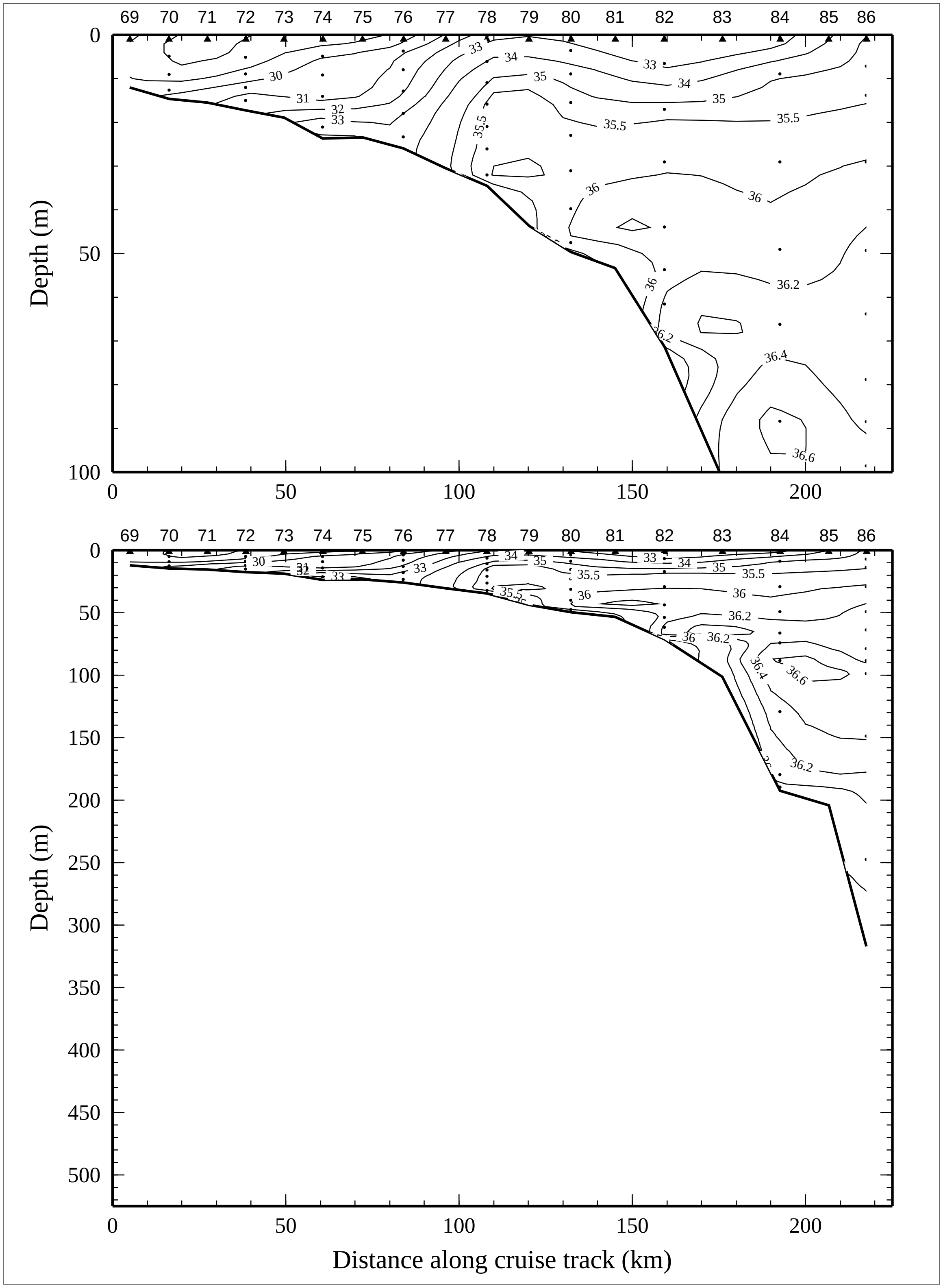

Figure 6.3.8. Bottle salinity on line 3 of LATEX A survey H06,
25 July - 7 August 1993.

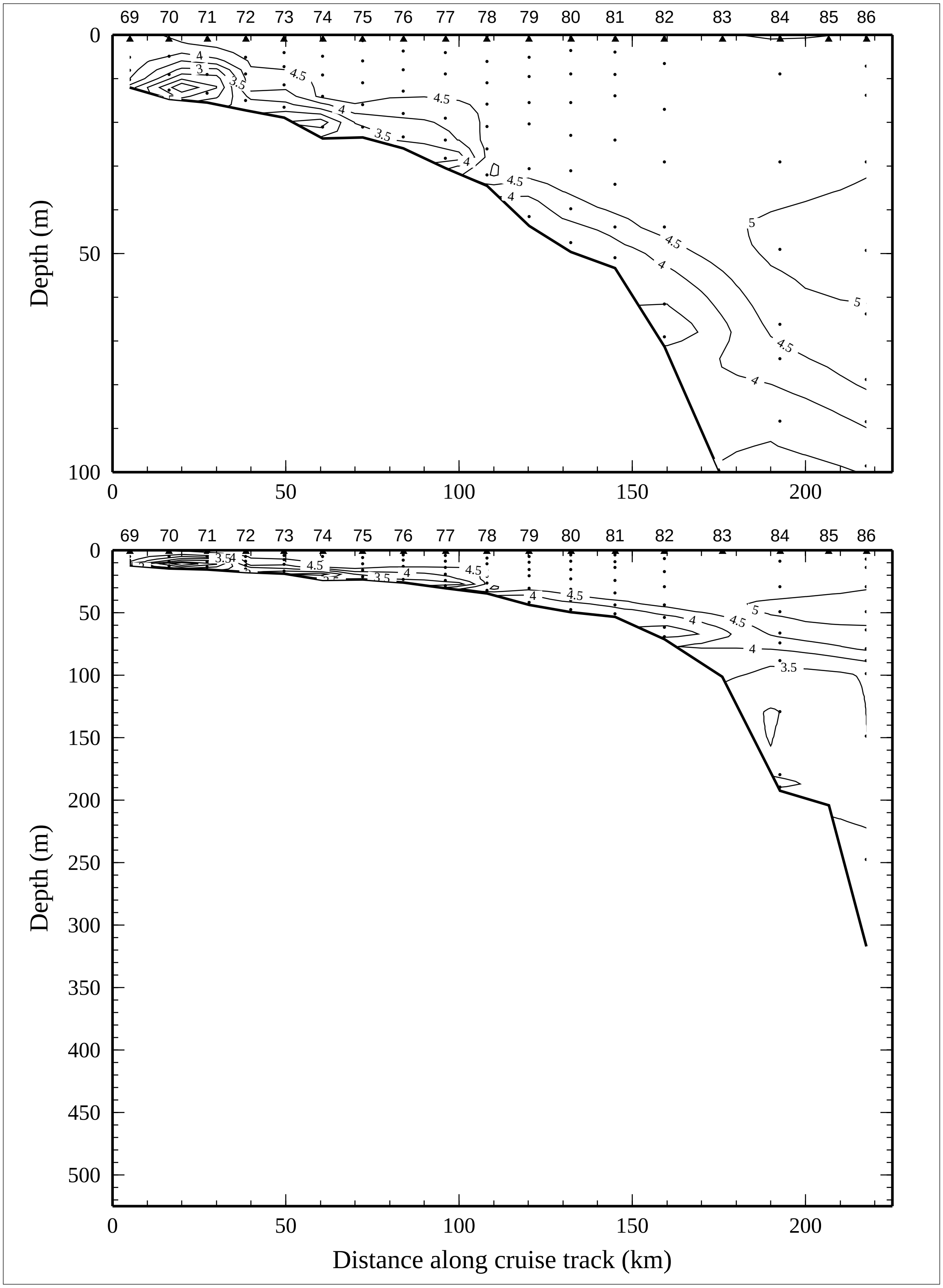

Figure 6.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

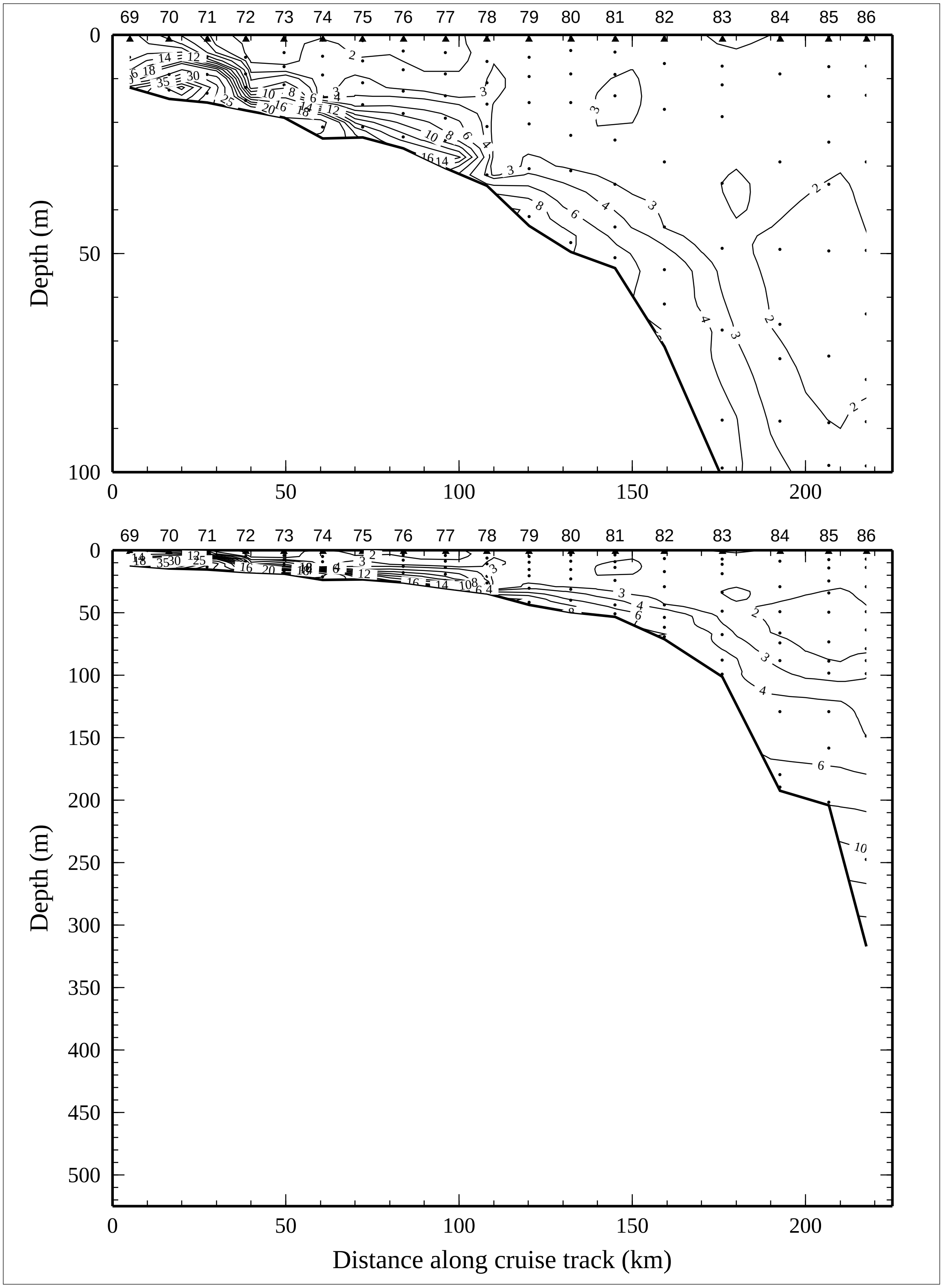

Figure 6.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

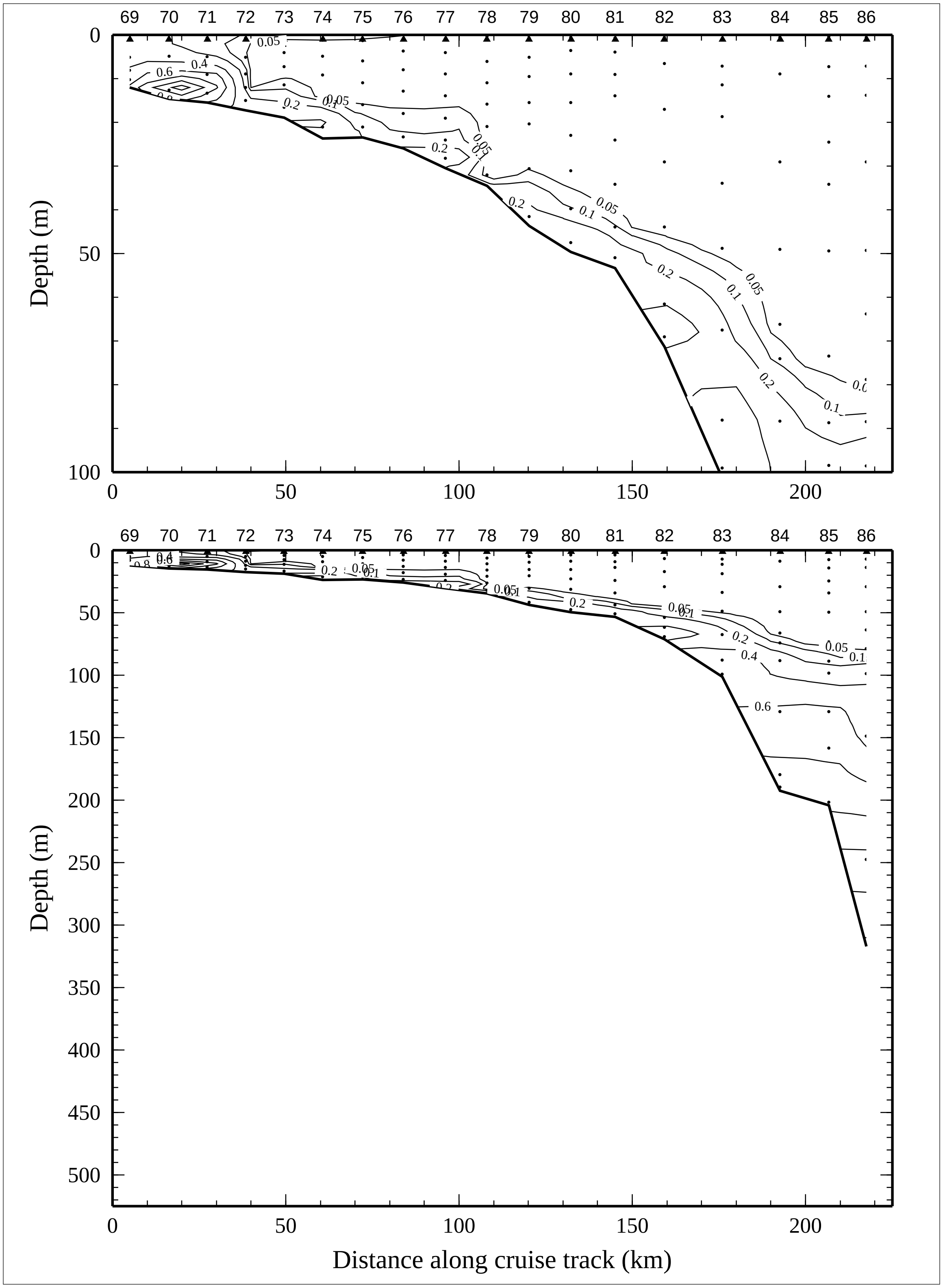

Figure 6.3.11. Phosphate (μmol·l^{-1}) on line 3 of LATEX A survey H06,
25 July - 7 August 1993.

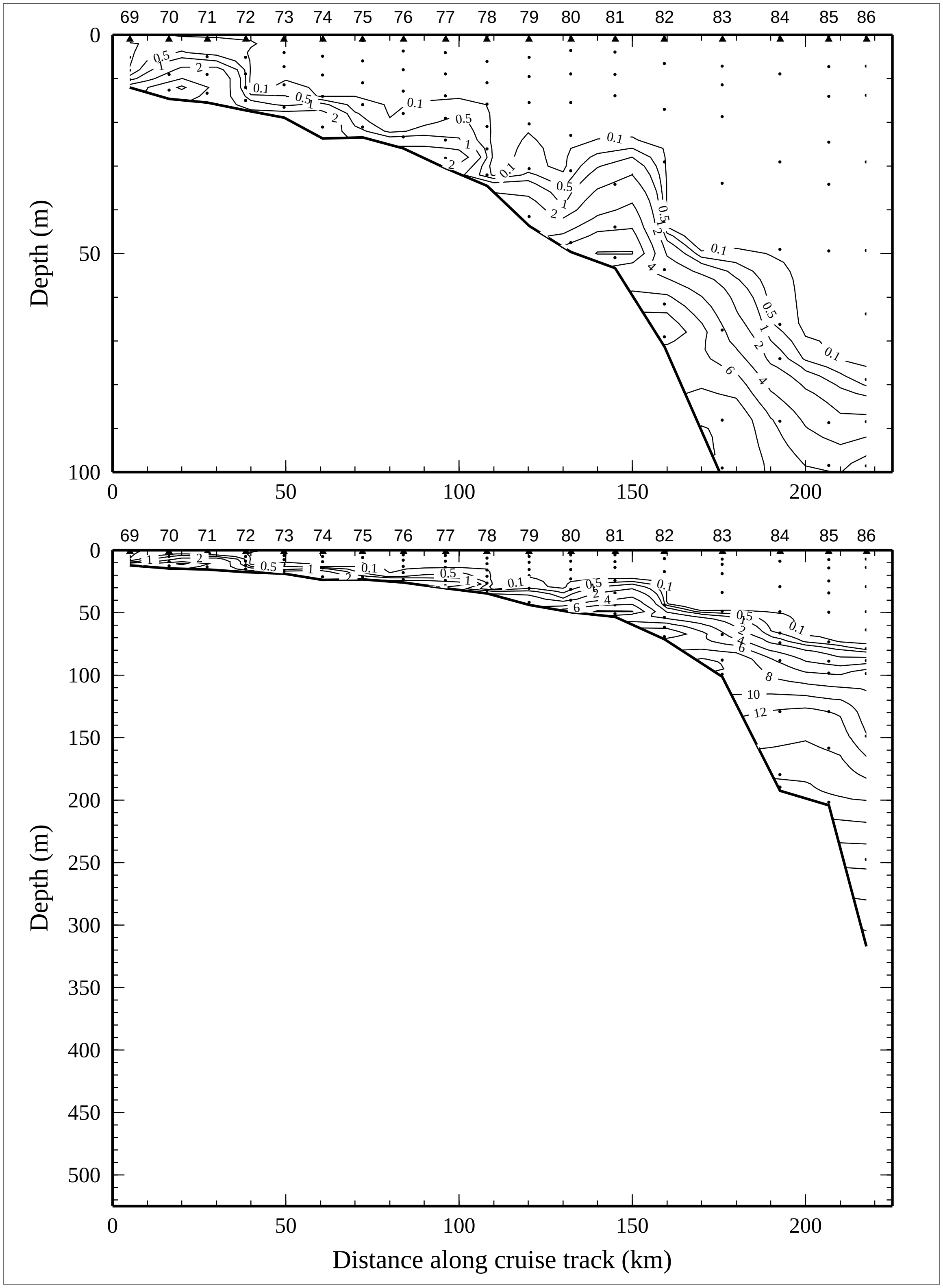

Figure 6.3.12. Nitrate (µmol·l^{-1}) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

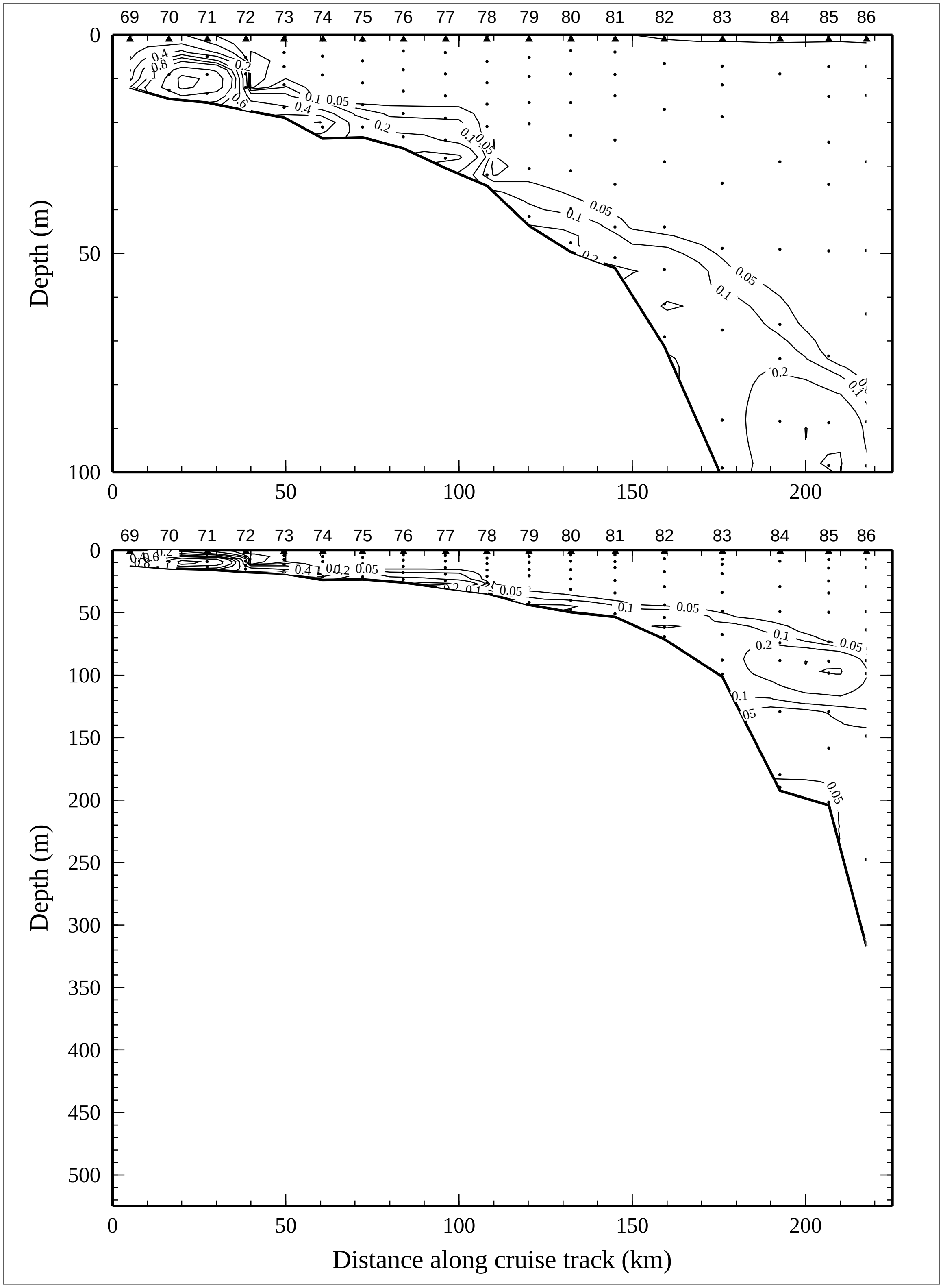

Figure 6.3.13. Nitrite ($\mu mol \cdot l^{-1}$) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

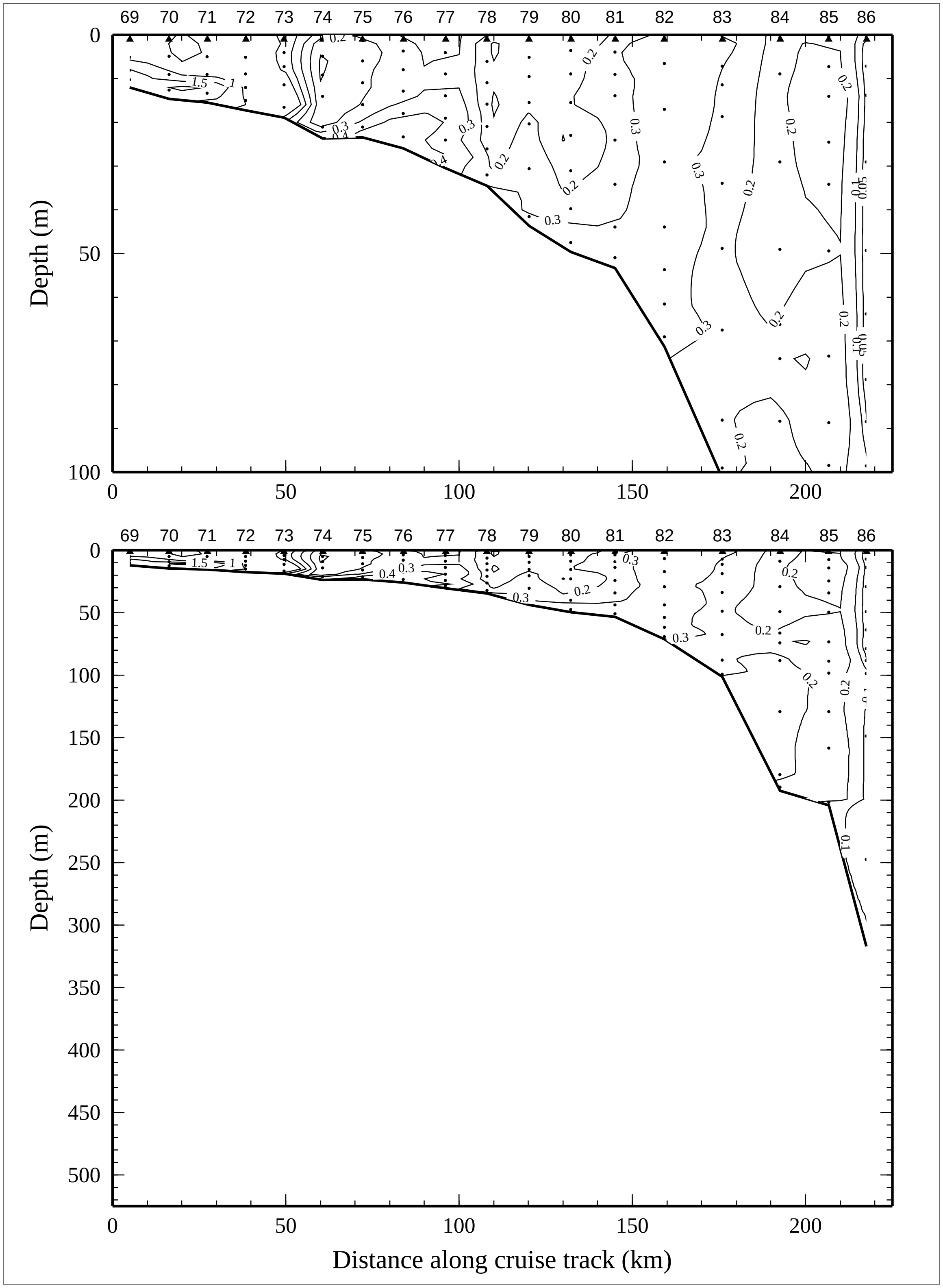

Figure 6.3.14. Ammonium (µmol·l^{-1}) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

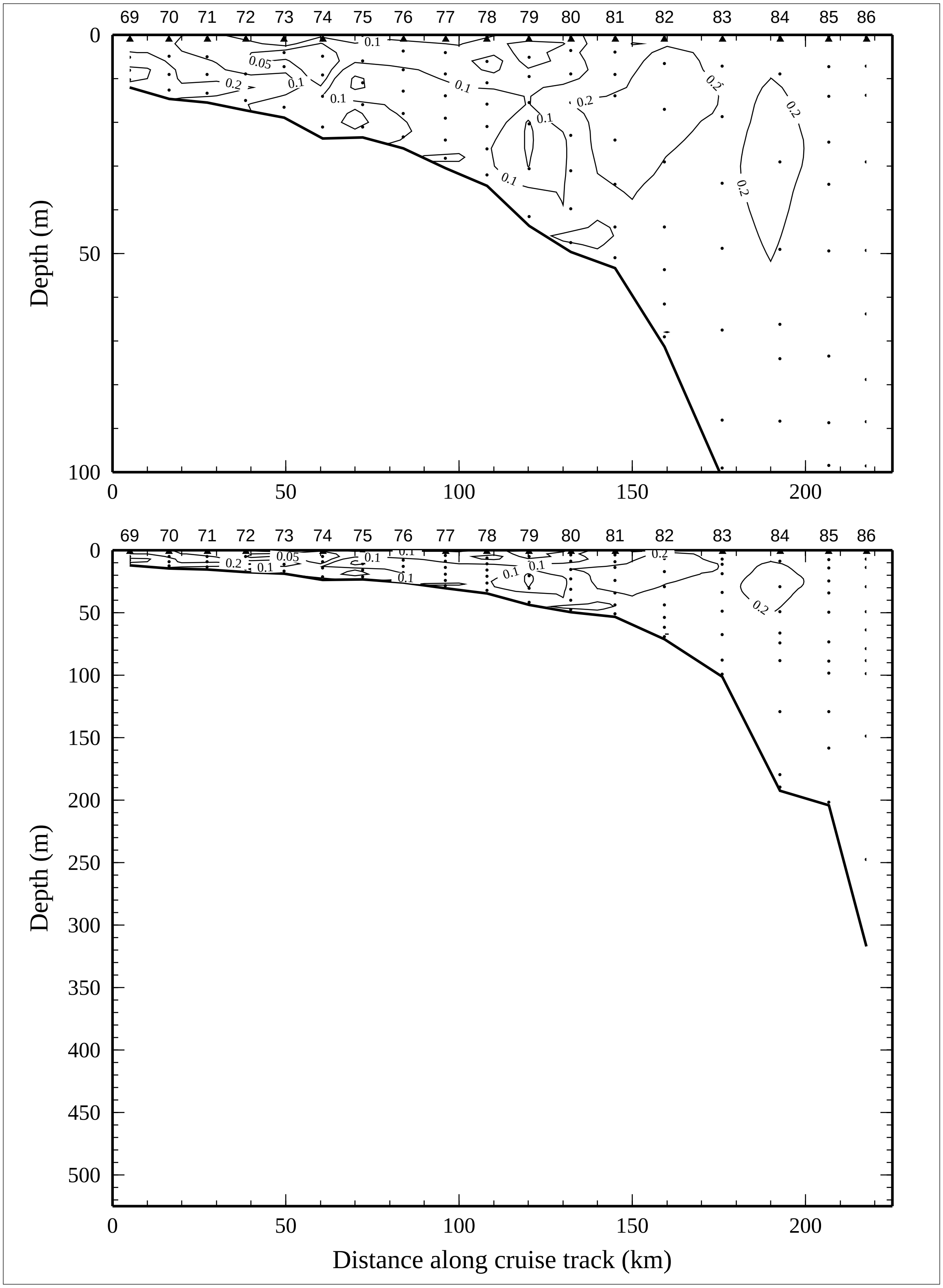

Figure 6.3.15. Urea (μmol·l⁻¹) on line 3 of LATEX A survey H06,
25 July - 7 August 1993.

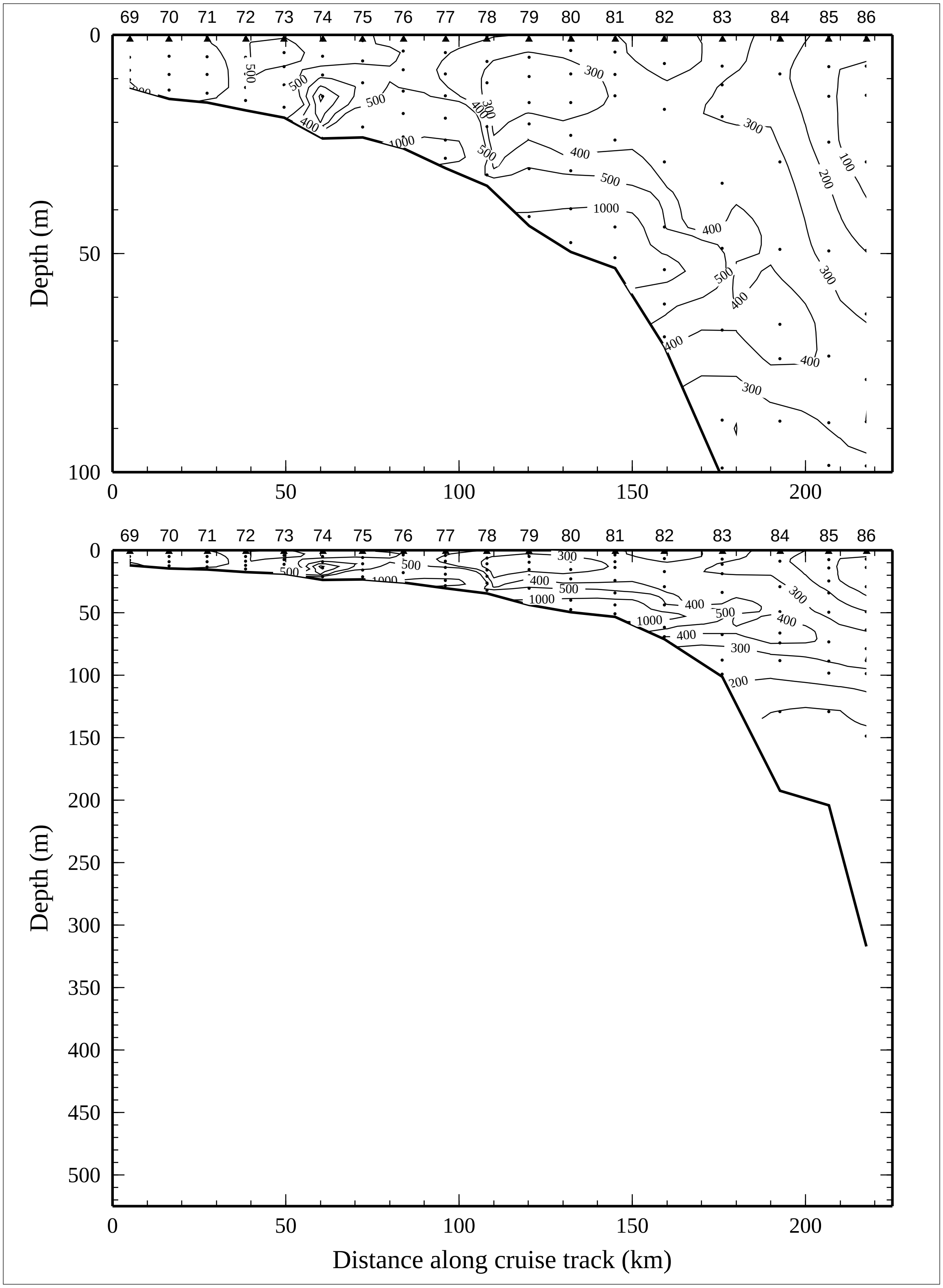

Figure 6.3.16. Chlorophyll a (ng·l^{-1}) on line 3 of LATEX A survey H06, 25 July - 7 August 1993.

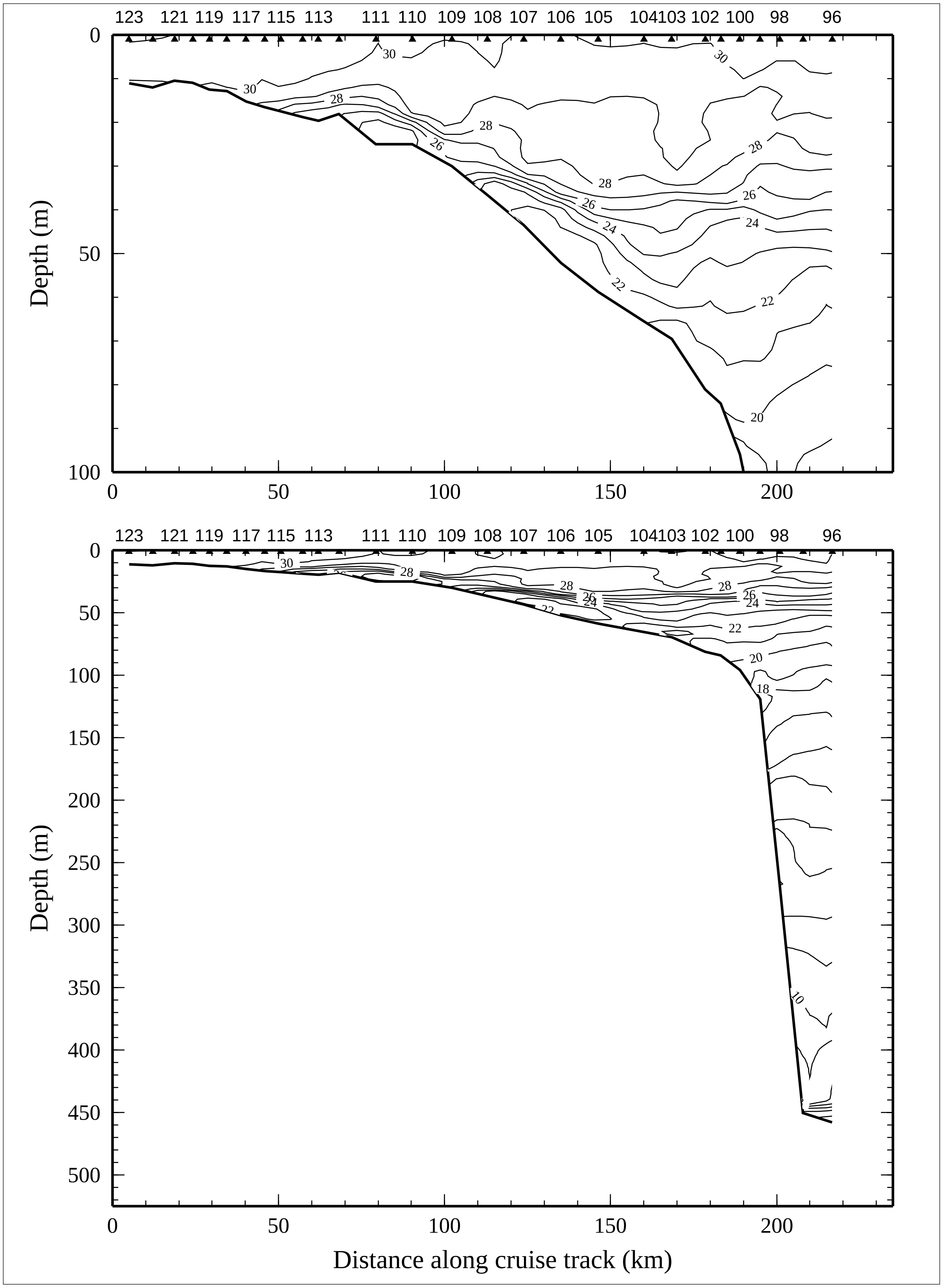

Figure 6.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H06,
25 July - 7 August 1993.

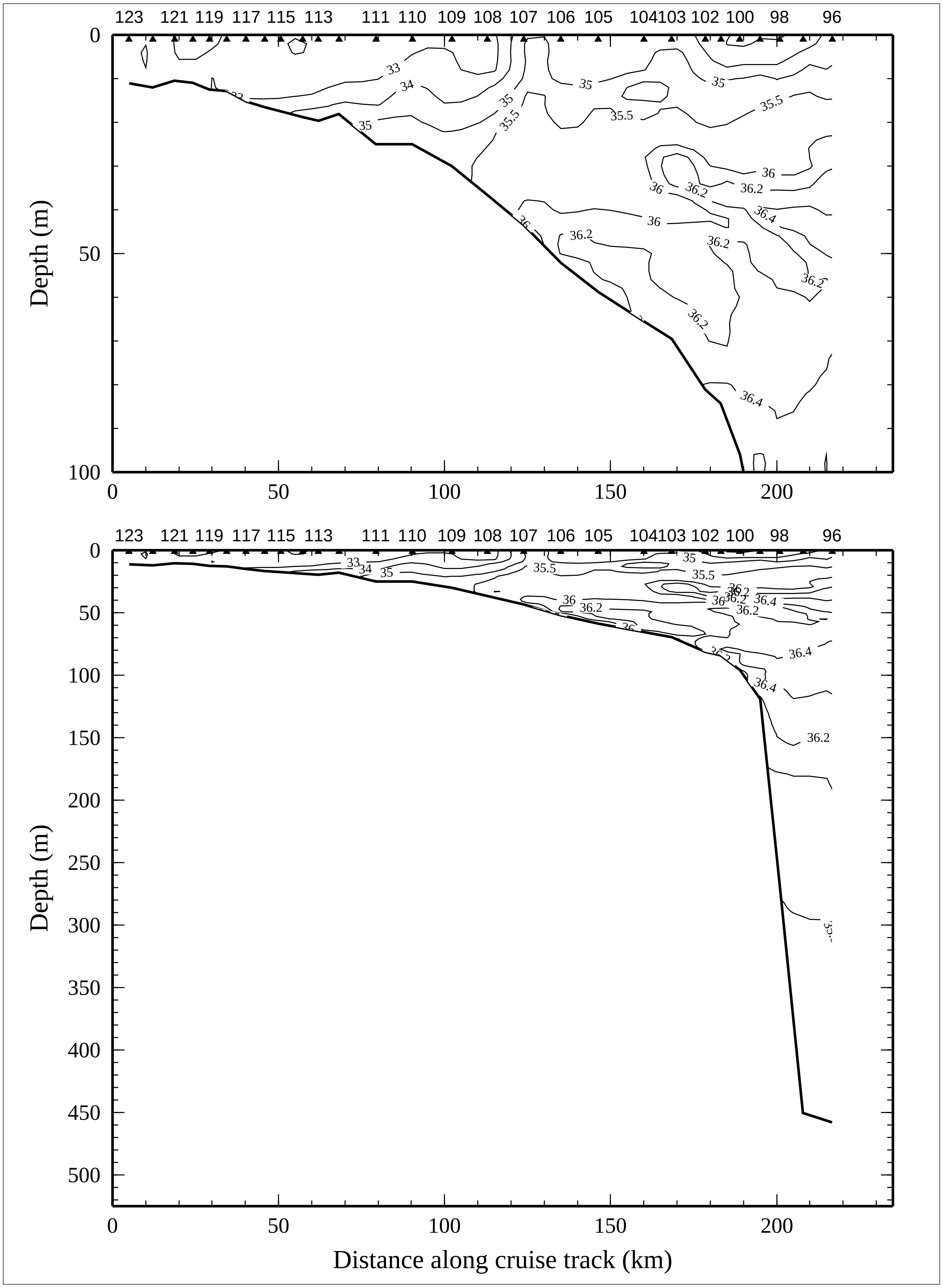

Figure 6.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

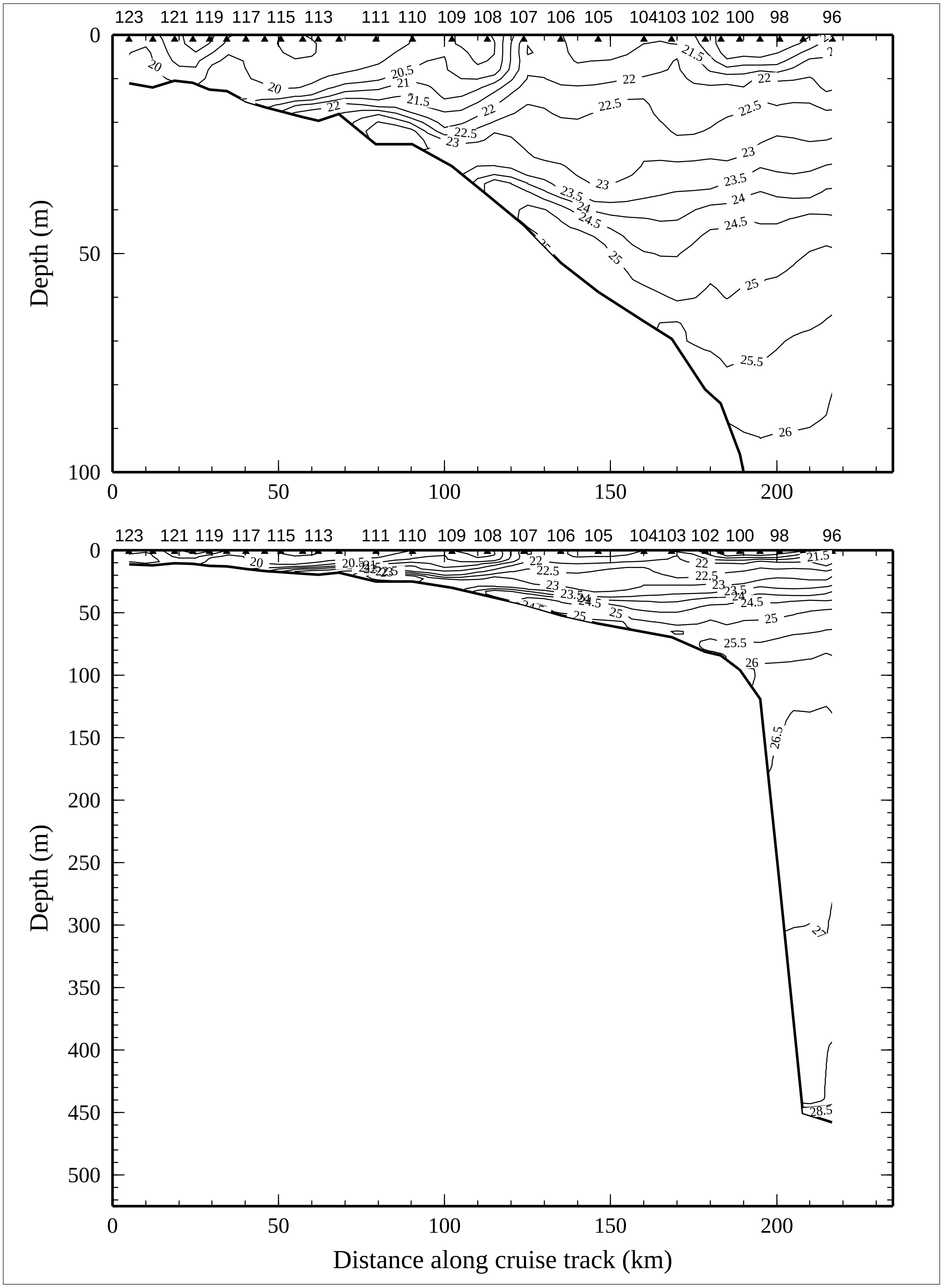

Figure 6.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

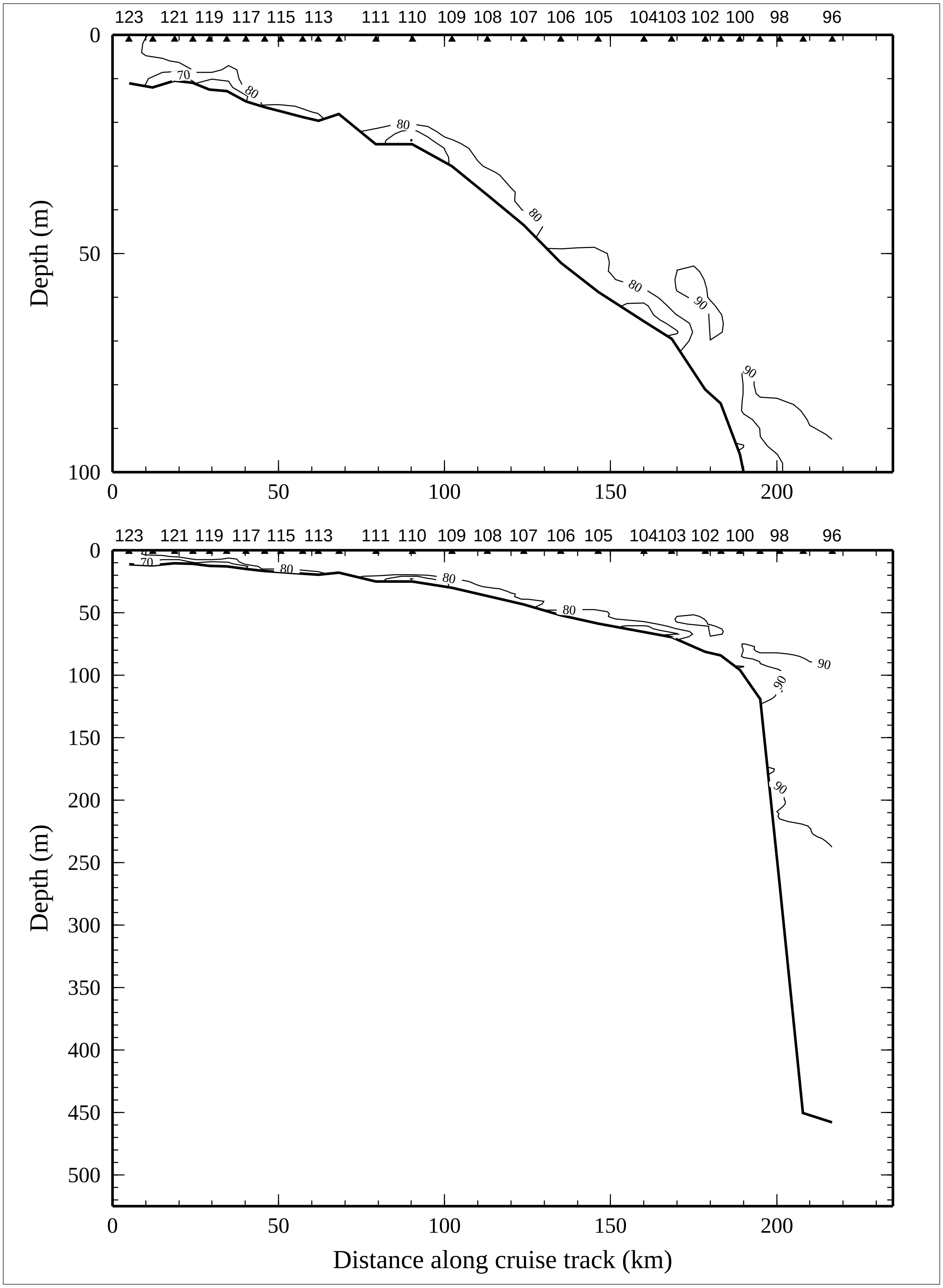

Figure 6.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

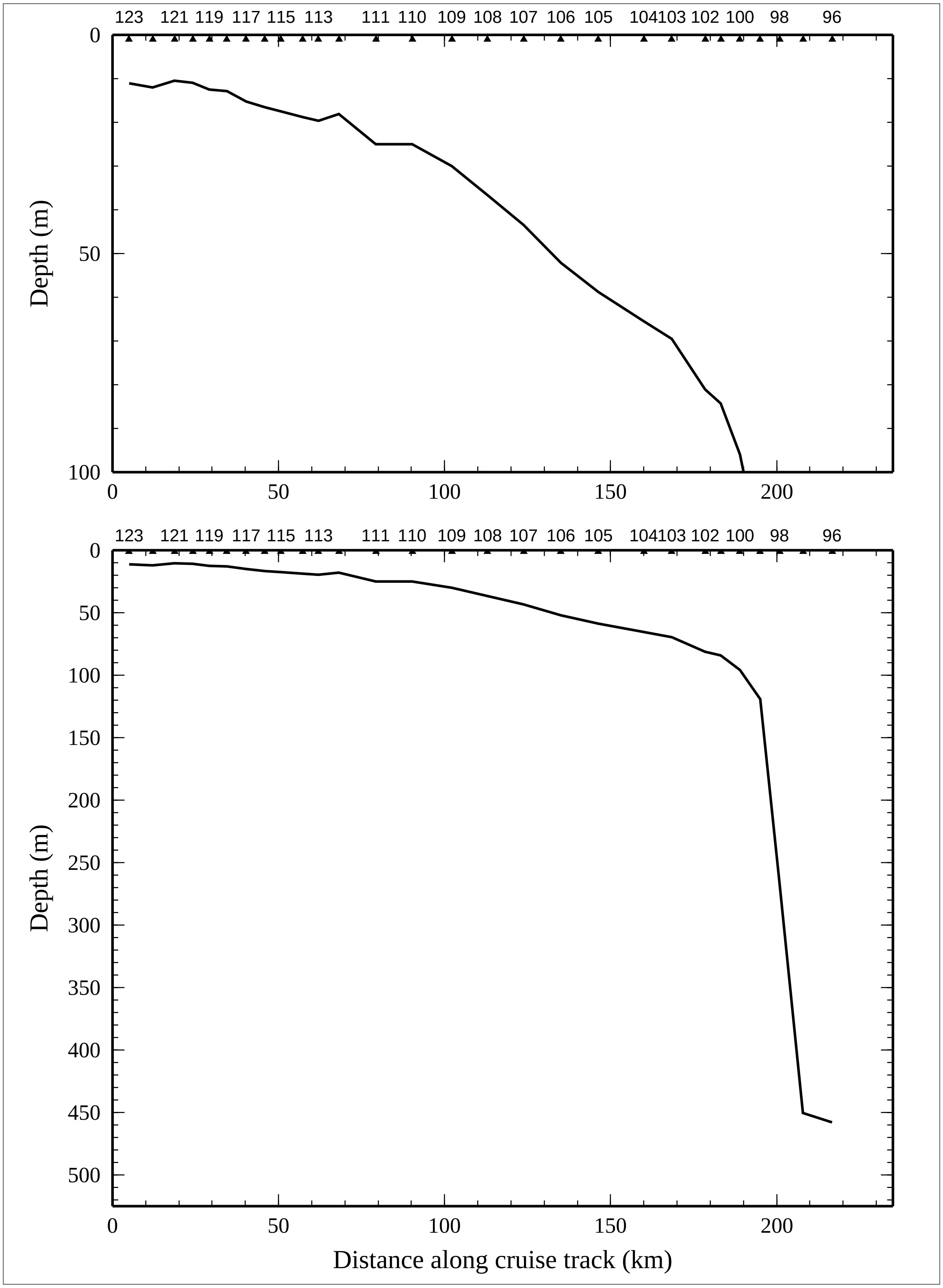

Figure 6.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H06,
25 July - 7 August 1993. Values were less than 0.05

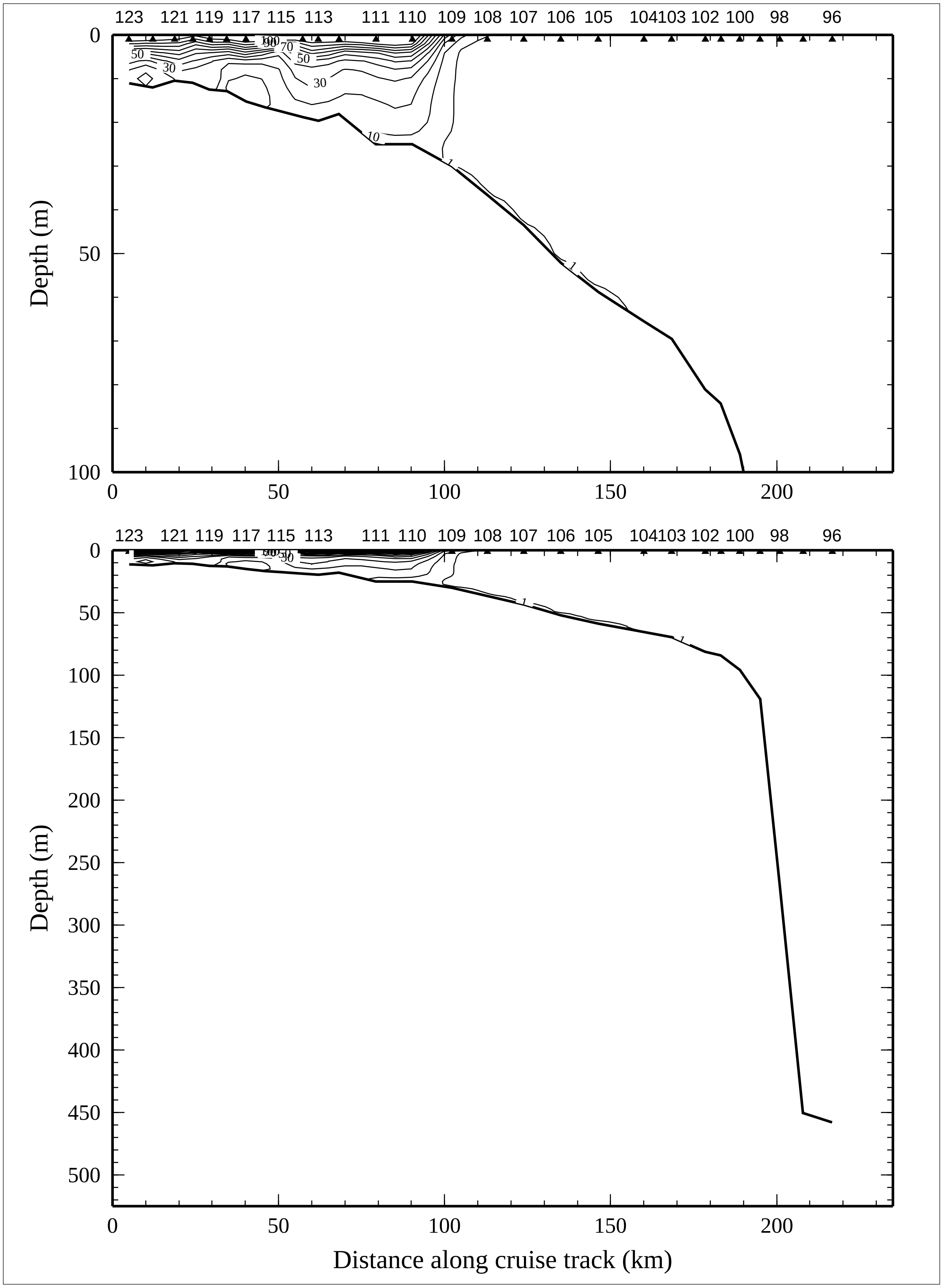

Figure 6.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

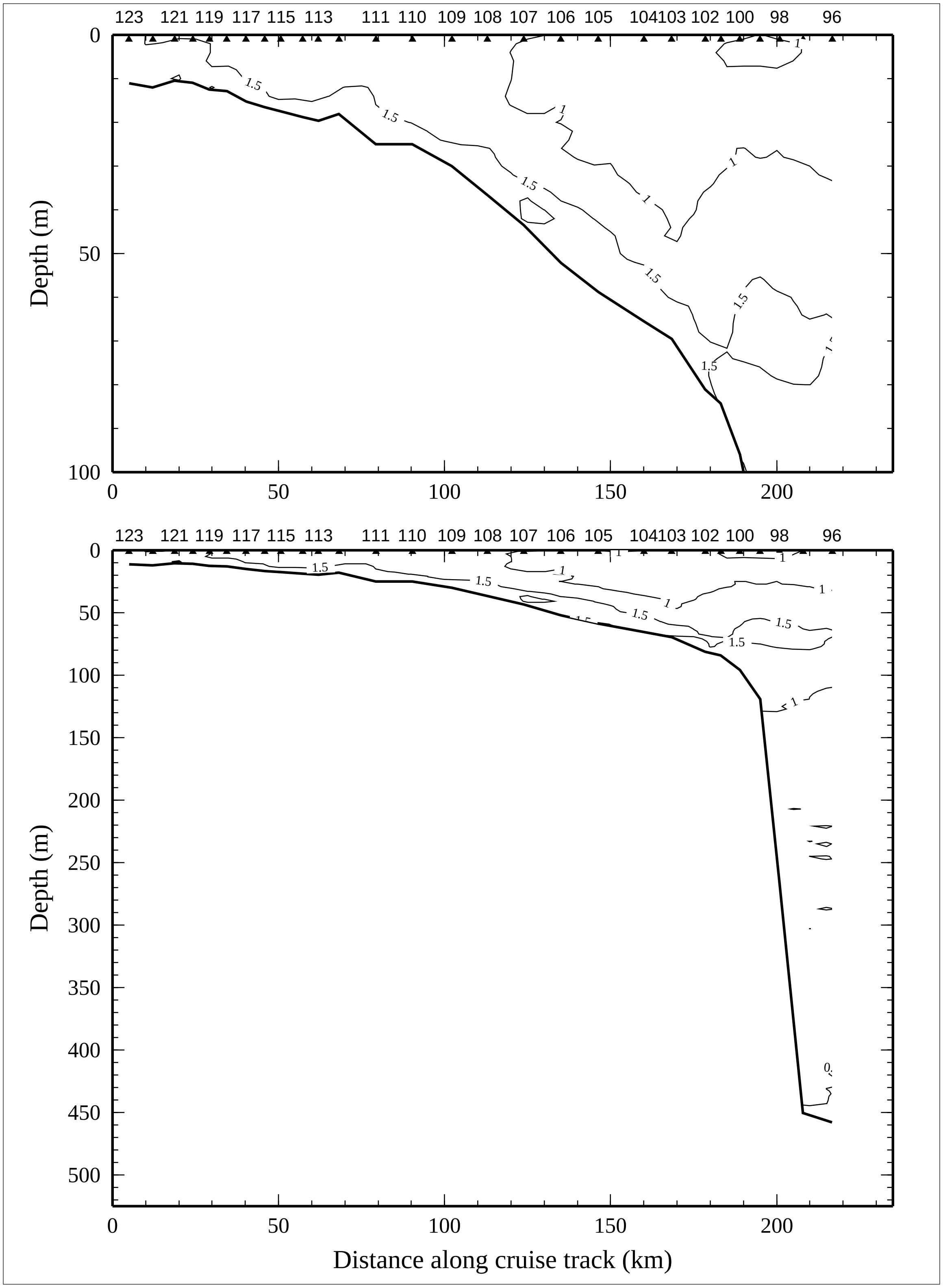

Figure 6.4.7. Relative fluorescence on line 4 of LATEX A survey H06,
25 July - 7 August 1993.

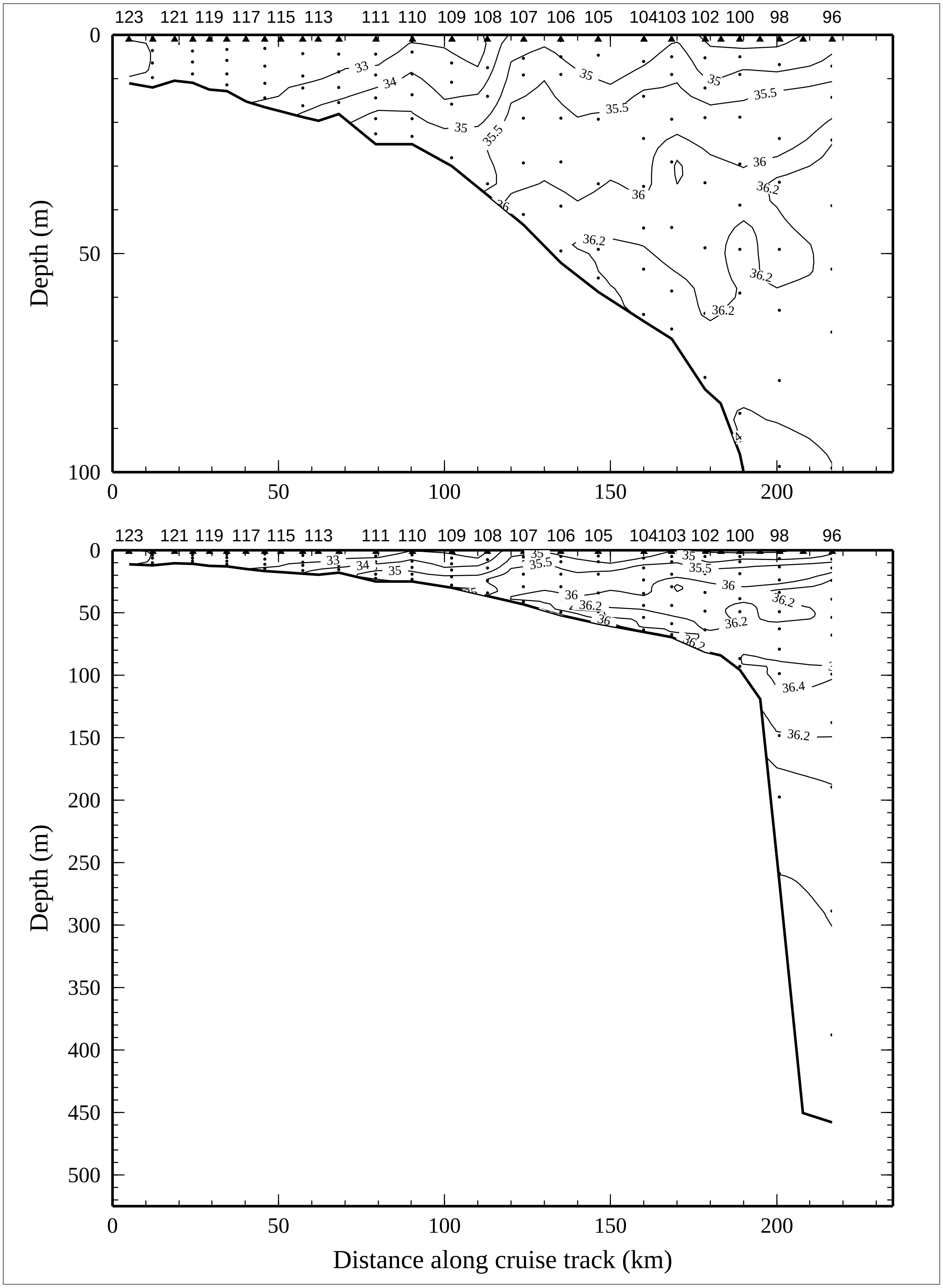

Figure 6.4.8. Bottle salinity on line 4 of LATEX A survey H06,
25 July - 7 August 1993.

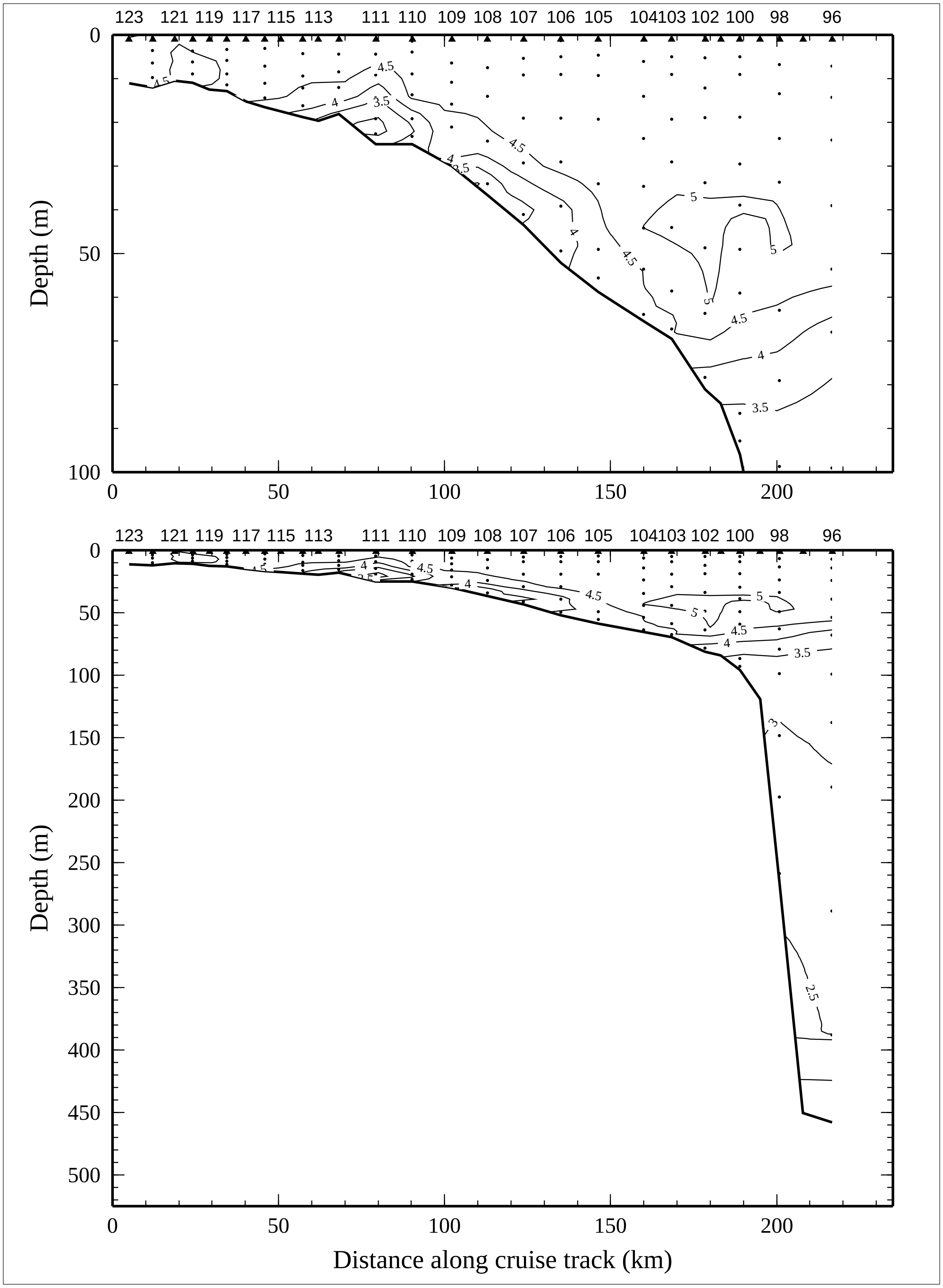

Figure 6.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

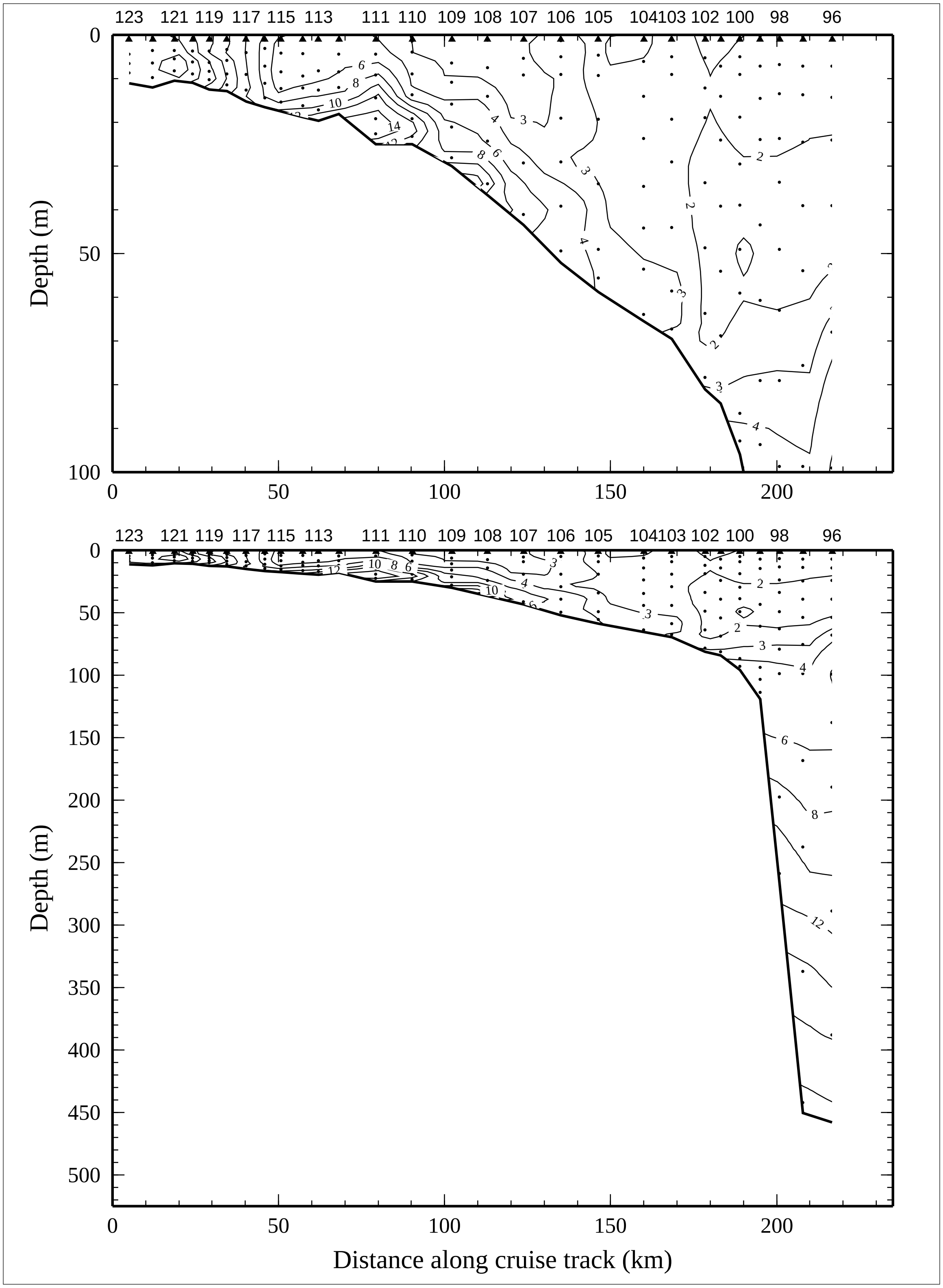

Figure 6.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H06,
25 July - 7 August 1993.

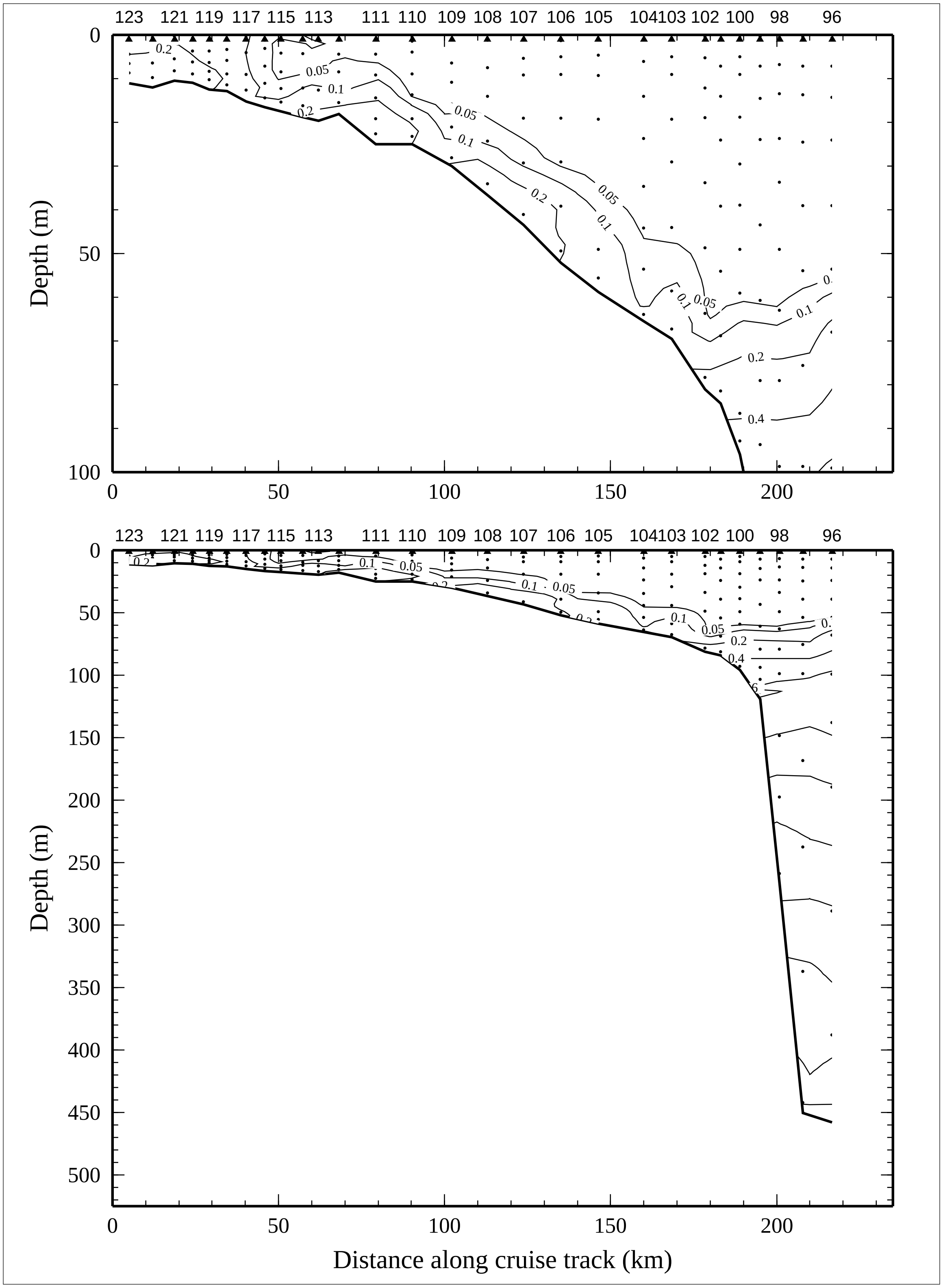

Figure 6.4.11. Phosphate (μmol·l^{-1}) on line 4 of LATEX A survey H06,
25 July - 7 August 1993.

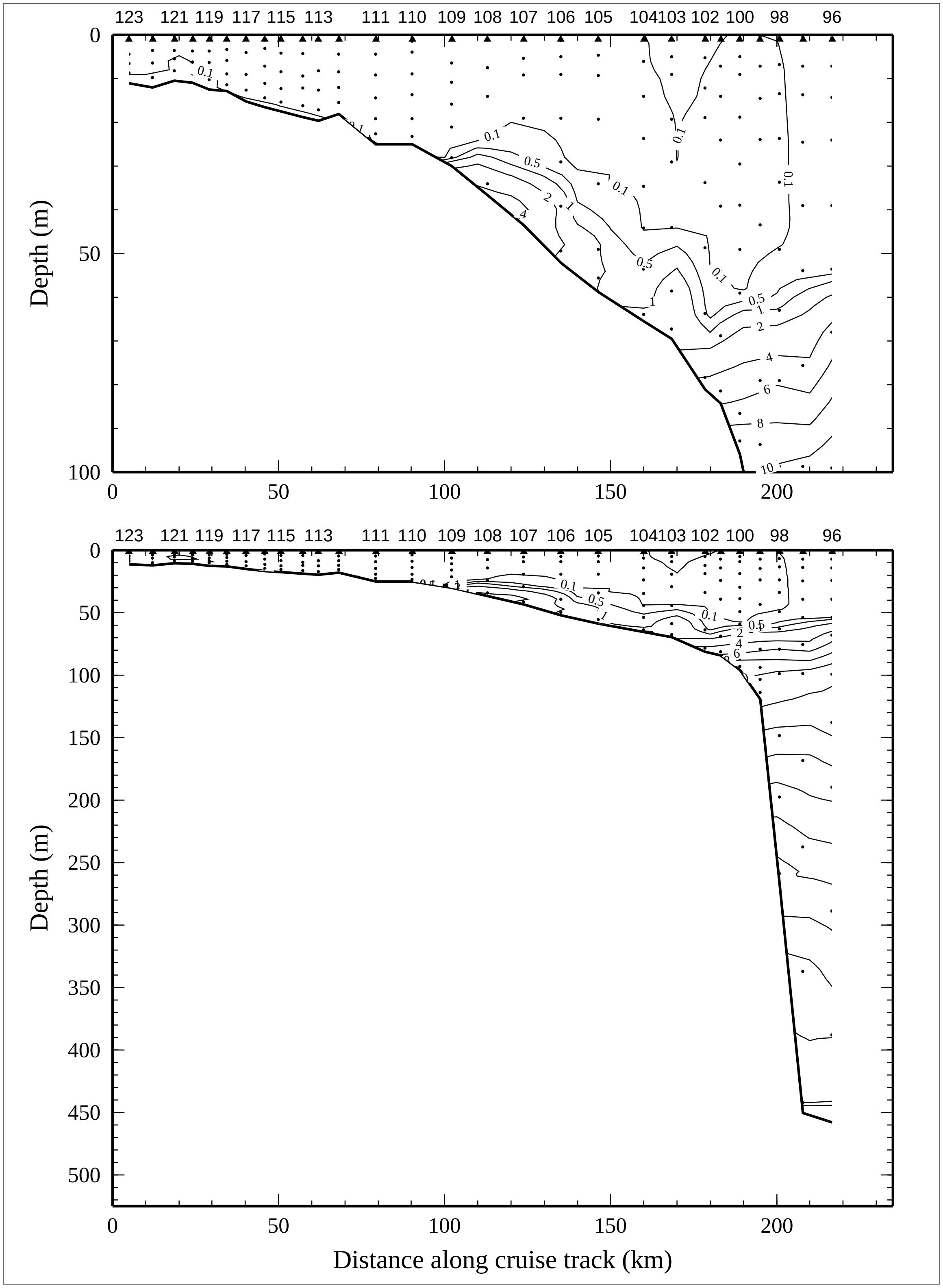

Figure 6.4.12. Nitrate (μmol·l-1) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

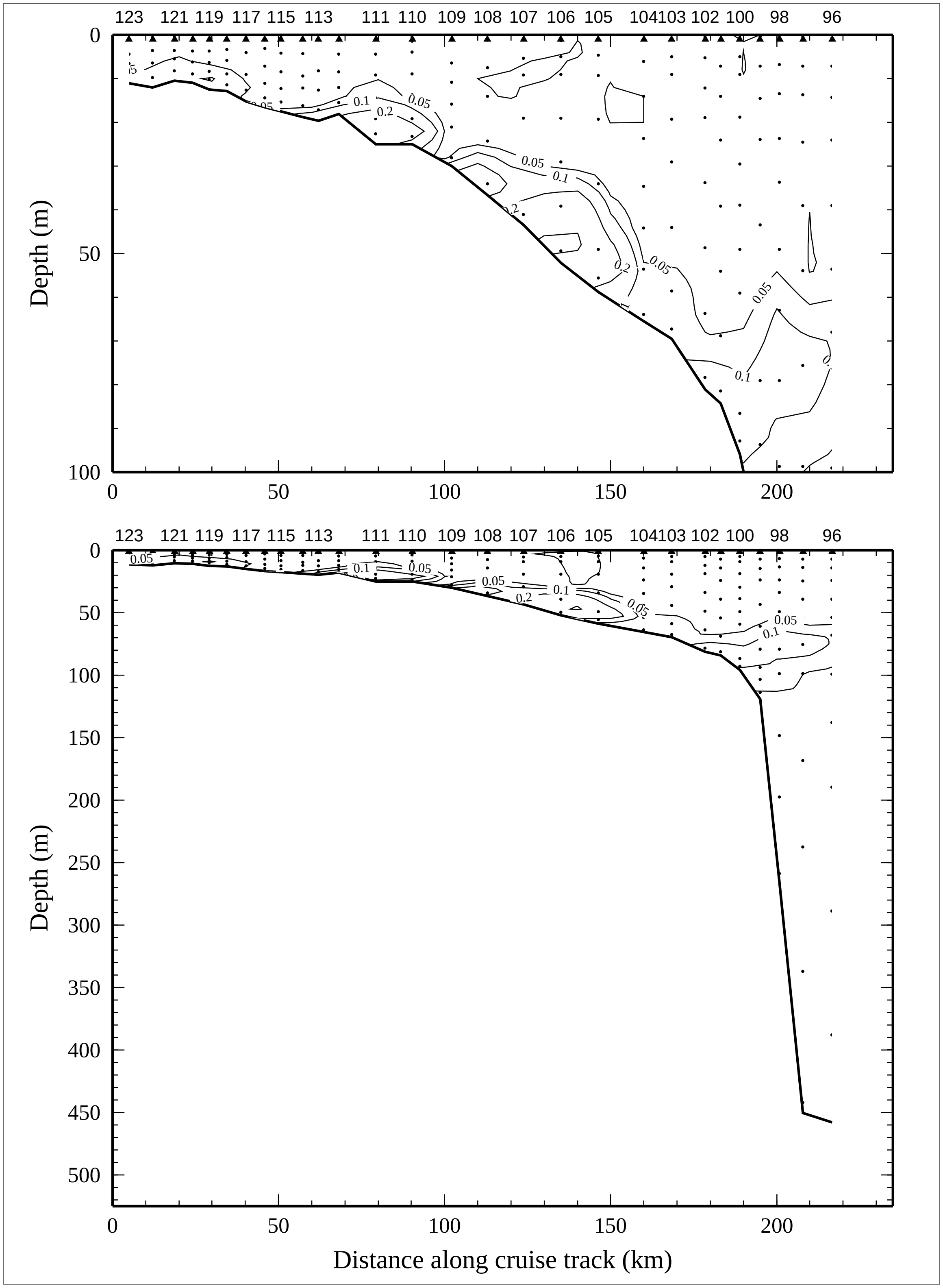

Figure 6.4.13. Nitrite (μmol·l[-1]) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

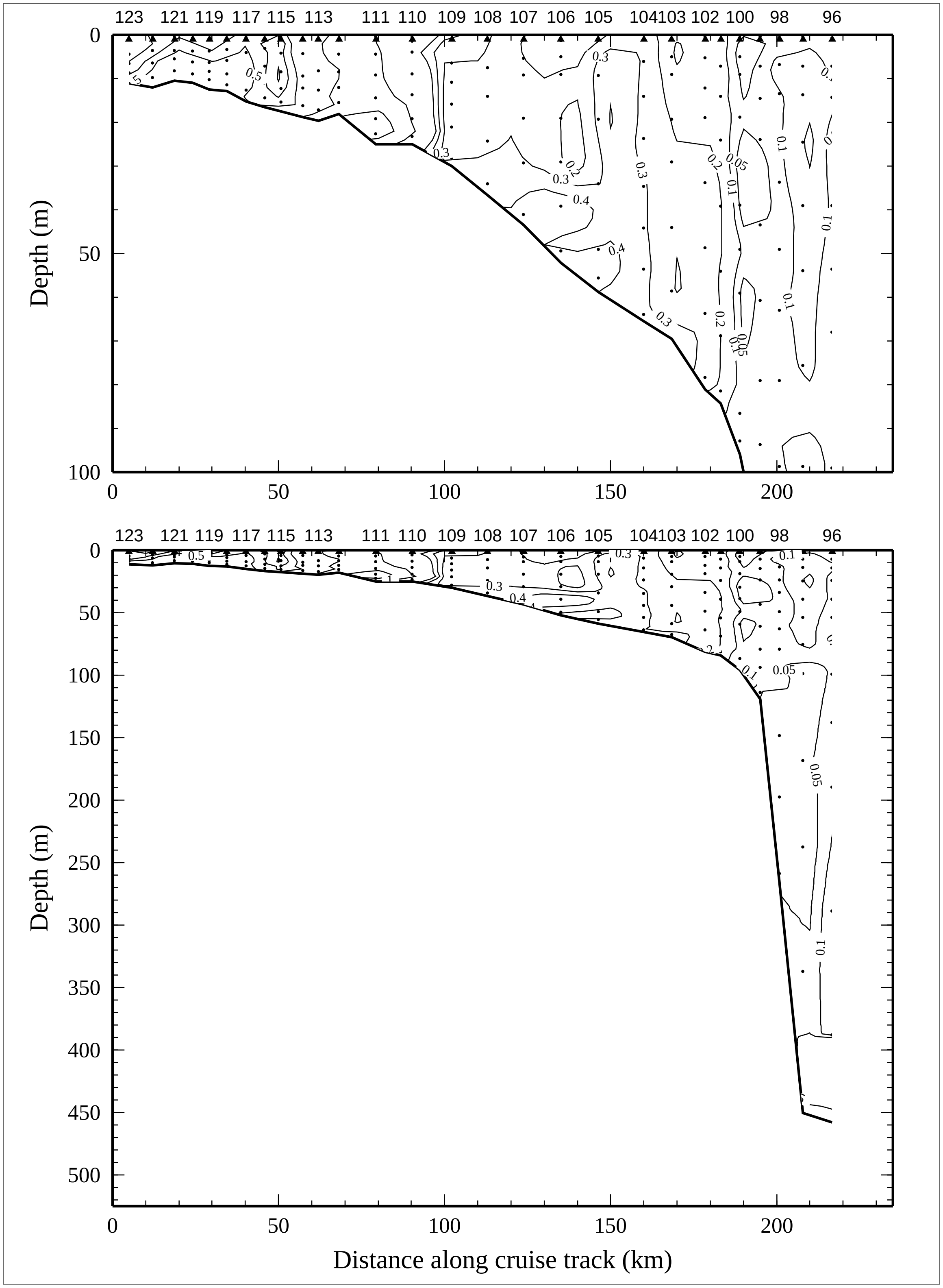

Figure 6.4.14. Ammonium (μmol·l^{-1}) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

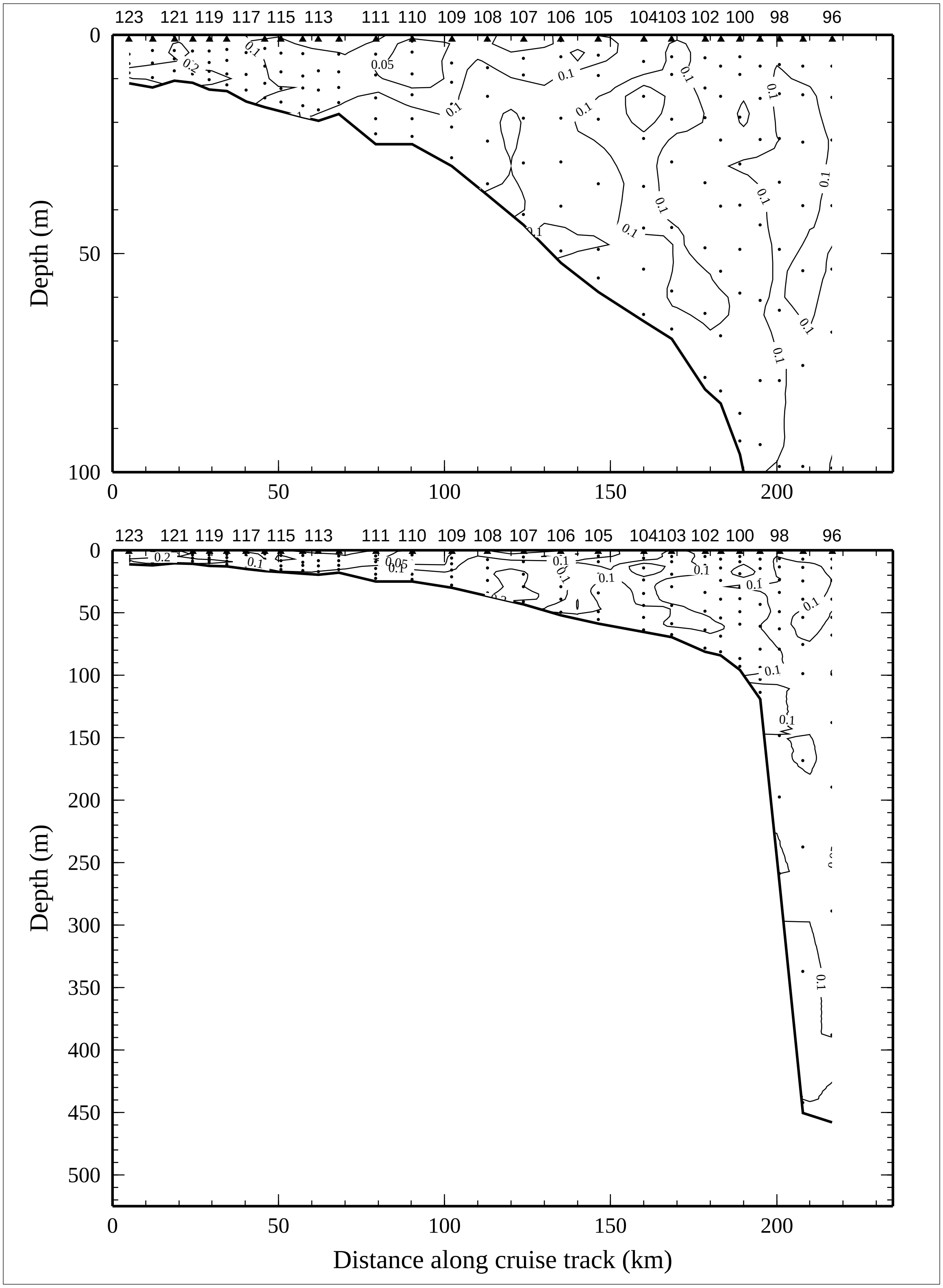

Figure 6.4.15. Urea (μmol·l-1) on line 4 of LATEX A survey H06,
25 July - 7 August 1993.

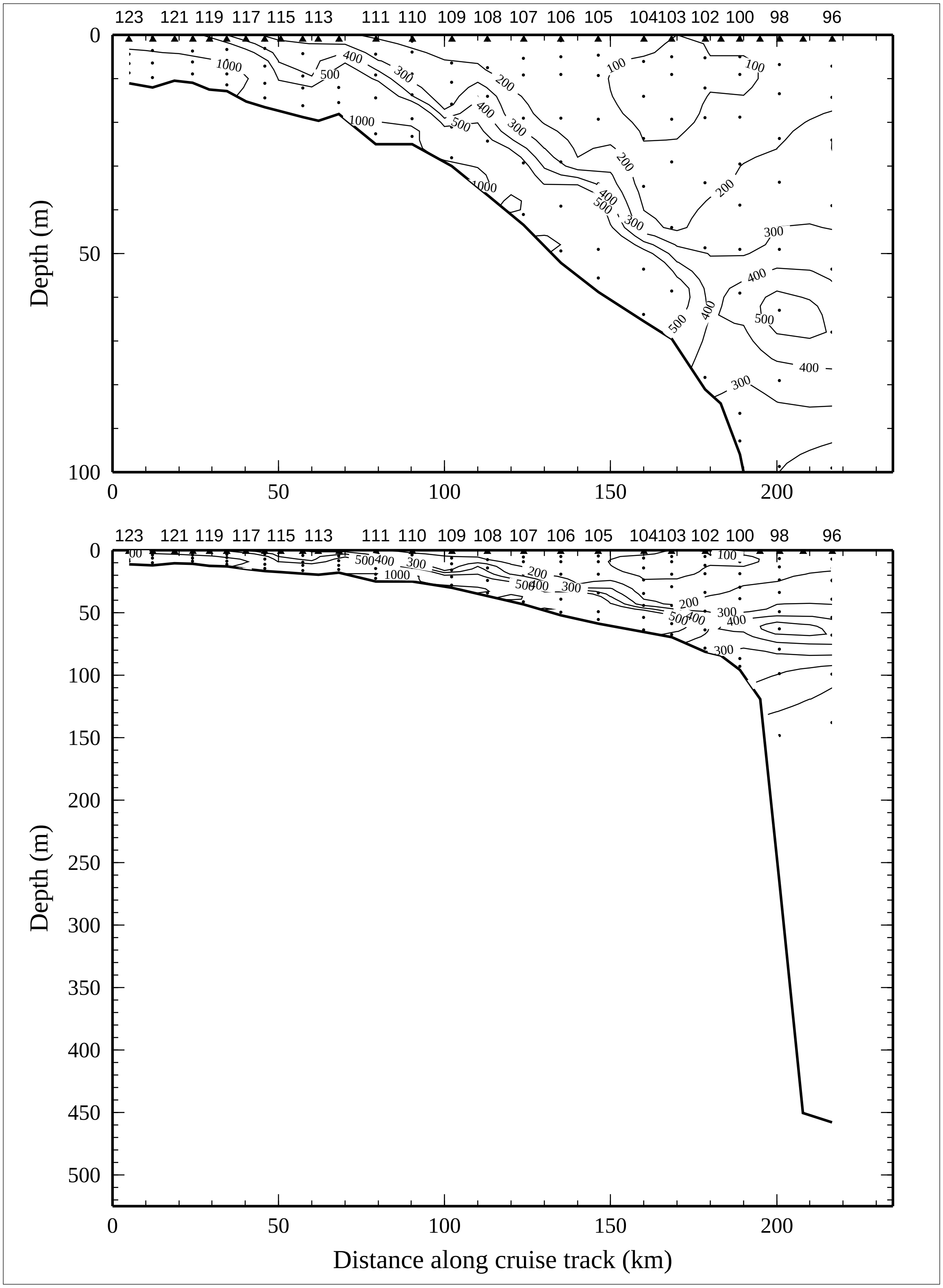

Figure 6.4.16. Chlorophyll a (ng·l^{-1}) on line 4 of LATEX A survey H06, 25 July - 7 August 1993.

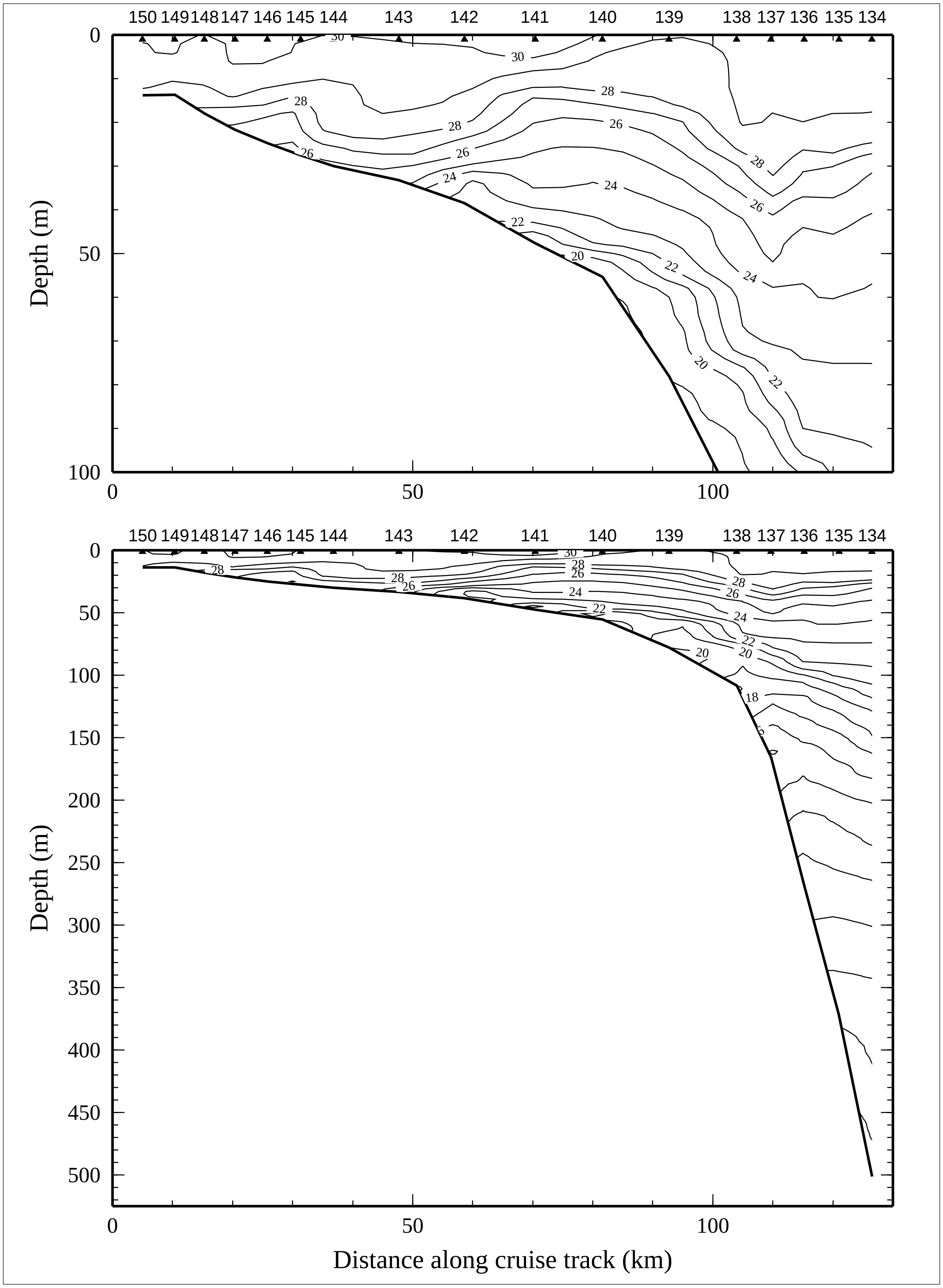

Figure 6.5.1. Potential temperature (˚C) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

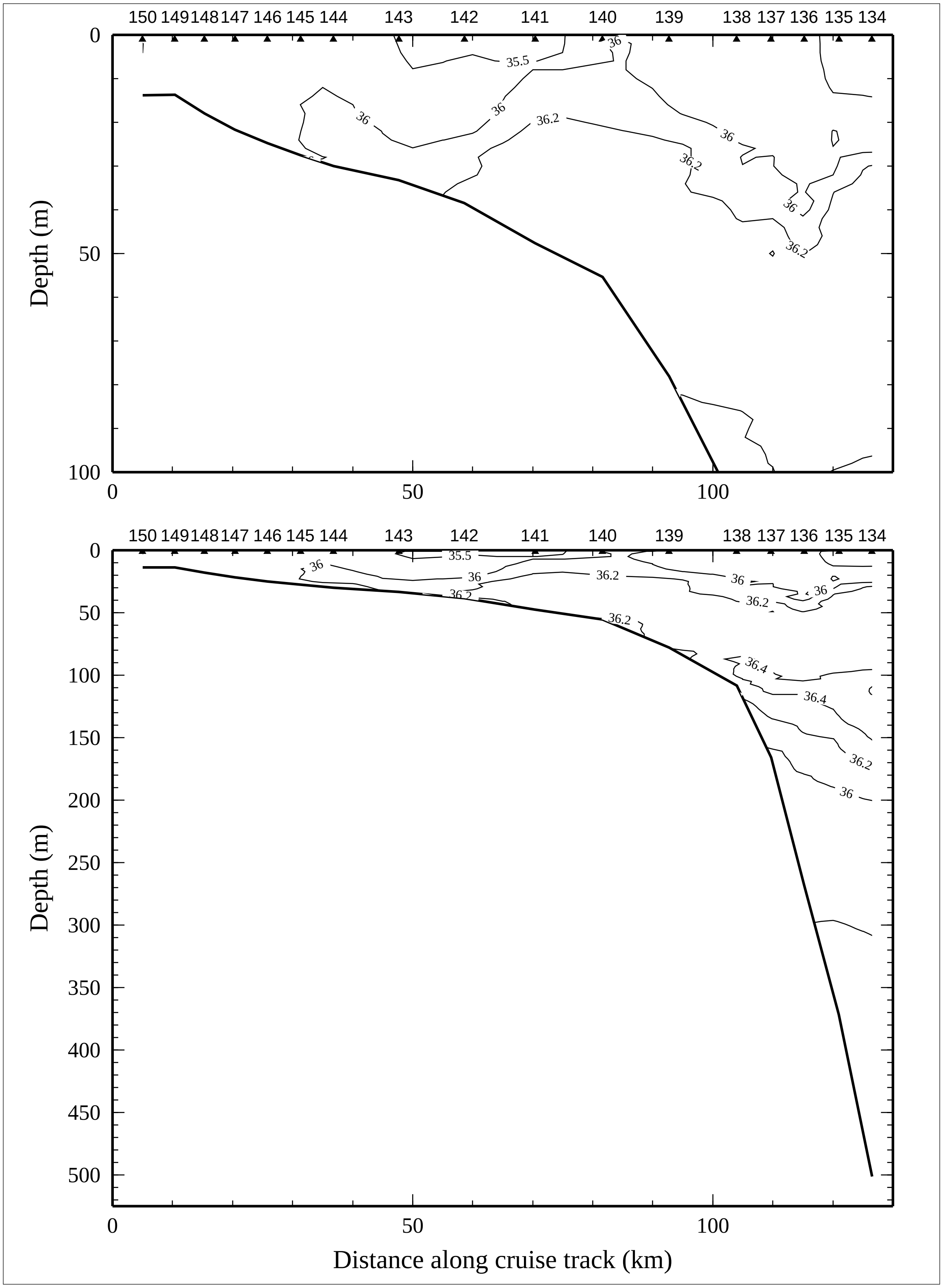

Figure 6.5.2. Salinity, derived from CTD data, on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

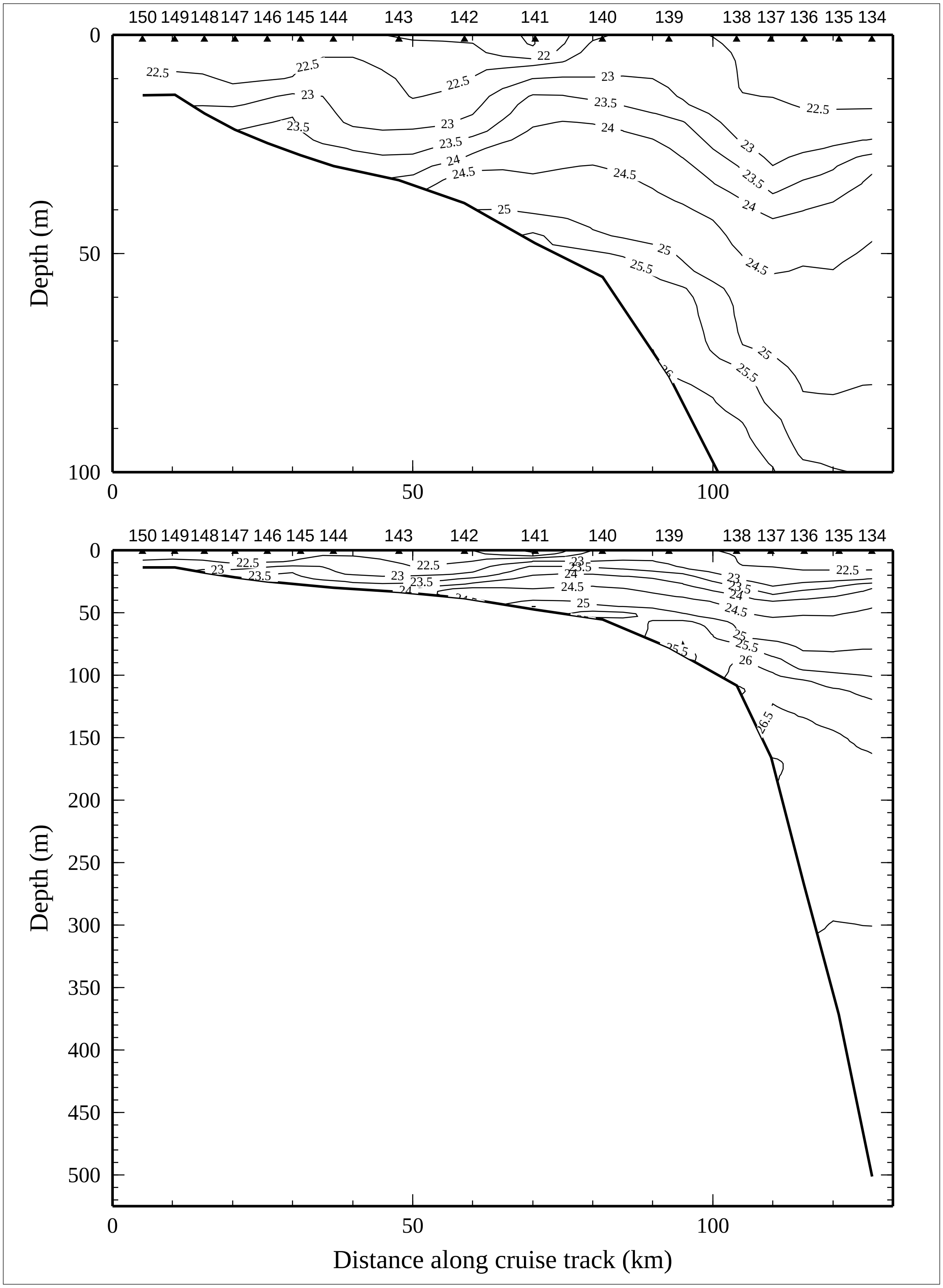

Figure 6.5.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

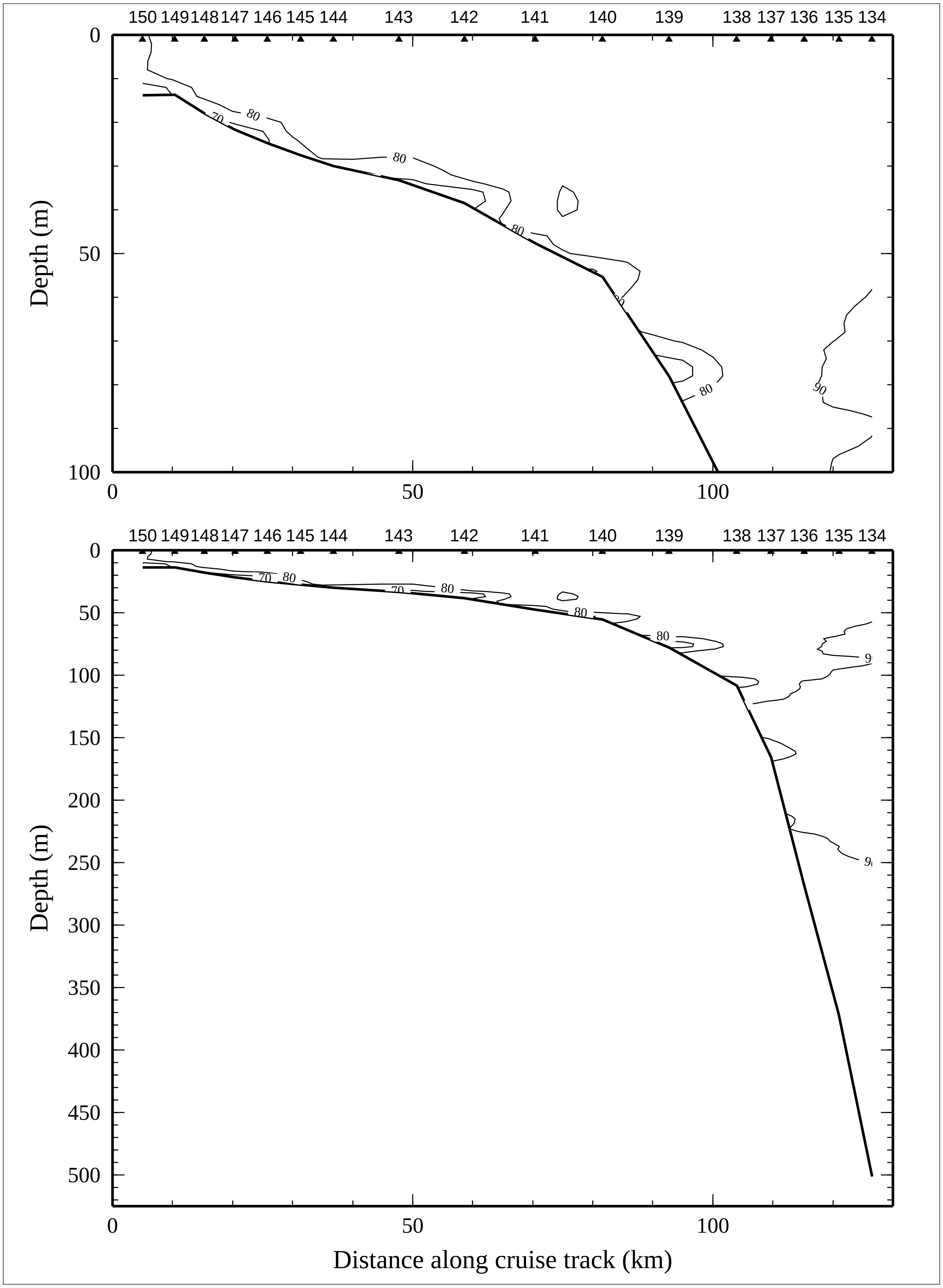

Figure 6.5.4. Percent transmission (660 nm wave length; 25-cm path length) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

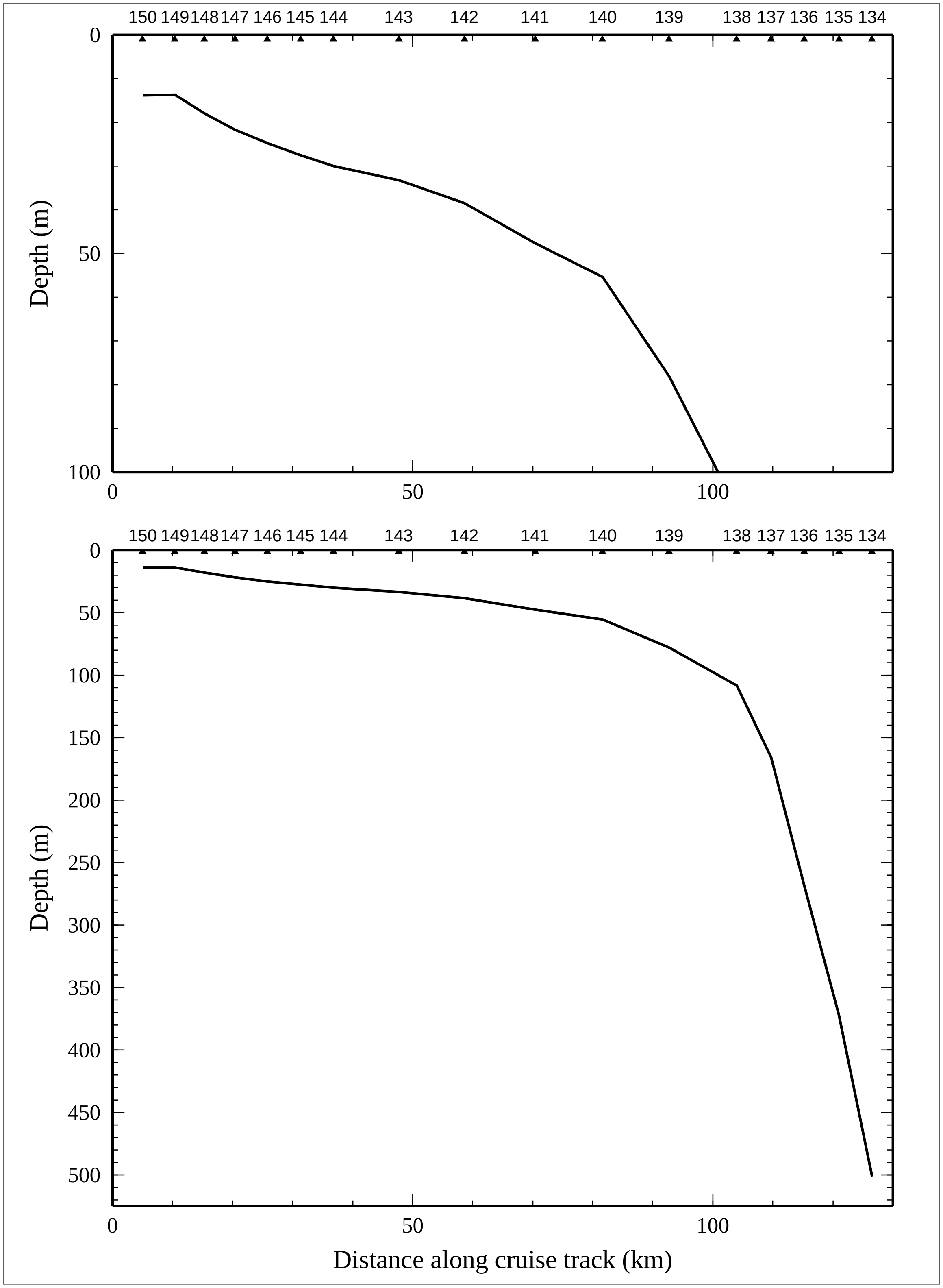

Figure 6.5.5. Optical backscatterance (voltage) on line 5 of LATEX A survey H06, 25 July - 7 August 1993. Values were less than 0.05.

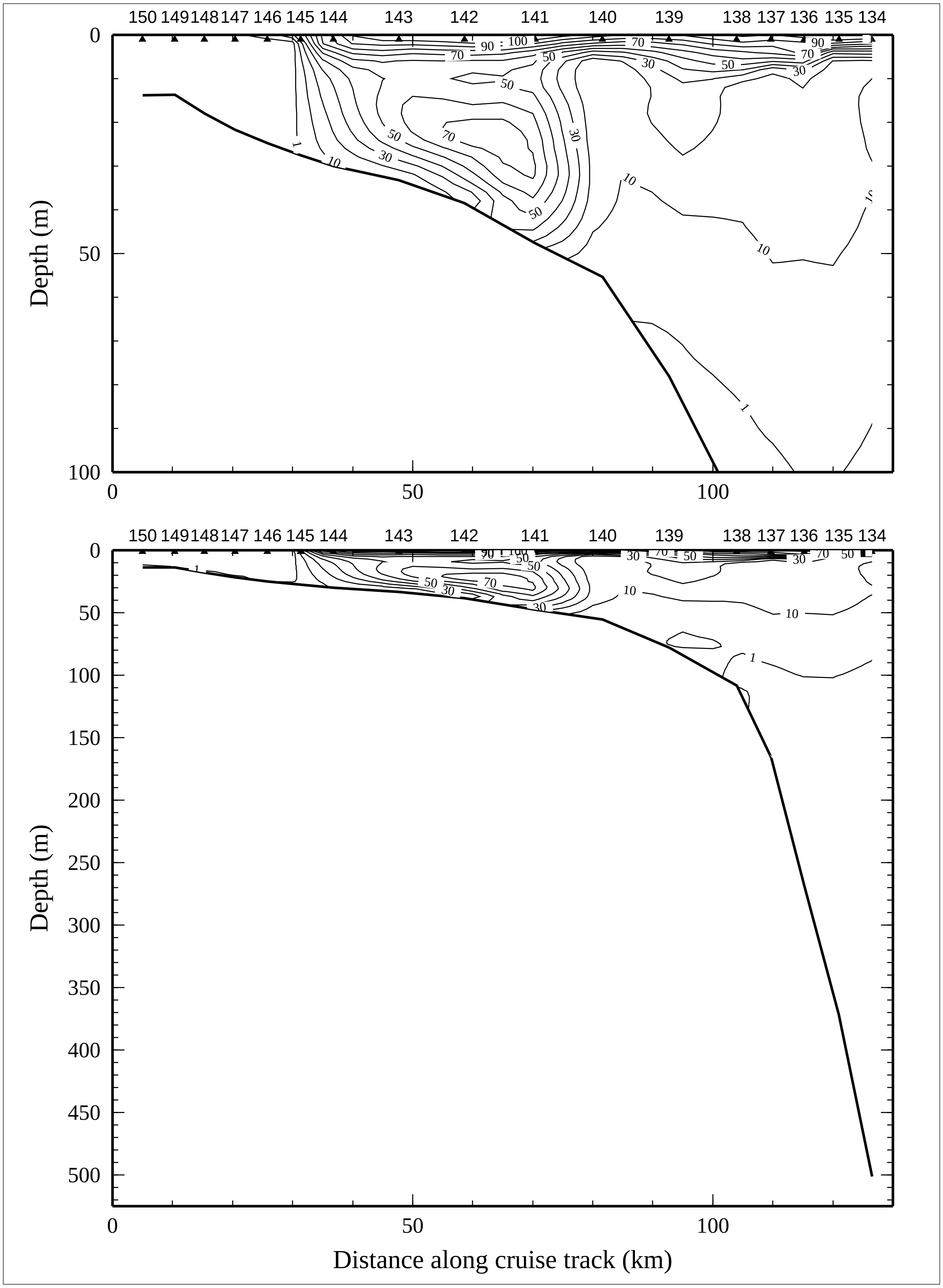

Figure 6.5.6. Downwelling irradiance as percent of surface irradiance on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

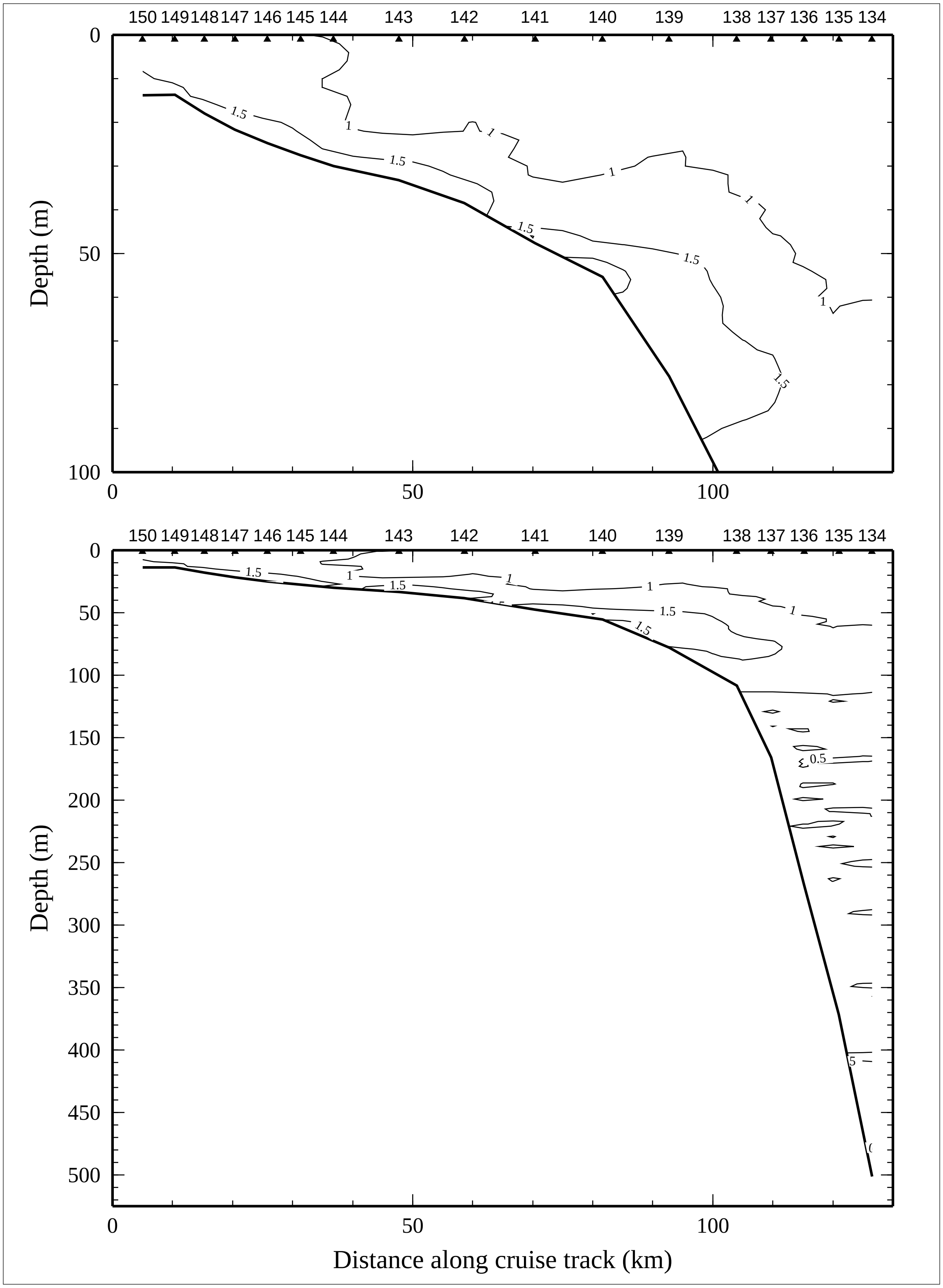

Figure 6.5.7. Relative fluorescence on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

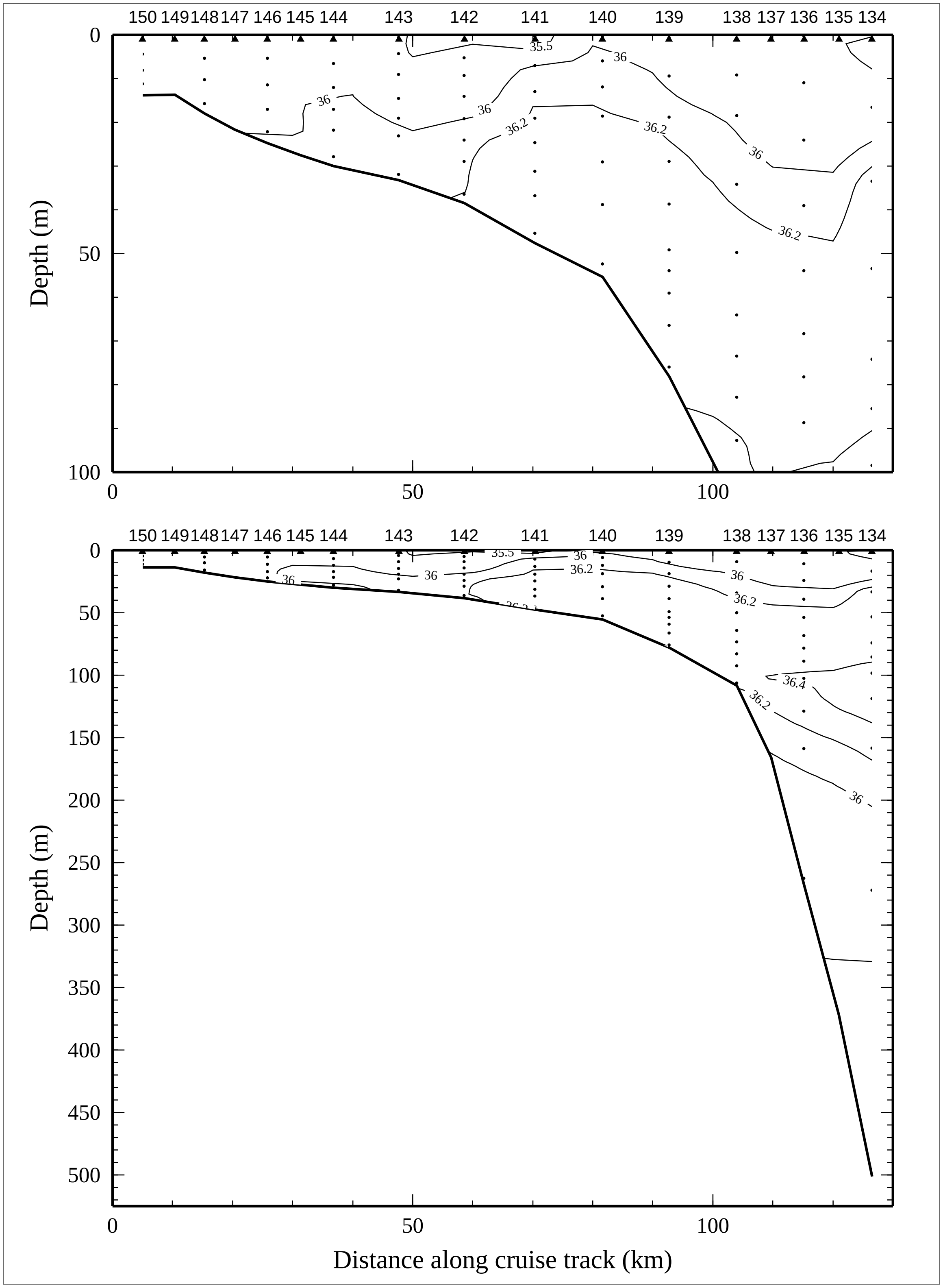

Figure 6.5.8. Bottle salinity on line 5 of LATEX A survey H06,
25 July - 7 August 1993.

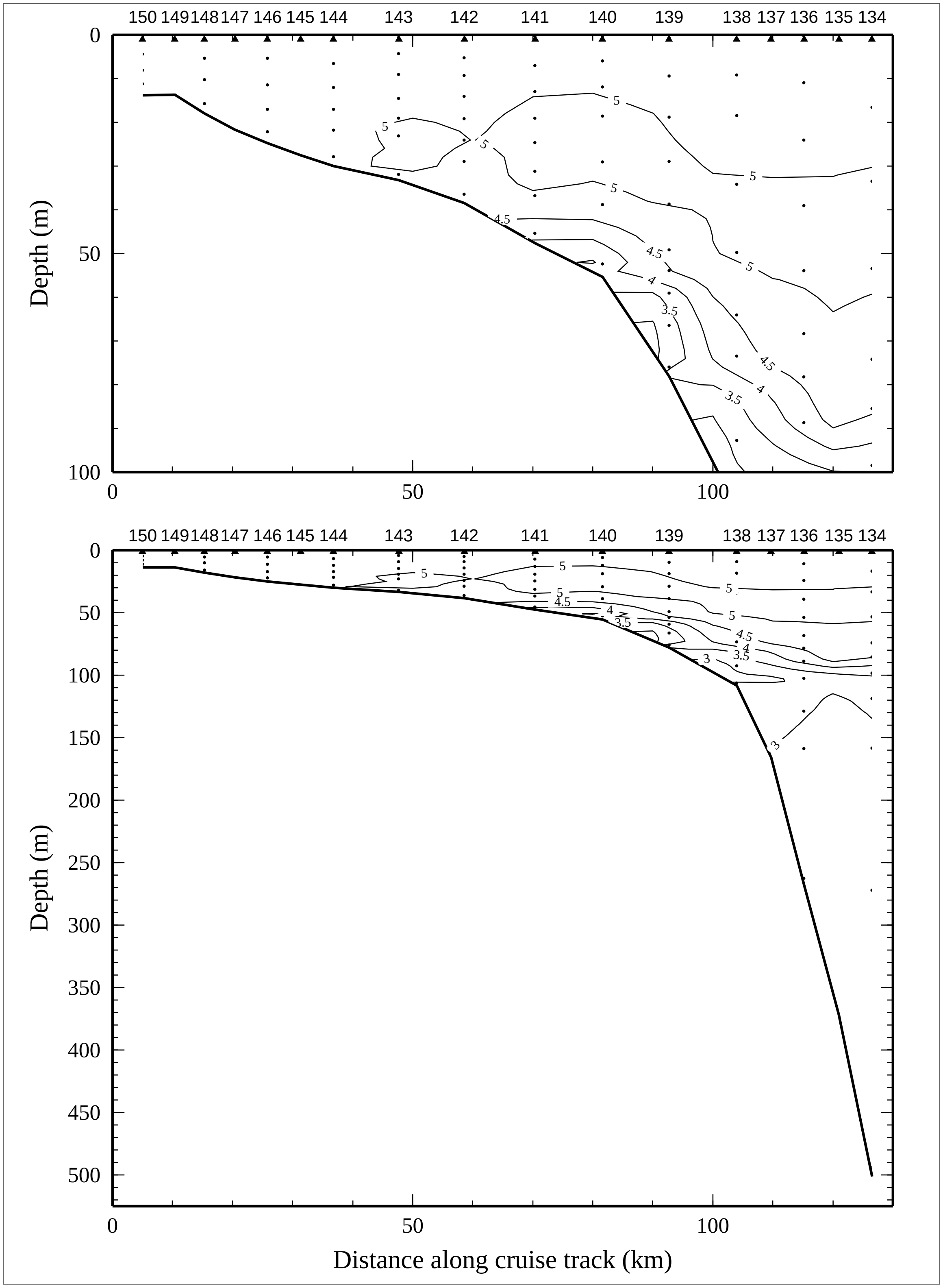

Figure 6.5.9. Dissolved oxygen (ml·l^{-1}) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

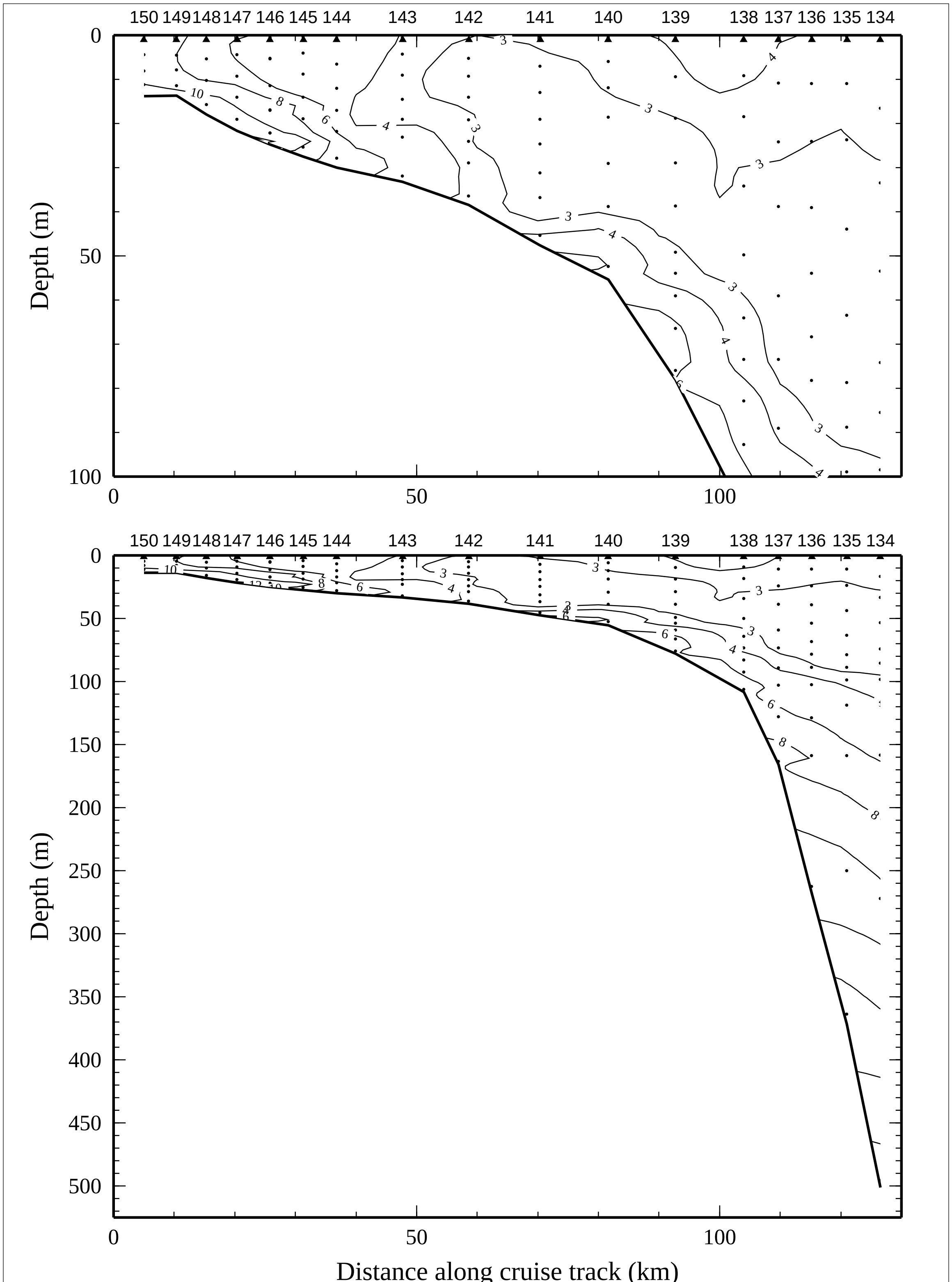

Figure 6.5.10. Silicate (μmol·l^{-1}) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

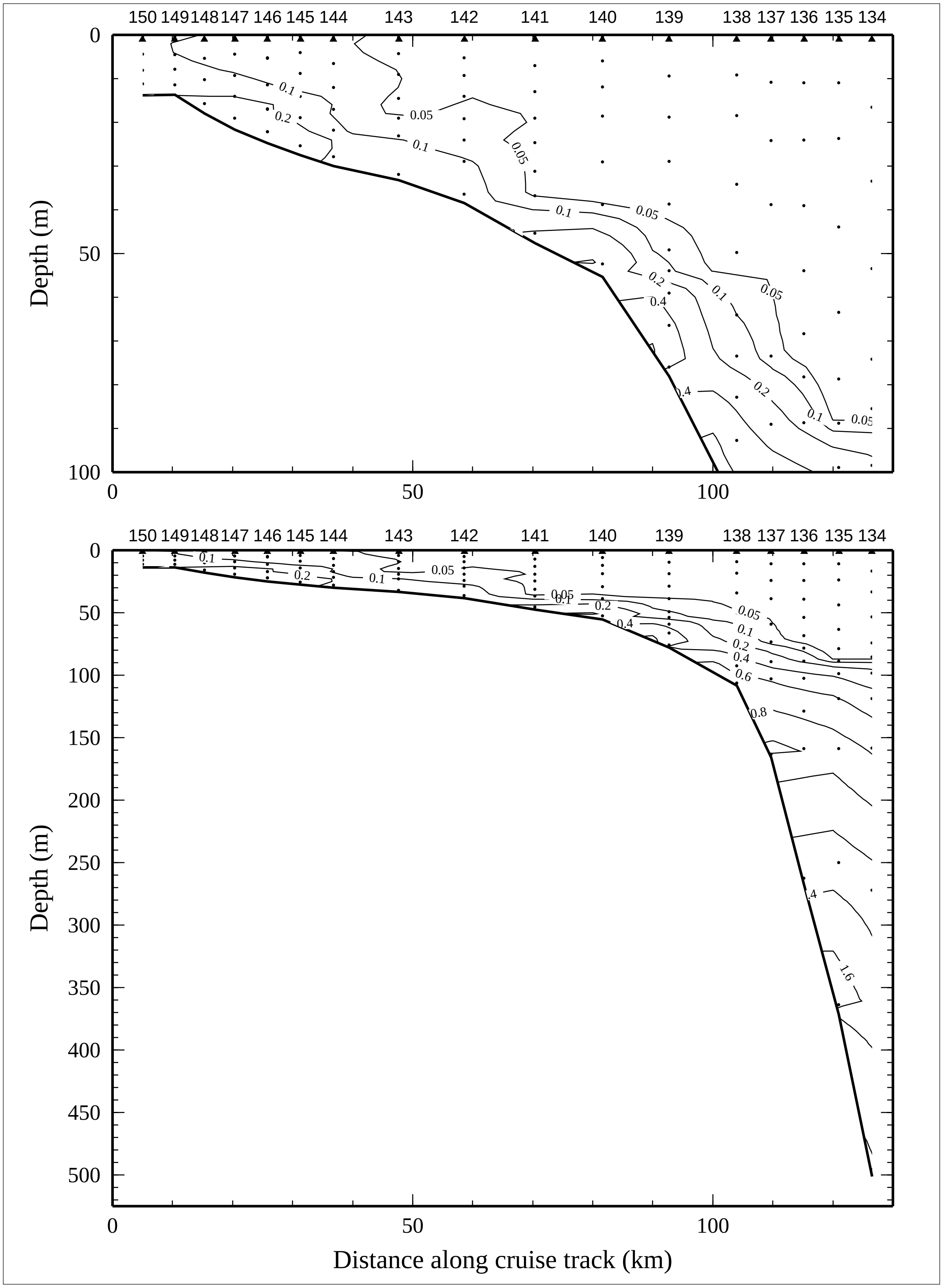

Figure 6.5.11. Phosphate (μmol·l⁻¹) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

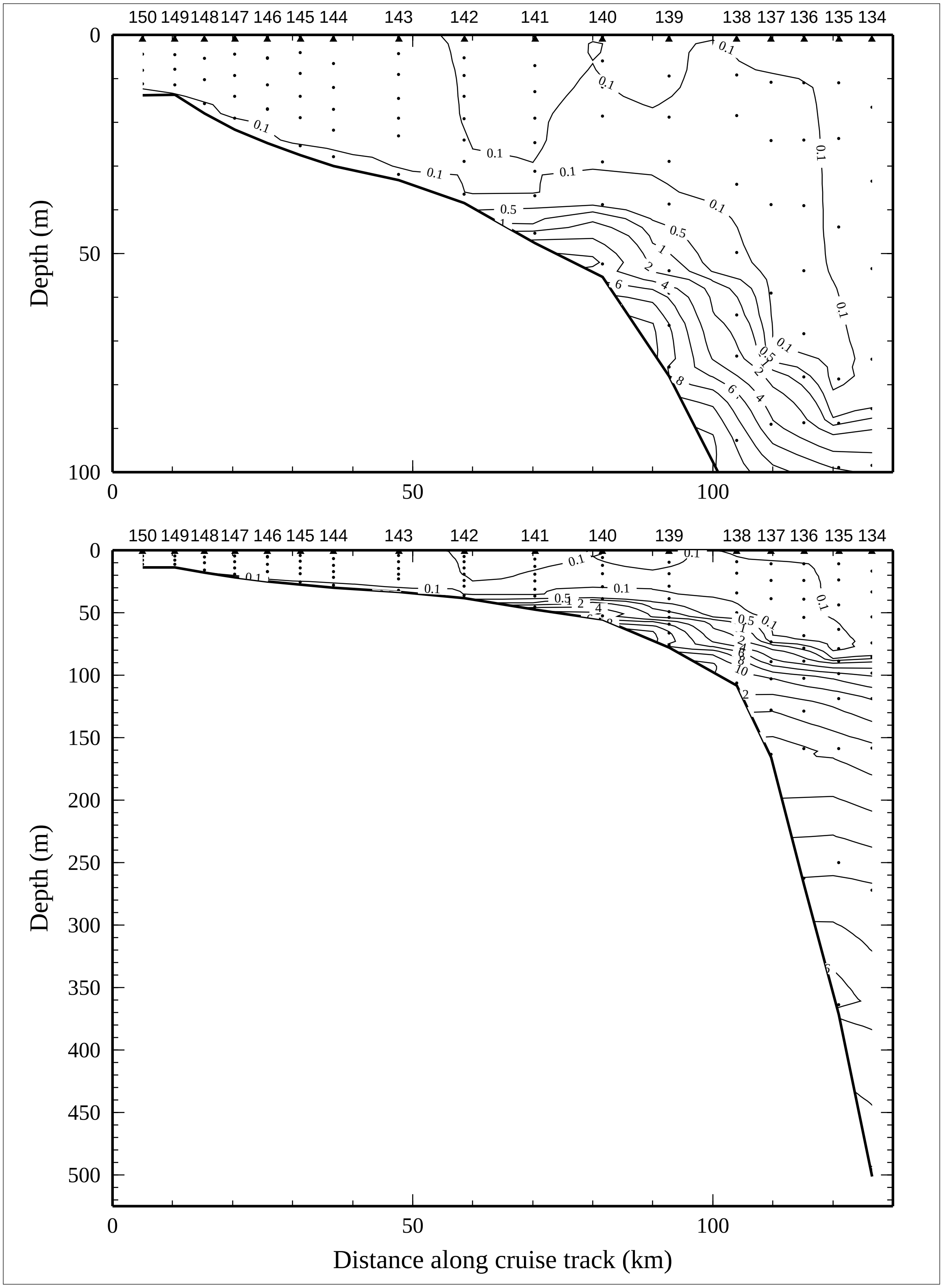

Figure 6.5.12. Nitrate (μmol·l-1) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

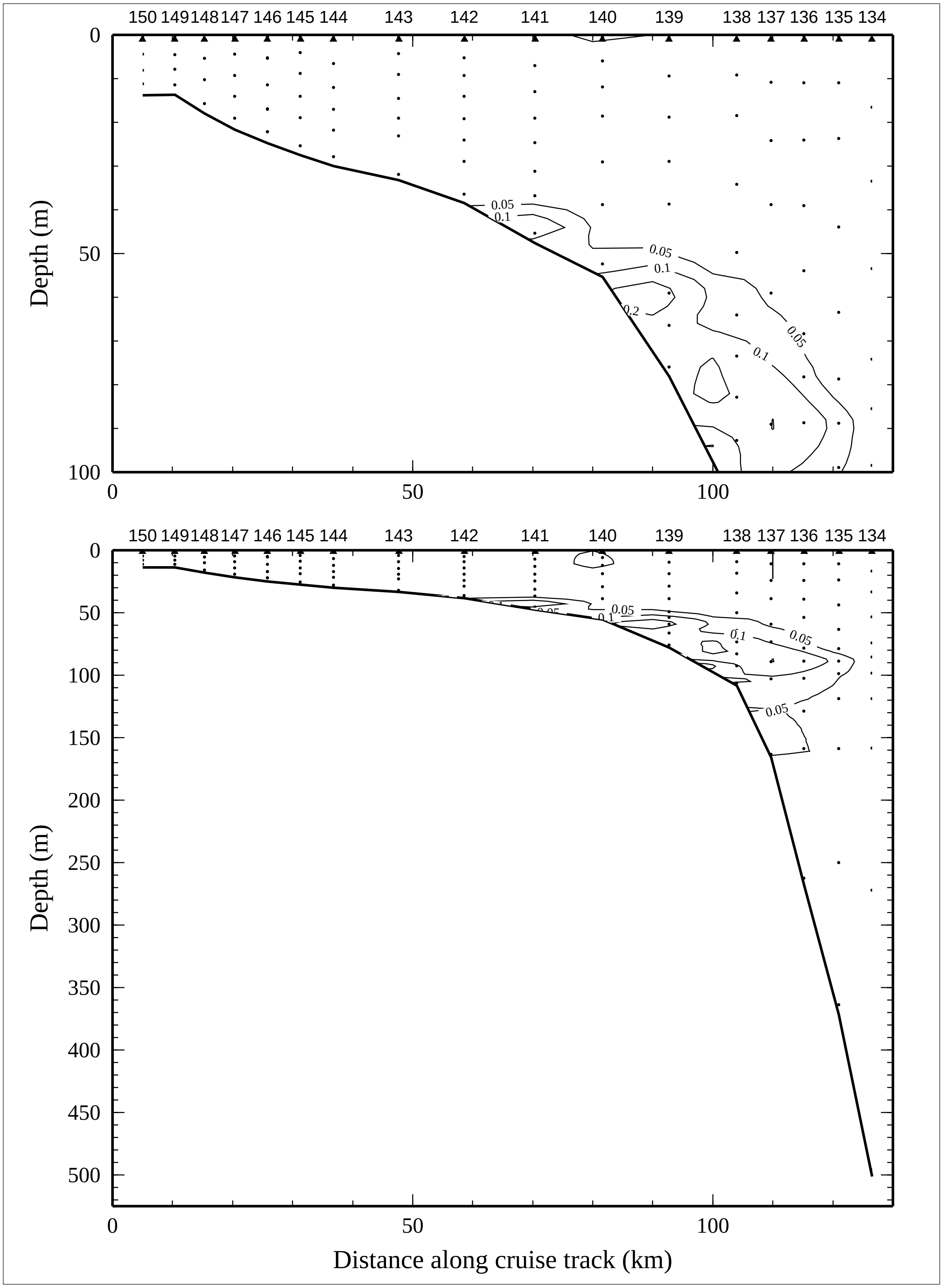

Figure 6.5.13. Nitrite (μmol·l-1) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

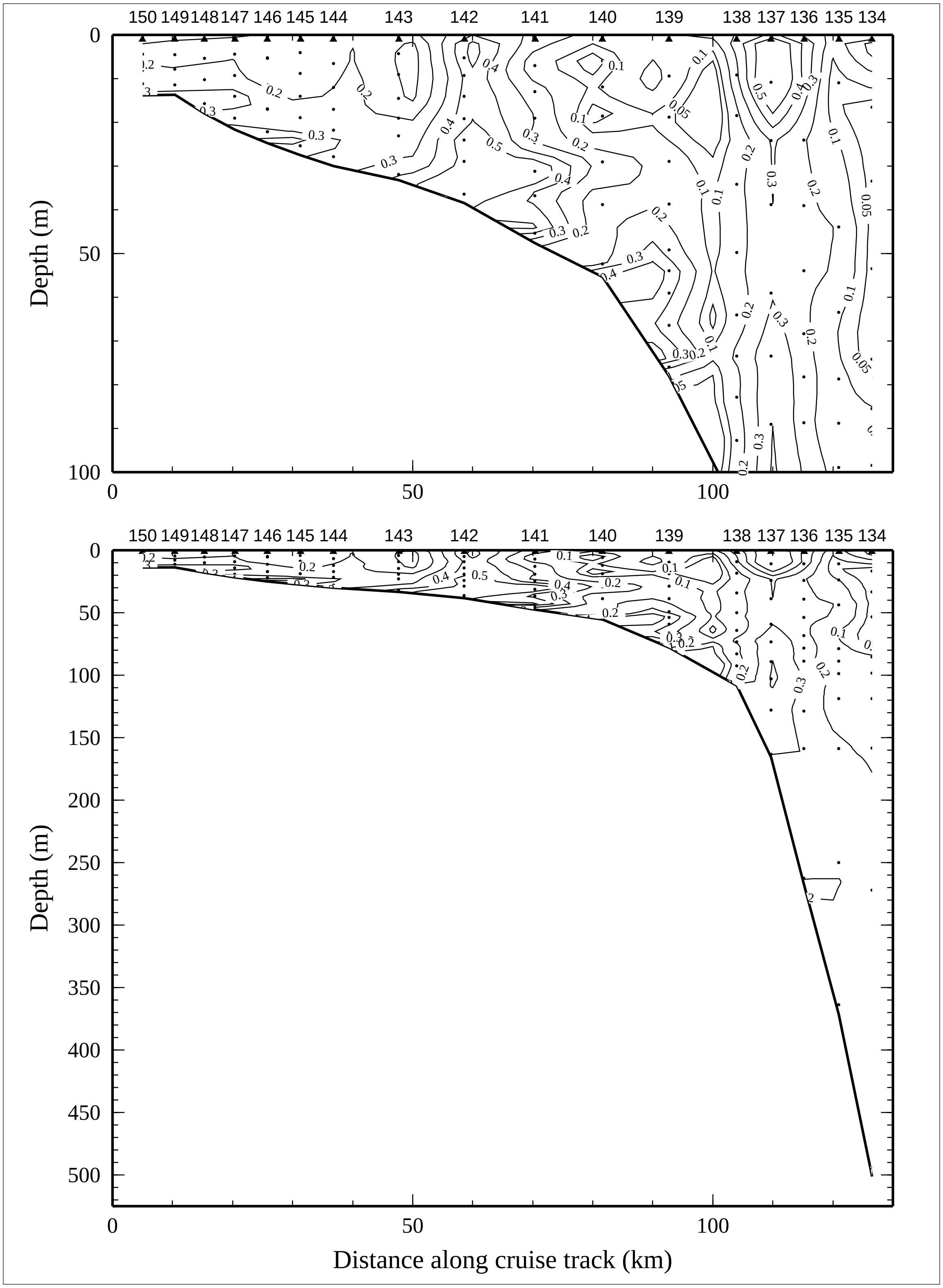

Figure 6.5.14. Ammonium (μmol·l-1) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

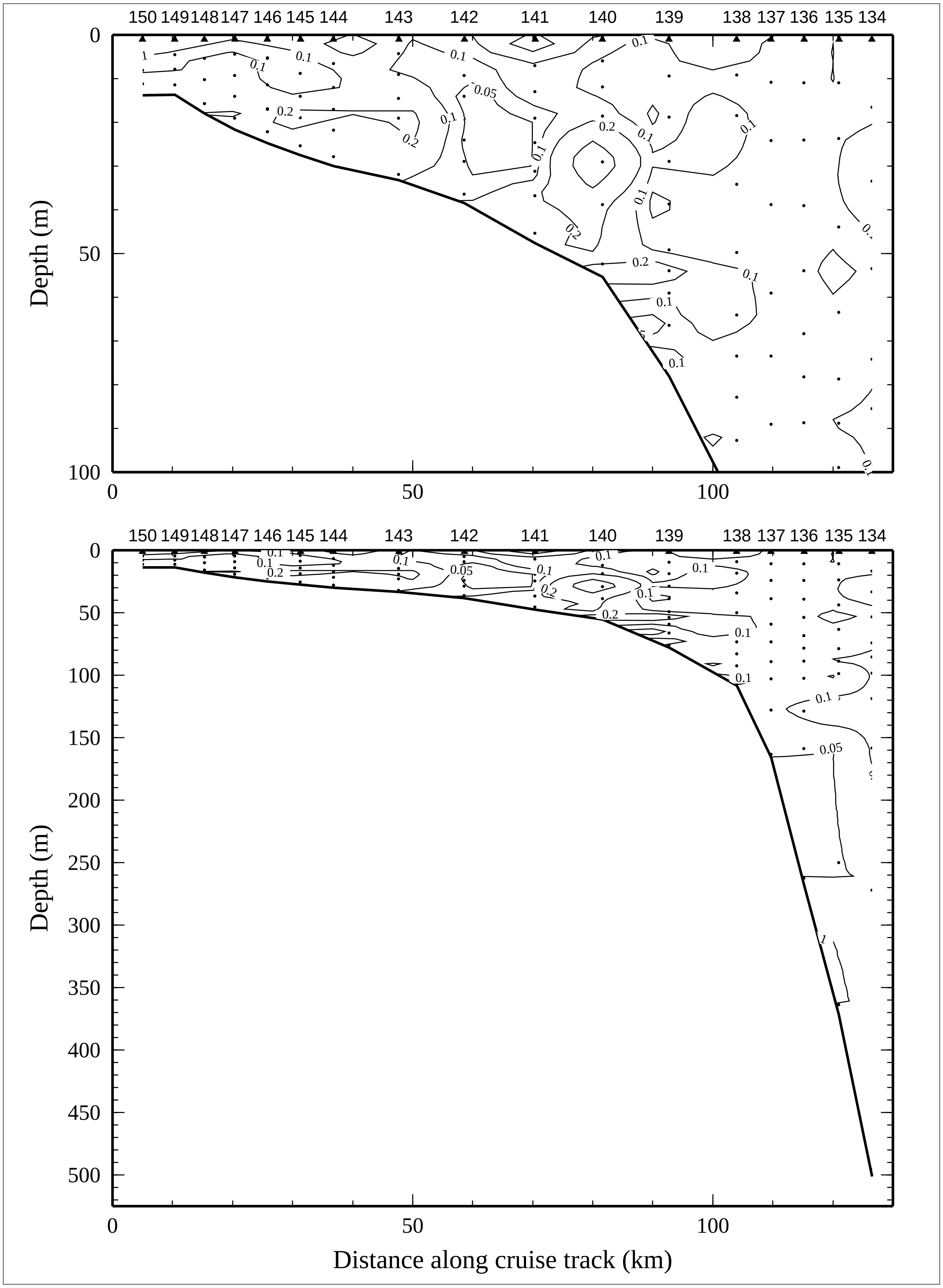

Figure 6.5.15. Urea ($\mu mol \cdot l^{-1}$) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

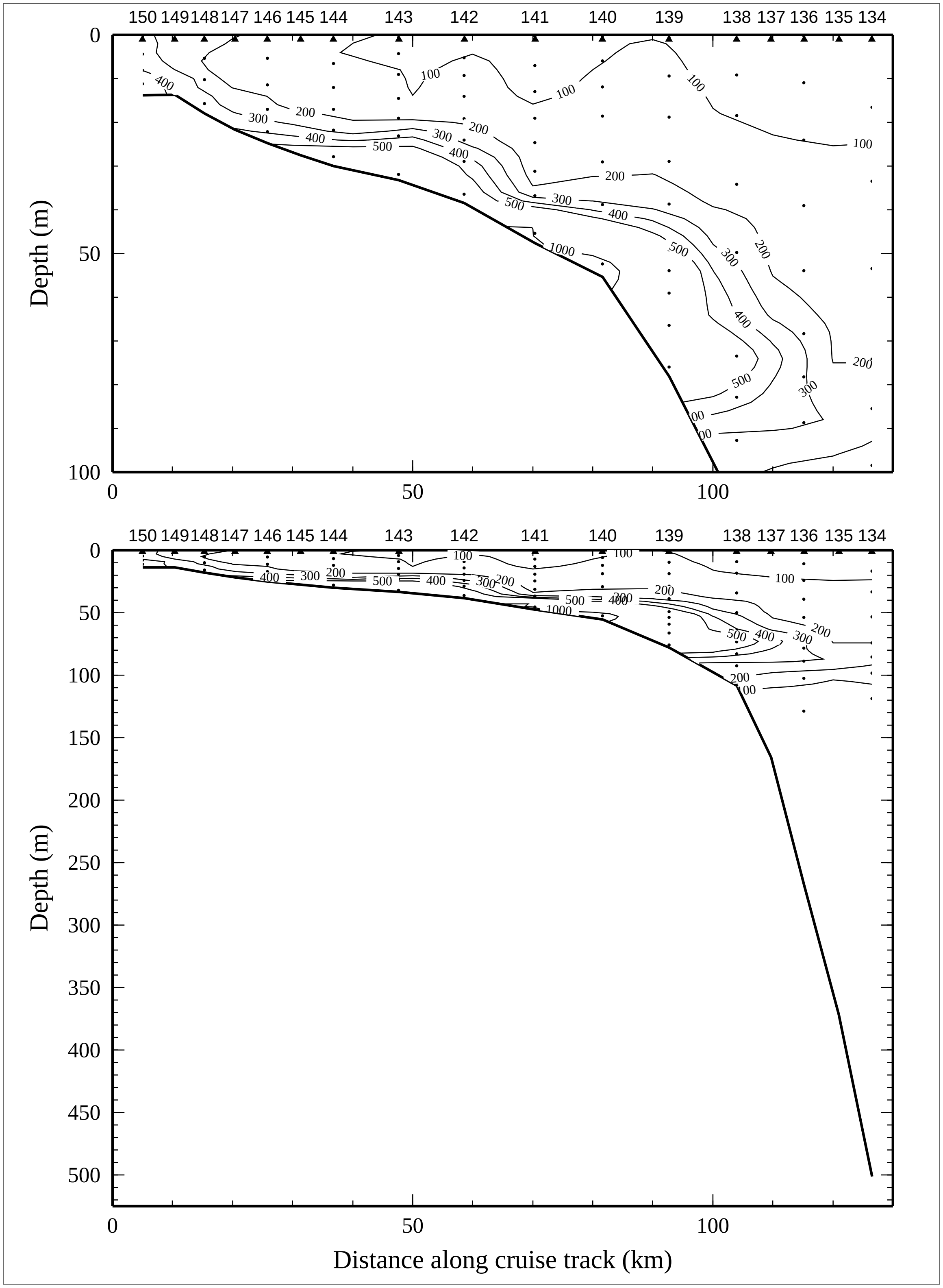

Figure 6.5.16. Chlorophyll a (ng·l^{-1}) on line 5 of LATEX A survey H06, 25 July - 7 August 1993.

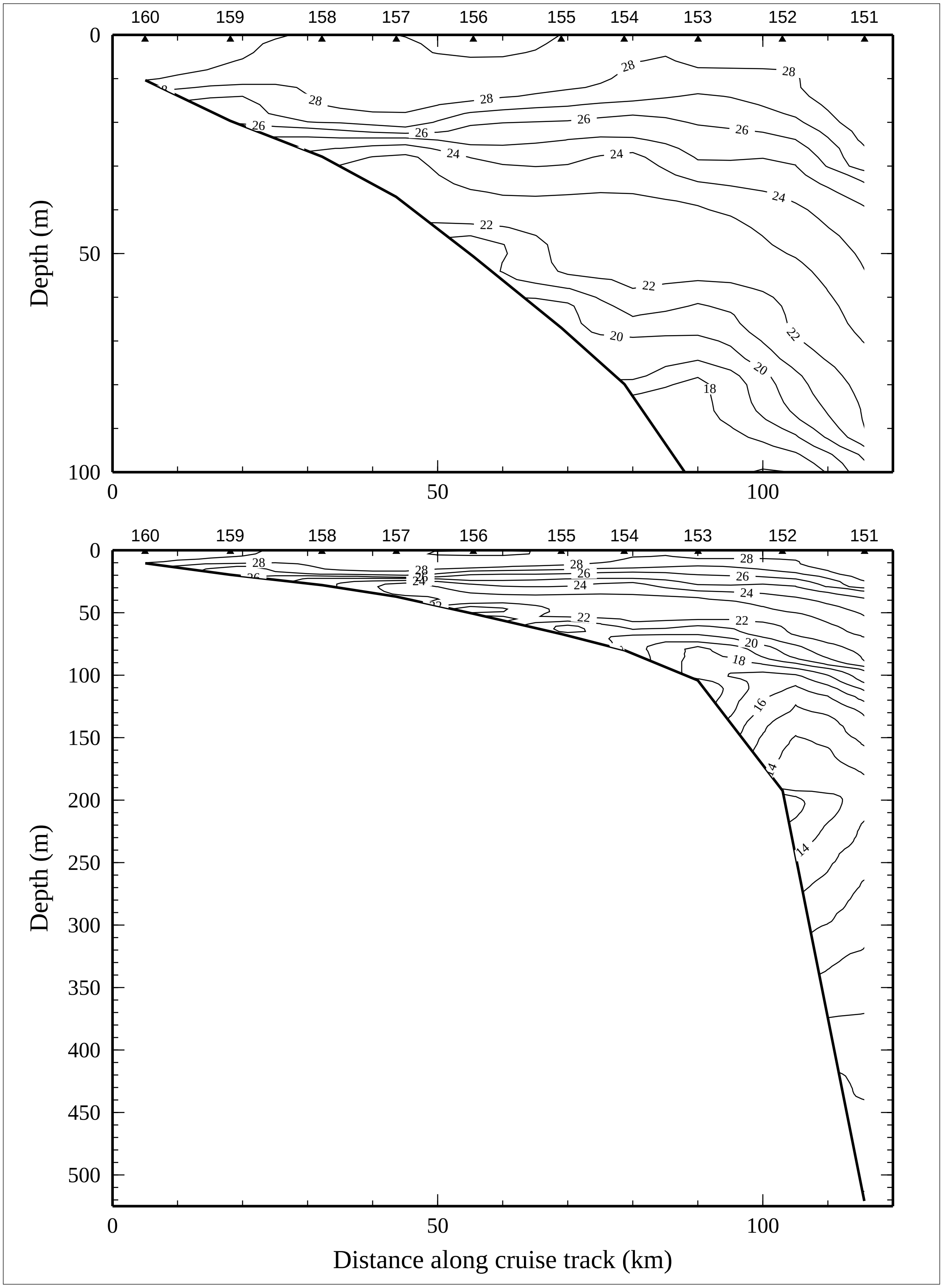

Figure 6.6.1. Potential temperature (˚C) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

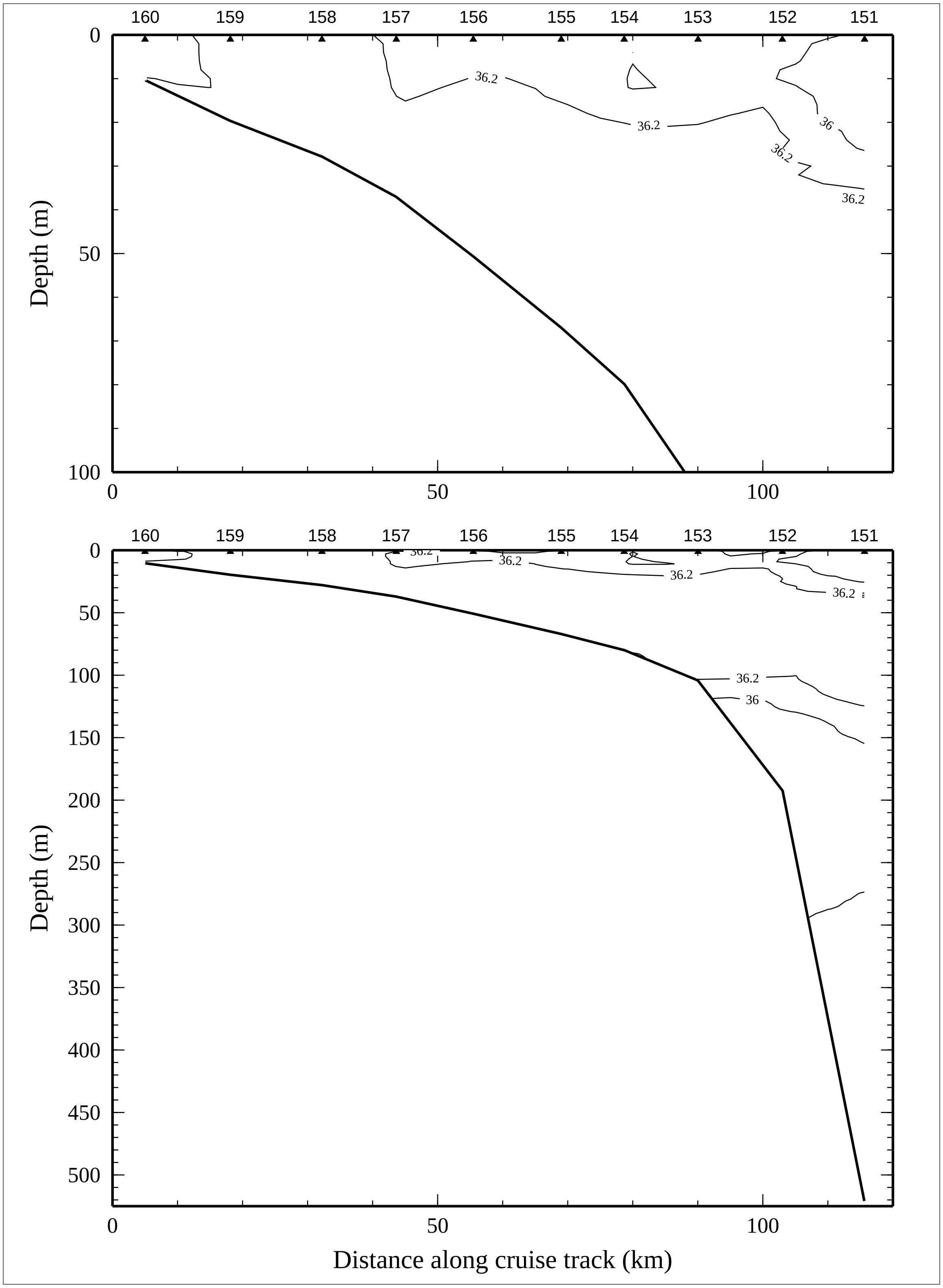

Figure 6.6.2. Salinity, derived from CTD data, on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

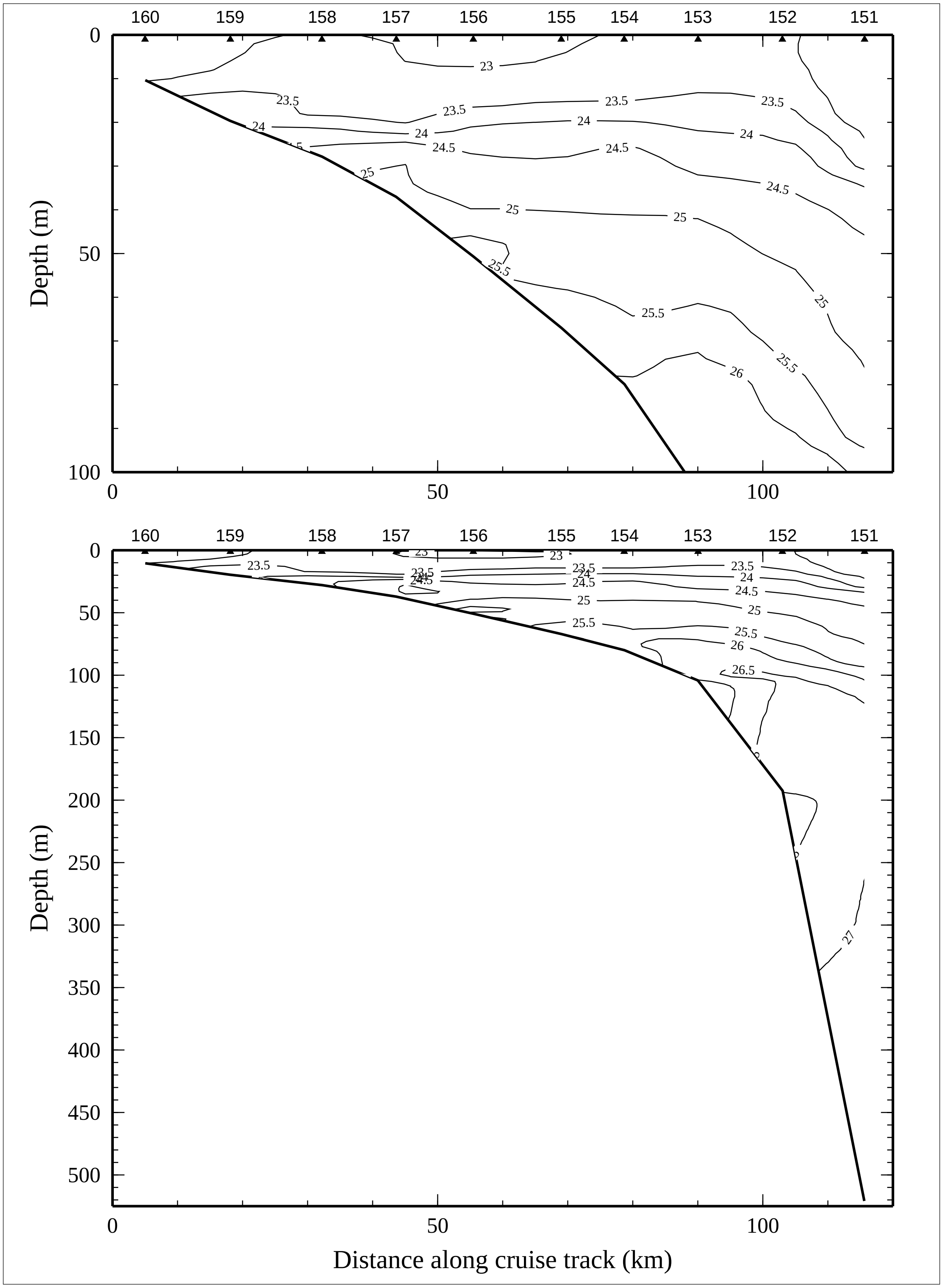

Figure 6.6.3. Density anomaly (σ_θ in kg·m^{-3}) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

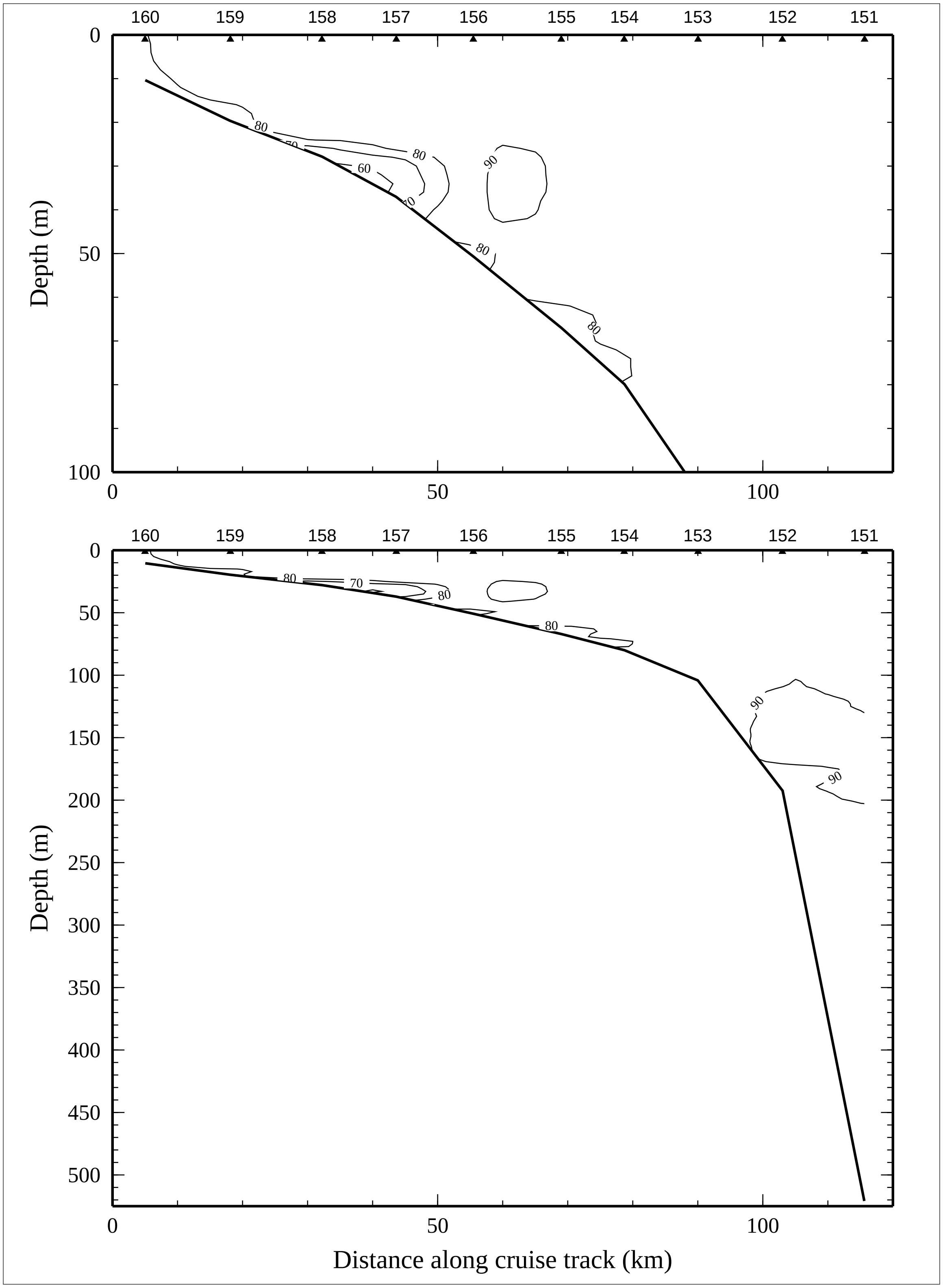

Figure 6.6.4. Percent transmission (660 nm wave length; 25-cm path length) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

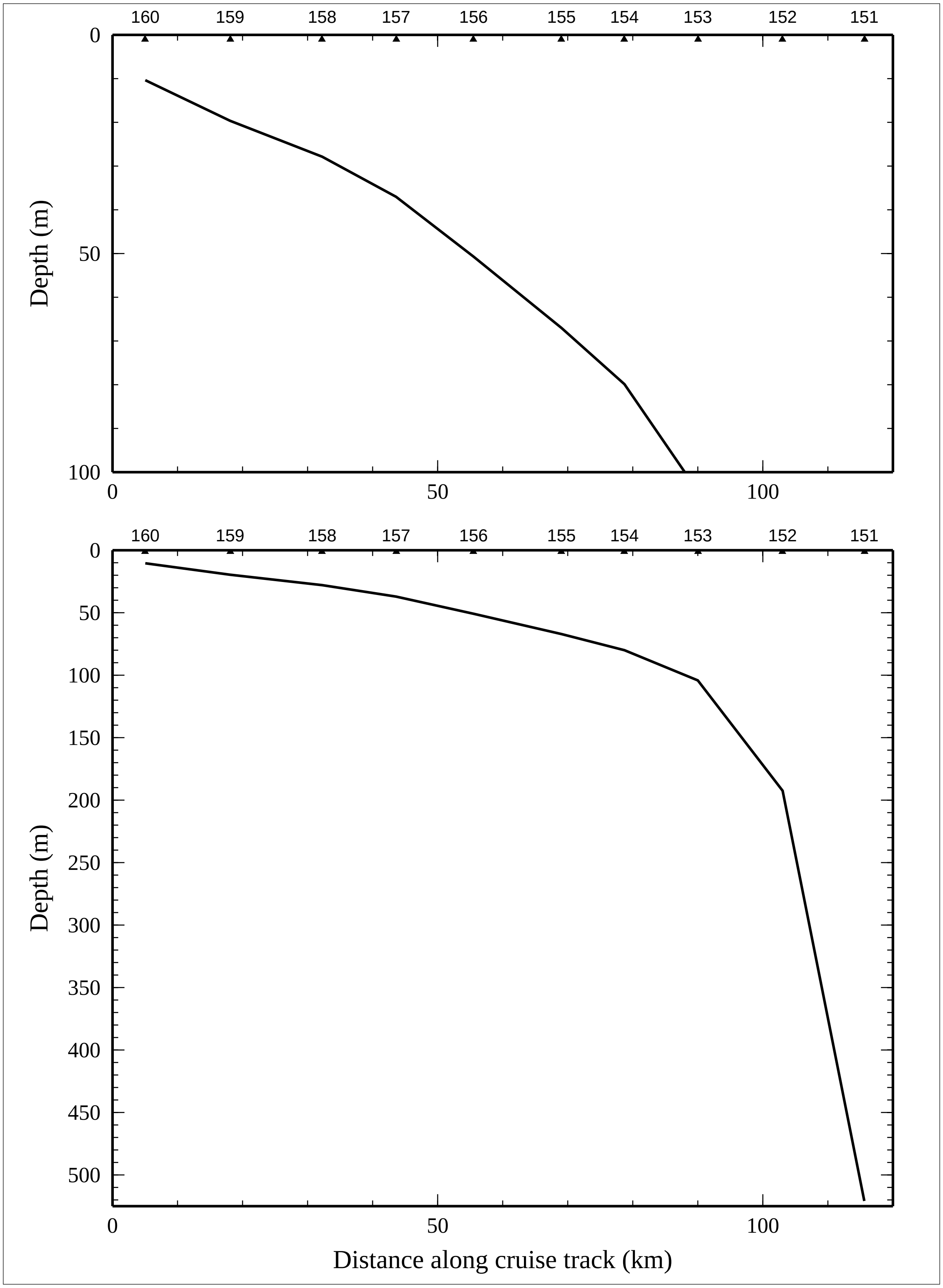

Figure 6.6.5. Optical backscatterance (voltage) on line 6 of LATEX A survey H06, 25 July - 7 August 1993. Values were less than 0.05.

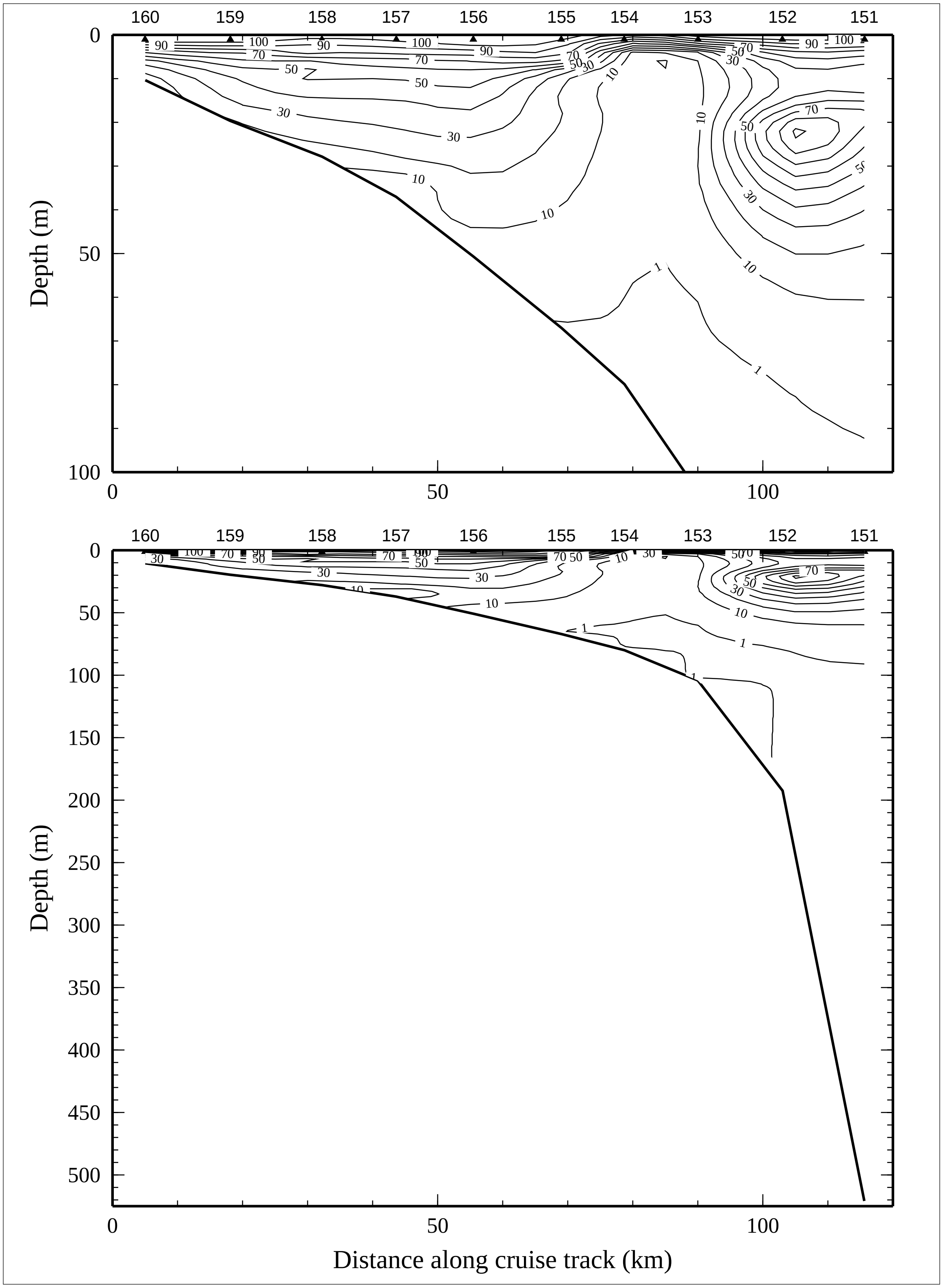

Figure 6.6.6. Downwelling irradiance as percent of surface irradiance on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

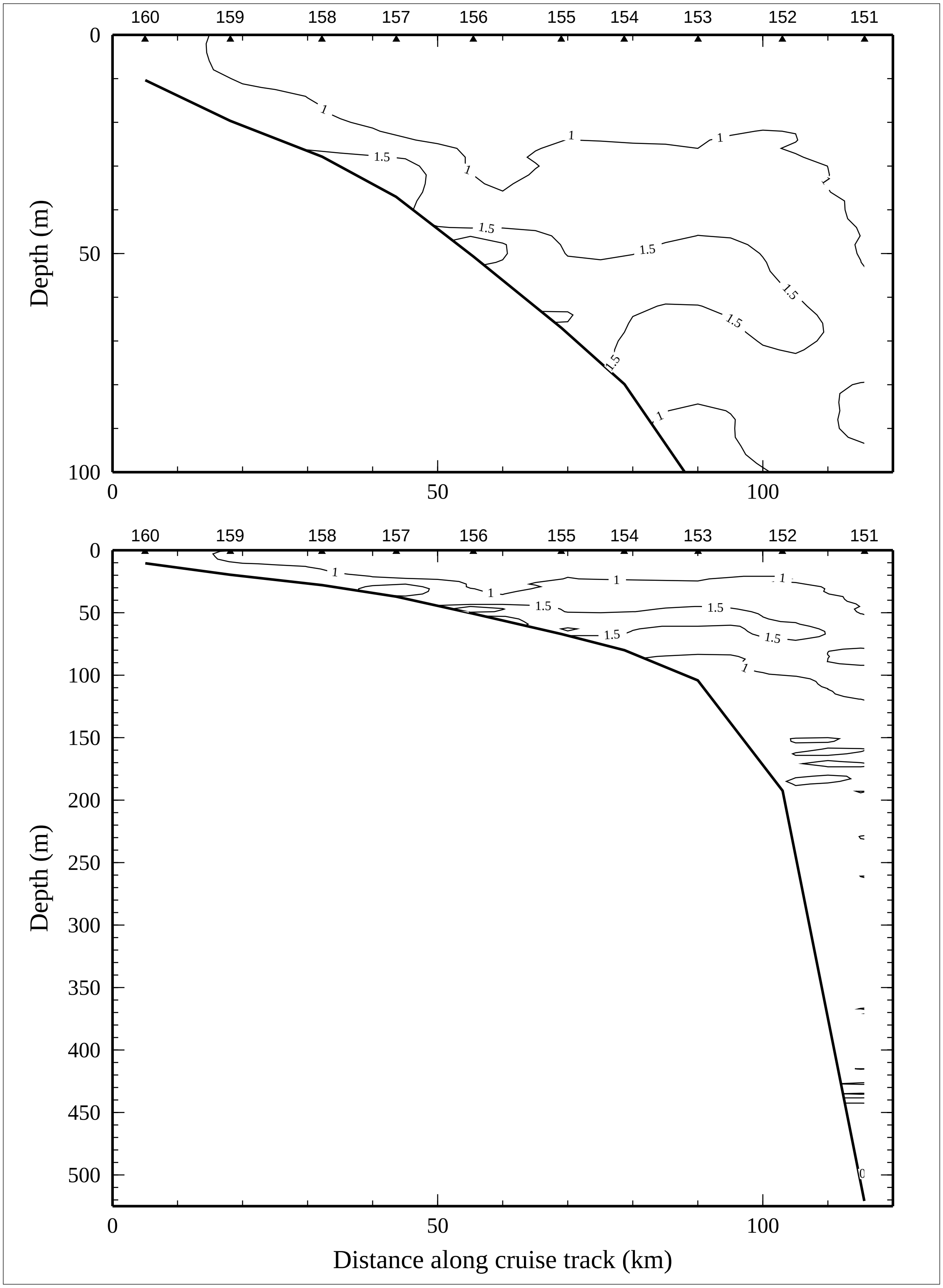

Figure 6.6.7. Relative fluorescence on line 6 of LATEX A survey H06,
25 July - 7 August 1993.

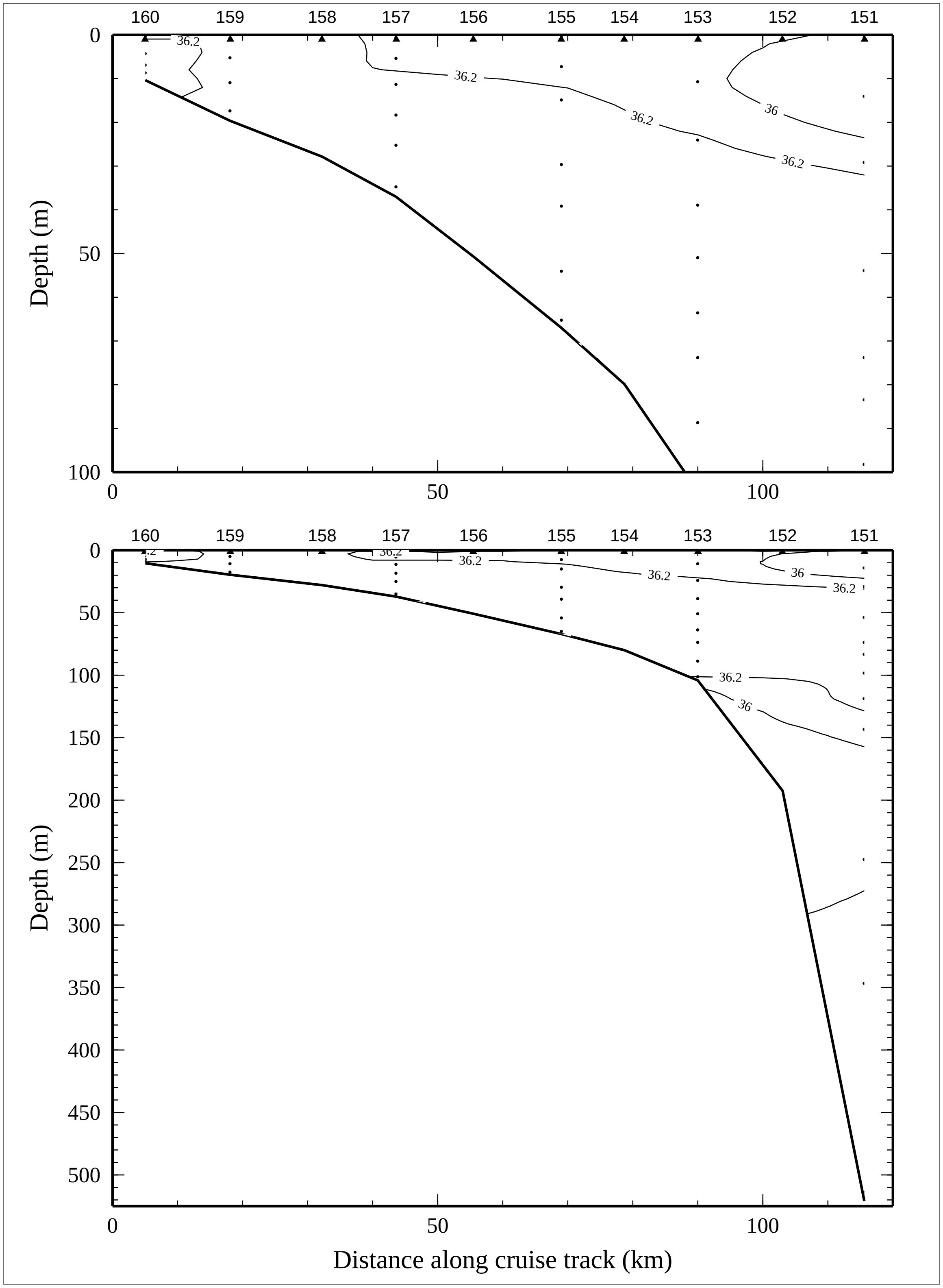

Figure 6.6.8. Bottle salinity on line 6 of LATEX A survey H06,
25 July - 7 August 1993.

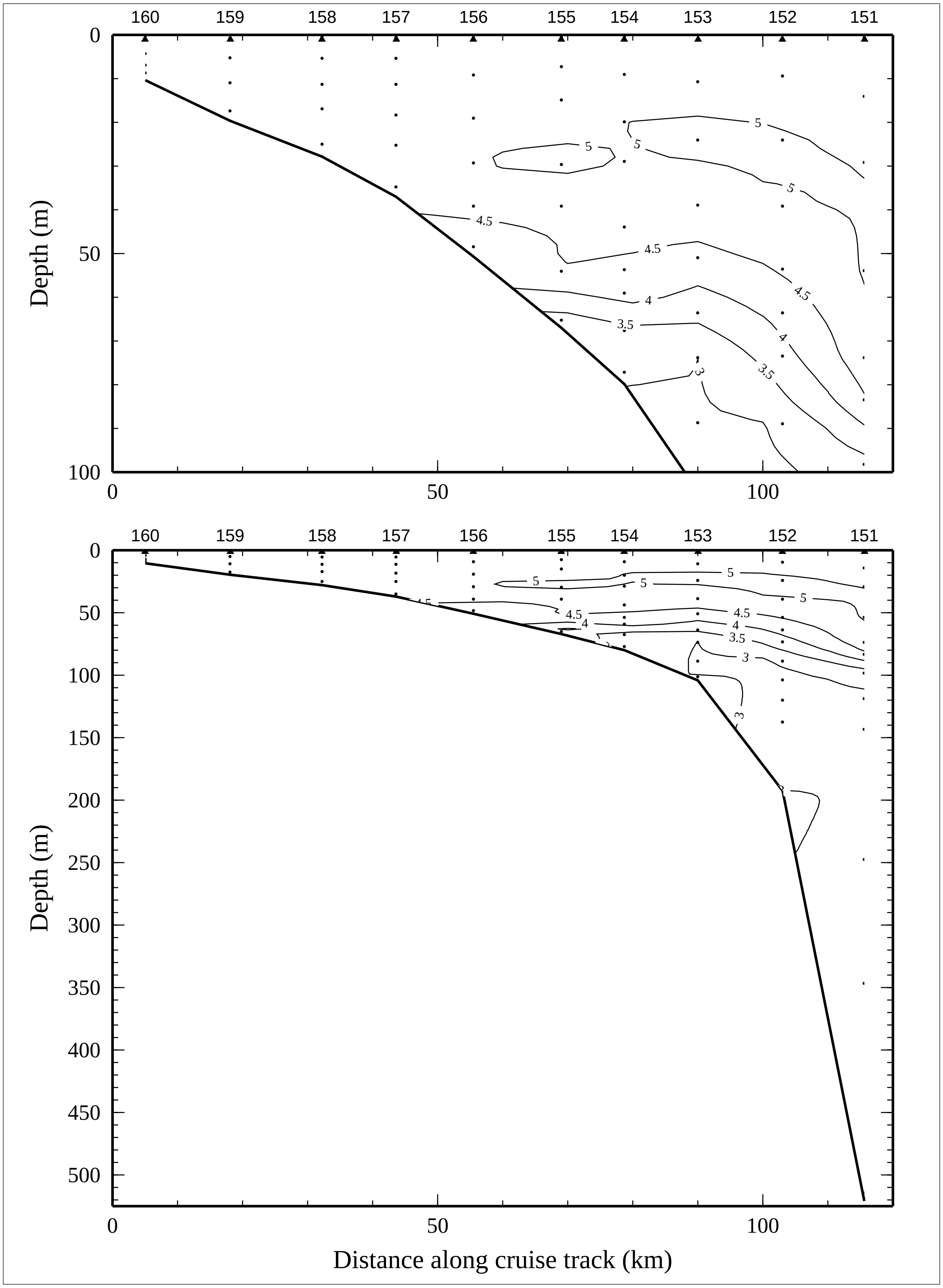

Figure 6.6.9. Dissolved oxygen (ml·l^{-1}) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

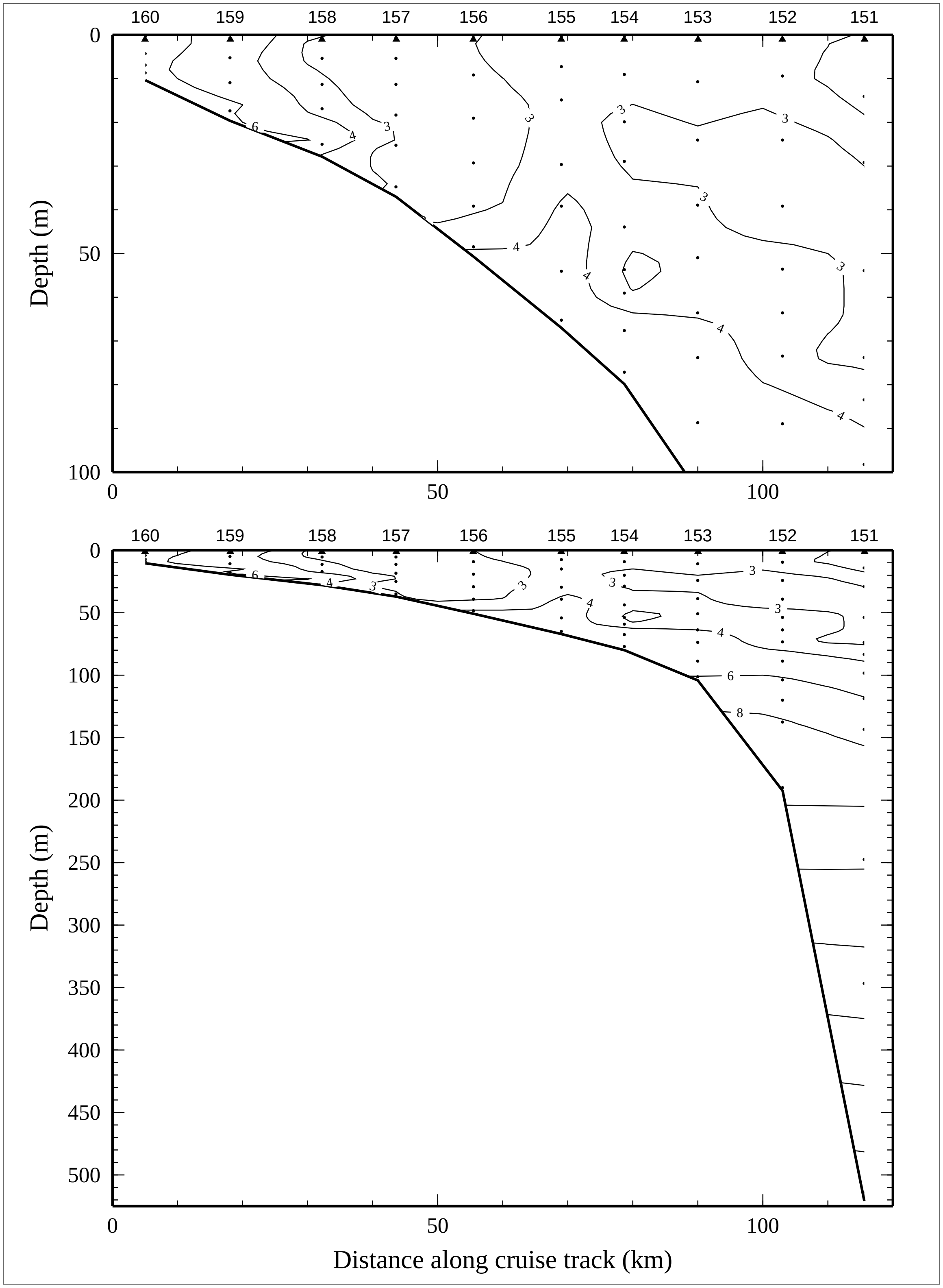

Figure 6.6.10. Silicate (μmol·l^{-1}) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

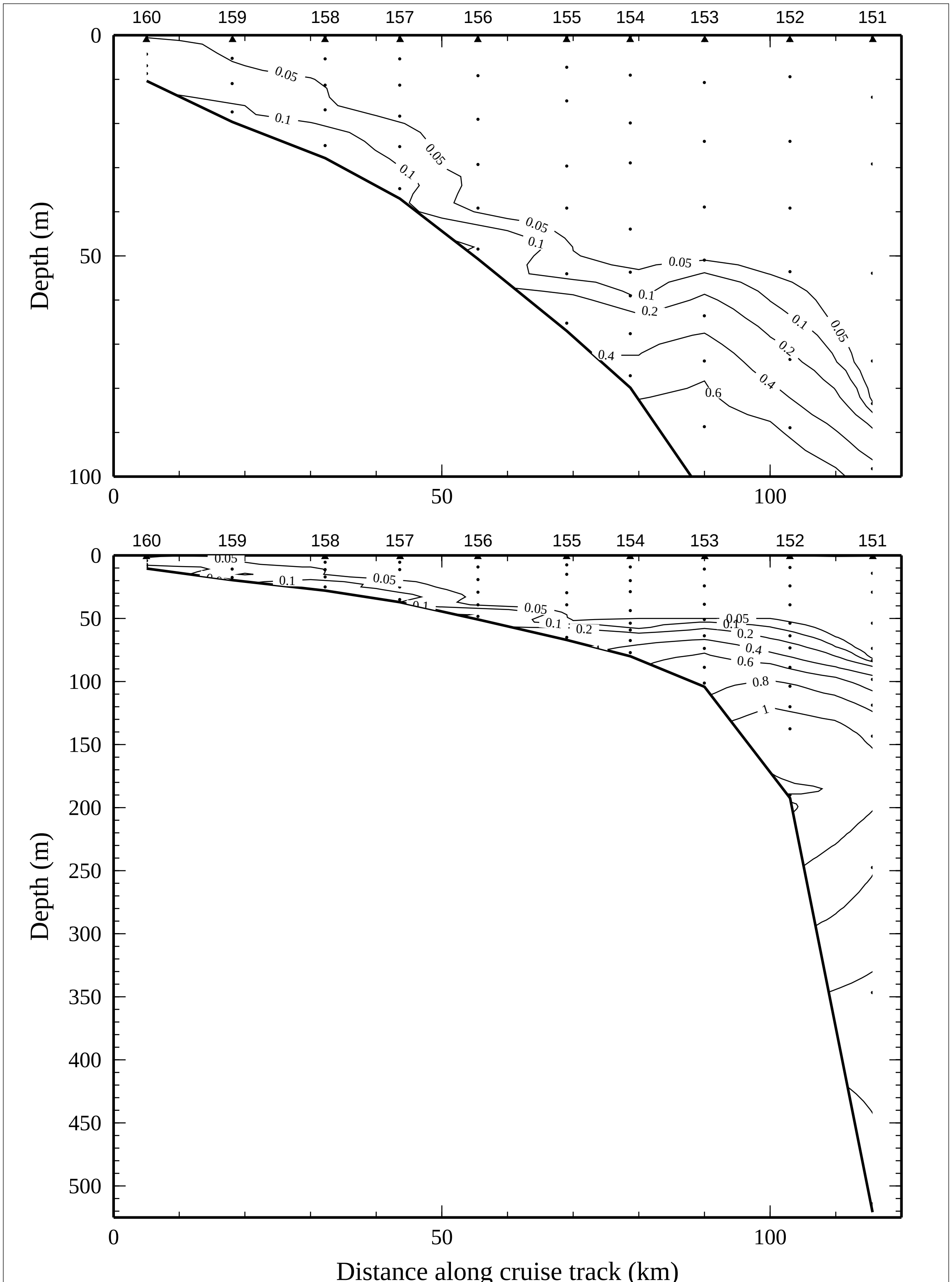

Figure 6.6.11. Phosphate (μmol·l-1) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

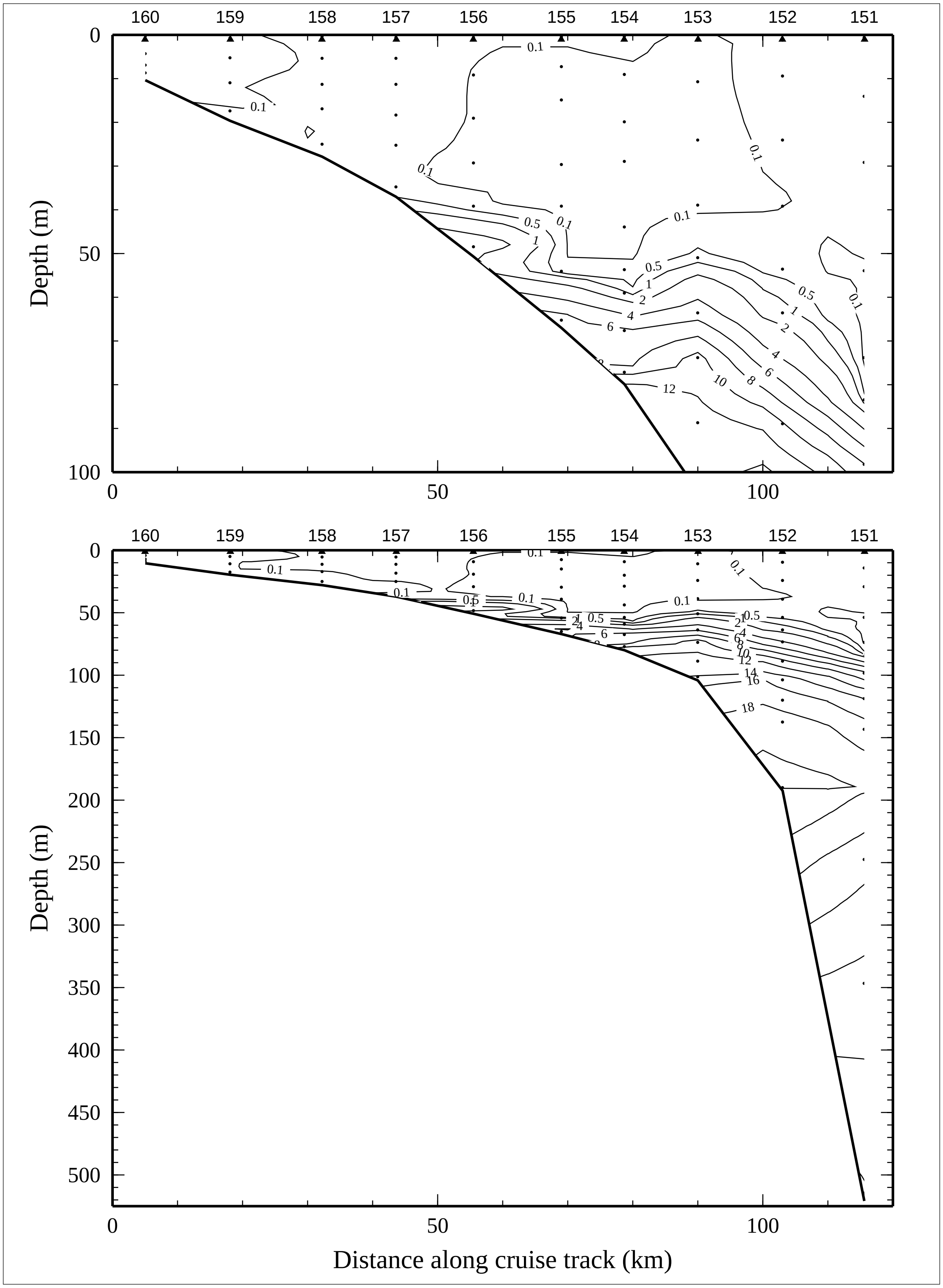

Figure 6.6.12. Nitrate (μmol·l-1) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

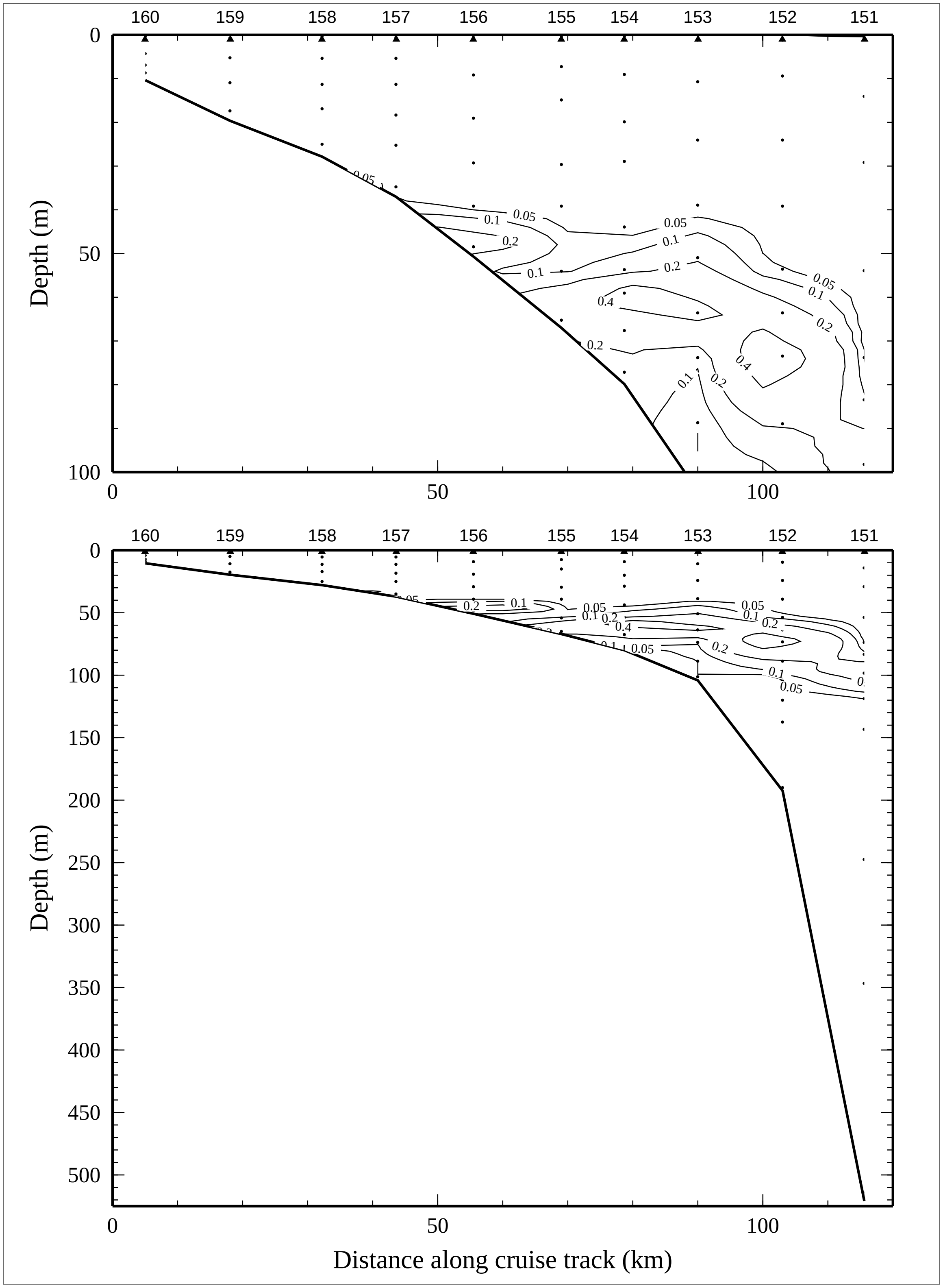

Figure 6.6.13. Nitrite (μmol·l-1) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

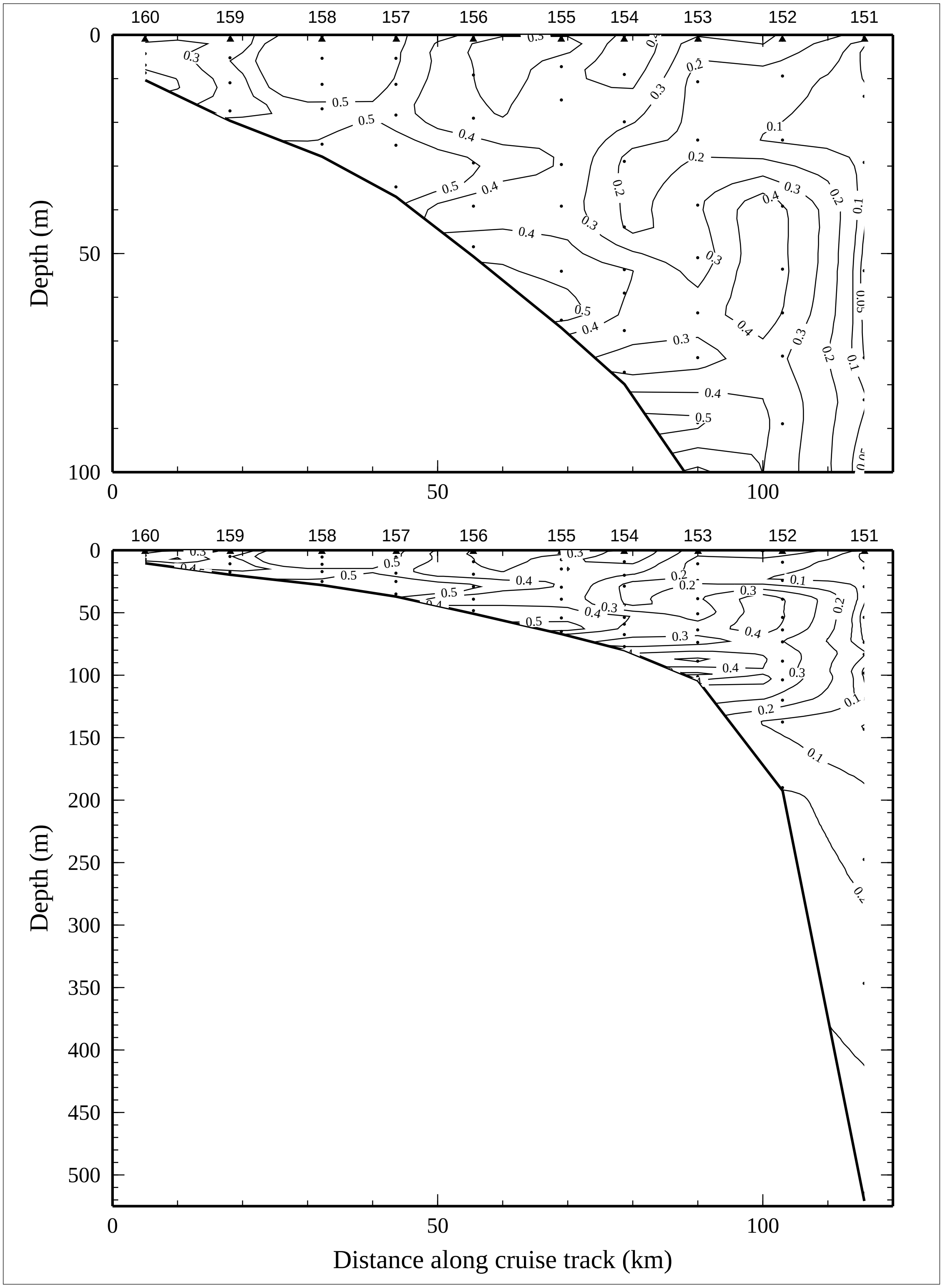

Figure 6.6.14. Ammonium (μmol·l^{-1}) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

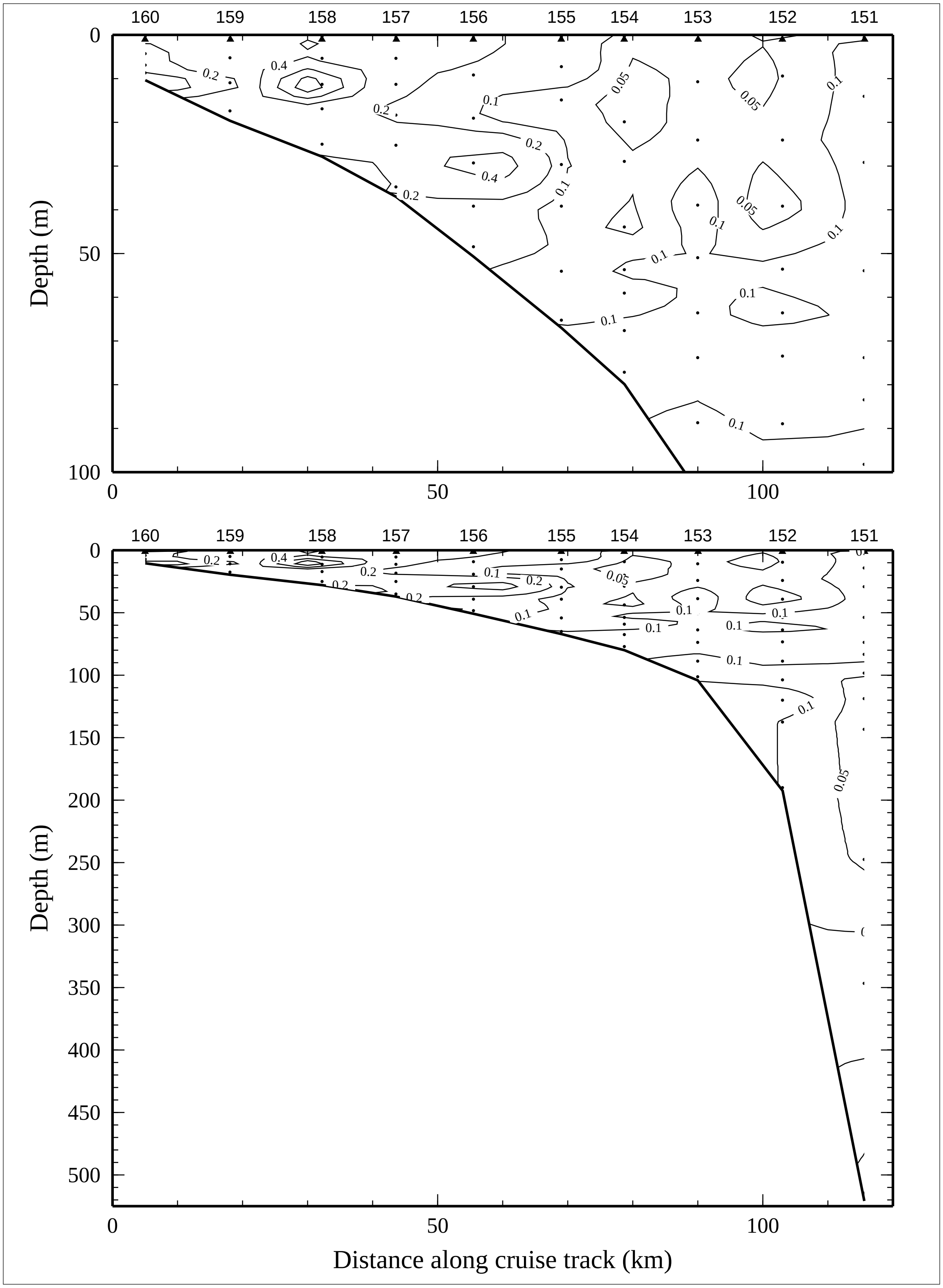

Figure 6.6.15. Urea ($\mu mol \cdot l^{-1}$) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

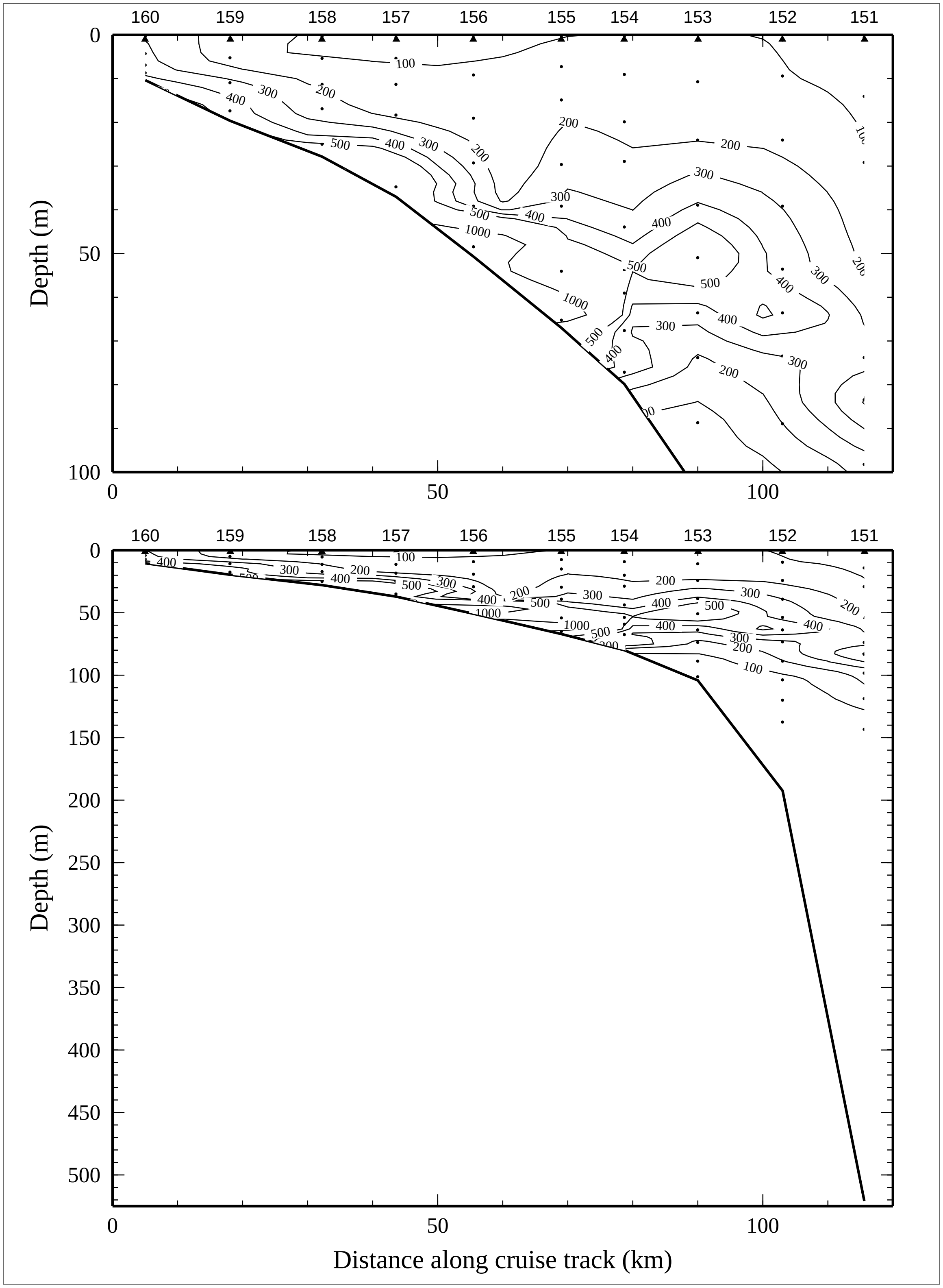

Figure 6.6.16. Chlorophyll a (ng·l^{-1}) on line 6 of LATEX A survey H06, 25 July - 7 August 1993.

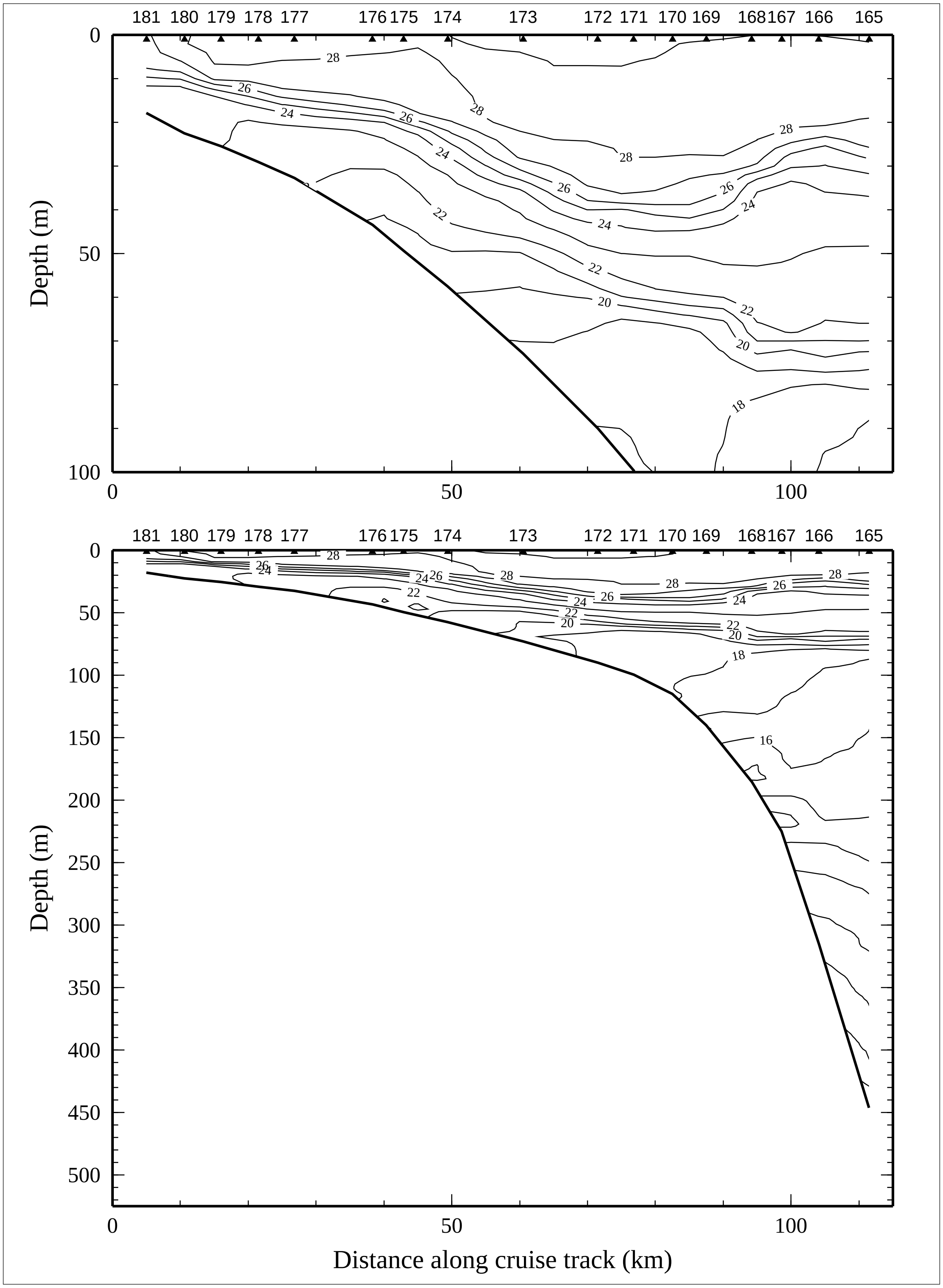

Figure 6.7.1. Potential temperature (˚C) on line 7 of LATEX A survey H06,
25 July - 7 August 1993.

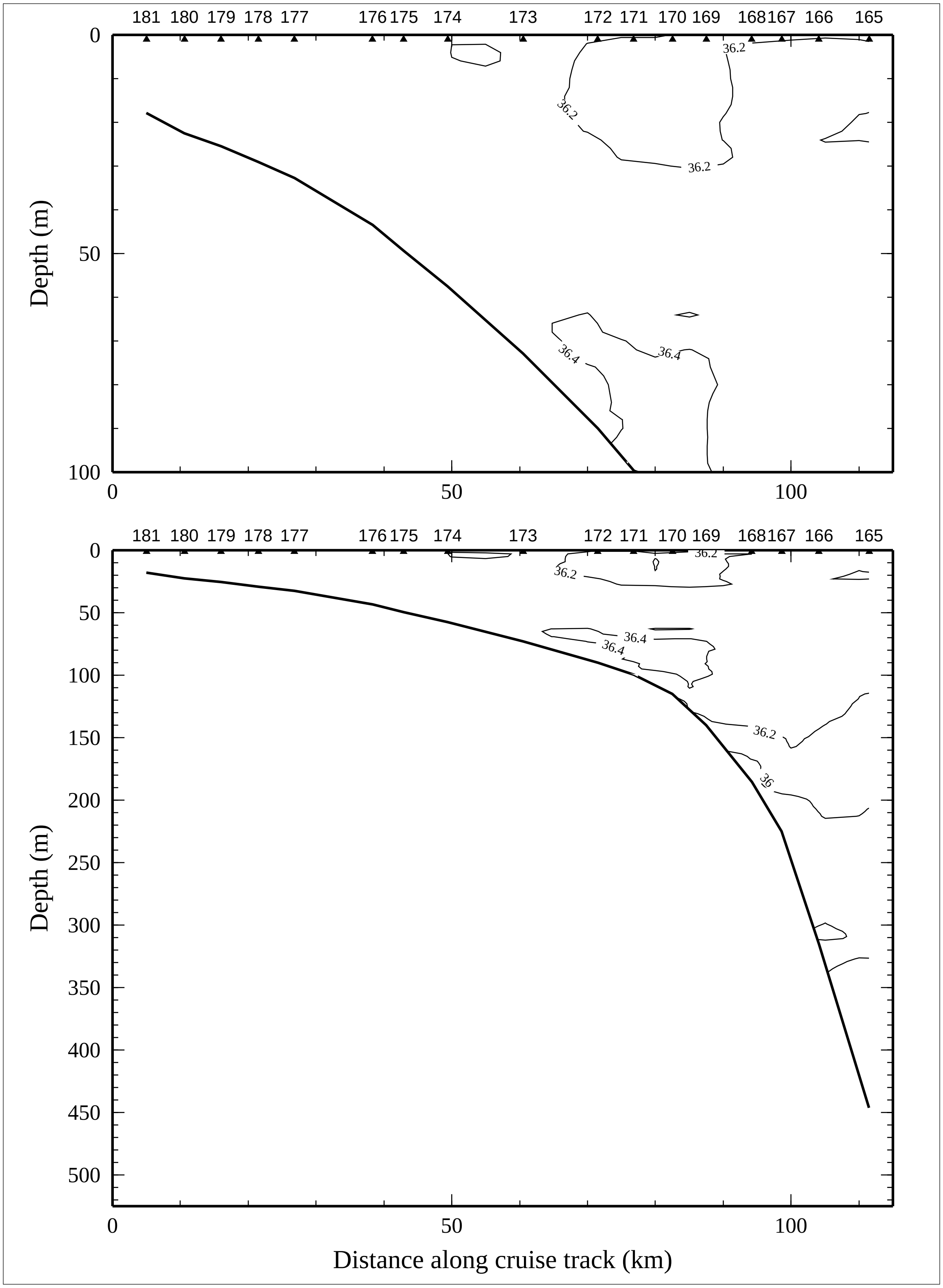

Figure 6.7.2. Salinity, derived from CTD data, on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

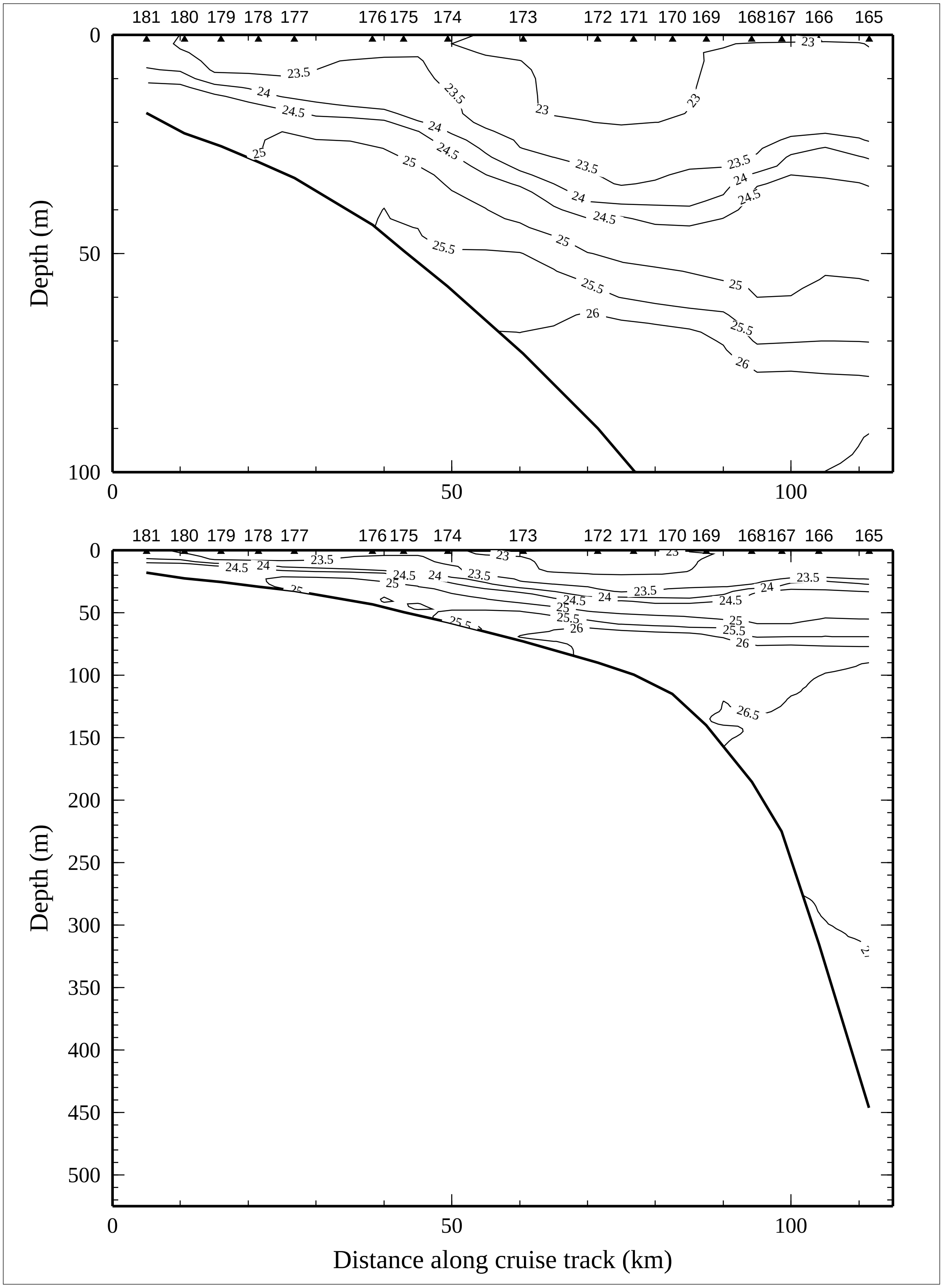

Figure 6.7.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

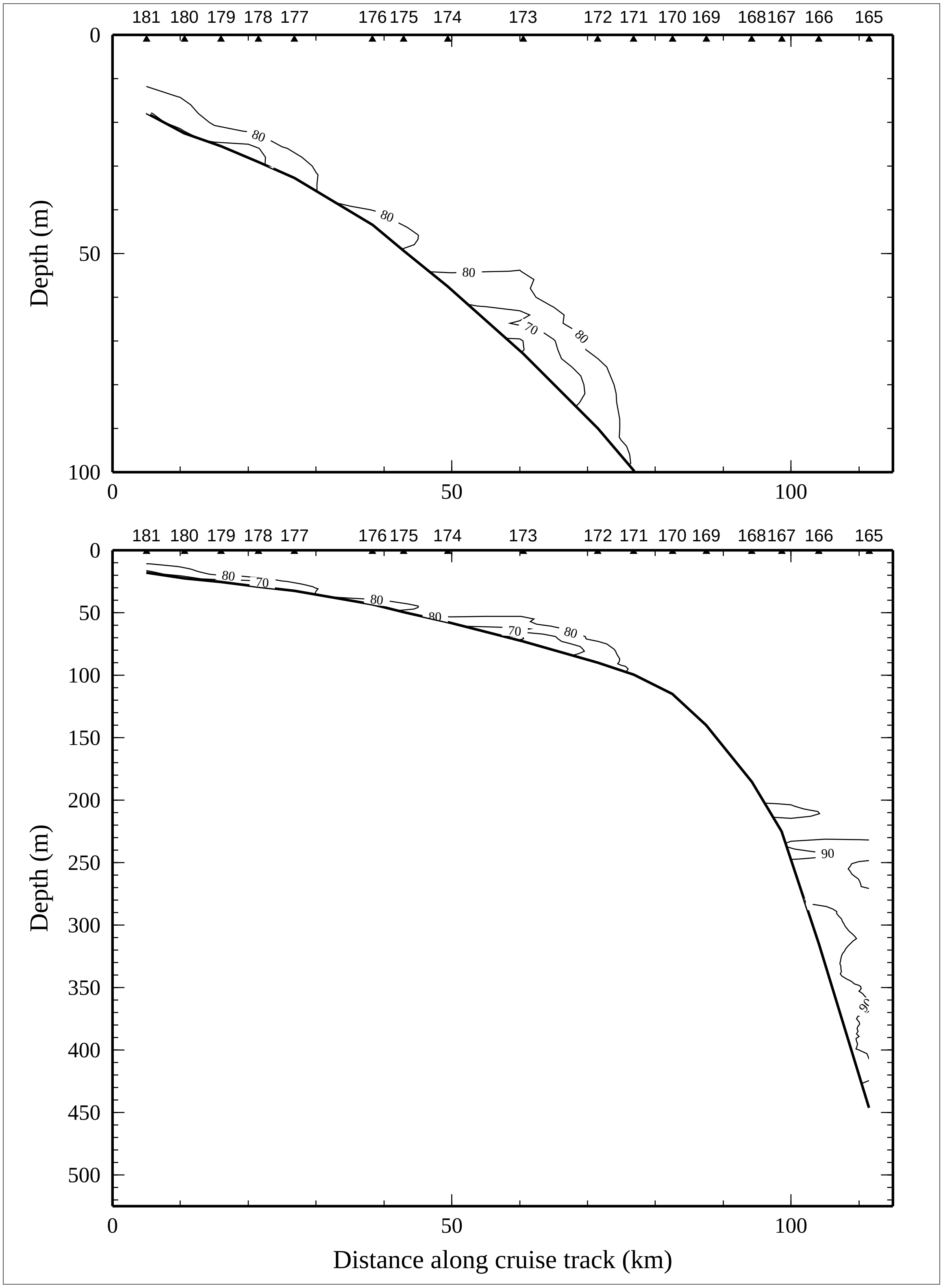

Figure 6.7.4. Percent transmission (660 nm wave length; 25-cm path length) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

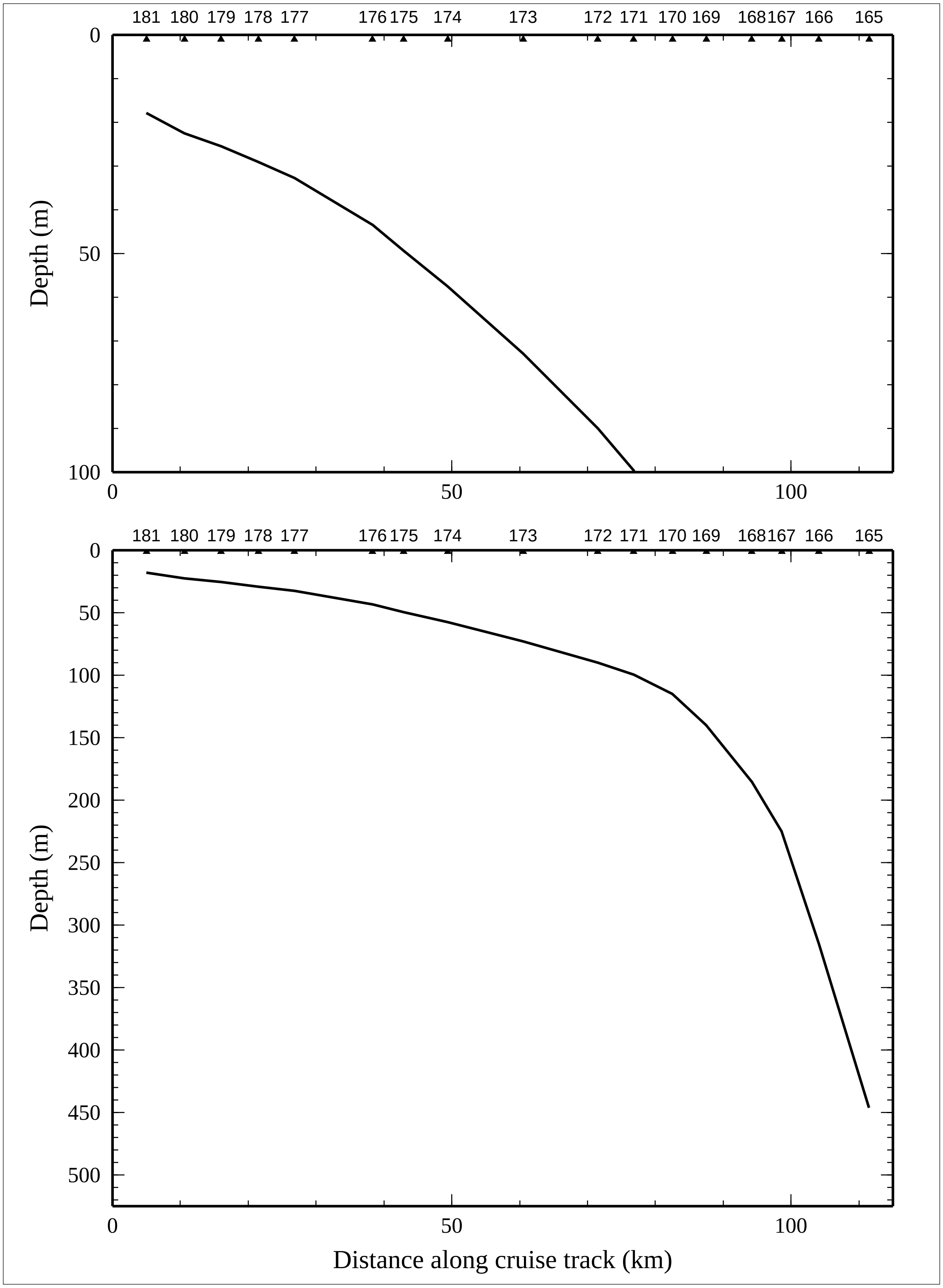

Figure 6.7.5. Optical backscatterance (voltage) on line 7 of LATEX A survey H06, 25 July - 7 August 1993. Values were less than 0.05.

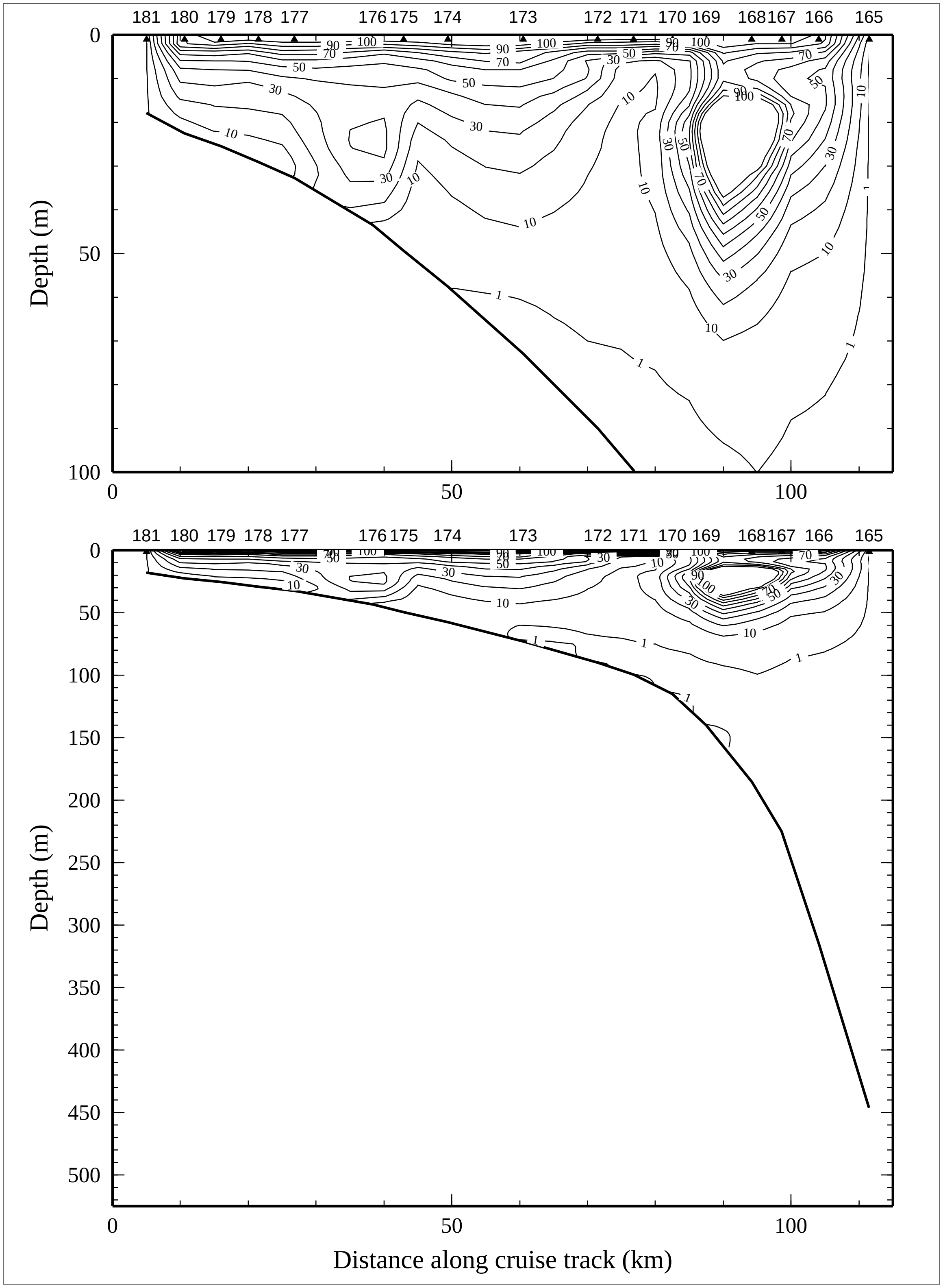

Figure 6.7.6. Downwelling irradiance as percent of surface irradiance on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

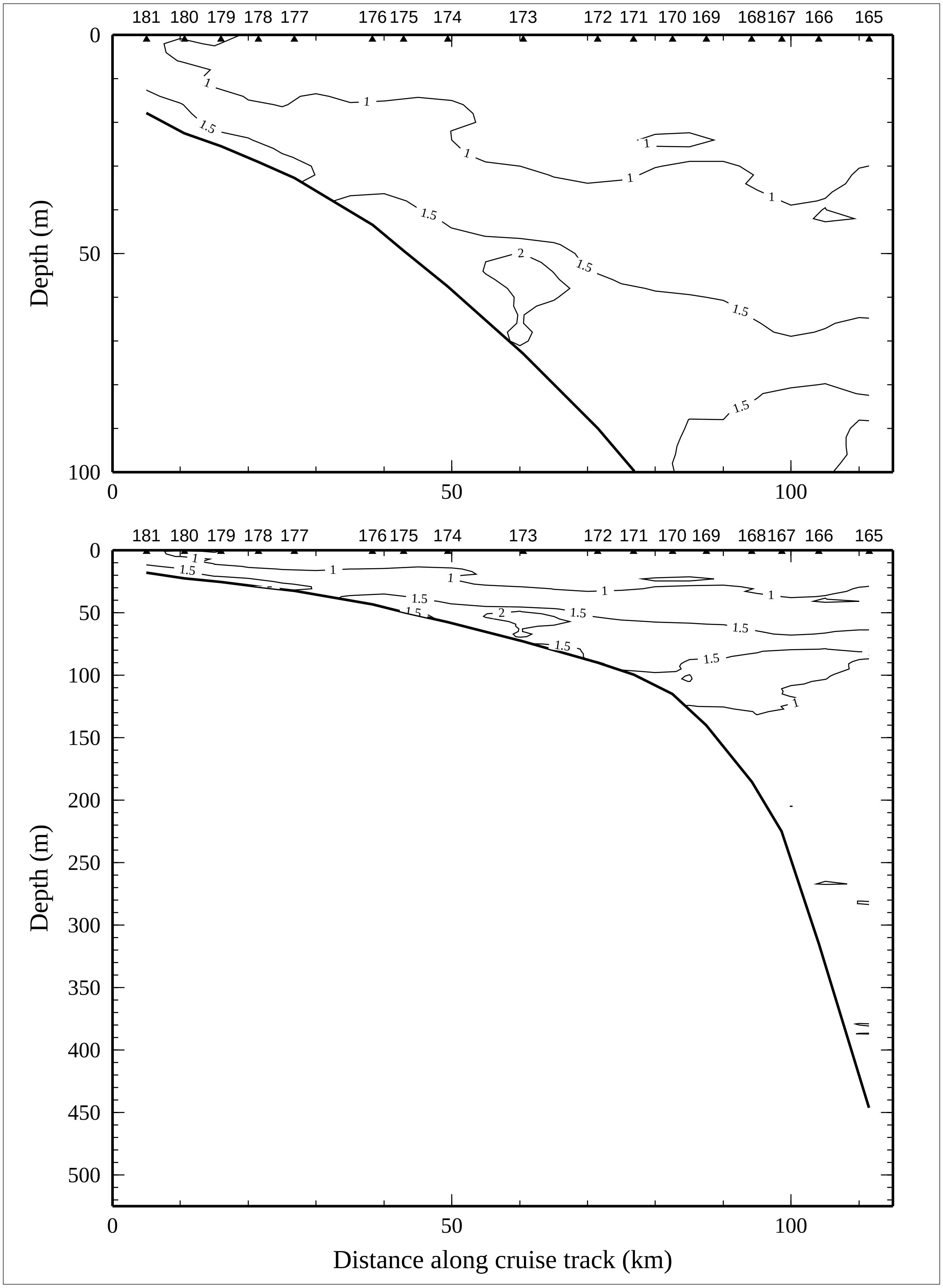

Figure 6.7.7. Relative fluorescence on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

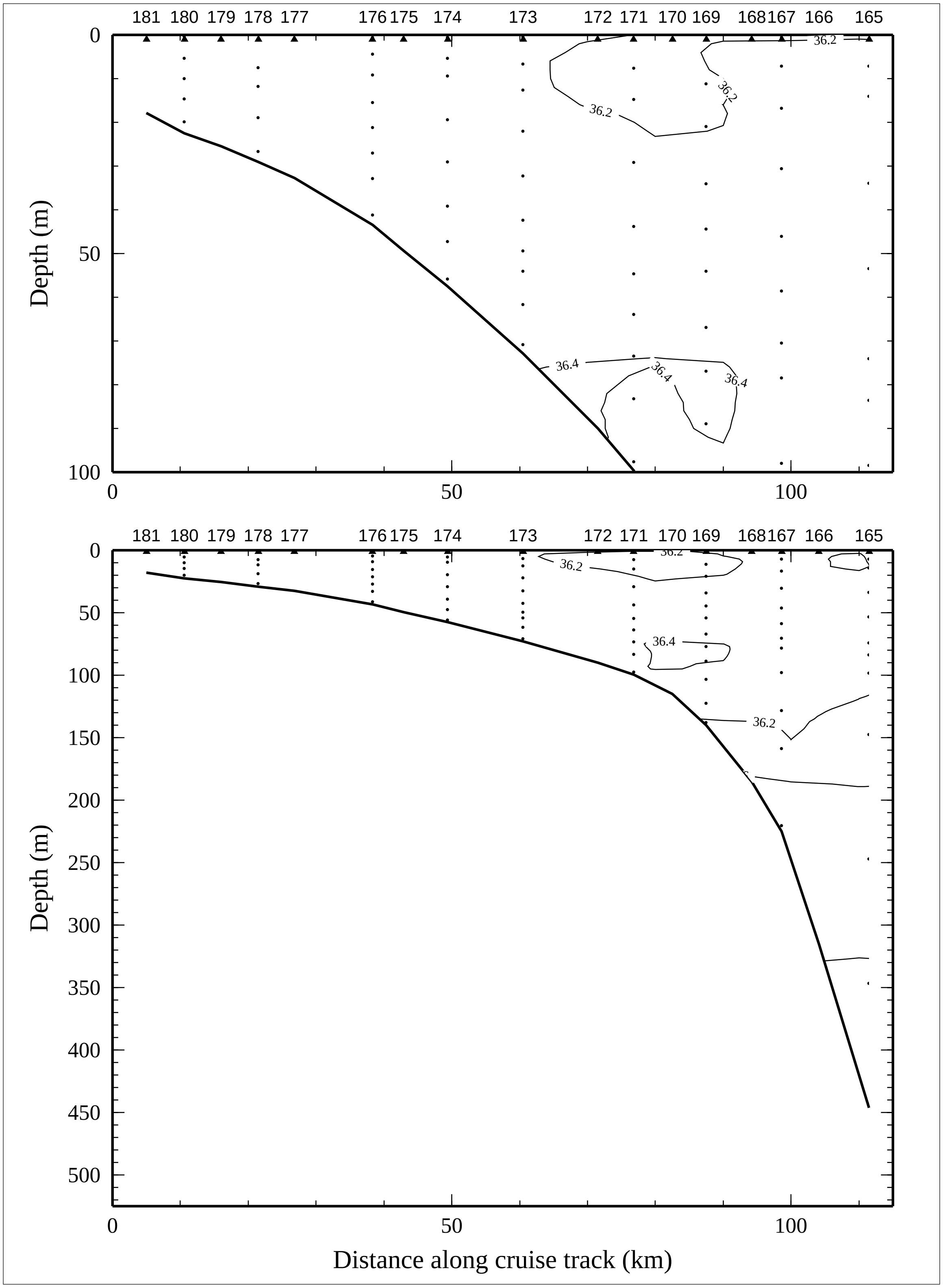

Figure 6.7.8. Bottle salinity on line 7 of LATEX A survey H06,
25 July - 7 August 1993.

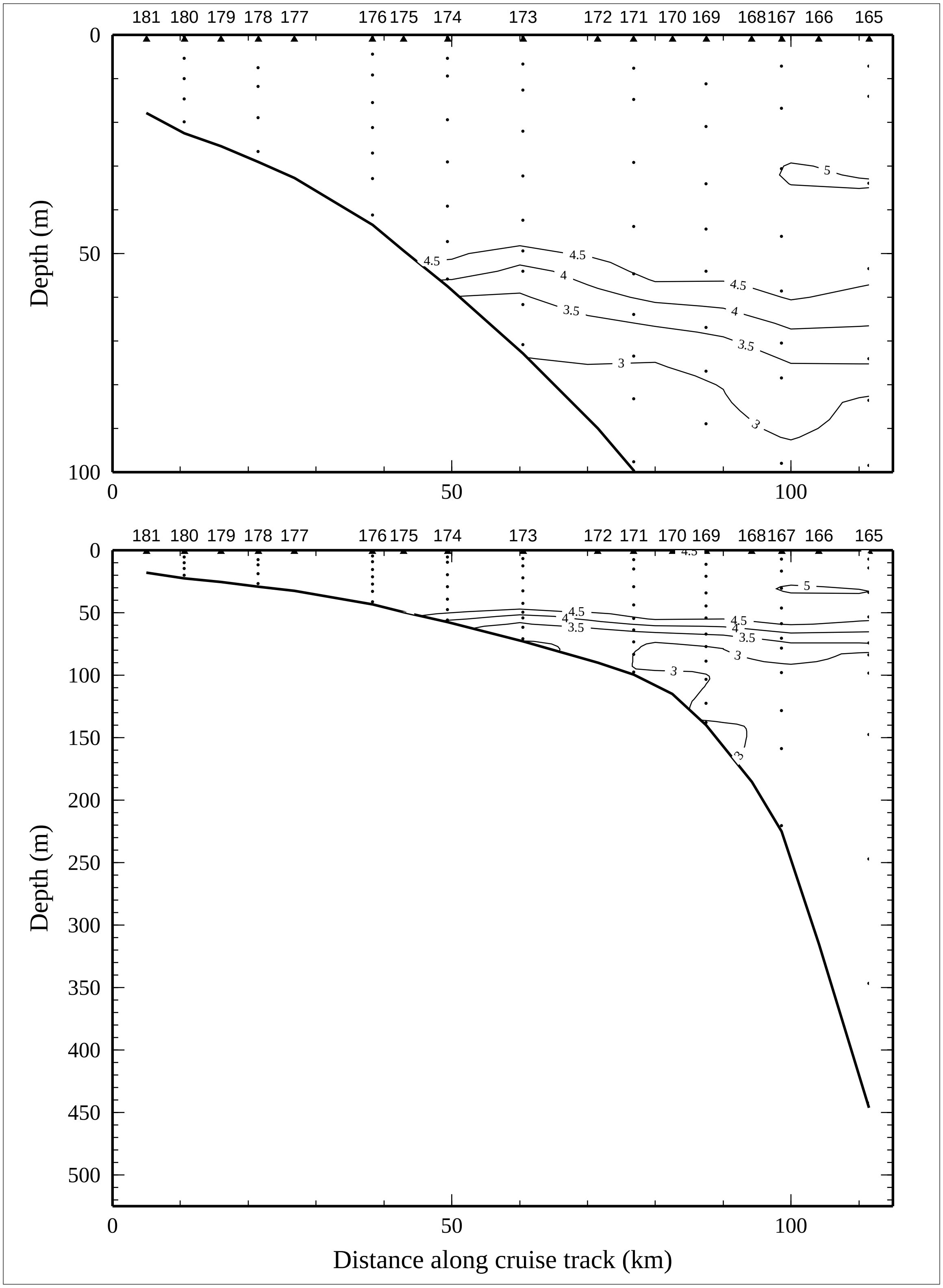

Figure 6.7.9. Dissolved oxygen (ml·l^{-1}) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

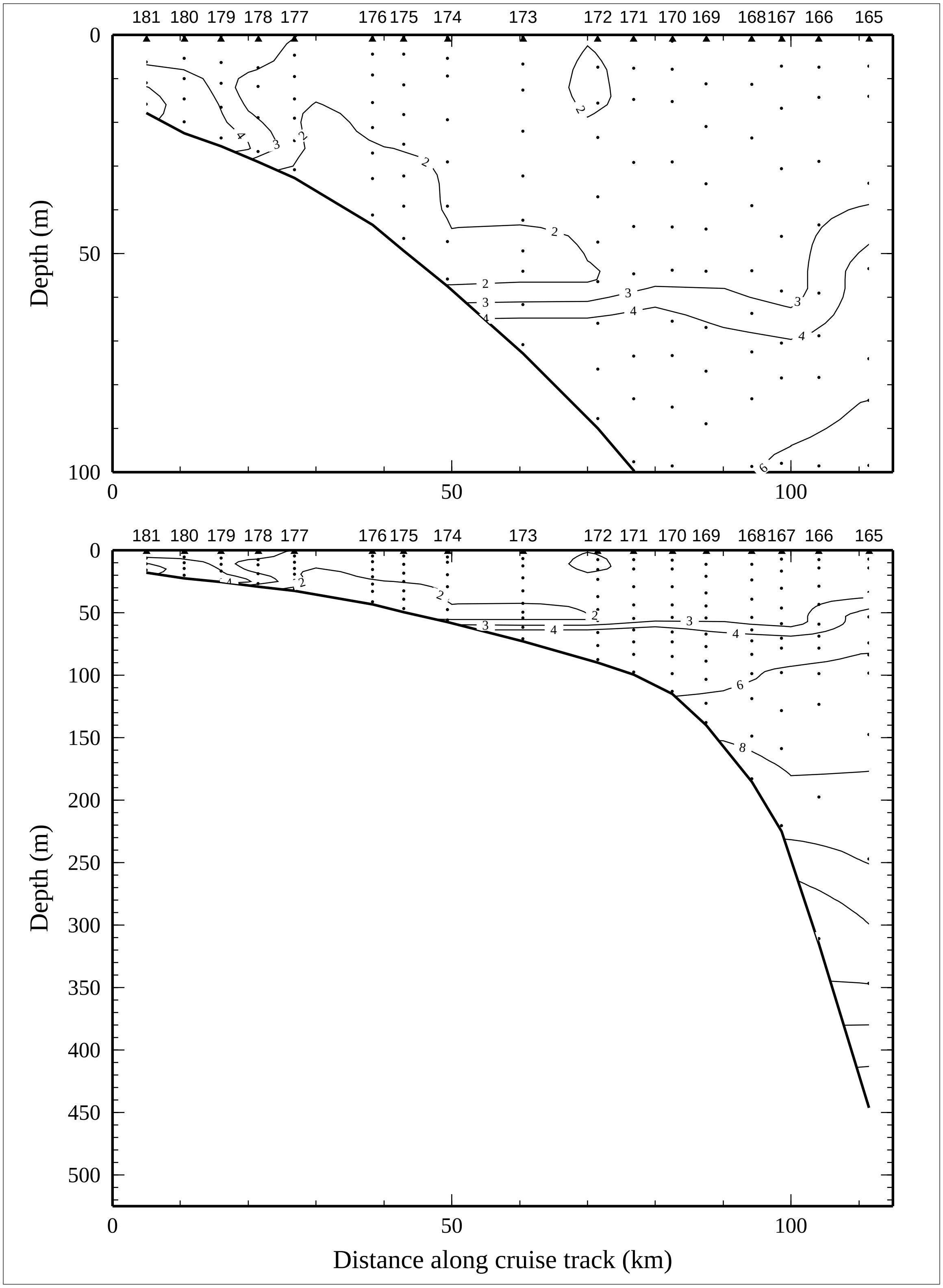

Figure 6.7.10. Silicate (μmol·l^{-1}) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

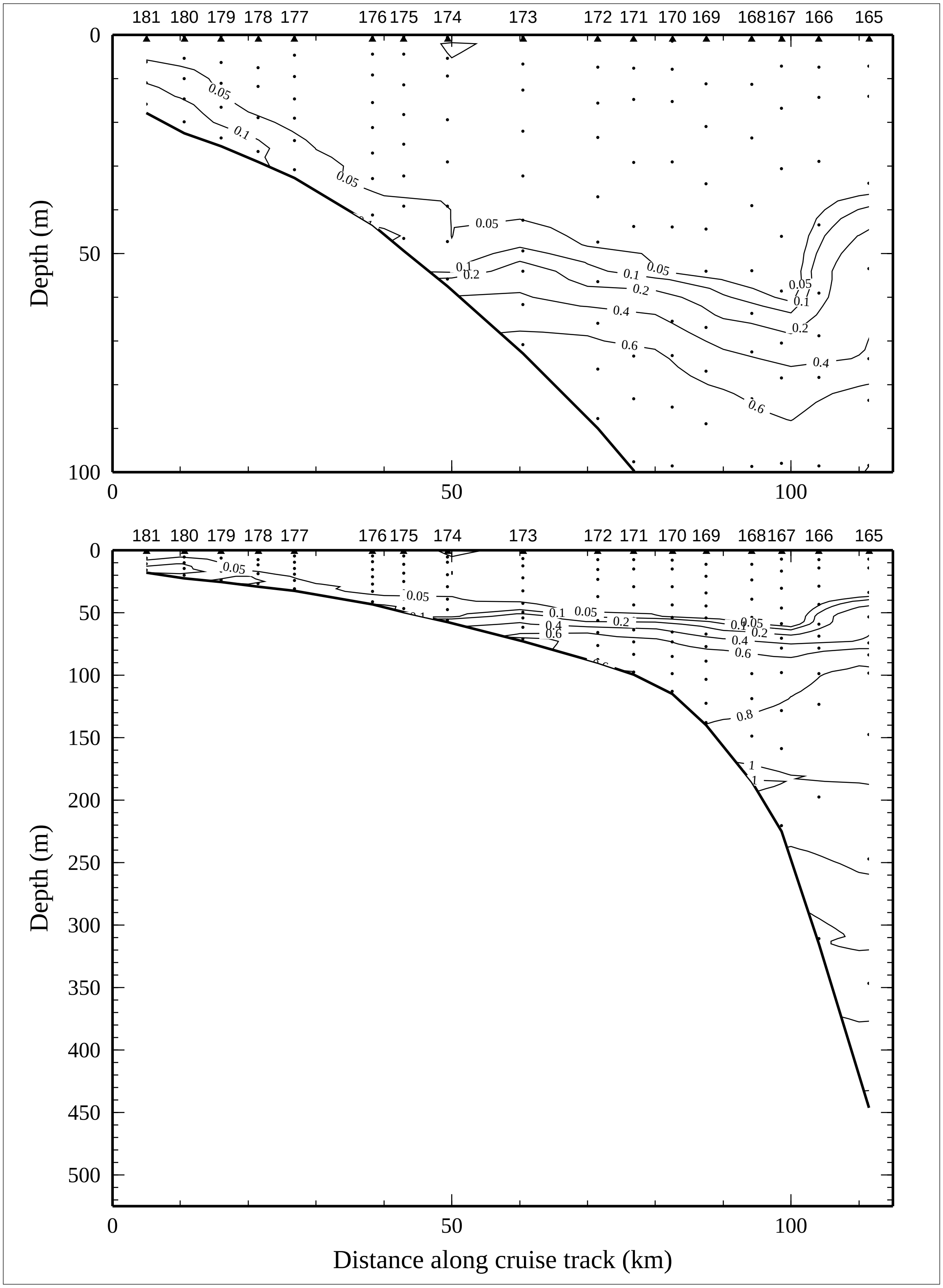

Figure 6.7.11. Phosphate (μmol·l⁻¹) on line 7 of LATEX A survey H06,
25 July - 7 August 1993.

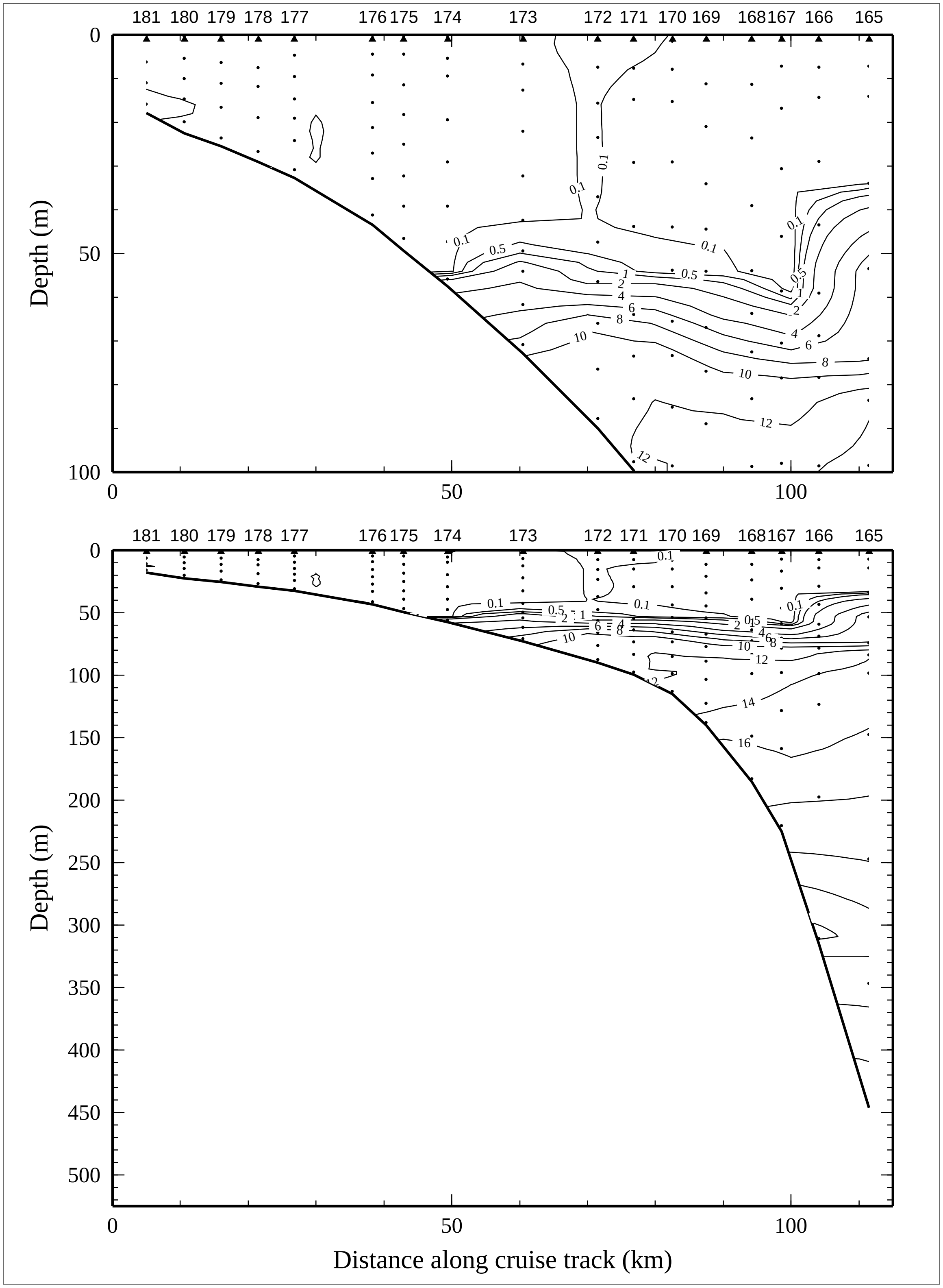

Figure 6.7.12. Nitrate (μmol·l^{-1}) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

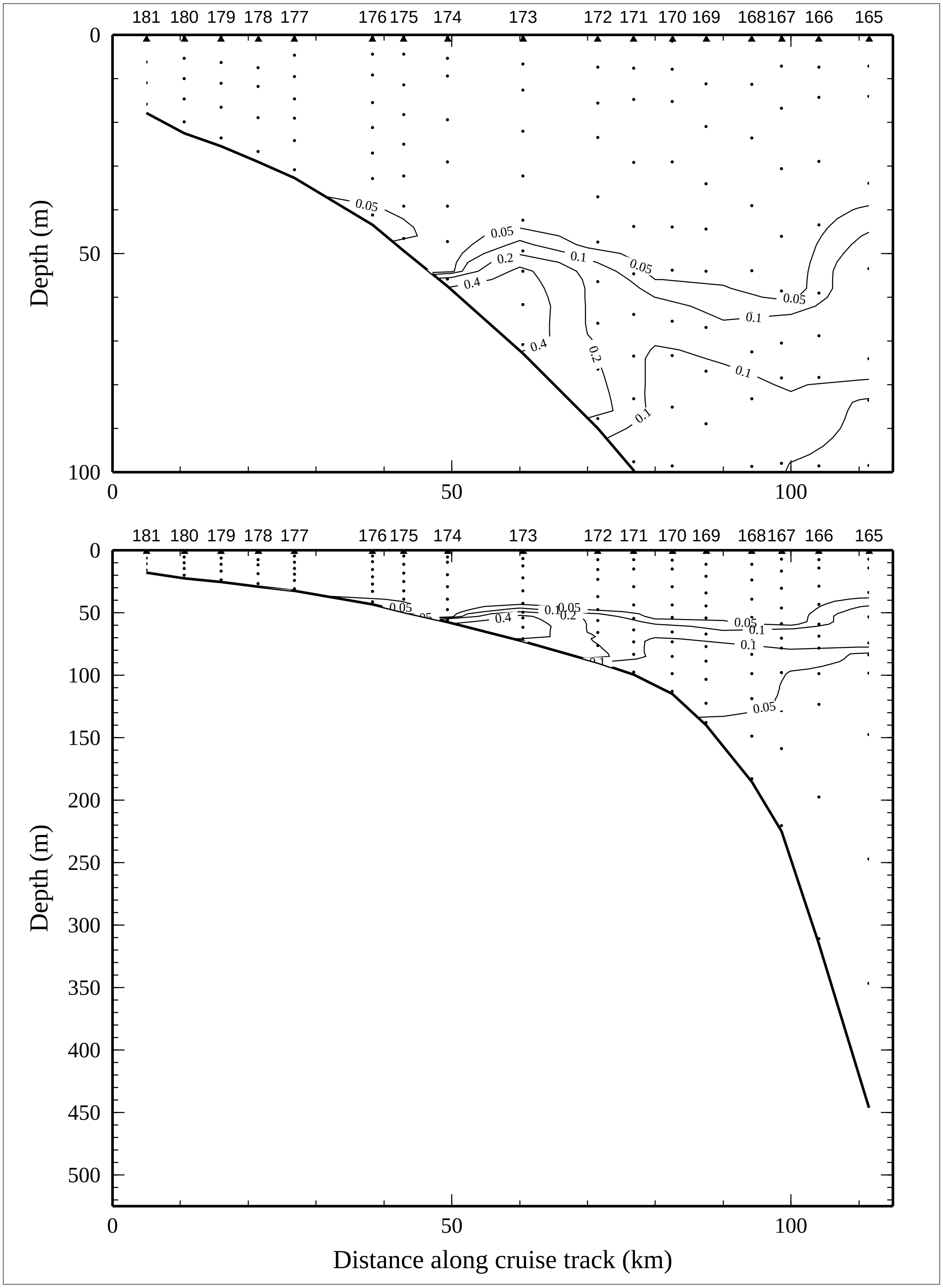

Figure 6.7.13. Nitrite (μmol·l-1) on line 7 of LATEX A survey H06,
25 July - 7 August 1993.

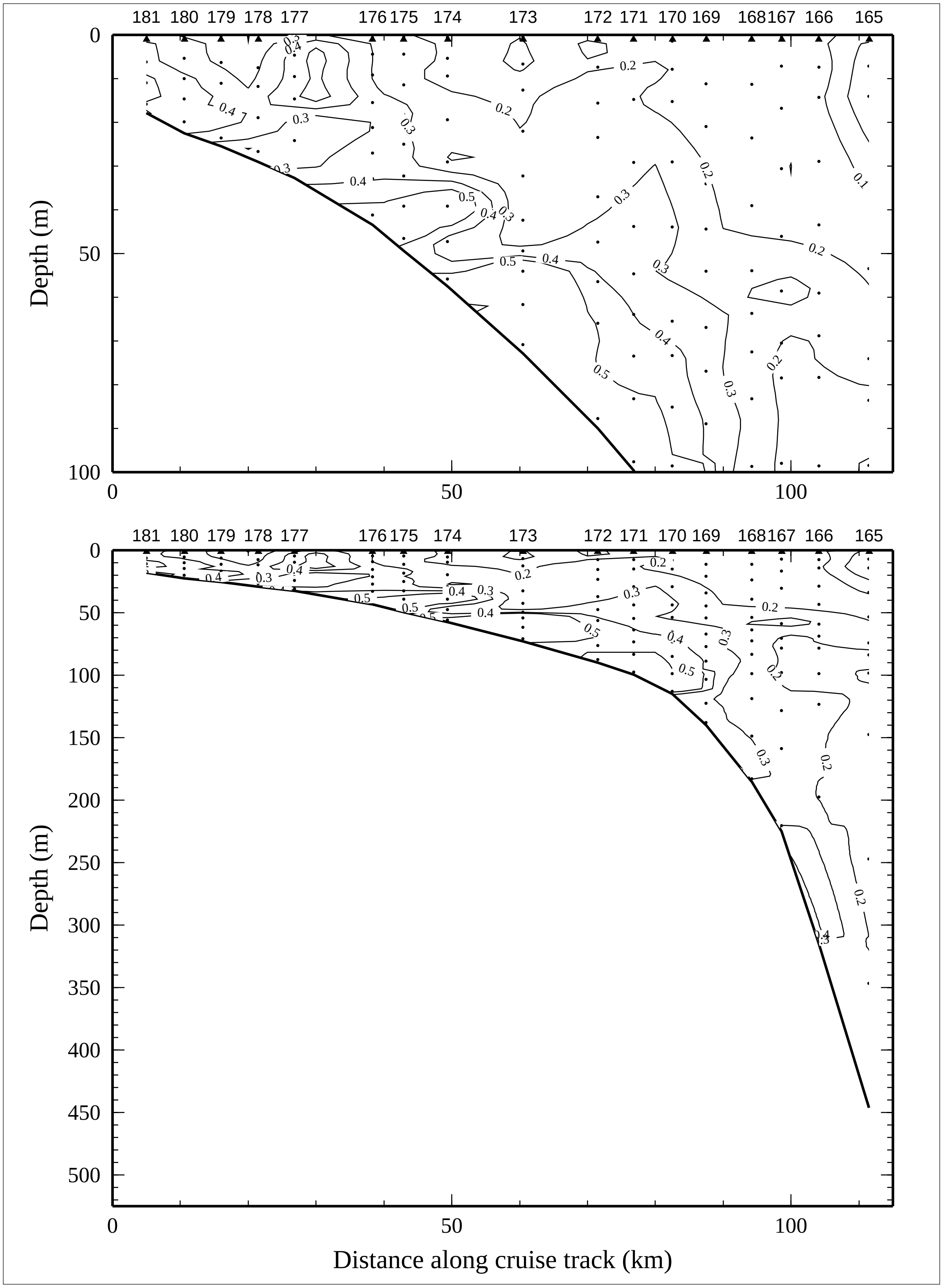

Figure 6.7.14. Ammonium (μmol·l^{-1}) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

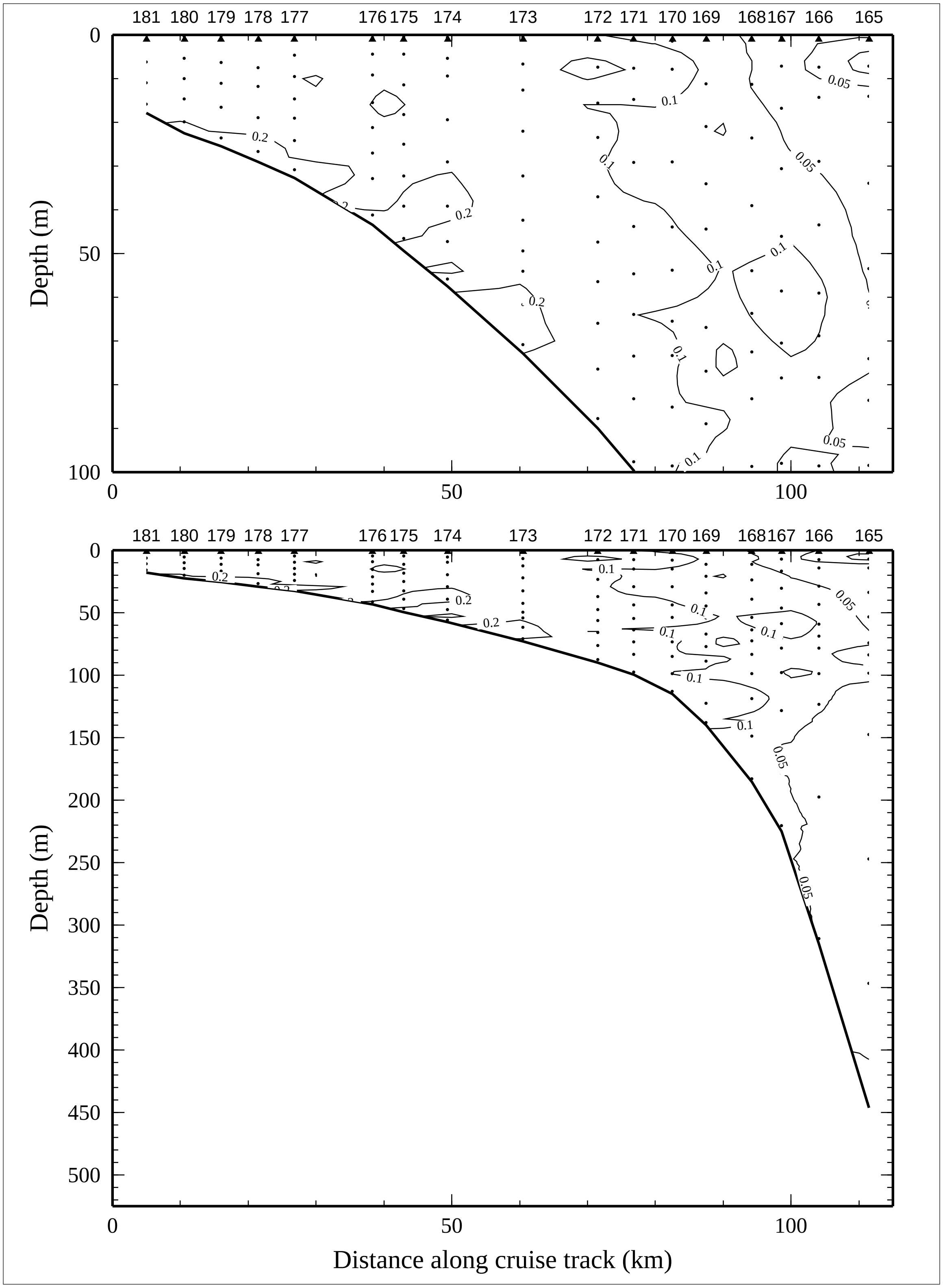

Figure 6.7.15. Urea (µmol·l^{-1}) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

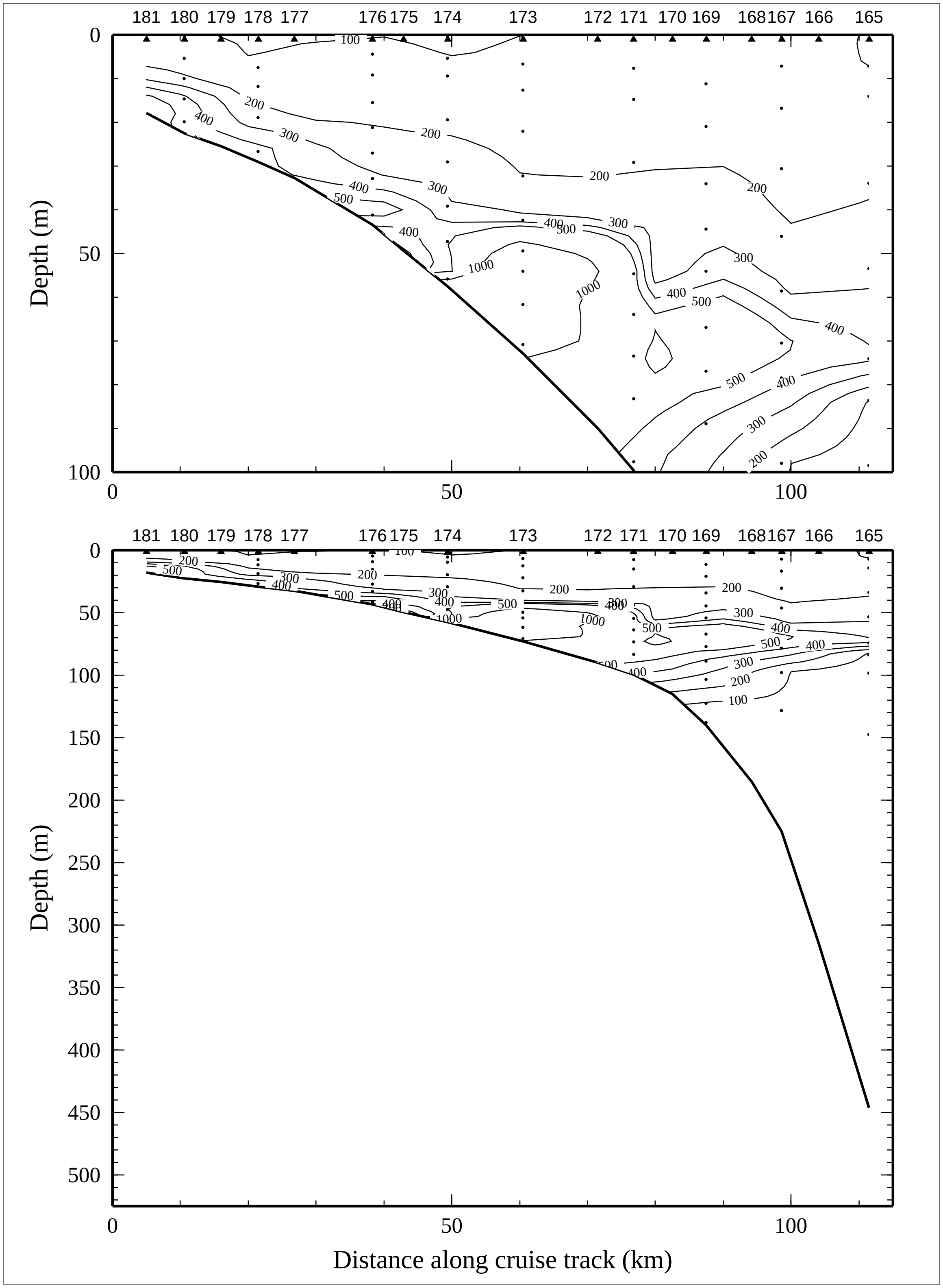

Figure 6.7.16. Chlorophyll a (ng·l^{-1}) on line 7 of LATEX A survey H06, 25 July - 7 August 1993.

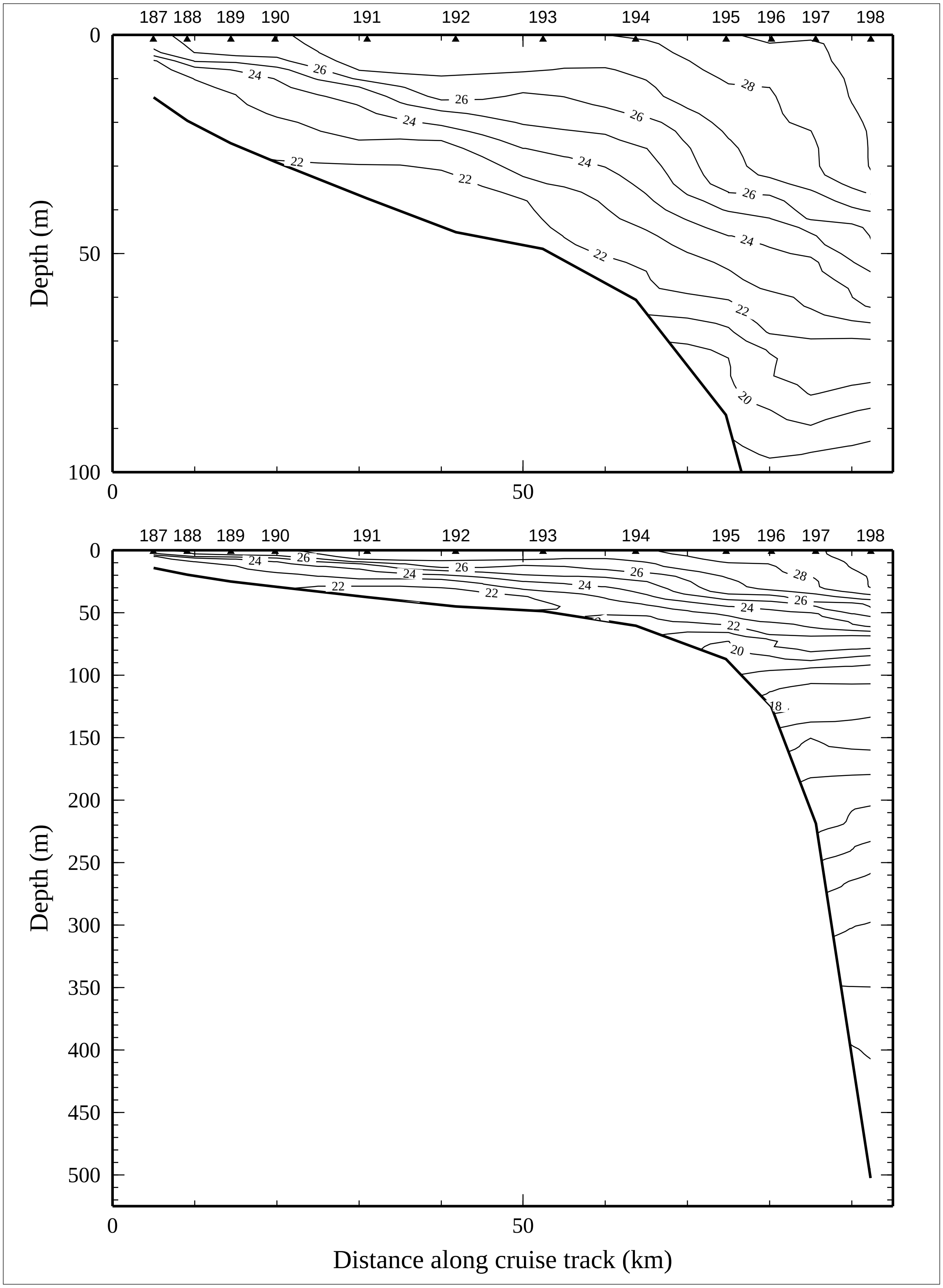

Figure 6.8.1. Potential temperature (˚C) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

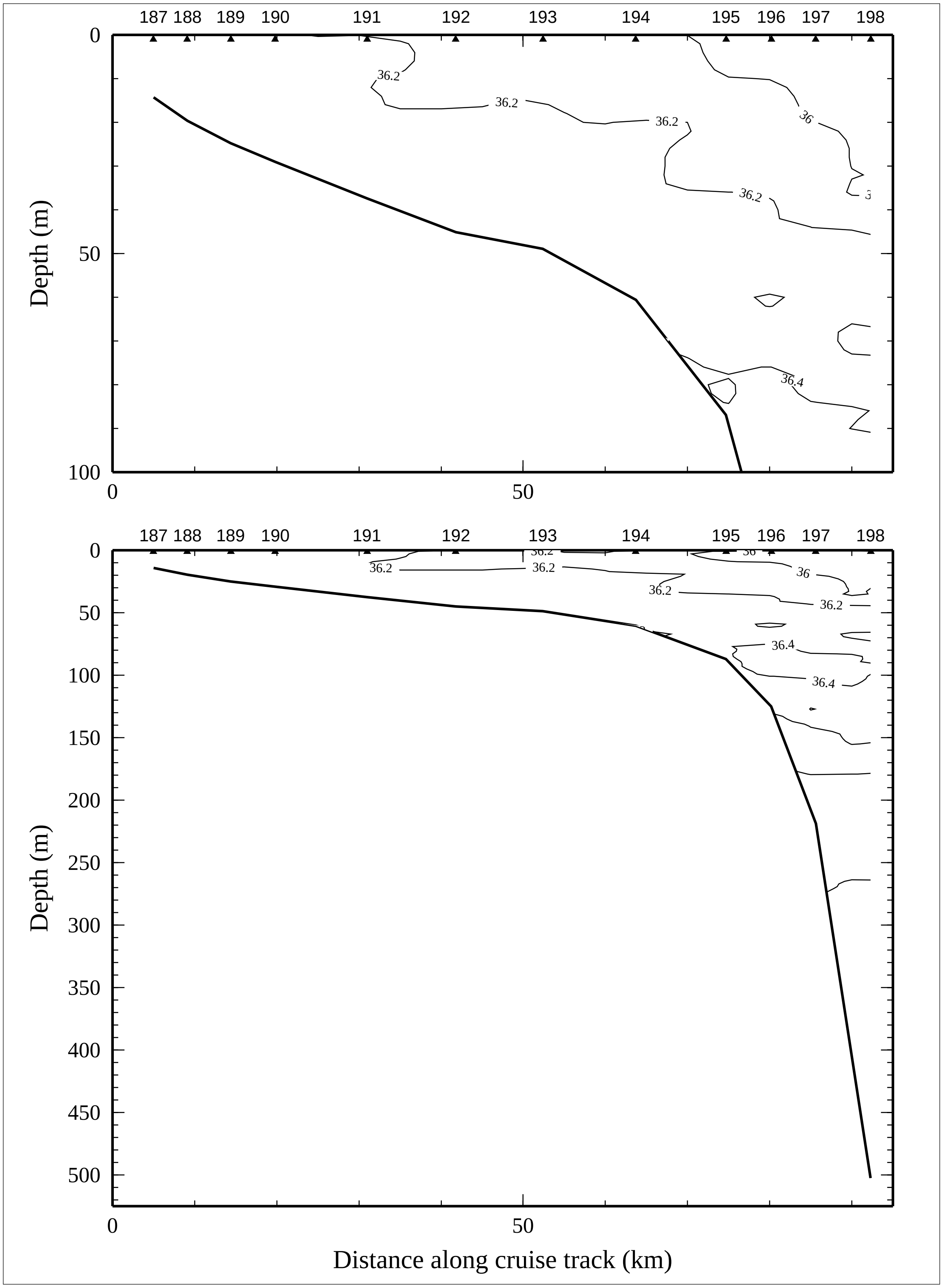

Figure 6.8.2. Salinity, derived from CTD data, on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

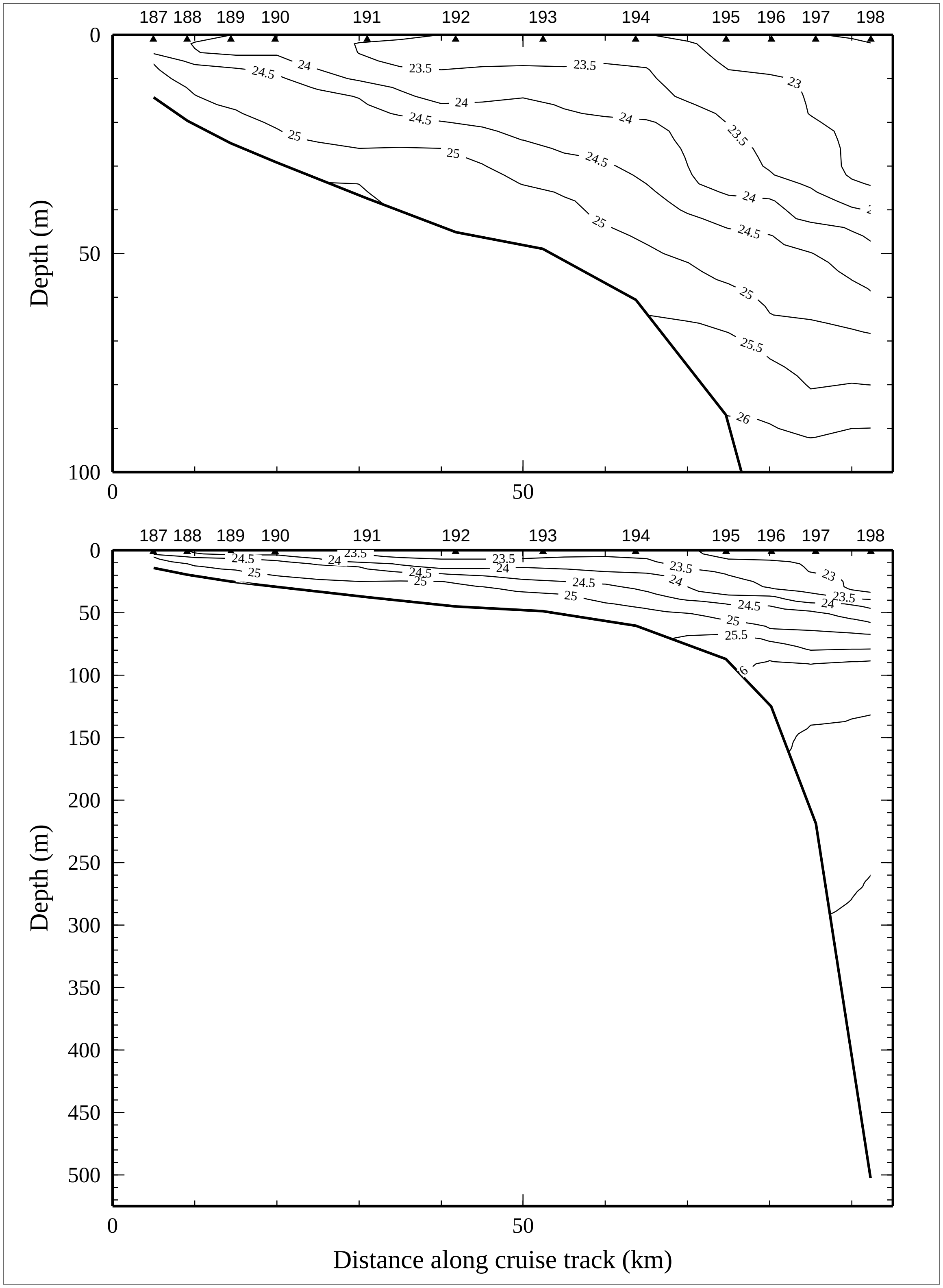

Figure 6.8.3. Density anomaly (σ_θ in kg·m^{-3}) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

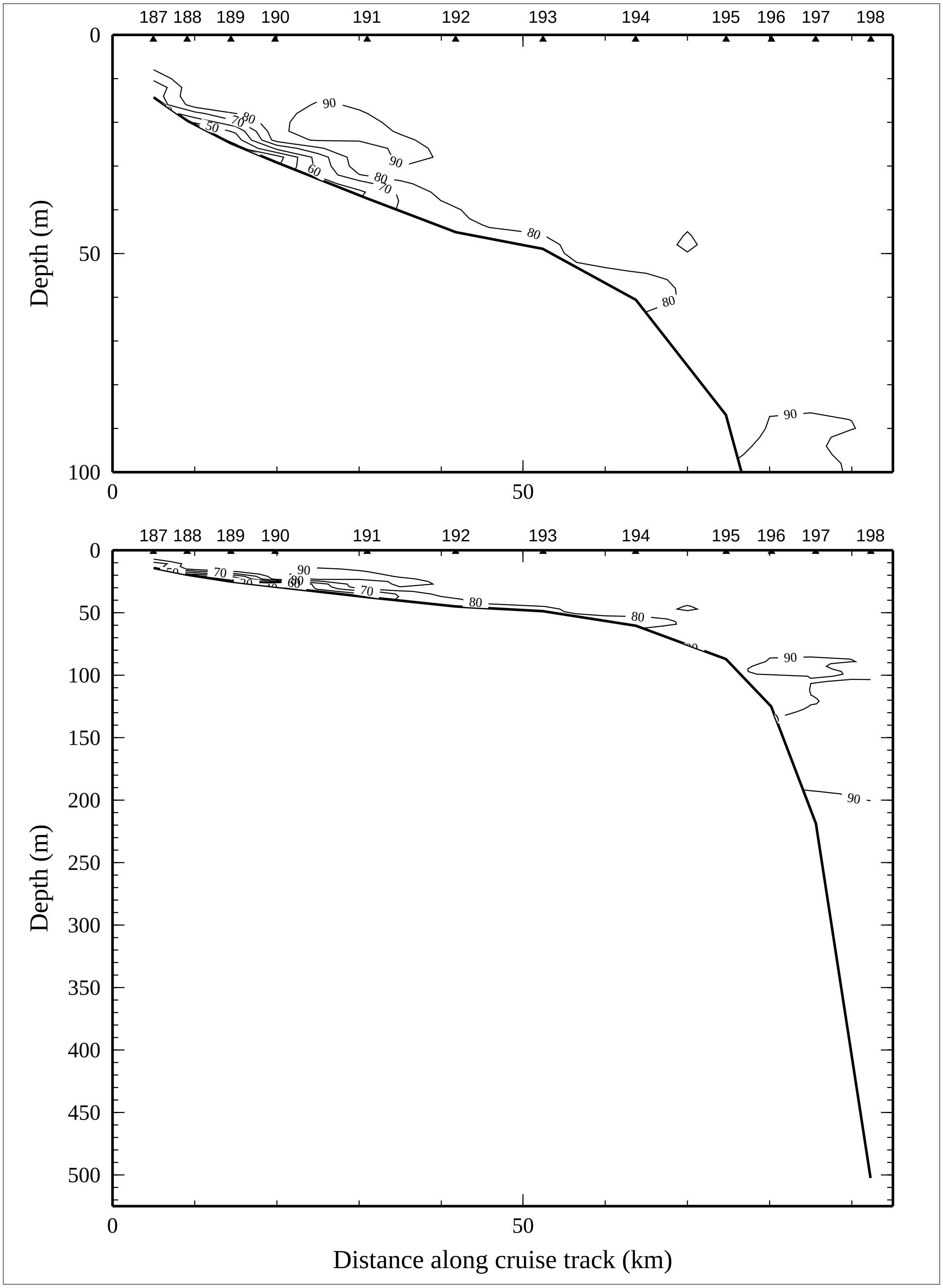

Figure 6.8.4. Percent transmission (660 nm wave length; 25-cm path length) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

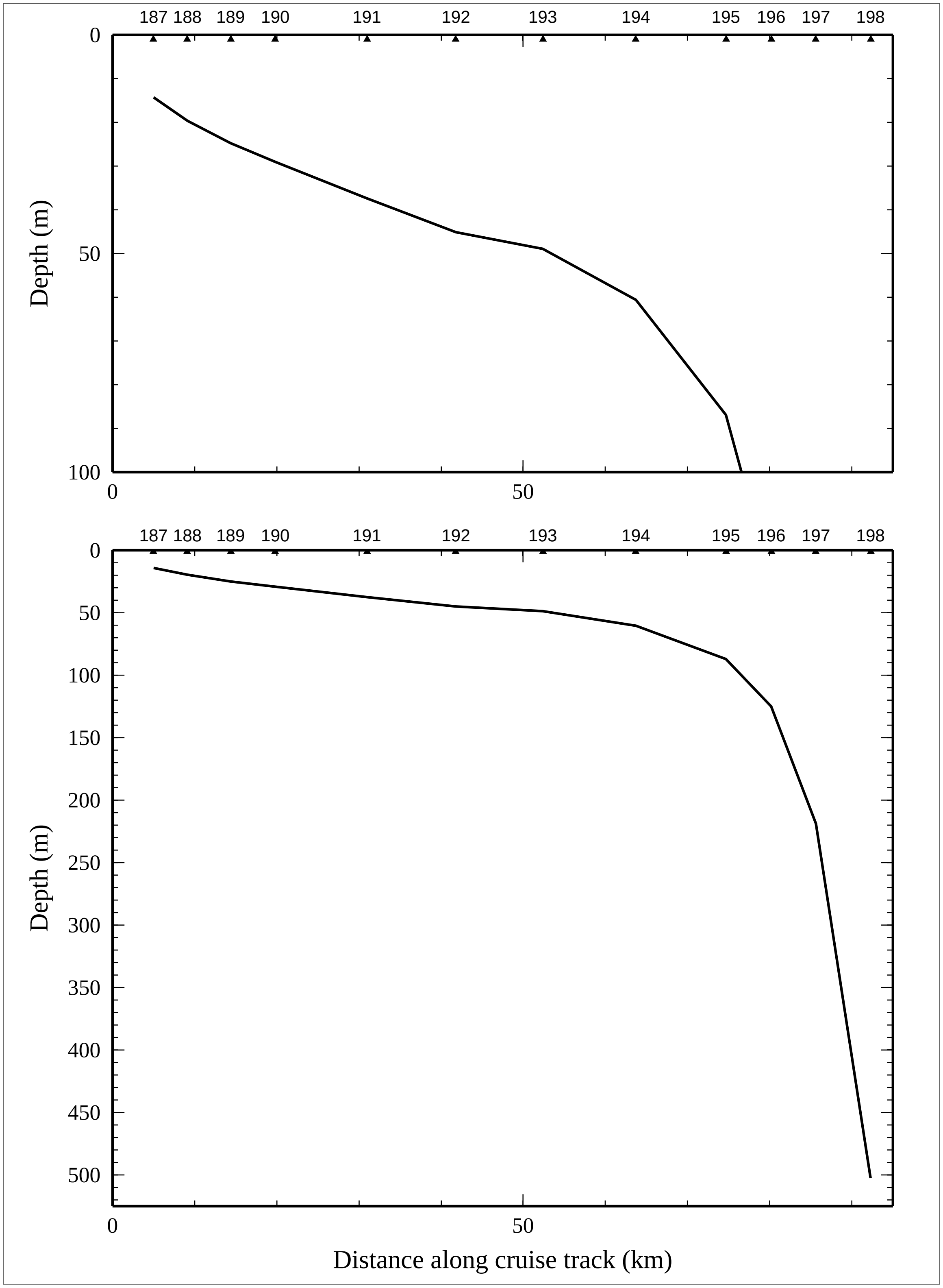

Figure 6.8.5. Optical backscatterance (voltage) on line 8 of LATEX A survey H06, 25 July - 7 August 1993. Values were less than 0.05.

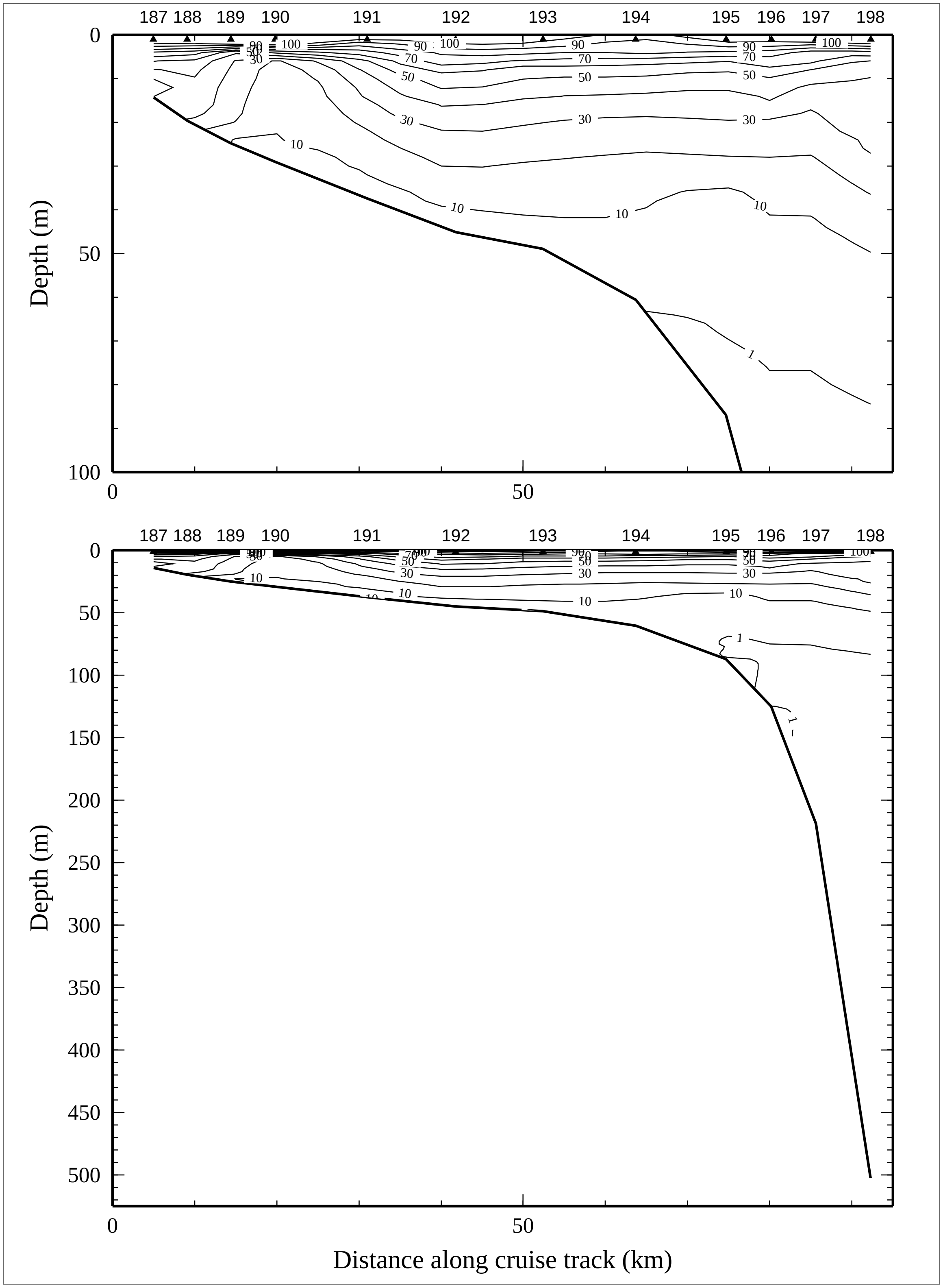

Figure 6.8.6. Downwelling irradiance as percent of surface irradiance on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

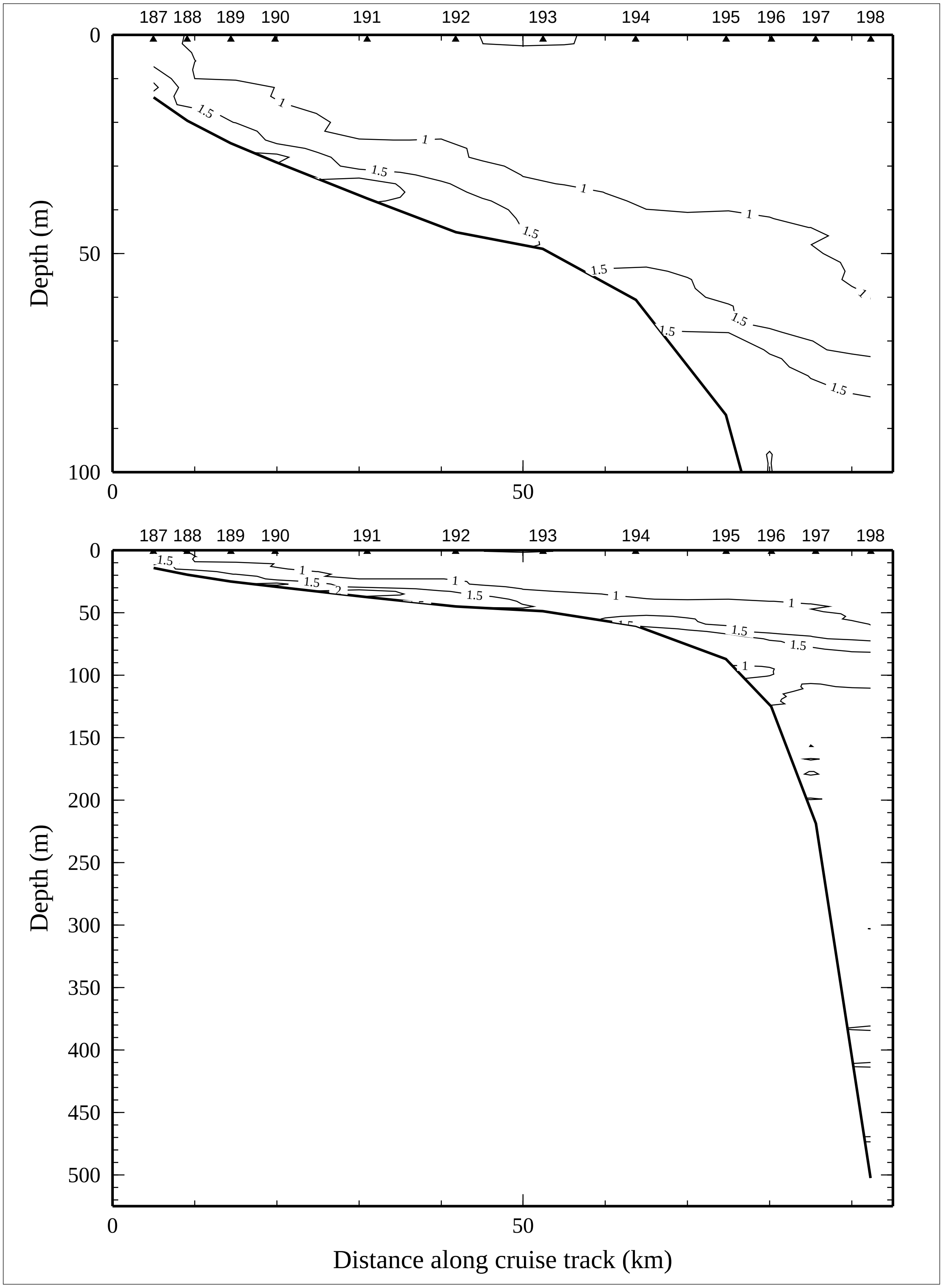

Figure 6.8.7. Relative fluorescence on line 8 of LATEX A survey H06,
25 July - 7 August 1993.

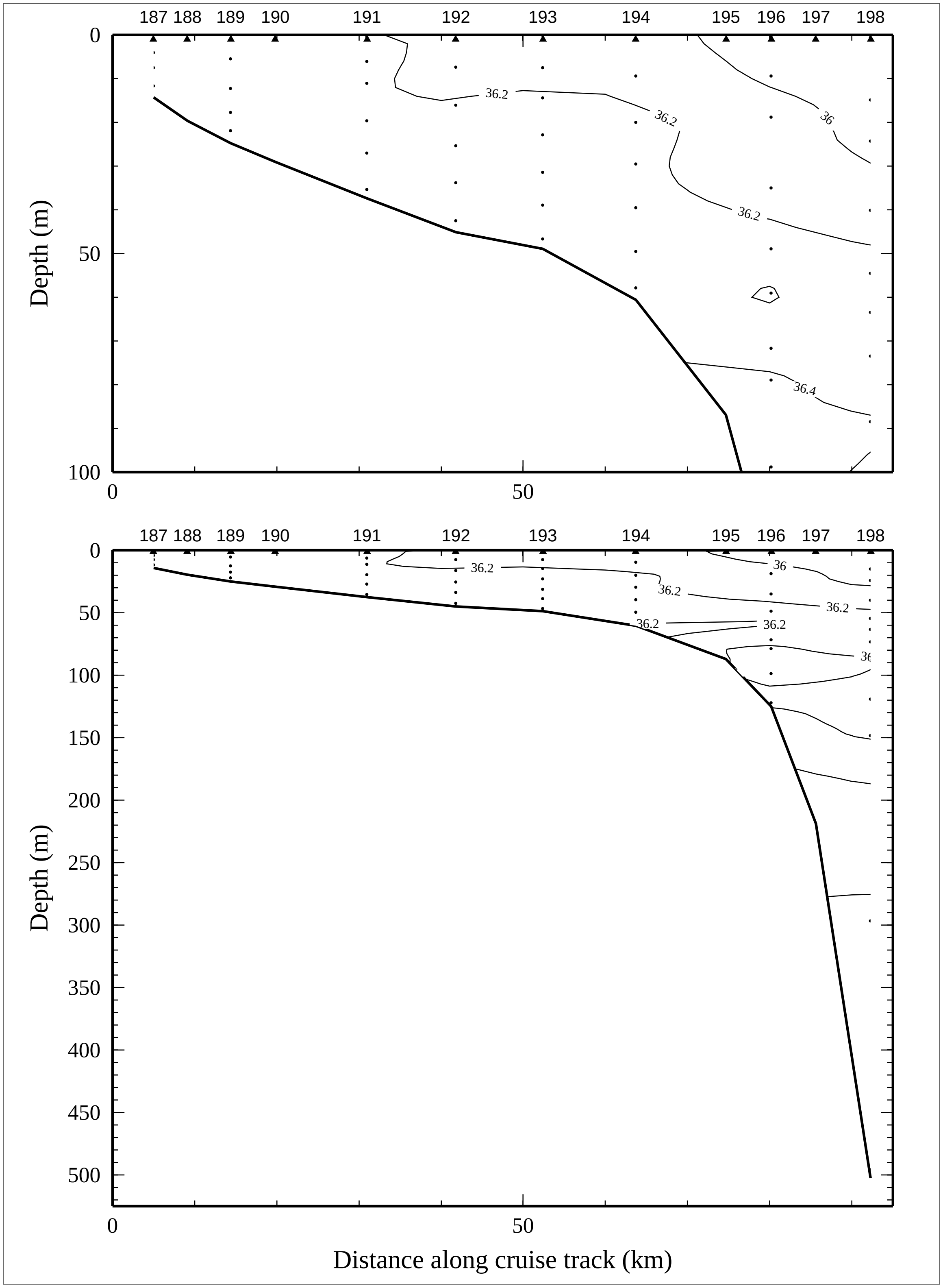

Figure 6.8.8. Bottle salinity on line 8 of LATEX A survey H06,
25 July - 7 August 1993.

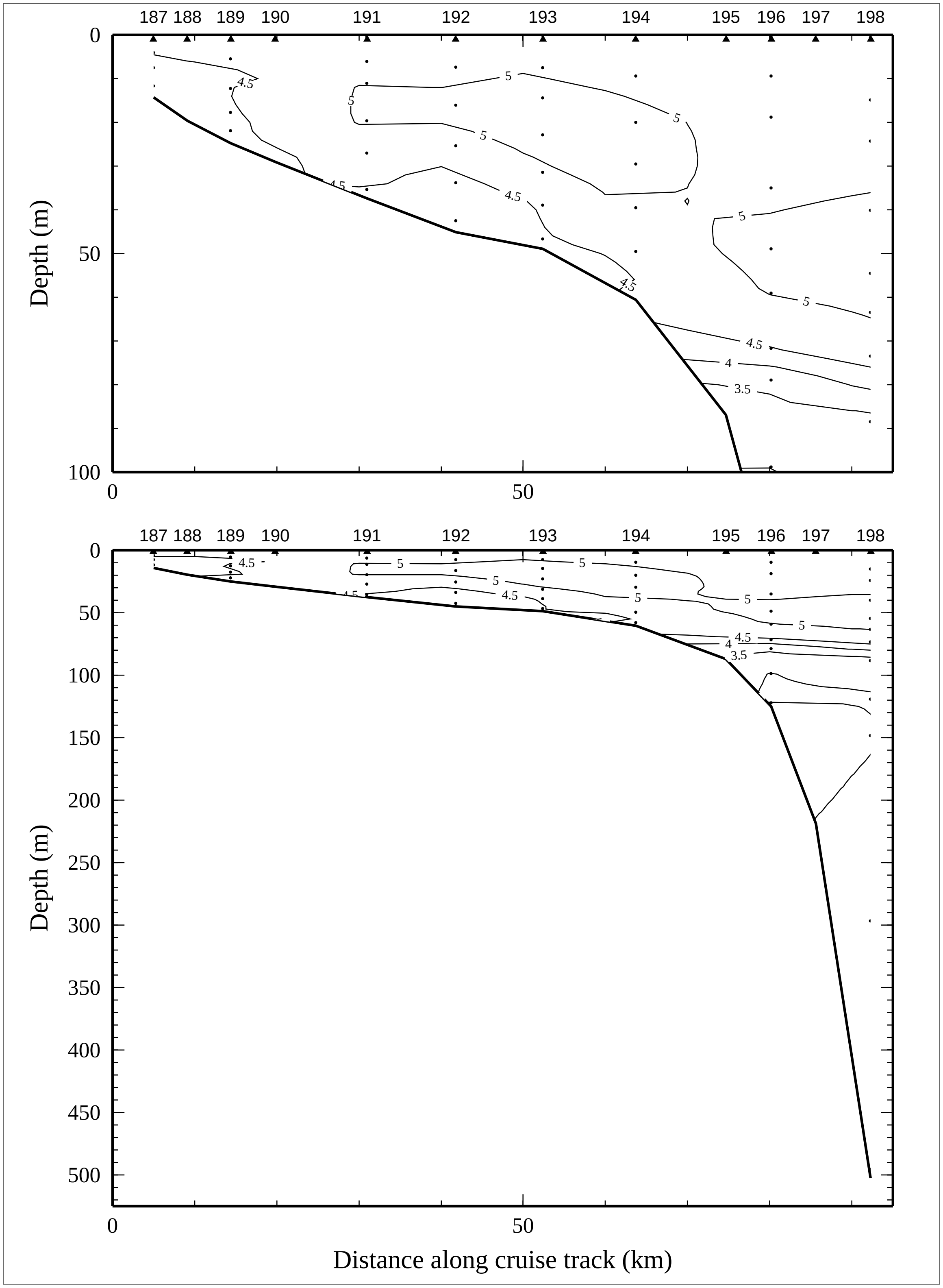

Figure 6.8.9. Dissolved oxygen (ml·l^{-1}) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

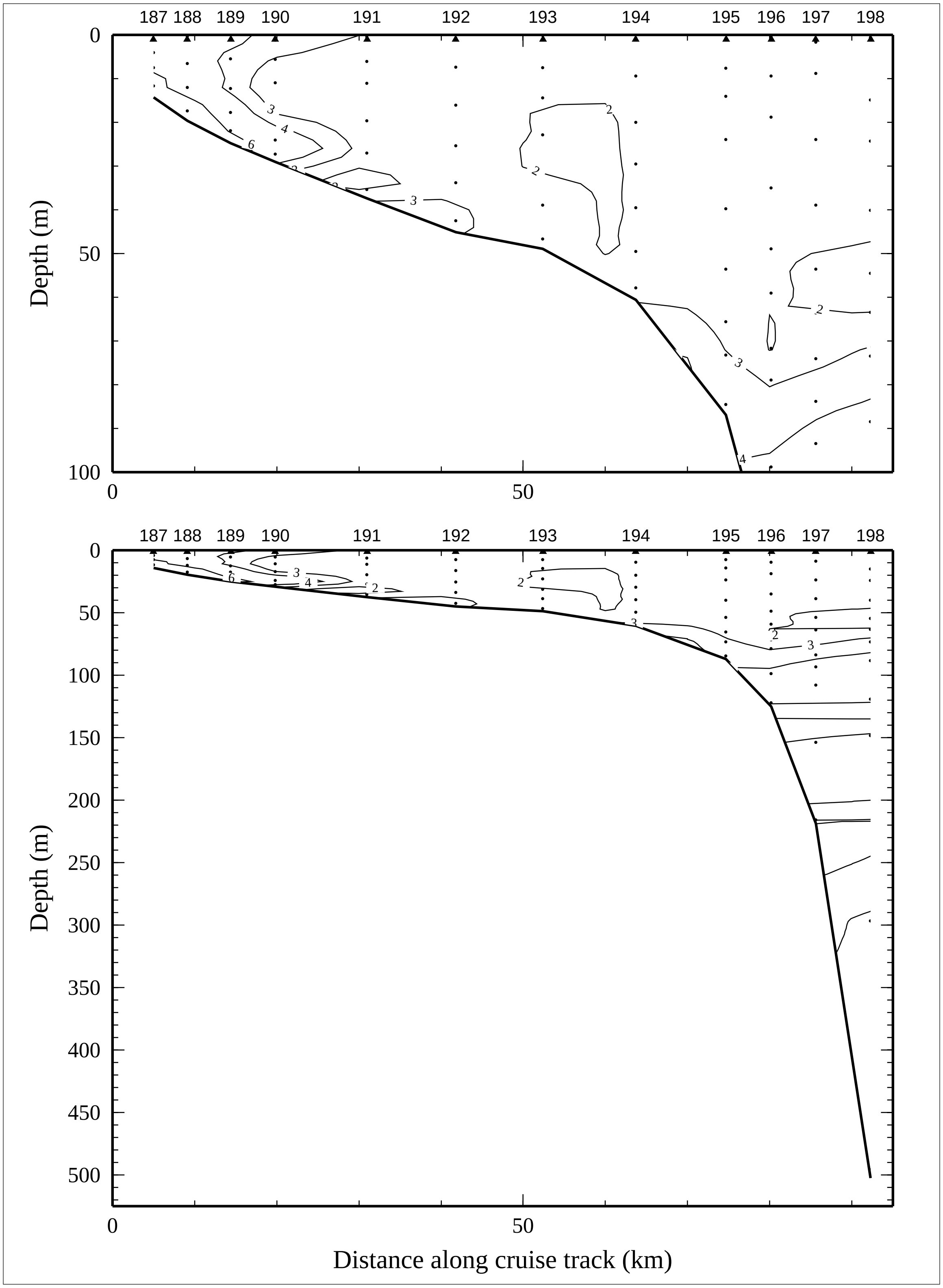

Figure 6.8.10. Silicate (μmol·l^{-1}) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

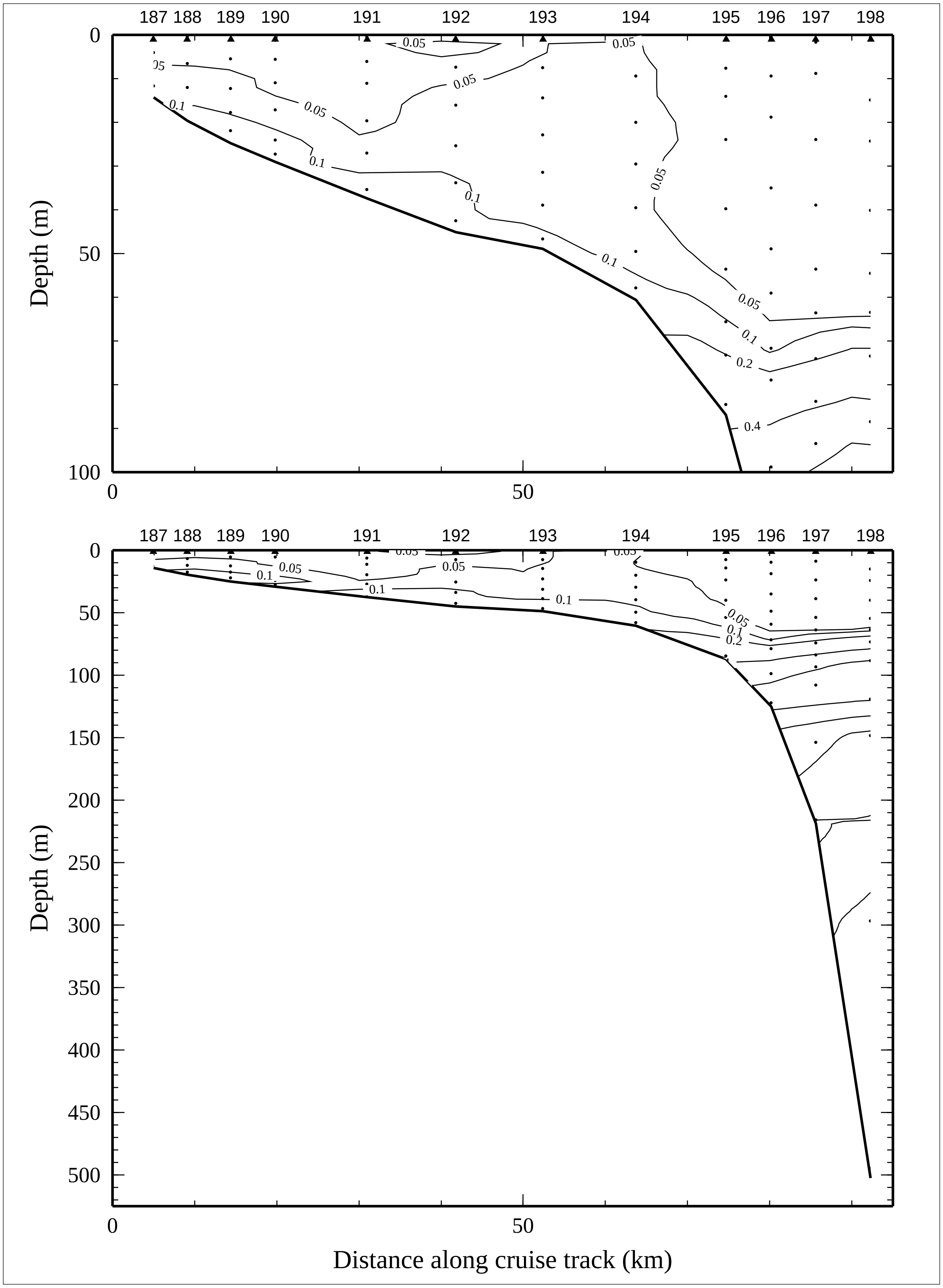

Figure 6.8.11. Phosphate (µmol·l^{-1}) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

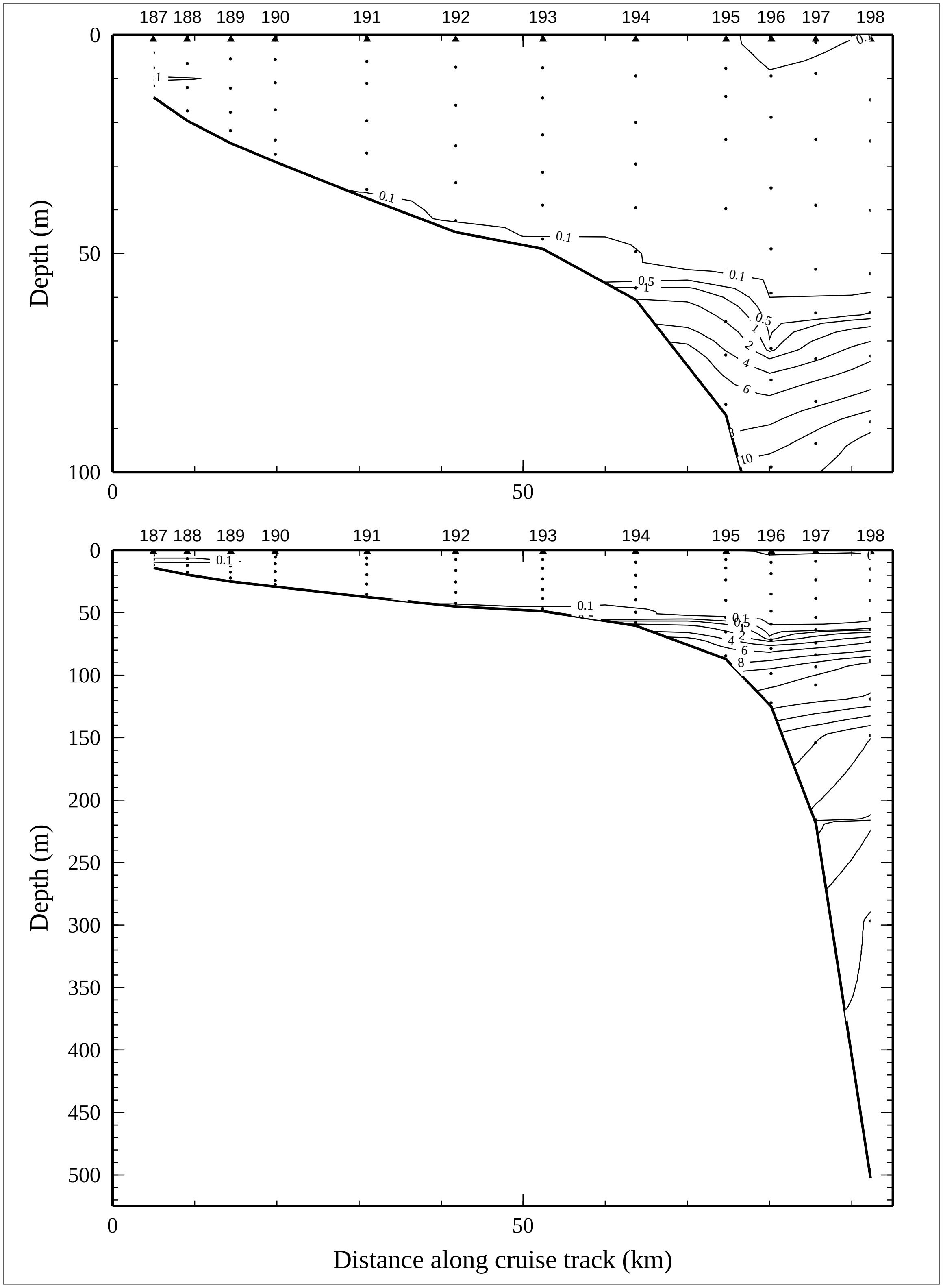

Figure 6.8.12. Nitrate (μmol·l⁻¹) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

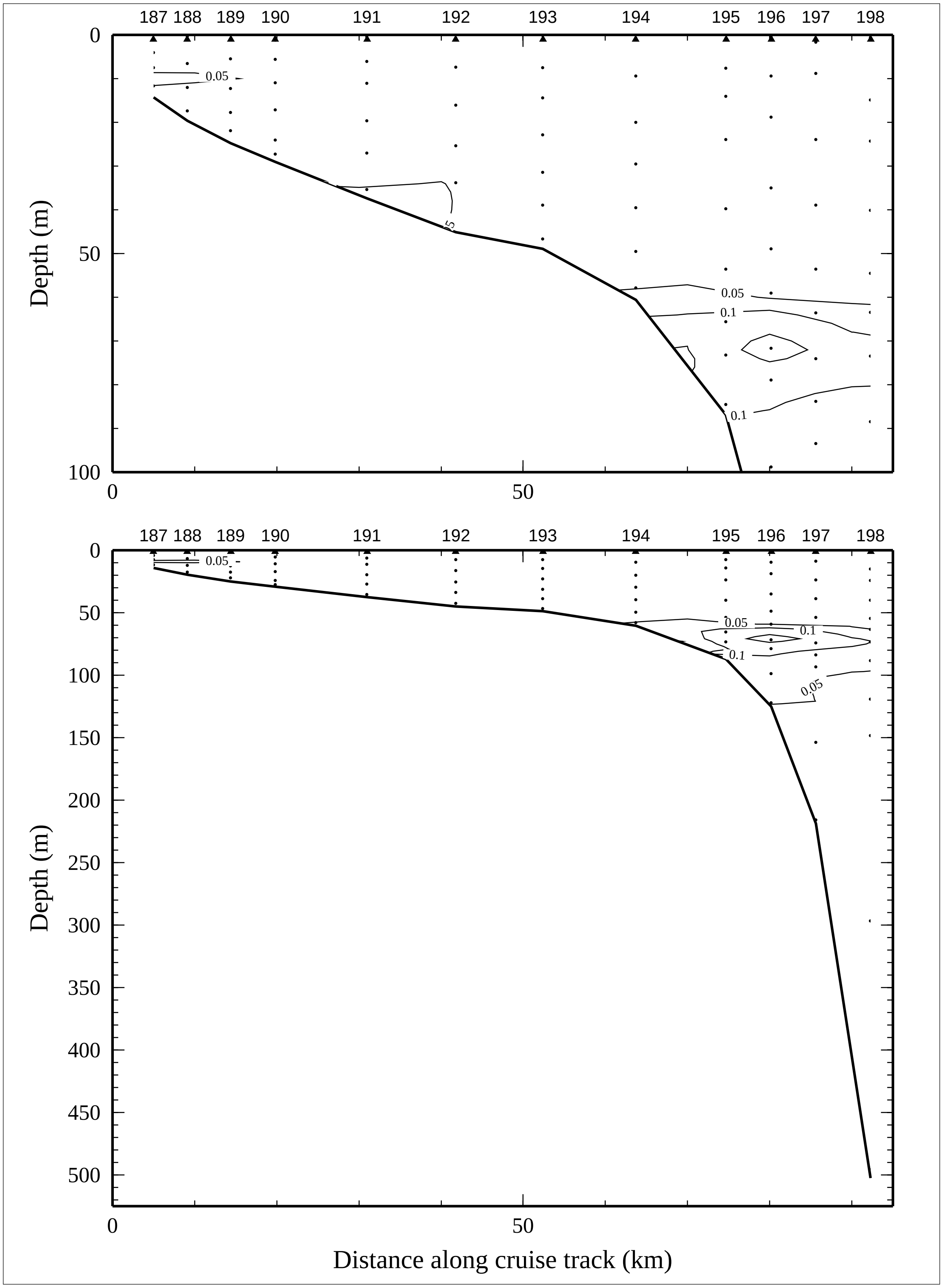

Figure 6.8.13. Nitrite (μmol·l^{-1}) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

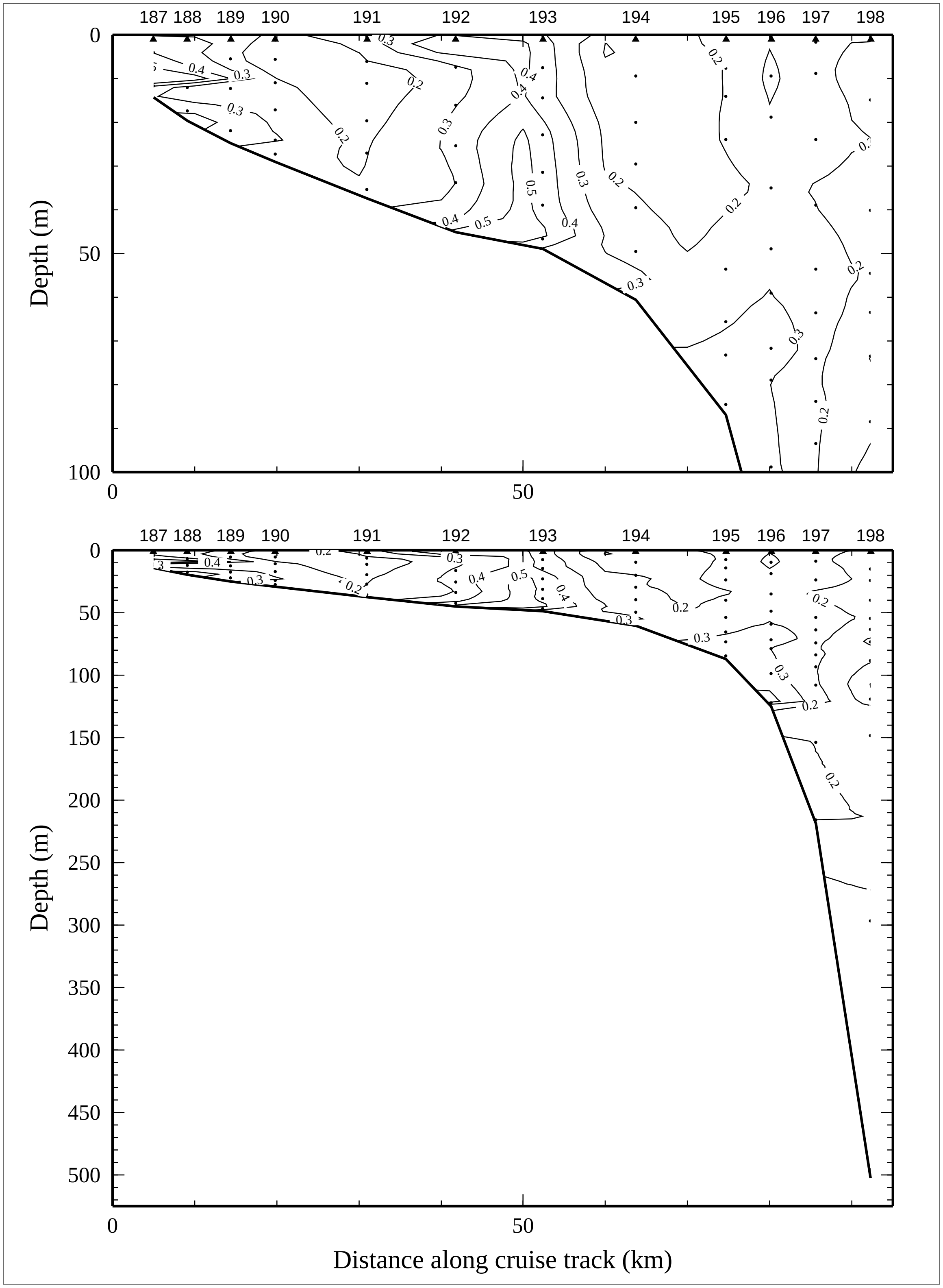

Figure 6.8.14. Ammonium (μmol·l-1) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

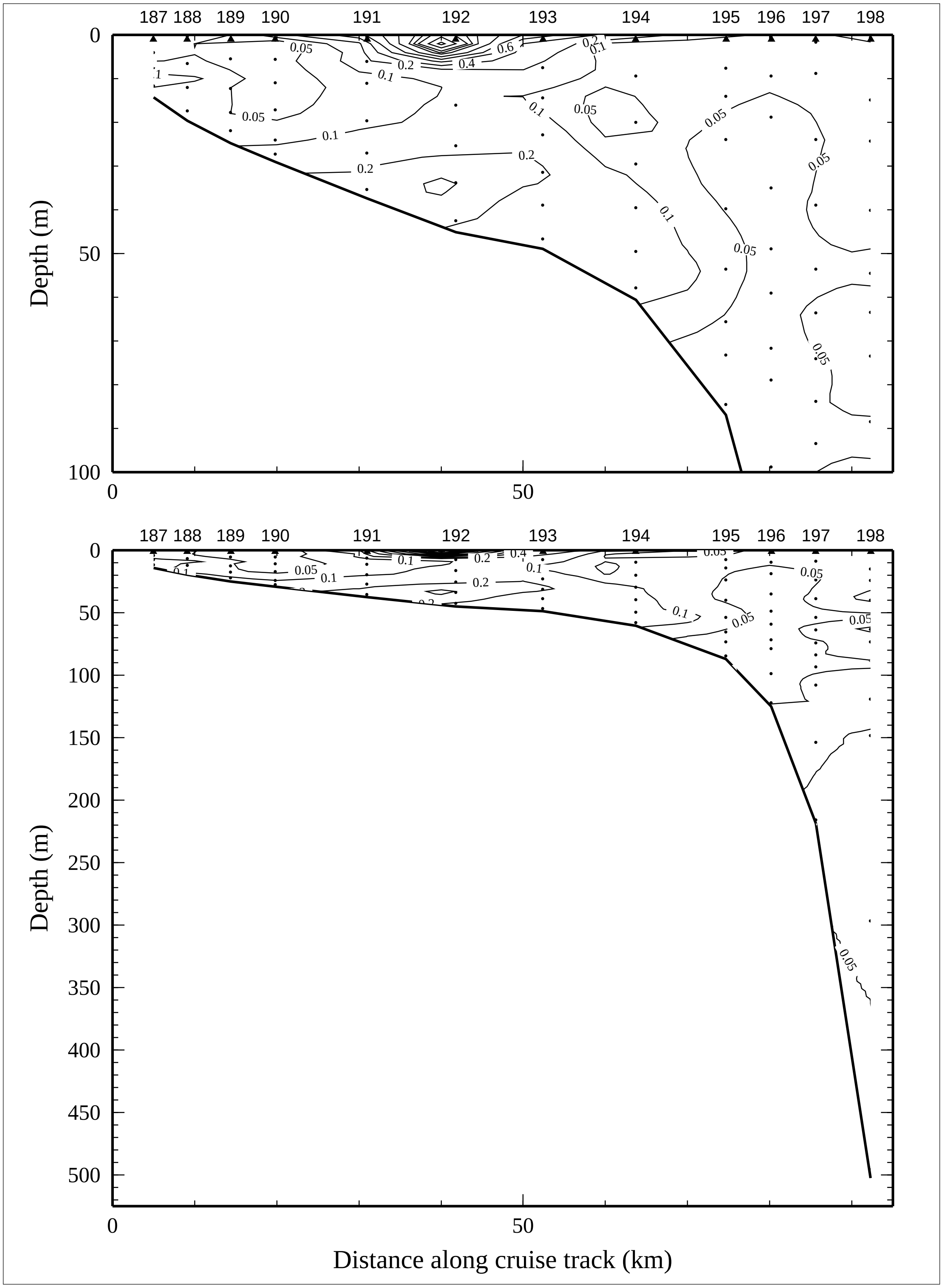

Figure 6.8.15. Urea (µmol·l^{-1}) on line 8 of LATEX A survey H06, 25 July - 7 August 1993.

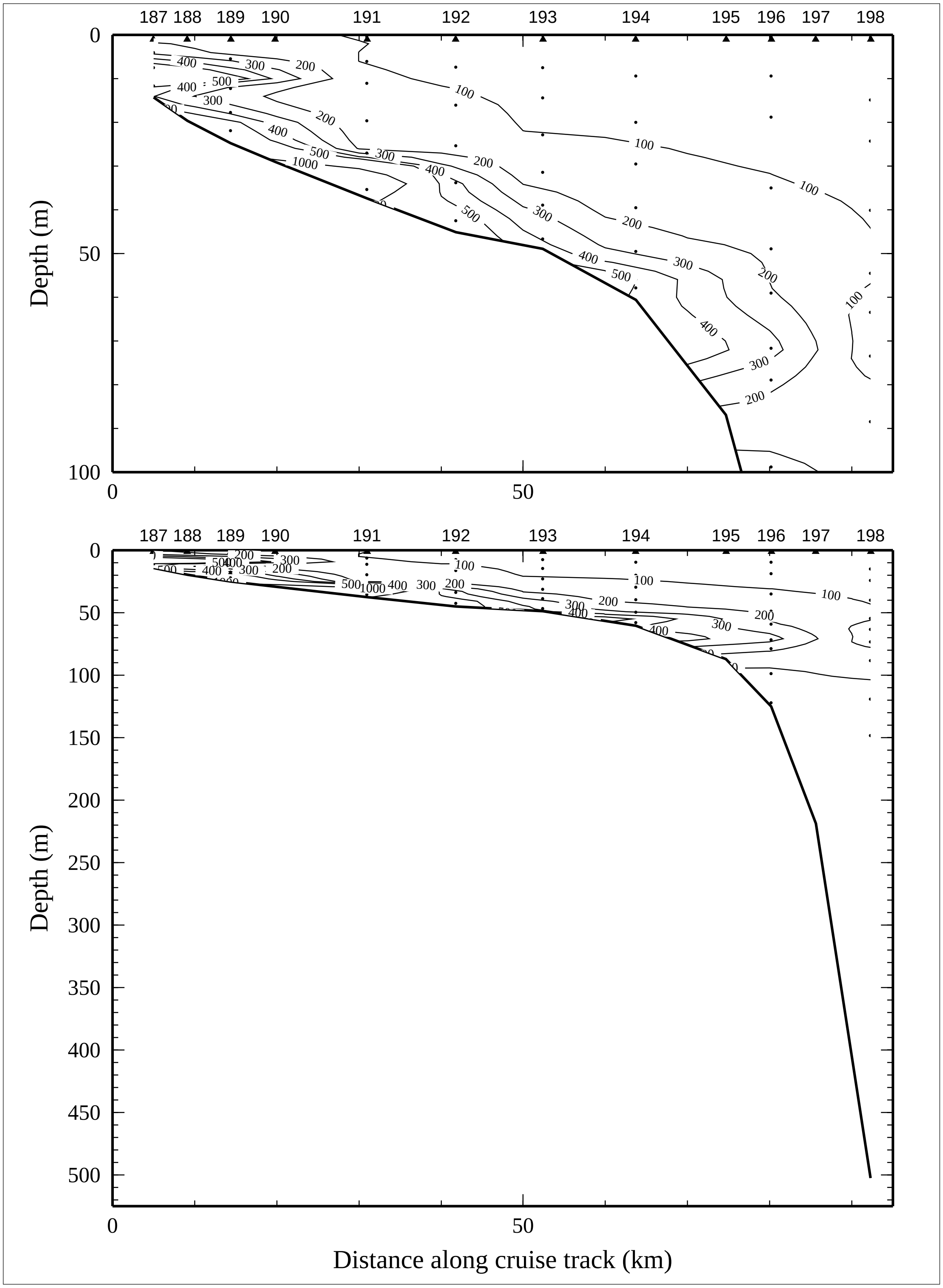

Figure 6.8.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 8 of LATEX A survey H06,
25 July - 7 August 1993.

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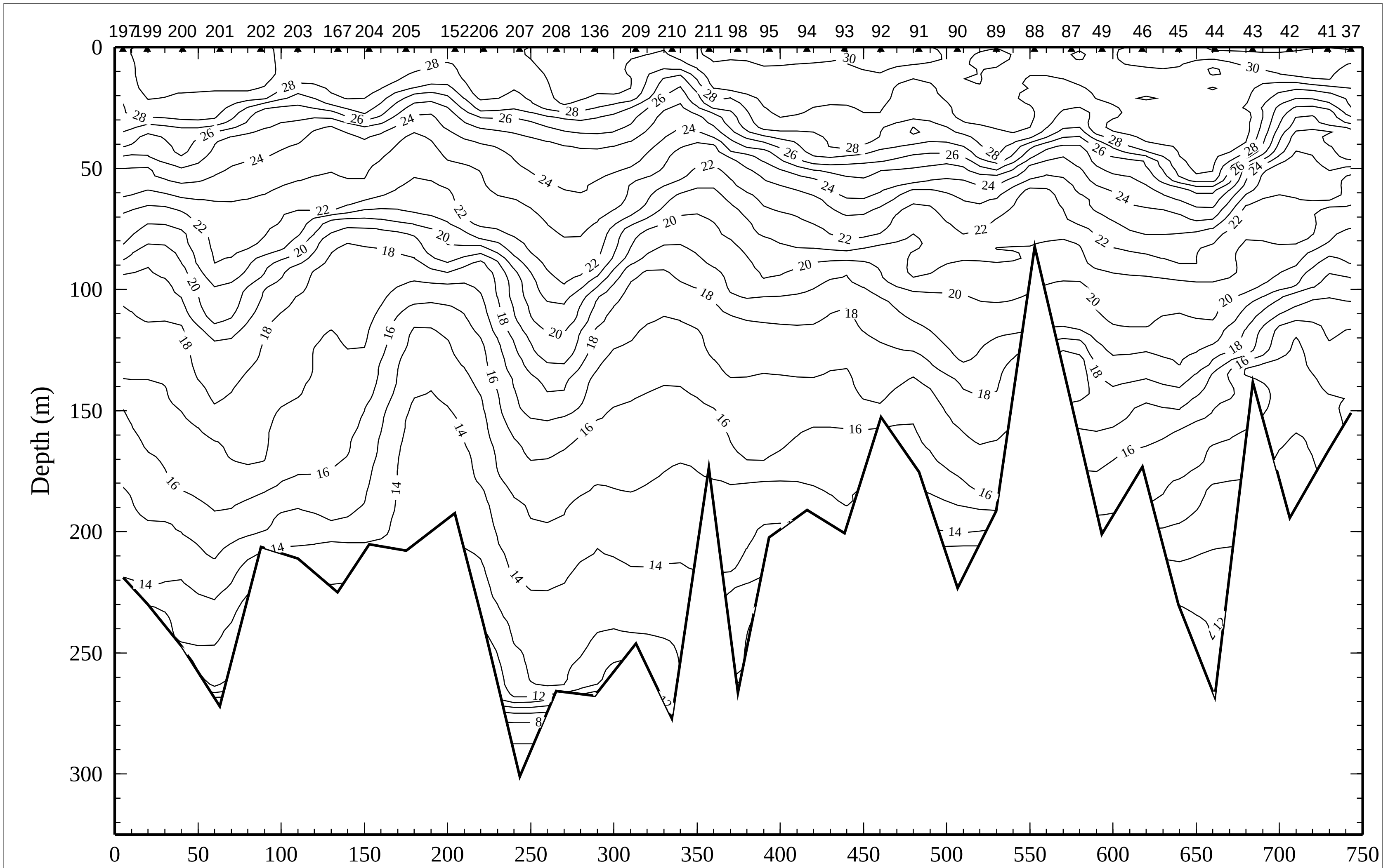

Figure 6.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

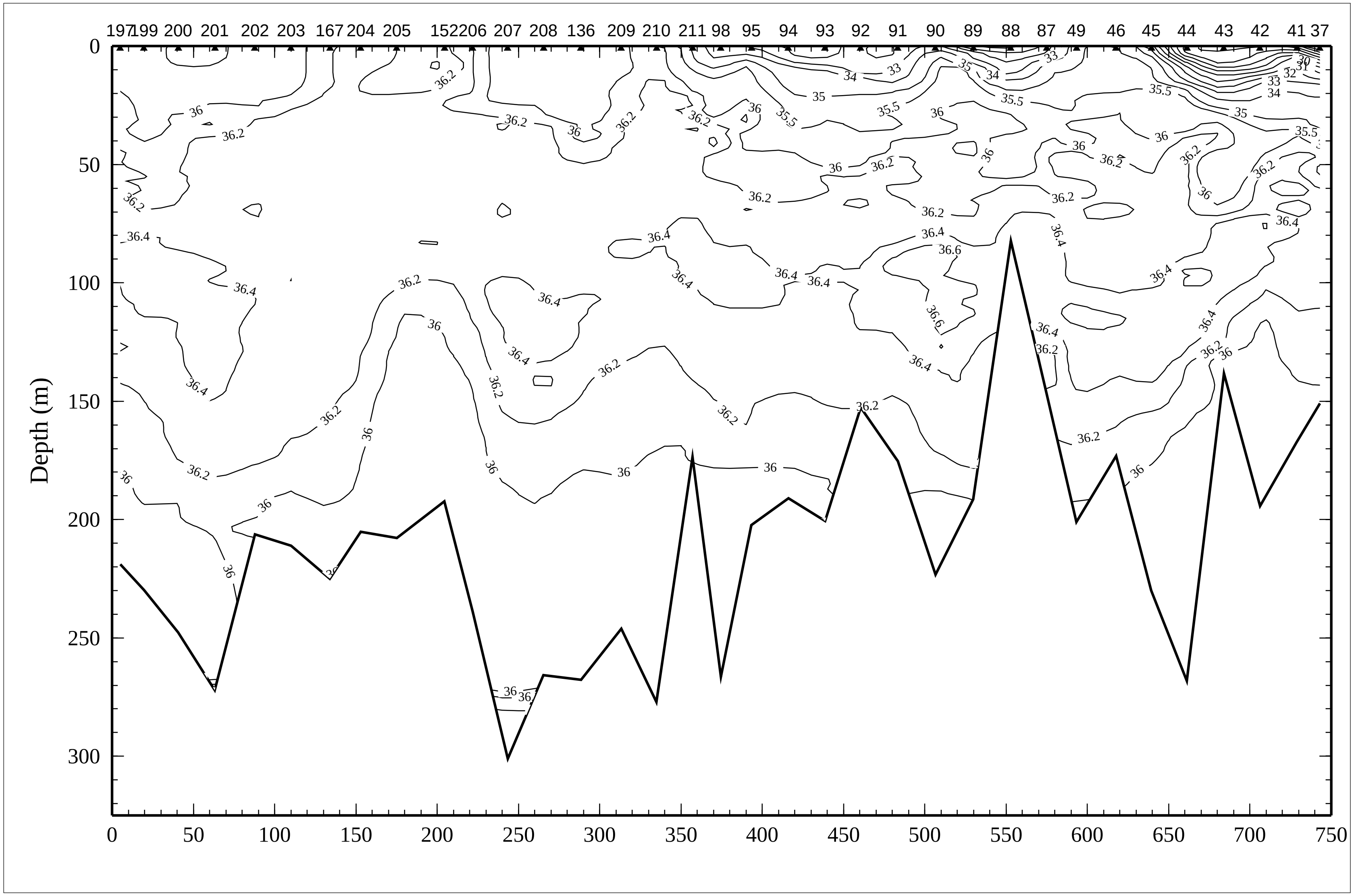

Figure 6.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

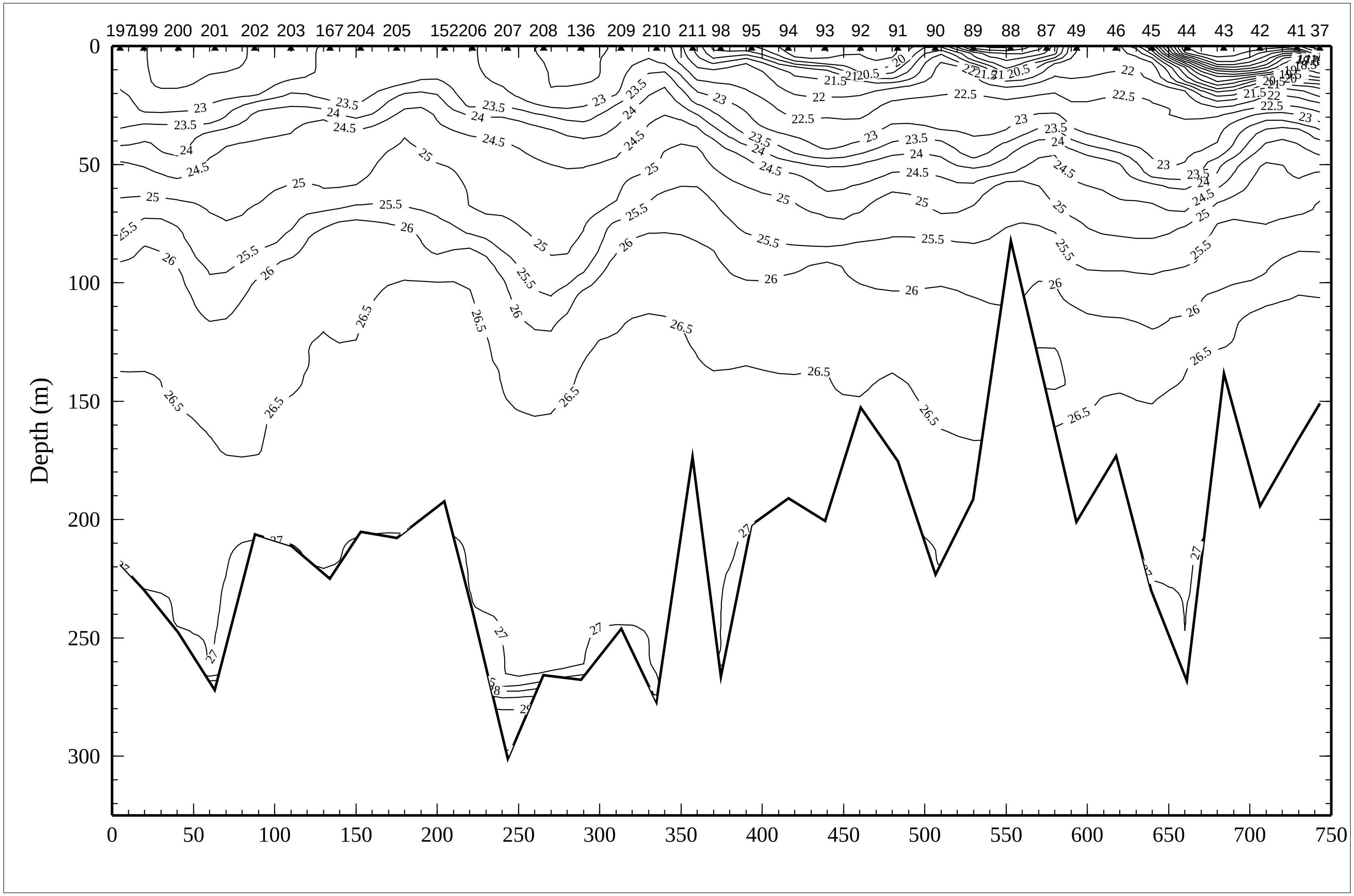

Figure 6.9.3. Density anomaly (σ_θ in kg·m^{-3}) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

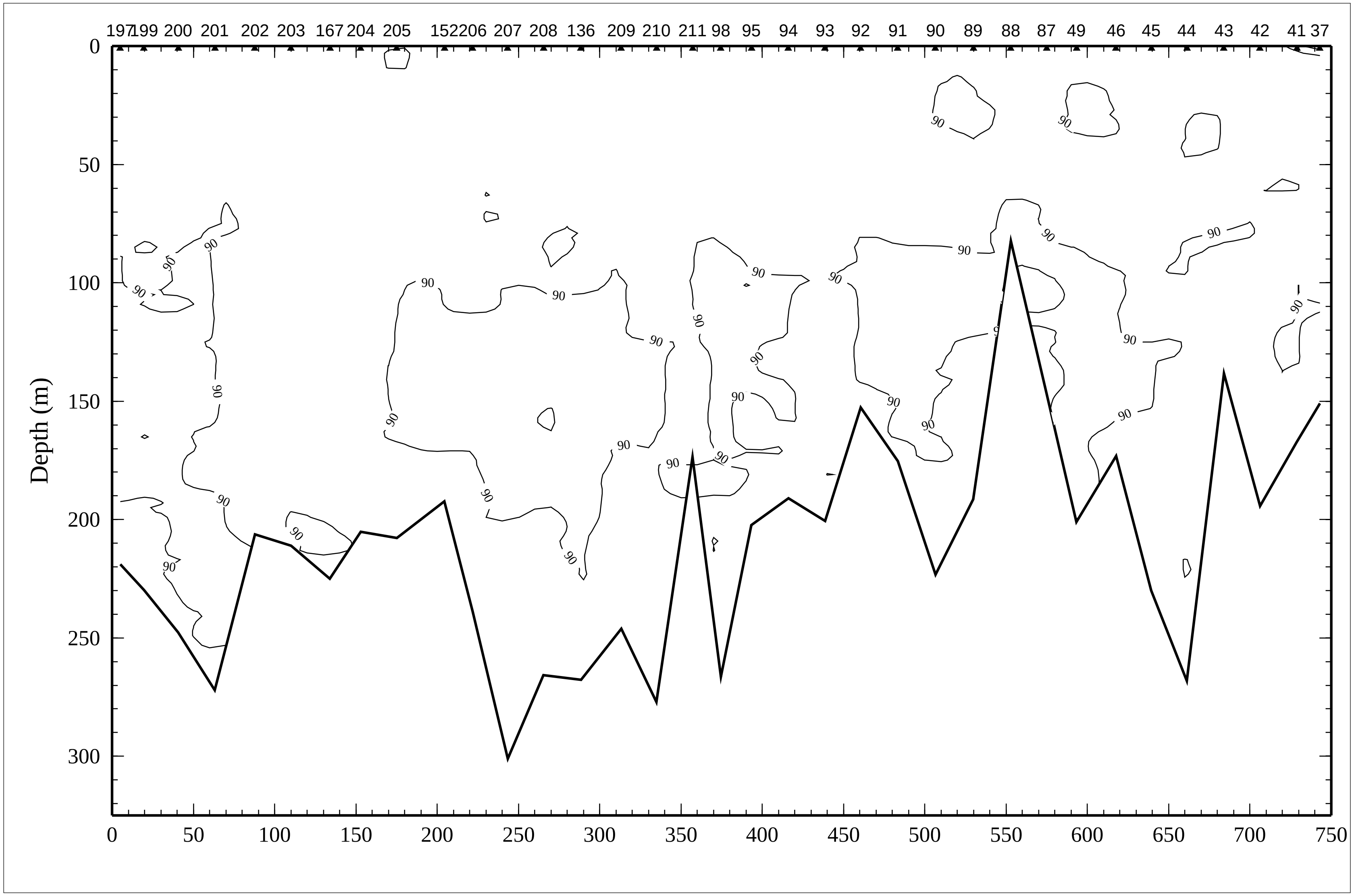

Figure 6.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

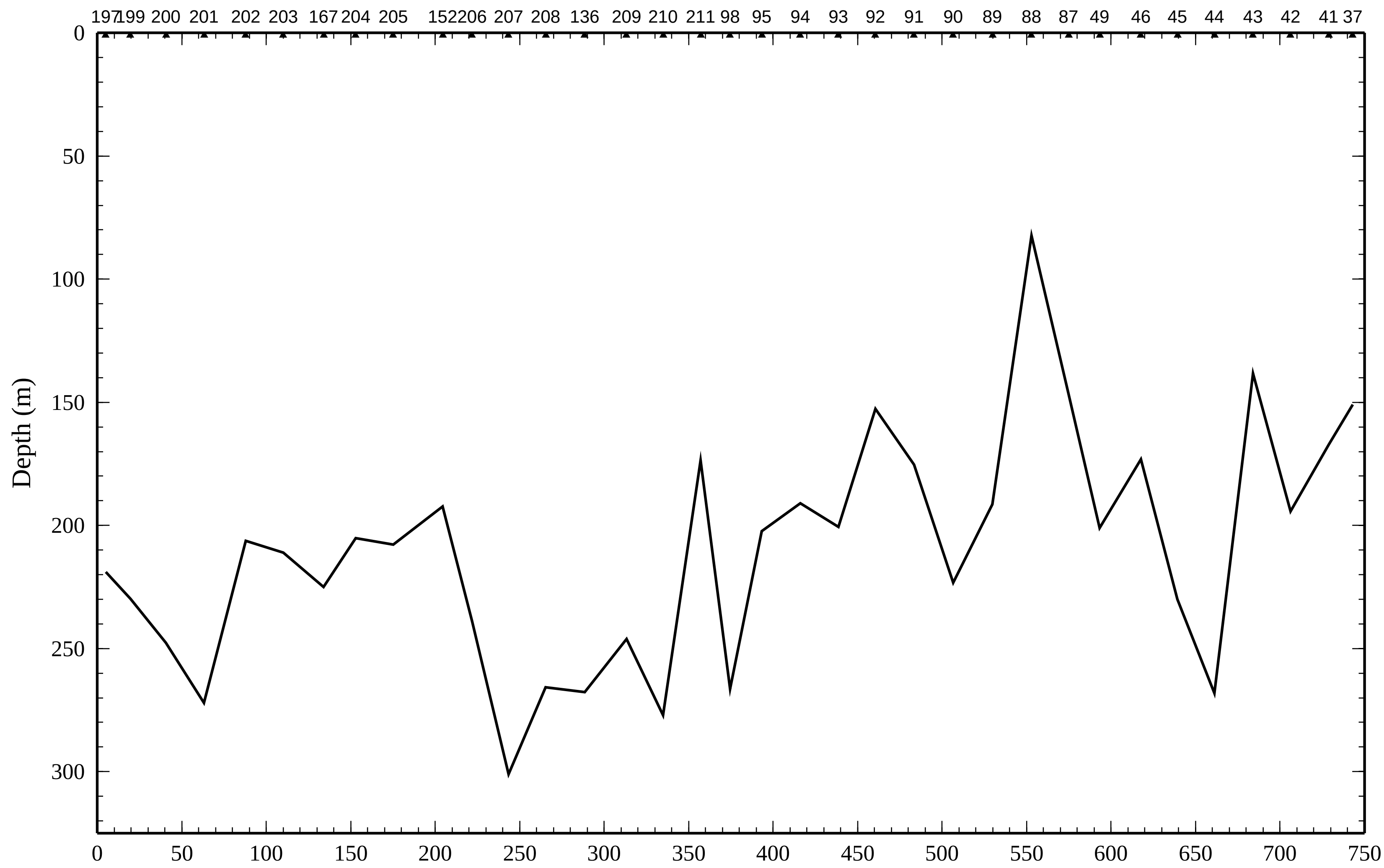

Figure 6.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H06, 25 July - 7 August 1993. All values on line 9 were less than 0.05.

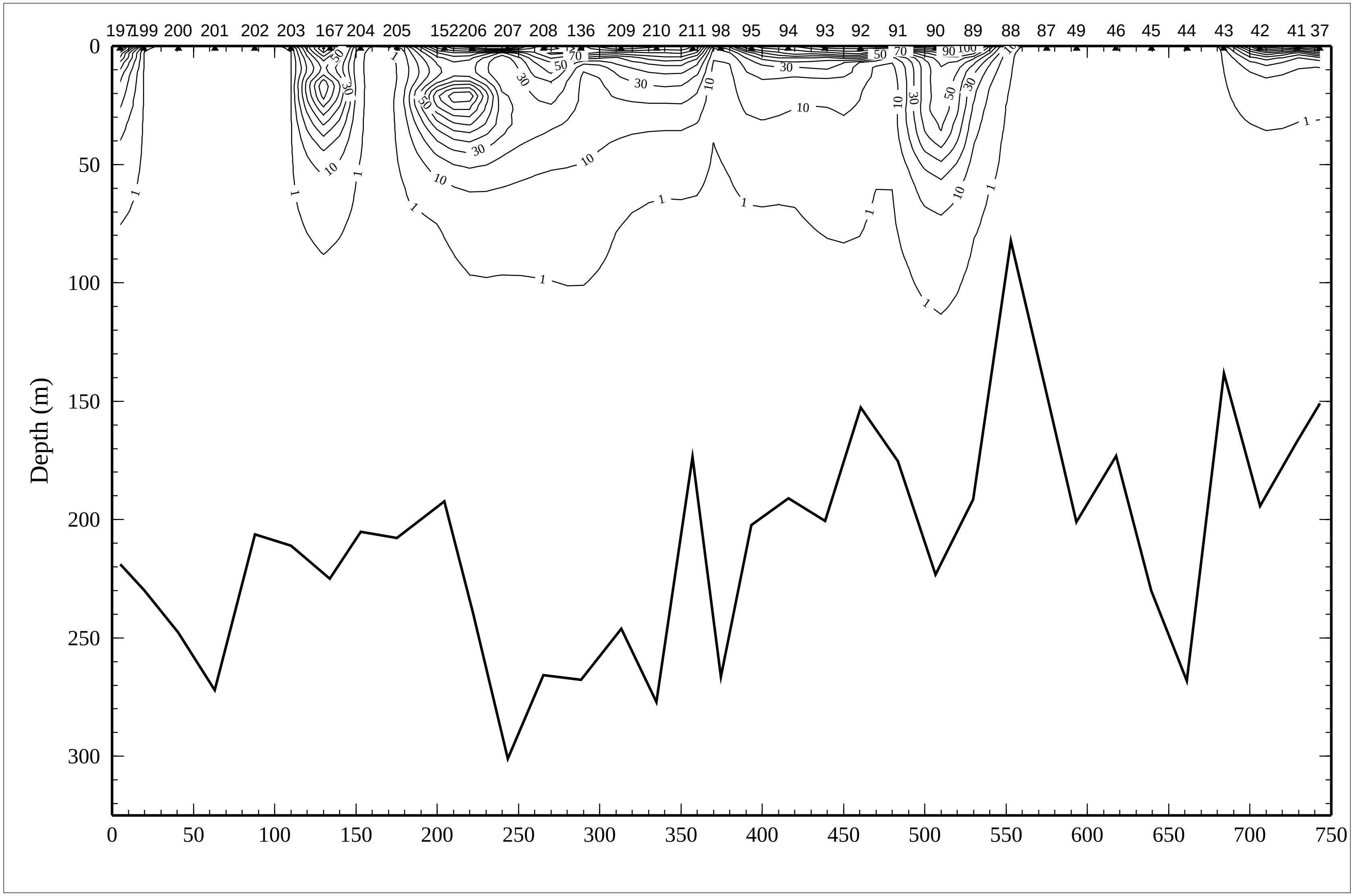

Figure 6.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

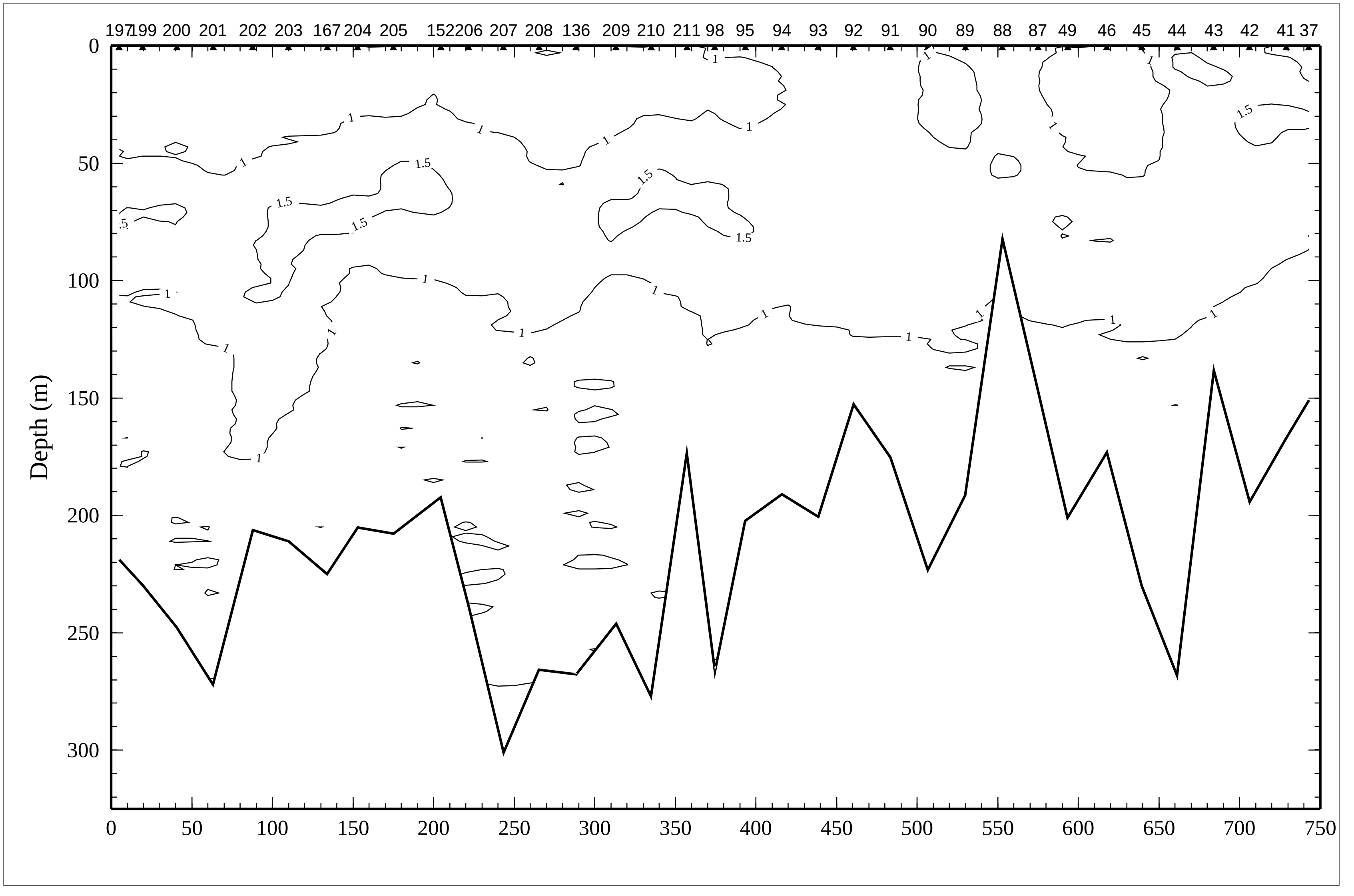

Figure 6.9.7. Relative fluorescence on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

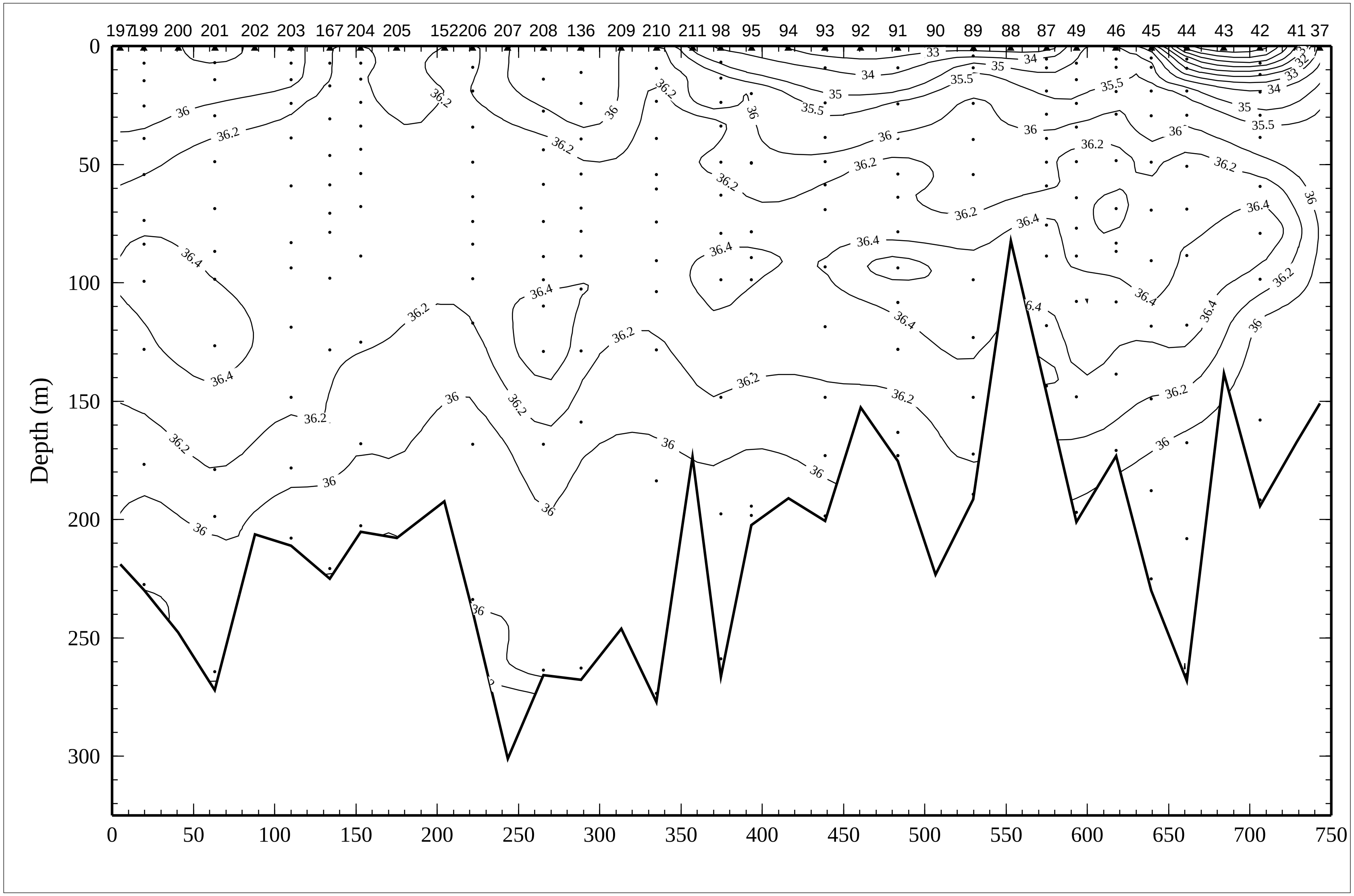

Figure 6.9.8. Bottle salinity on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

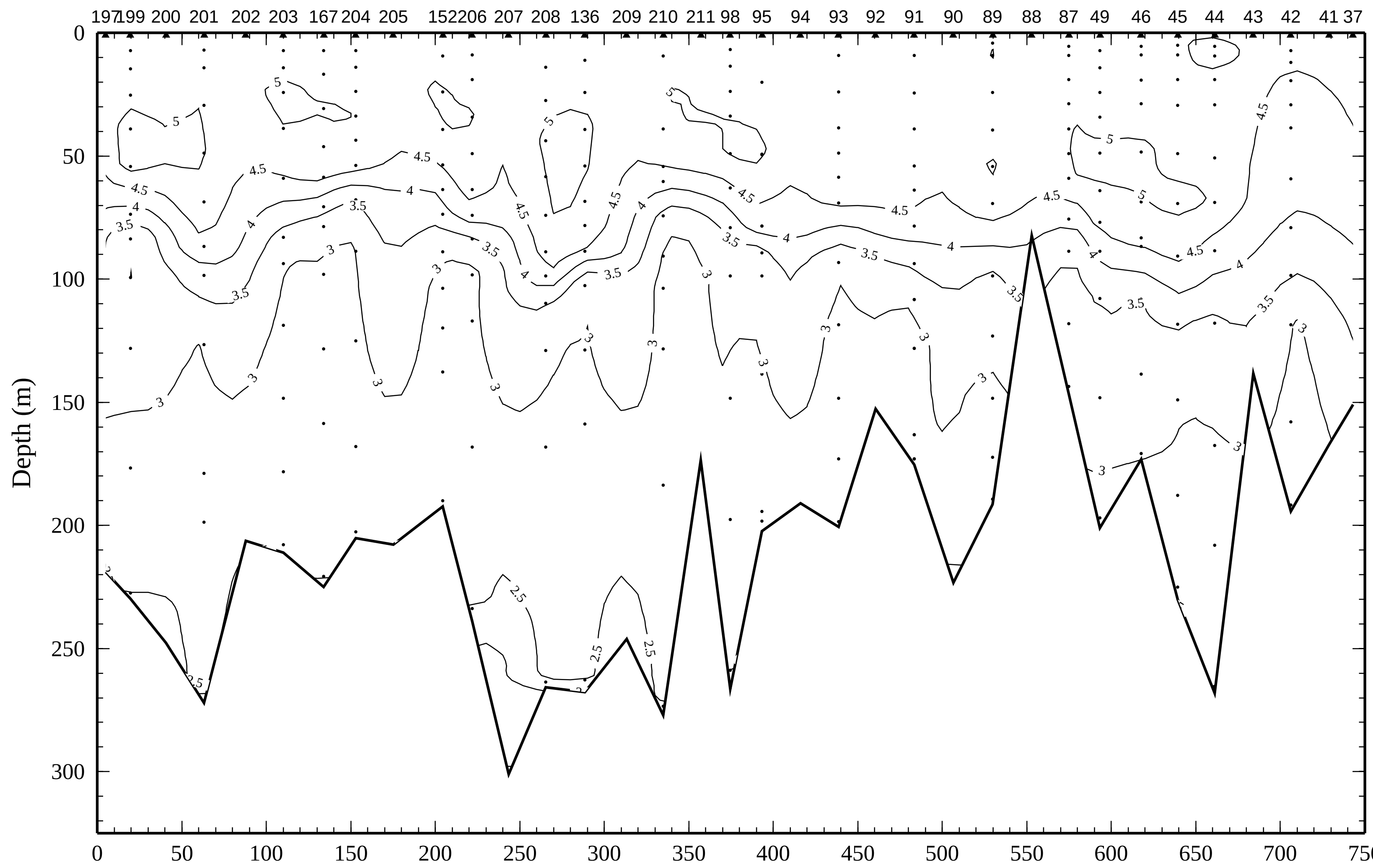

Figure 6.9.9. Dissolved oxygen ($ml \cdot l^{-1}$) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

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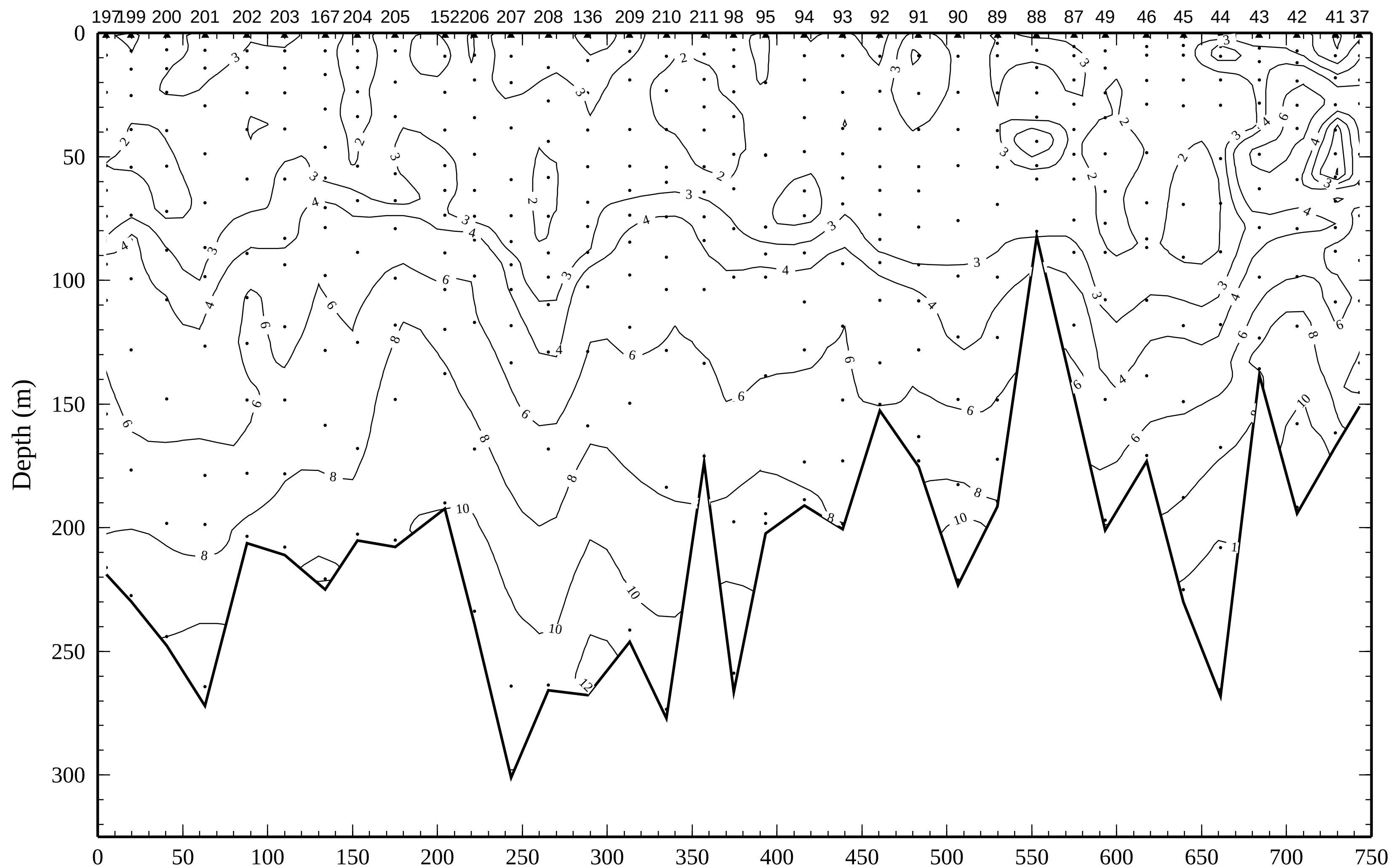


Figure 6.9.10. Silicate ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

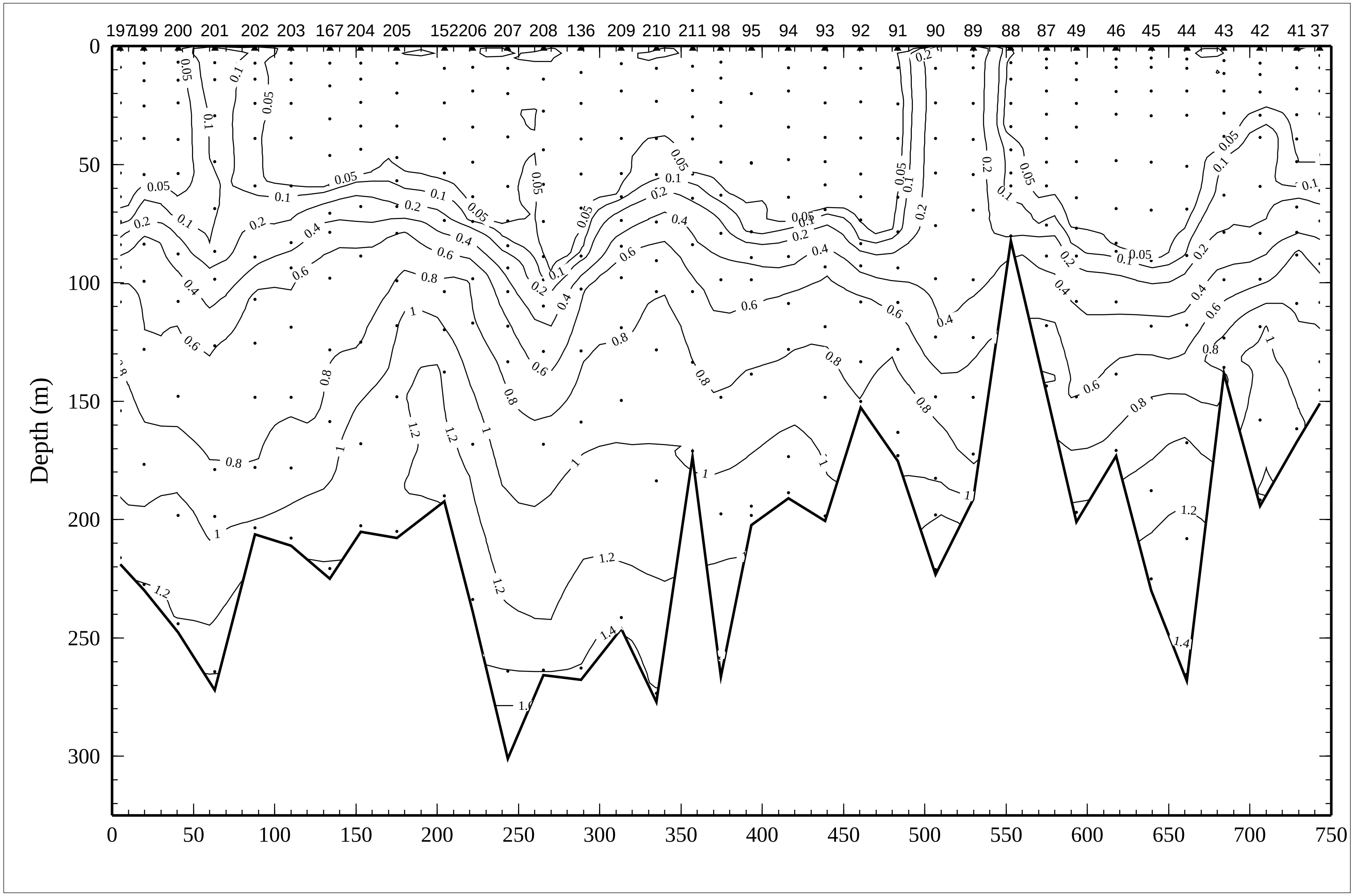
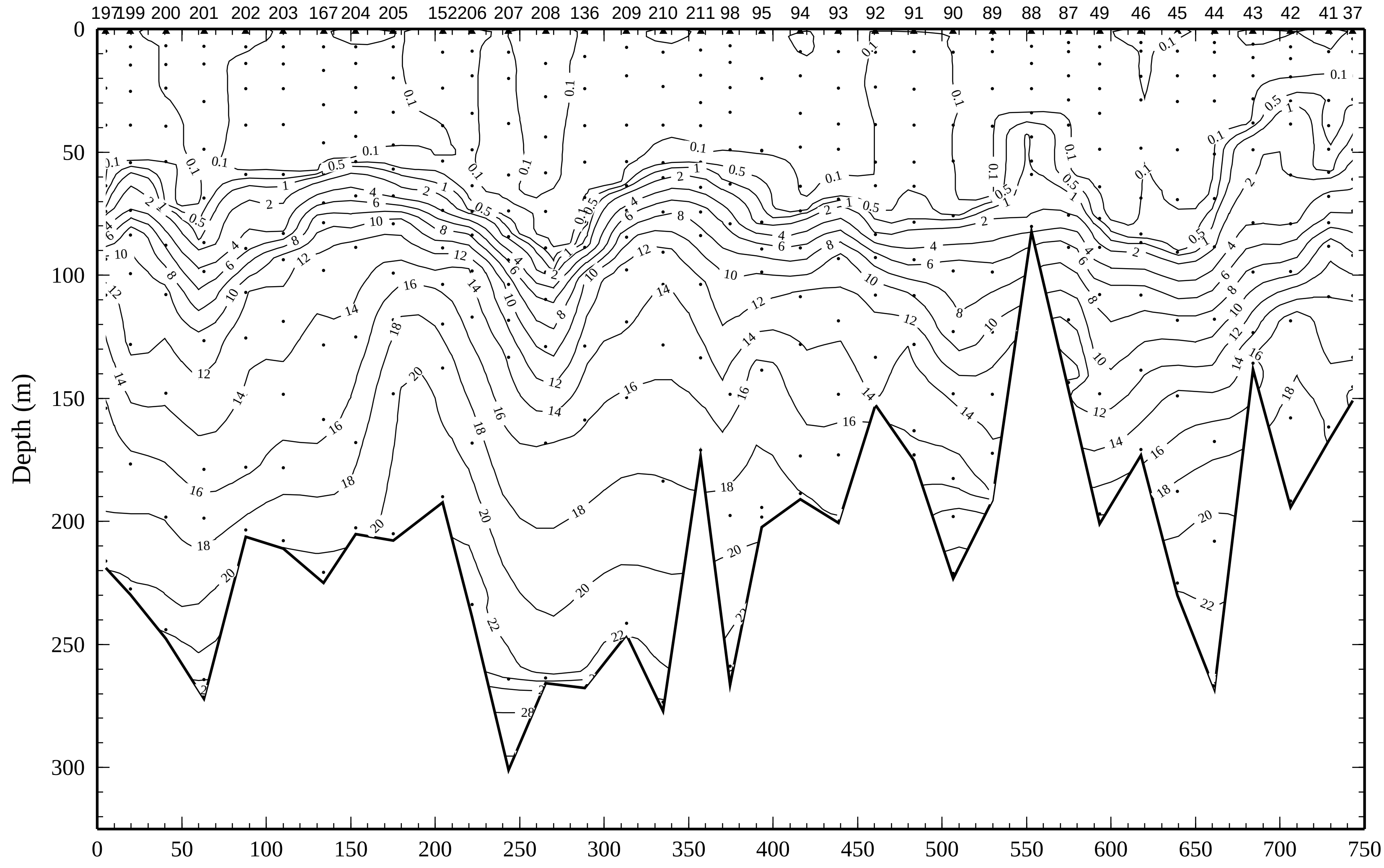


Figure 6.9.11. Phosphate (μmol·l^{-1}) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.



F149

Figure 6.9.12. Nitrate (µmol·l⁻¹) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

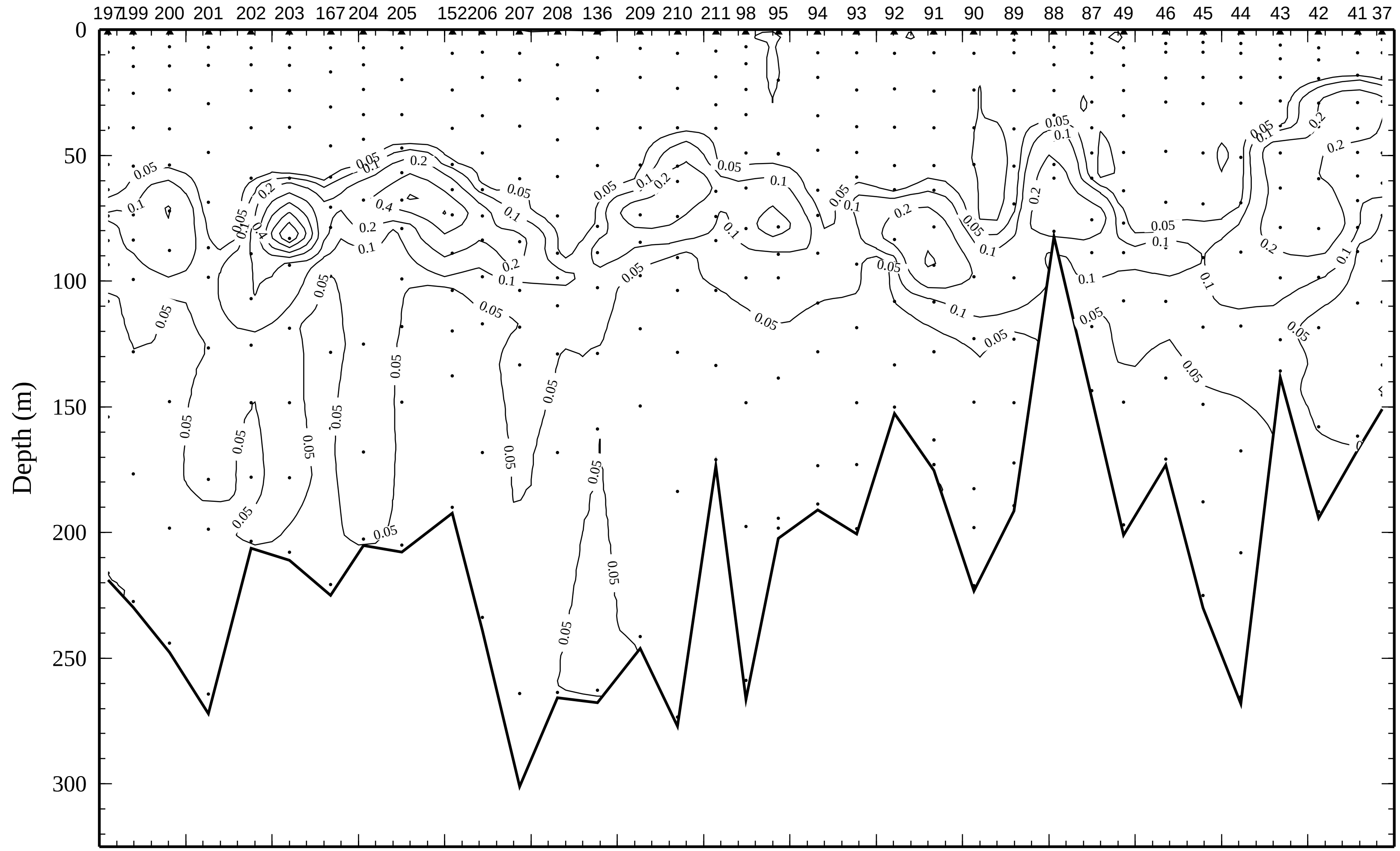


Figure 6.9.13. Nitrite (µmol·l^{-1}) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

F151

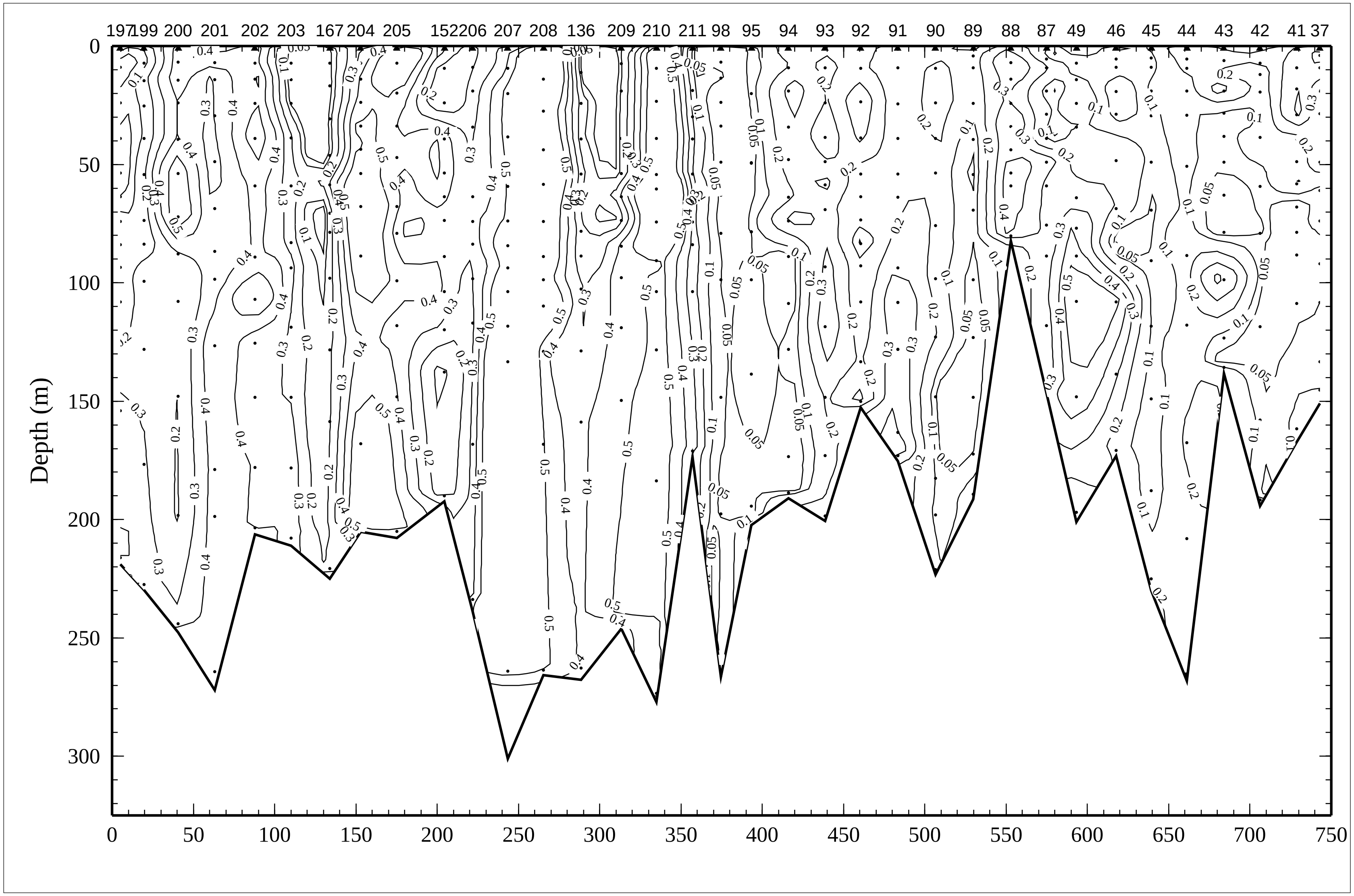


Figure 6.9.14. Ammonium (μmol·l^{-1}) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

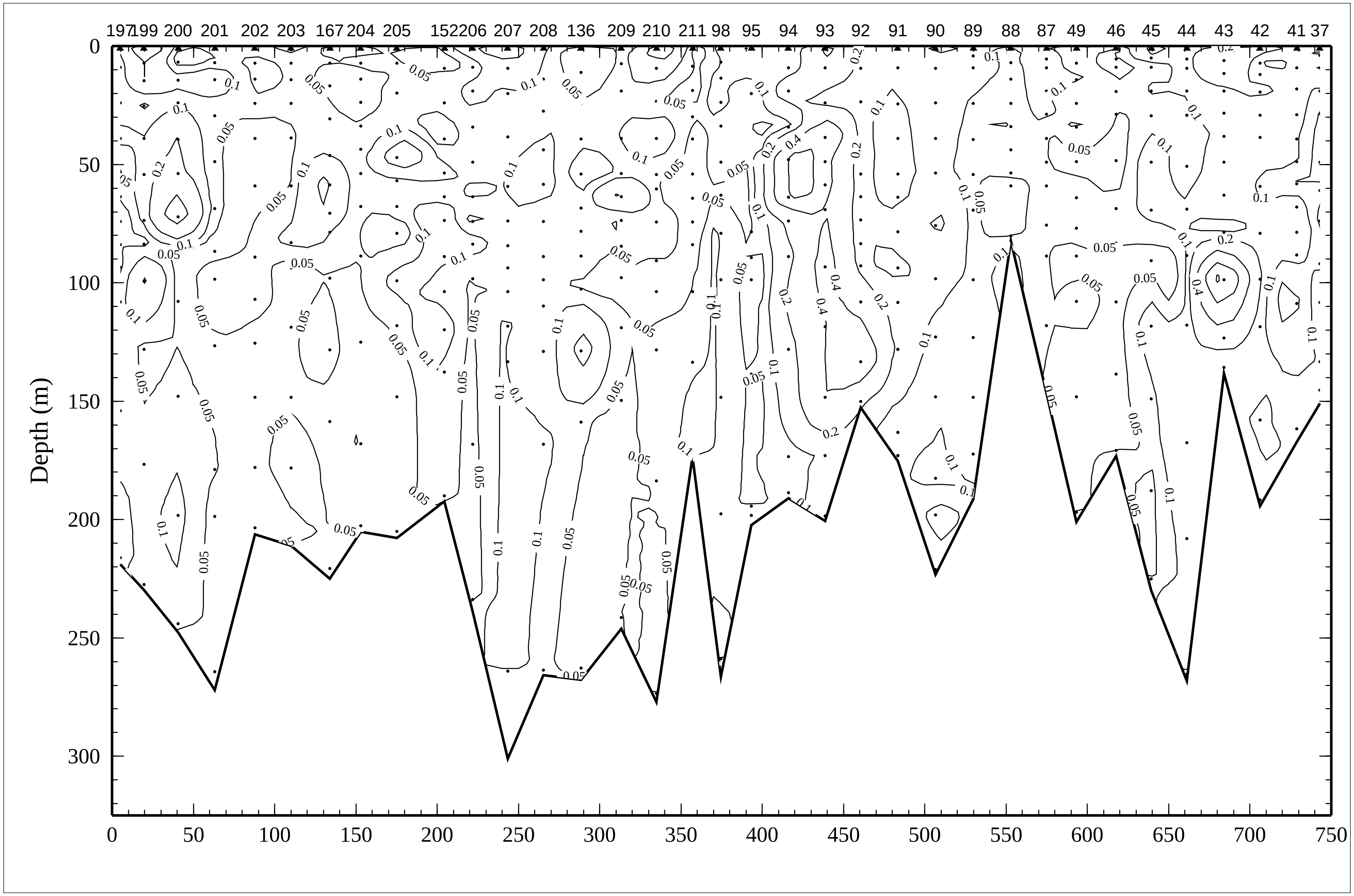


Figure 6.9.15. Urea (μmol·l^{-1}) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

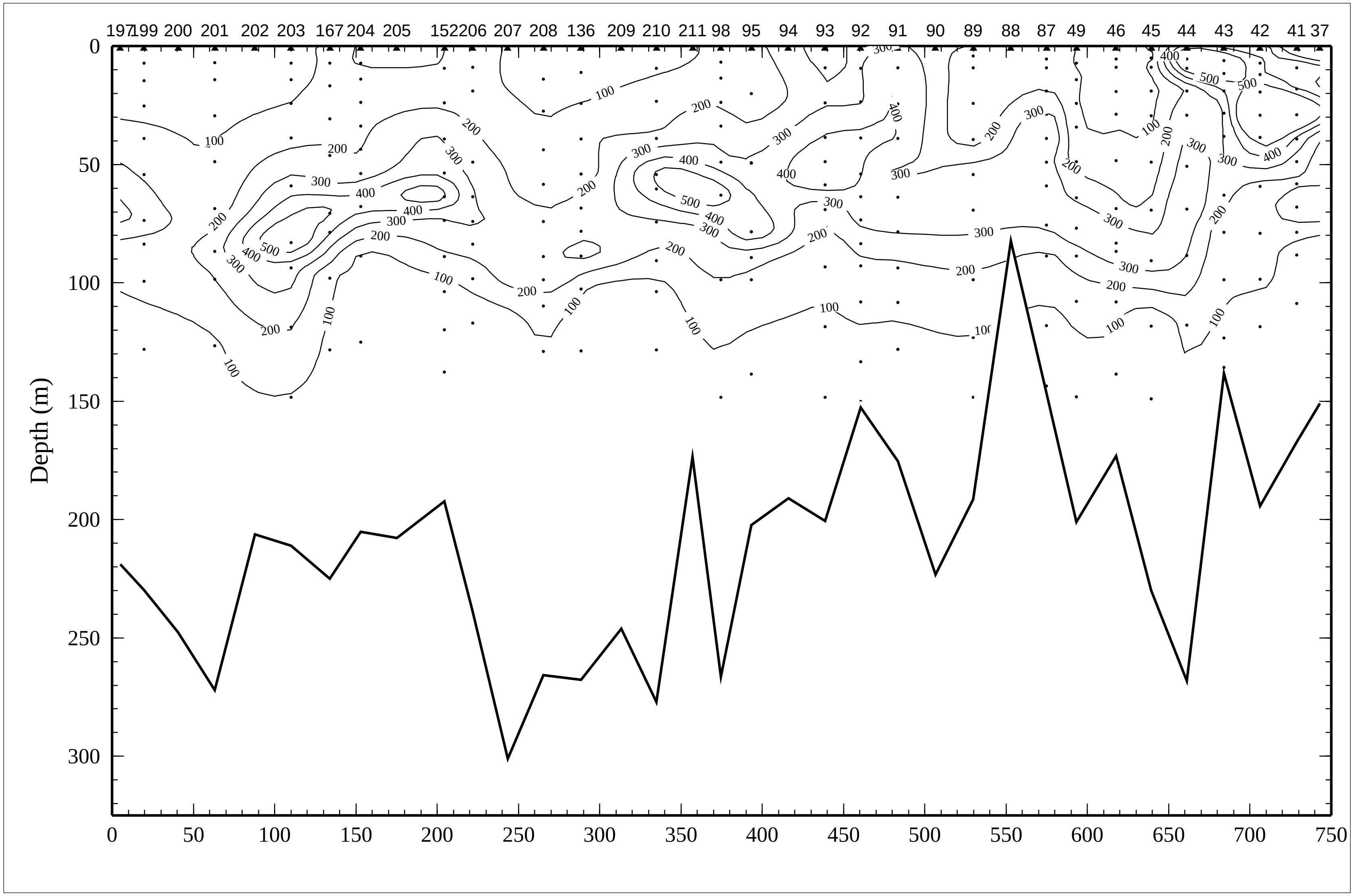


Figure 6.9.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 9 of LATEX A survey H06, 25 July - 7 August 1993.

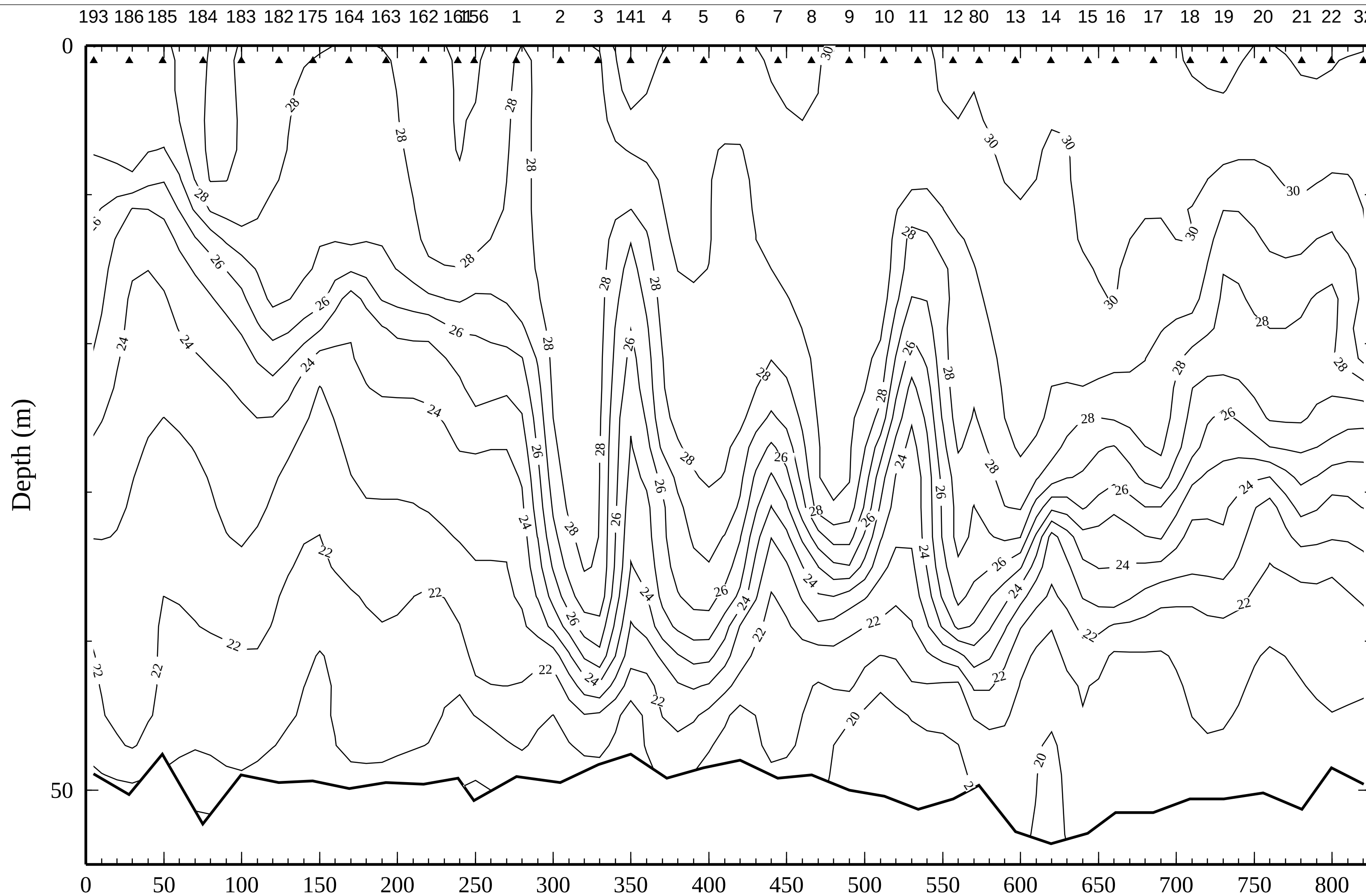


Figure 6.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

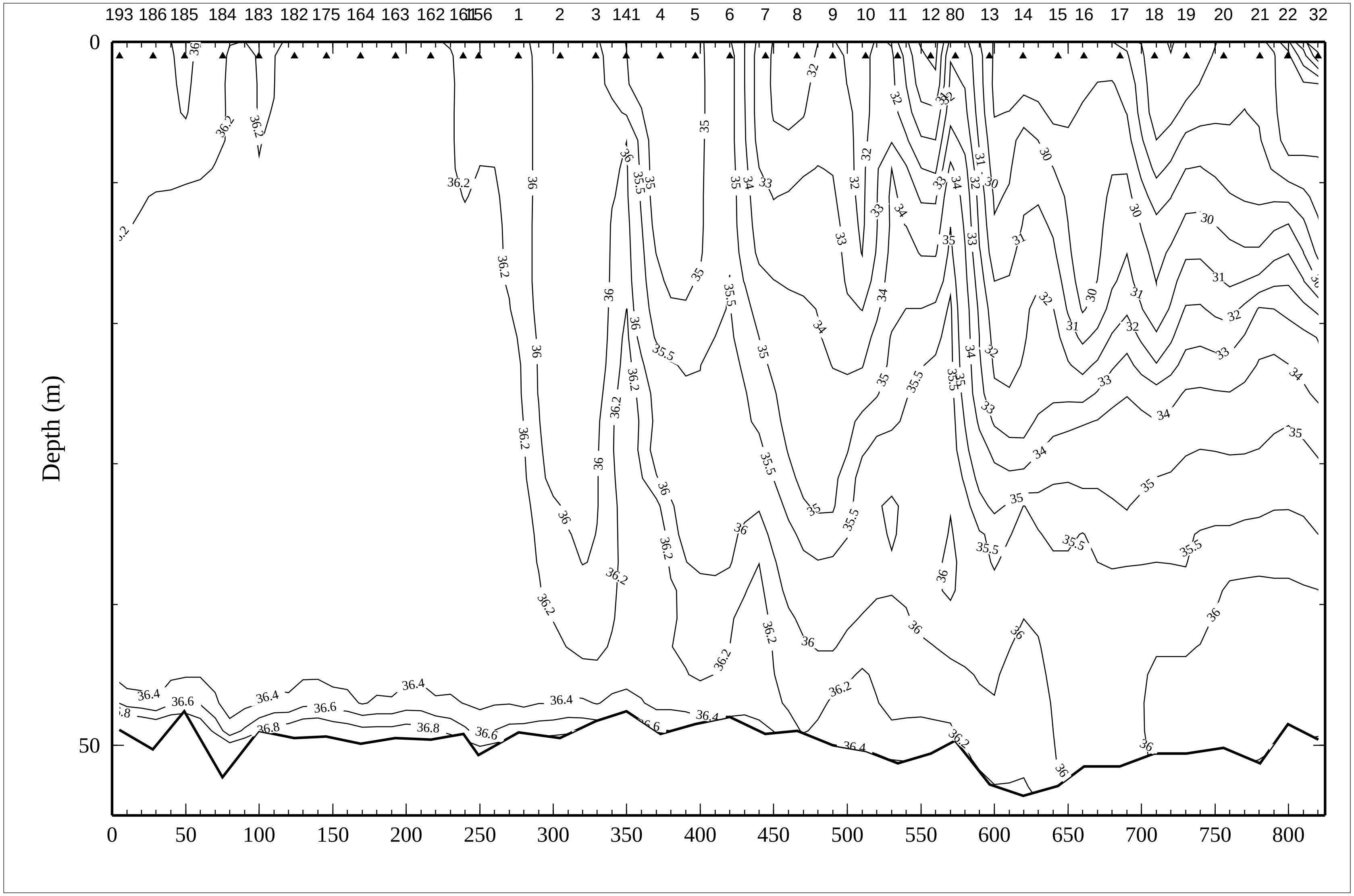


Figure 6.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

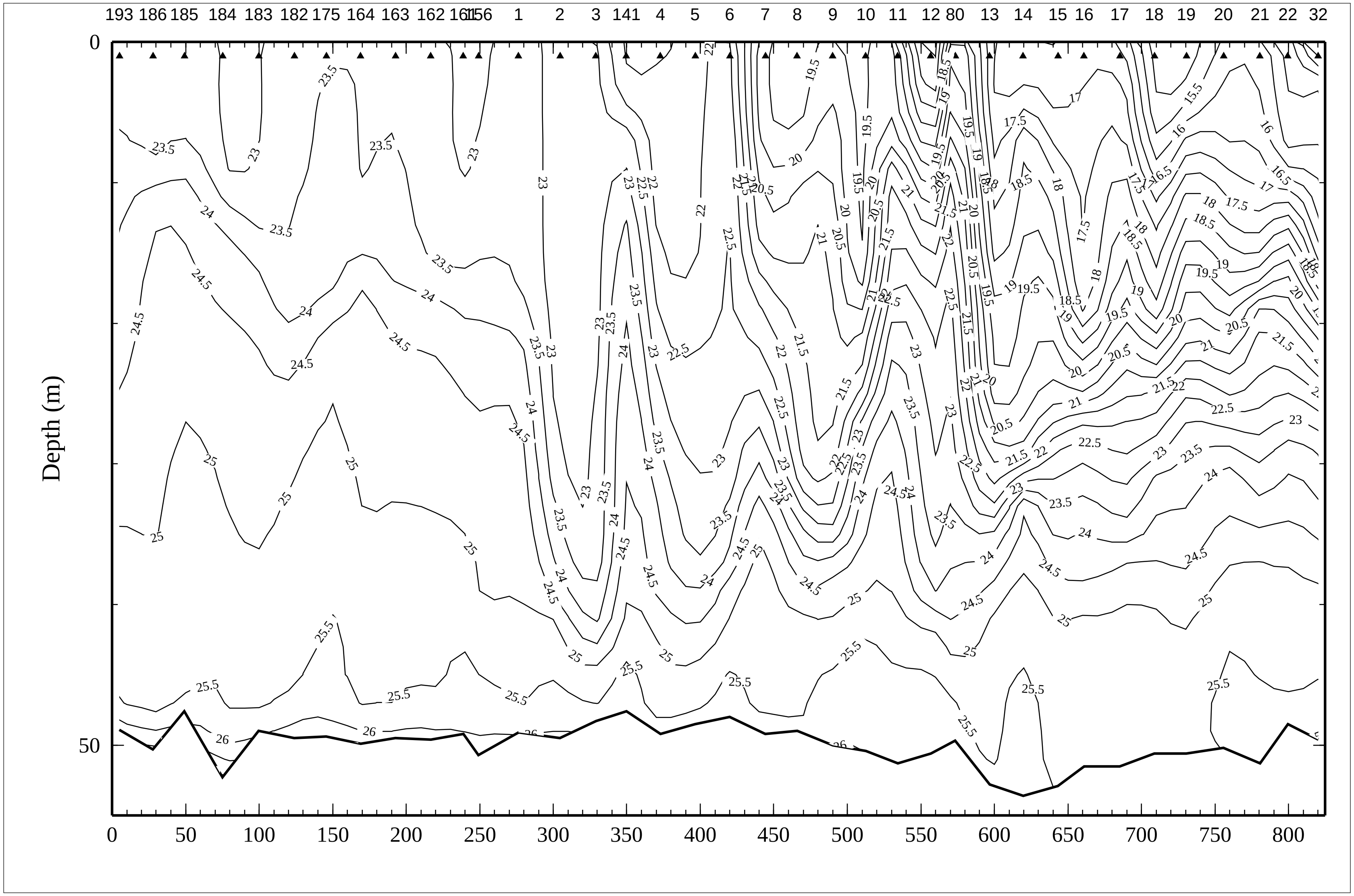


Figure 6.10.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

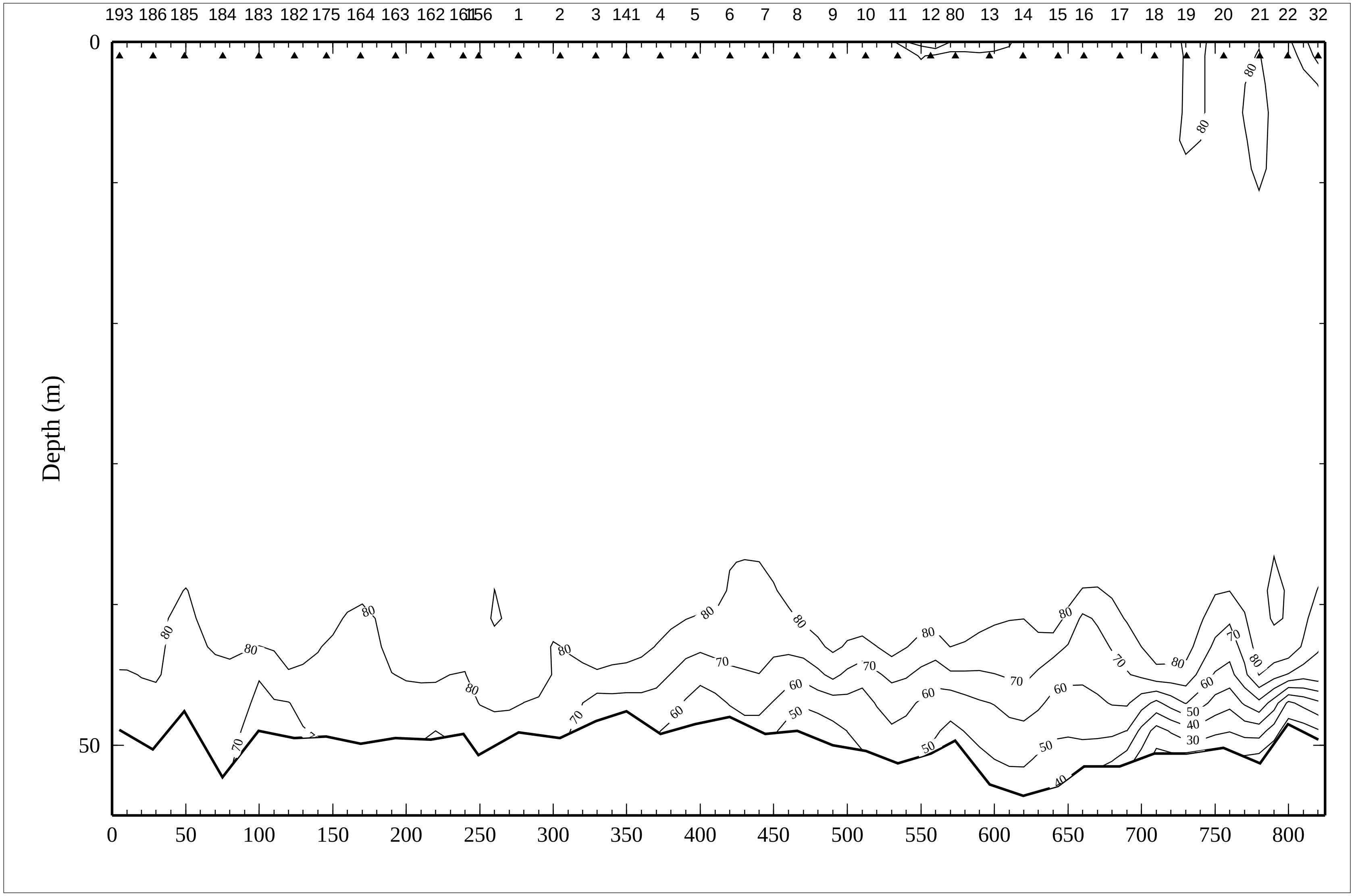


Figure 6.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

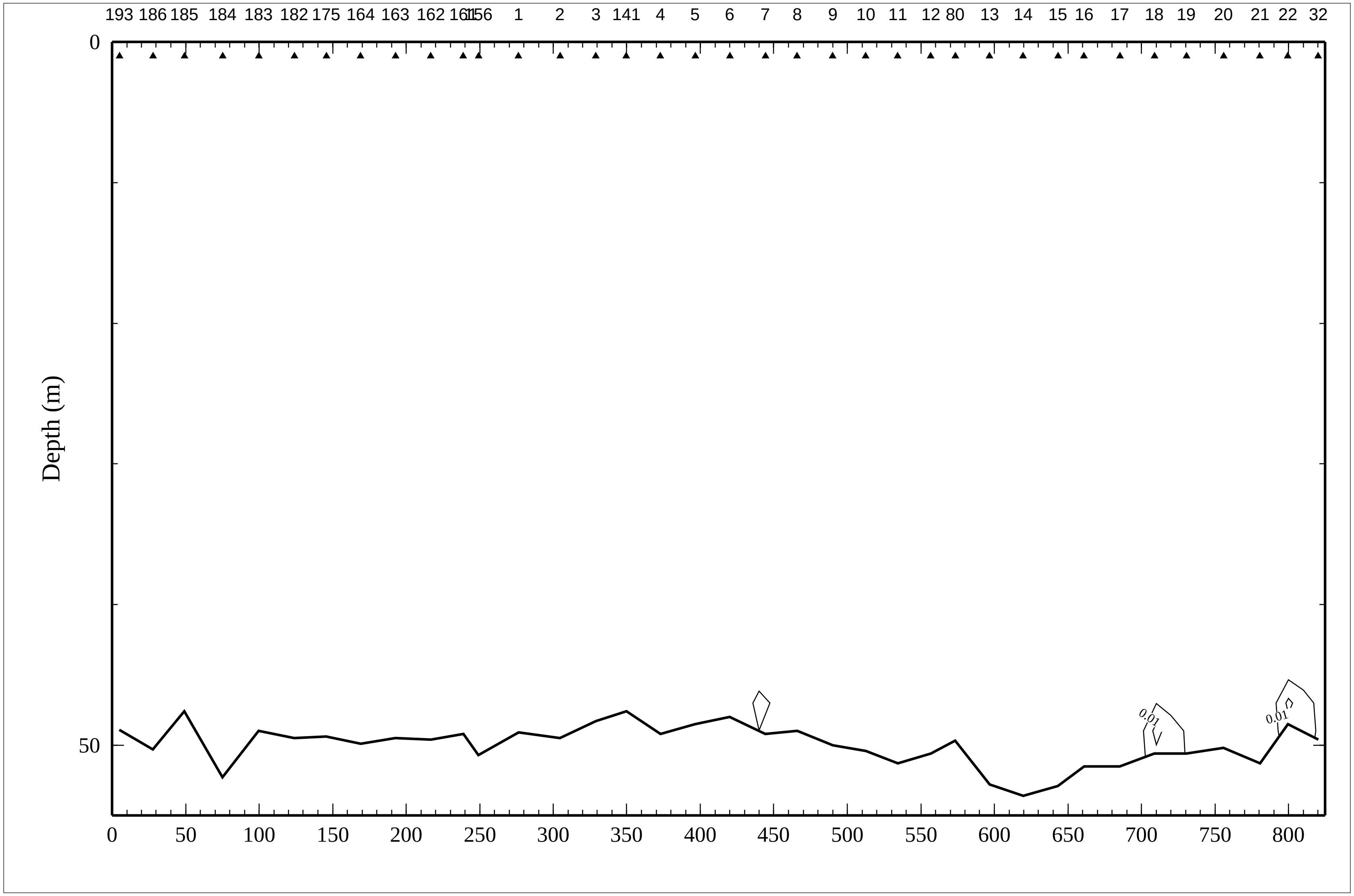


Figure 6.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

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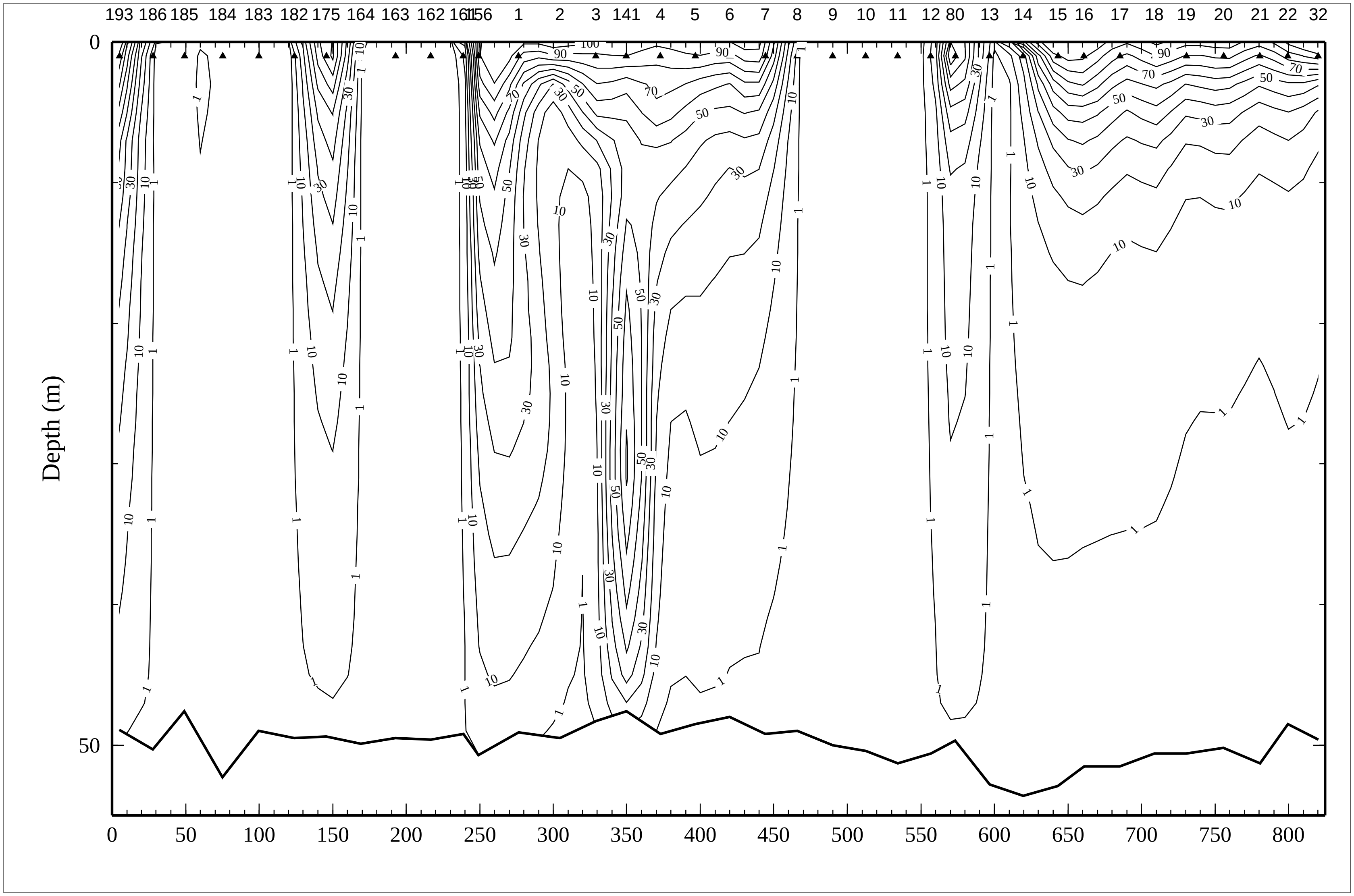

Figure 6.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

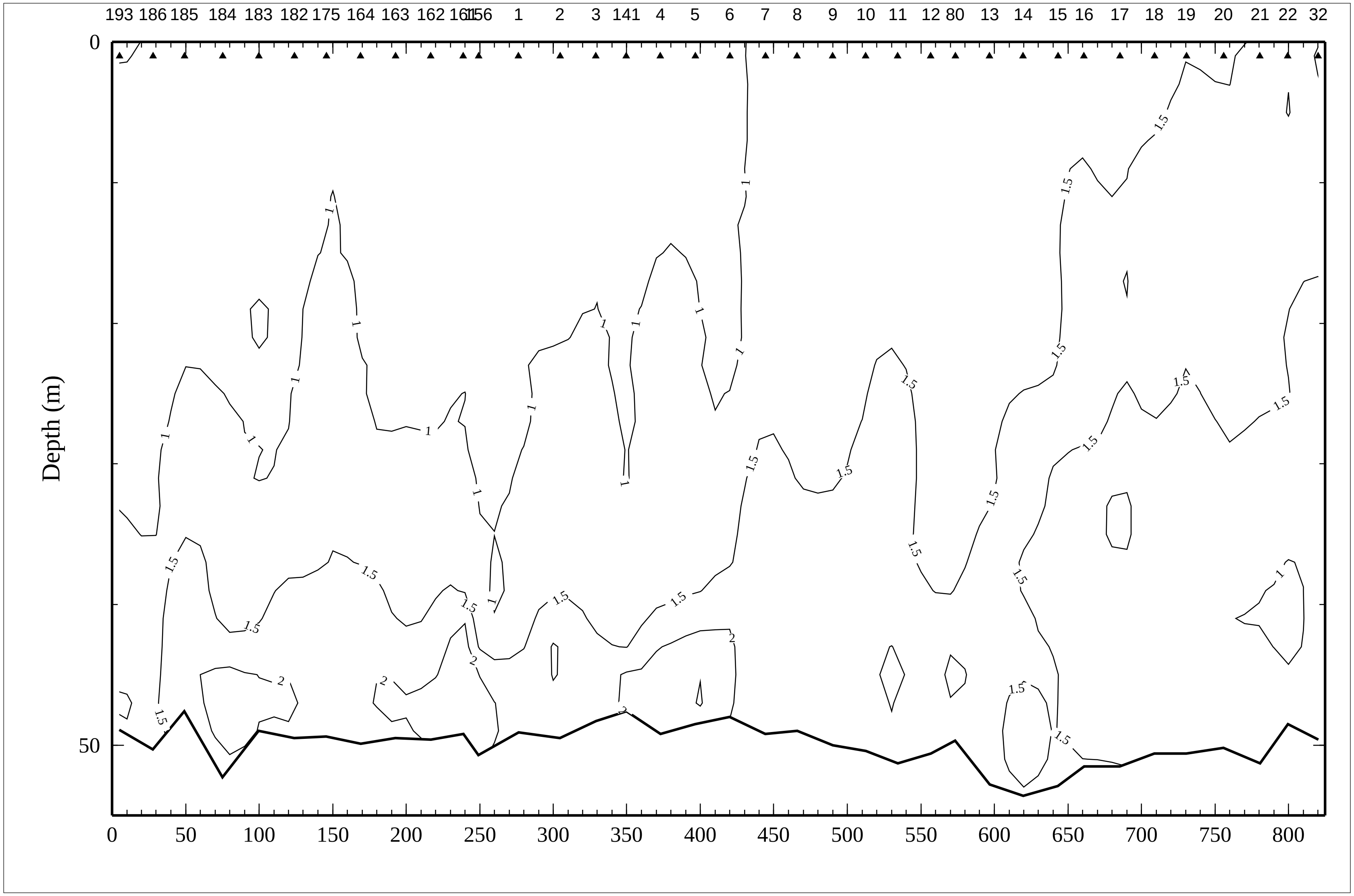

Figure 6.10.7. Relative fluorescence on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

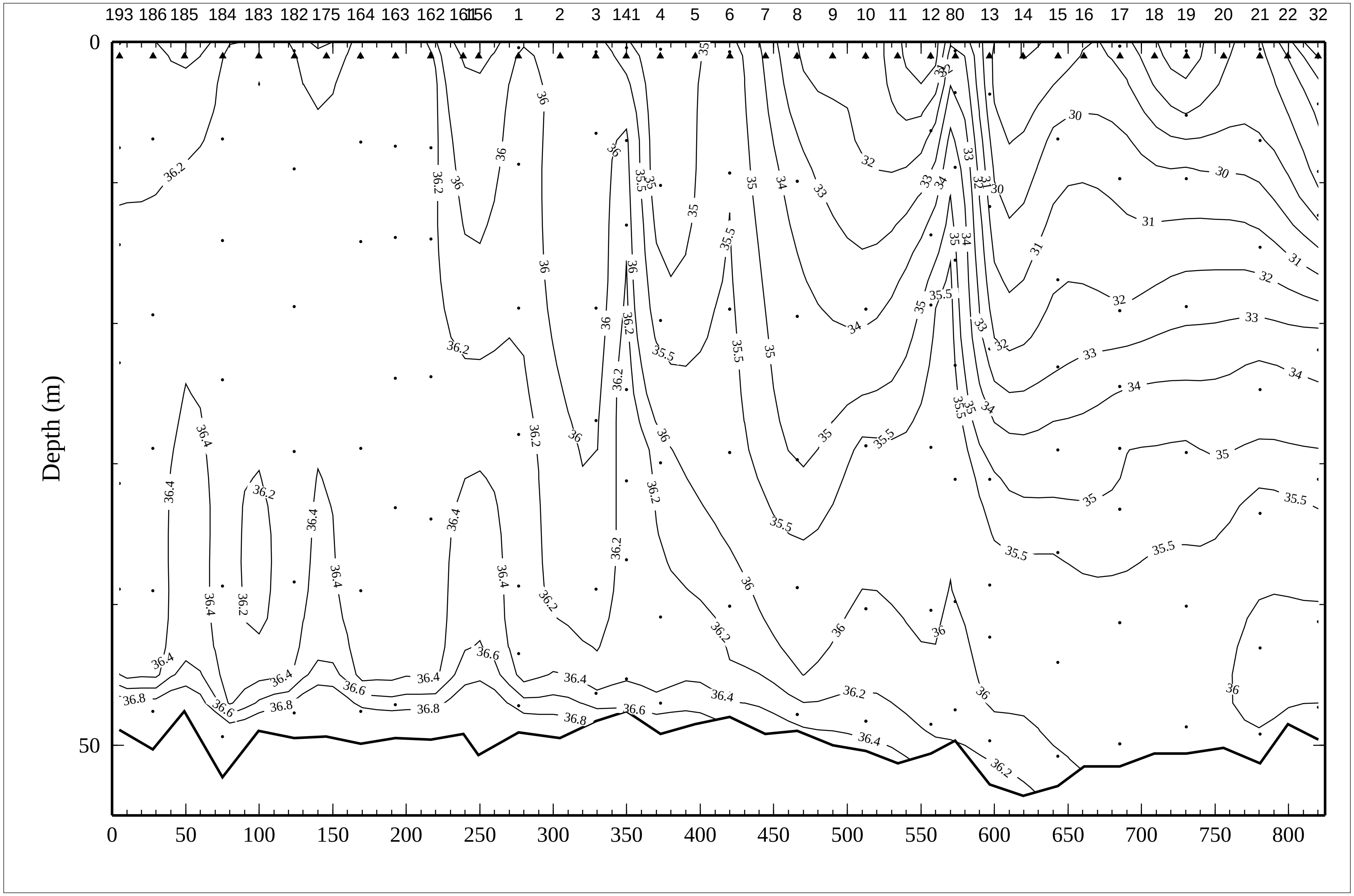

Figure 6.10.8. Bottle salinity on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

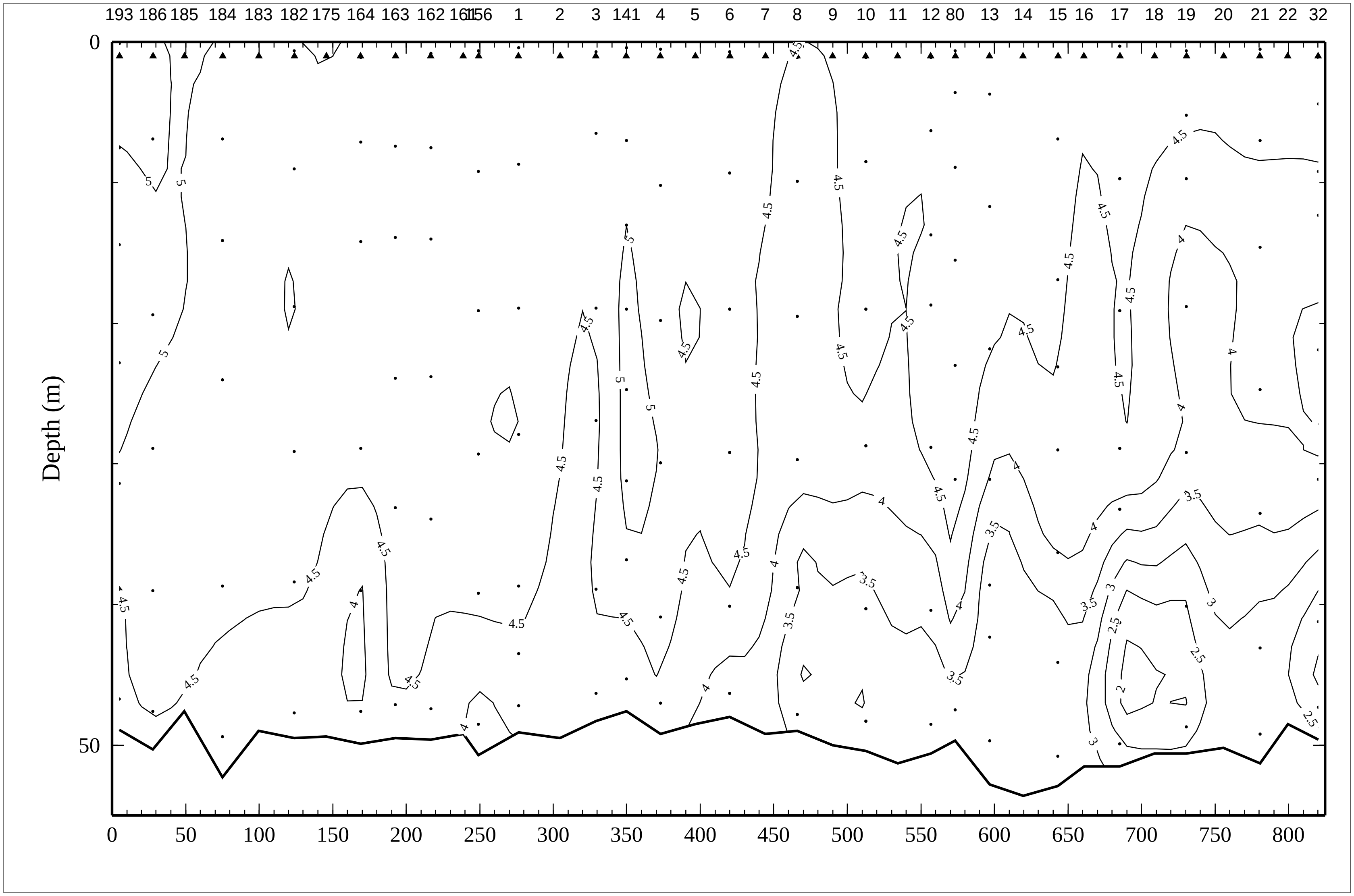

Figure 6.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

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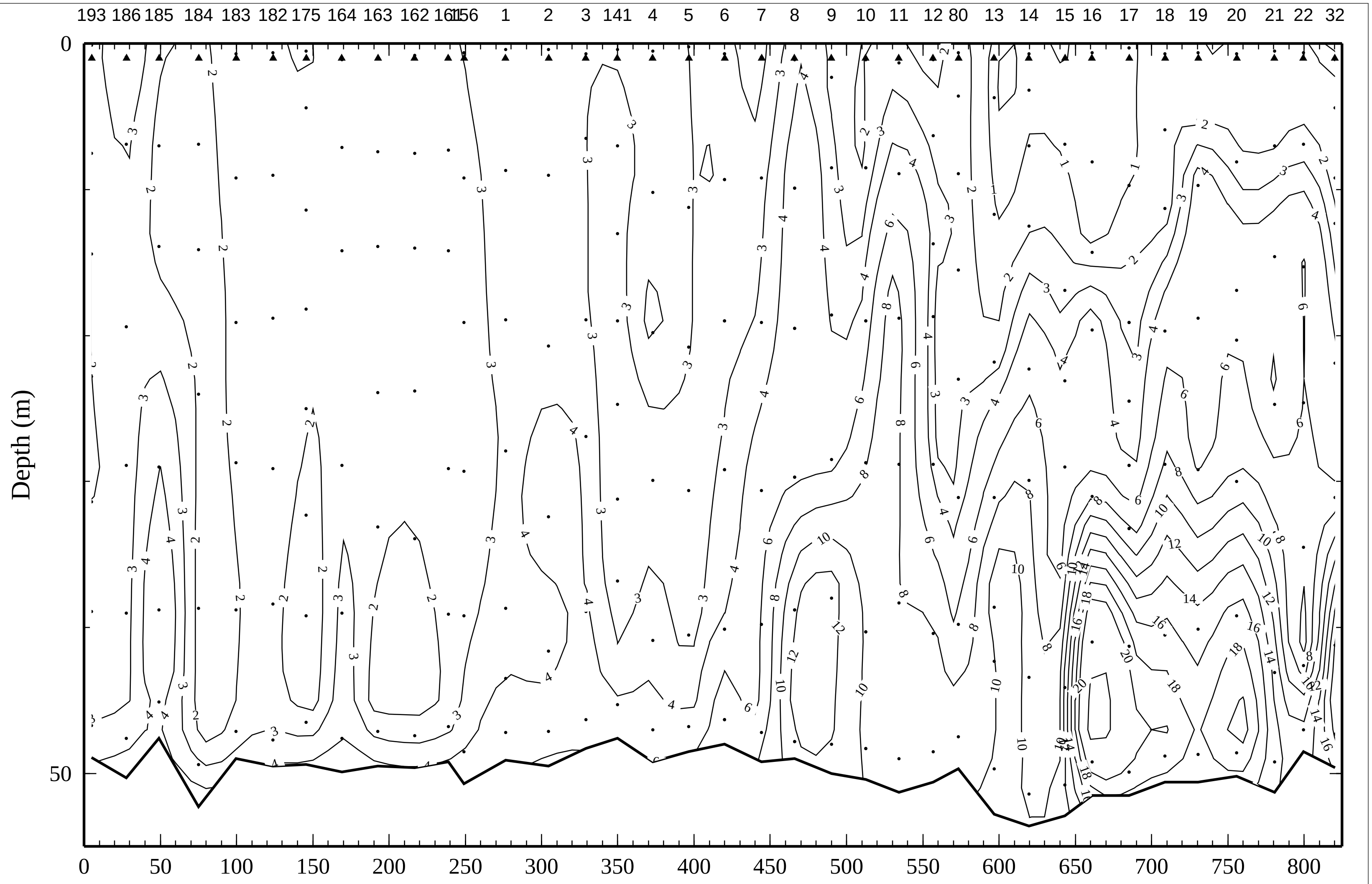

Figure 6.10.10. Silicate (μmol·l^{-1}) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

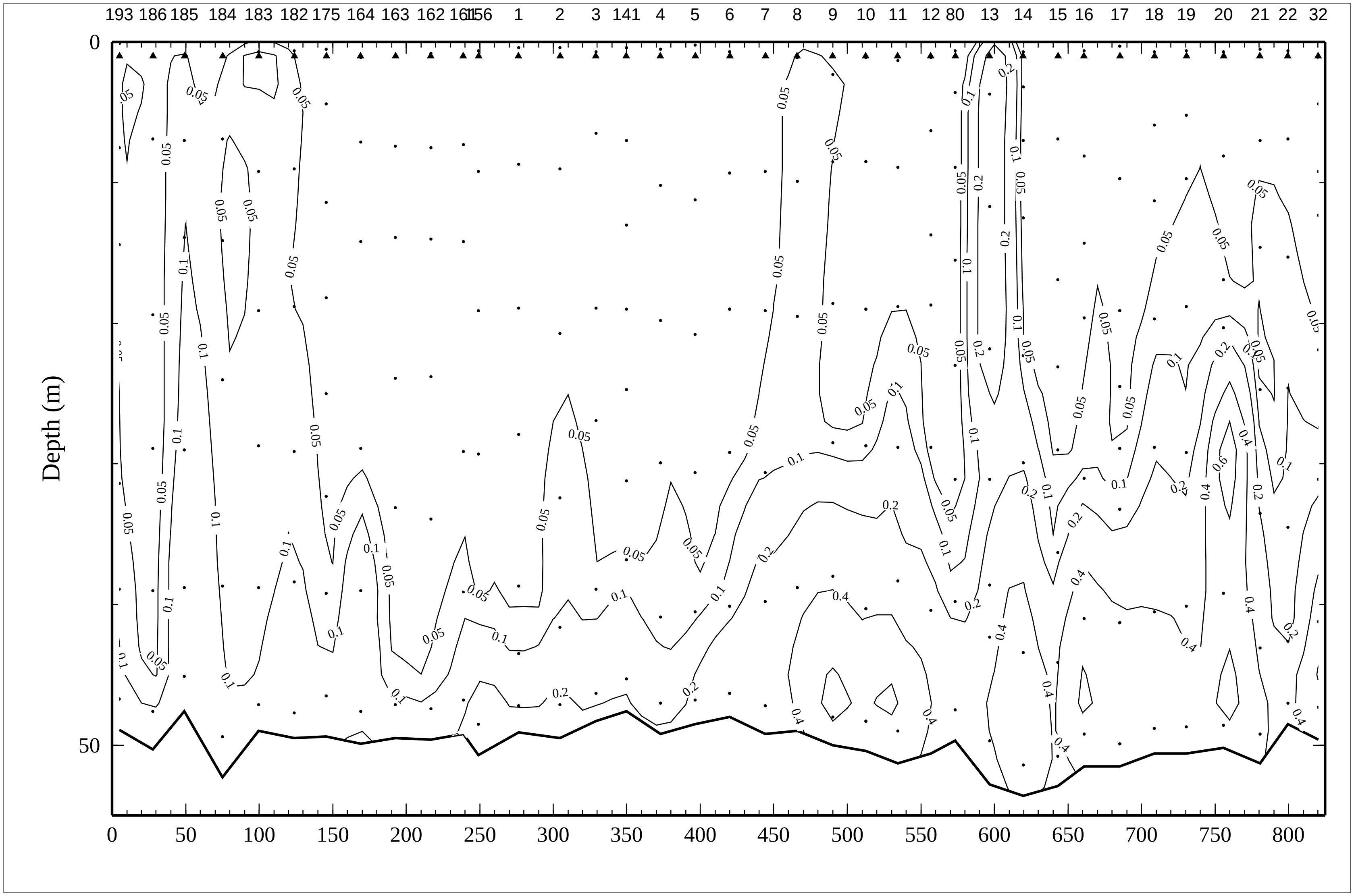

Figure 6.10.11. Phosphate (μmol·l⁻¹) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

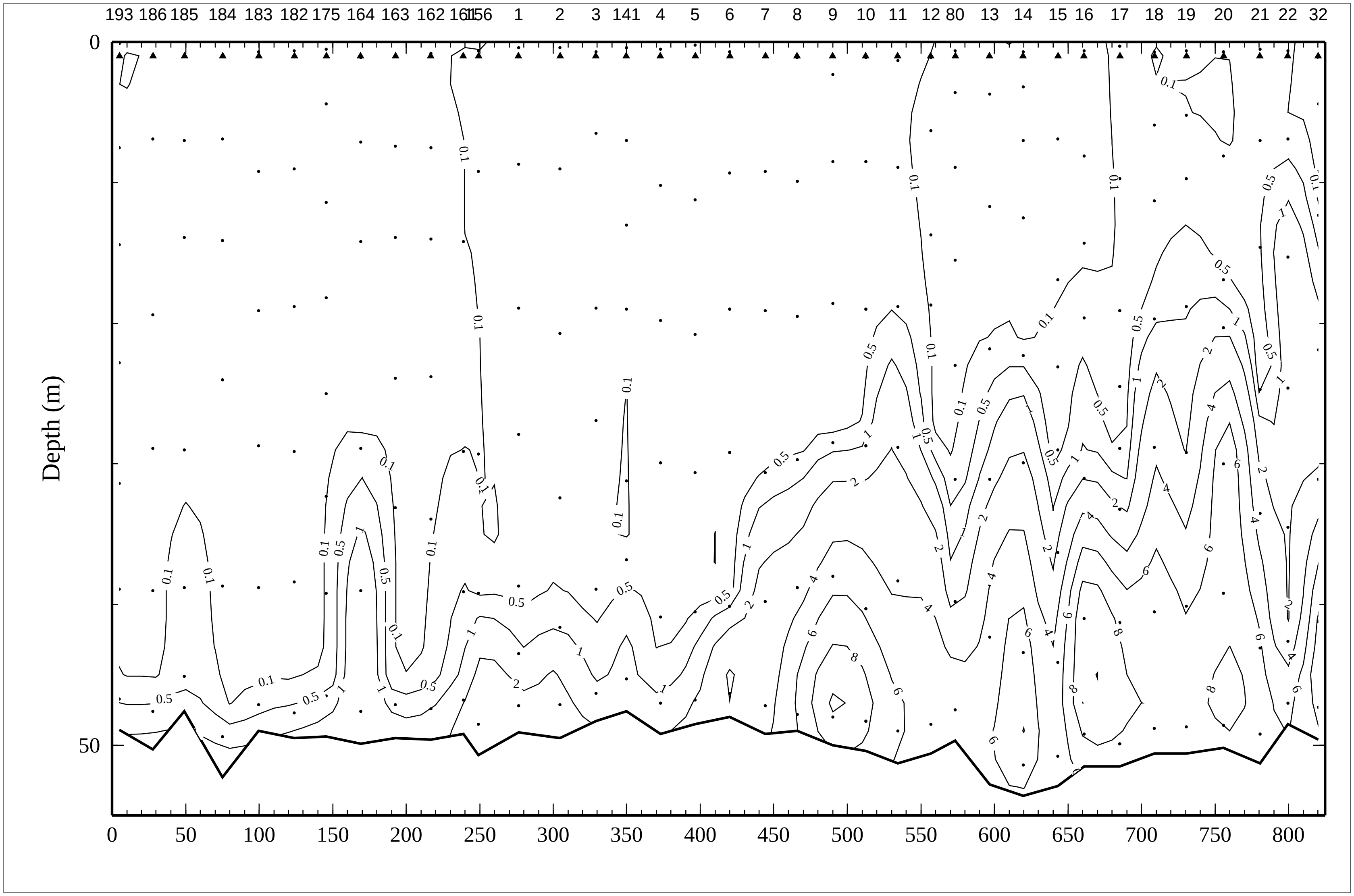

Figure 6.10.12. Nitrate (μmol·l^{-1}) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

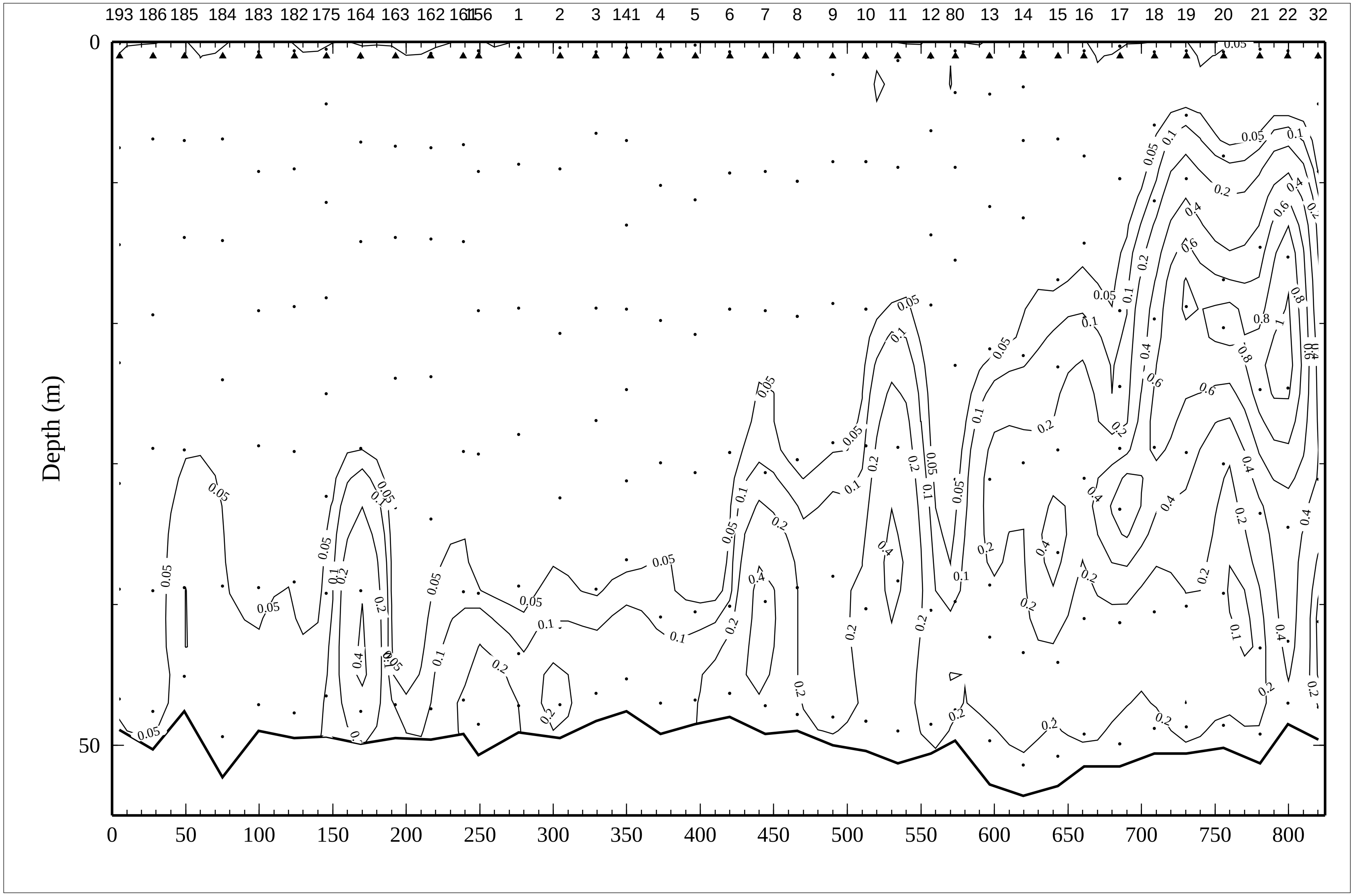

Figure 6.10.13. Nitrite (μmol·l^{-1}) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

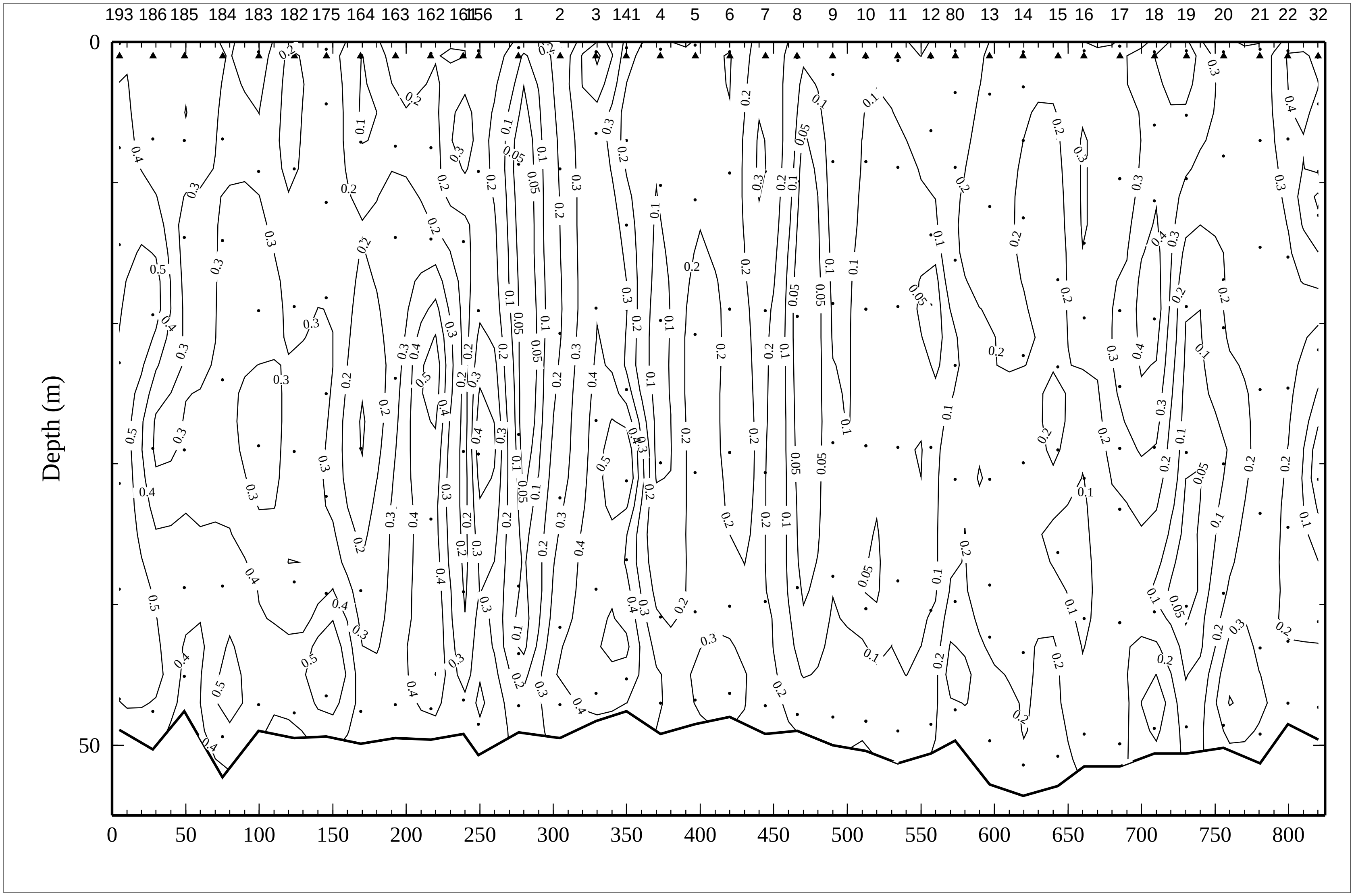

Figure 6.10.14. Ammonium (μmol·l^{-1}) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

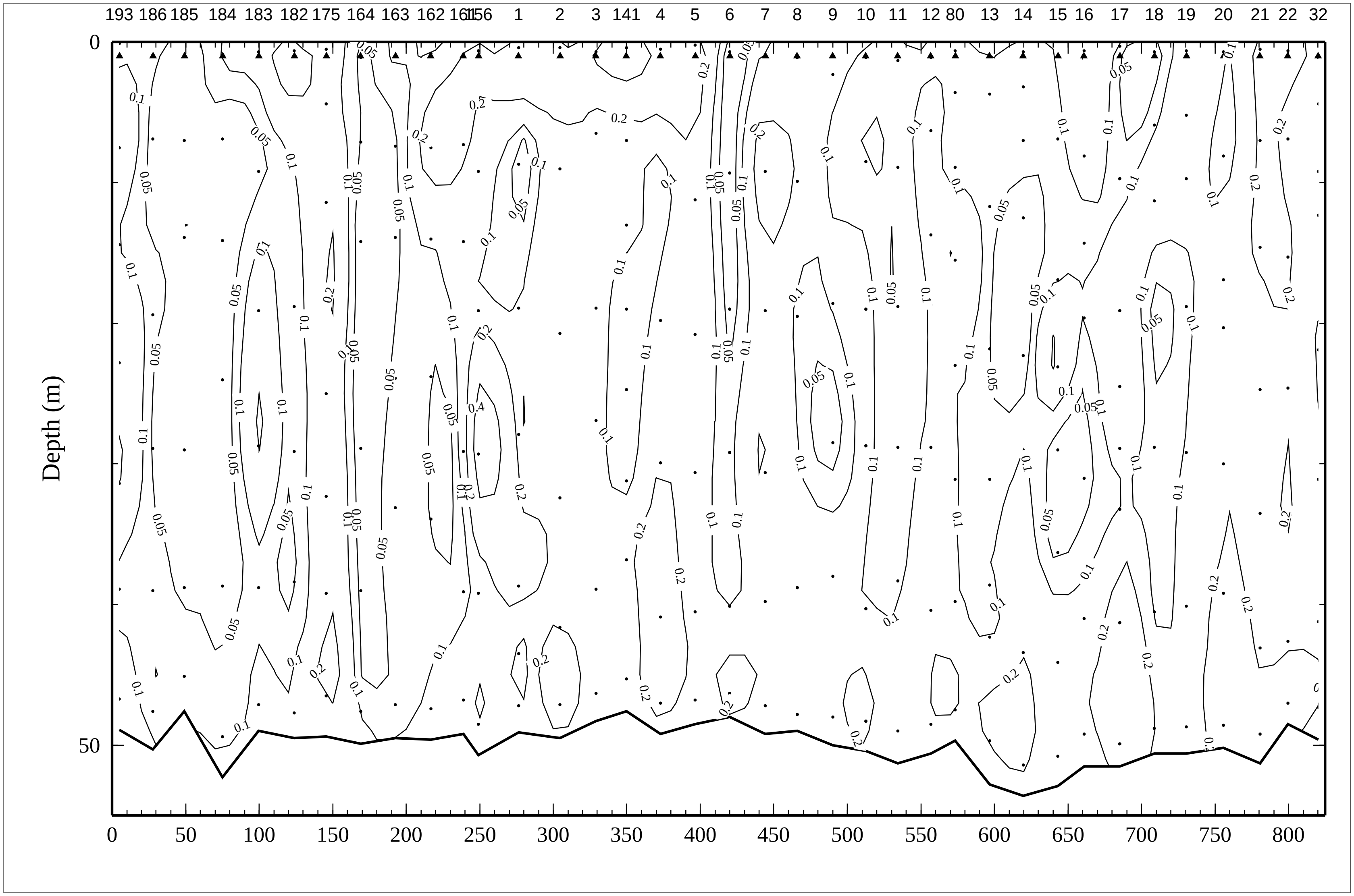

Figure 6.10.15. Urea (µmol·l^{-1}) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

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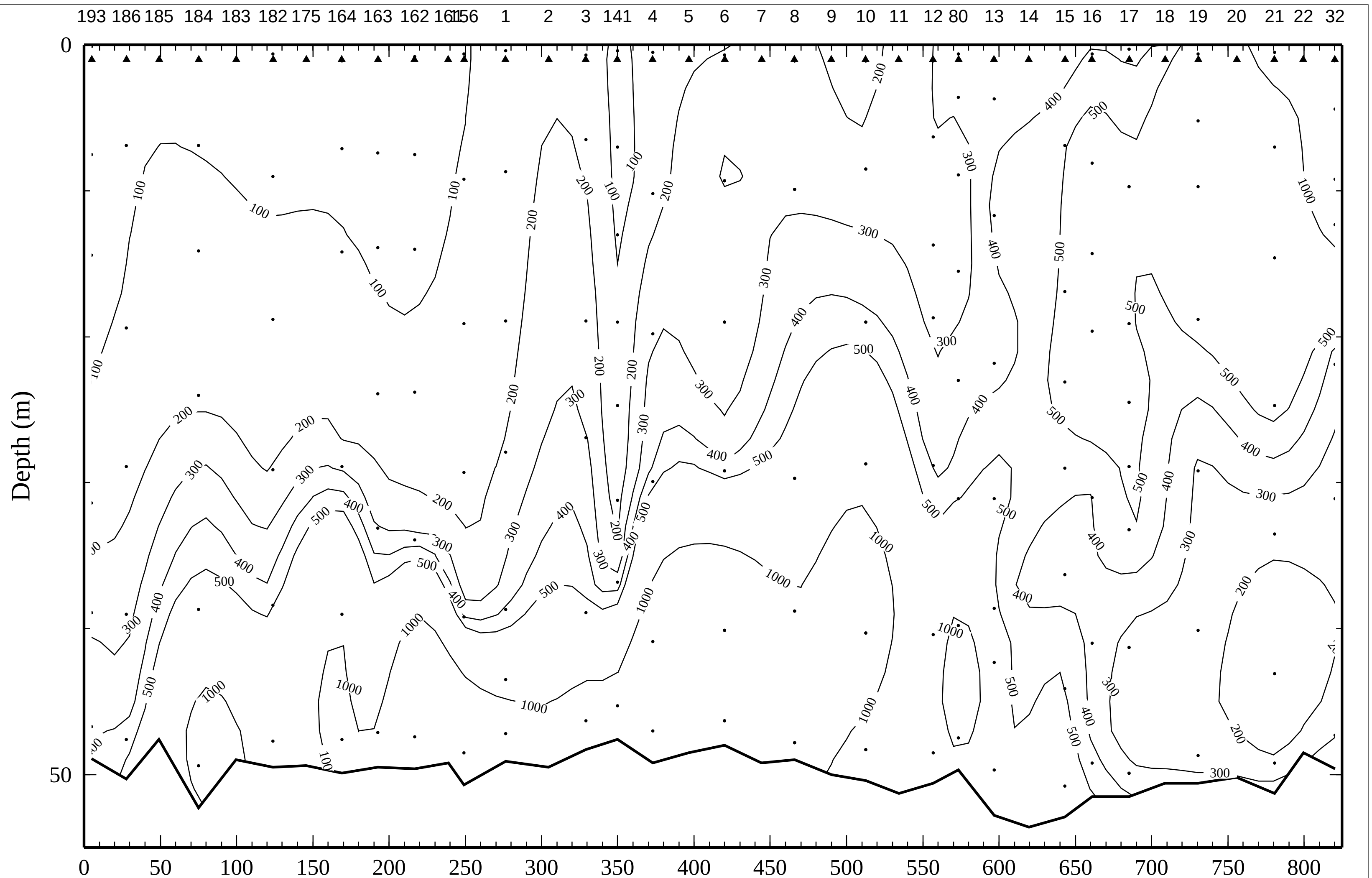

Figure 6.10.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 10 of LATEX A survey H06, 25 July - 7 August 1993.

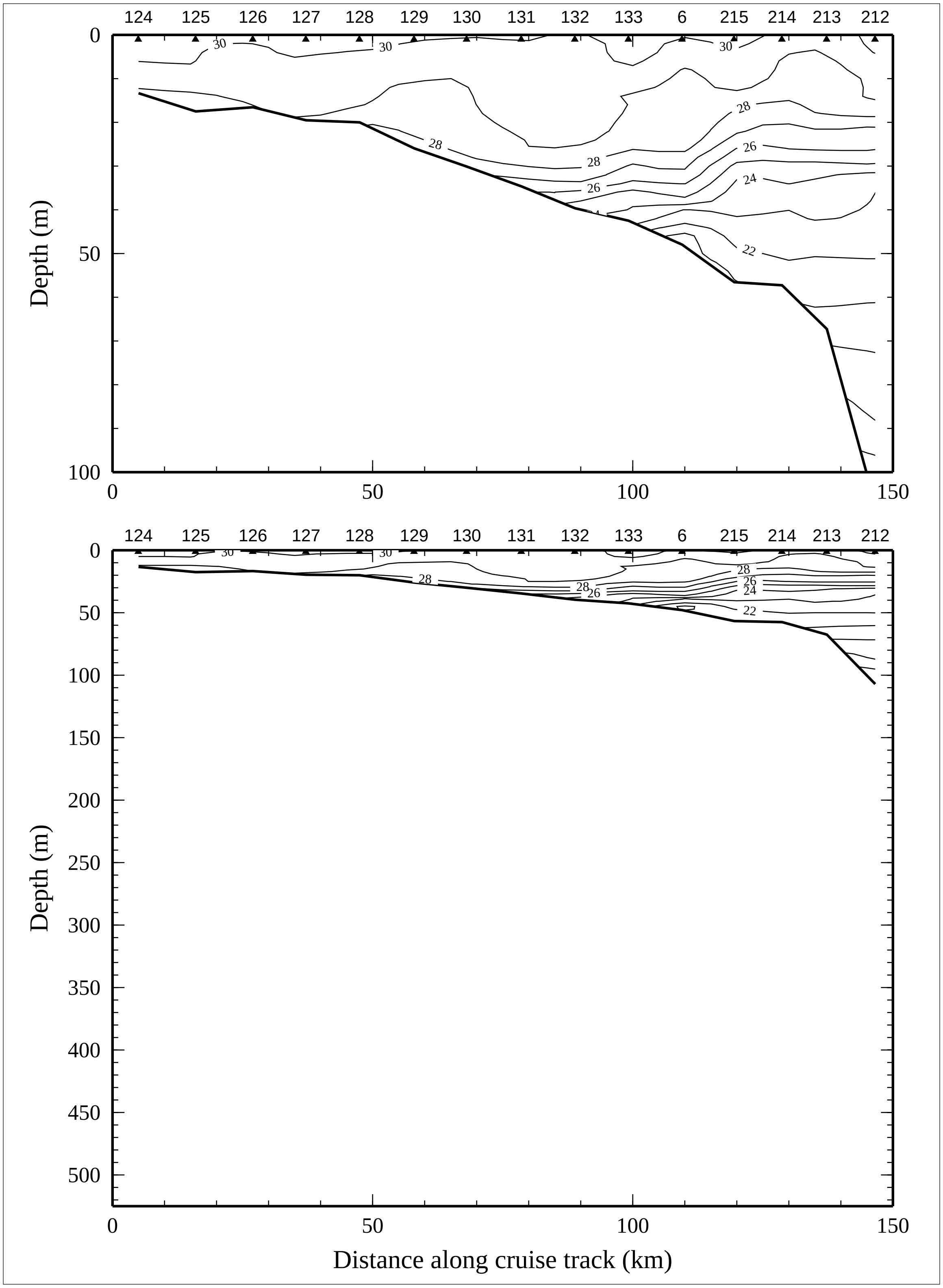

Figure 6.11.1. Potential temperature (˚C) on line 11 of LATEX A survey H06,
25 July - 7 August 1993.

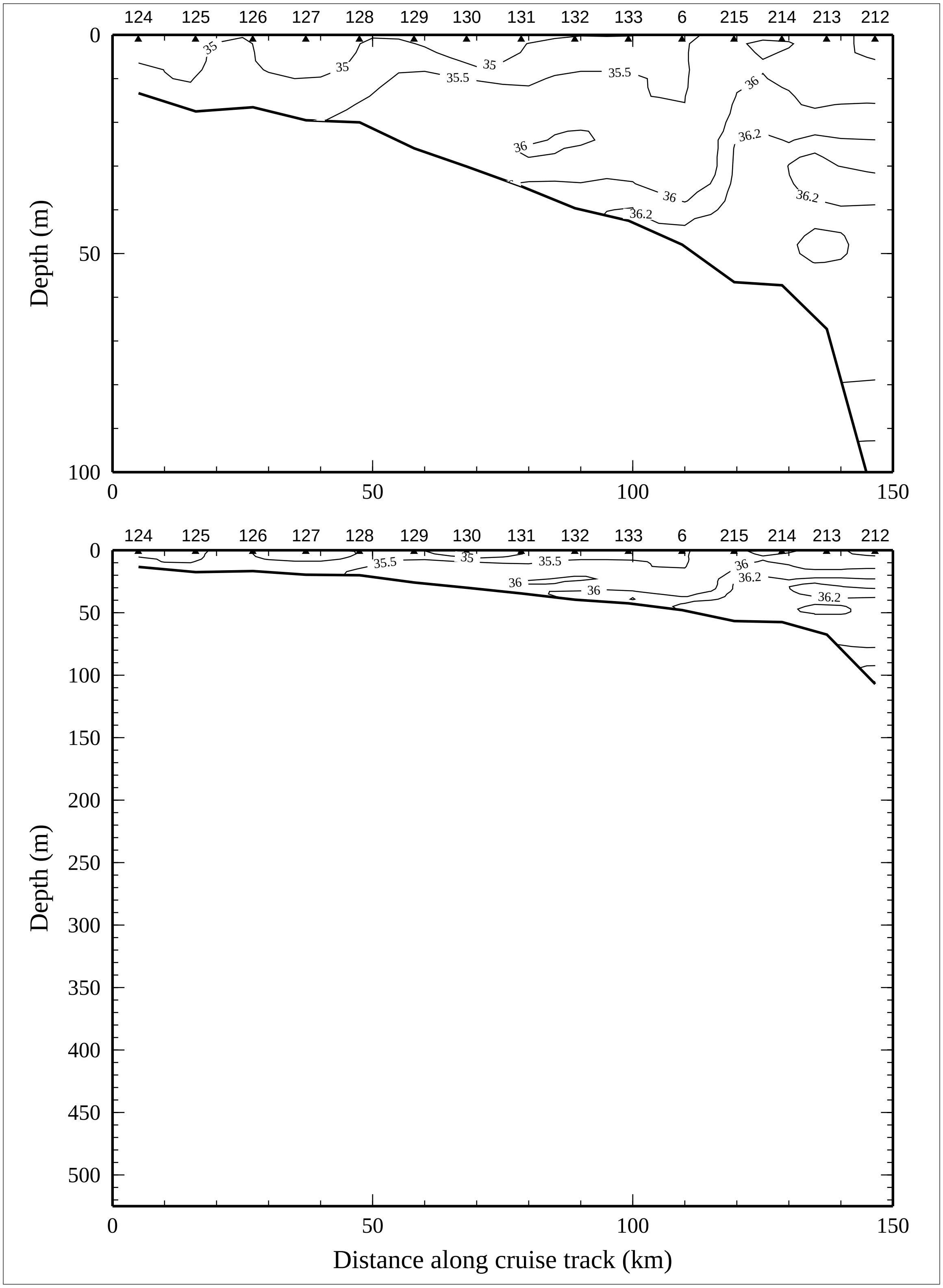

Figure 6.11.2. Salinity, derived from CTD data, on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

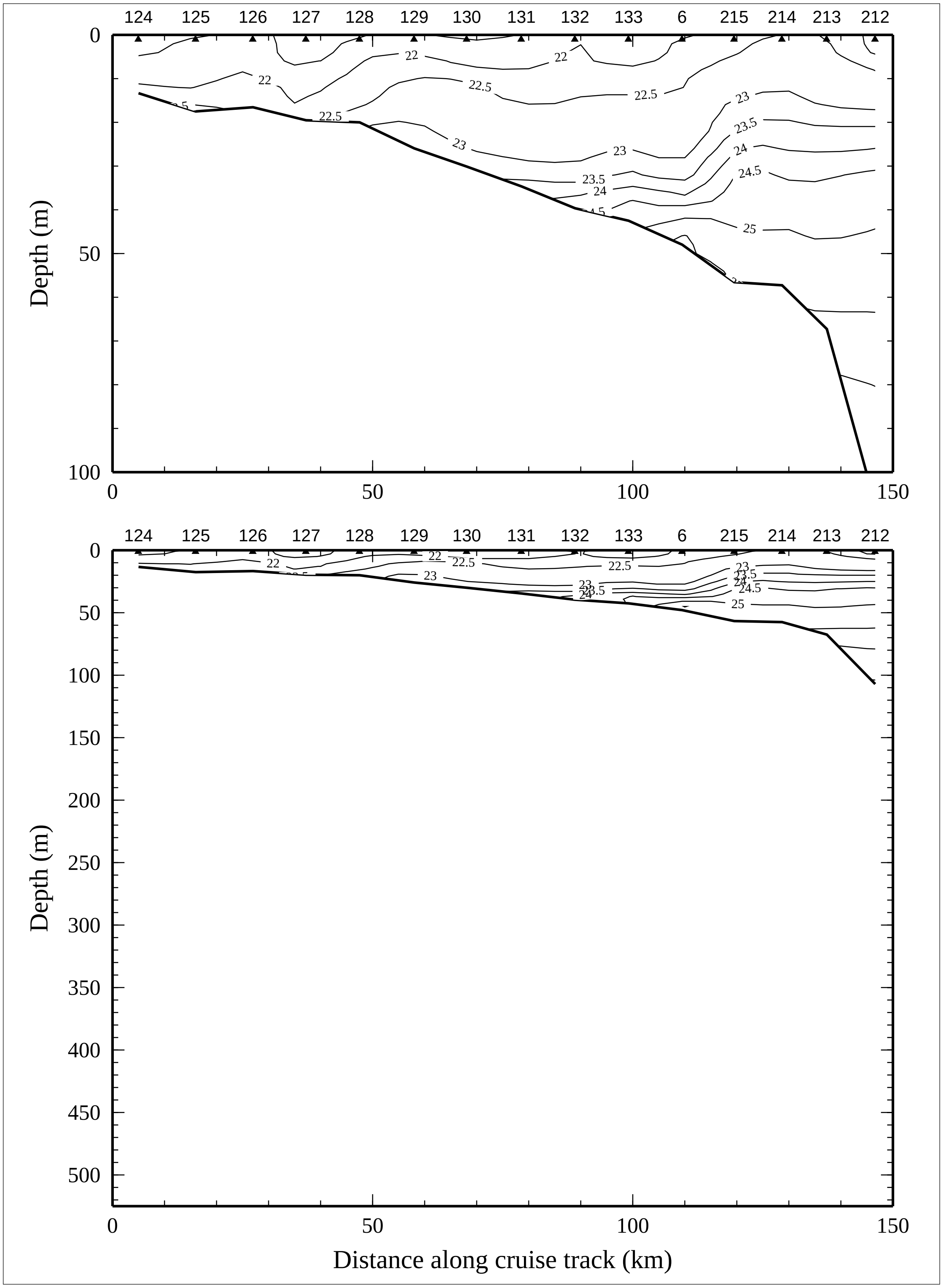

Figure 6.11.3. Density anomaly (σ_θ in kg·m^{-3}) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

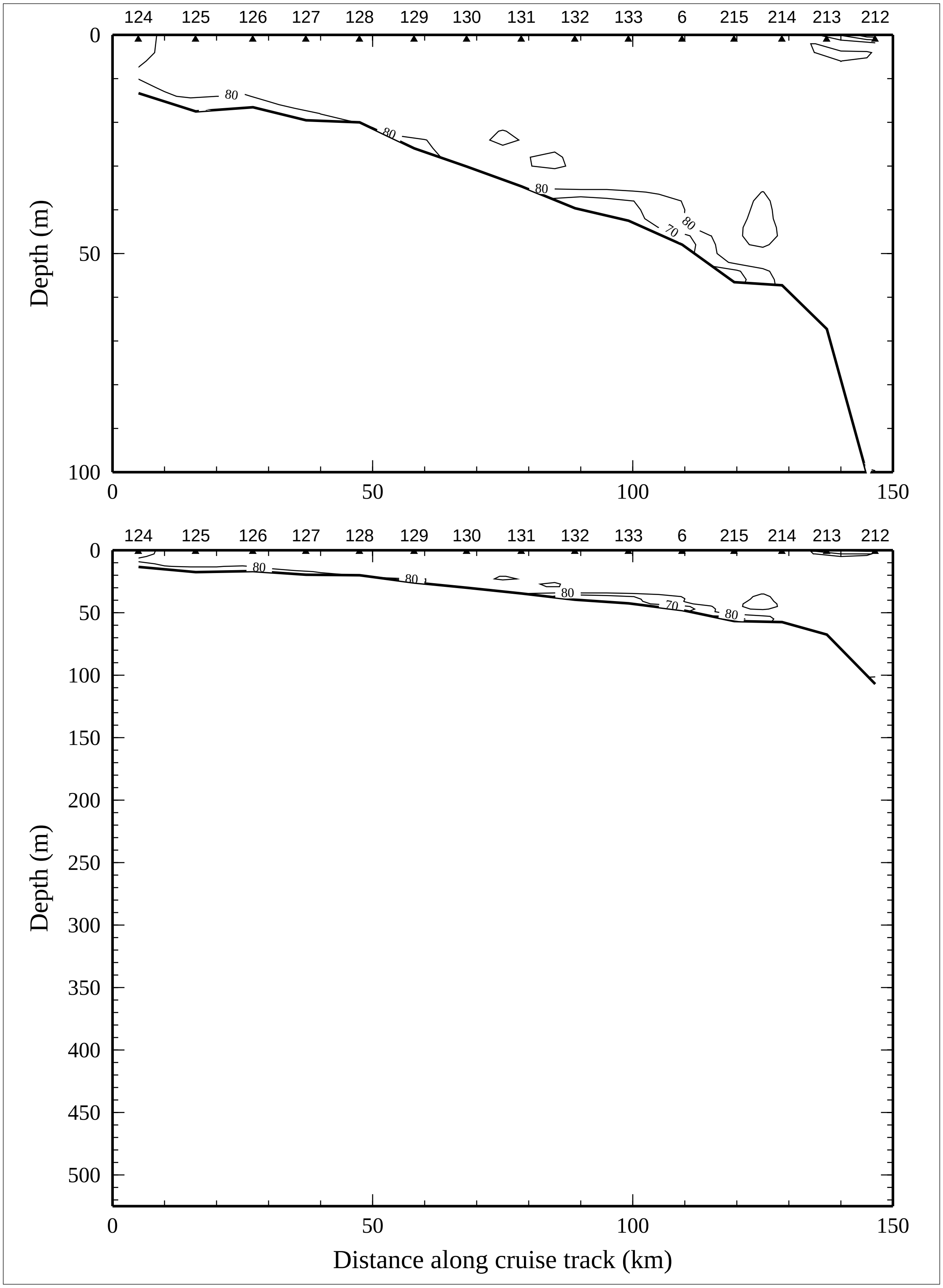

Figure 6.11.4. Percent transmission (660 nm wave length; 25-cm path length) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

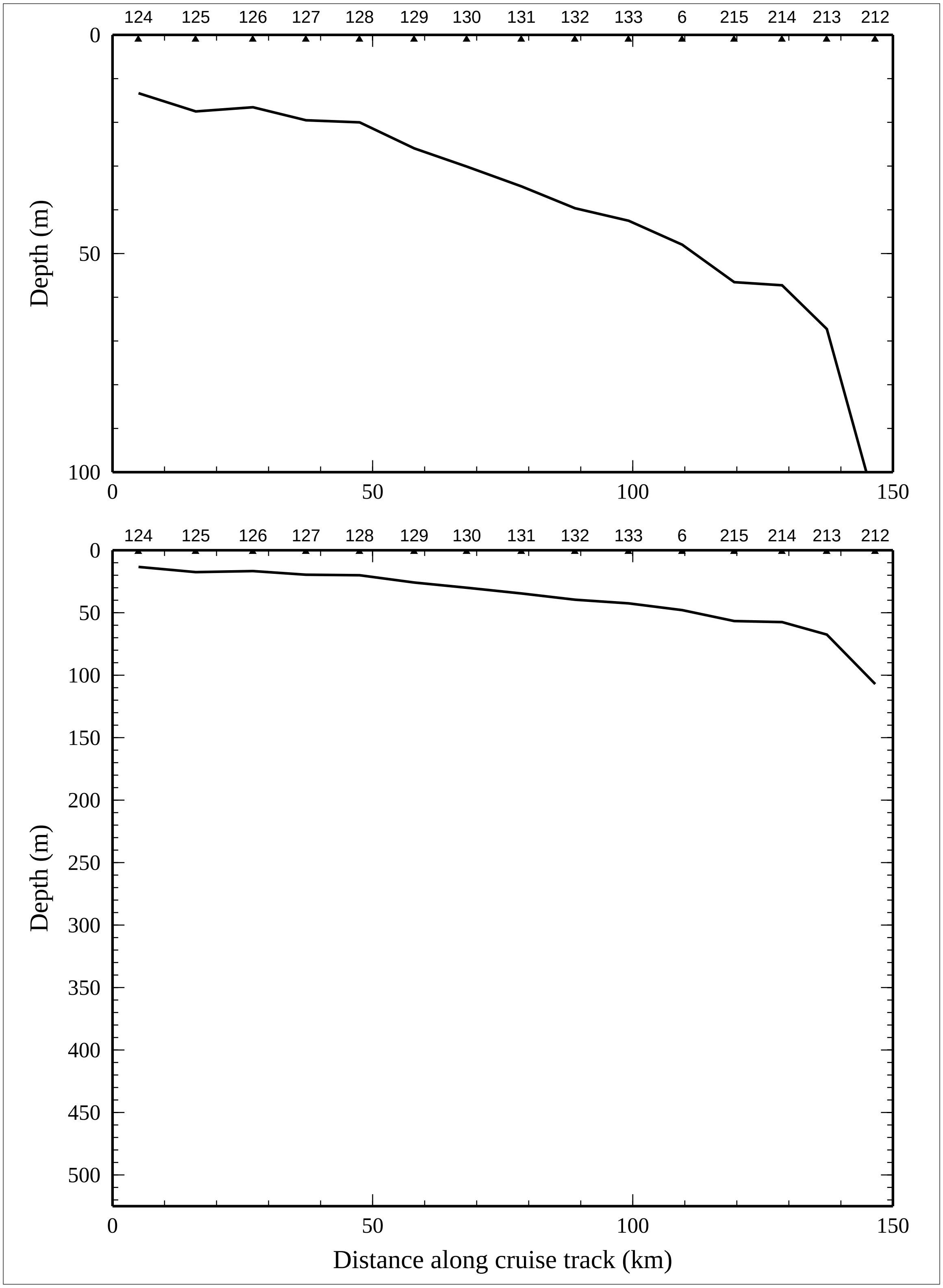

Figure 6.11.5. Optical backscatterance (voltage) on line 11 of LATEX A survey H06, 25 July - 7 August 1993. Values were less than 0.05.

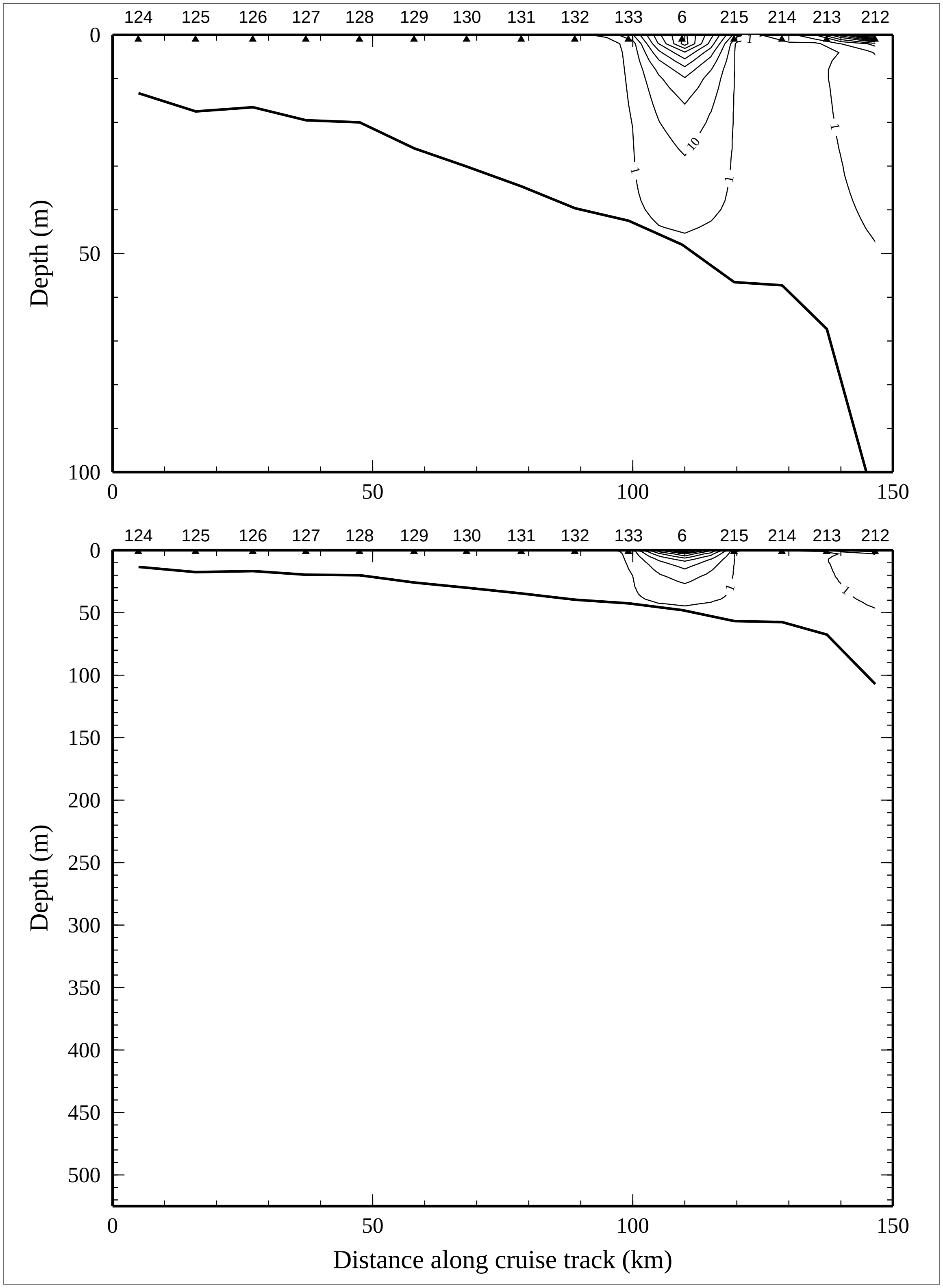

Figure 6.11.6. Downwelling irradiance as percent of surface irradiance on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

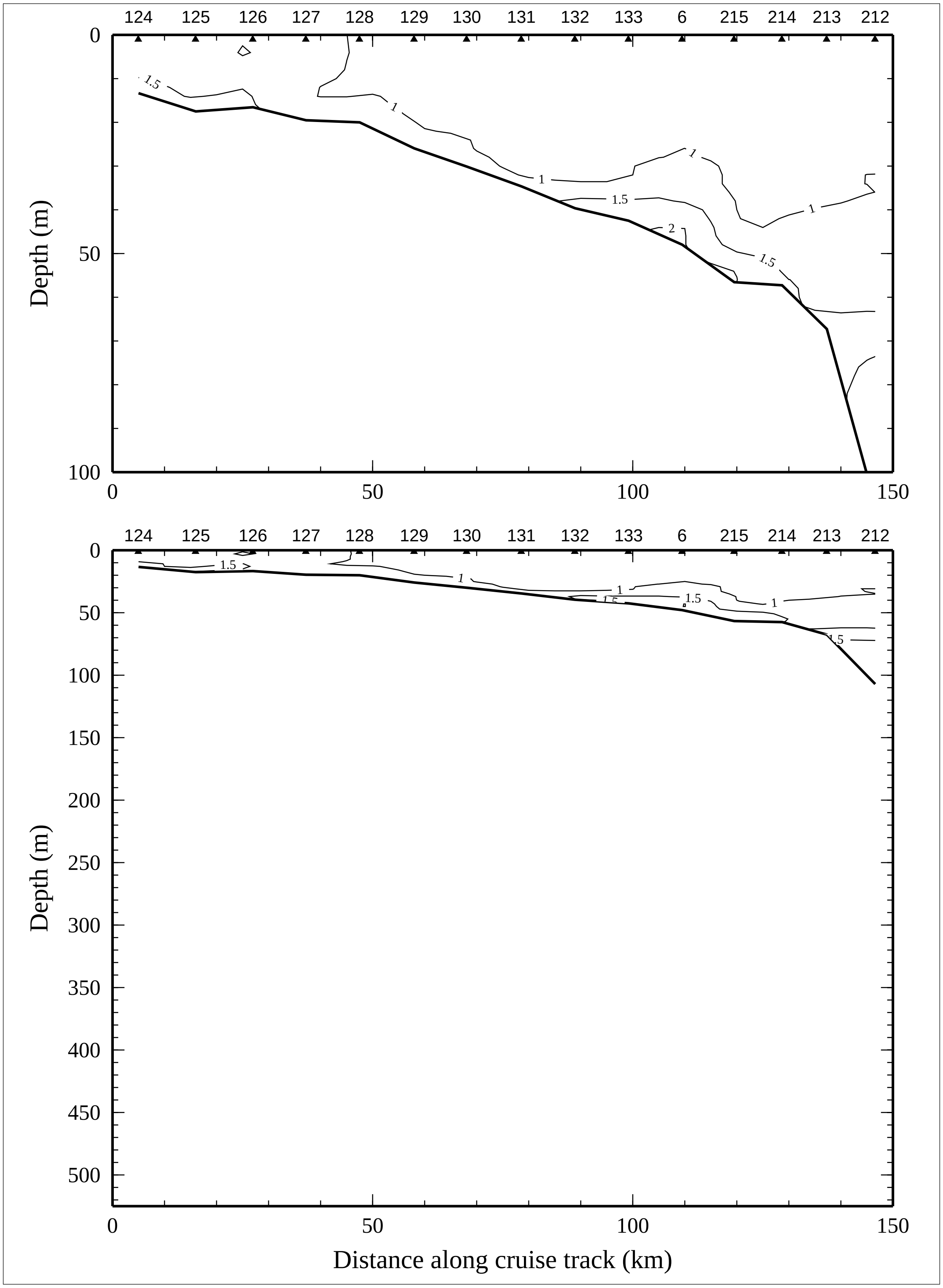

Figure 6.11.7. Relative fluorescence on line 11 of LATEX A survey H06,
25 July - 7 August 1993.

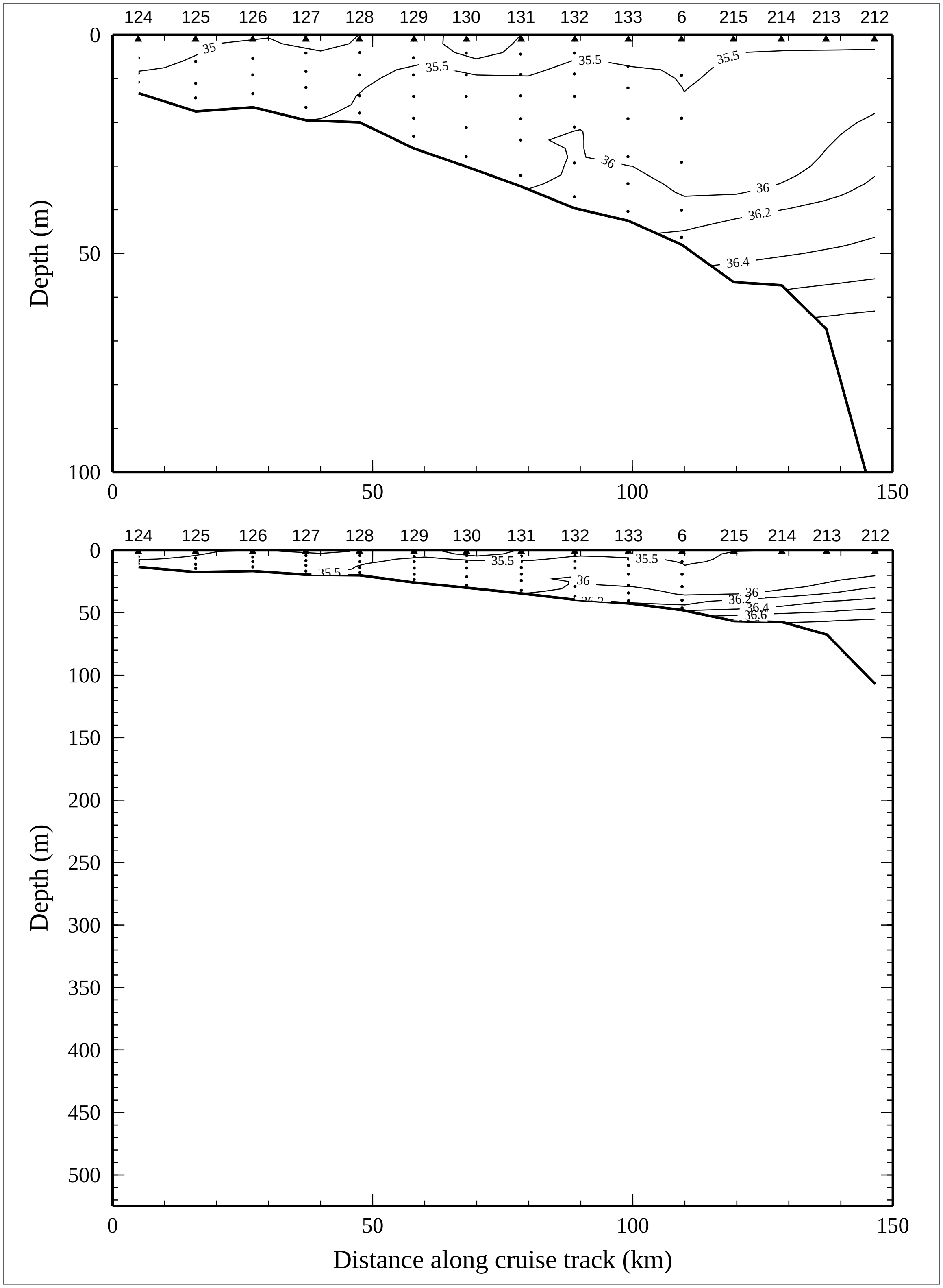

Figure 6.11.8. Bottle salinity on line 11 of LATEX A survey H06,
25 July - 7 August 1993.

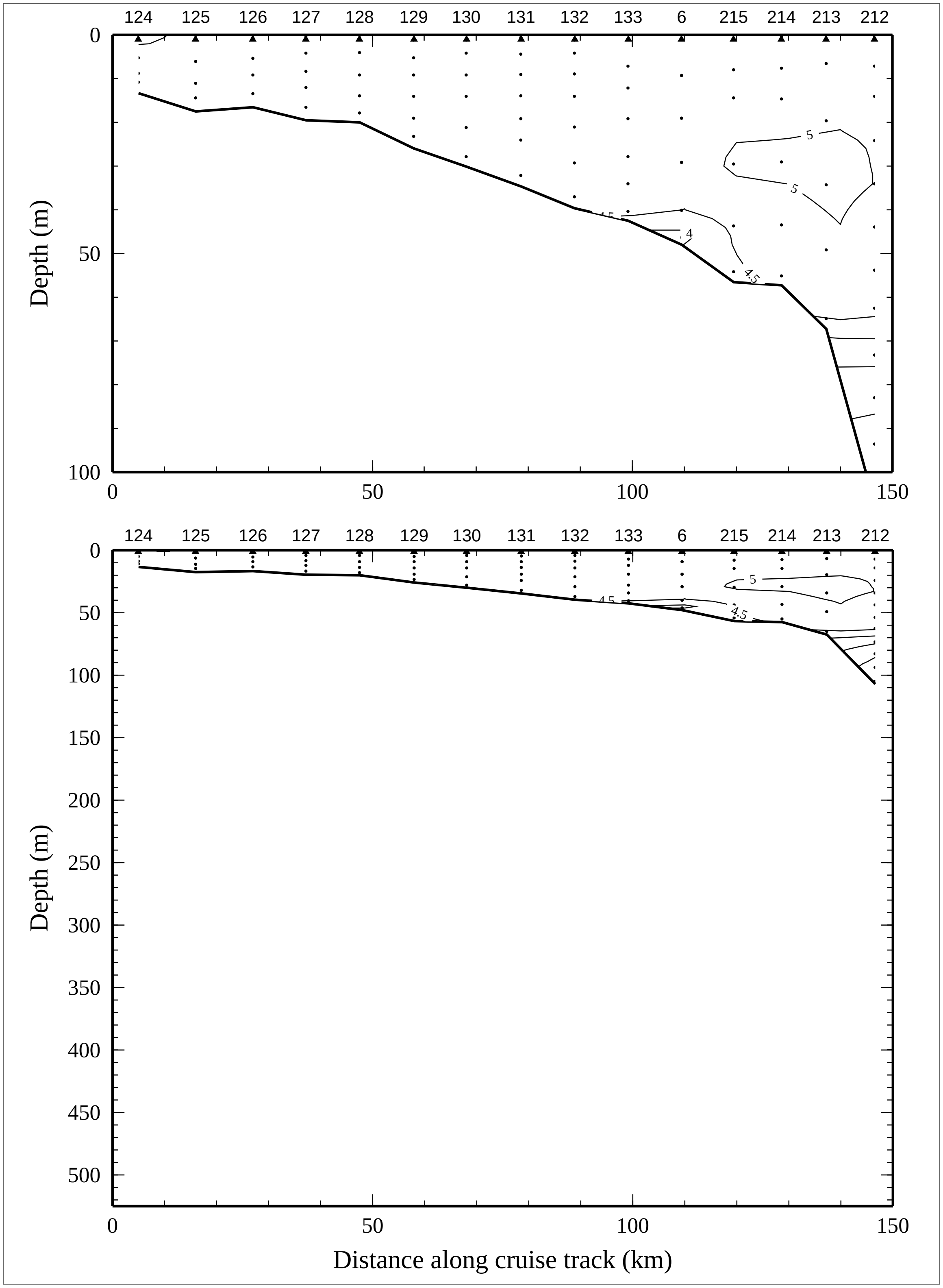

Figure 6.11.9. Dissolved oxygen (ml·l^{-1}) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

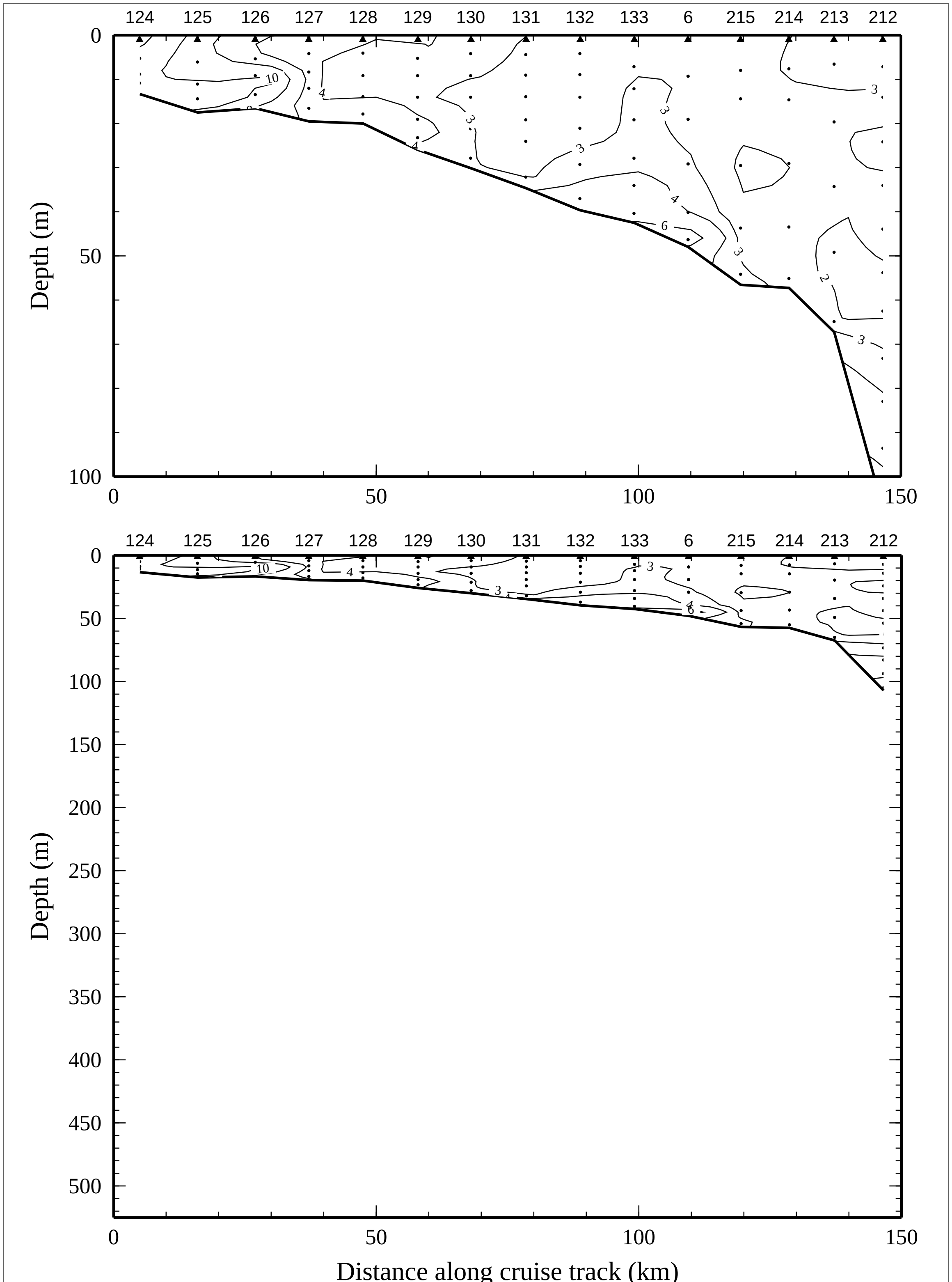

Figure 6.11.10. Silicate (μmol·l^{-1}) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

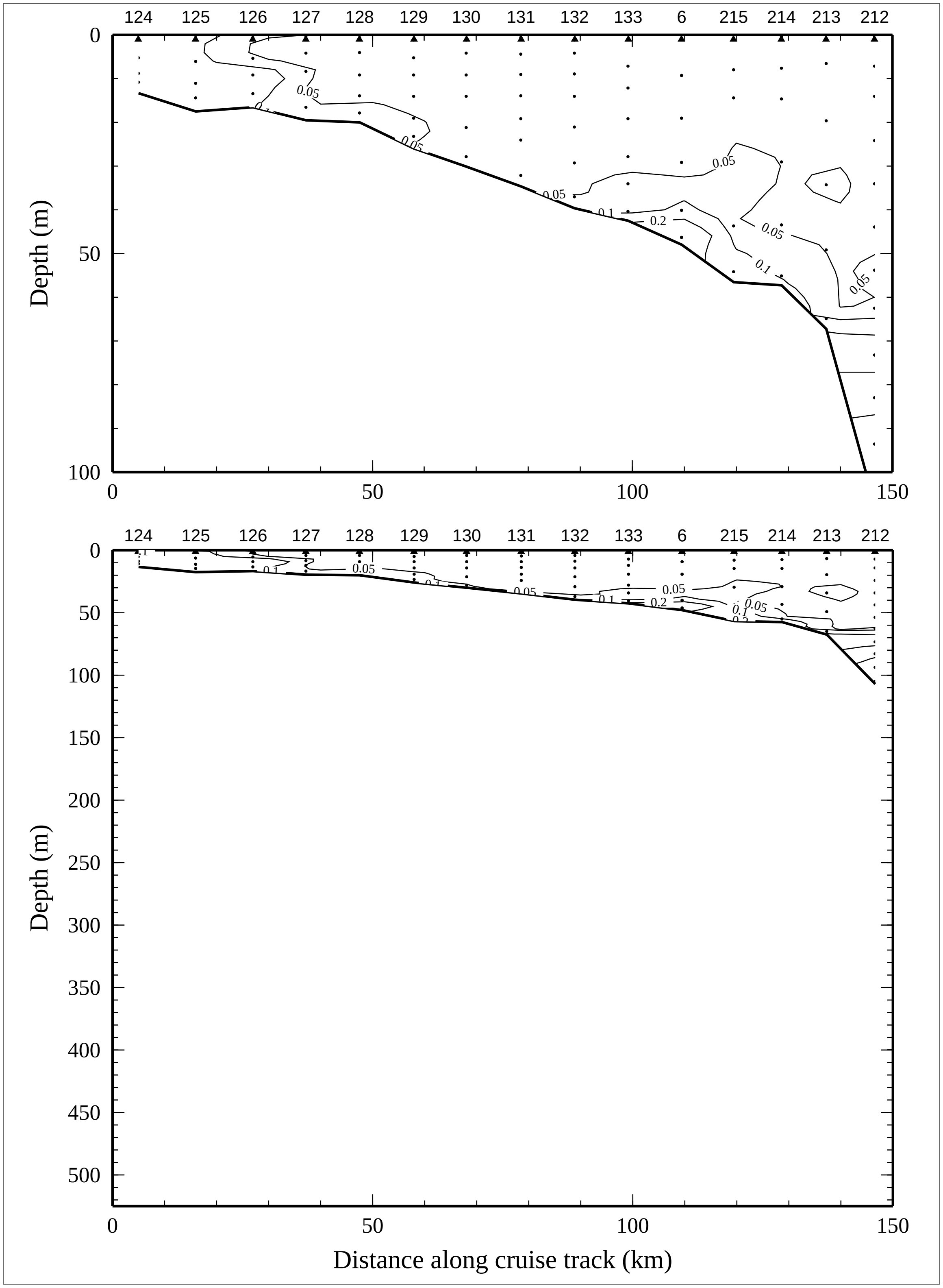

Figure 6.11.11. Phosphate (µmol·l^{-1}) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

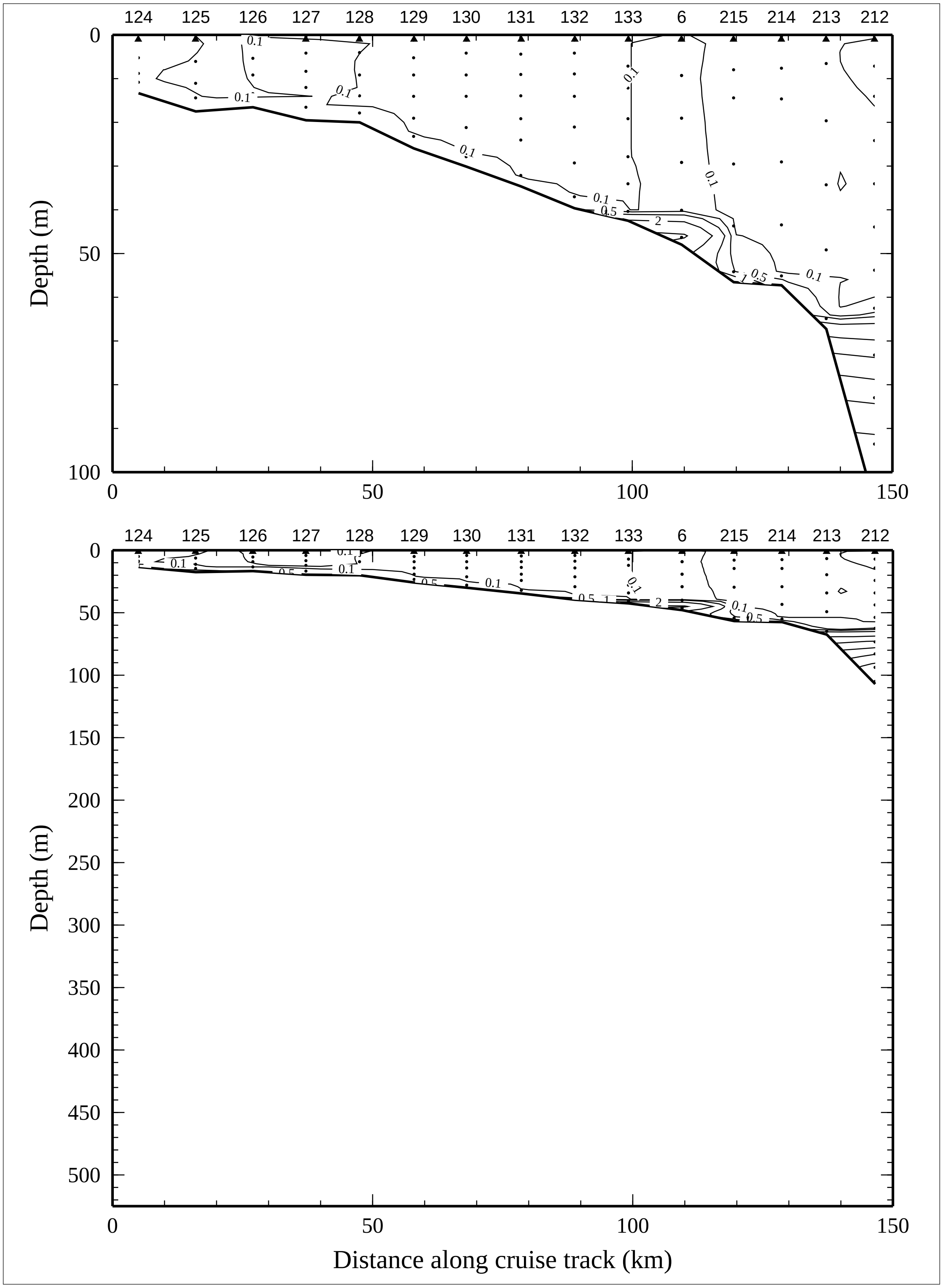

Figure 6.11.12. Nitrate (μmol·l⁻¹) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

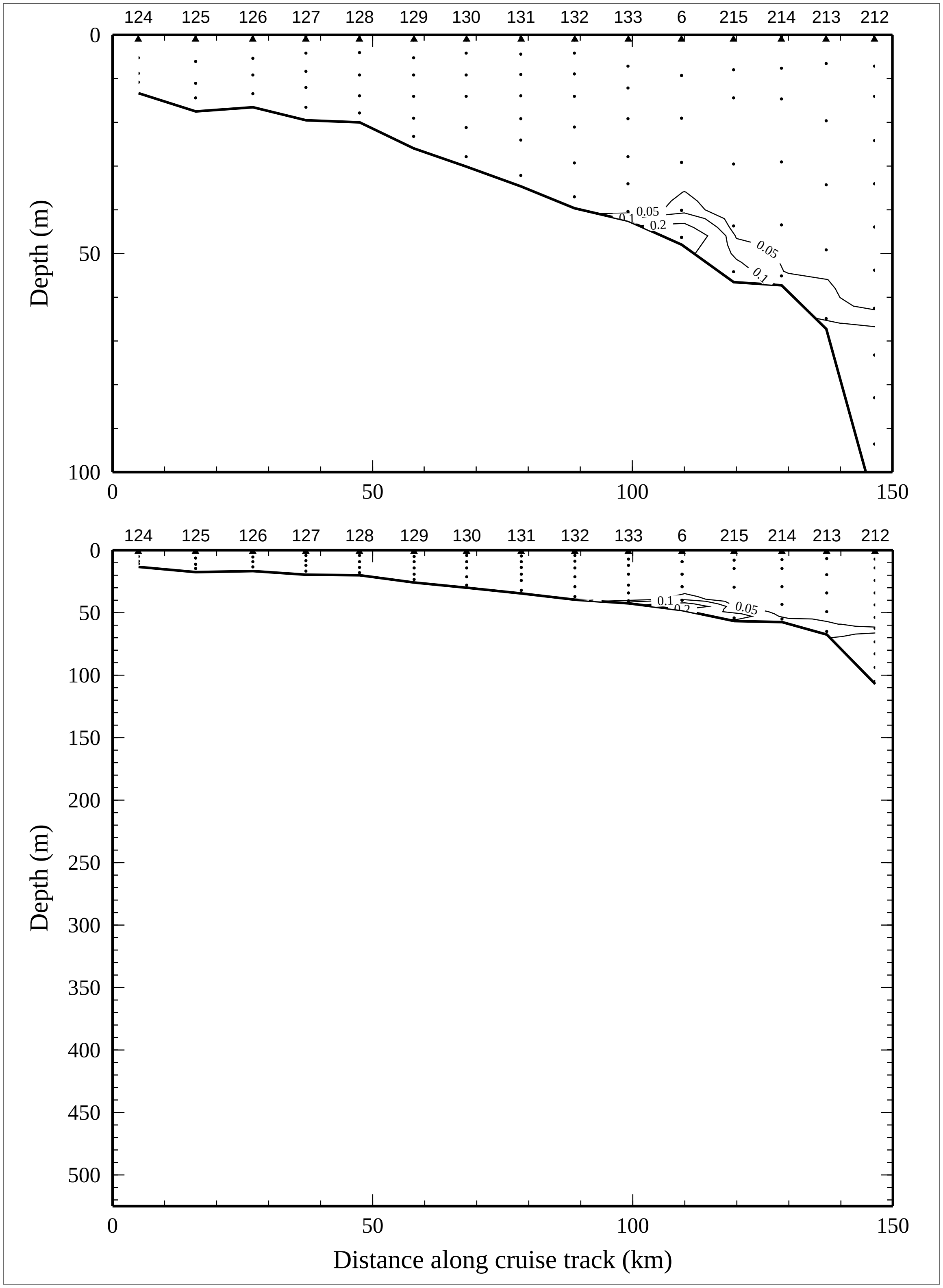

Figure 6.11.13. Nitrite (μmol·l^{-1}) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

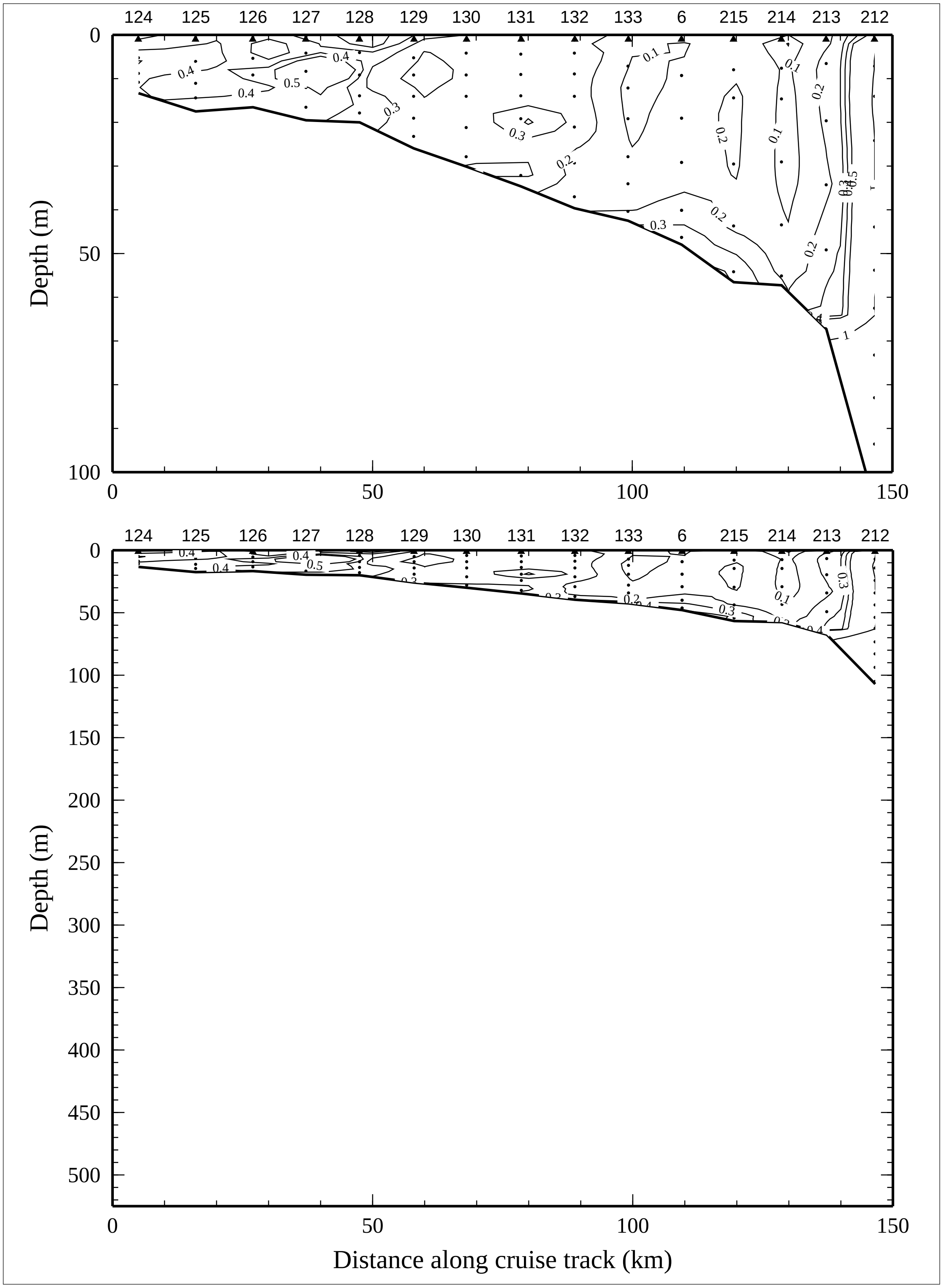

Figure 6.11.14. Ammonium (μmol·l^{-1}) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

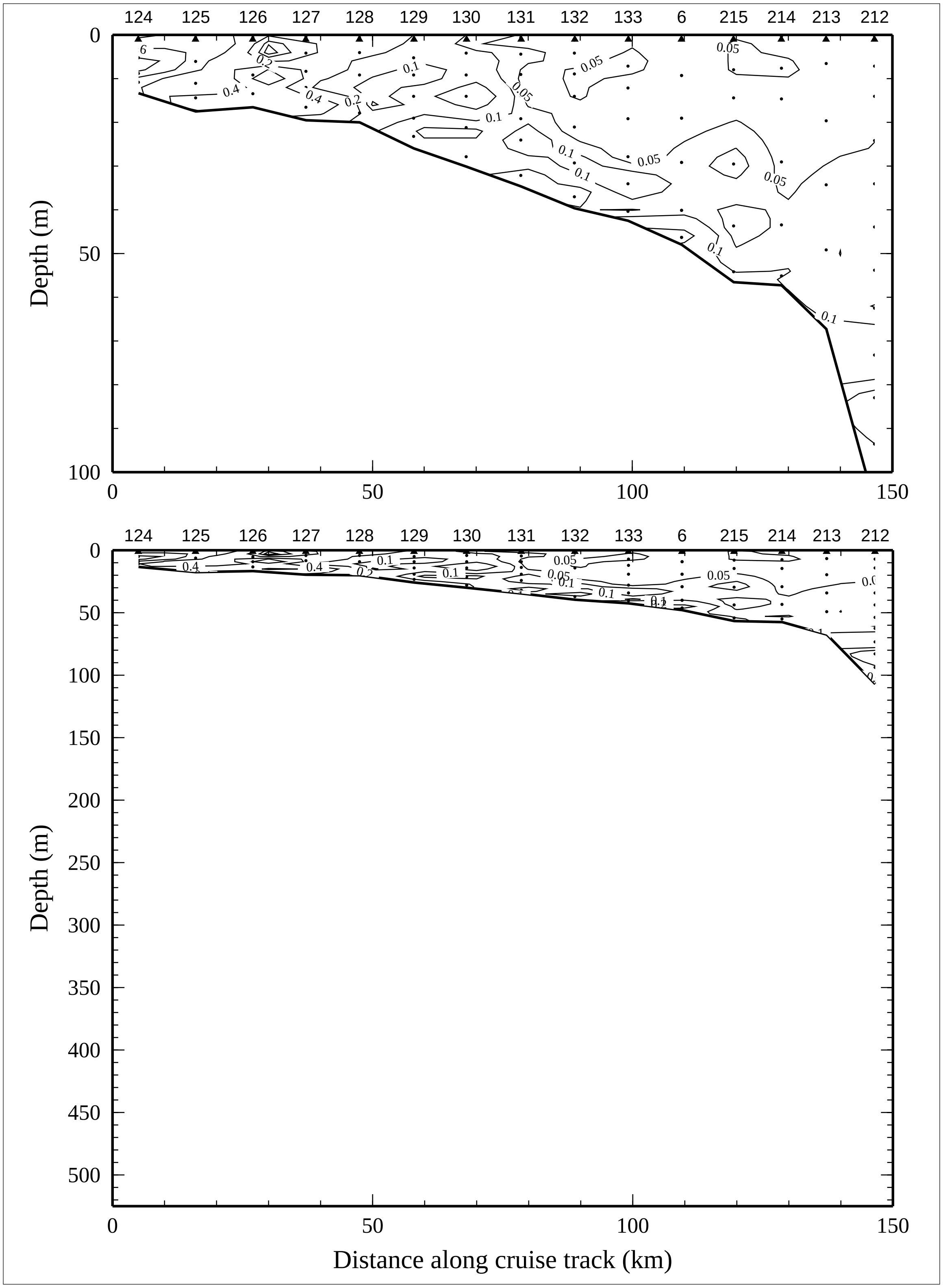

Figure 6.11.15. Urea (μmol·l⁻¹) on line 11 of LATEX A survey H06,
25 July - 7 August 1993.

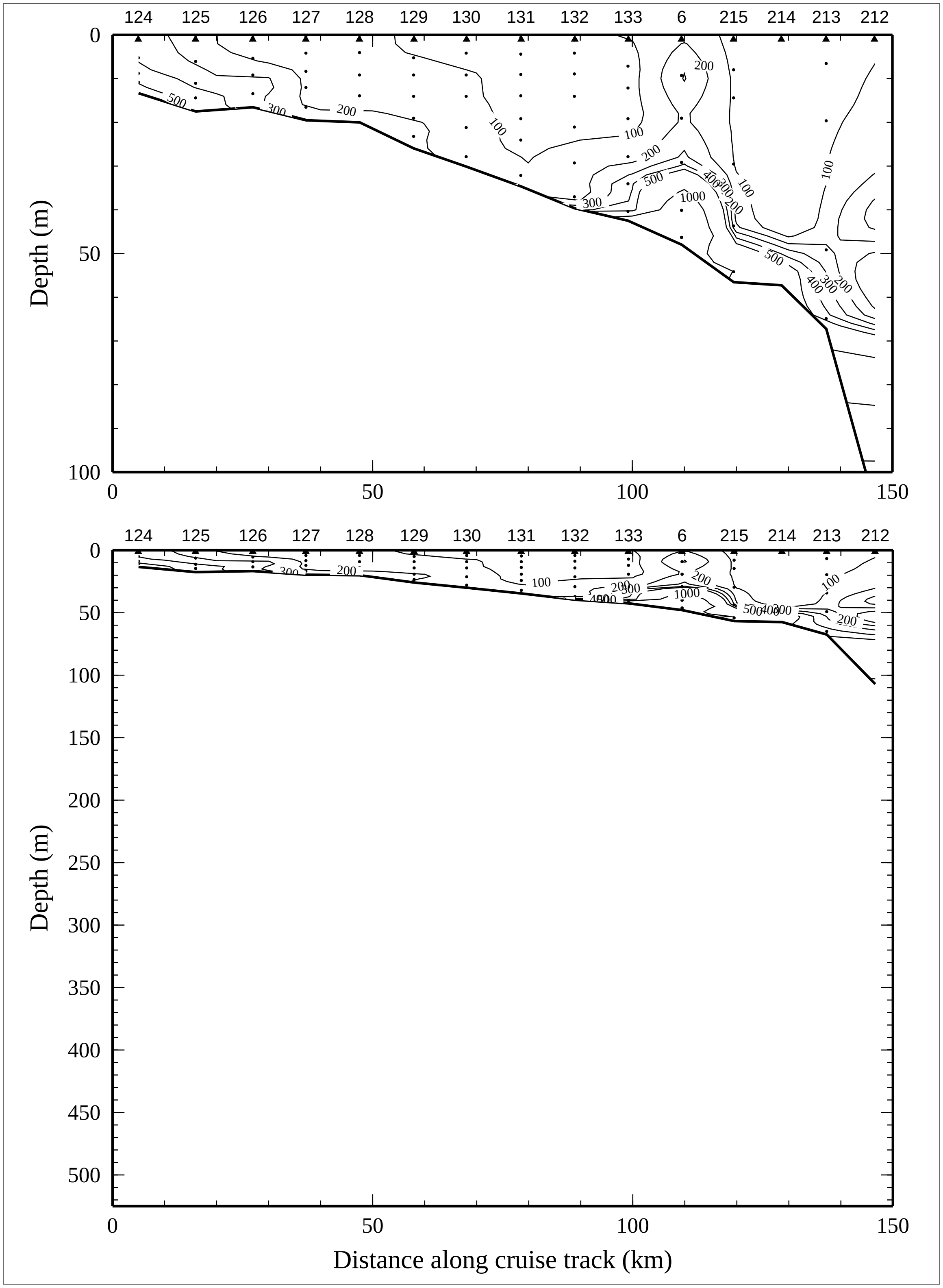

Figure 6.11.16. Chlorophyll a (ng·l-1) on line 11 of LATEX A survey H06, 25 July - 7 August 1993.

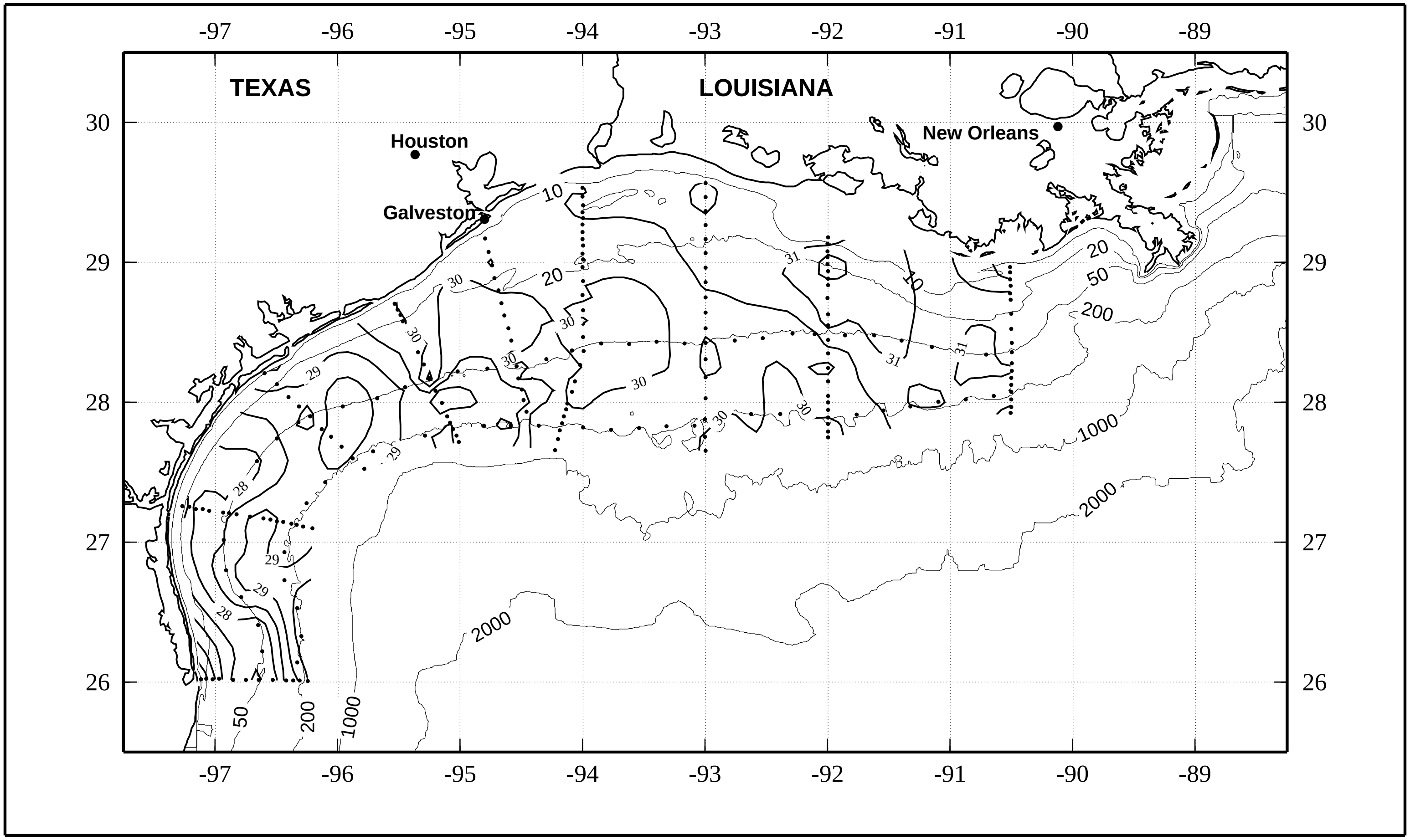

Figure 6.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

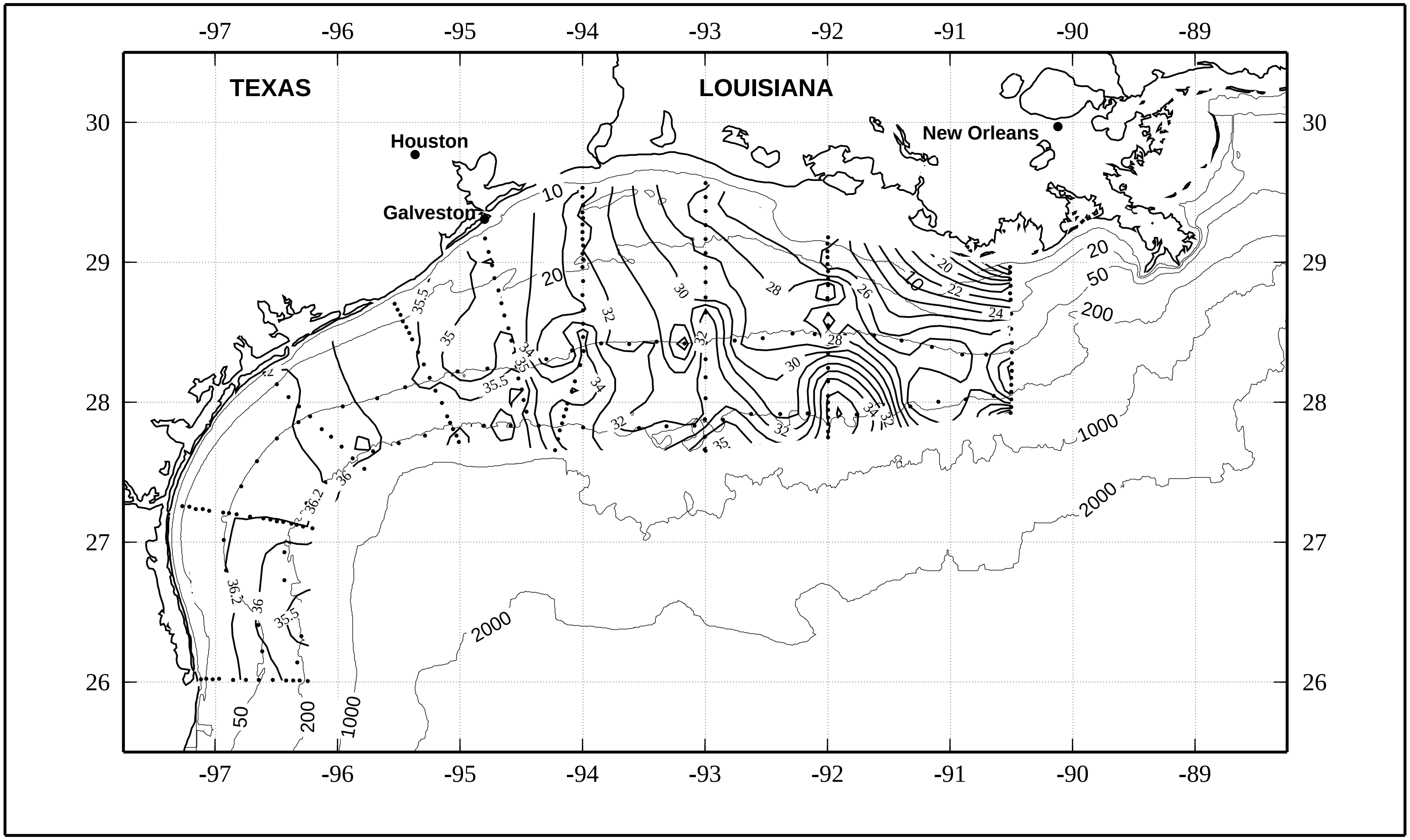

Figure 6.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

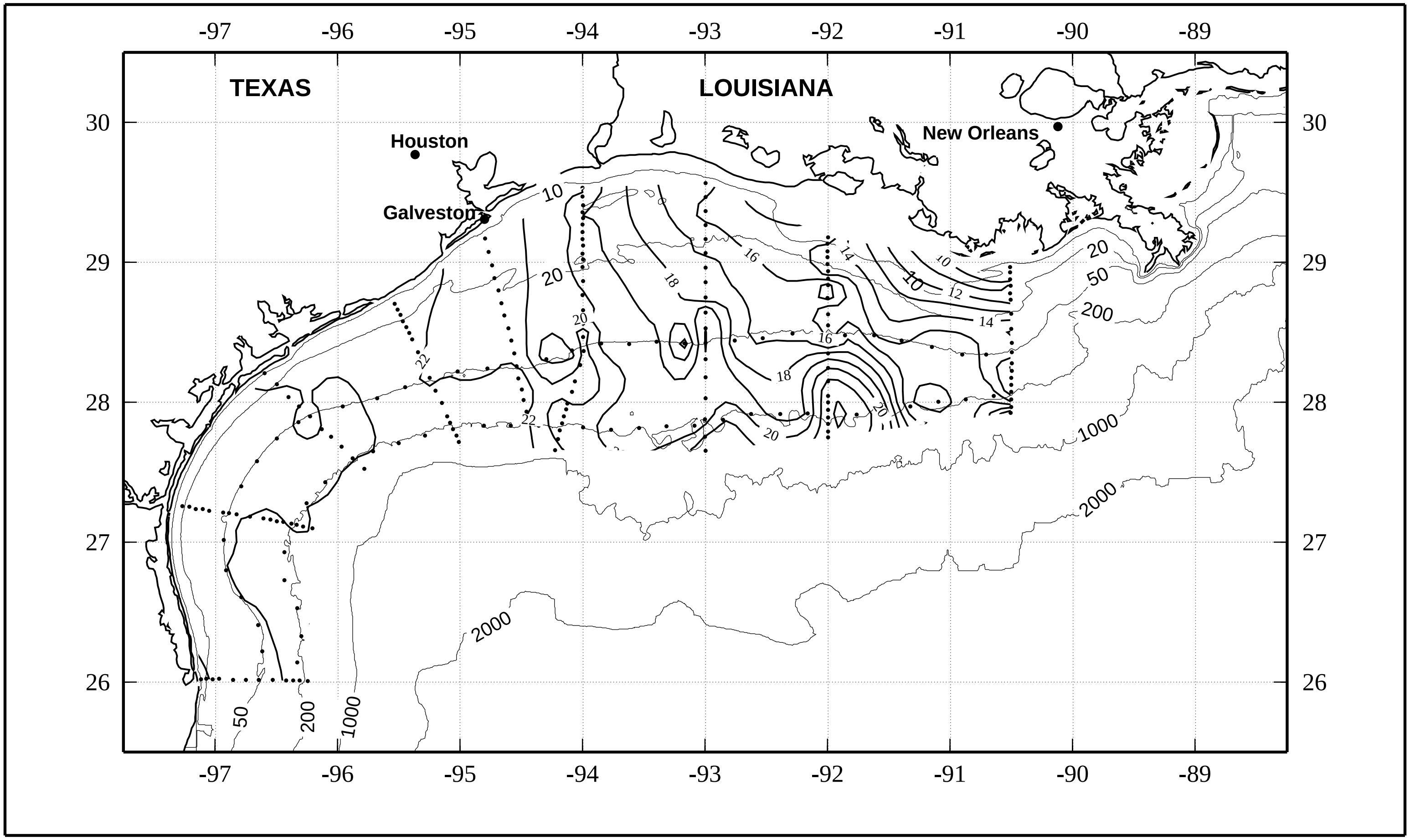

Figure 6.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

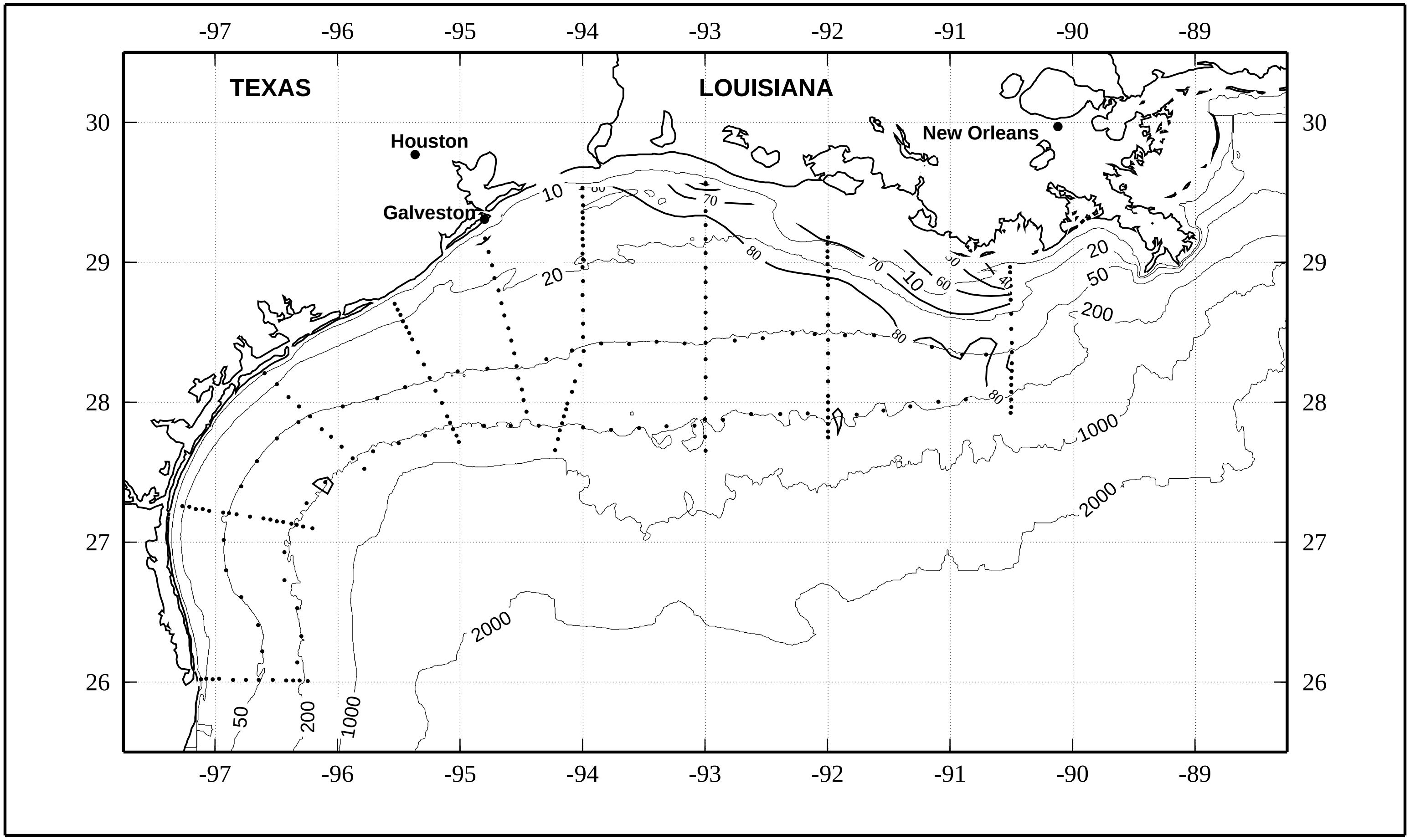

Figure 6.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

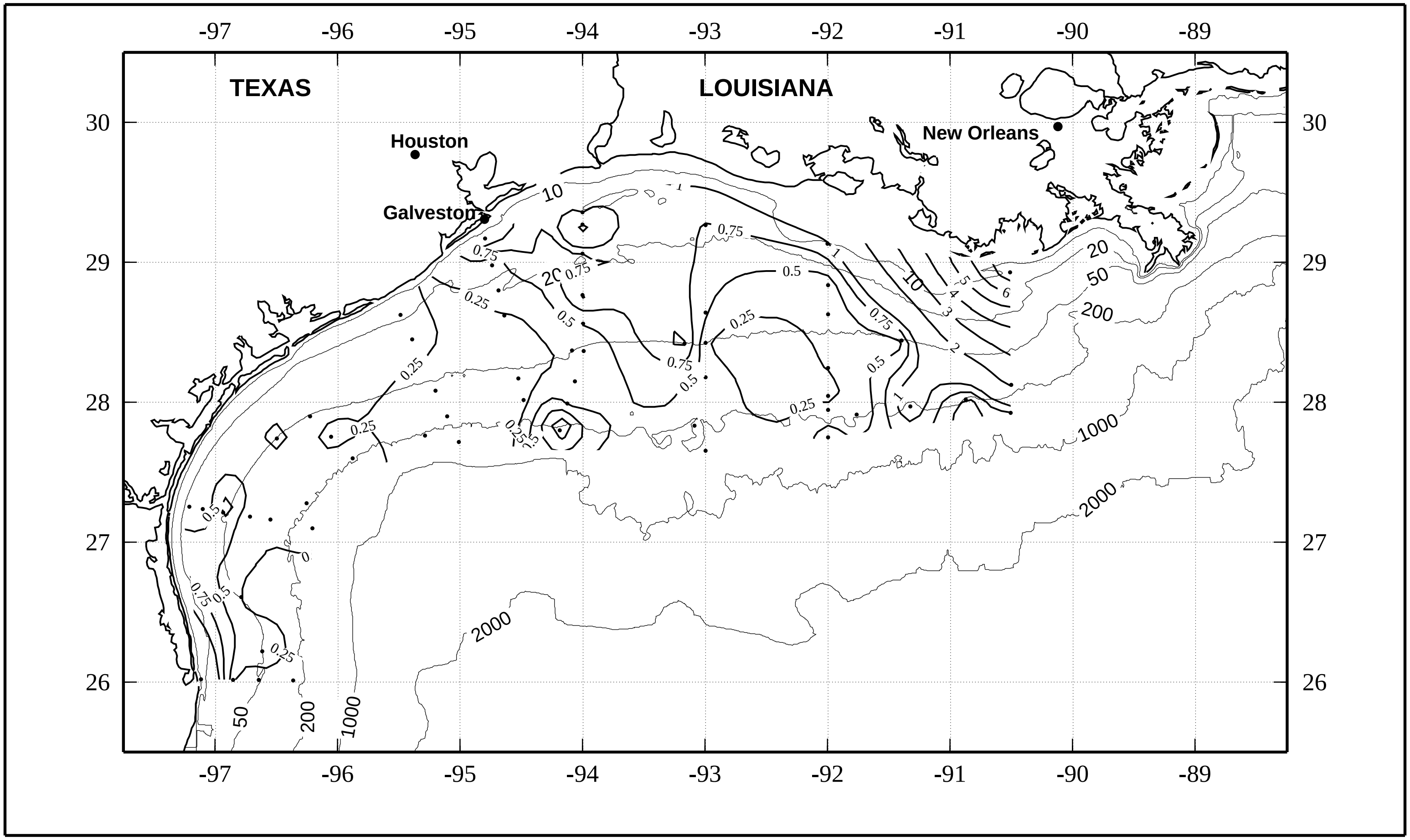

Figure 6.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

F191

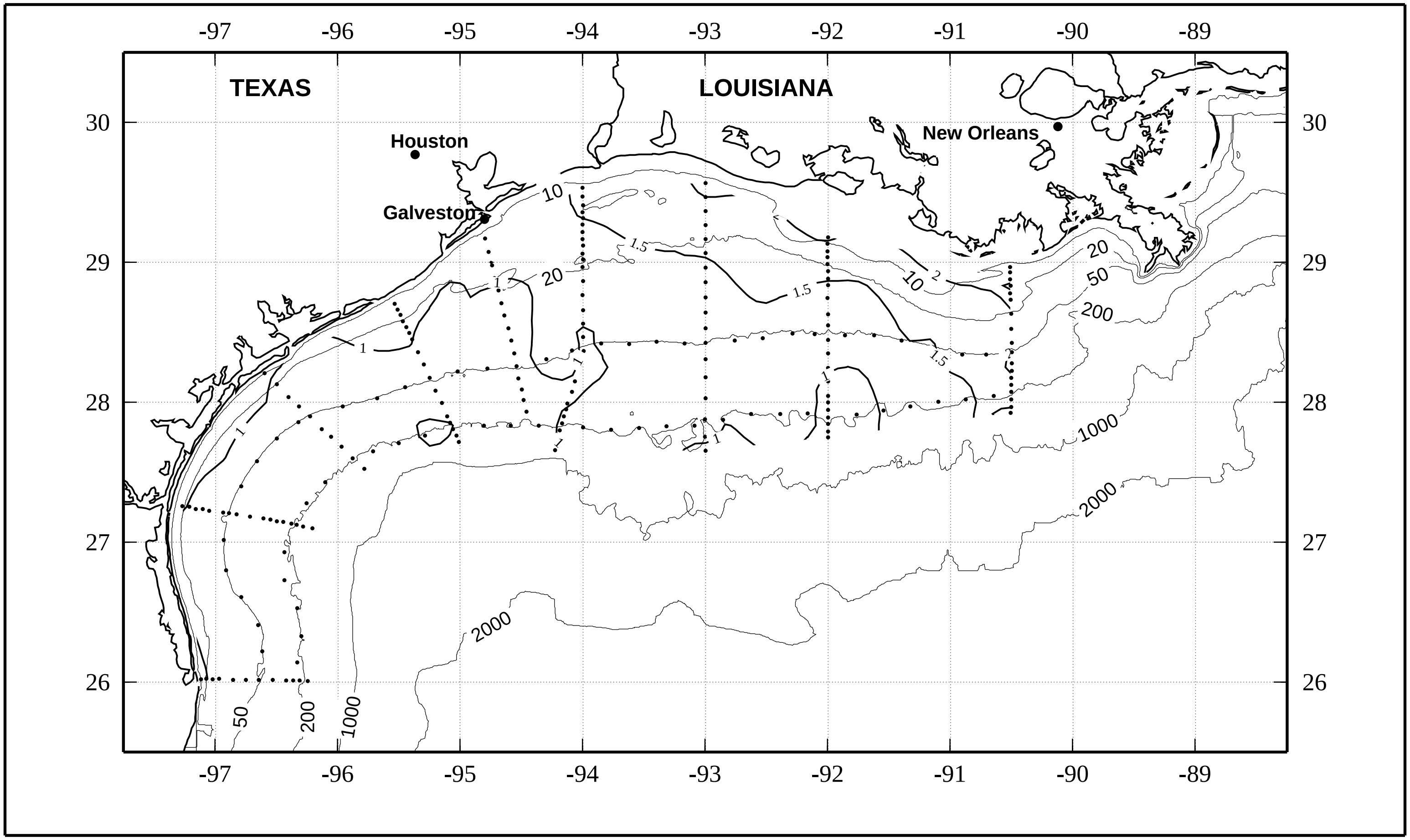

Figure 6.12.7. Relative fluorescence at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

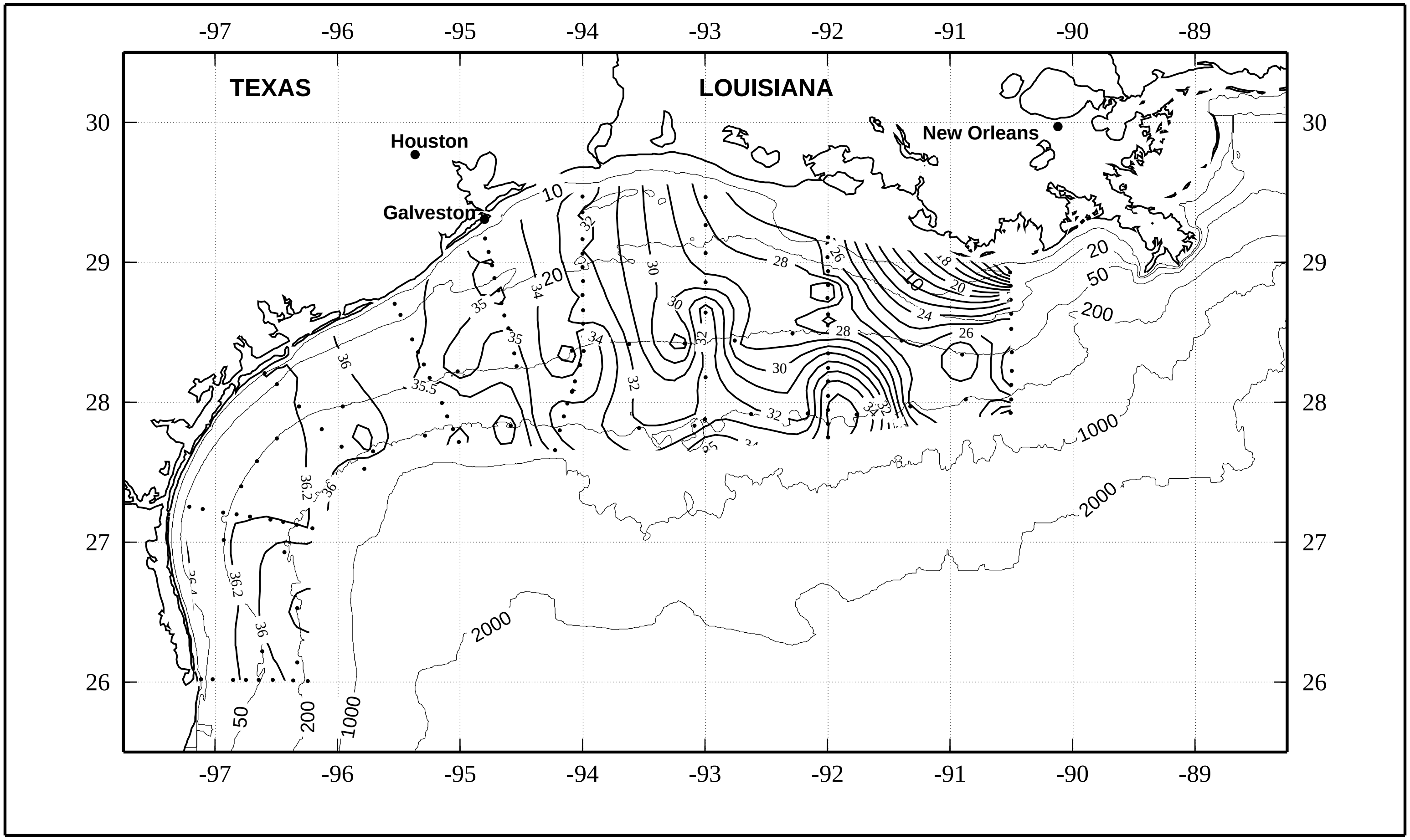

Figure 6.12.8. Bottle salinity at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

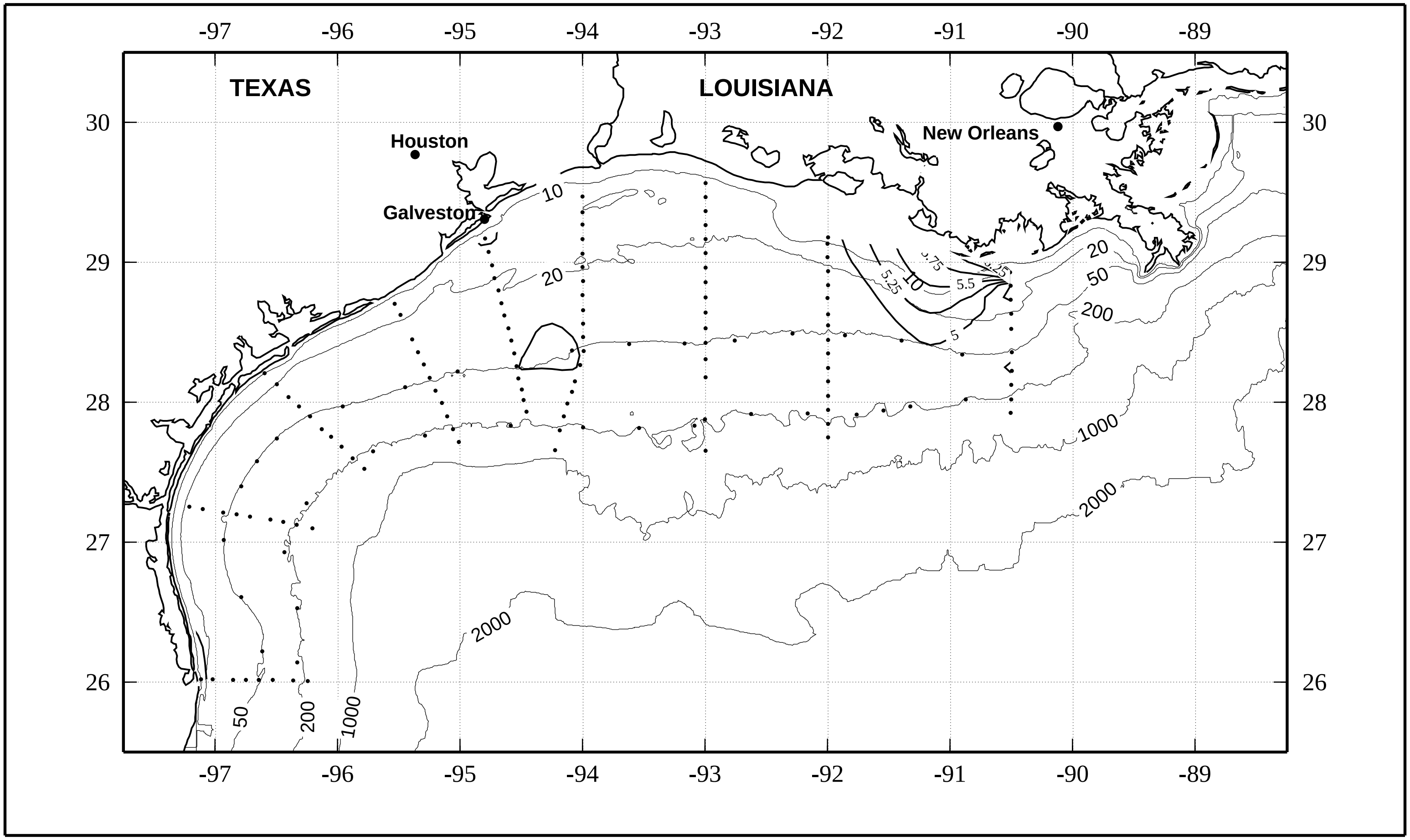

Figure 6.12.9. Dissolved oxygen (ml·l^{-1}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

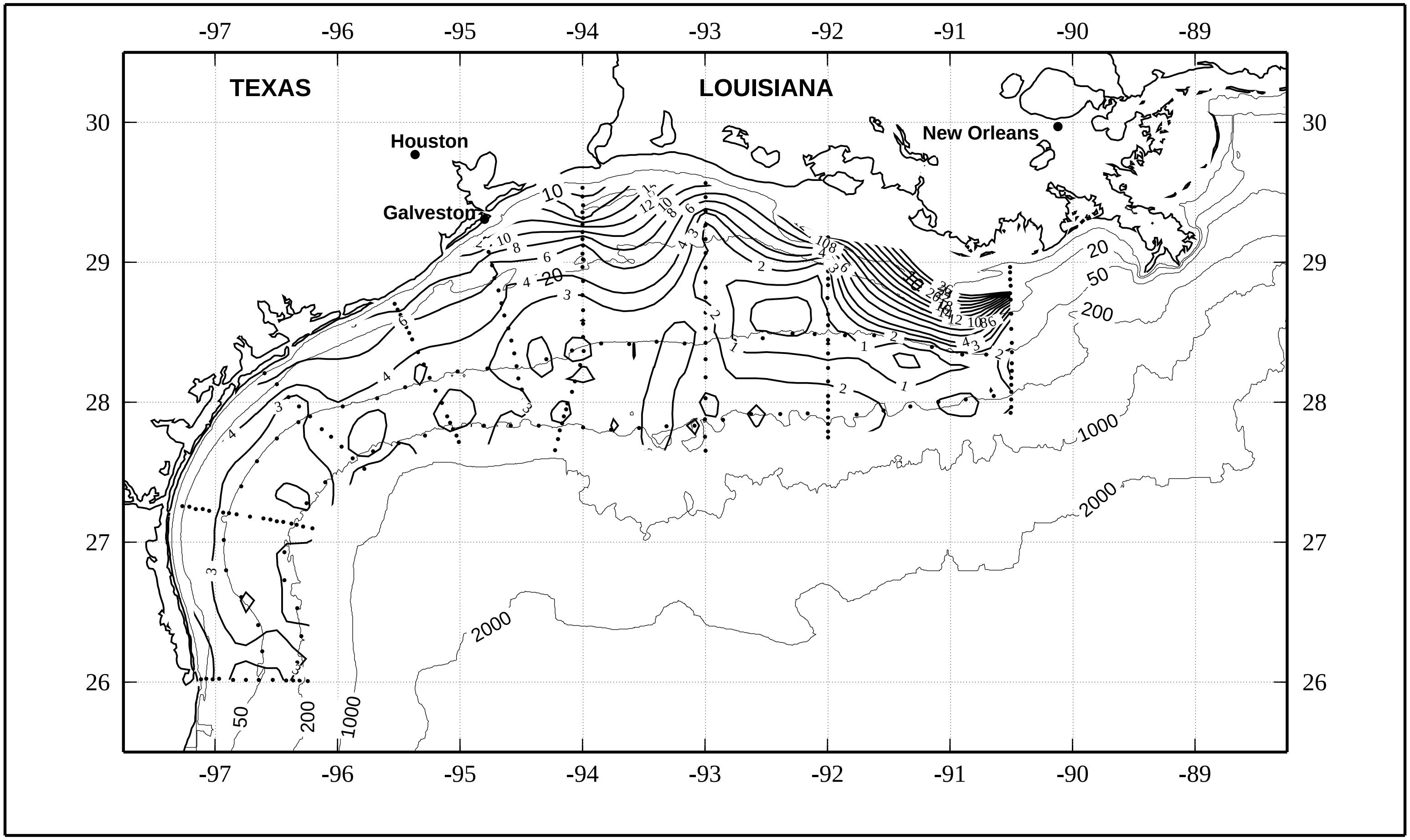

Figure 6.12.10. Silicate ($\mu mol \cdot l^{-1}$) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

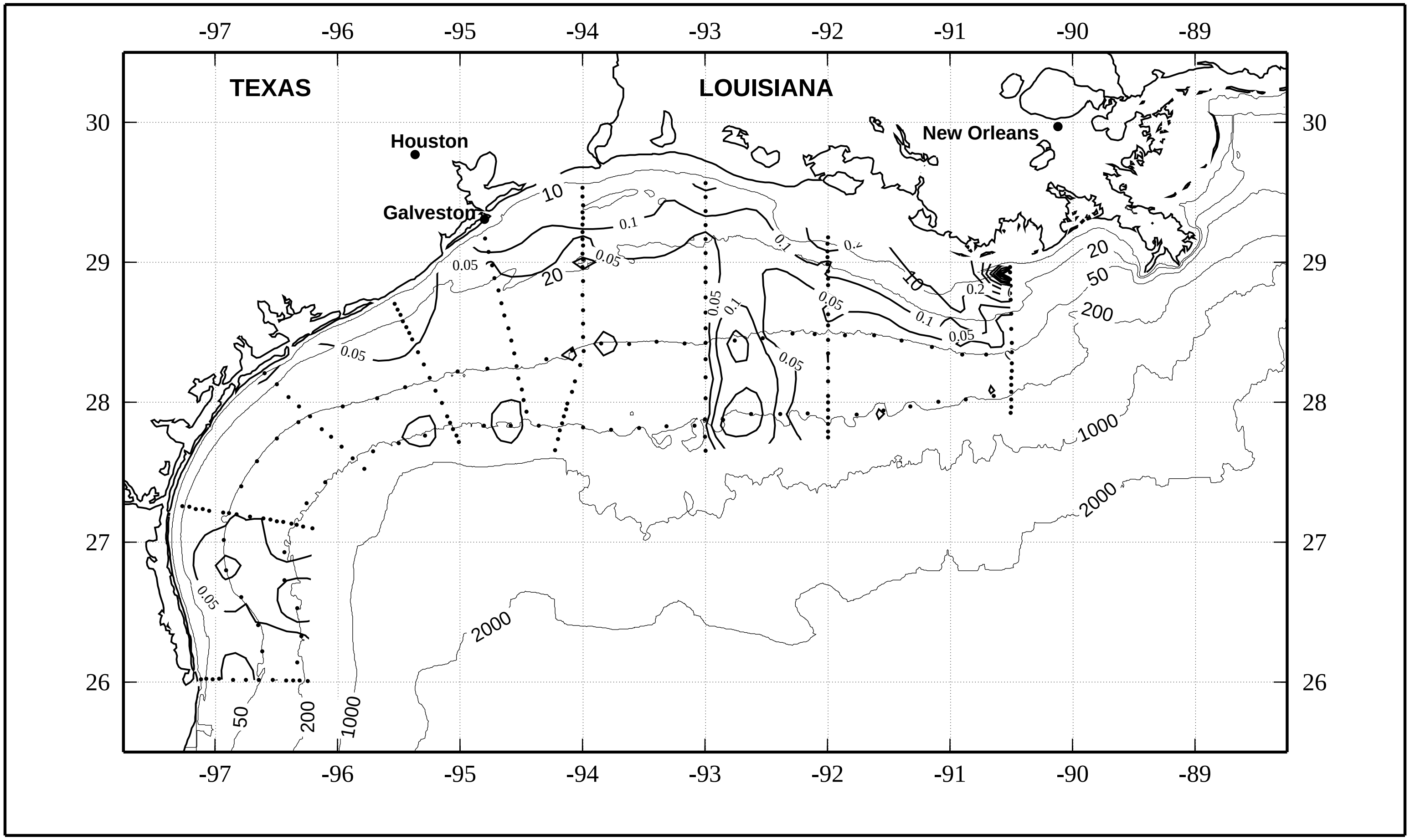

Figure 6.12.11. Phosphate (μmol·l^{-1}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

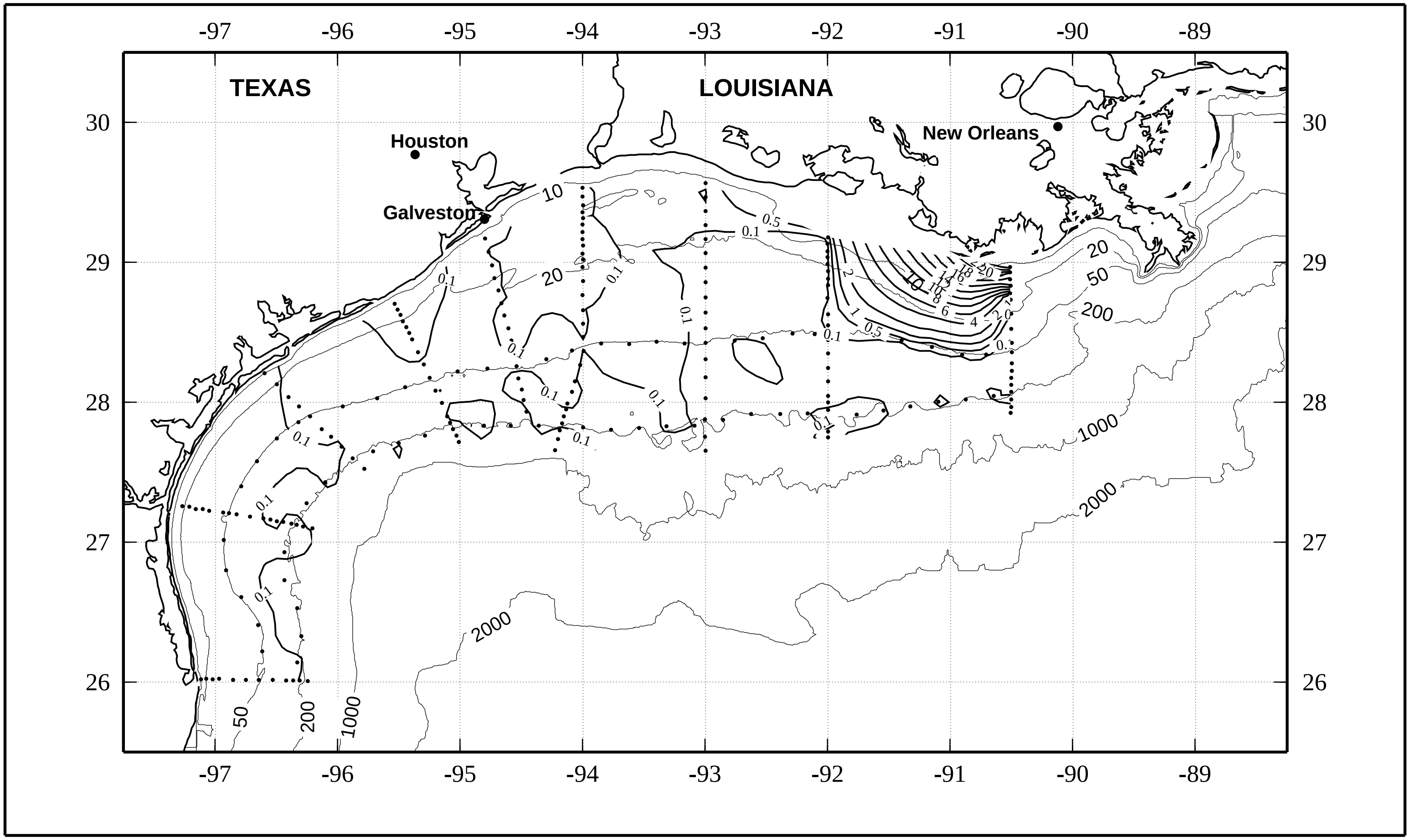

Figure 6.12.12. Nitrate (μmol·l^{-1}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

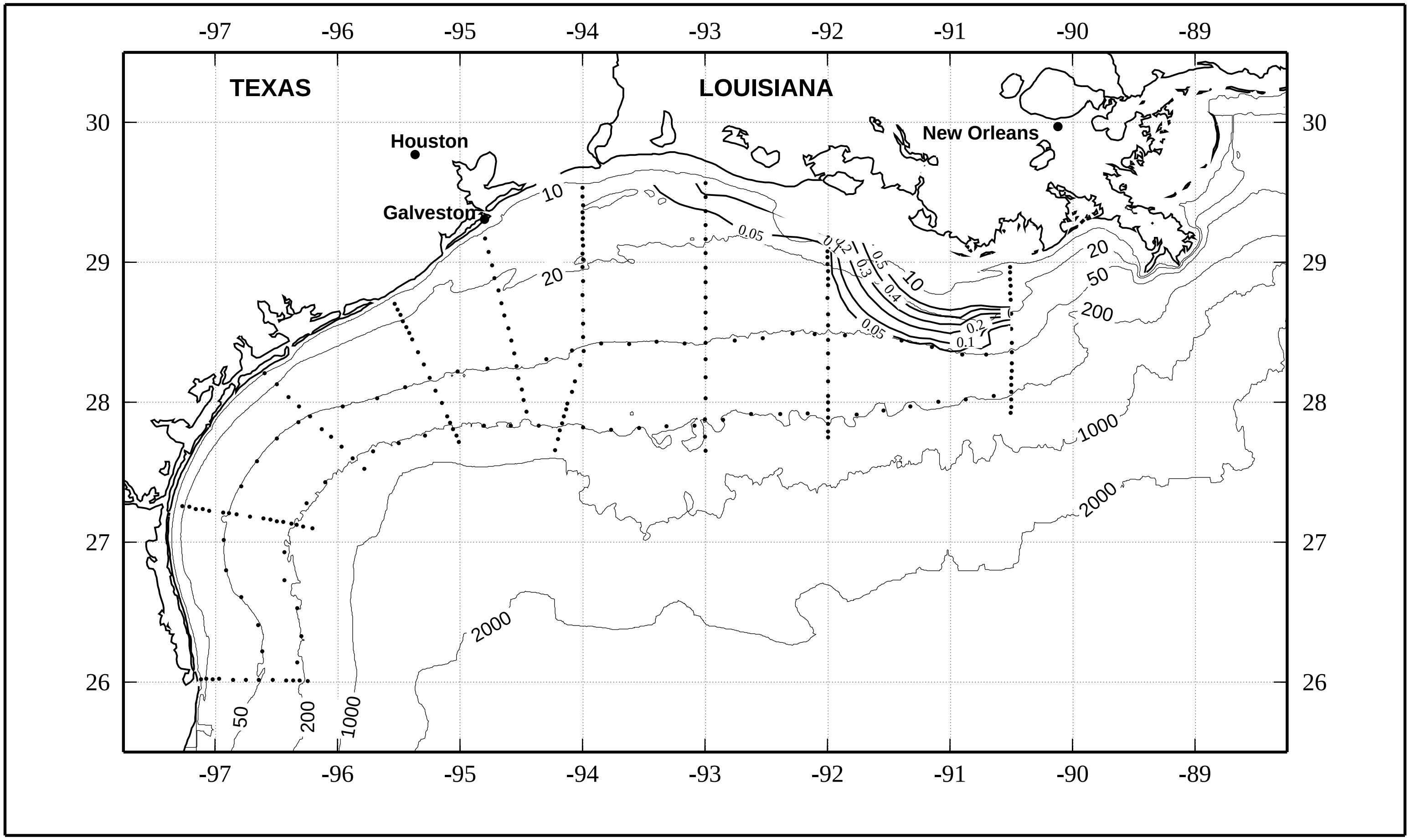

Figure 6.12.13. Nitrite (μmol·l^{-1}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

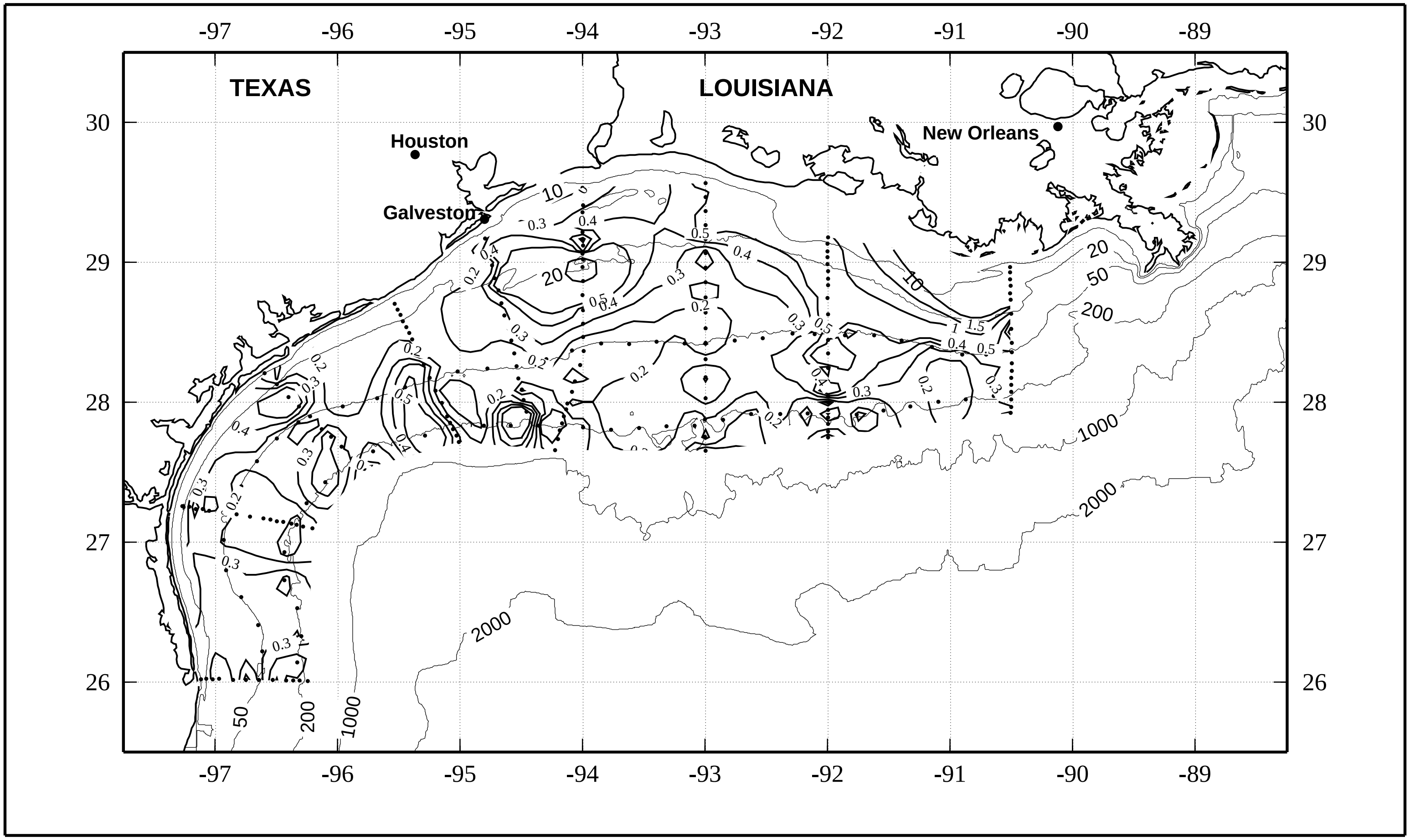

Figure 6.12.14. Ammonium (μmol·l^{-1}) at 3 m on LATEX A survey H06, 25 July - 7 August 1993.

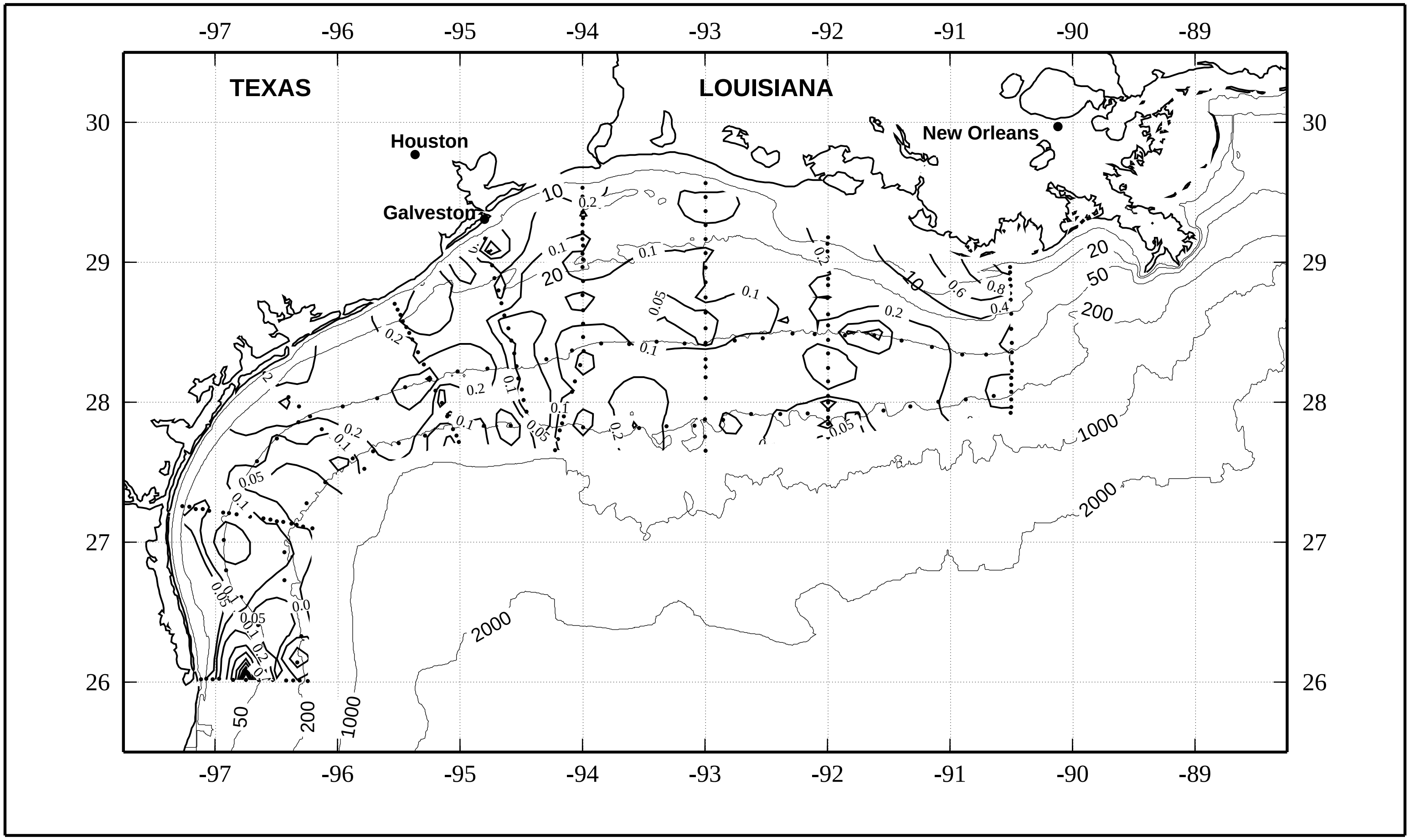

Figure 6.12.15. Urea ($\mu mol \cdot l^{-1}$) on LATEX A survey H06, 25 July - 7 August 1993.

F200

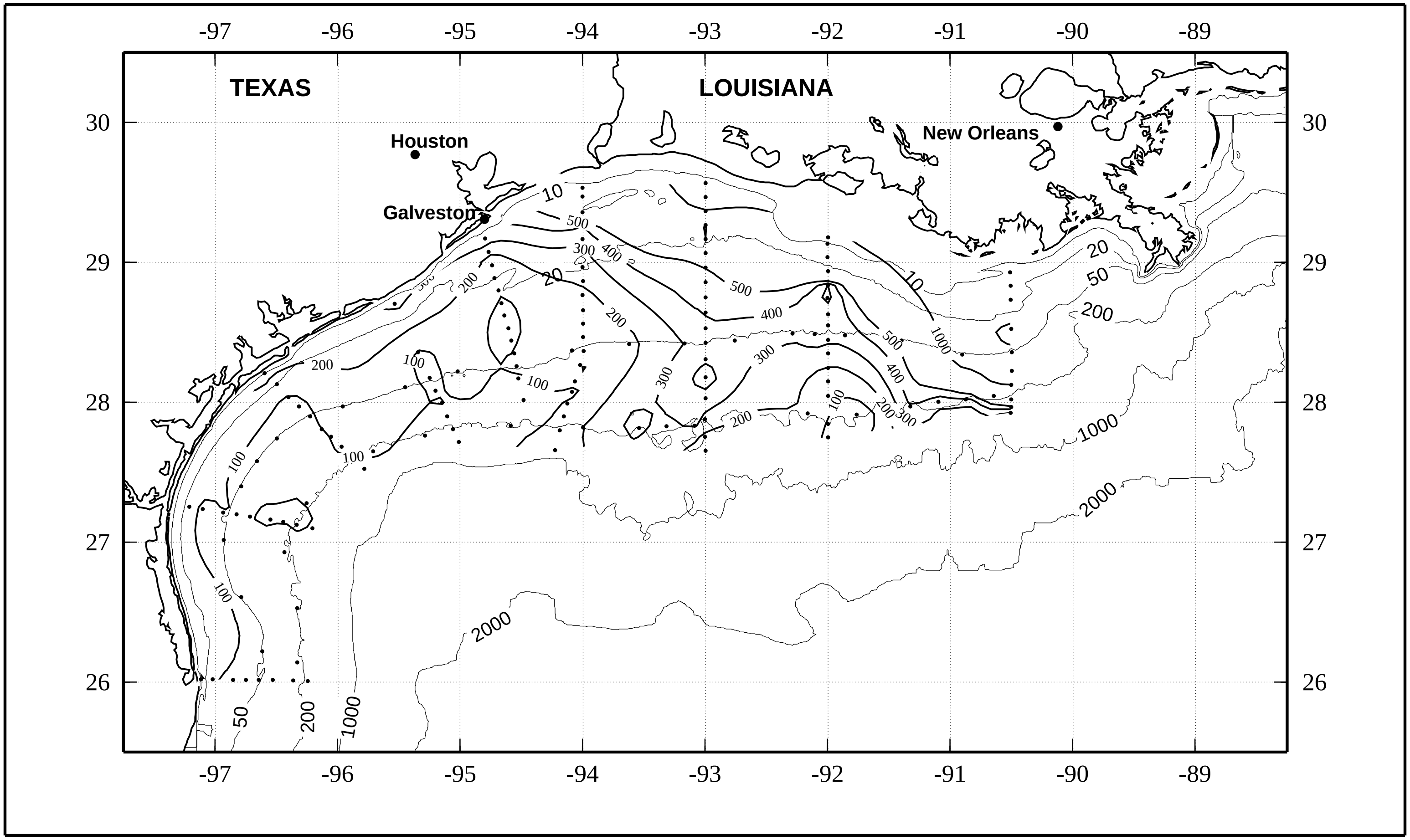

Figure 6.12.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H06, 25 July - 7 August 1993.

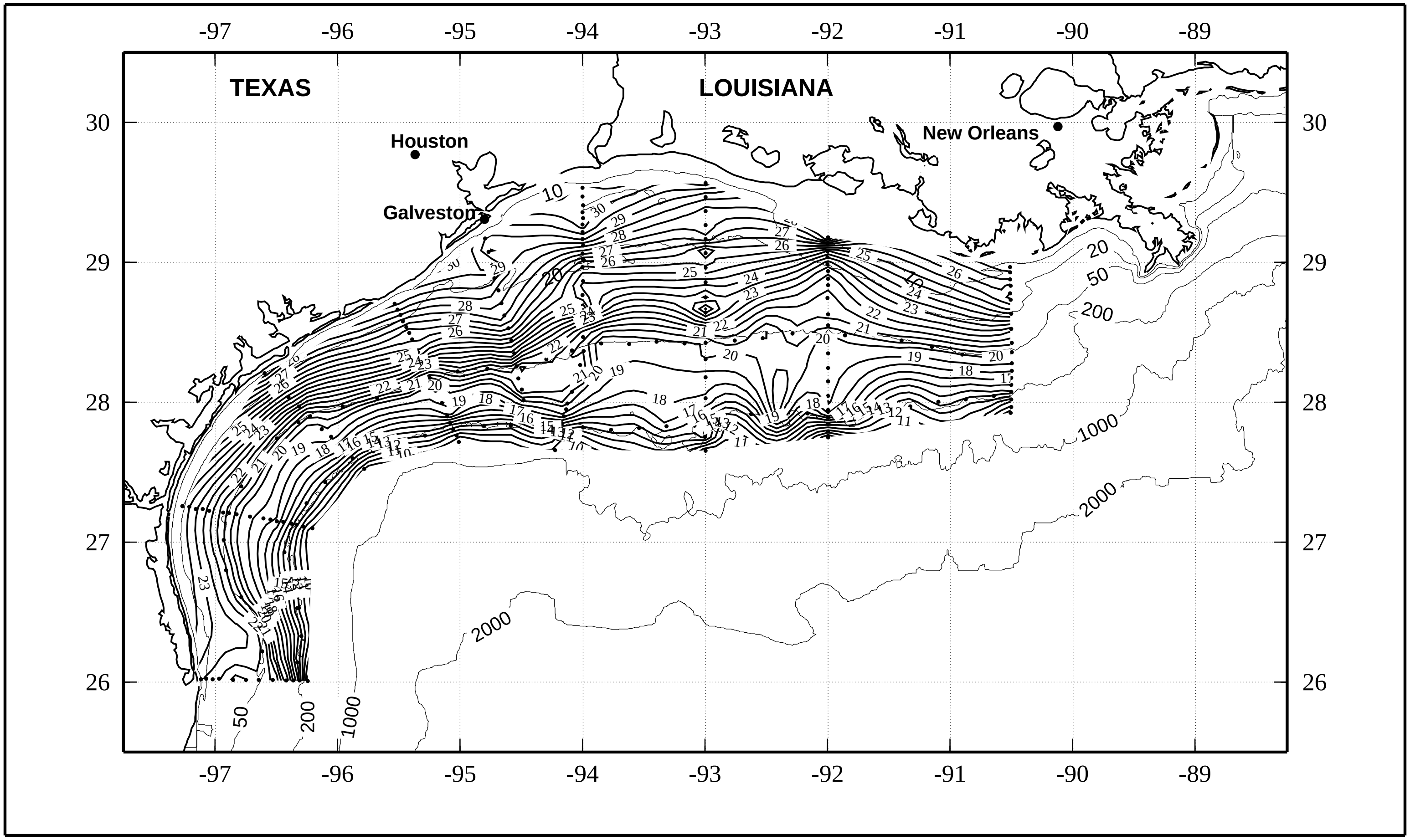

Figure 6.13.1. Potential temperature (˚C) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

F202

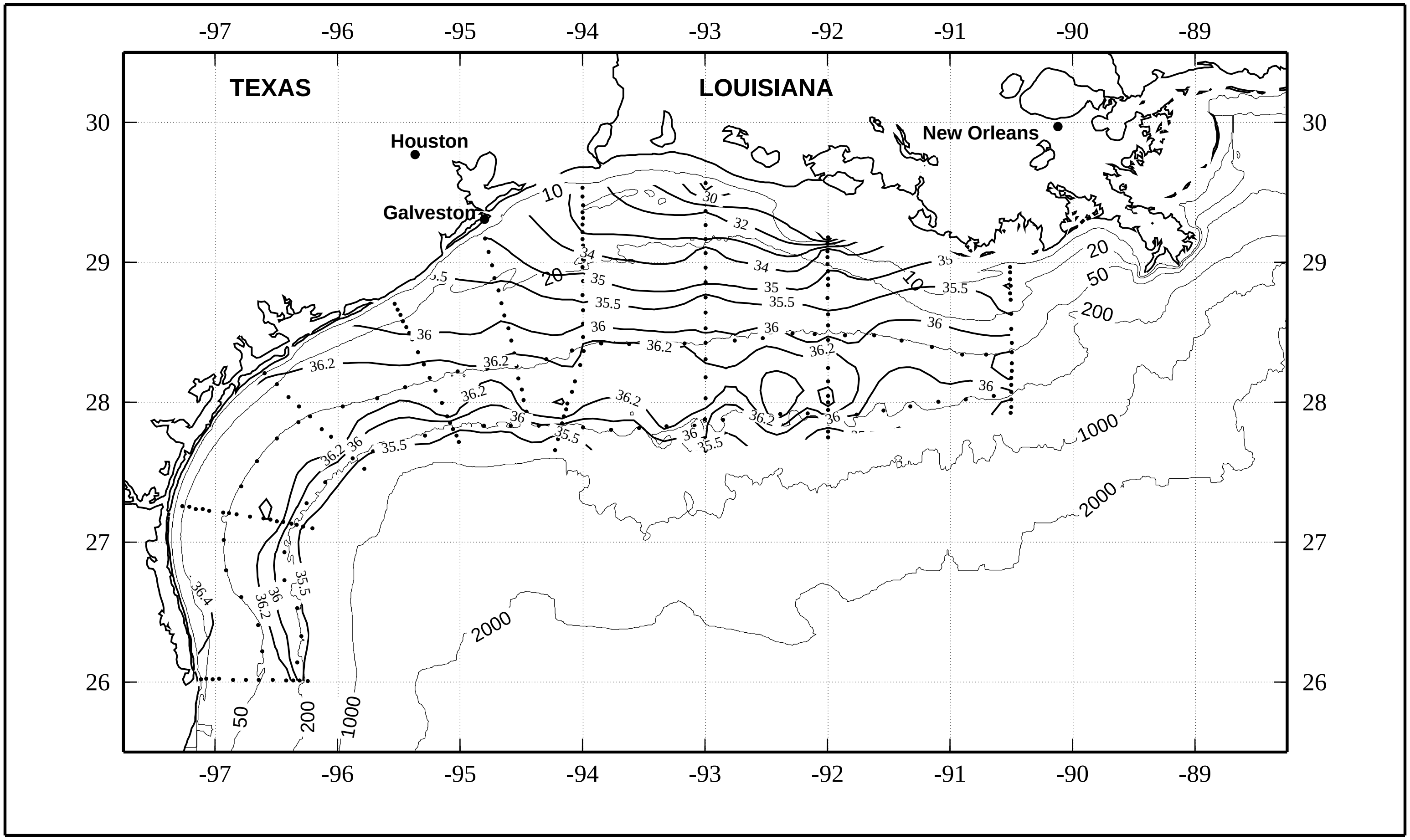

Figure 6.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H06, 25 July - 7 August 1993.

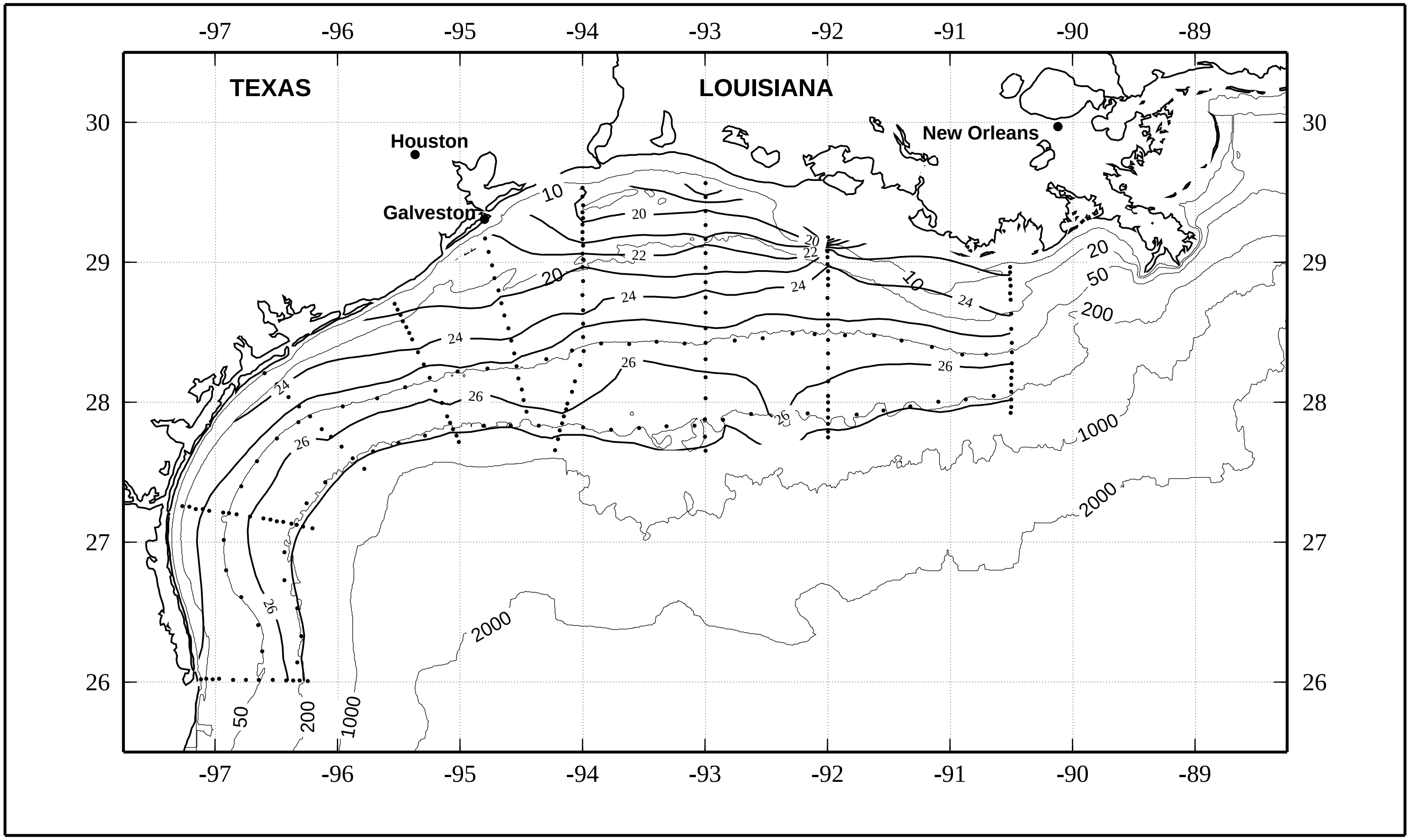

Figure 6.13.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

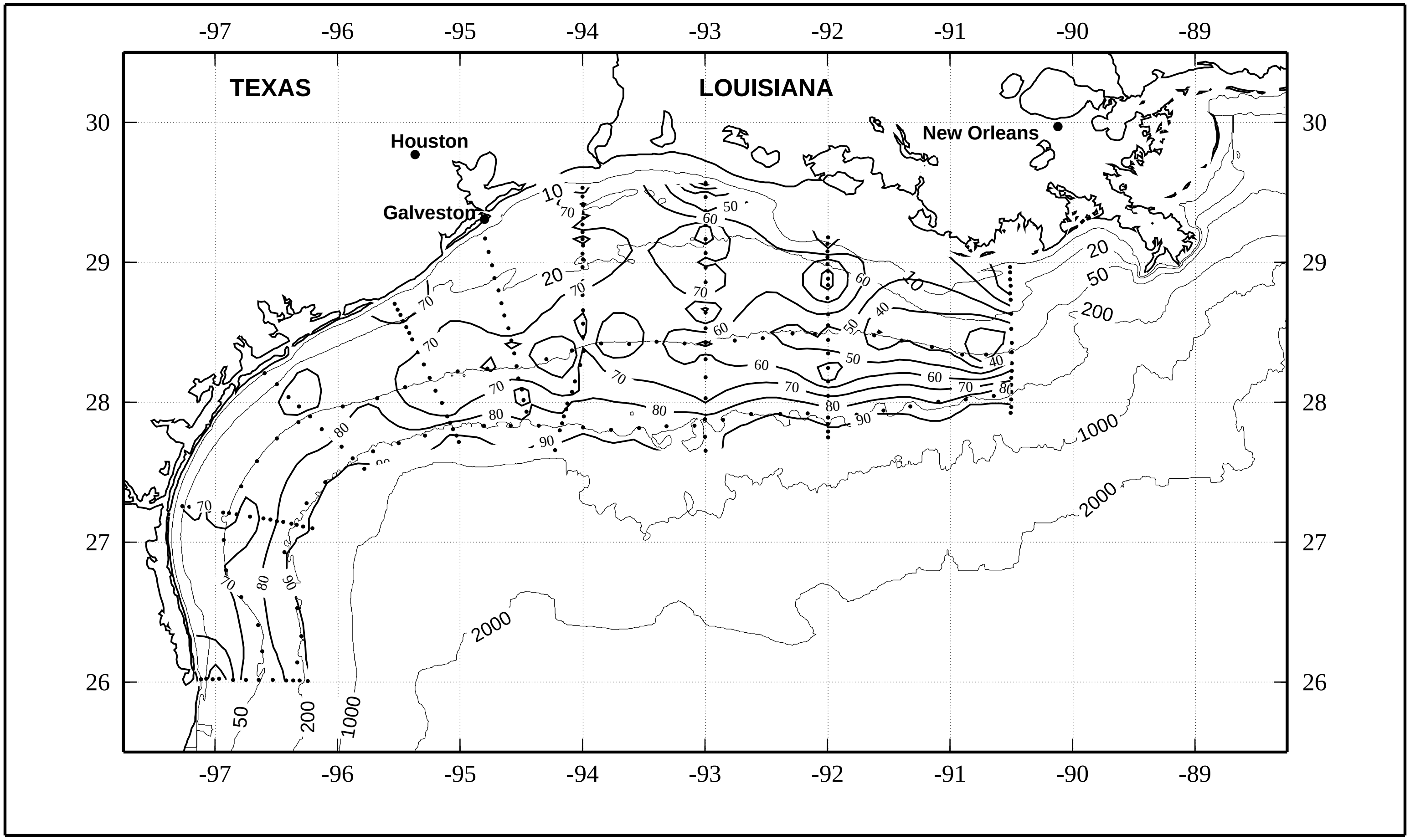

Figure 6.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

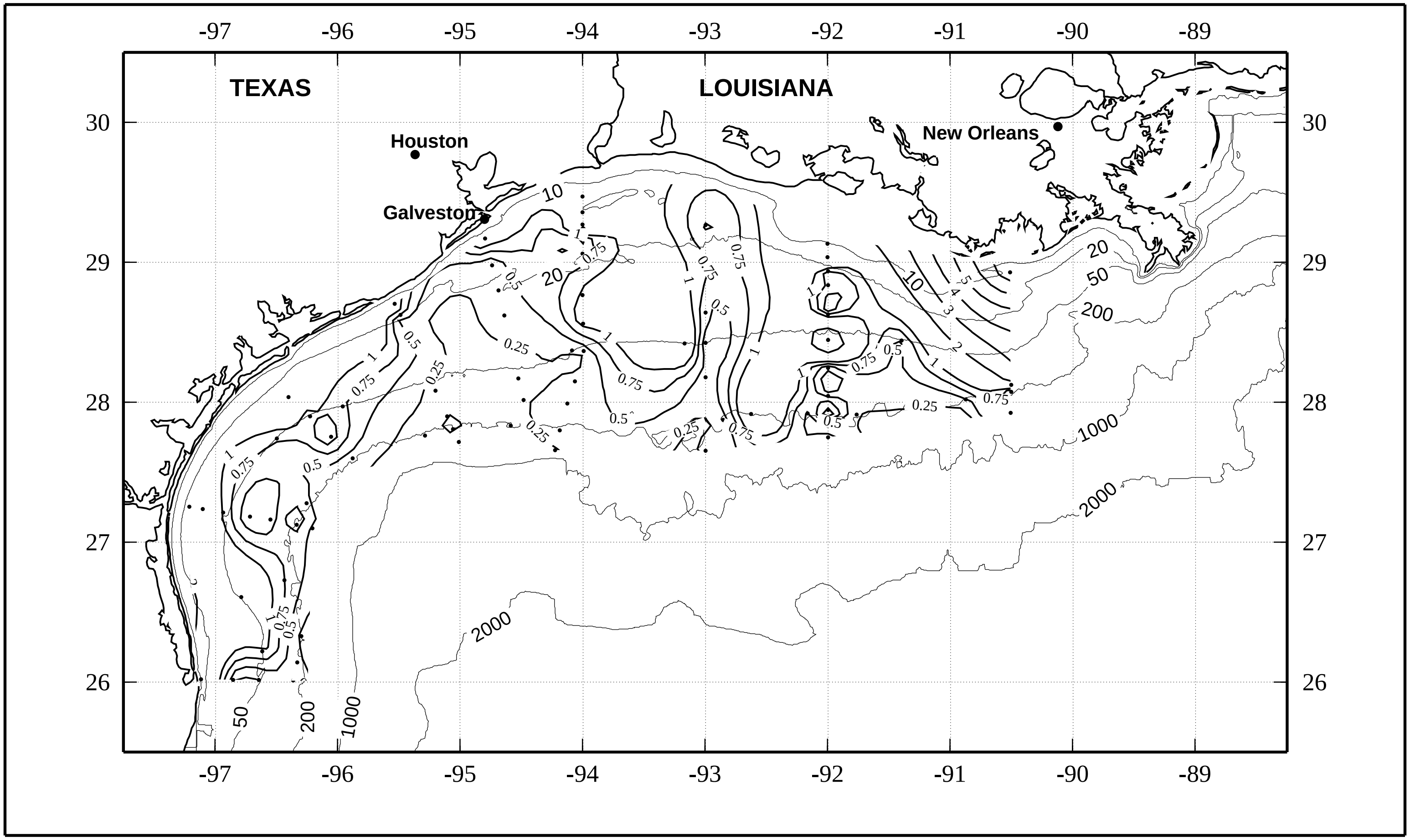

Figure 6.13.5. Suspended particulate material (mg·l^{-1}) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

F206

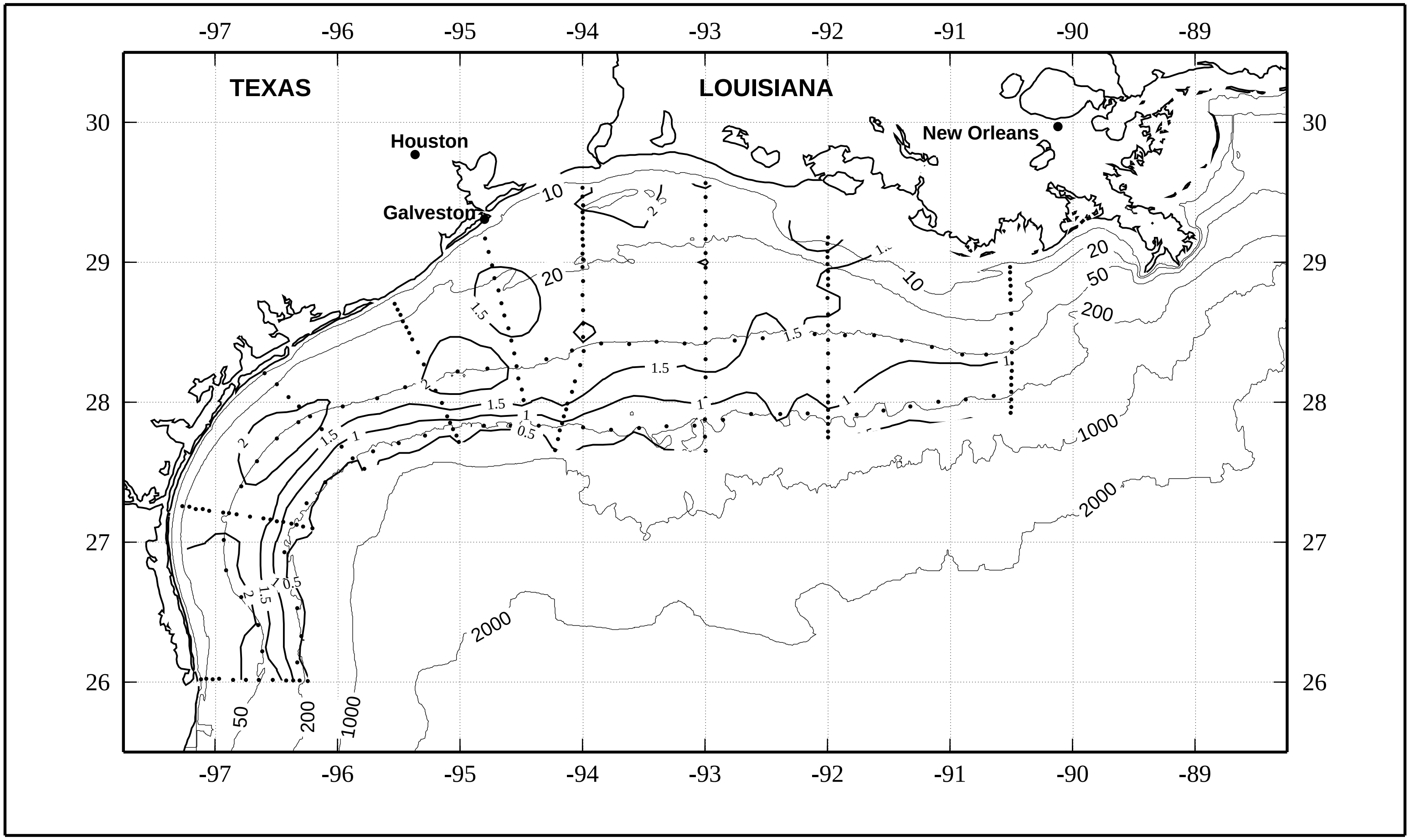

Figure 6.13.7. Relative fluorescence near bottom on LATEX A survey H06, 25 July - 7 August 1993.

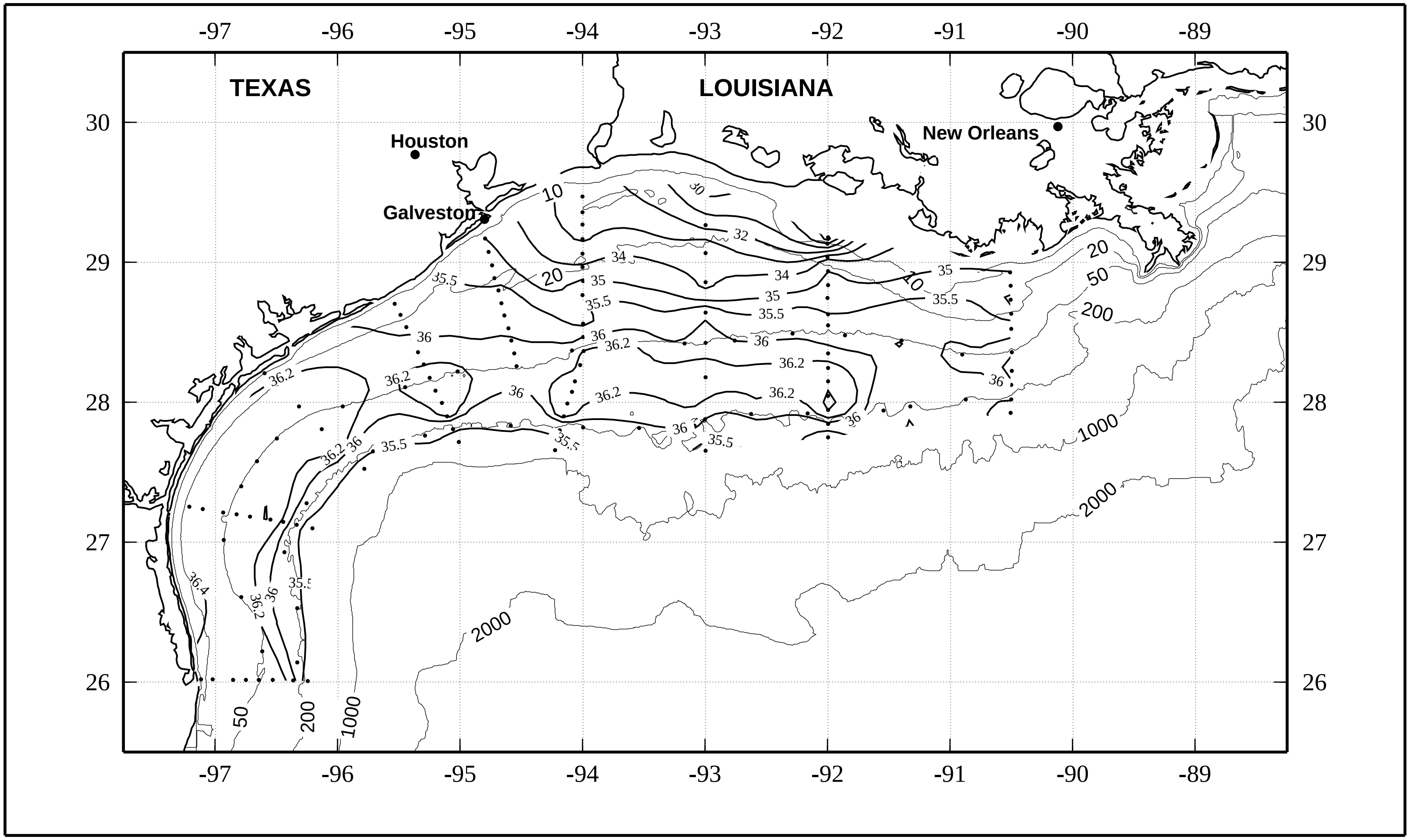

Figure 6.13.8. Bottle salinity near bottom on LATEX A survey H06, 25 July - 7 August 1993.

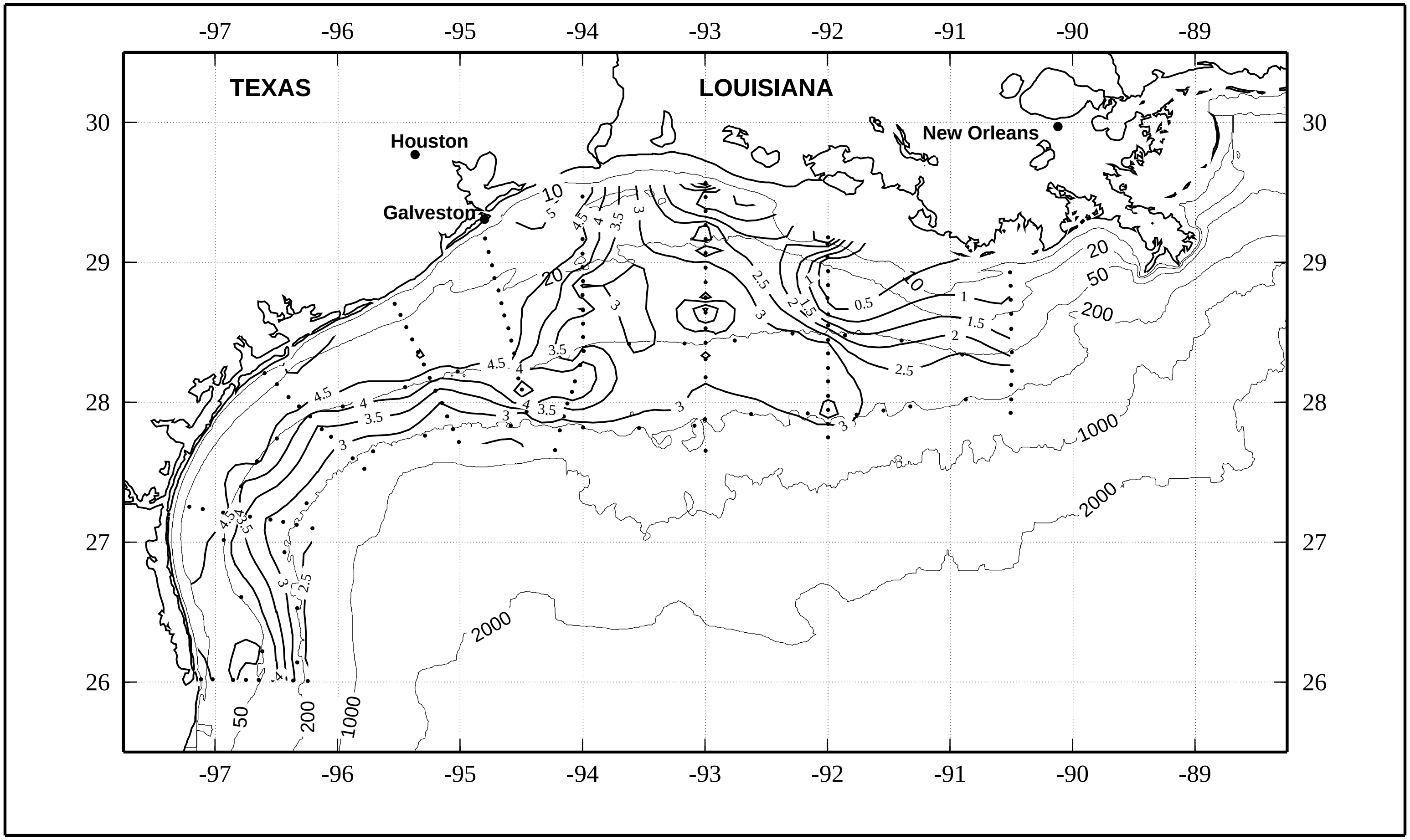

Figure 6.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

F209

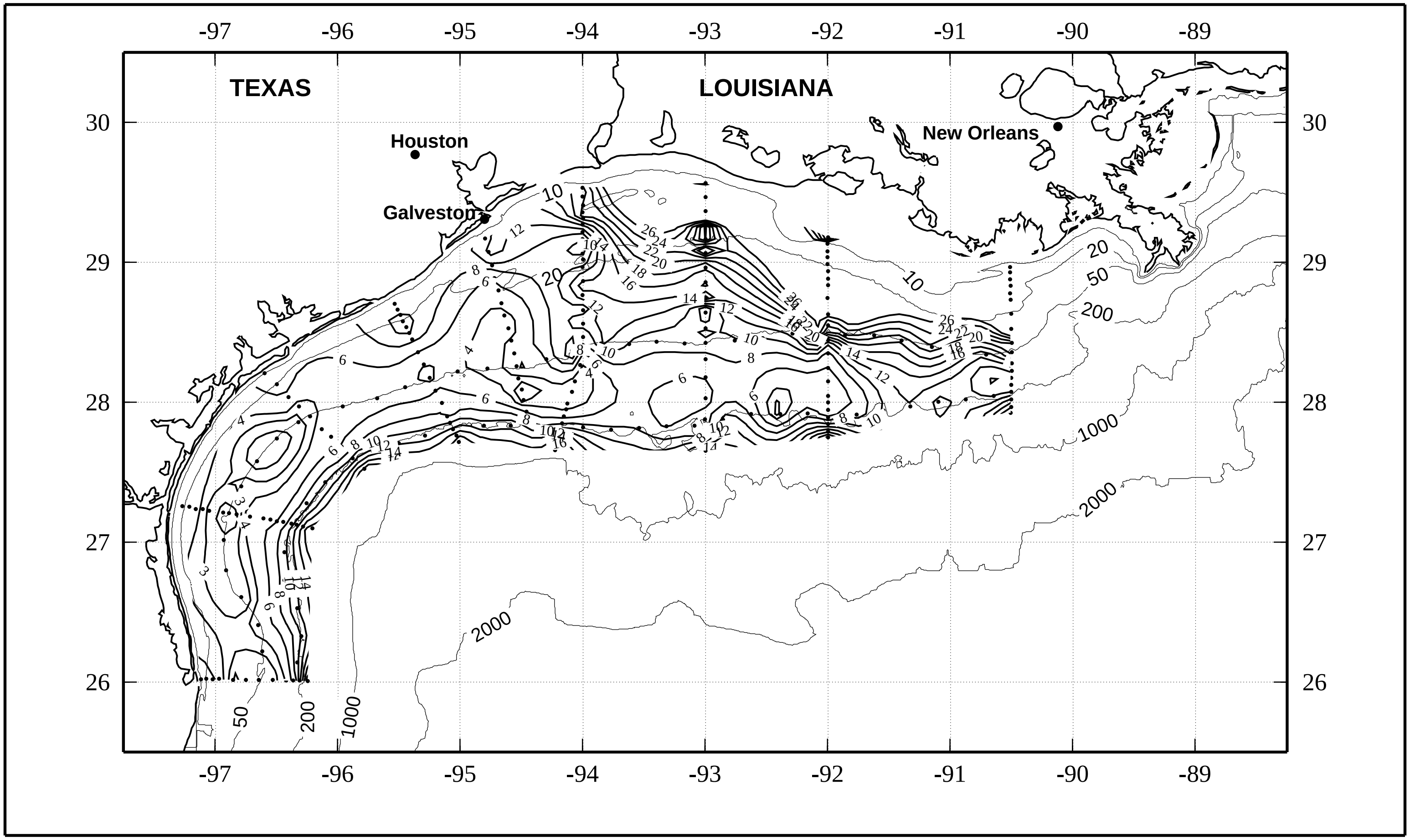

Figure 6.13.10. Silicate (μmol·l-1) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

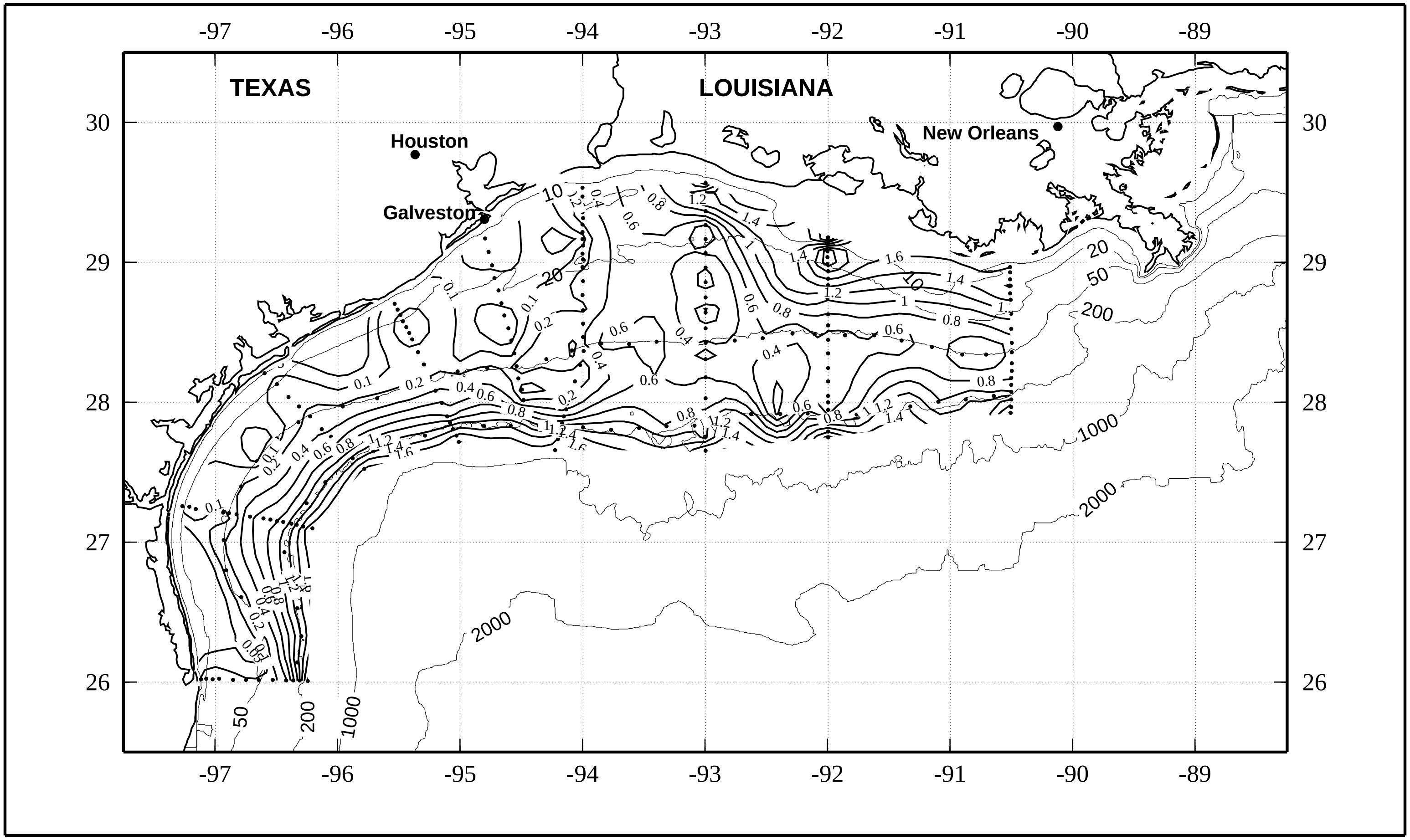

Figure 6.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

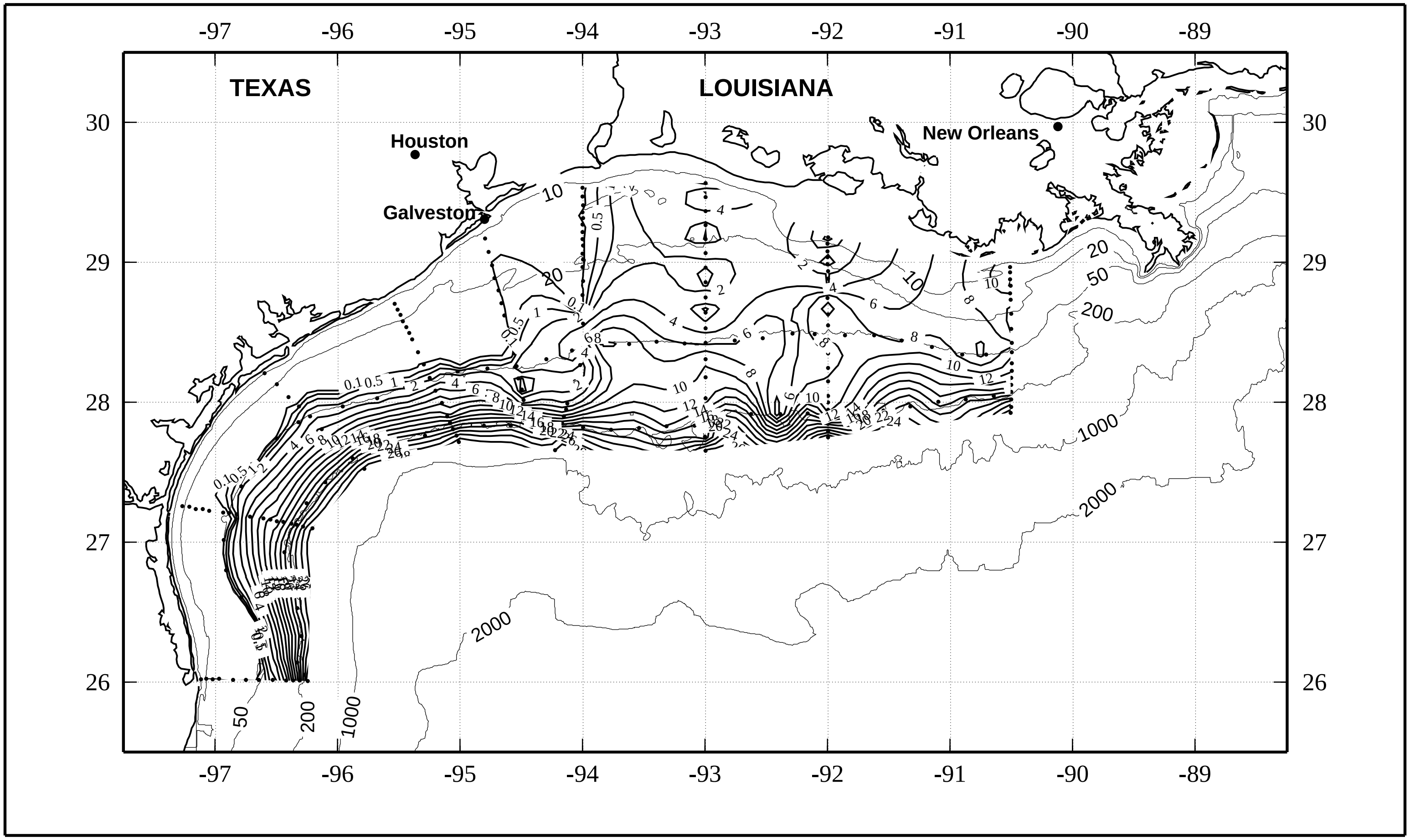

Figure 6.13.12. Nitrate (μmol·l^{-1}) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

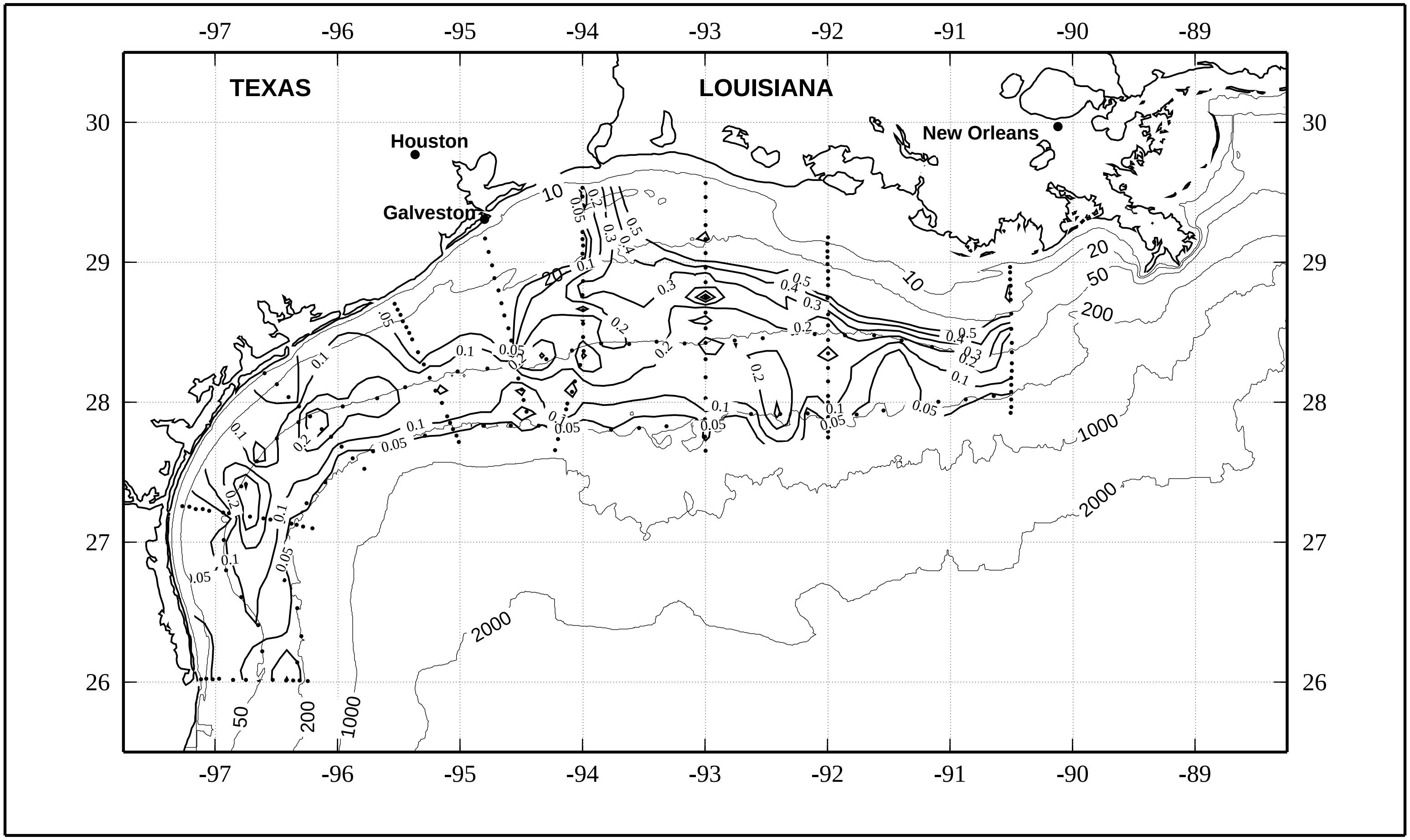

Figure 6.13.13. Nitrite (µmol·l⁻¹) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

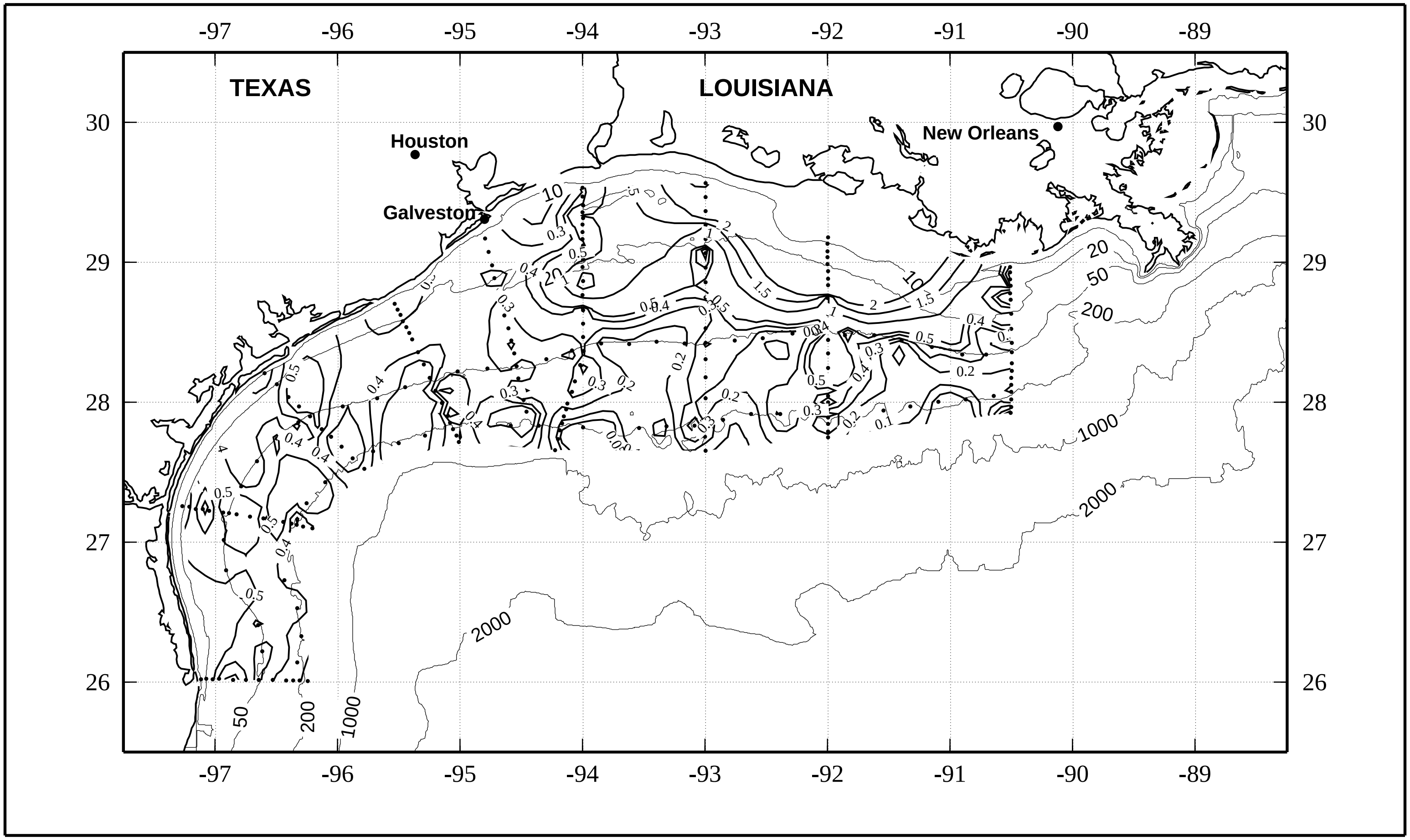

Figure 6.13.14. Ammonium (μmol·l^{-1}) near bottom on LATEX A survey H06, 25 July - 7 August 1993.

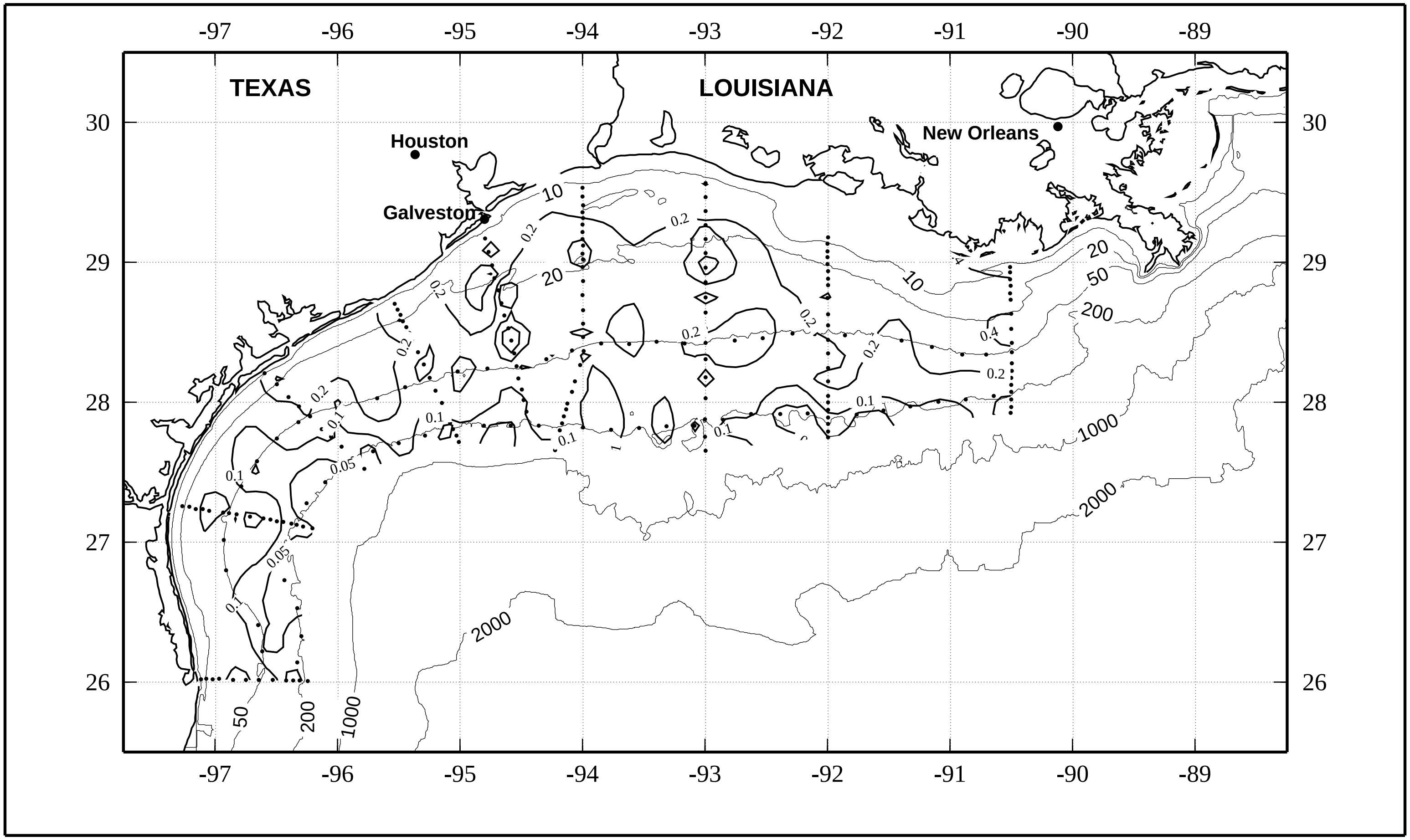

Figure 6.13.15. Urea ($\mu mol \cdot l^{-1}$) on LATEX A survey H06, 25 July - 7 August 1993.

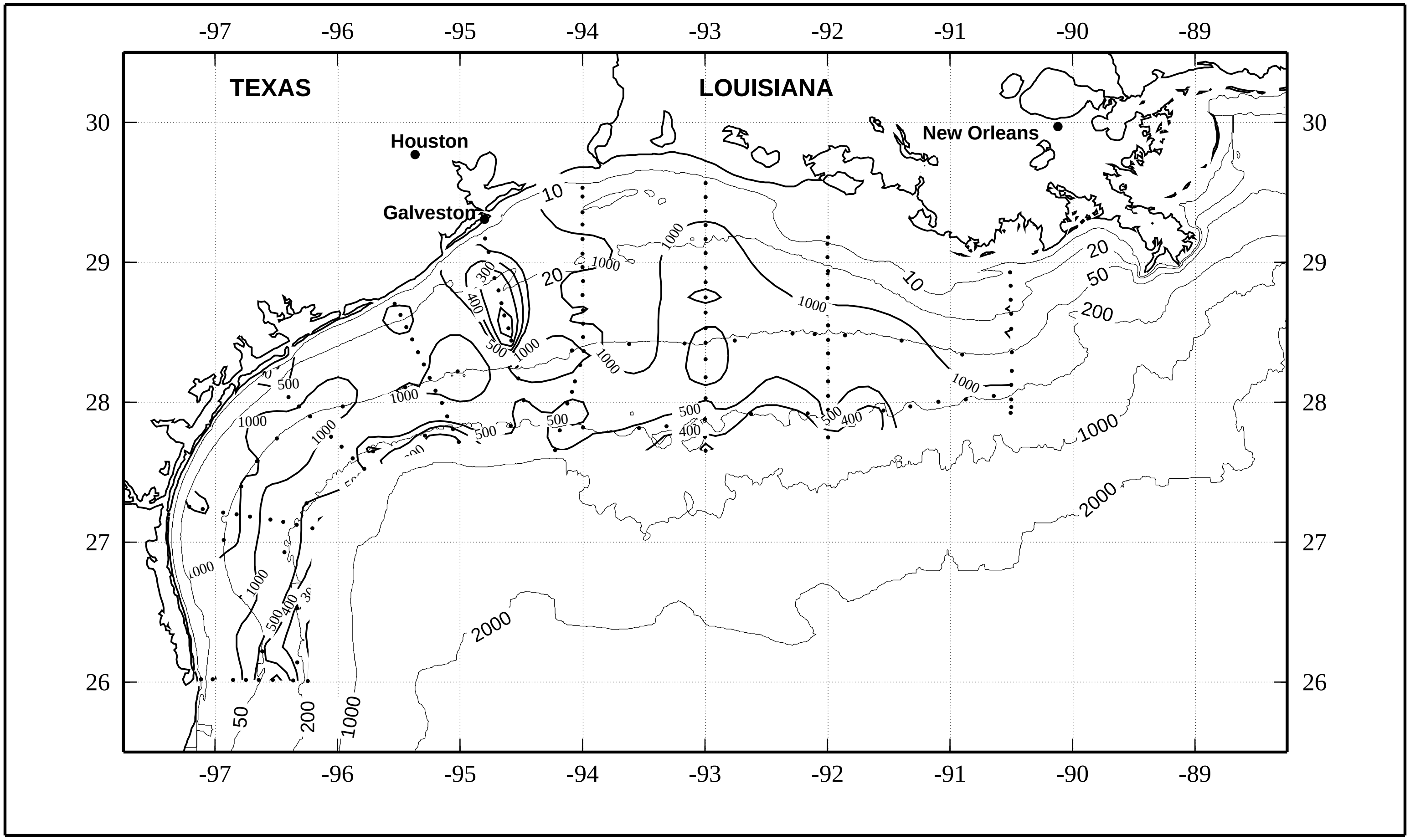

Figure 6.13.16. Chlorophyll a (ng·l^{-1}) at the chlorophyll maximum on LATEX A survey H06, 25 July - 7 August 1993.

F216

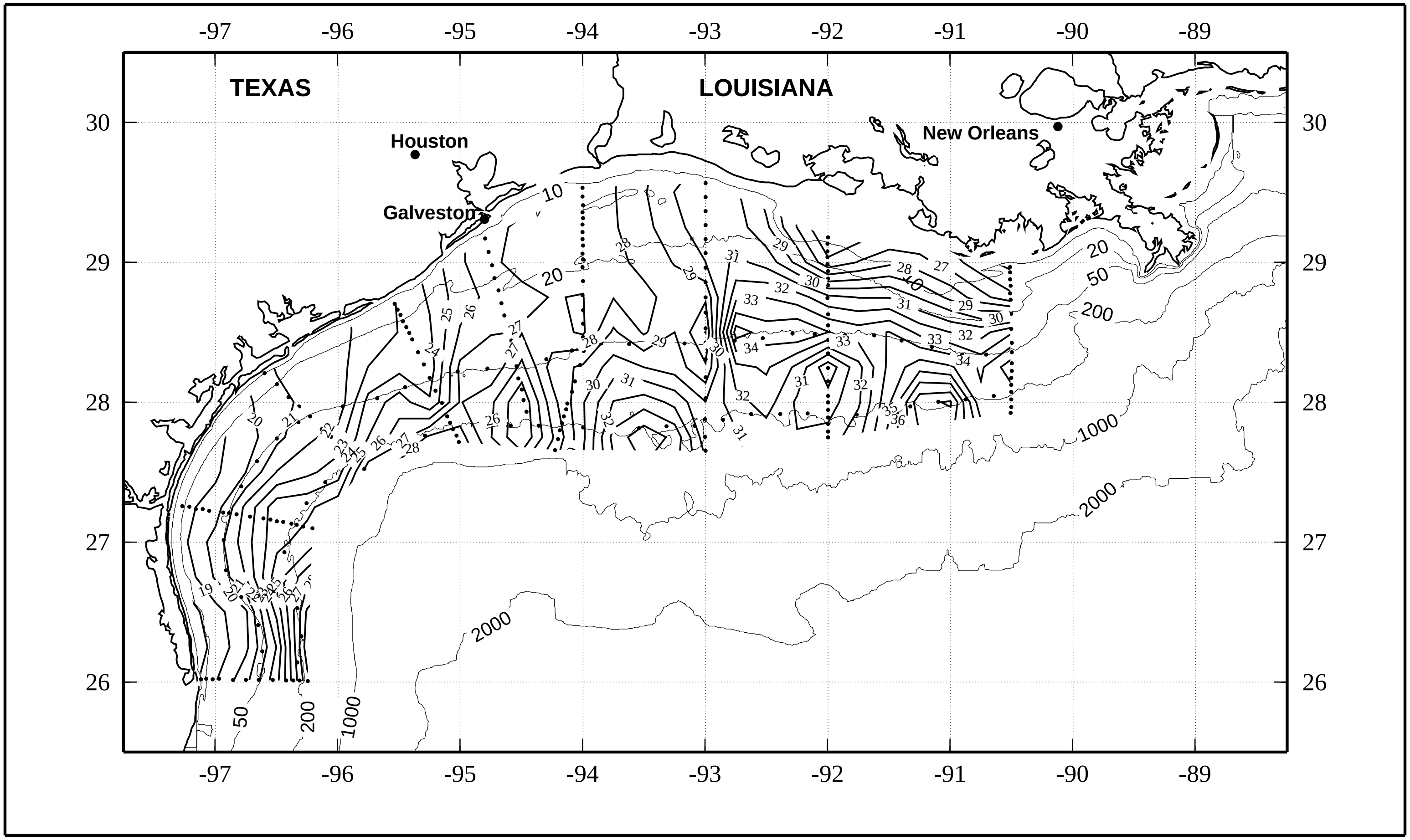

Figure 6.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H06, 25 July - 7 August 1993.

F217

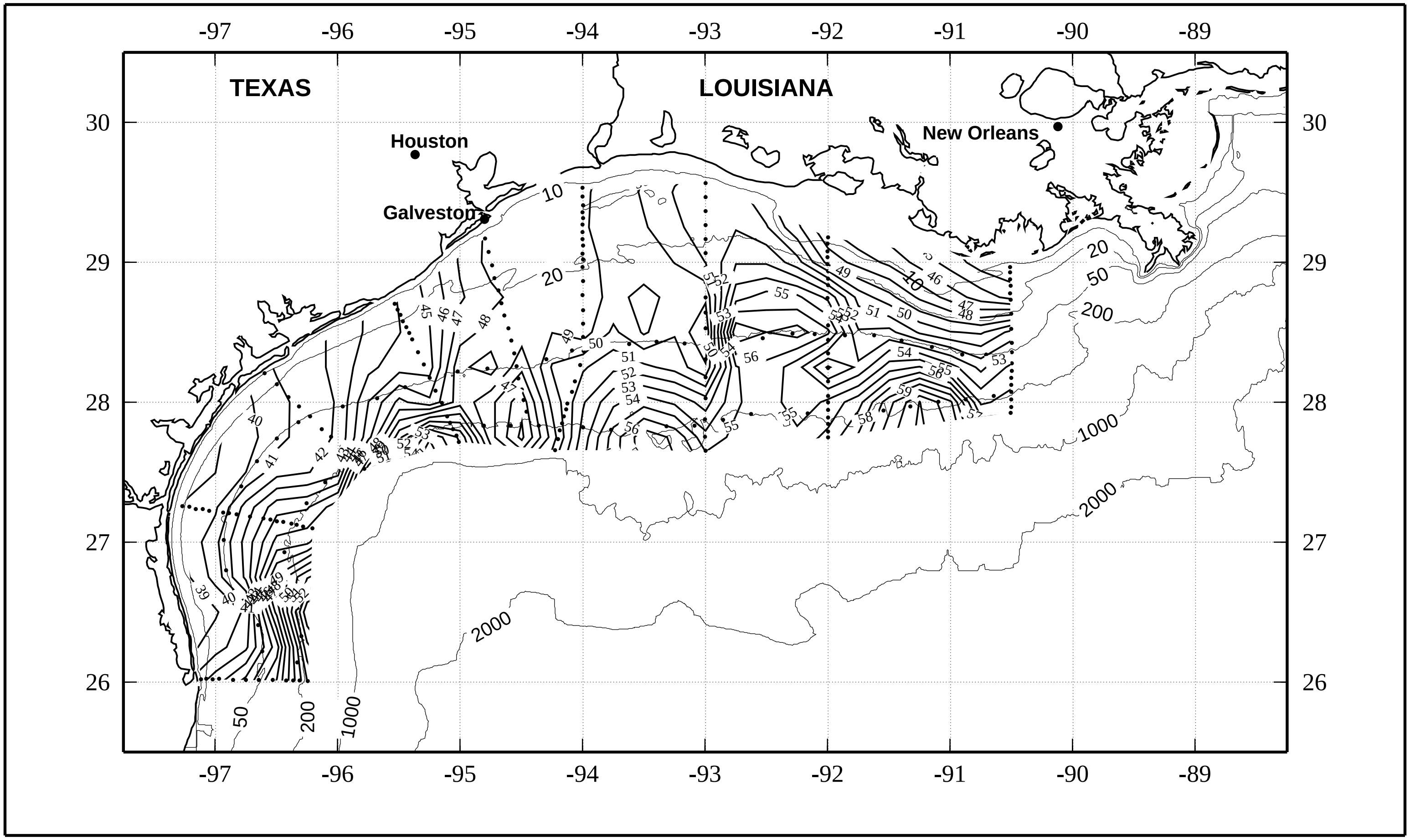

Figure 6.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H06, 25 July - 7 August 1993.

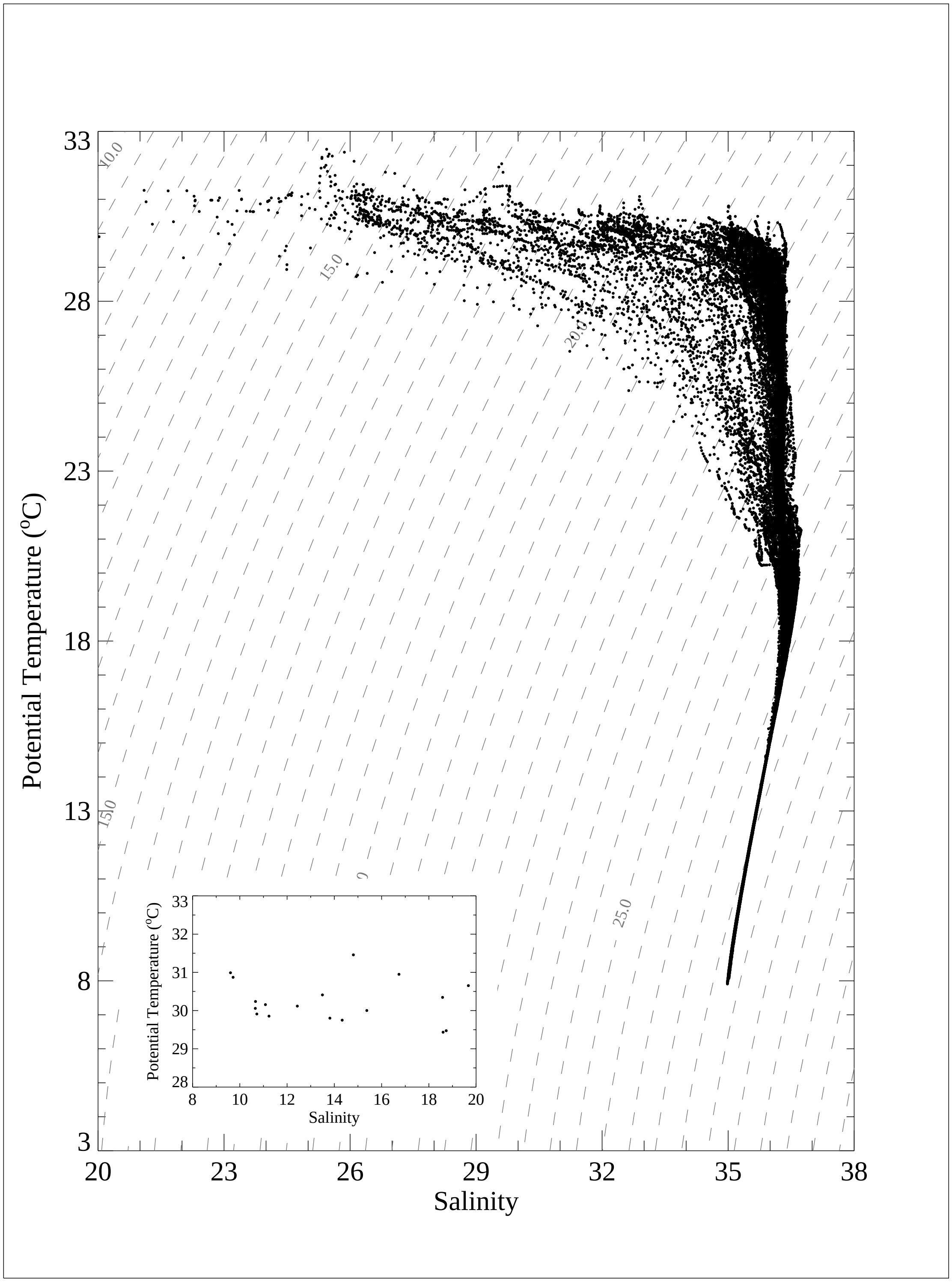

Figure 6.16. Composite potential temperature-salinity diagram for stations from cruise H06, 25 July - 7 August 1993. Inset shows points with salinity less than 20.

LATEX A Hydrographic Survey Data Report

APPENDIX G: Cruise H07
November 1993

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Technical Report No. 96-6-T
September 1998

Hydrographic Survey H07

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H07, which was conducted 6 - 22 November 1993 aboard the *R/V J. W. Powell*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 7.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 7.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 7.12.6 or 7.13.6.

Table 7.1. Definitions for "x.y.z" figure numbering scheme for cruise H07.

---

cruise number (x):

7 = hydrographic survey H07

plot type (y):

0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = vertical section of line 10 (along 50-m isobath)
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 7.1. Definitions for "x.y.z" figure numbering scheme for cruise H07. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

At most pigment stations, only chlorophyll *a* and phaeopigments were determined, using a Turner fluorometer. At 16 stations, however, the concentrations of 20 pigments also were determined, using high performance liquid chromatography (HPLC). Two of the pigments, lutein and chlorophyll-c4, were not observed. Others measured were chlorophyll-c3, chlorophyllide, chlorophyll *c*, peridinin, 19' butanoyloxyfucoxanthin, fucoxanthin, 19' hexanoyloxyfucoxanthin, prasinoxanthin, violaxanthin, diadinoxanthin, alloxanthin, diatoxanthin, zeaxanthin, chlorophyll *b*, alloxanthin-a, chlorophyll-a', and carotene. The accessory pigments are discussed in Neuhard (1994) and Bontempi (1995), and the data are included in the LATEX data base provided to NODC. Only chlorophyll *a* is shown in the plots.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 7.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H07. Figure 7.0 shows the location map for the stations.

Following Figure 7.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

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Table 7.2. Station times and positions for LATEX A cruise H07.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	07-NOV-1993	1630	27˚56.39'	96˚10.83'	48.0	0
2	07-NOV-1993	1843	27˚58.19'	95˚57.59'	48.2	7
3	07-NOV-1993	1948	28˚00.01'	95˚49.18'	49.0	0
4	07-NOV-1993	2046	28˚01.82'	95˚40.77'	47.9	8
5	07-NOV-1993	2149	28˚04.20'	95˚33.90'	49.0	0
6	07-NOV-1993	2238	28˚06.62'	95˚26.97'	47.8	7
7	08-NOV-1993	0100	28˚09.91'	95˚14.07'	49.0	0
8	08-NOV-1993	0217	28˚13.20'	95˚01.19'	48.2	7
9	08-NOV-1993	0306	28˚13.82'	94˚54.00'	50.0	0
10	08-NOV-1993	0357	28˚14.41'	94˚46.80'	48.2	7
11	08-NOV-1993	0448	28˚14.99'	94˚39.60'	49.0	0
12	08-NOV-1993	0538	28˚15.59'	94˚32.42'	47.8	7
13	08-NOV-1993	0644	28˚17.11'	94˚25.21'	48.0	0
14	08-NOV-1993	0738	28˚18.57'	94˚18.02'	47.8	7
15	08-NOV-1993	0847	28˚20.41'	94˚11.73'	49.0	0
16	08-NOV-1993	0935	28˚22.21'	94˚05.43'	48.5	7
17	08-NOV-1993	1032	28˚23.76'	93˚58.23'	50.0	0
18	08-NOV-1993	1122	28˚25.30'	93˚51.05'	49.6	7
19	08-NOV-1993	1215	28˚25.19'	93˚44.16'	50.0	0
20	08-NOV-1993	1304	28˚25.06'	93˚37.27'	49.4	7
21	08-NOV-1993	1408	28˚25.54'	93˚30.66'	51.0	0
22	08-NOV-1993	1501	28˚25.96'	93˚24.02'	49.3	7
23	08-NOV-1993	1602	28˚25.65'	93˚17.11'	50.0	0
24	08-NOV-1993	1658	28˚25.32'	93˚10.18'	48.8	7
25	08-NOV-1993	1829	28˚25.90'	92˚57.92'	51.0	0
26	08-NOV-1993	1950	28˚26.48'	92˚45.66'	51.8	6
27	08-NOV-1993	2049	28˚27.04'	92˚38.74'	52.0	0
28	08-NOV-1993	2143	28˚27.61'	92˚31.80'	51.6	6
29	08-NOV-1993	2237	28˚28.50'	92˚24.58'	54.0	0
30	08-NOV-1993	2332	28˚29.40'	92˚17.36'	50.9	7
31	09-NOV-1993	0029	28˚29.39'	92˚11.98'	53.0	0
32	09-NOV-1993	0115	28˚29.39'	92˚06.59'	50.8	7
33	09-NOV-1993	0218	28˚29.08'	91˚59.10'	52.0	0
34	09-NOV-1993	0317	28˚28.79'	91˚51.61'	51.3	7
35	09-NOV-1993	0417	28˚28.77'	91˚44.42'	52.0	0
36	09-NOV-1993	0513	28˚28.76'	91˚37.23'	50.7	8
37	09-NOV-1993	0616	28˚27.59'	91˚30.65'	52.0	0
38	09-NOV-1993	0713	28˚26.43'	91˚24.03'	51.0	7
39	09-NOV-1993	0836	28˚25.06'	91˚16.48'	52.0	0
40	09-NOV-1993	0937	28˚23.71'	91˚08.93'	50.4	7
41	09-NOV-1993	1047	28˚22.08'	91˚01.53'	51.0	0
42	09-NOV-1993	1149	28˚20.47'	90˚54.17'	50.0	7
43	09-NOV-1993	1324	28˚20.45'	90˚48.38'	50.0	0
44	09-NOV-1993	1430	28˚20.42'	90˚42.62'	49.3	7

Table 7.2. Station times and positions for LATEX A cruise H07 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	09-NOV-1993	1606	28˚21.01'	90˚36.29'	50.0	0
46	10-NOV-1993	0147	28˚58.11'	90˚30.61'	11.1	4
47	10-NOV-1993	0218	28˚55.72'	90˚30.86'	12.5	4
48	10-NOV-1993	0310	28˚52.69'	90˚30.61'	16.2	5
49	10-NOV-1993	0341	28˚49.99'	90˚30.59'	16.9	5
50	10-NOV-1993	0413	28˚46.72'	90˚30.64'	16.8	4
51	10-NOV-1993	0456	28˚43.93'	90˚30.36'	16.6	6
52	10-NOV-1993	0623	28˚37.95'	90˚30.33'	20.3	5
53	10-NOV-1993	0827	28˚31.63'	90˚30.18'	34.6	6
54	10-NOV-1993	1041	28˚25.42'	90˚29.97'	41.9	7
55	10-NOV-1993	1152	28˚21.61'	90˚29.97'	48.4	7
56	10-NOV-1993	1259	28˚16.81'	90˚30.00'	60.4	9
57	10-NOV-1993	1347	28˚13.53'	90˚30.05'	74.6	9
58	10-NOV-1993	1502	28˚10.47'	90˚30.30'	94.0	11
59	10-NOV-1993	1553	28˚07.68'	90˚30.16'	117.8	12
60	10-NOV-1993	1653	28˚04.65'	90˚30.21'	151.9	12
61	10-NOV-1993	1741	28˚01.26'	90˚30.06'	259.5	12
62	10-NOV-1993	1857	27˚57.97'	90˚30.14'	439.1	12
63	10-NOV-1993	1950	27˚55.45'	90˚30.46'	502.5	12
64	10-NOV-1993	2145	28˚02.72'	90˚38.59'	165.7	12
65	10-NOV-1993	2323	28˚01.39'	90˚52.41'	190.3	12
66	11-NOV-1993	0059	28˚00.39'	91˚05.83'	137.0	12
67	11-NOV-1993	0232	27˚58.15'	91˚19.49'	266.6	12
68	11-NOV-1993	0408	27˚56.60'	91˚32.70'	228.9	12
69	11-NOV-1993	0539	27˚54.77'	91˚45.89'	171.5	12
70	11-NOV-1993	0757	27˚44.94'	91˚59.90'	493.0	12
71	11-NOV-1993	0938	27˚47.51'	92˚00.02'	396.3	12
72	11-NOV-1993	1105	27˚50.68'	91˚59.98'	198.4	12
73	11-NOV-1993	1221	27˚53.54'	92˚00.08'	168.5	12
74	11-NOV-1993	1313	27˚56.80'	92˚00.07'	101.2	10
75	11-NOV-1993	1409	27˚59.99'	92˚00.05'	119.9	12
76	11-NOV-1993	1453	28˚02.71'	91˚59.97'	104.7	11
77	11-NOV-1993	1613	28˚08.94'	91˚59.93'	81.5	10
78	11-NOV-1993	1735	28˚14.69'	91˚59.89'	68.5	7
79	11-NOV-1993	1902	28˚21.13'	91˚59.82'	60.8	7
80	11-NOV-1993	1958	28˚26.77'	91˚59.86'	55.0	7
81	11-NOV-1993	2052	28˚33.01'	91˚59.85'	44.7	6
82	11-NOV-1993	2135	28˚37.73'	91˚59.88'	39.4	6
83	11-NOV-1993	2231	28˚44.70'	92˚00.09'	32.0	6
84	11-NOV-1993	2323	28˚50.26'	92˚00.00'	26.6	6
85	11-NOV-1993	2353	28˚52.96'	91˚59.99'	23.8	5
86	12-NOV-1993	0026	28˚56.23'	91˚59.98'	21.4	5
87	12-NOV-1993	0058	28˚59.33'	92˚00.07'	18.8	5
88	12-NOV-1993	0128	29˚02.29'	92˚00.11'	16.2	5

Table 7.2. Station times and positions for LATEX A cruise H07 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	12-NOV-1993	0156	29˚04.87'	92˚00.16'	13.1	5
90	12-NOV-1993	0228	29˚07.99'	92˚00.06'	9.9	4
91	12-NOV-1993	0255	29˚10.87'	91˚59.99'	6.0	4
92	12-NOV-1993	0824	29˚34.05'	93˚00.07'	9.8	4
93	12-NOV-1993	0917	29˚27.93'	92˚59.96'	11.7	4
94	12-NOV-1993	1018	29˚22.00'	92˚59.97'	13.7	4
95	12-NOV-1993	1116	29˚15.91'	93˚00.01'	15.2	5
96	12-NOV-1993	1213	29˚10.04'	93˚00.05'	17.4	5
97	12-NOV-1993	1259	29˚03.98'	92˚59.97'	21.6	5
98	12-NOV-1993	1352	28˚57.81'	92˚59.99'	22.1	5
99	12-NOV-1993	1448	28˚51.41'	92˚59.99'	24.5	5
100	12-NOV-1993	1555	28˚44.92'	92˚59.94'	29.5	6
101	12-NOV-1993	1649	28˚38.41'	92˚59.93'	34.5	7
102	12-NOV-1993	1810	28˚31.87'	92˚59.98'	43.1	7
103	12-NOV-1993	1911	28˚25.38'	92˚59.94'	48.8	9
104	12-NOV-1993	2024	28˚18.48'	92˚59.88'	52.0	8
105	12-NOV-1993	2142	28˚10.85'	92˚59.92'	71.9	10
106	12-NOV-1993	2315	28˚01.82'	92˚59.86'	100.0	12
107	13-NOV-1993	0040	27˚52.85'	93˚00.11'	191.4	12
108	13-NOV-1993	0201	27˚45.27'	93˚00.15'	206.3	12
109	13-NOV-1993	0310	27˚39.41'	92˚59.91'	318.3	12
110	13-NOV-1993	0504	27˚52.49'	92˚51.37'	219.0	12
111	13-NOV-1993	0645	27˚55.13'	92˚37.46'	190.6	12
112	13-NOV-1993	0826	27˚55.14'	92˚23.40'	80.4	9
113	13-NOV-1993	1001	27˚55.13'	92˚09.94'	146.9	12
114	13-NOV-1993	1500	27˚50.08'	93˚05.29'	174.5	12
115	13-NOV-1993	1638	27˚49.87'	93˚19.13'	148.5	12
116	13-NOV-1993	1810	27˚49.00'	93˚32.57'	199.7	12
117	13-NOV-1993	2001	27˚48.29'	93˚46.23'	190.3	12
118	13-NOV-1993	2153	27˚49.23'	93˚59.99'	196.3	12
119	14-NOV-1993	0011	27˚39.62'	94˚13.46'	451.2	12
120	14-NOV-1993	0115	27˚44.25'	94˚12.19'	440.2	12
121	14-NOV-1993	0216	27˚47.99'	94˚11.40'	269.0	12
122	14-NOV-1993	0302	27˚50.98'	94˚10.27'	119.5	12
123	14-NOV-1993	0343	27˚54.14'	94˚09.29'	95.9	10
124	14-NOV-1993	0424	27˚57.05'	94˚08.32'	84.3	9
125	14-NOV-1993	0500	27˚59.54'	94˚07.51'	79.8	9
126	14-NOV-1993	0549	28˚04.65'	94˚05.52'	68.8	8
127	14-NOV-1993	0639	28˚08.97'	94˚03.73'	64.6	8
128	14-NOV-1993	0744	28˚16.02'	94˚01.31'	56.5	7
129	14-NOV-1993	0834	28˚21.94'	93˚59.64'	50.7	7
130	14-NOV-1993	0930	28˚27.94'	93˚59.99'	43.0	6
131	14-NOV-1993	1023	28˚33.82'	93˚59.94'	34.7	6
132	14-NOV-1993	1118	28˚39.64'	93˚59.93'	28.7	6

Table 7.2. Station times and positions for LATEX A cruise H07 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
133	14-NOV-1993	1225	28˚46.01'	94˚00.09'	23.7	6
134	14-NOV-1993	1315	28˚51.90'	93˚59.97'	22.4	6
135	14-NOV-1993	1404	28˚57.93'	94˚00.14'	16.2	5
136	14-NOV-1993	1438	29˚01.31'	94˚00.06'	18.9	4
137	14-NOV-1993	1505	29˚03.78'	94˚00.14'	17.1	5
138	14-NOV-1993	1539	29˚07.34'	94˚00.07'	16.7	5
139	14-NOV-1993	1607	29˚09.99'	94˚00.07'	15.7	5
140	14-NOV-1993	1655	29˚12.99'	94˚00.10'	13.6	5
141	14-NOV-1993	1725	29˚16.21'	94˚00.10'	12.6	5
142	14-NOV-1993	1753	29˚18.97'	93˚59.92'	11.5	4
143	14-NOV-1993	1821	29˚21.61'	94˚00.13'	10.8	4
144	14-NOV-1993	1850	29˚24.57'	94˚00.03'	10.7	4
145	14-NOV-1993	1923	29˚28.15'	94˚00.13'	11.2	4
146	14-NOV-1993	1956	29˚32.04'	94˚00.16'	10.5	4
147	15-NOV-1993	0613	29˚10.18'	94˚47.98'	12.5	4
148	15-NOV-1993	0700	29˚04.50'	94˚46.23'	15.7	4
149	15-NOV-1993	0853	28˚58.78'	94˚44.41'	15.3	4
150	15-NOV-1993	0936	28˚53.40'	94˚43.22'	18.8	5
151	15-NOV-1993	1021	28˚48.01'	94˚41.43'	16.7	5
152	15-NOV-1993	1108	28˚42.58'	94˚39.89'	23.6	6
153	15-NOV-1993	1152	28˚37.18'	94˚38.41'	28.3	6
154	15-NOV-1993	1246	28˚31.77'	94˚36.60'	31.7	7
155	15-NOV-1993	1333	28˚26.40'	94˚35.15'	37.4	7
156	15-NOV-1993	1424	28˚21.00'	94˚33.58'	40.9	7
157	17-NOV-1993	1001	28˚42.21'	95˚32.21'	13.6	4
158	17-NOV-1993	1034	28˚39.71'	95˚30.82'	12.8	4
159	17-NOV-1993	1102	28˚37.45'	95˚29.30'	17.2	4
160	17-NOV-1993	1135	28˚34.82'	95˚28.19'	20.5	5
161	17-NOV-1993	1215	28˚32.38'	95˚26.35'	24.2	7
162	17-NOV-1993	1256	28˚29.66'	95˚25.07'	27.0	6
163	17-NOV-1993	1330	28˚27.00'	95˚23.48'	30.0	6
164	17-NOV-1993	1429	28˚21.63'	95˚20.86'	32.0	7
165	17-NOV-1993	1522	28˚16.35'	95˚17.86'	38.5	8
166	17-NOV-1993	1623	28˚10.50'	95˚15.02'	46.1	8
167	17-NOV-1993	1725	28˚05.03'	95˚12.12'	54.5	7
168	17-NOV-1993	1836	27˚59.64'	95˚09.11'	78.1	9
169	17-NOV-1993	1925	27˚54.08'	95˚06.41'	107.2	11
170	17-NOV-1993	2005	27˚51.30'	95˚04.93'	163.7	11
171	17-NOV-1993	2105	27˚48.55'	95˚03.59'	264.5	11
172	17-NOV-1993	2154	27˚45.83'	95˚01.96'	380.8	11
173	17-NOV-1993	2241	27˚43.02'	95˚00.69'	508.0	11
174	18-NOV-1993	0320	27˚31.50'	95˚47.11'	520.5	12
175	18-NOV-1993	0448	27˚36.12'	95˚52.69'	194.0	12
176	18-NOV-1993	0612	27˚41.09'	95˚58.19'	104.0	10

Table 7.2. Station times and positions for LATEX A cruise H07 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
177	18-NOV-1993	0813	27˚45.30'	96˚03.31'	79.0	9
178	18-NOV-1993	0907	27˚48.60'	96˚07.85'	66.1	7
179	18-NOV-1993	1008	27˚53.98'	96˚13.52'	50.8	6
180	18-NOV-1993	1101	27˚58.22'	96˚18.93'	35.4	6
181	18-NOV-1993	1153	28˚02.40'	96˚24.06'	27.0	6
182	18-NOV-1993	1255	28˚07.82'	96˚30.02'	18.6	4
183	18-NOV-1993	1359	28˚12.62'	96˚36.02'	9.4	4
184	18-NOV-1993	1631	27˚51.61'	96˚19.21'	48.2	6
185	18-NOV-1993	1753	27˚44.39'	96˚30.00'	49.0	6
186	18-NOV-1993	1914	27˚34.80'	96˚39.62'	48.8	6
187	18-NOV-1993	2037	27˚24.01'	96˚47.39'	49.4	6
188	19-NOV-1993	0006	27˚05.99'	96˚12.59'	446.8	12
189	19-NOV-1993	0102	27˚06.88'	96˚16.96'	316.1	12
190	19-NOV-1993	0151	27˚07.58'	96˚20.20'	223.5	12
191	19-NOV-1993	0236	27˚08.10'	96˚22.81'	183.9	12
192	19-NOV-1993	0321	27˚08.84'	96˚26.72'	138.8	12
193	19-NOV-1993	0403	27˚09.09'	96˚29.80'	114.6	12
194	19-NOV-1993	0442	27˚09.68'	96˚33.14'	98.8	10
195	19-NOV-1993	0519	27˚10.17'	96˚36.38'	89.6	10
196	19-NOV-1993	0619	27˚11.04'	96˚42.92'	71.5	10
197	19-NOV-1993	0718	27˚11.92'	96˚49.60'	56.9	8
198	19-NOV-1993	0802	27˚12.59'	96˚53.38'	49.0	8
199	19-NOV-1993	0834	27˚12.69'	96˚56.24'	43.0	8
200	19-NOV-1993	0930	27˚13.56'	97˚03.13'	32.0	7
201	19-NOV-1993	1004	27˚14.29'	97˚06.28'	28.2	5
202	19-NOV-1993	1045	27˚14.42'	97˚09.60'	25.0	5
203	19-NOV-1993	1119	27˚15.38'	97˚12.64'	21.5	5
204	19-NOV-1993	1152	27˚15.45'	97˚16.05'	16.6	4
205	19-NOV-1993	1405	27˚01.00'	96˚55.81'	48.8	6
206	19-NOV-1993	1528	26˚48.01'	96˚54.62'	48.3	6
207	19-NOV-1993	1652	26˚36.59'	96˚47.24'	51.2	6
208	19-NOV-1993	1821	26˚24.59'	96˚39.00'	47.1	6
209	19-NOV-1993	1937	26˚13.20'	96˚37.06'	49.5	6
210	19-NOV-1993	2230	26˚01.29'	97˚06.97'	13.8	4
211	19-NOV-1993	2256	26˚01.37'	97˚04.55'	19.0	5
212	19-NOV-1993	2324	26˚01.20'	97˚01.35'	23.5	5
213	20-NOV-1993	0011	26˚01.50'	96˚58.11'	28.6	6
214	20-NOV-1993	0051	26˚00.98'	96˚51.44'	35.6	6
215	20-NOV-1993	0145	26˚00.97'	96˚44.97'	44.3	6
216	20-NOV-1993	0235	26˚00.97'	96˚38.62'	48.0	7
217	20-NOV-1993	0326	26˚00.96'	96˚31.84'	59.8	7
218	20-NOV-1993	0413	26˚00.71'	96˚25.26'	84.2	8
219	20-NOV-1993	0449	26˚00.83'	96˚21.95'	120.6	10
220	20-NOV-1993	0549	26˚00.80'	96˚18.66'	209.6	12

Table 7.2. Station times and positions for LATEX A cruise H07 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
221	20-NOV-1993	0712	26˚00.61'	96˚14.69'	504.0	12
222	20-NOV-1993	1056	26˚08.61'	96˚19.94'	230.0	12
223	20-NOV-1993	1350	26˚19.80'	96˚17.87'	229.4	12
224	20-NOV-1993	1612	26˚31.80'	96˚19.95'	272.0	12
225	20-NOV-1993	2106	26˚43.74'	96˚26.29'	205.5	12
226	20-NOV-1993	2320	26˚55.80'	96˚26.23'	206.9	12
227	21-NOV-1993	0144	27˚07.59'	96˚20.22'	223.6	12
228	21-NOV-1993	0315	27˚16.79'	96˚15.21'	205.2	12
229	21-NOV-1993	0500	27˚25.79'	96˚06.24'	204.4	12
230	21-NOV-1993	0709	27˚36.10'	95˚52.67'	189.4	12
231	21-NOV-1993	0918	27˚39.04'	95˚42.67'	238.0	12
232	21-NOV-1993	1059	27˚42.49'	95˚30.12'	302.5	12
233	21-NOV-1993	1237	27˚45.68'	95˚17.20'	267.1	12
234	21-NOV-1993	1415	27˚48.55'	95˚03.56'	263.8	12
235	21-NOV-1993	1643	27˚50.15'	94˚48.55'	237.8	12
236	21-NOV-1993	1822	27˚50.12'	94˚35.29'	278.9	12
237	21-NOV-1993	1959	27˚50.05'	94˚21.66'	172.3	12
238	21-NOV-1993	2159	27˚34.48'	94˚18.07'	733.0	12

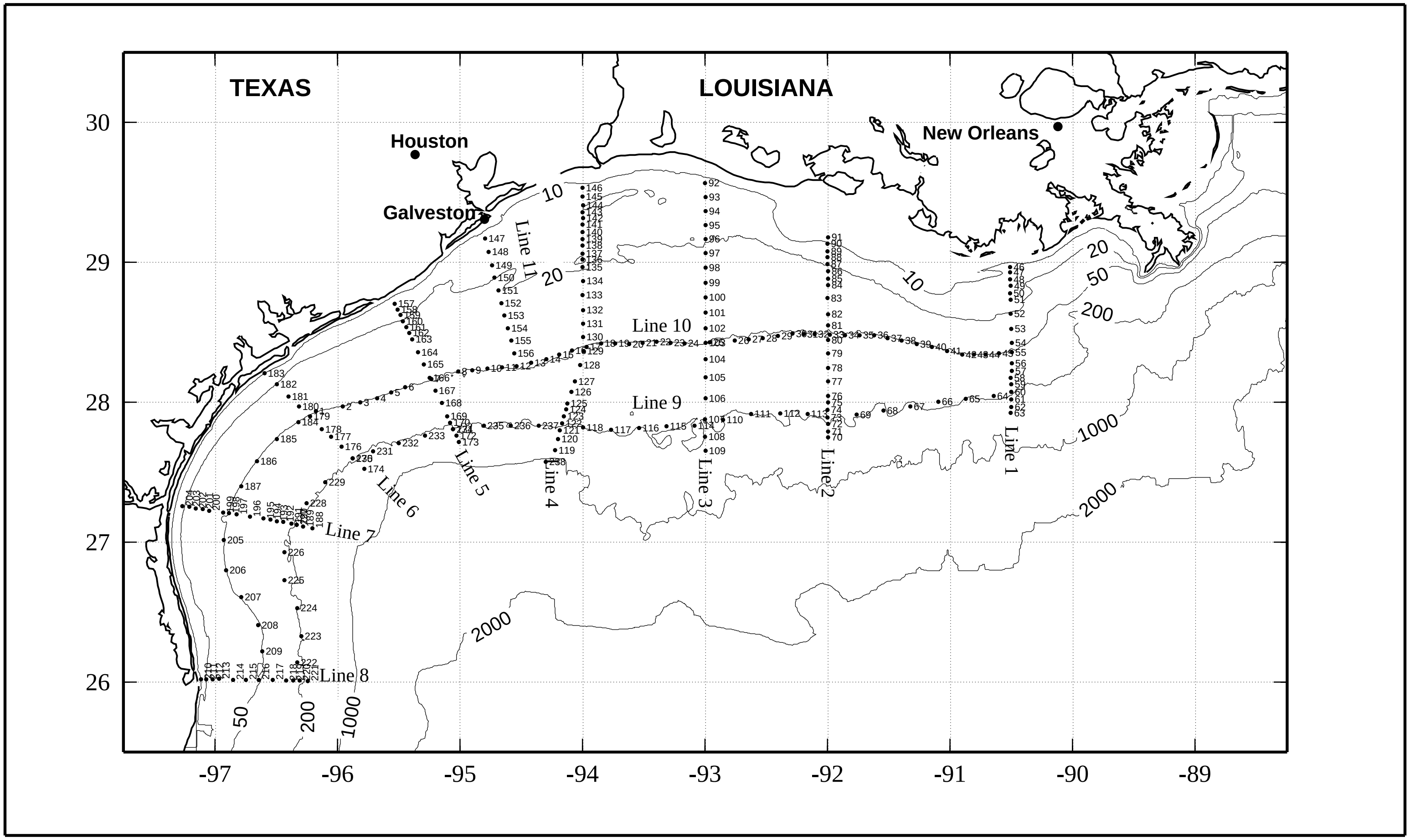

Figure 7.0. Cruise track and station locations for LATEX A Hydrographic Survey H07, 6 - 22 November 1993.

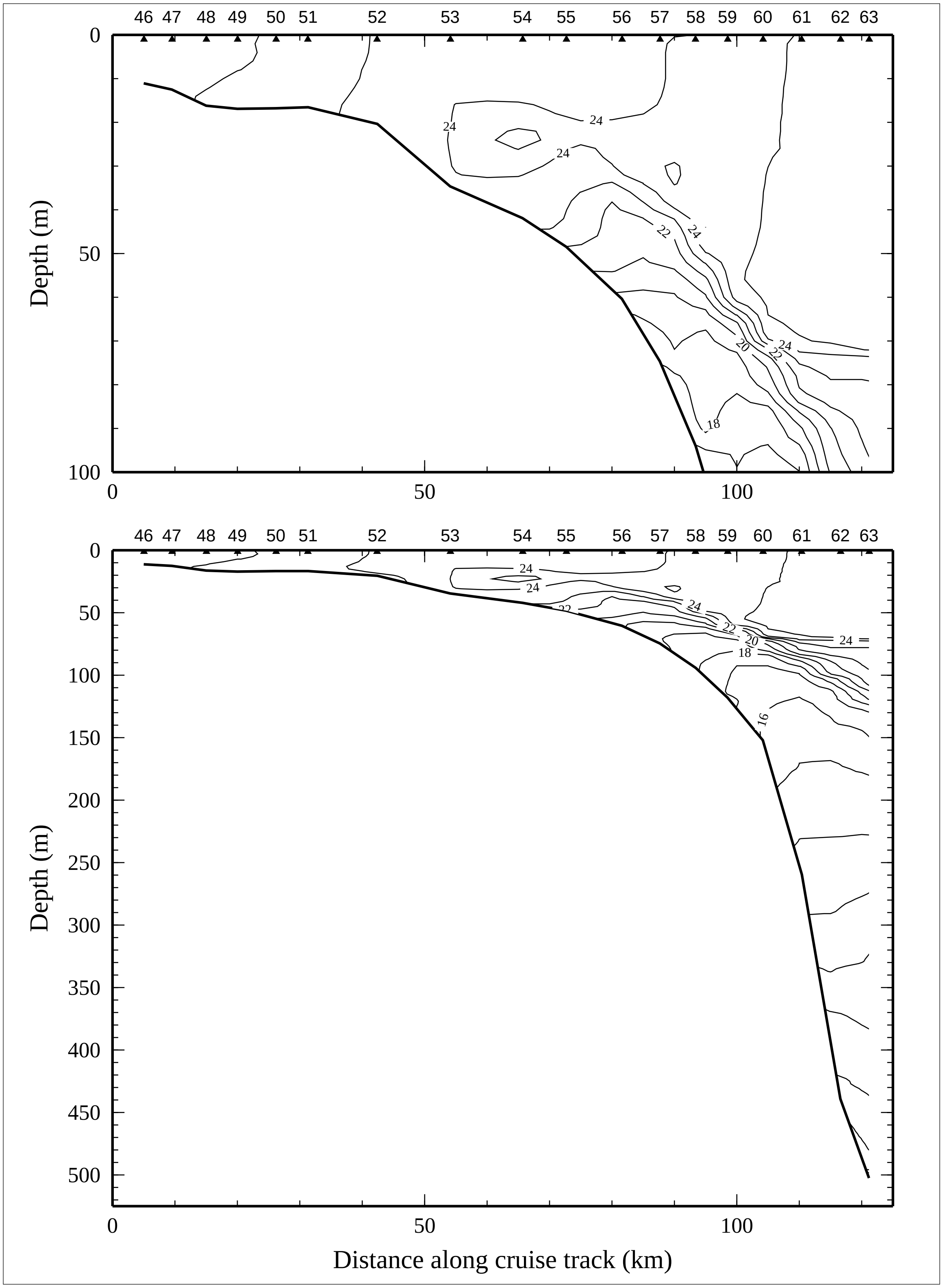

Figure 7.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H07, 6-22 November 1993.

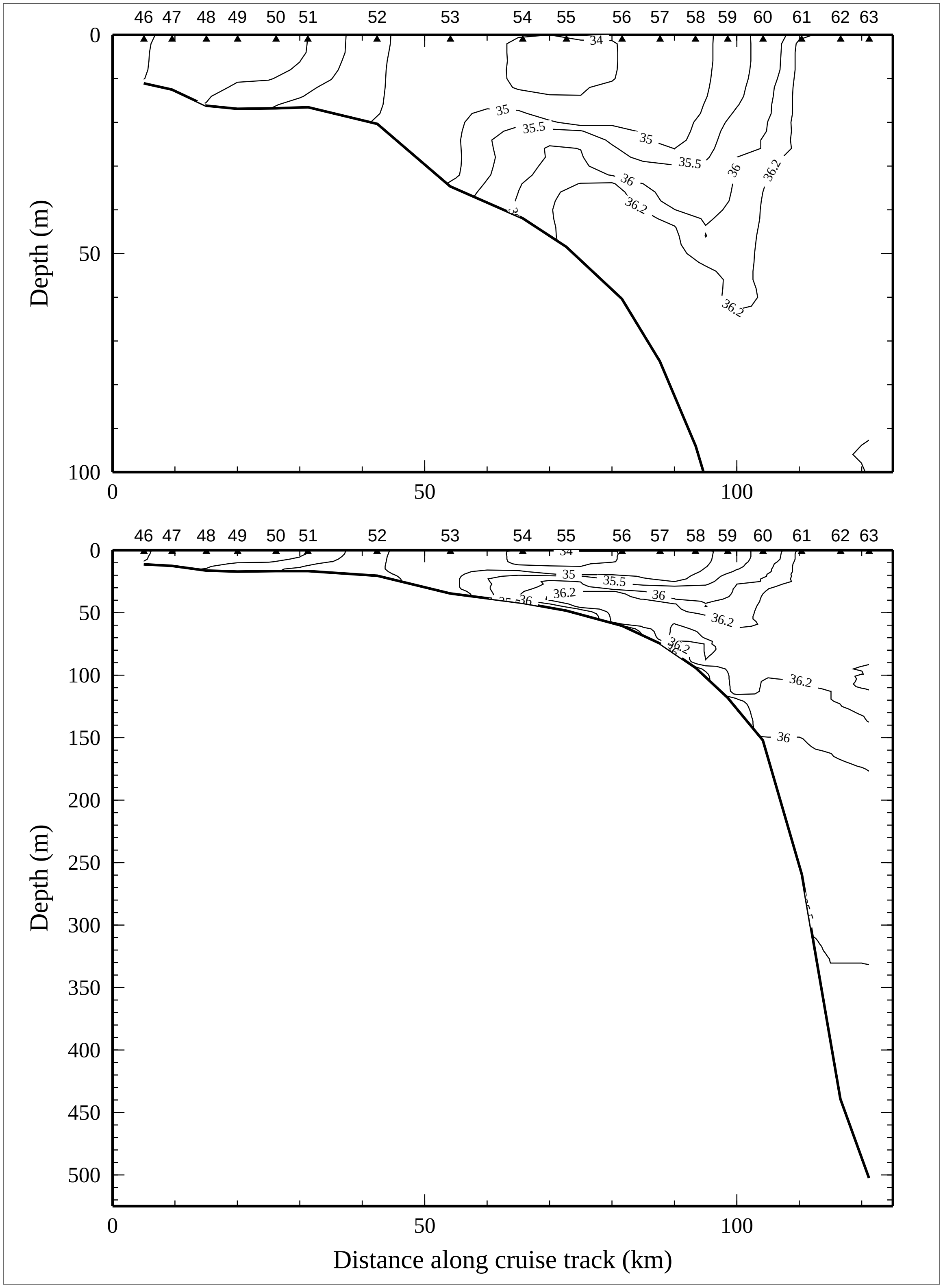

Figure 7.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H07, 6-22 November 1993.

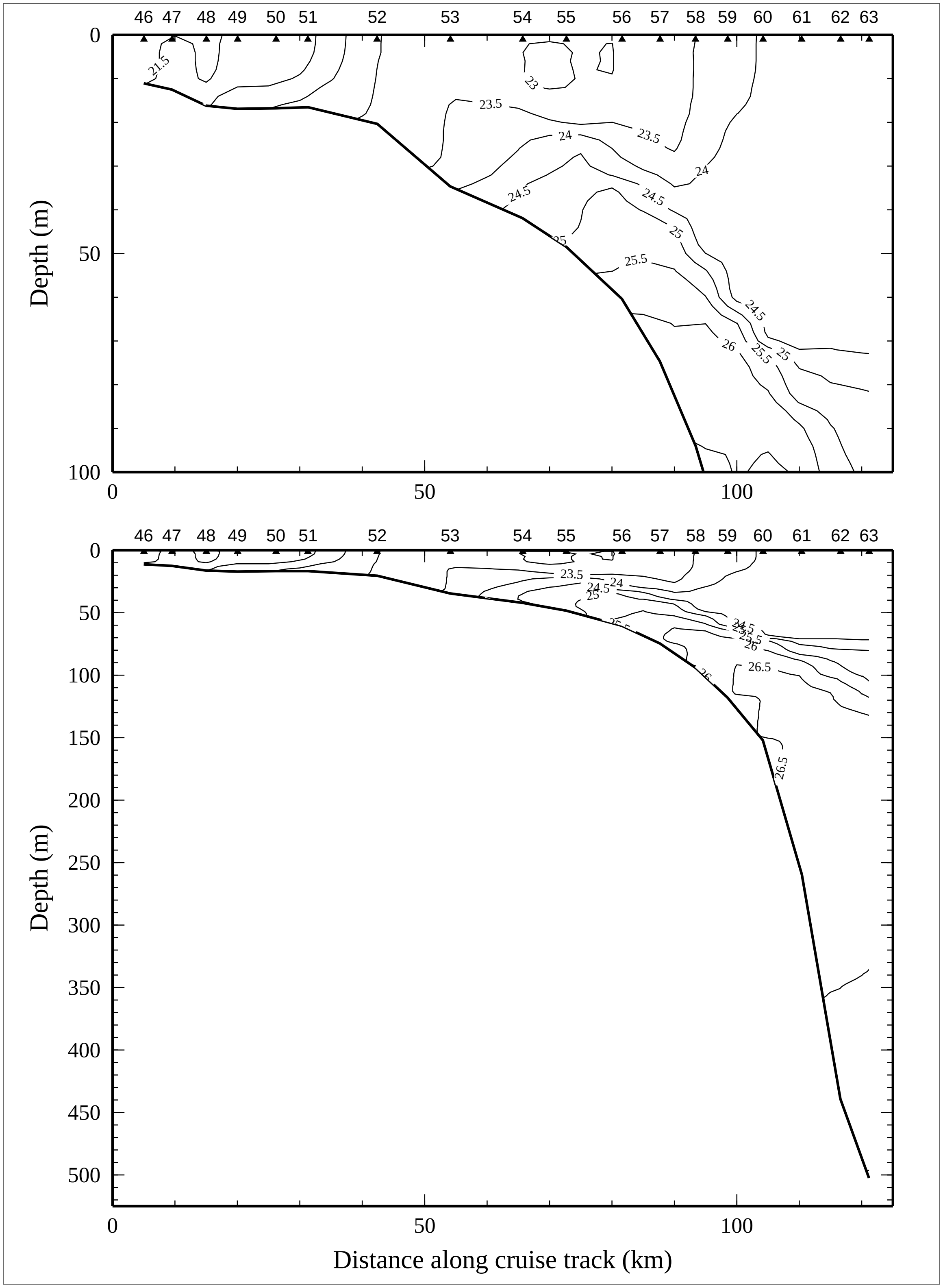

Figure 7.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H07, 6-22 November 1993.

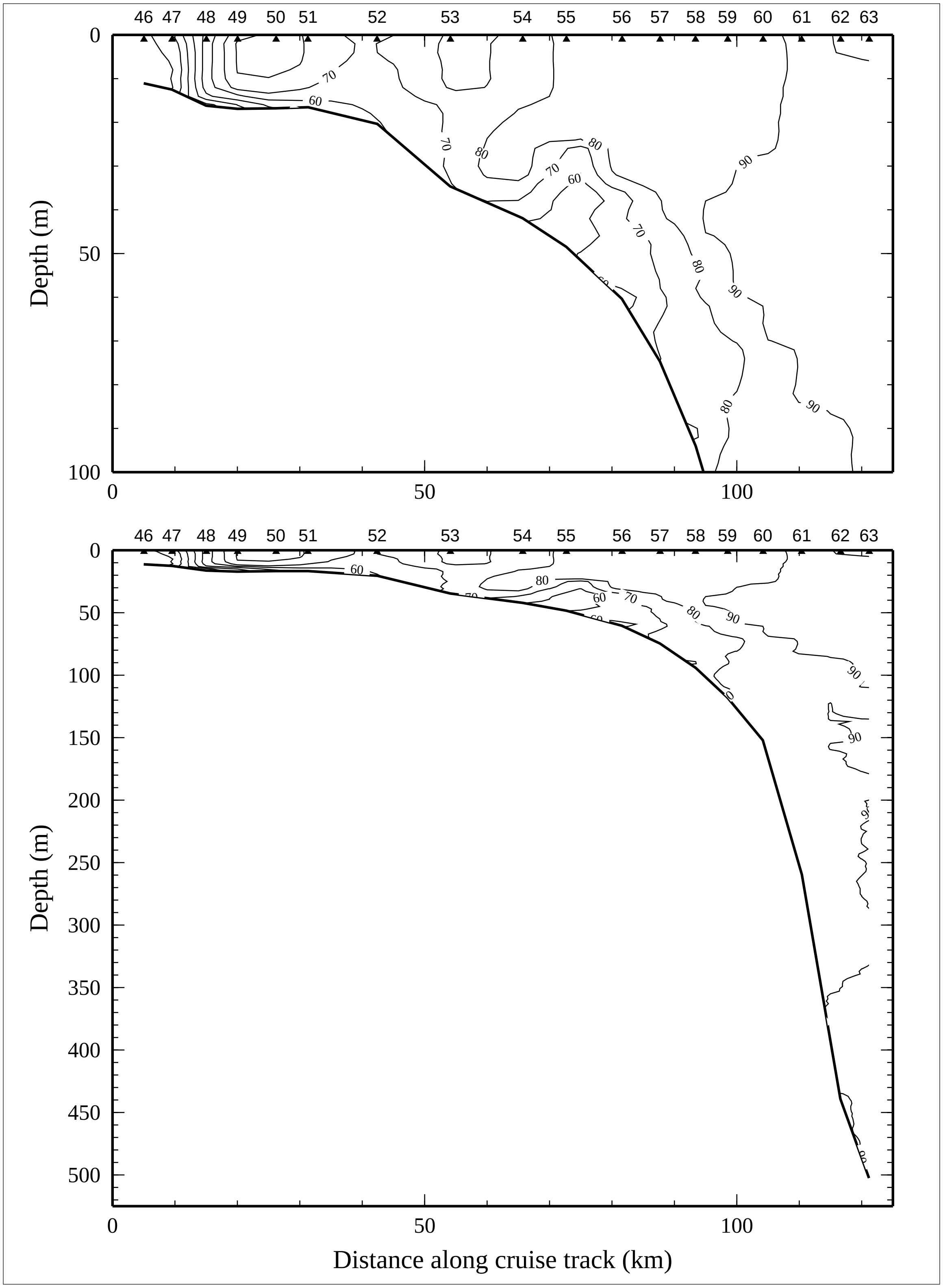

Figure 7.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H07, 6-22 November 1993.

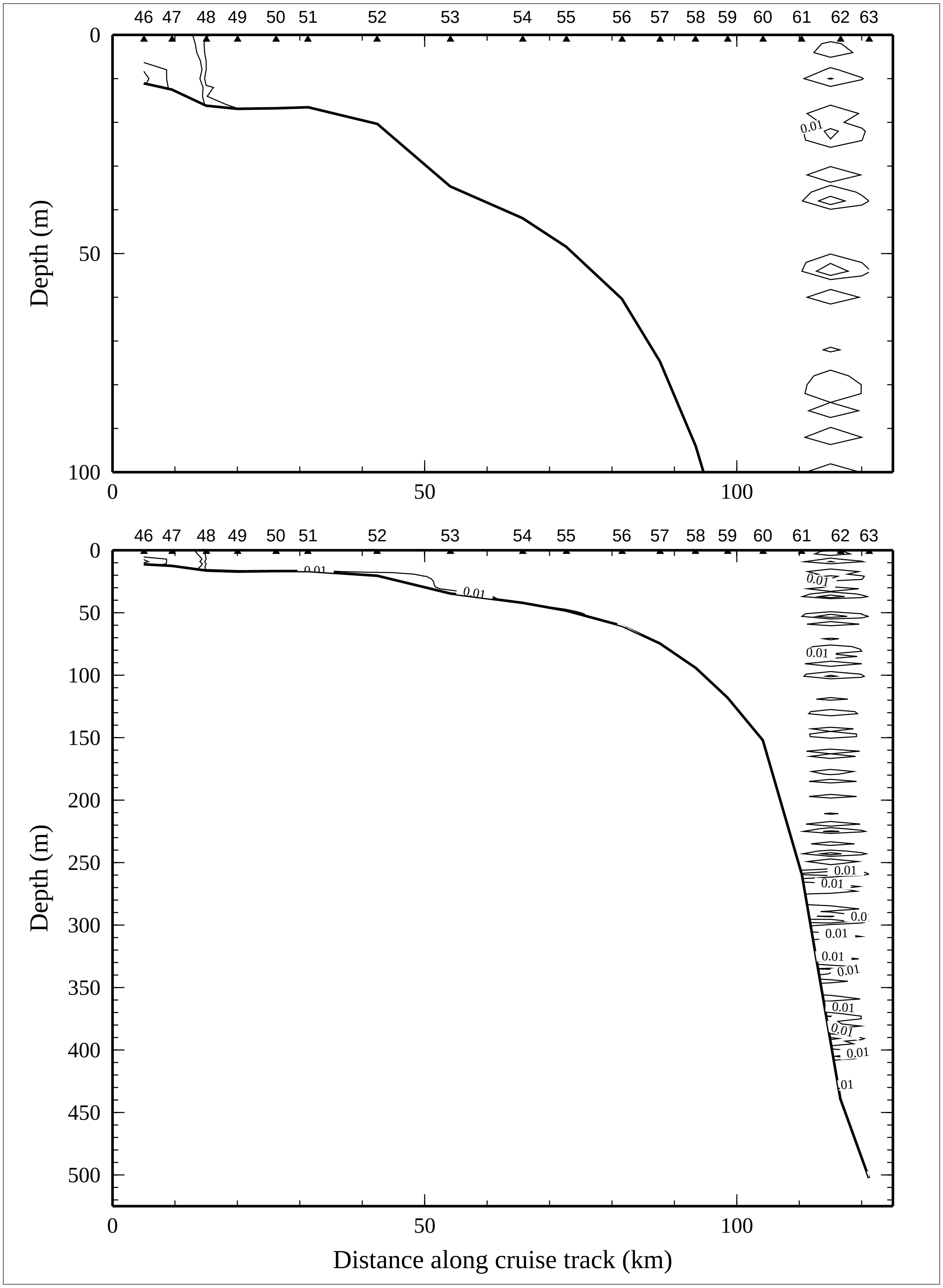

Figure 7.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H07, 6-22 November 1993.

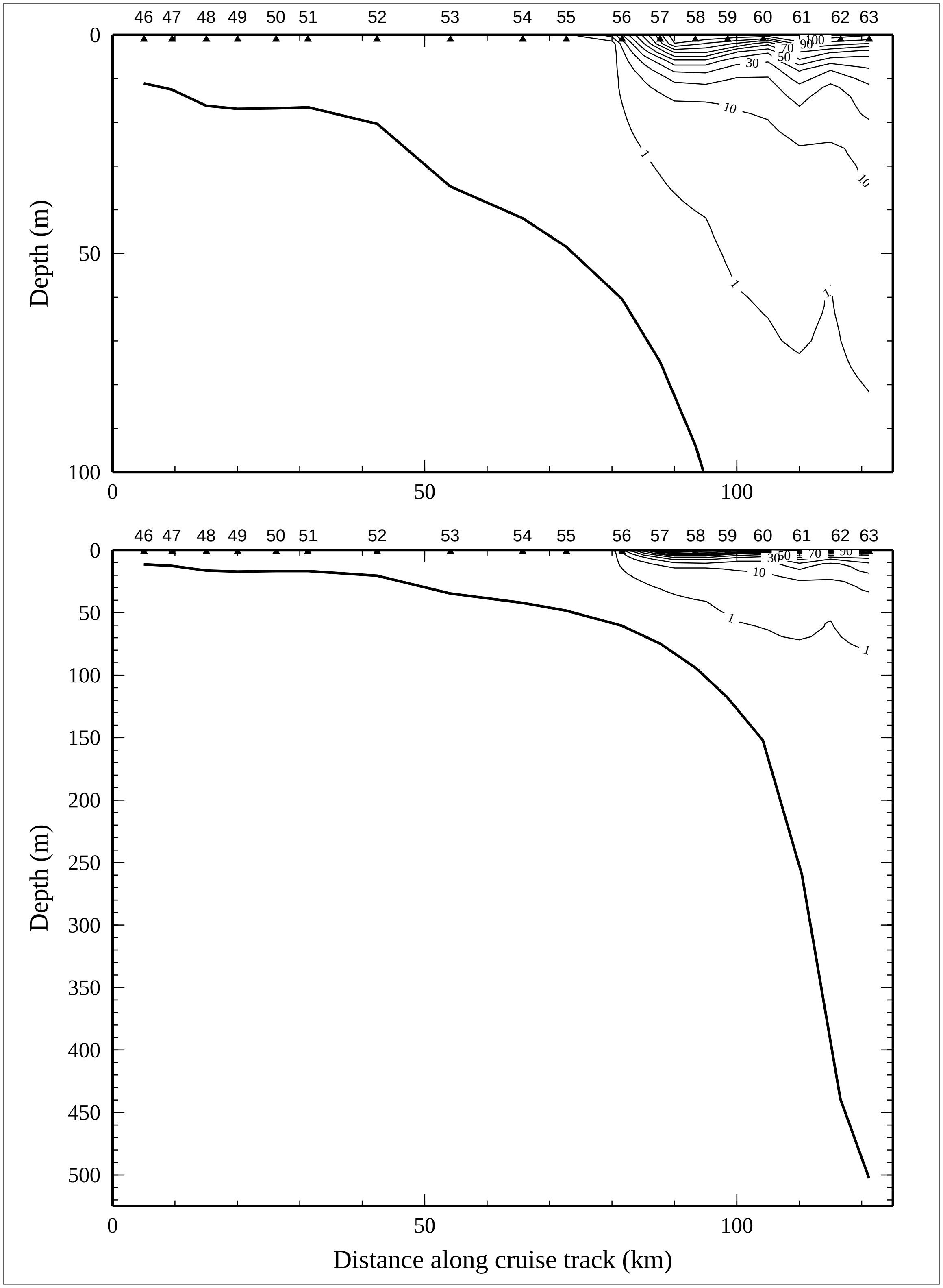

Figure 7.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H07, 6-22 November 1993.

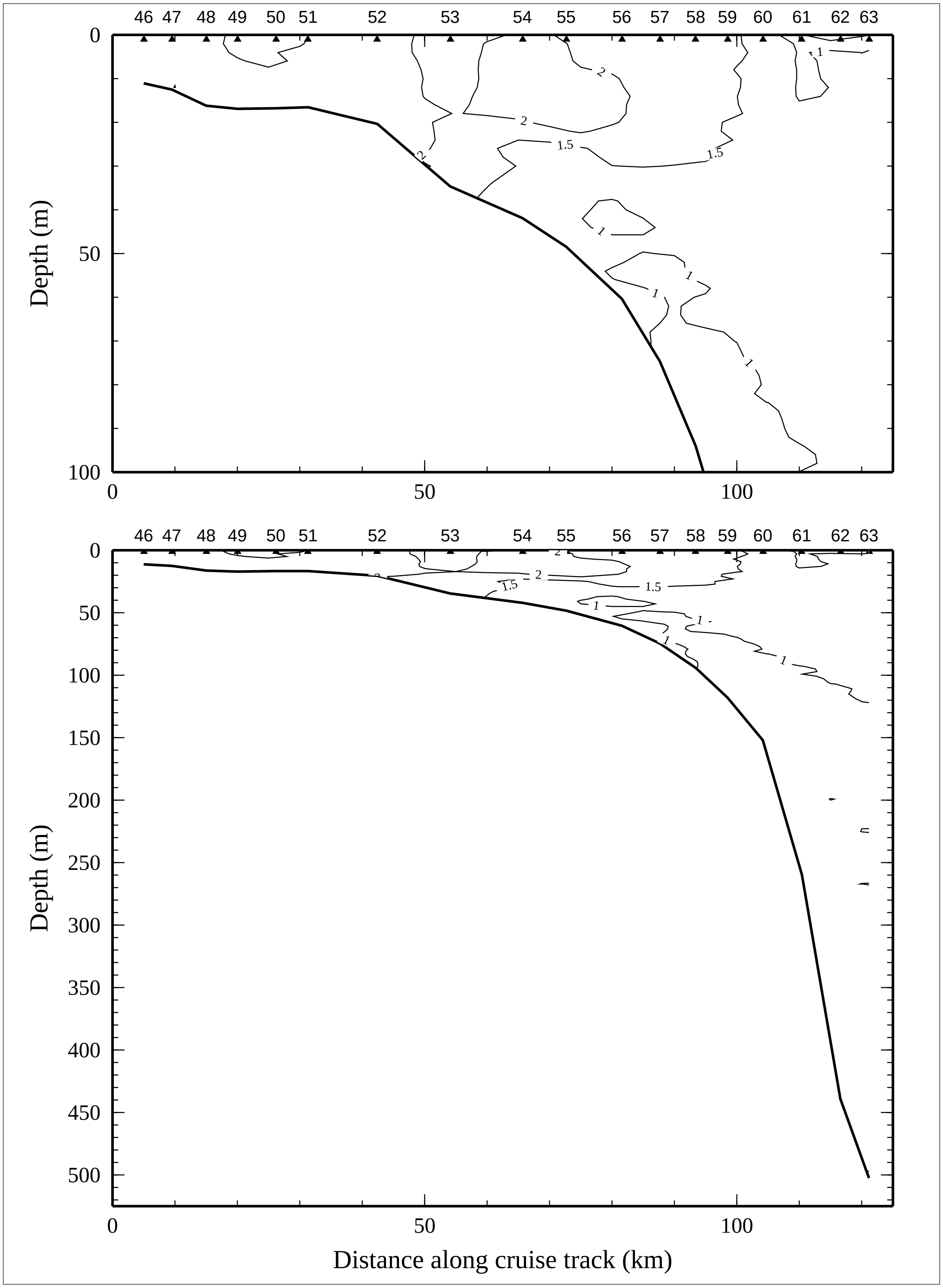

Figure 7.1.7. Relative fluorescence on line 1 of LATEX A survey H07, 6-22 November 1993.

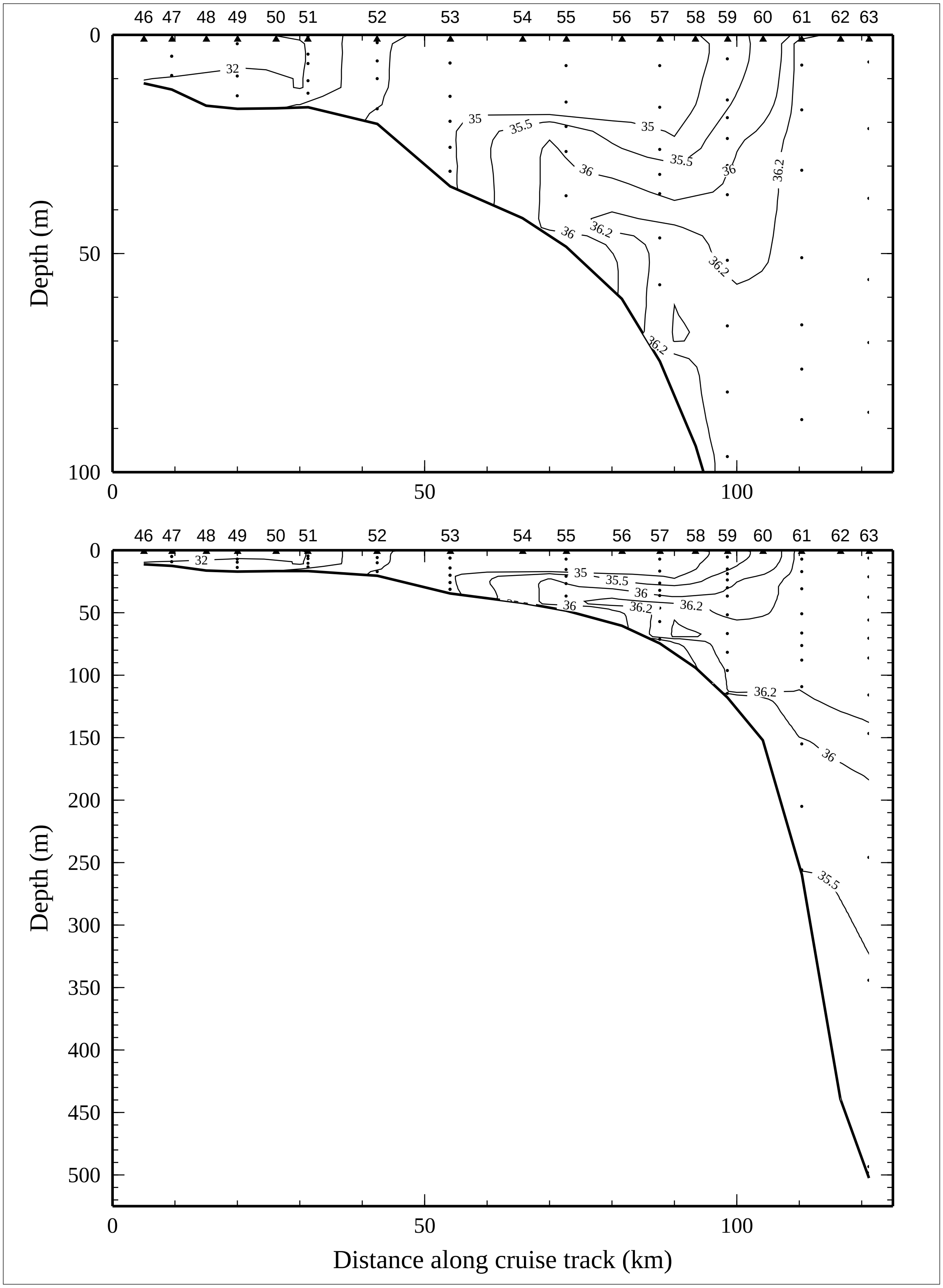

Figure 7.1.8. Bottle salinity on line 1 of LATEX A survey H07, 6-22 November 1993.

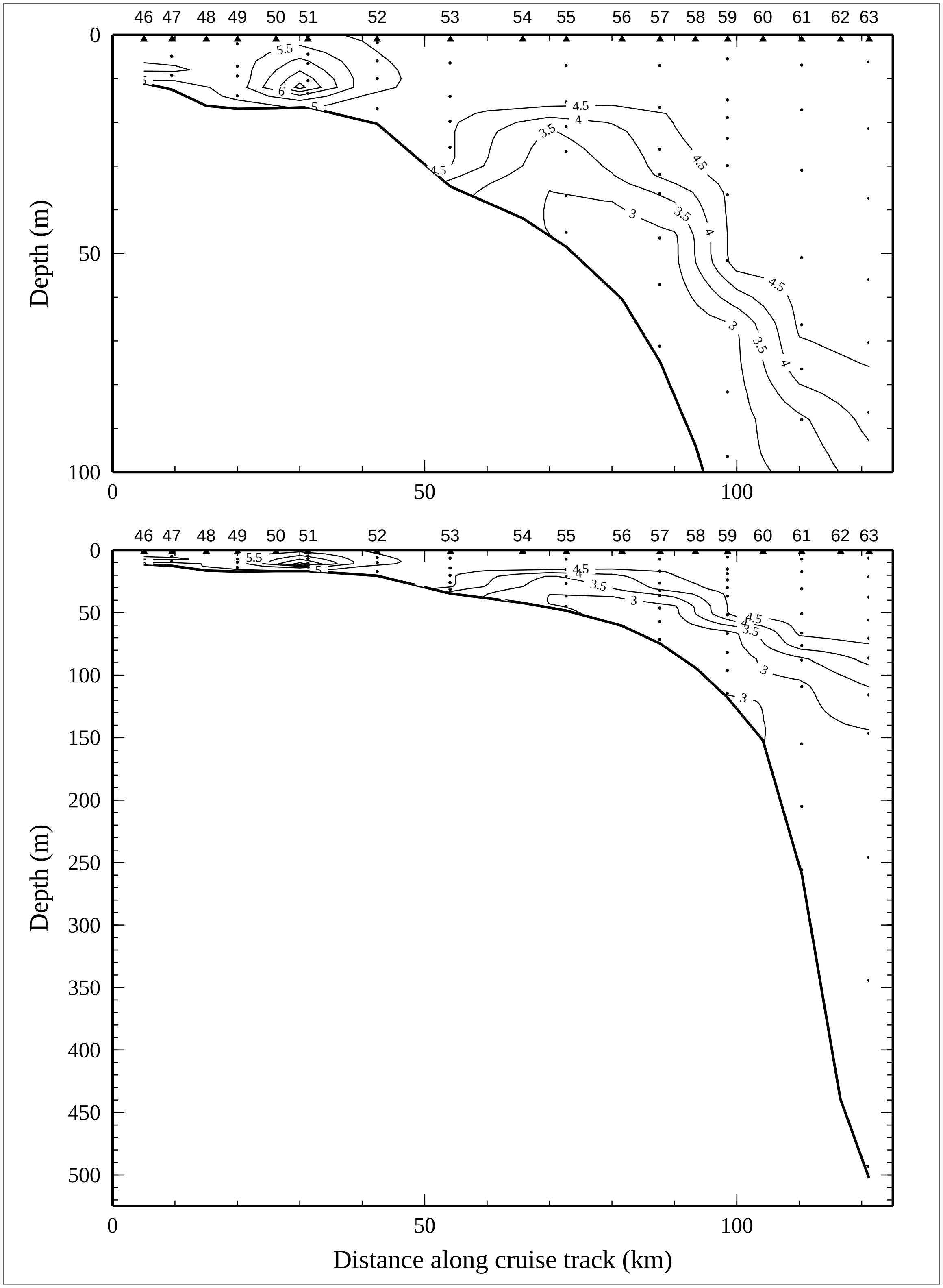

Figure 7.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H07, 6-22 November 1993.

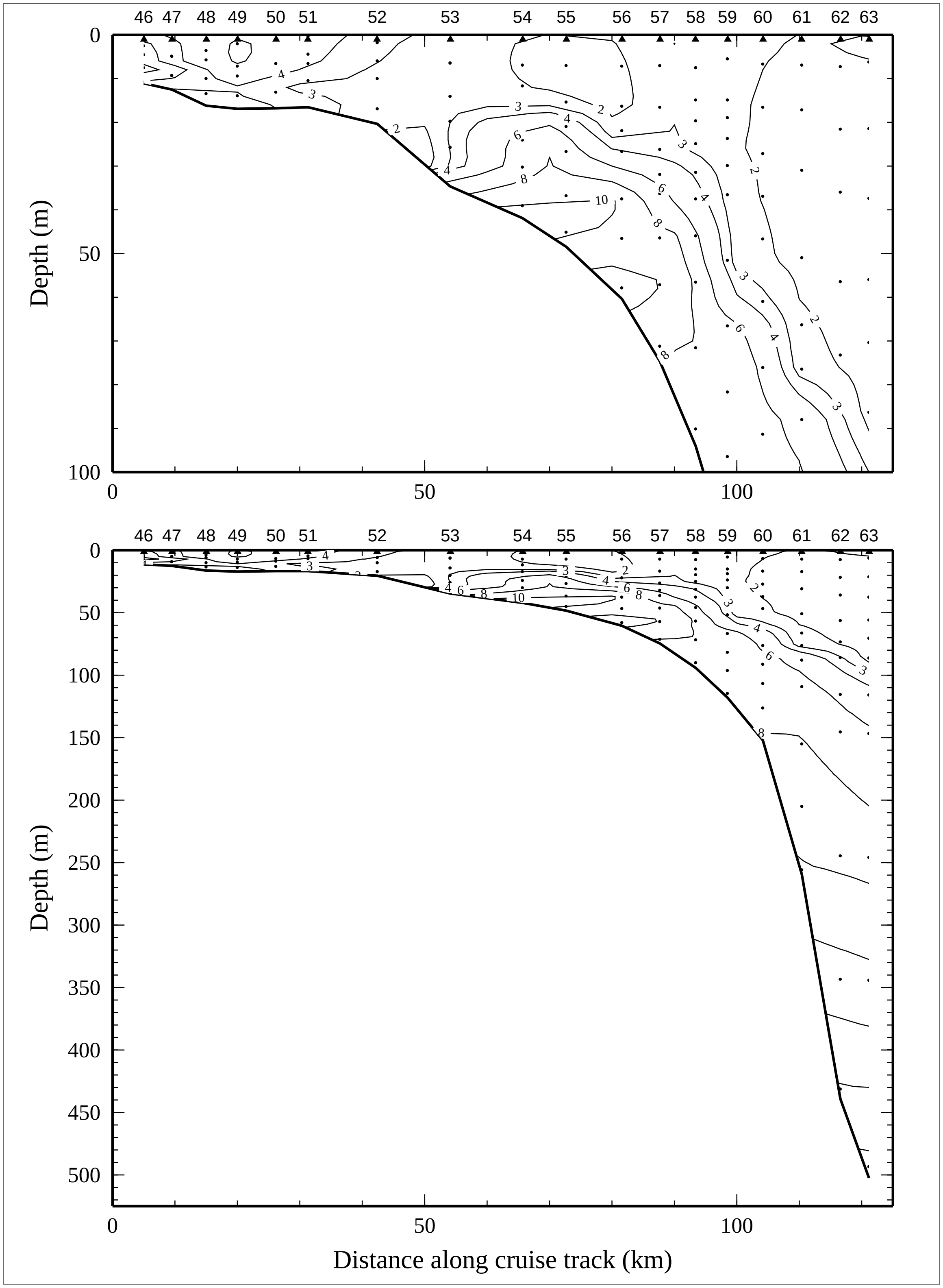

Figure 7.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H07, 6-22 November 1993.

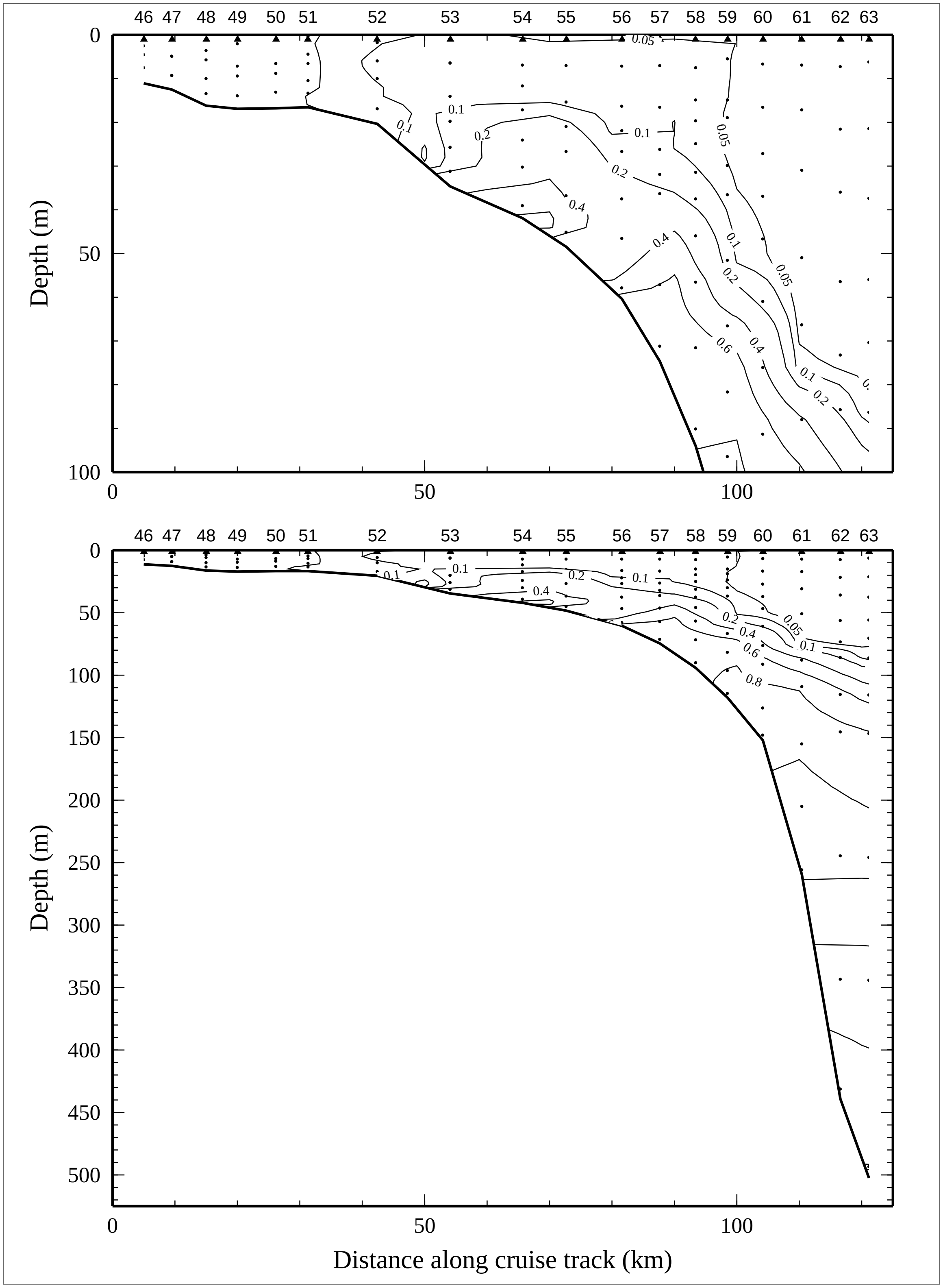

Figure 7.1.11. Phosphate (µmol·l^{-1}) on line 1 of LATEX A survey H07, 6-22 November 1993.

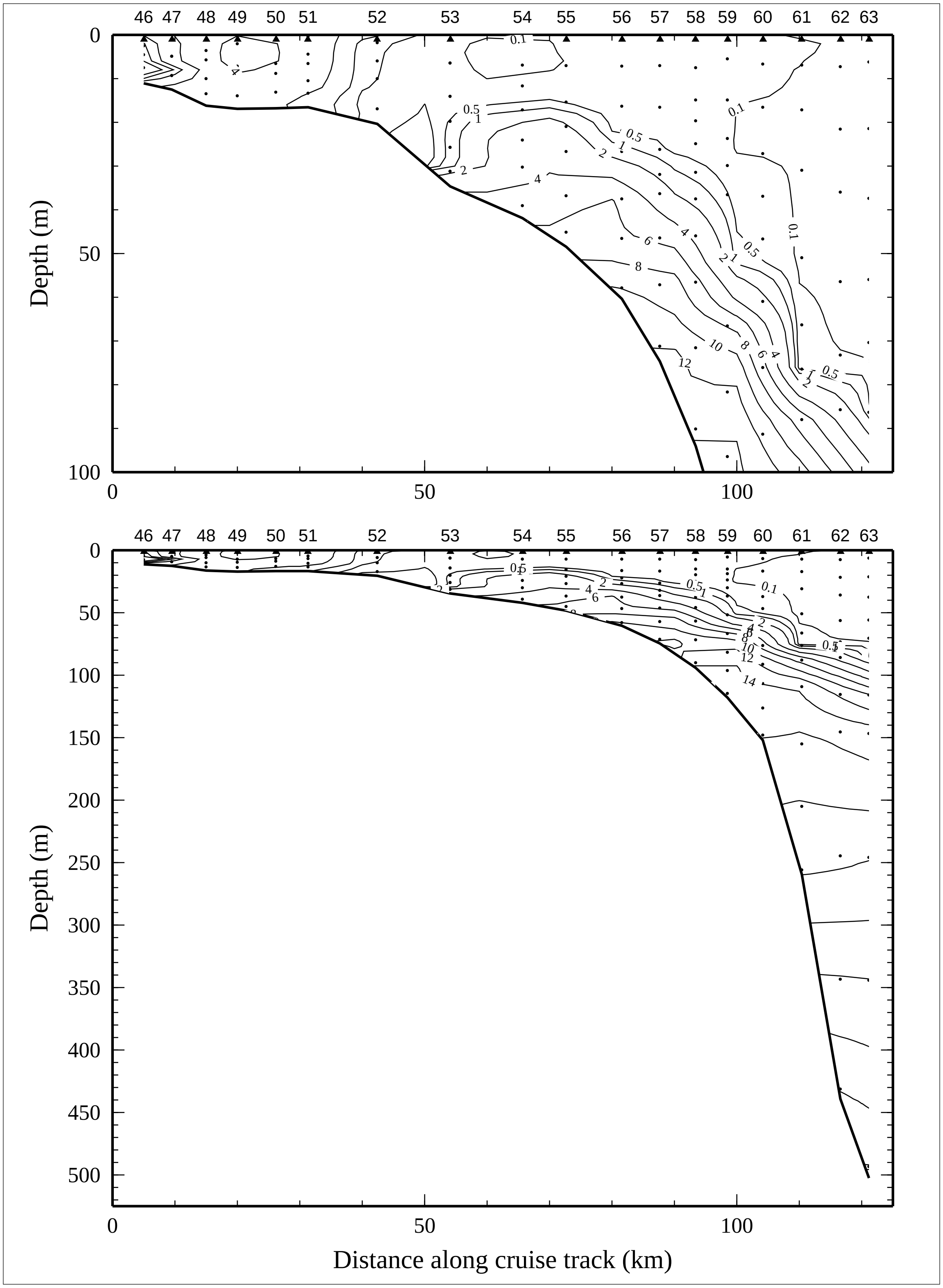

Figure 7.1.12. Nitrate (μmol·l⁻¹) on line 1 of LATEX A survey H07,
6-22 November 1993.

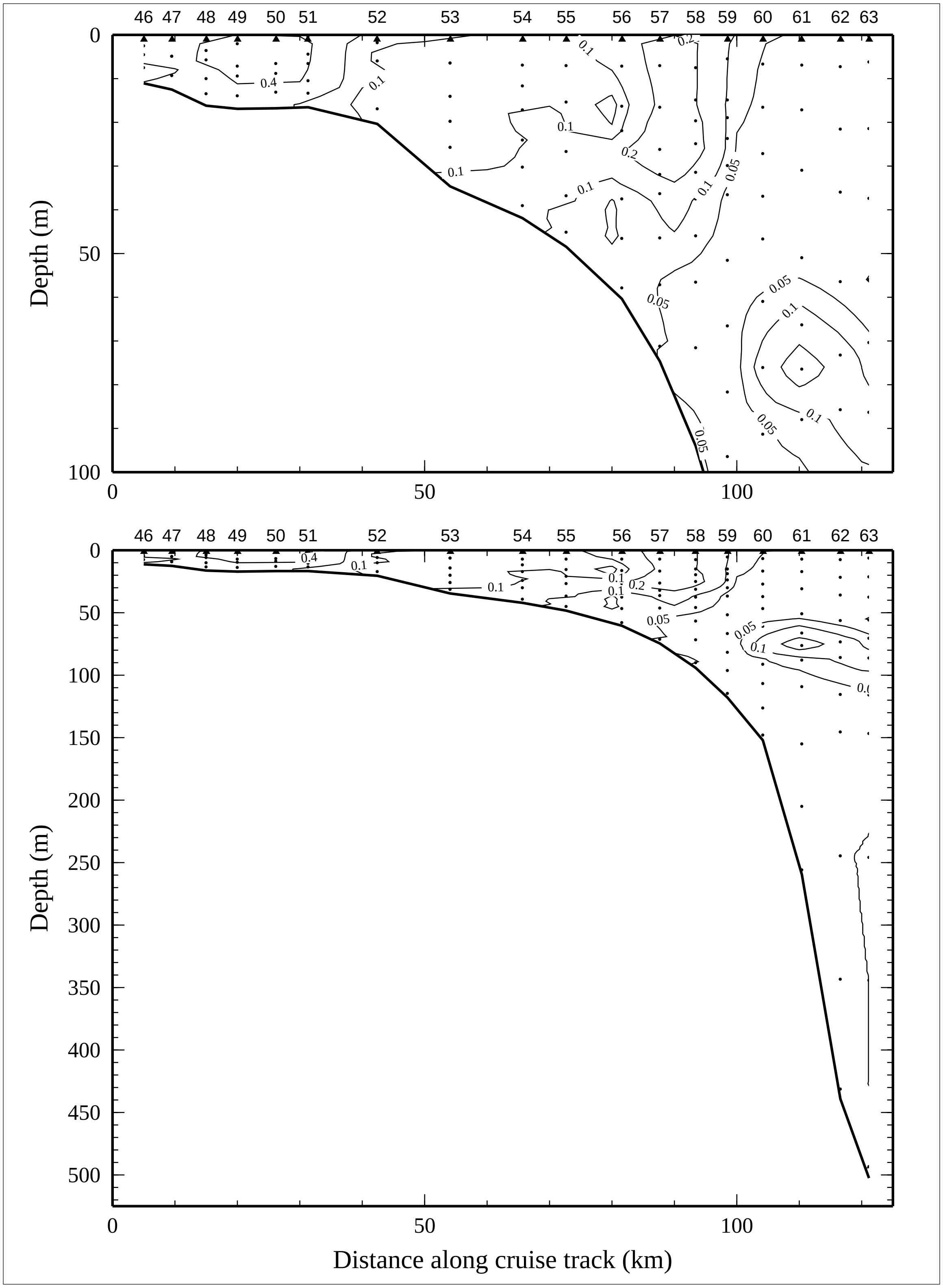

Figure 7.1.13. Nitrite (μmol·l^{-1}) on line 1 of LATEX A survey H07,
6-22 November 1993.

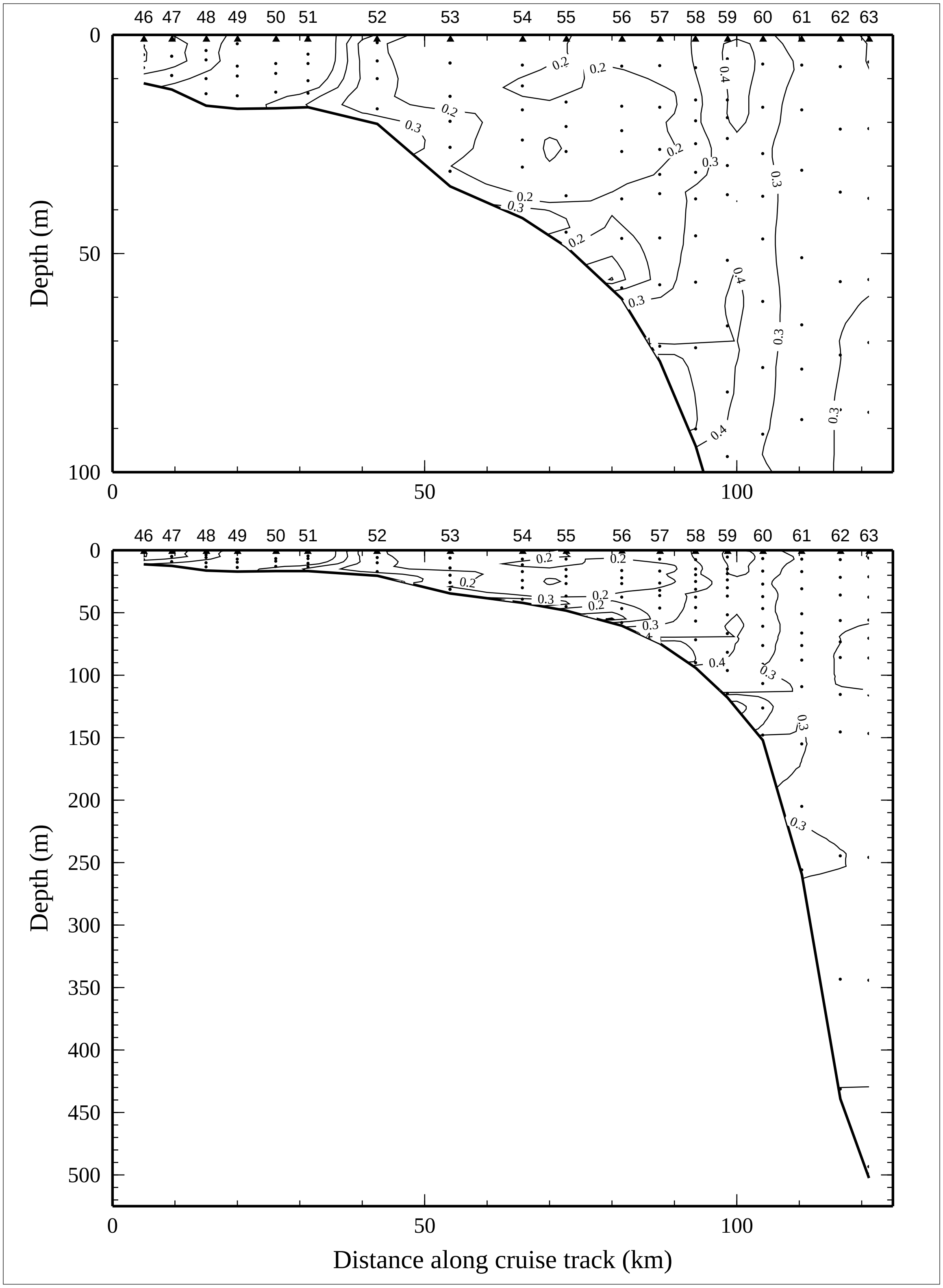

Figure 7.1.14. Ammonium (μmol·l^{-1}) on line 1 of LATEX A survey H07, 6-22 November 1993.

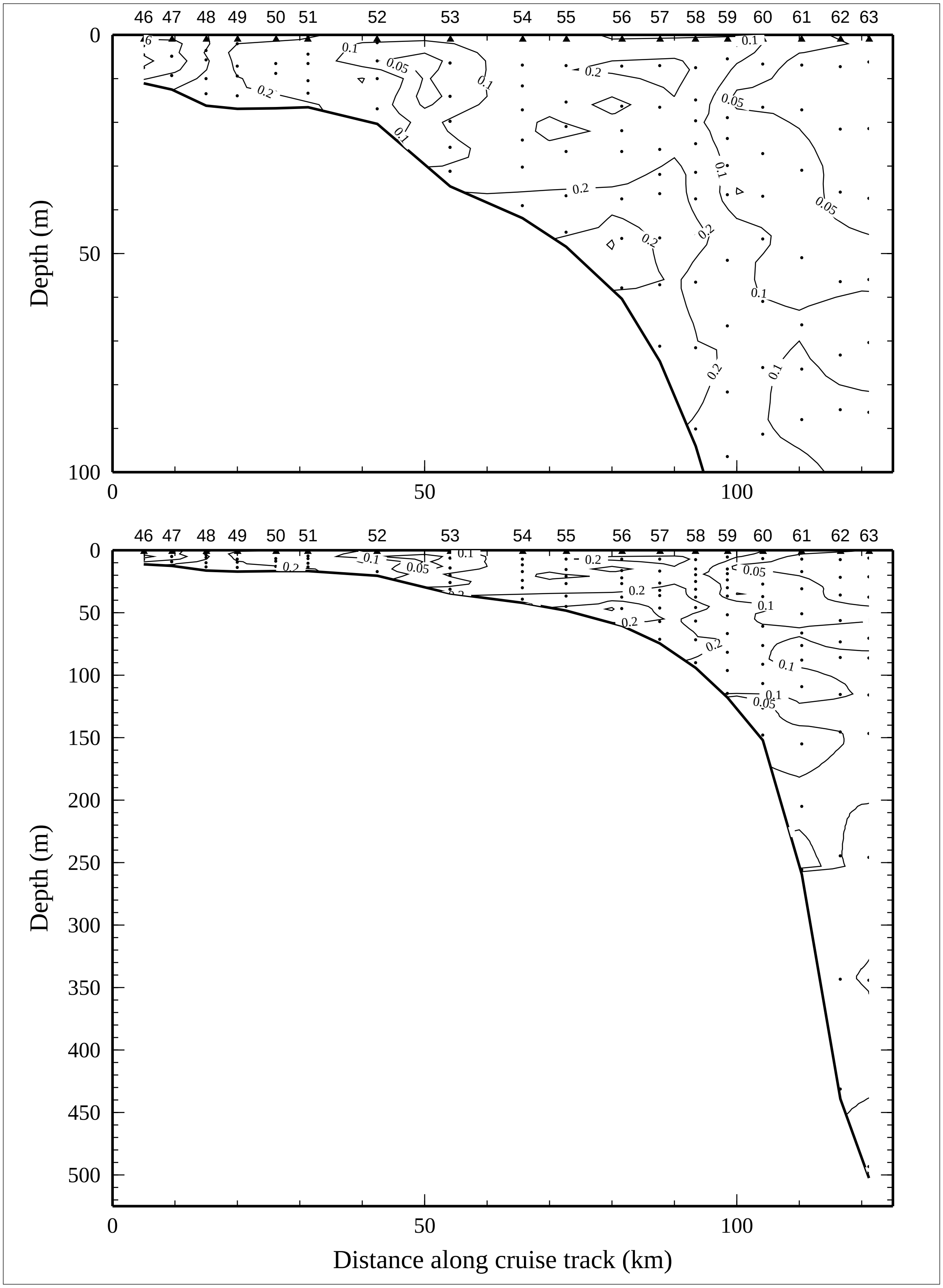

Figure 7.1.15. Urea (μmol·l-1) on line 1 of LATEX A survey H07, 6-22 November 1993.

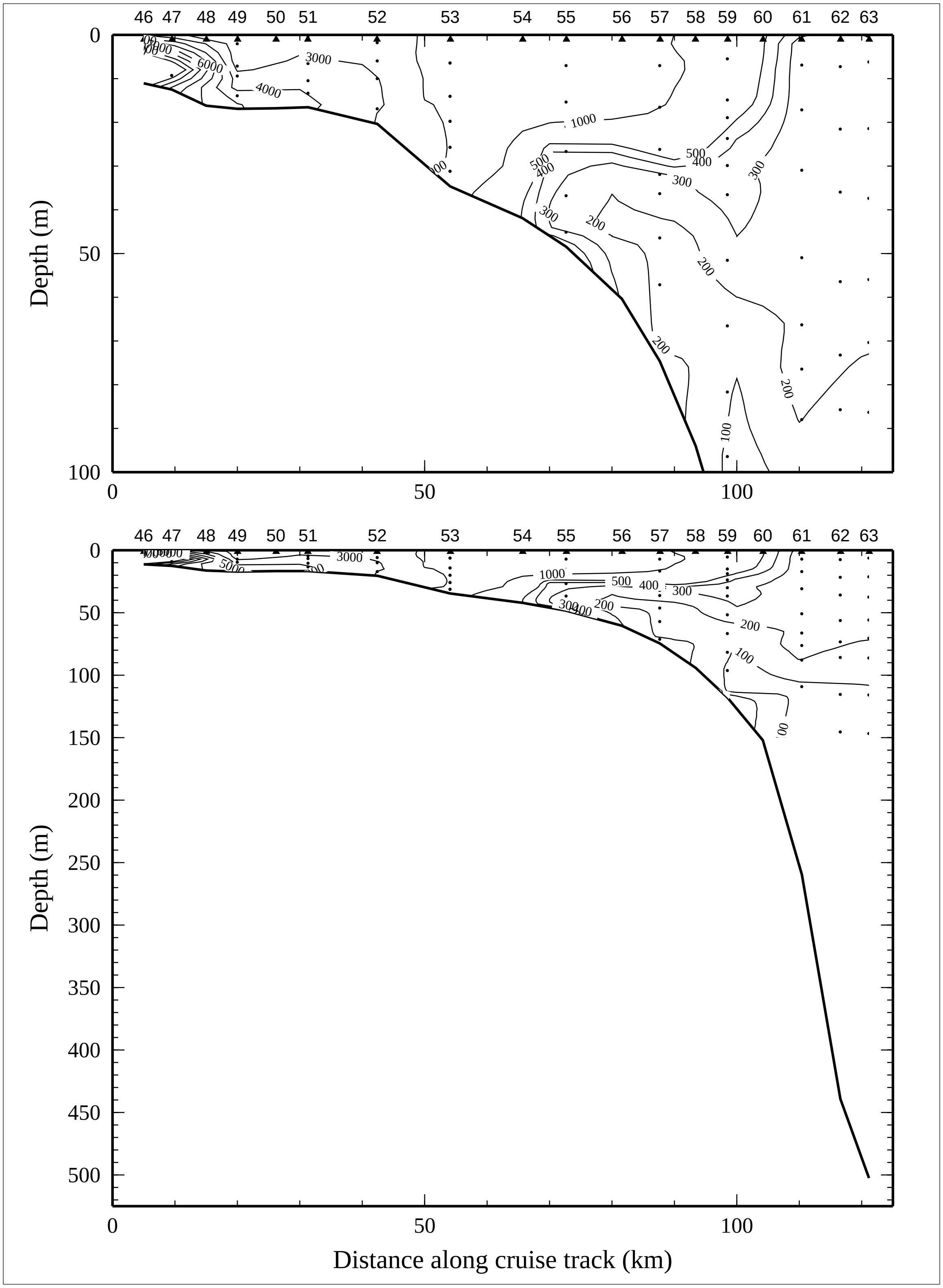

Figure 7.1.16. Chlorophyll a (ng·l-1) on line 1 of LATEX A survey H07, 6-22 November 1993.

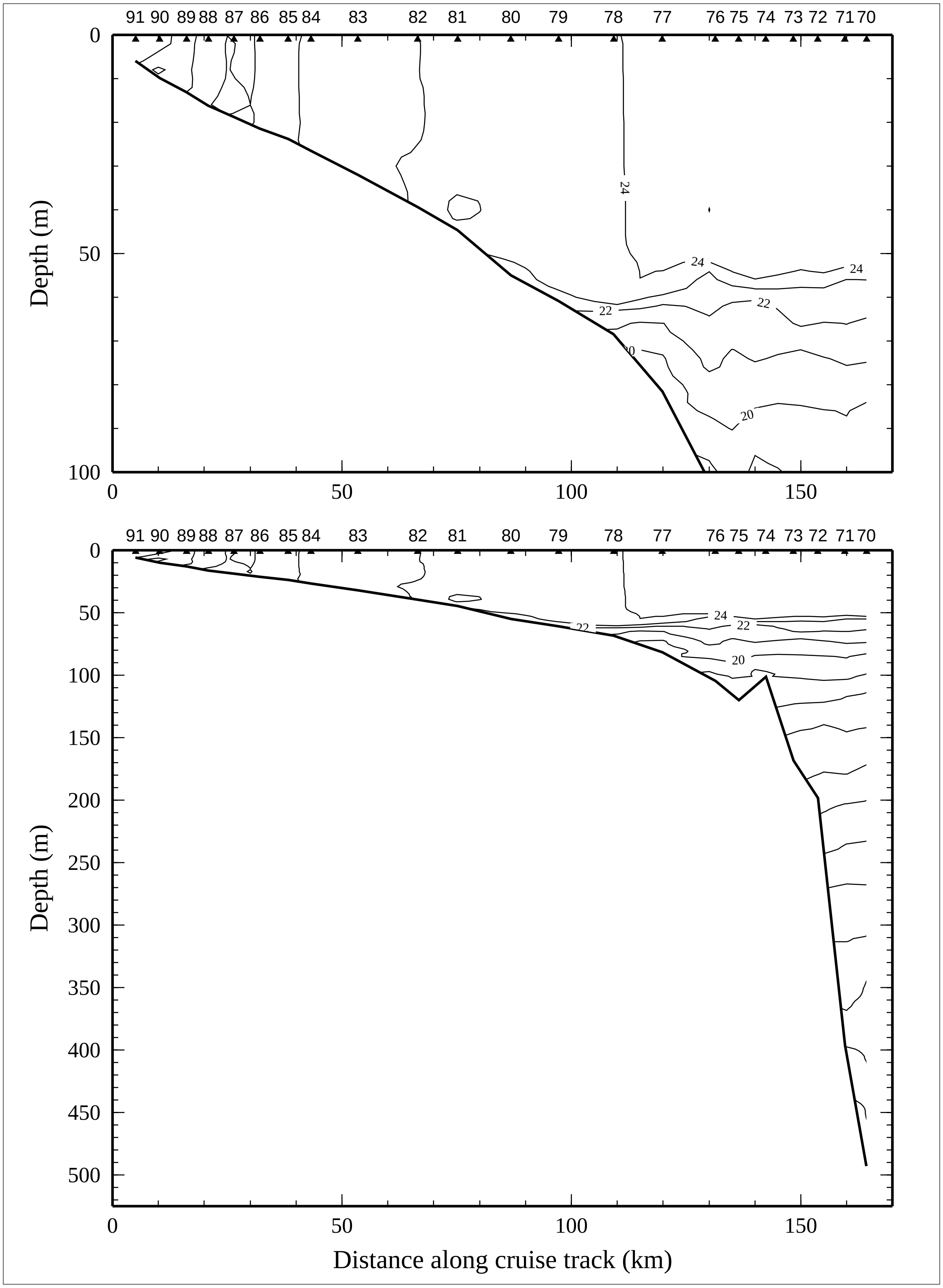

Figure 7.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H07, 6-22 November 1993.

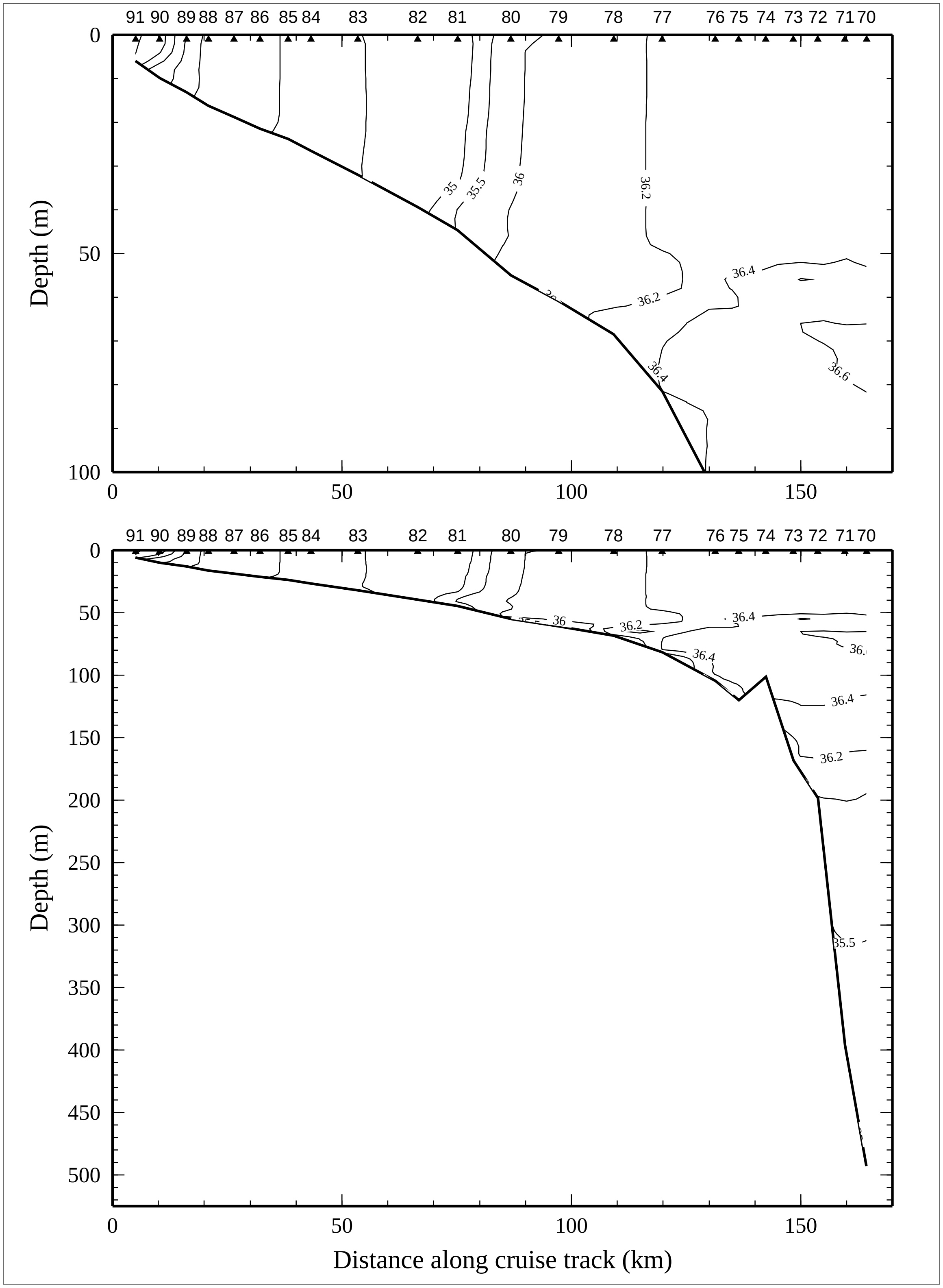

Figure 7.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H07, 6-22 November 1993.

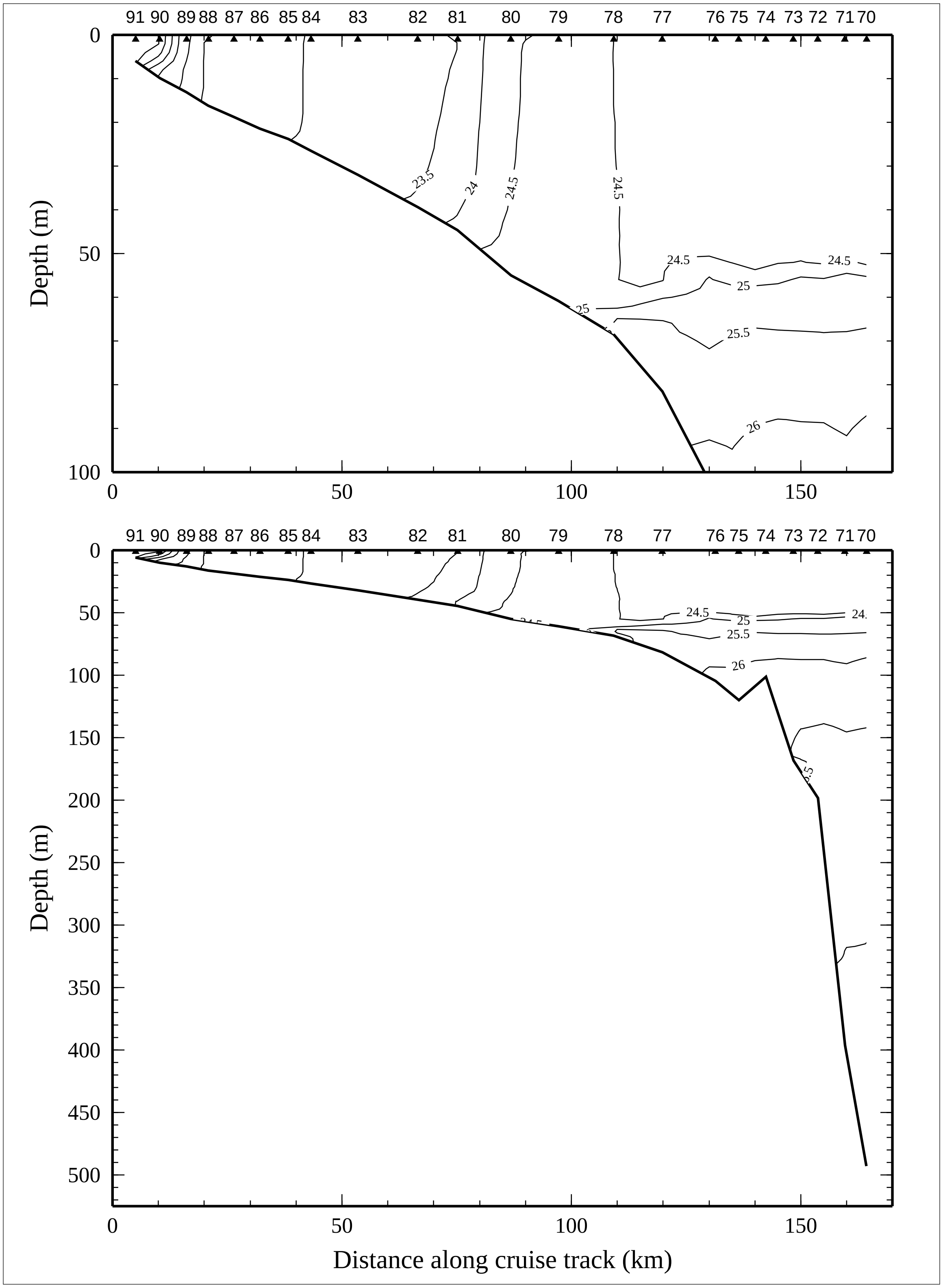

Figure 7.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H07, 6-22 November 1993.

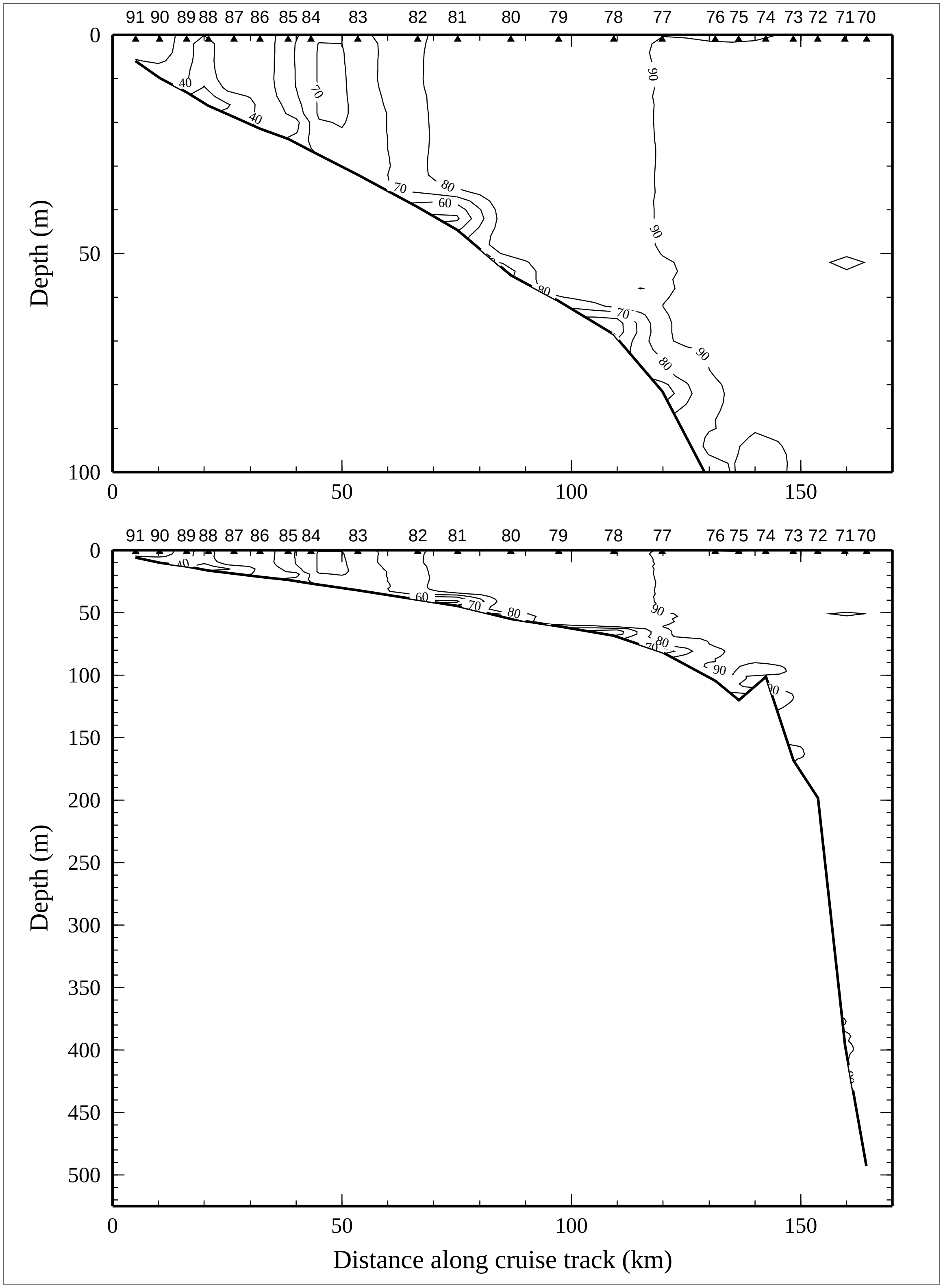

Figure 7.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H07, 6-22 November 1993.

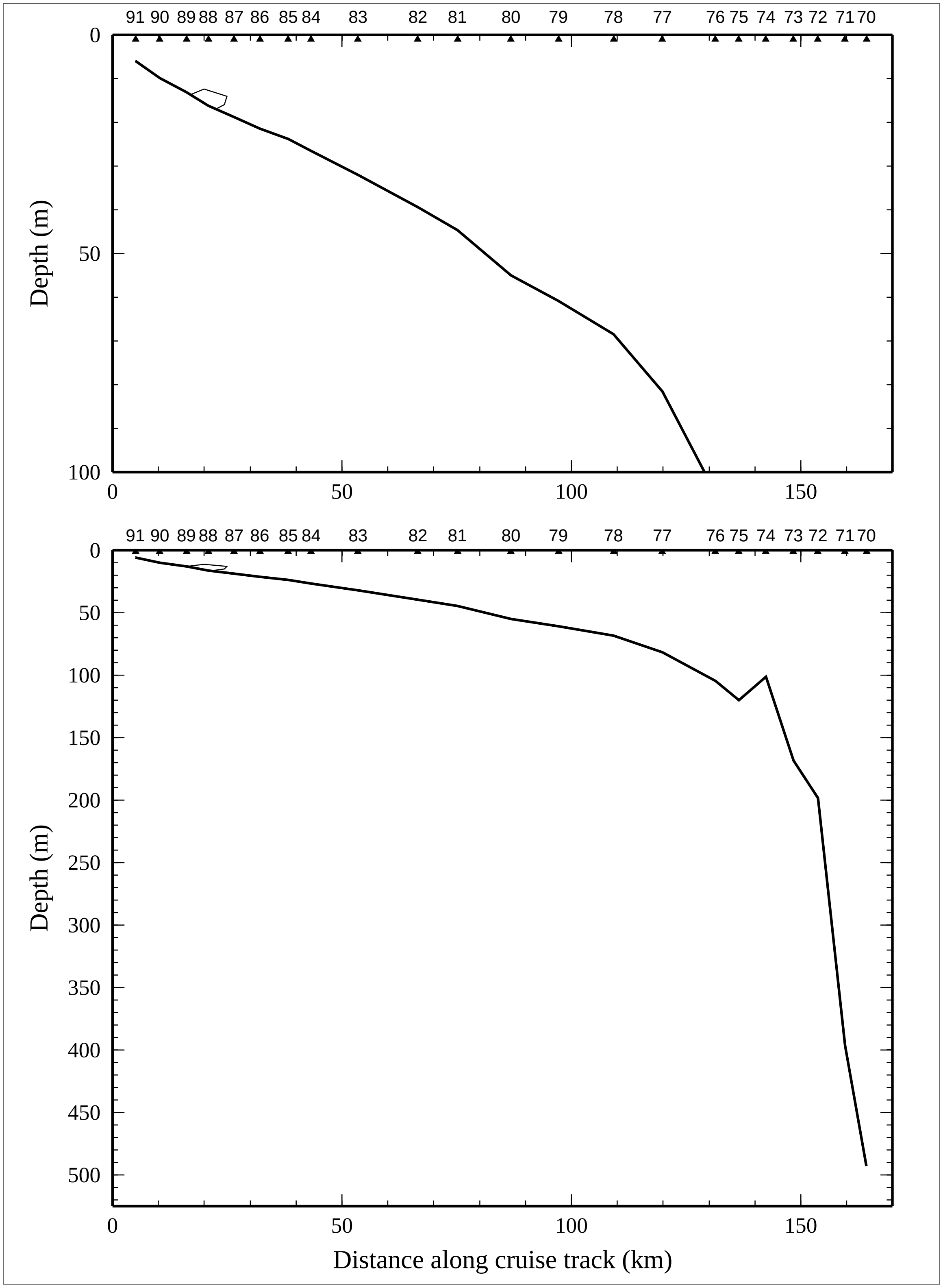

Figure 7.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H07, 6-22 November 1993.

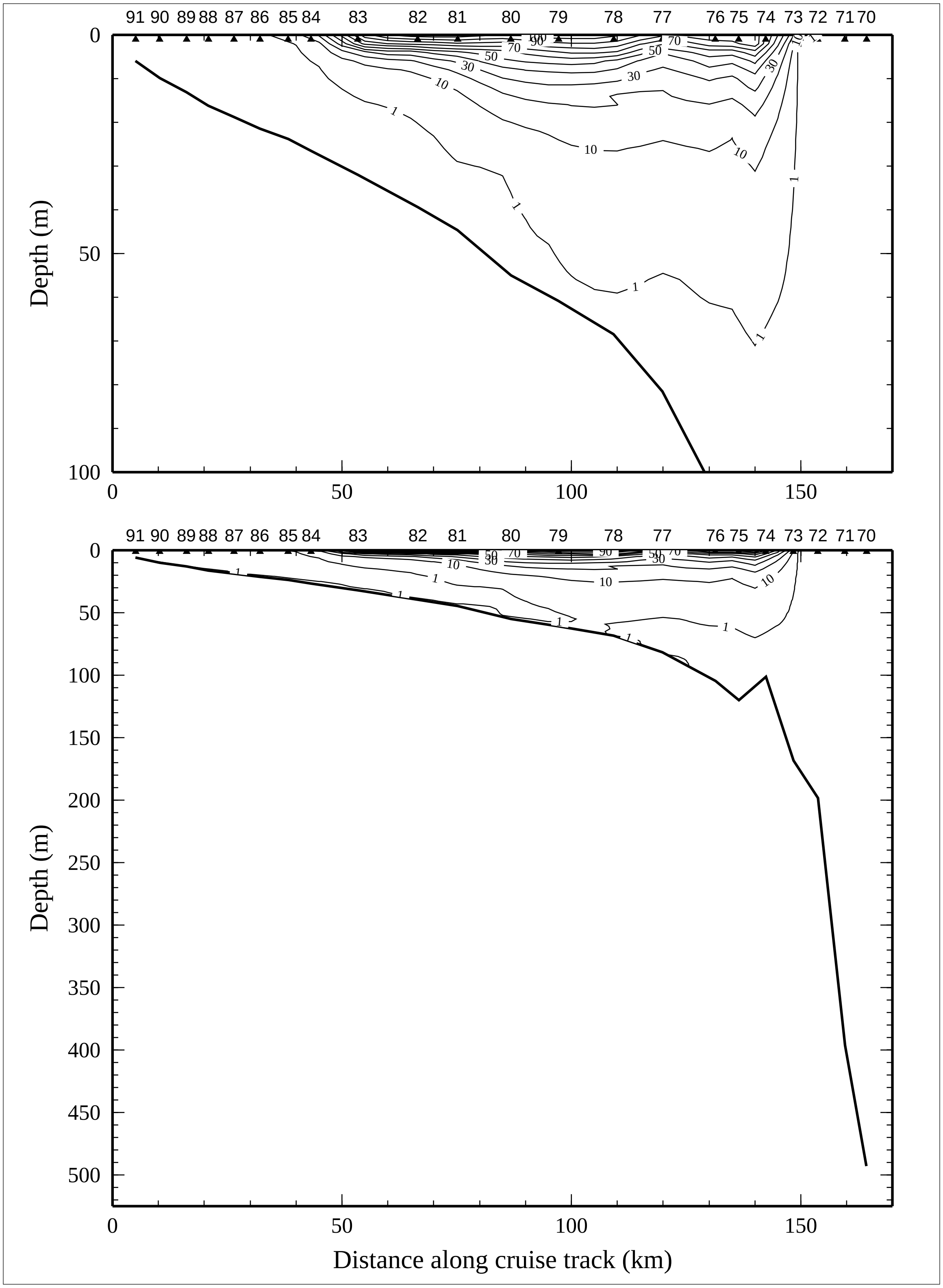

Figure 7.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H07, 6-22 November 1993.

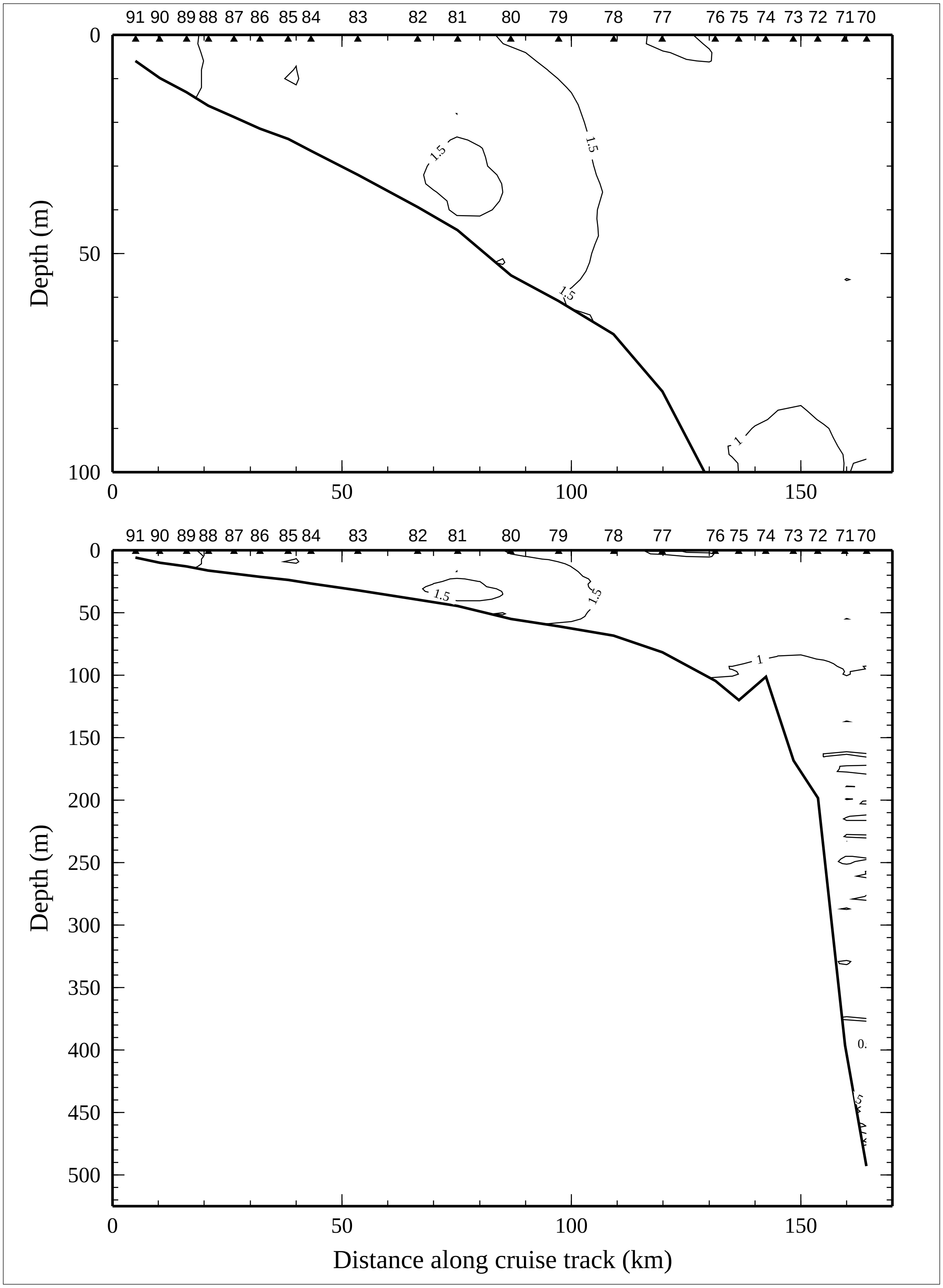

Figure 7.2.7. Relative fluorescence on line 2 of LATEX A survey H07, 6-22 November 1993.

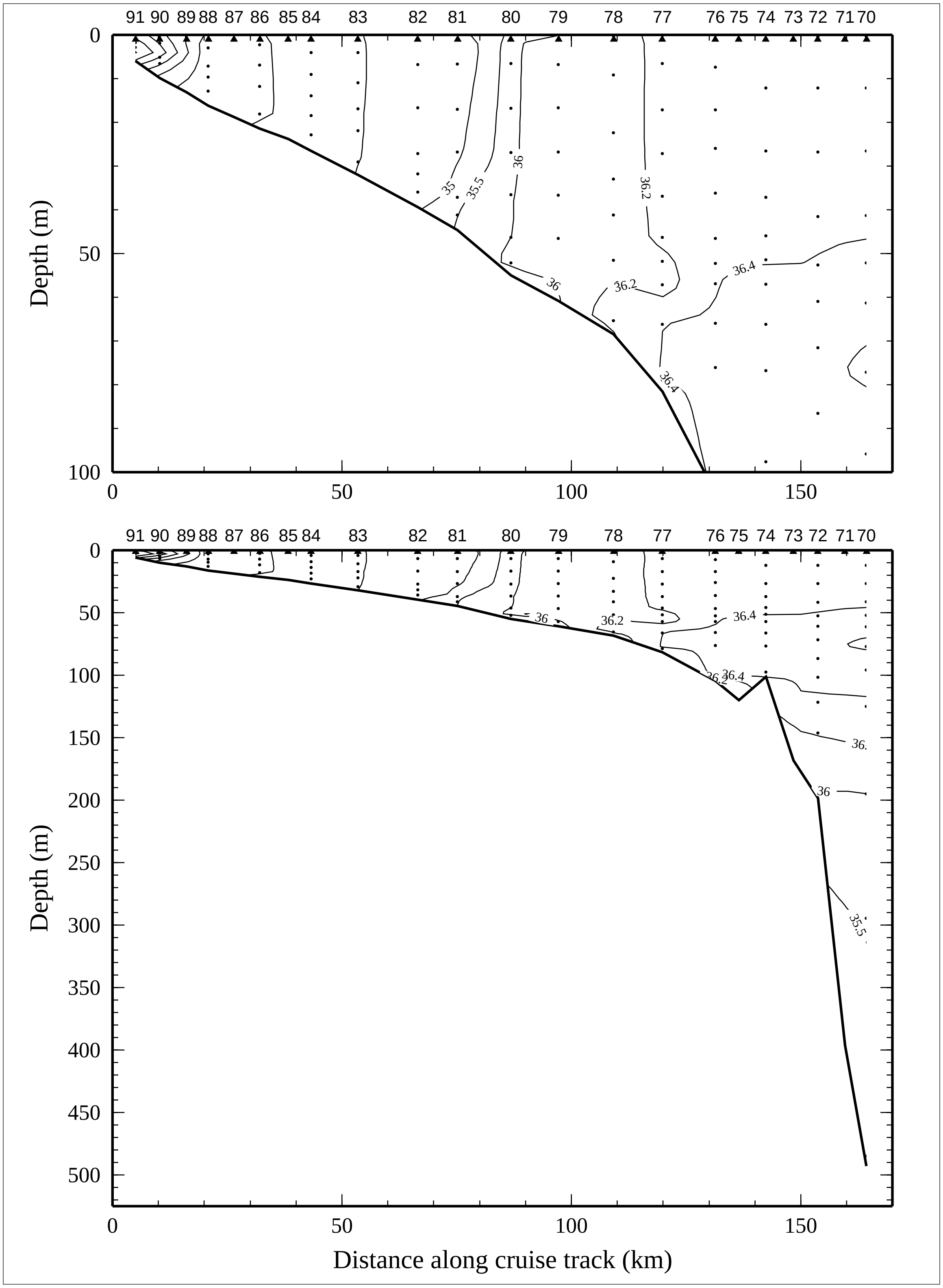

Figure 7.2.8. Bottle salinity on line 2 of LATEX A survey H07, 6-22 November 1993.

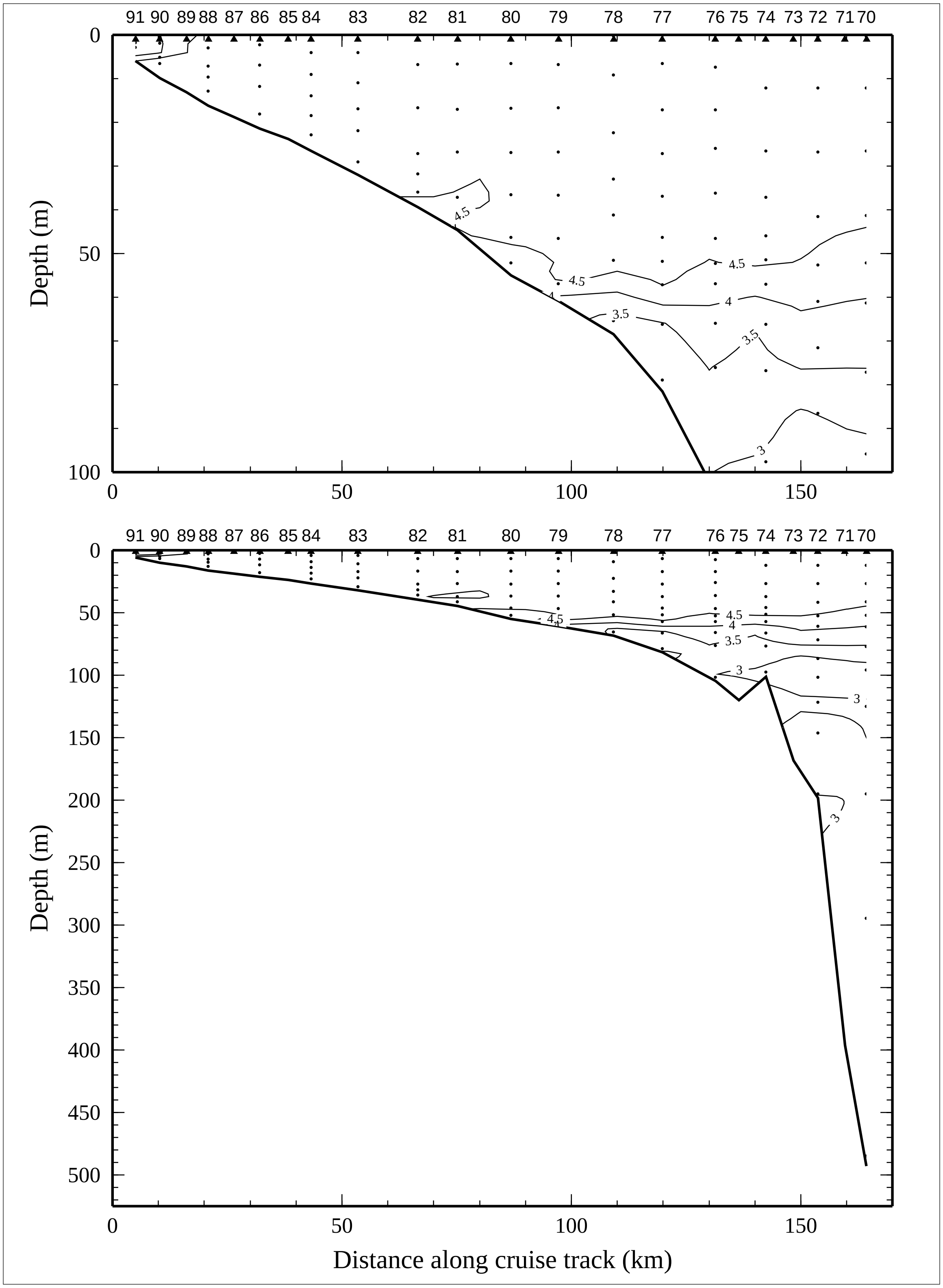

Figure 7.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H07, 6-22 November 1993.

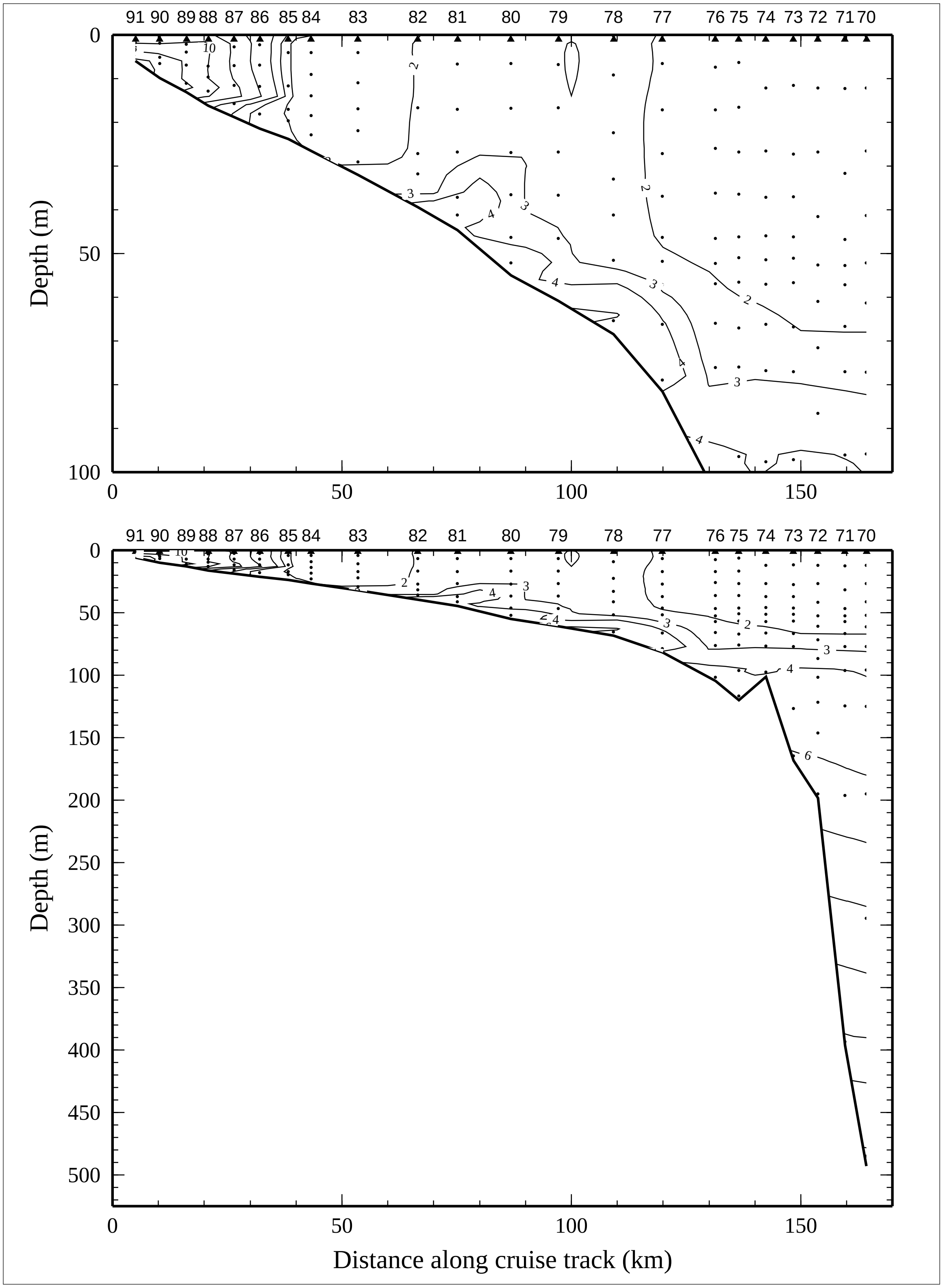

Figure 7.2.10. Silicate (μmol·l-1) on line 2 of LATEX A survey H07, 6-22 November 1993.

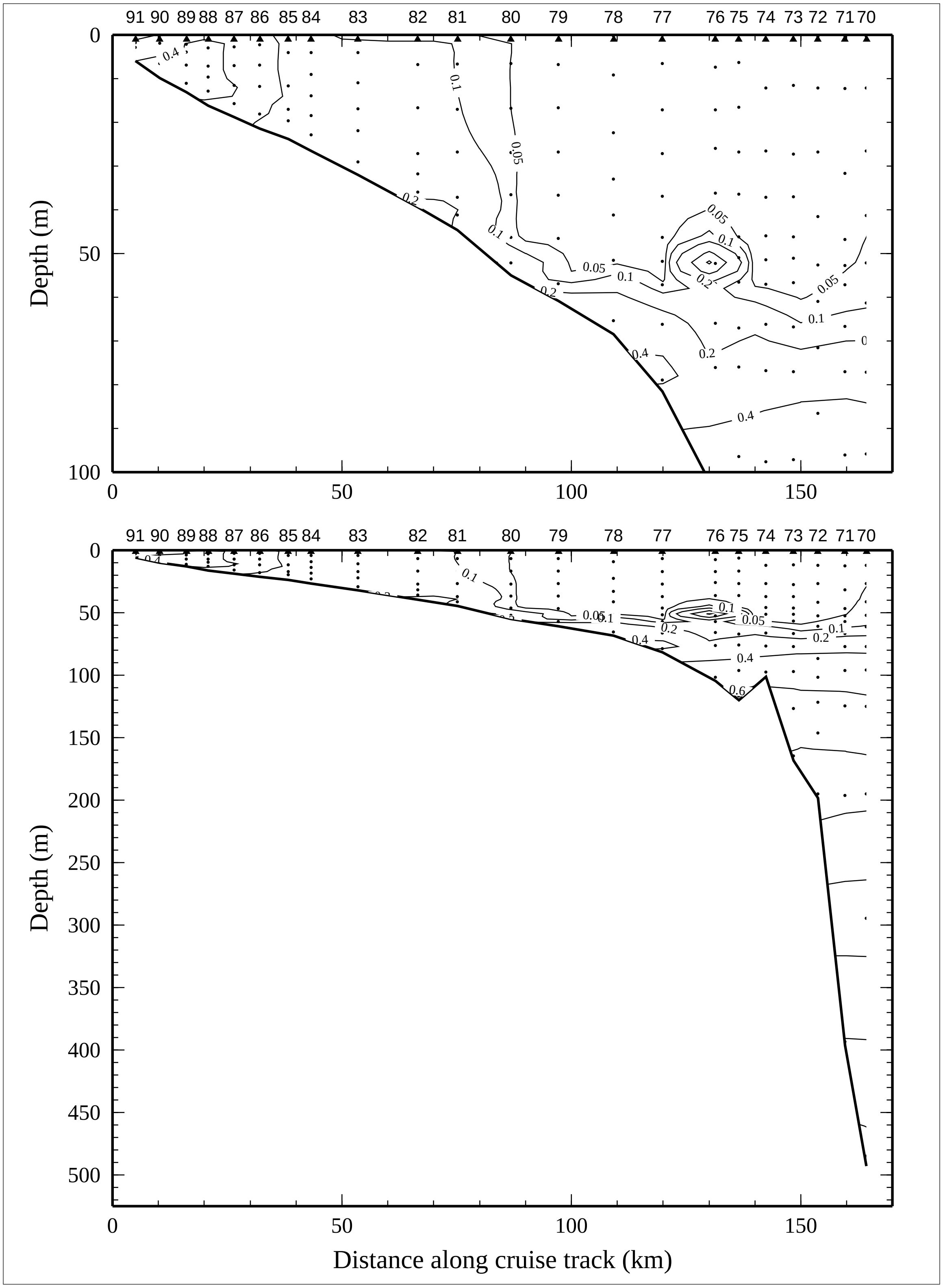

Figure 7.2.11. Phosphate (μmol·l^{-1}) on line 2 of LATEX A survey H07, 6-22 November 1993.

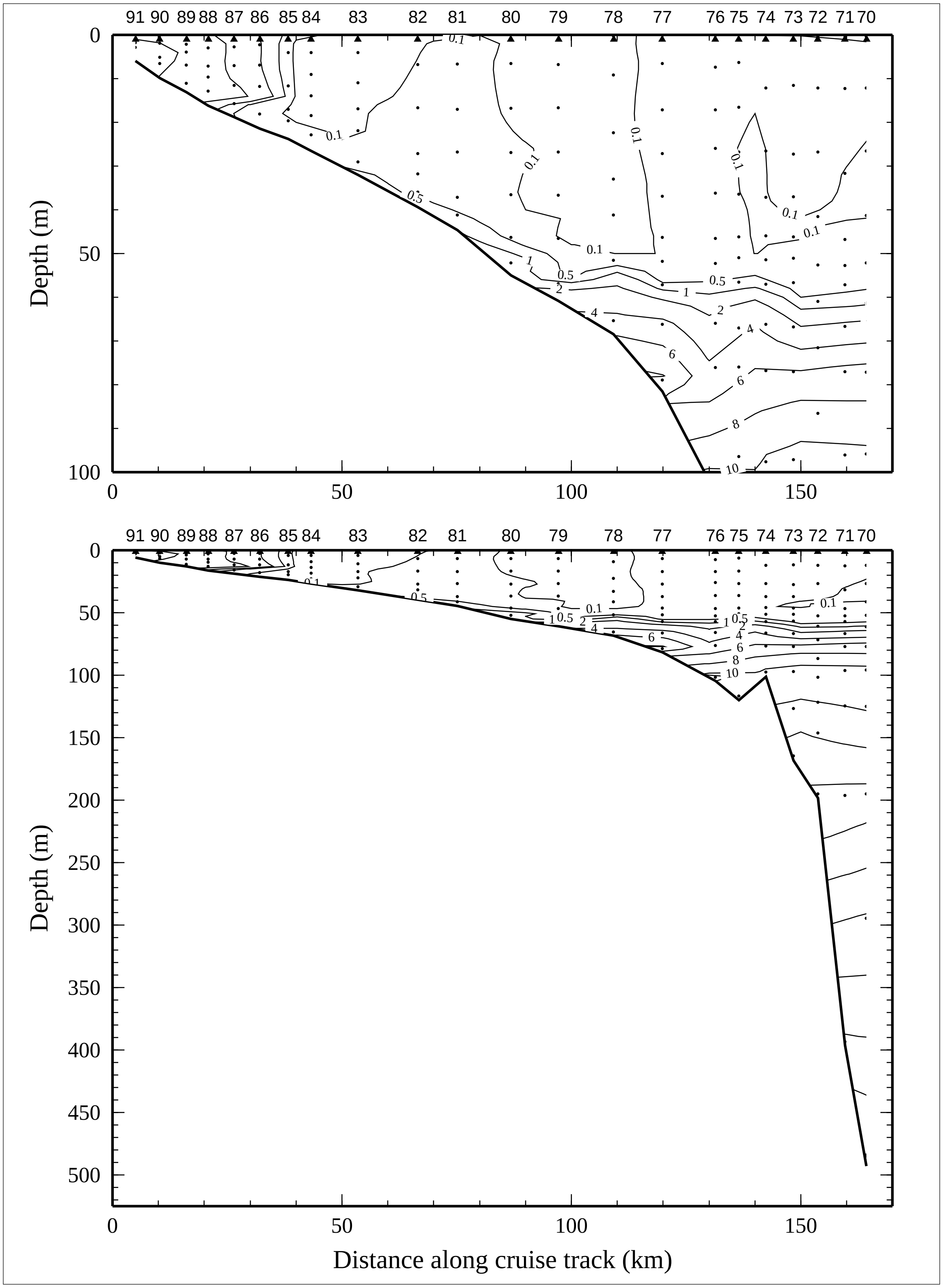

Figure 7.2.12. Nitrate (μmol·l-1) on line 2 of LATEX A survey H07, 6-22 November 1993.

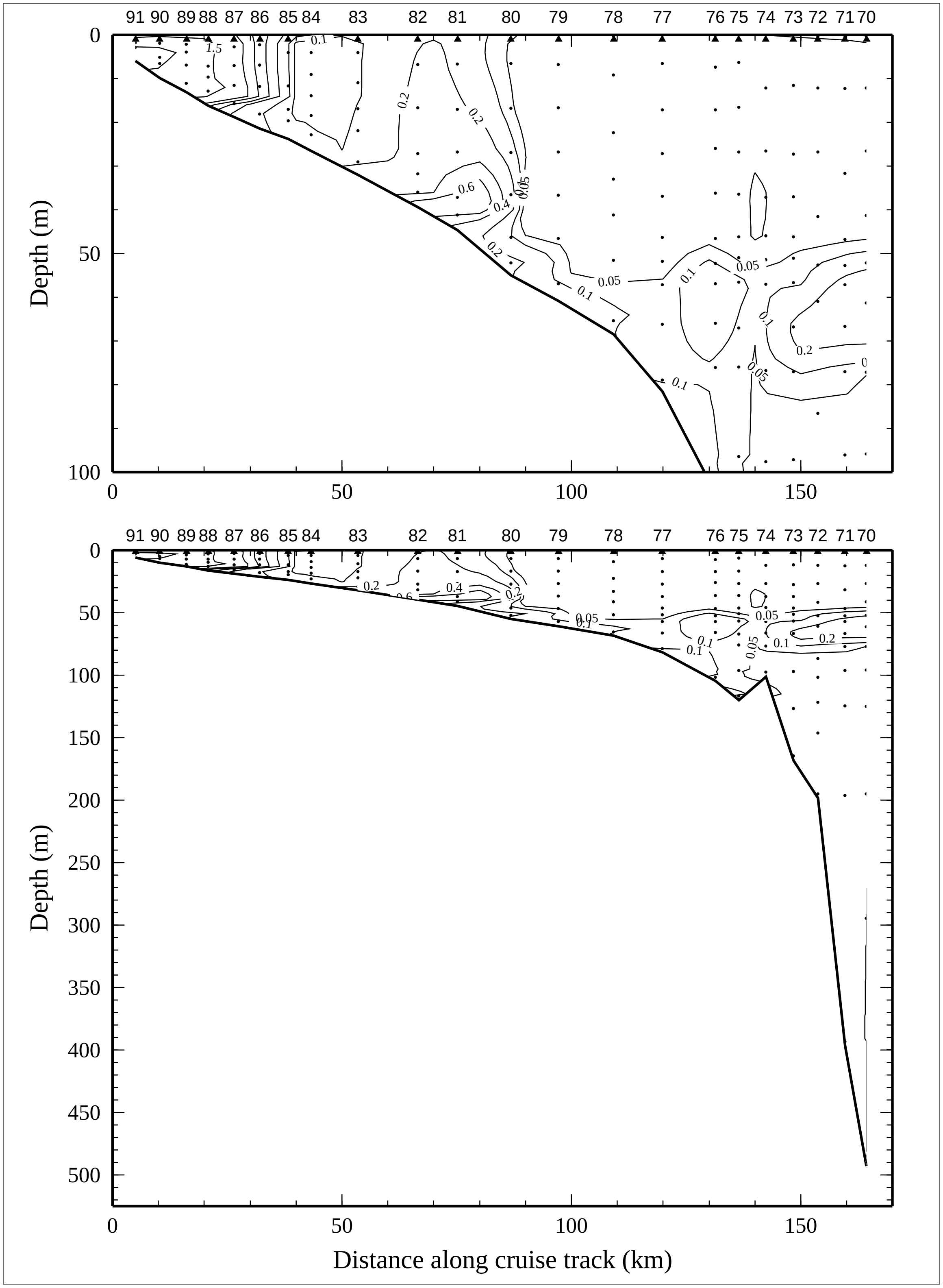

Figure 7.2.13. Nitrite (μmol·l-1) on line 2 of LATEX A survey H07, 6-22 November 1993.

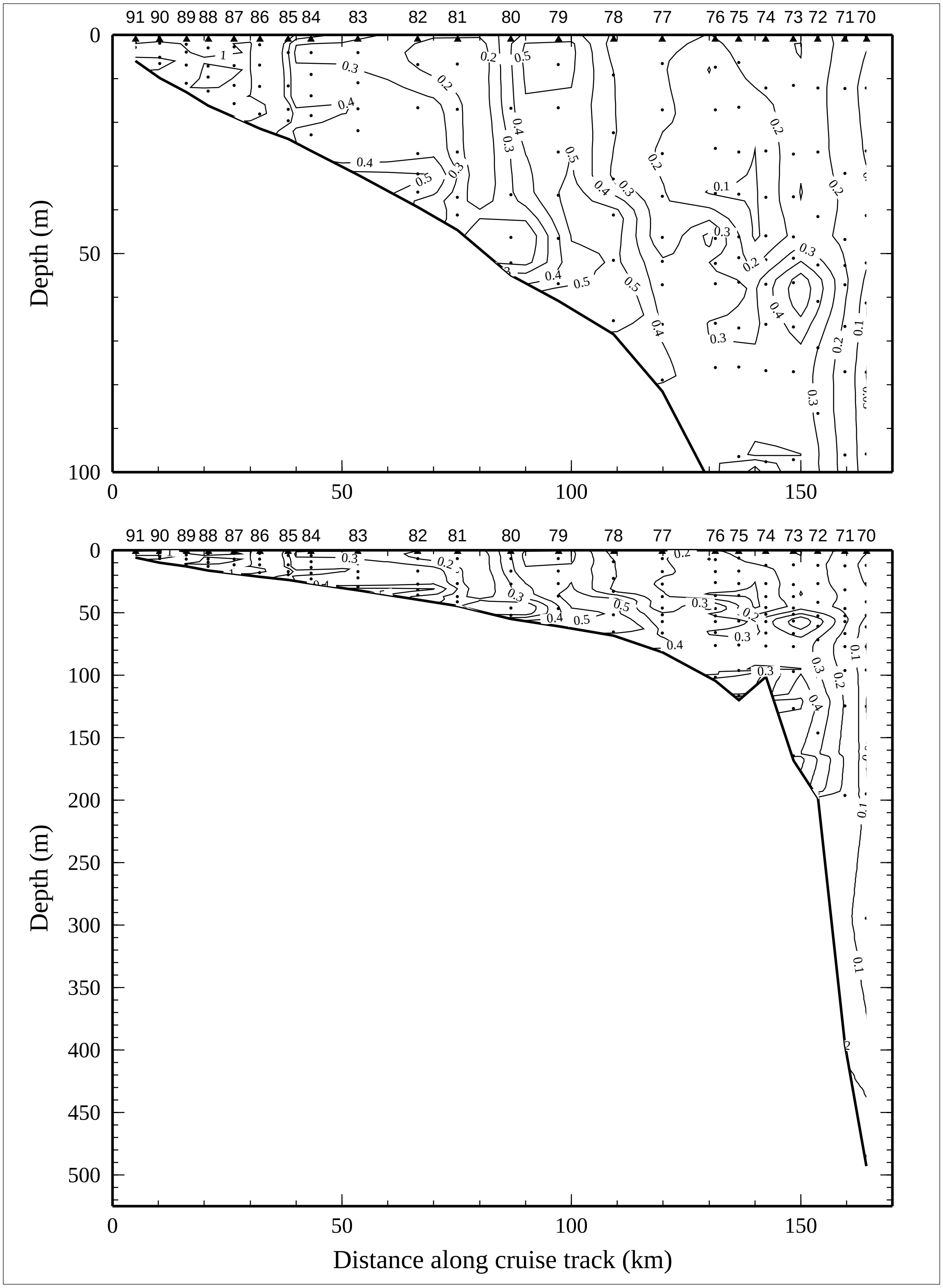

Figure 7.2.14. Ammonium (μmol·l^{-1}) on line 2 of LATEX A survey H07, 6-22 November 1993.

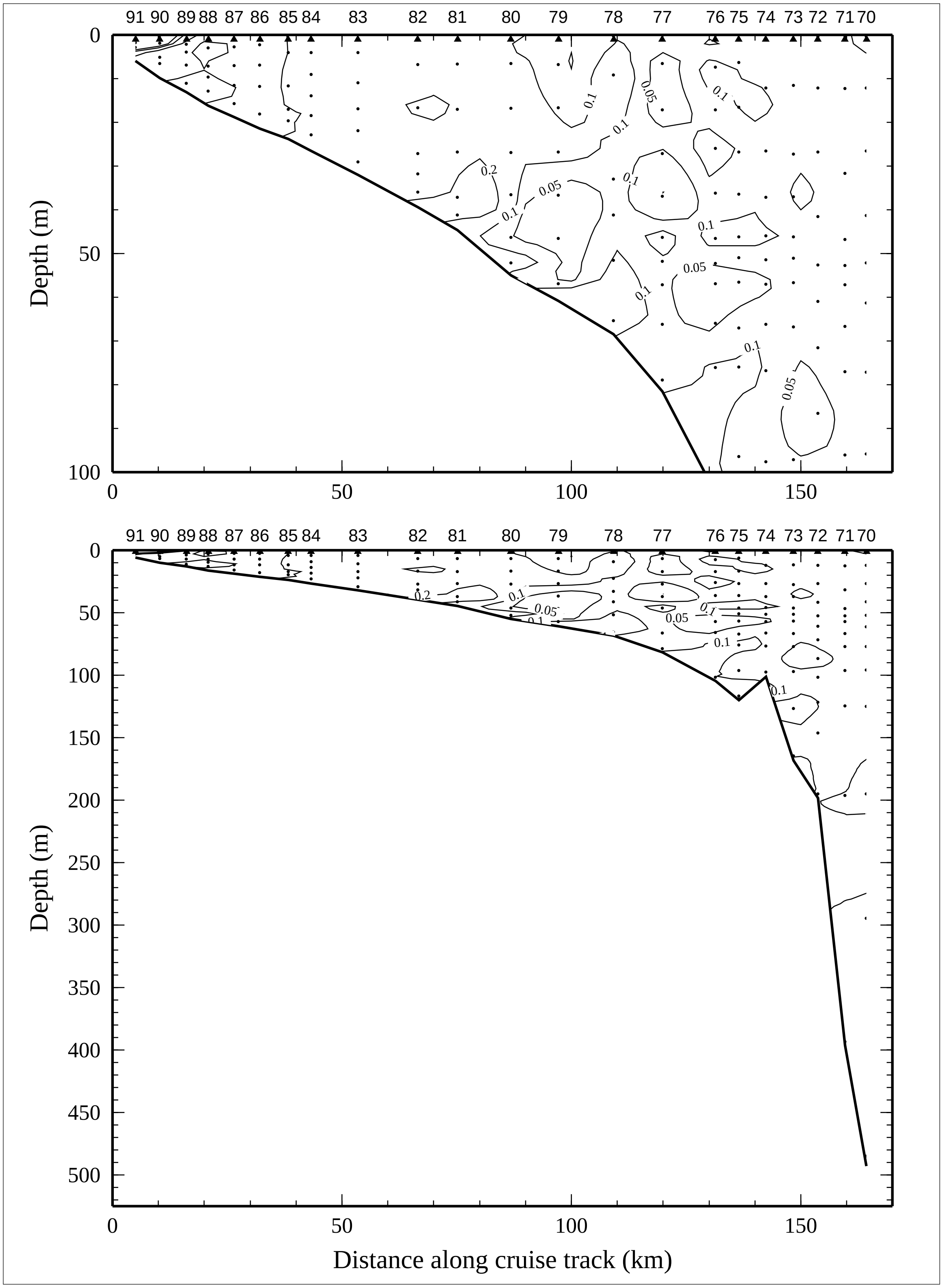

Figure 7.2.15. Urea (μmol·l-1) on line 2 of LATEX A survey H07, 6-22 November 1993.

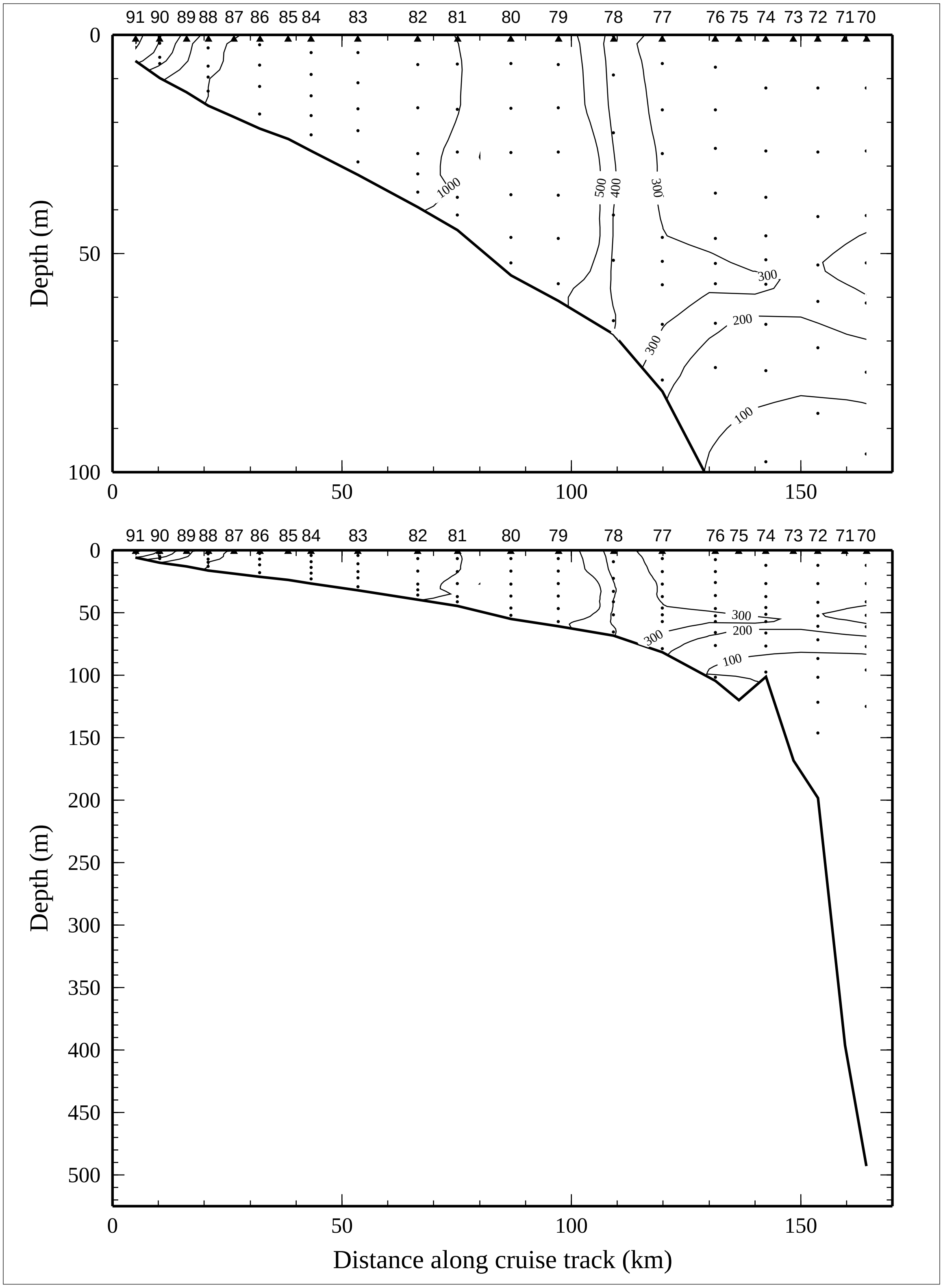

Figure 7.2.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 2 of LATEX A survey H07, 6-22 November 1993.

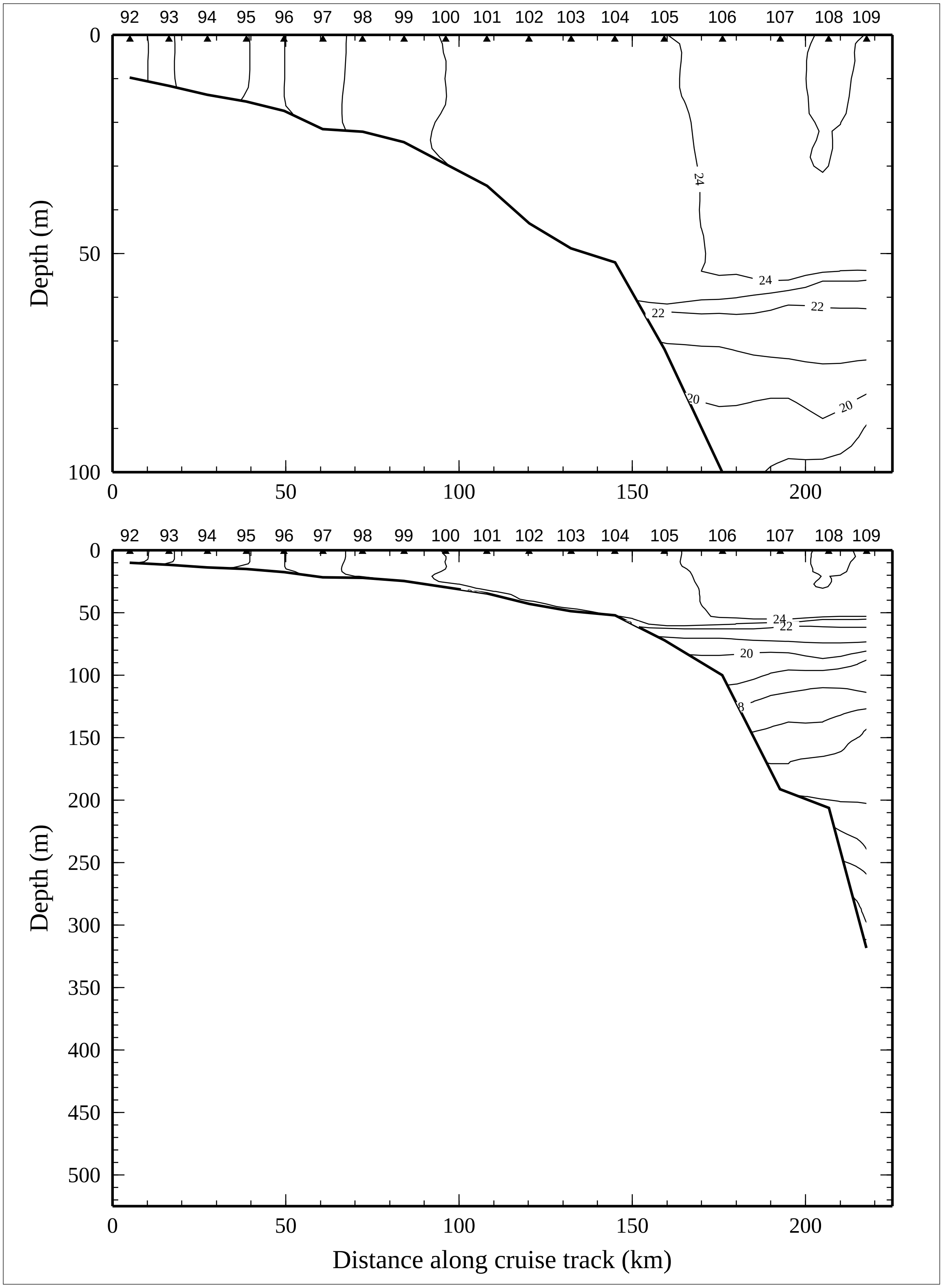

Figure 7.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H07, 6-22 November 1993.

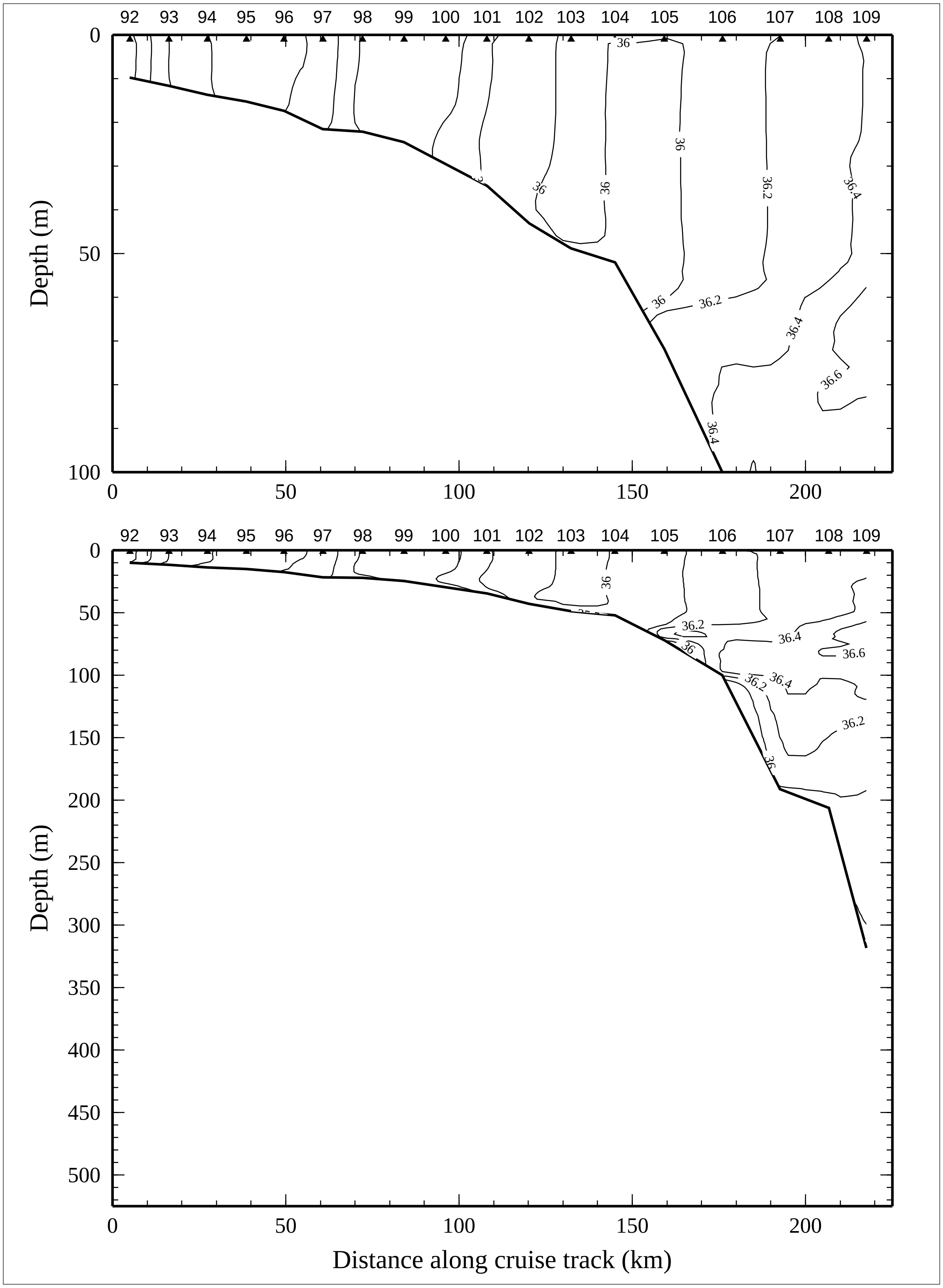

Figure 7.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H07, 6-22 November 1993.

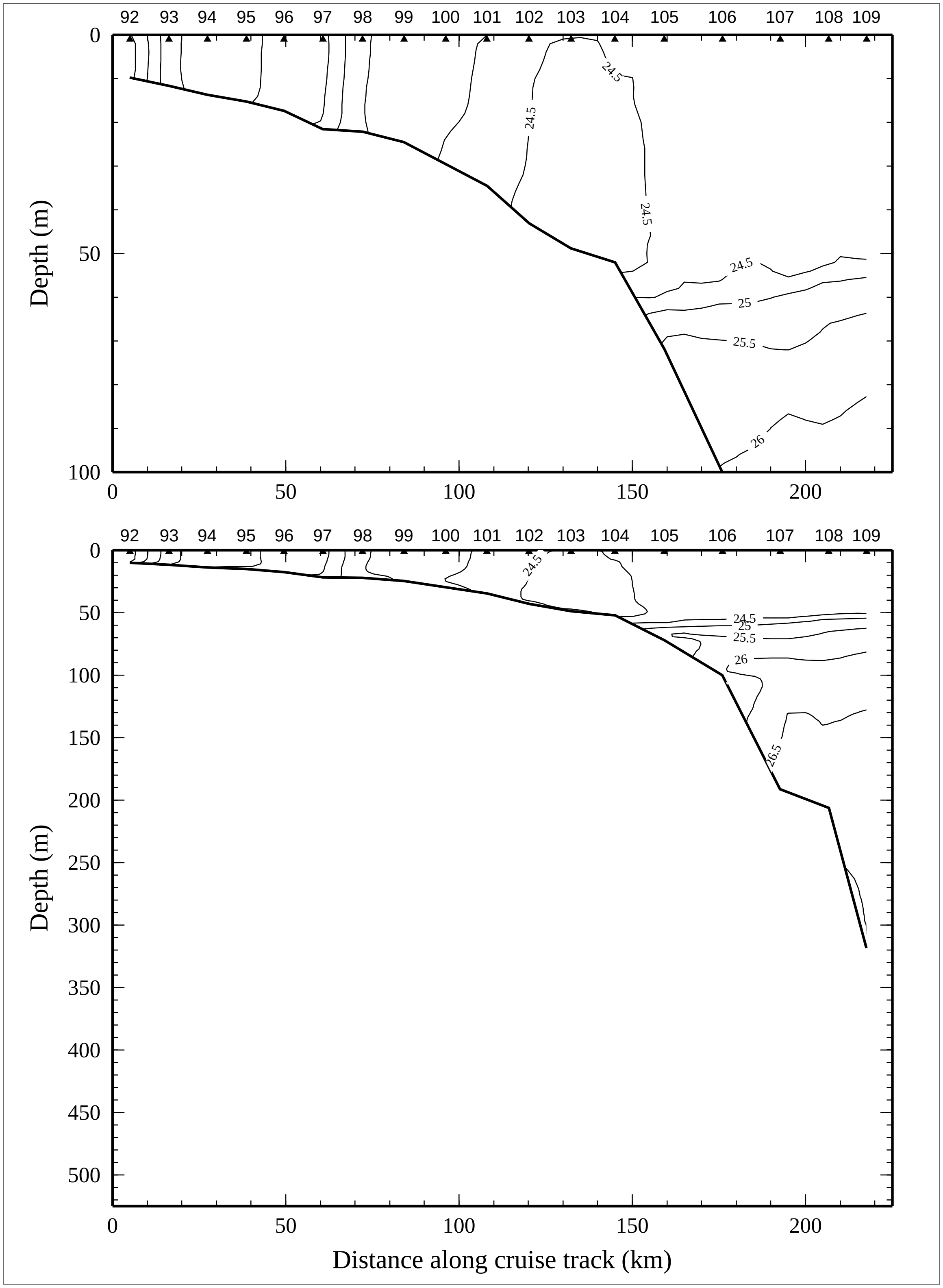

Figure 7.3.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 3 of LATEX A survey H07, 6-22 November 1993.

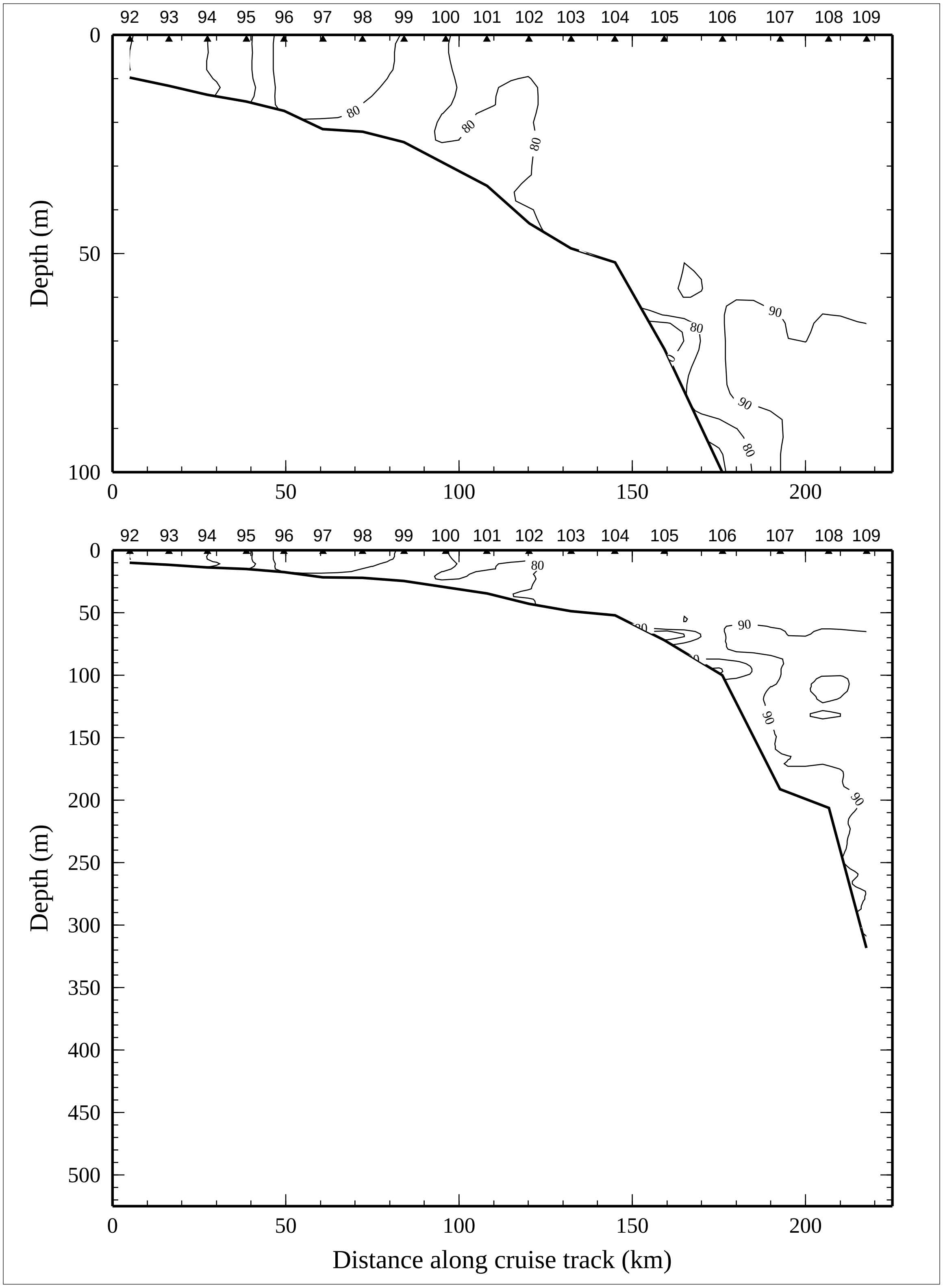

Figure 7.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H07, 6-22 November 1993.

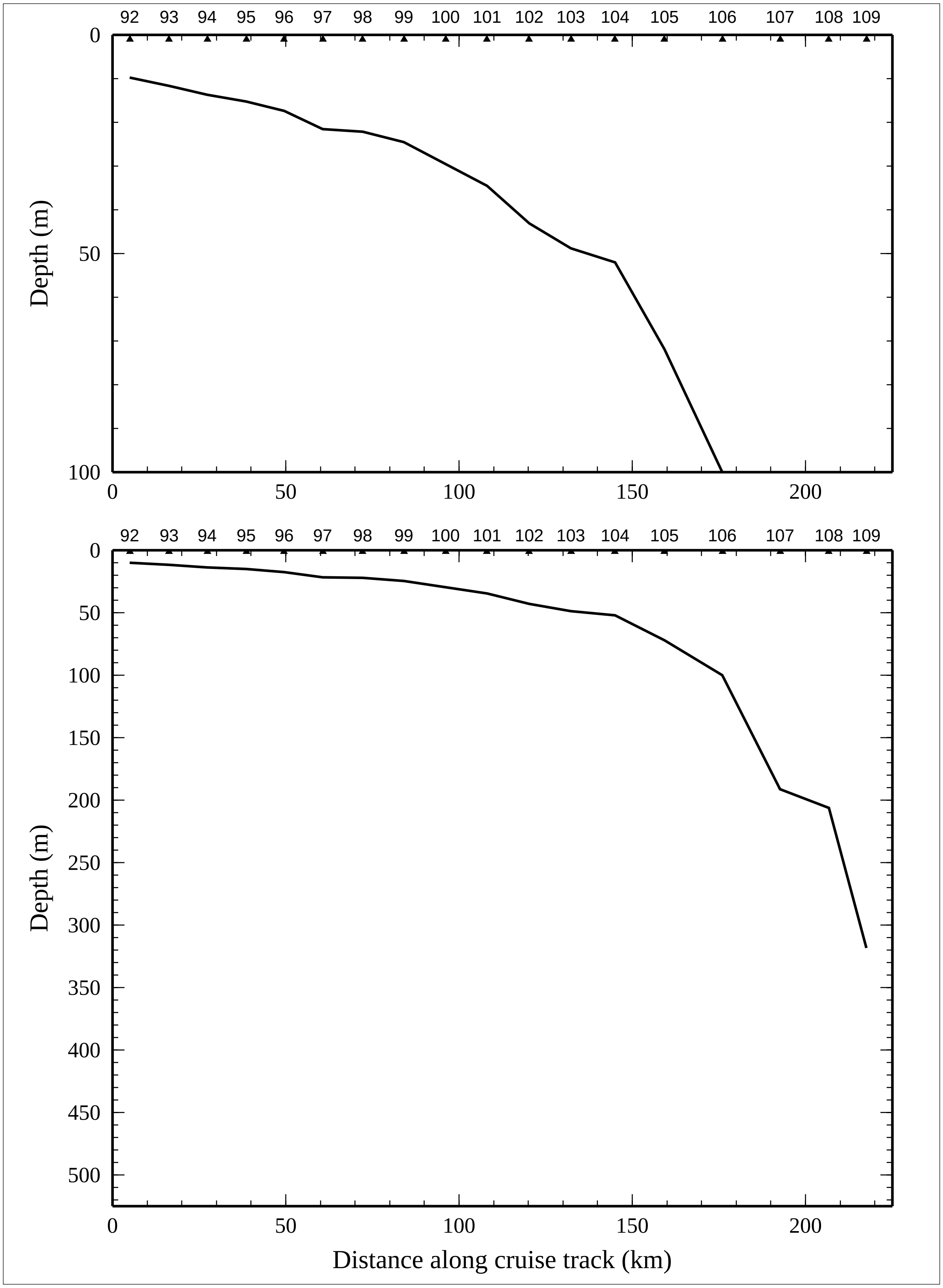

Figure 7.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H07, 6-22 November 1993. Values were less than 0.05.

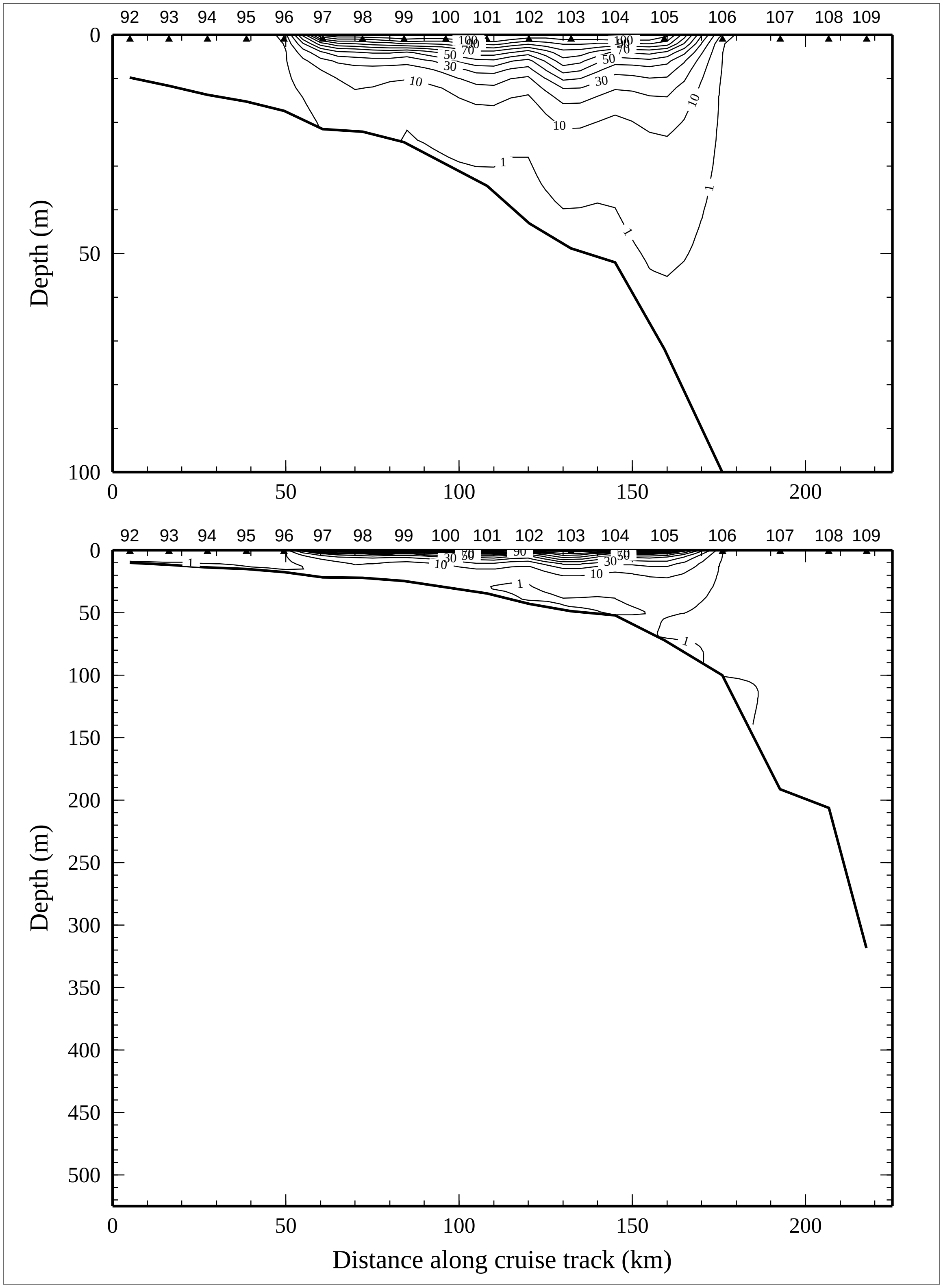

Figure 7.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H07, 6-22 November 1993.

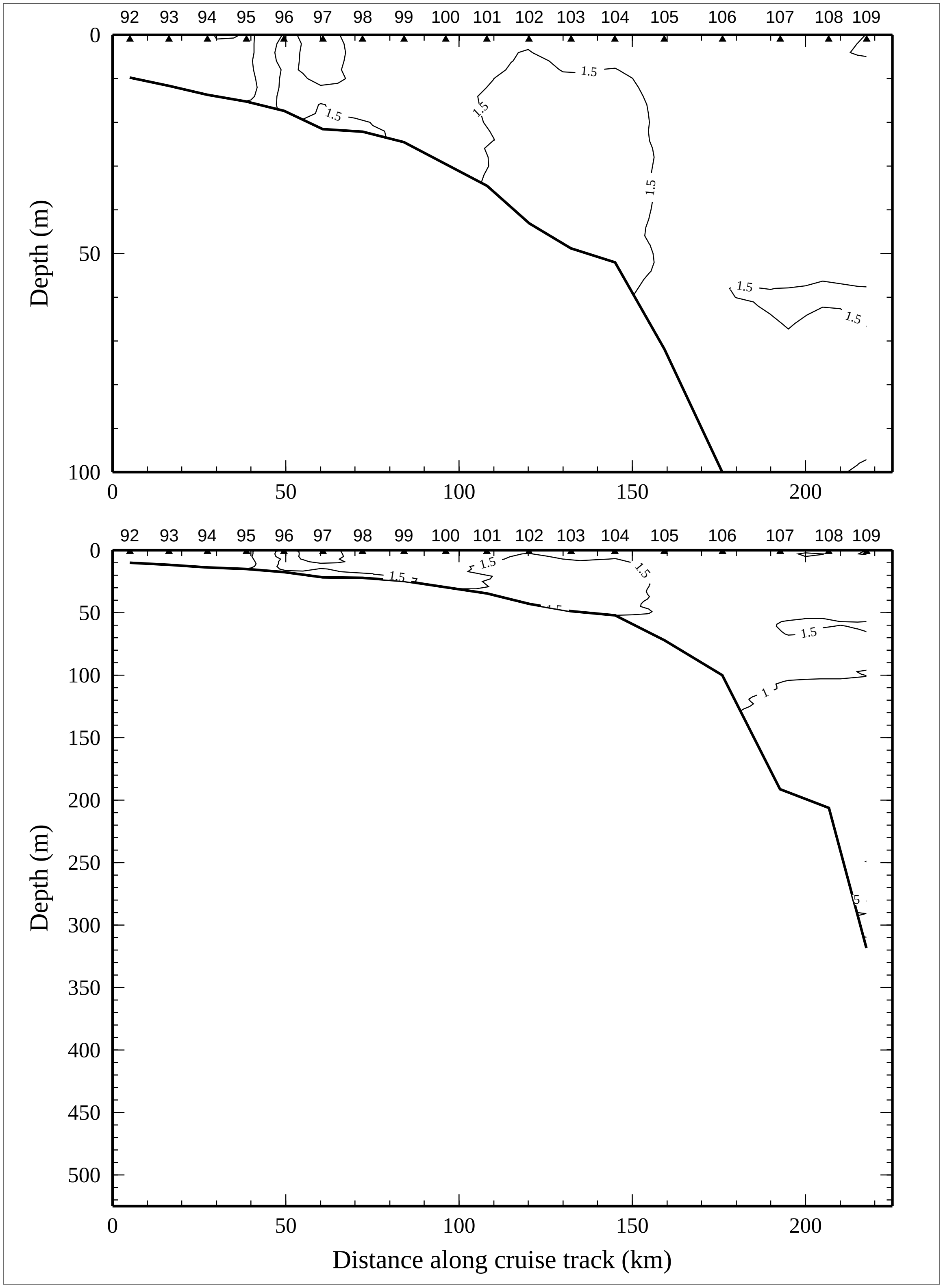

Figure 7.3.7. Relative fluorescence on line 3 of LATEX A survey H07, 6-22 November 1993.

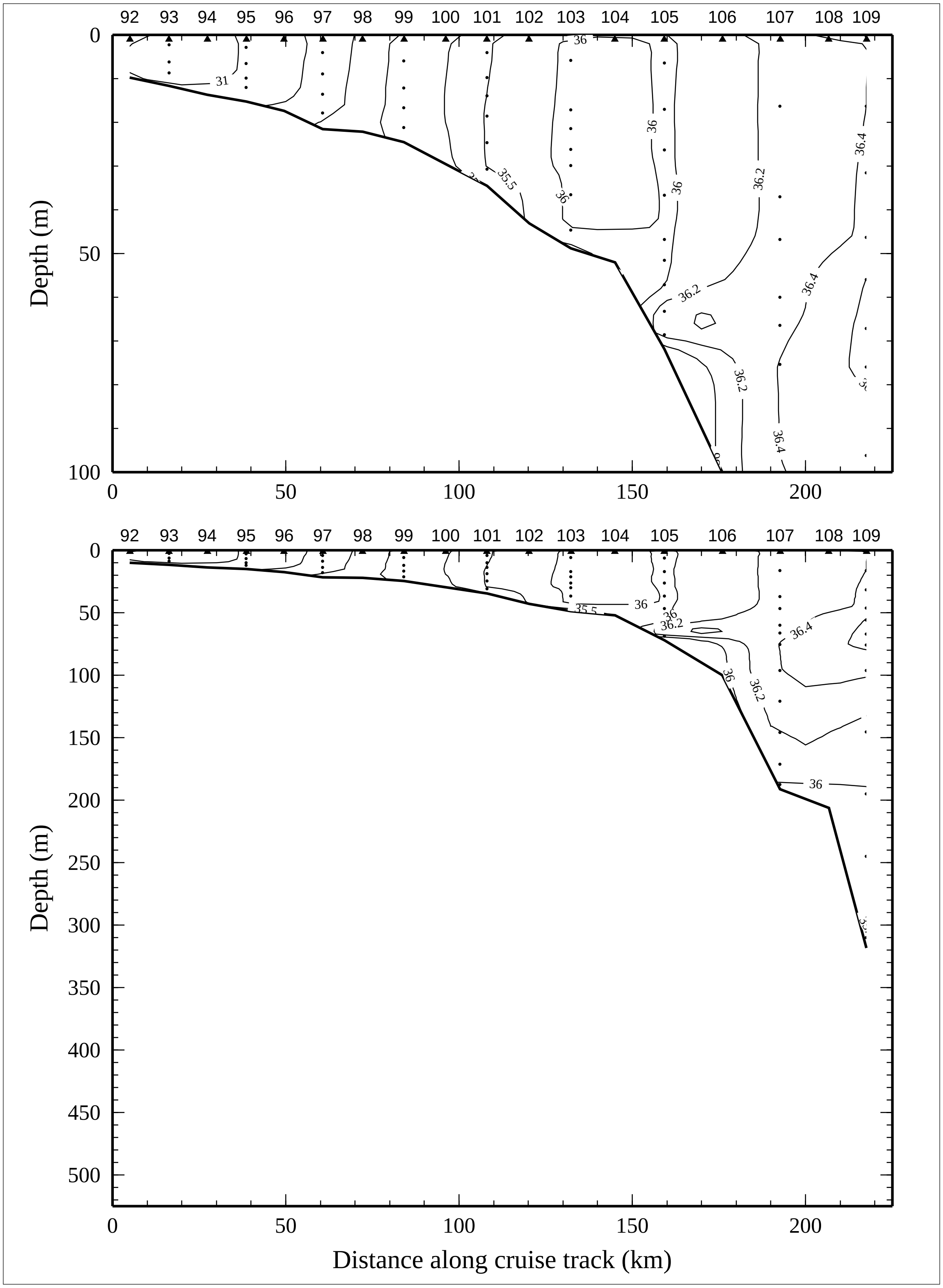

Figure 7.3.8. Bottle salinity on line 3 of LATEX A survey H07,
6-22 November 1993.

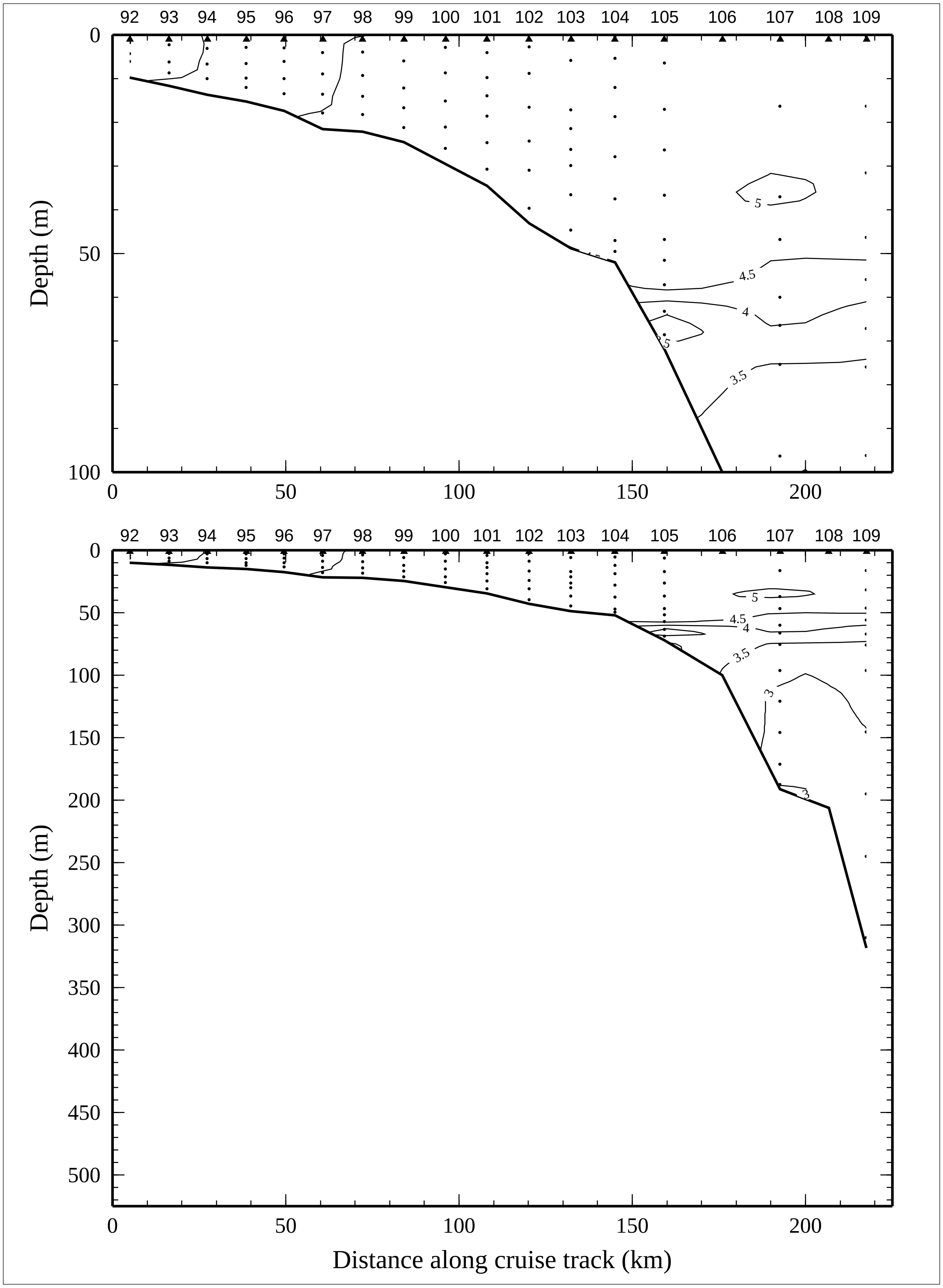

Figure 7.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H07, 6-22 November 1993.

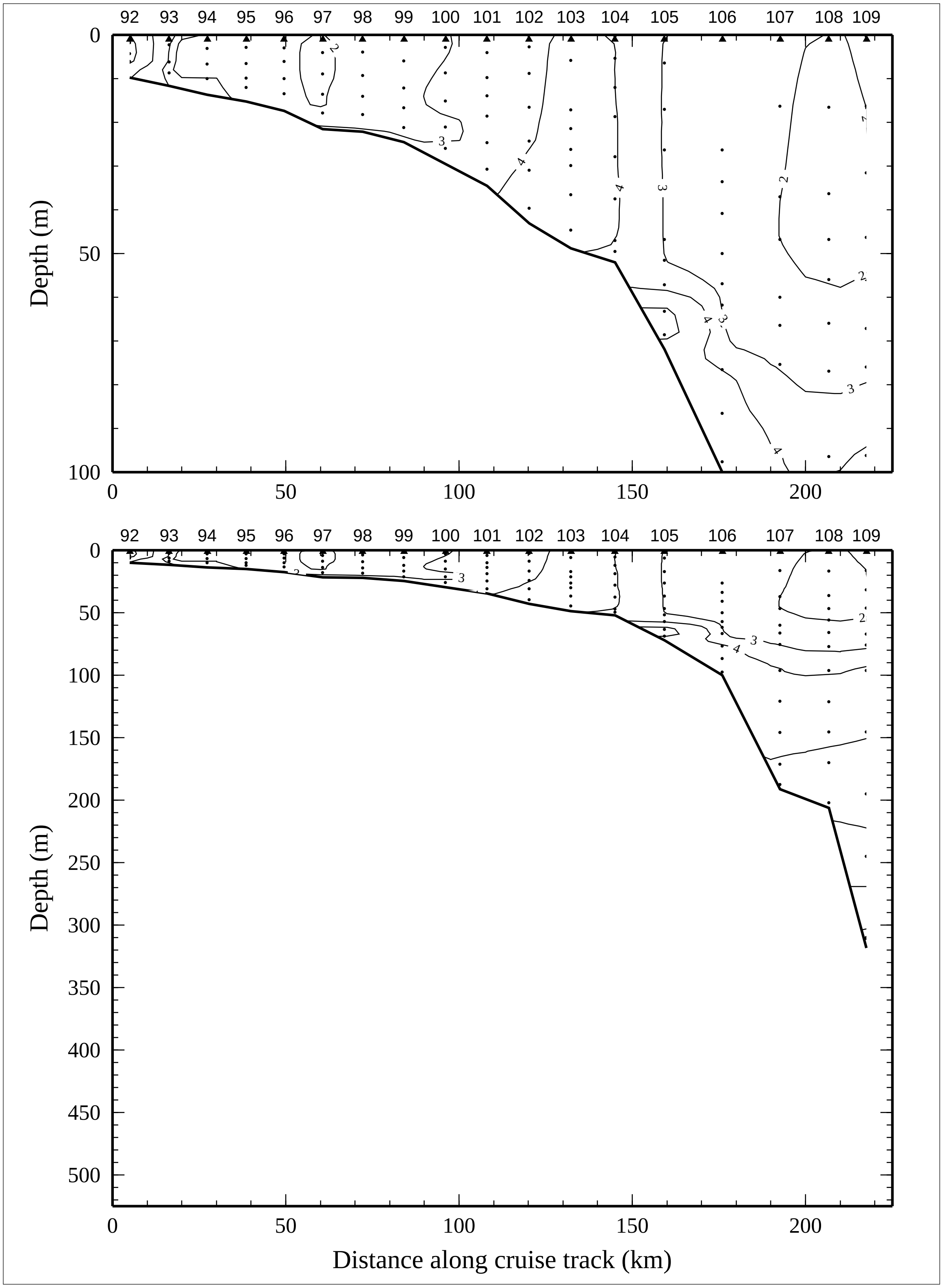

Figure 7.3.10. Silicate (μmol·l-1) on line 3 of LATEX A survey H07,
6-22 November 1993.

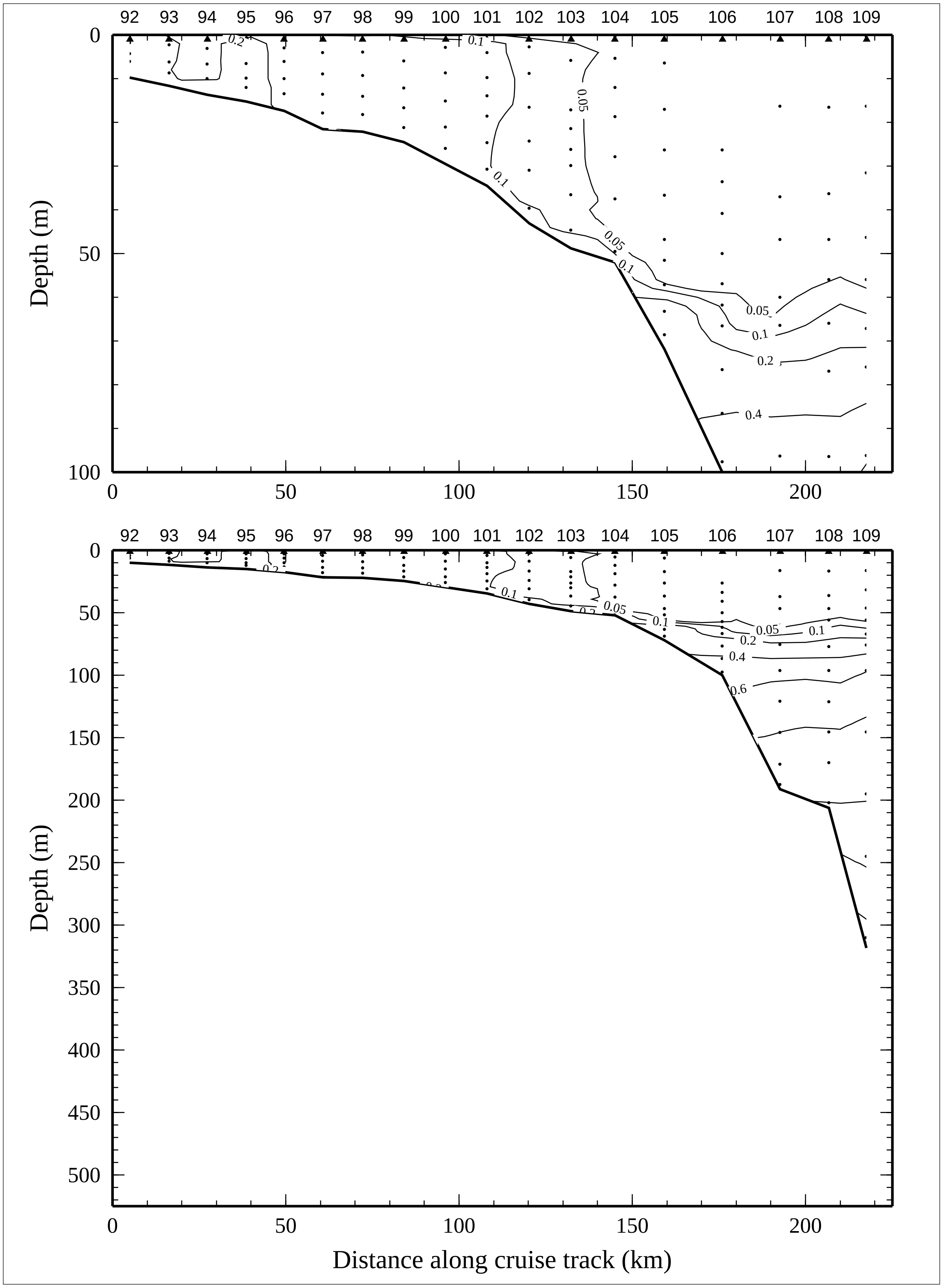

Figure 7.3.11. Phosphate (μmol·l-1) on line 3 of LATEX A survey H07, 6-22 November 1993.

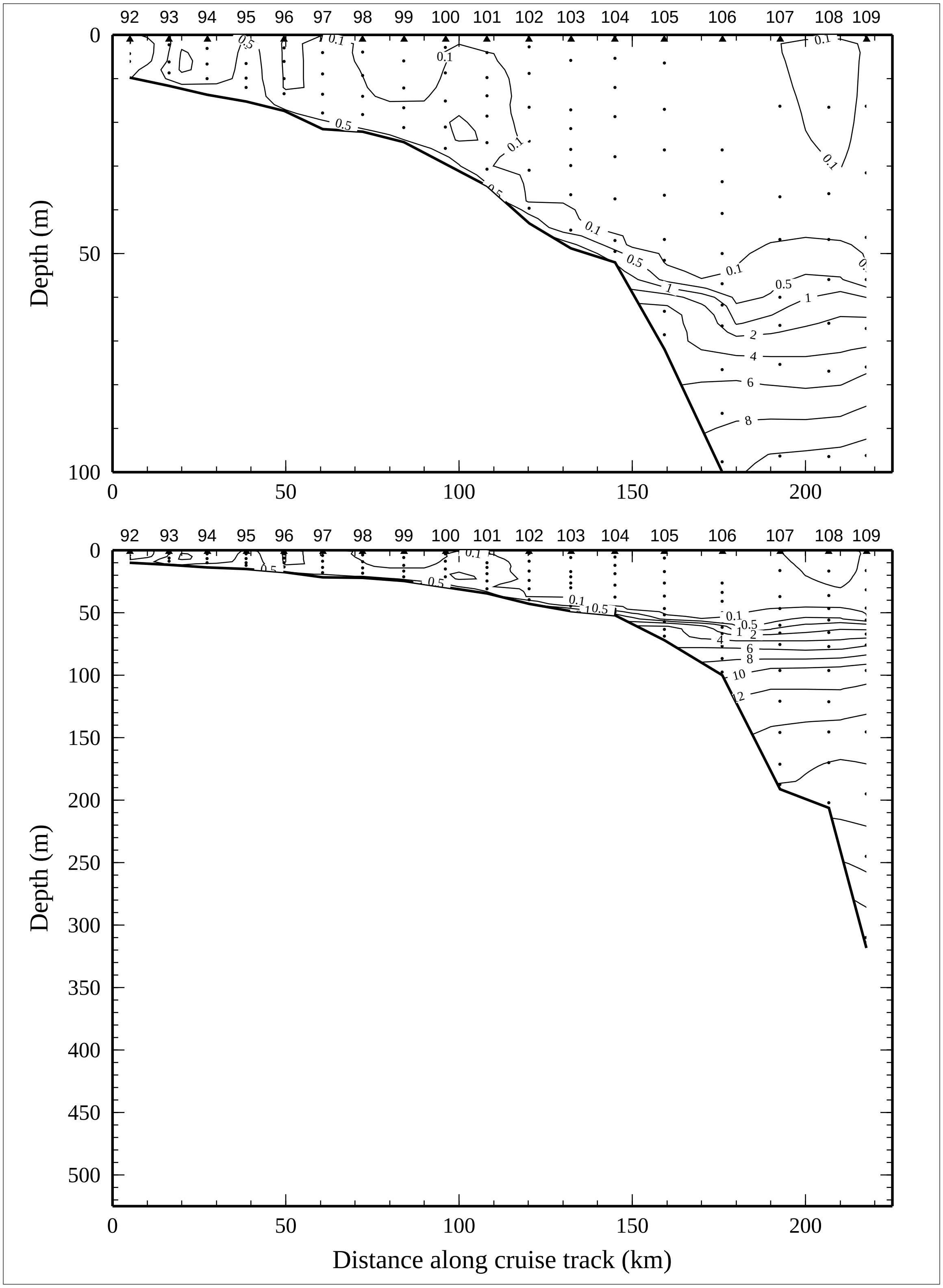

Figure 7.3.12. Nitrate (μmol·l-1) on line 3 of LATEX A survey H07, 6-22 November 1993.

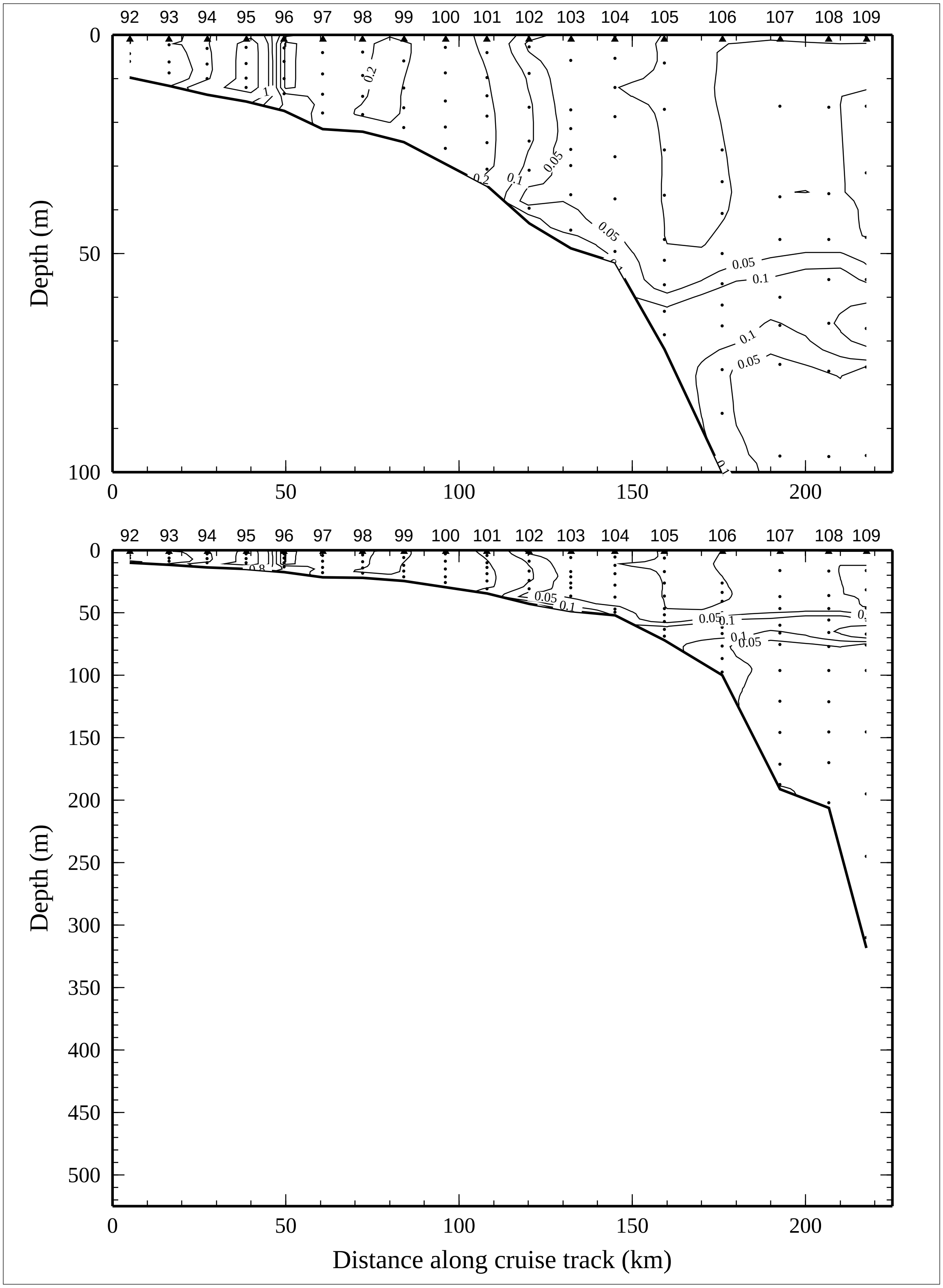

Figure 7.3.13. Nitrite (μmol·l[-1]) on line 3 of LATEX A survey H07, 6-22 November 1993.

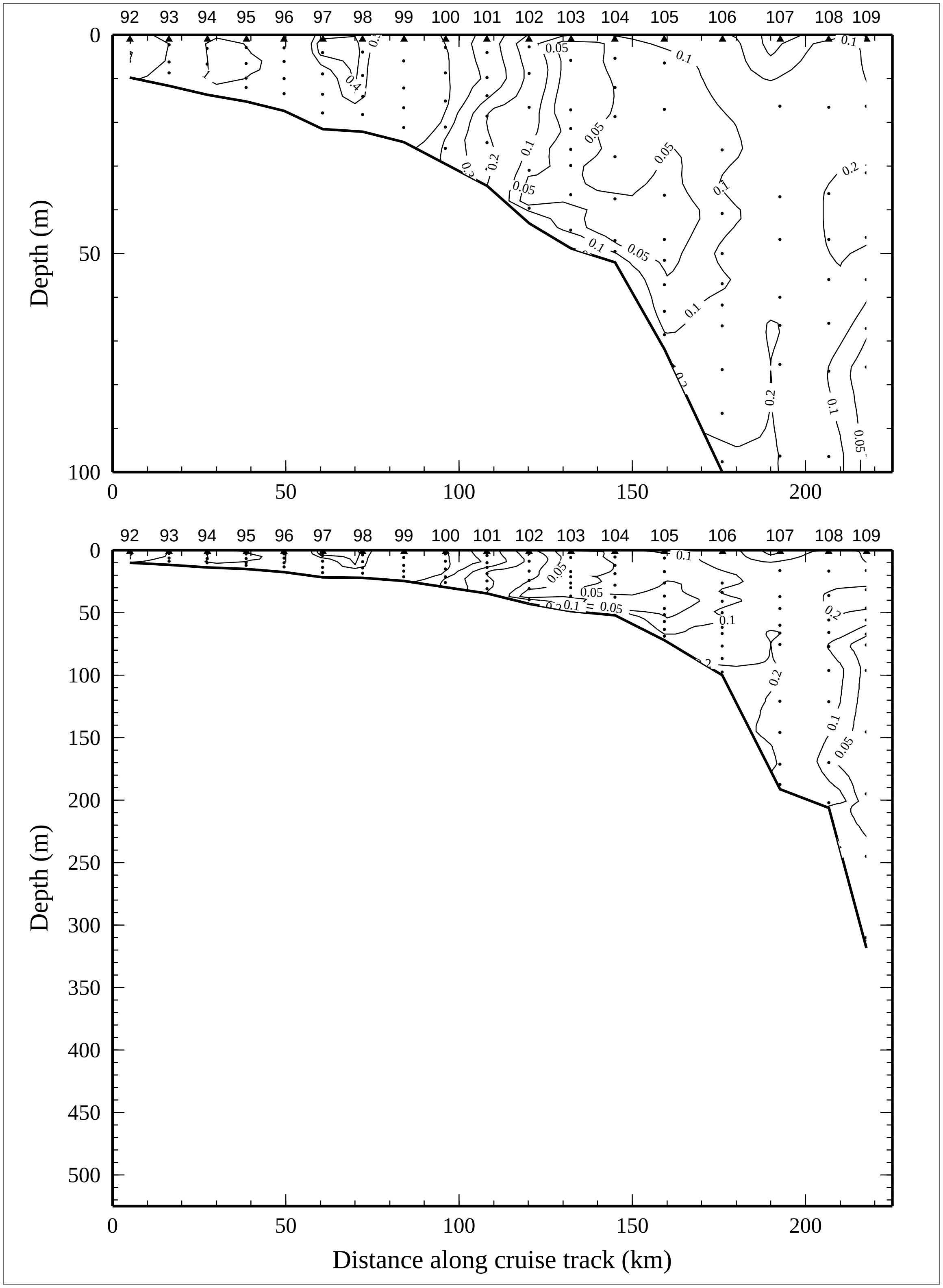

Figure 7.3.14. Ammonium (μmol·l^{-1}) on line 3 of LATEX A survey H07, 6-22 November 1993.

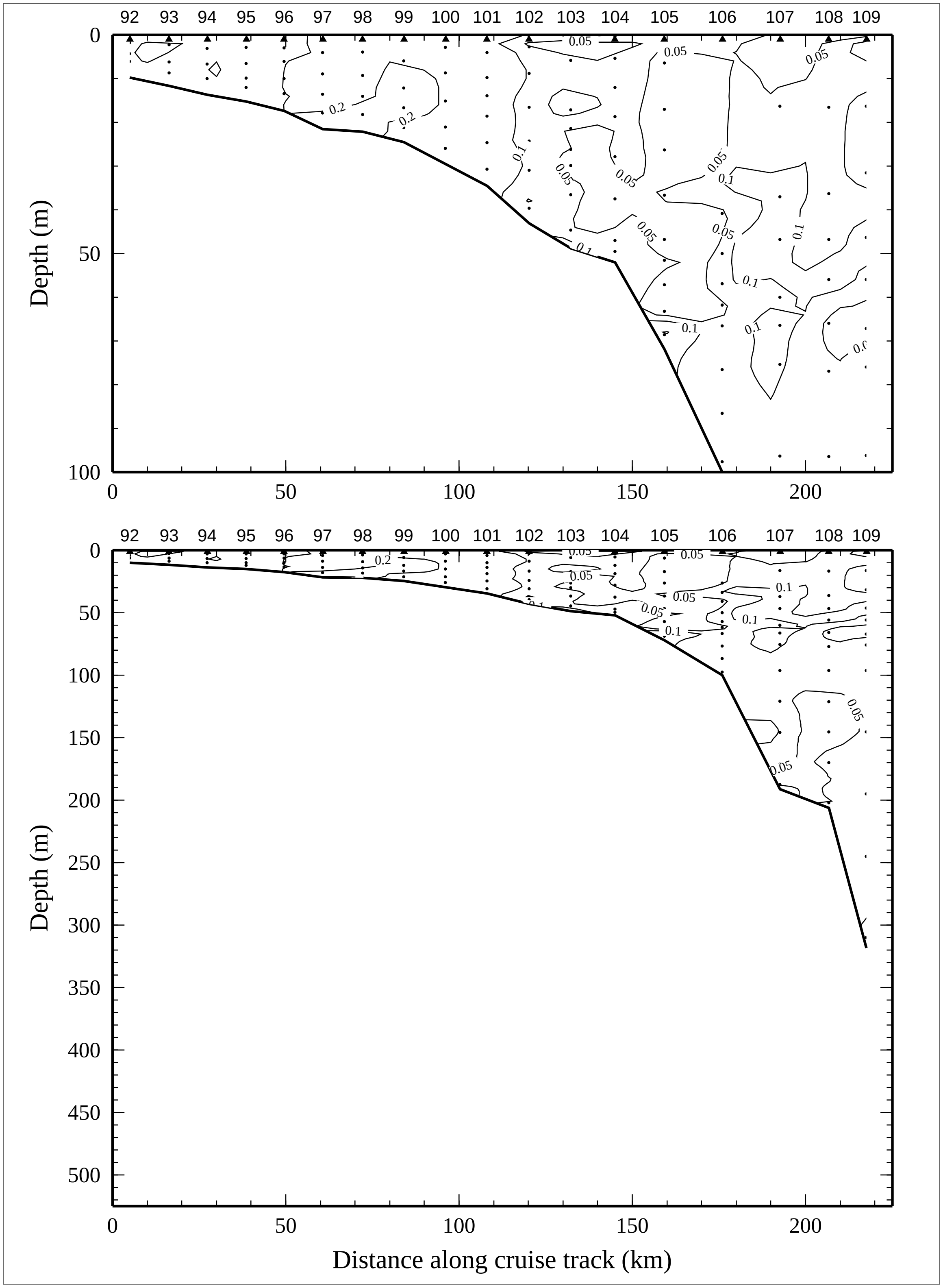

Figure 7.3.15. Urea (μmol·l-1) on line 3 of LATEX A survey H07, 6-22 November 1993.

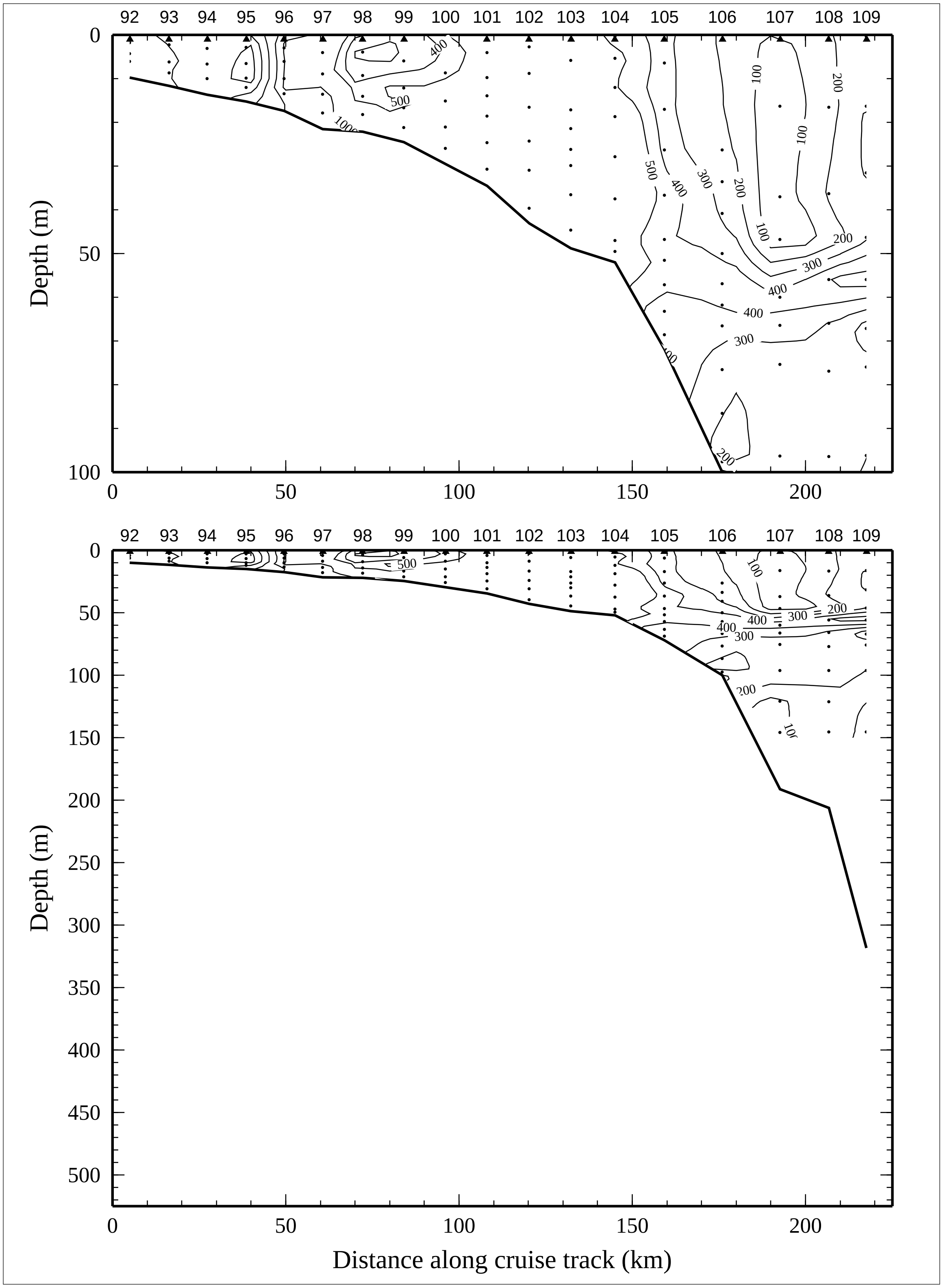

Figure 7.3.16. Chlorophyll a (ng·l^{-1}) on line 3 of LATEX A survey H07, 6-22 November 1993.

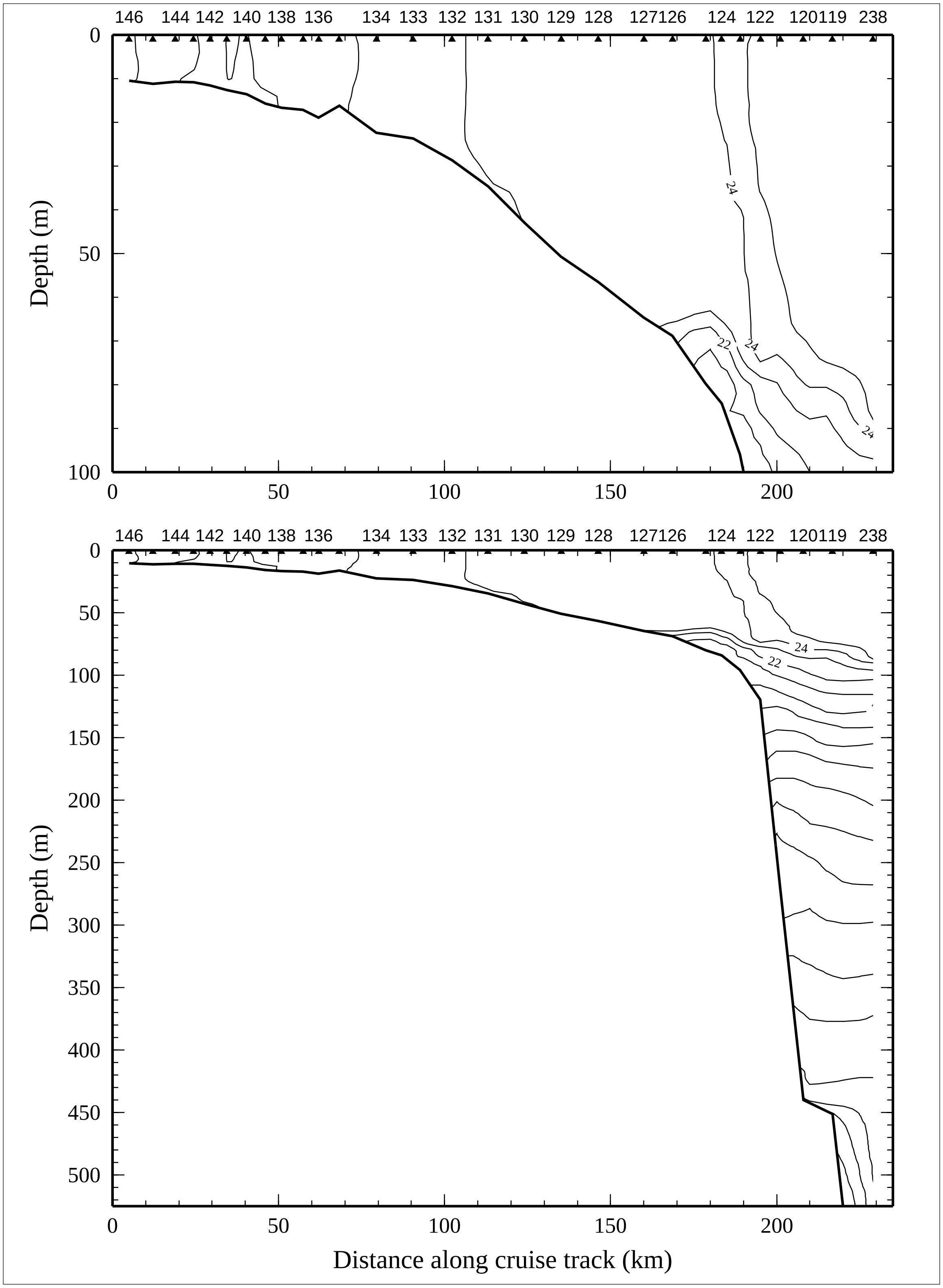

Figure 7.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H07, 6-22 November 1993.

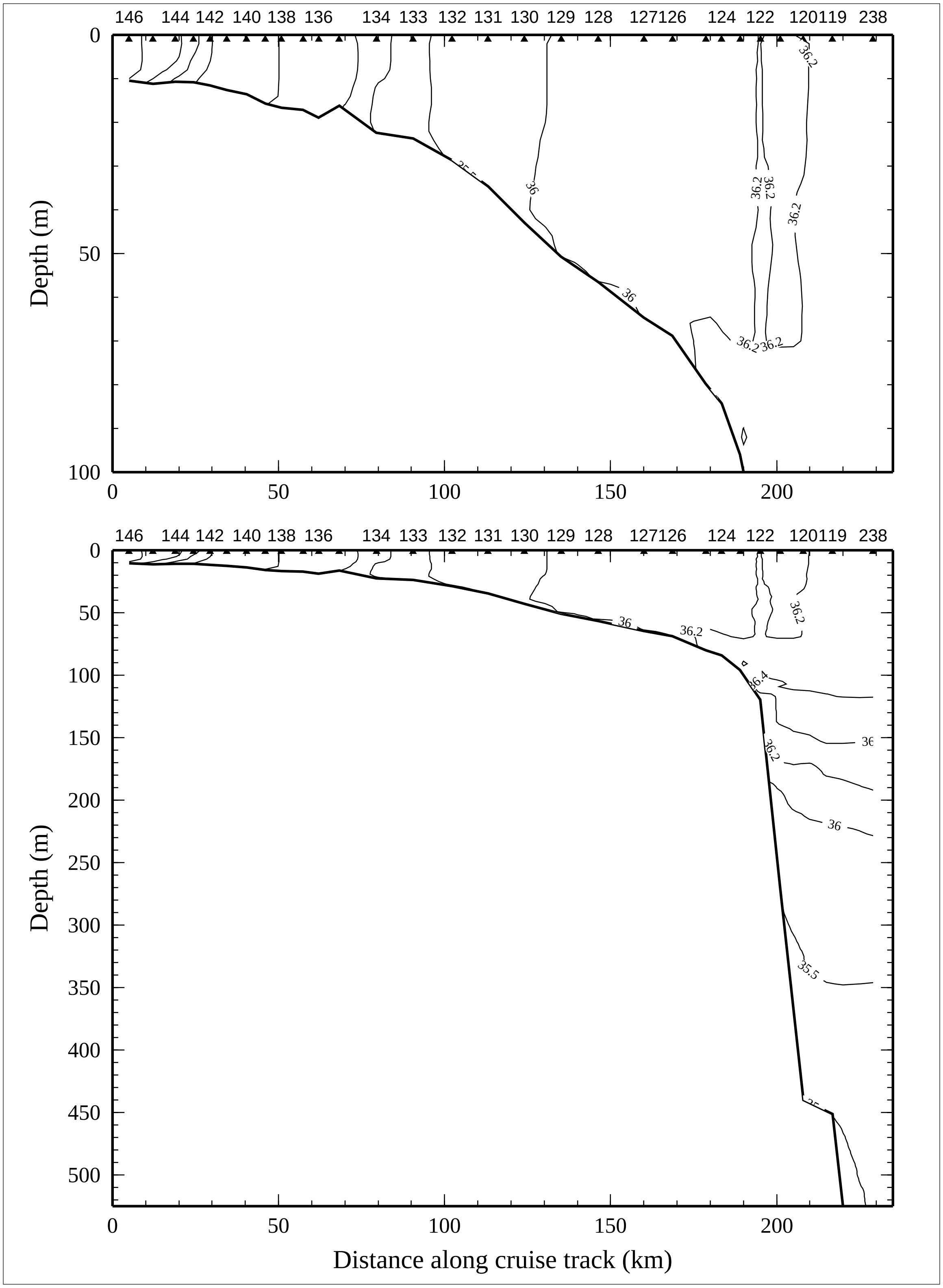

Figure 7.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H07, 6-22 November 1993.

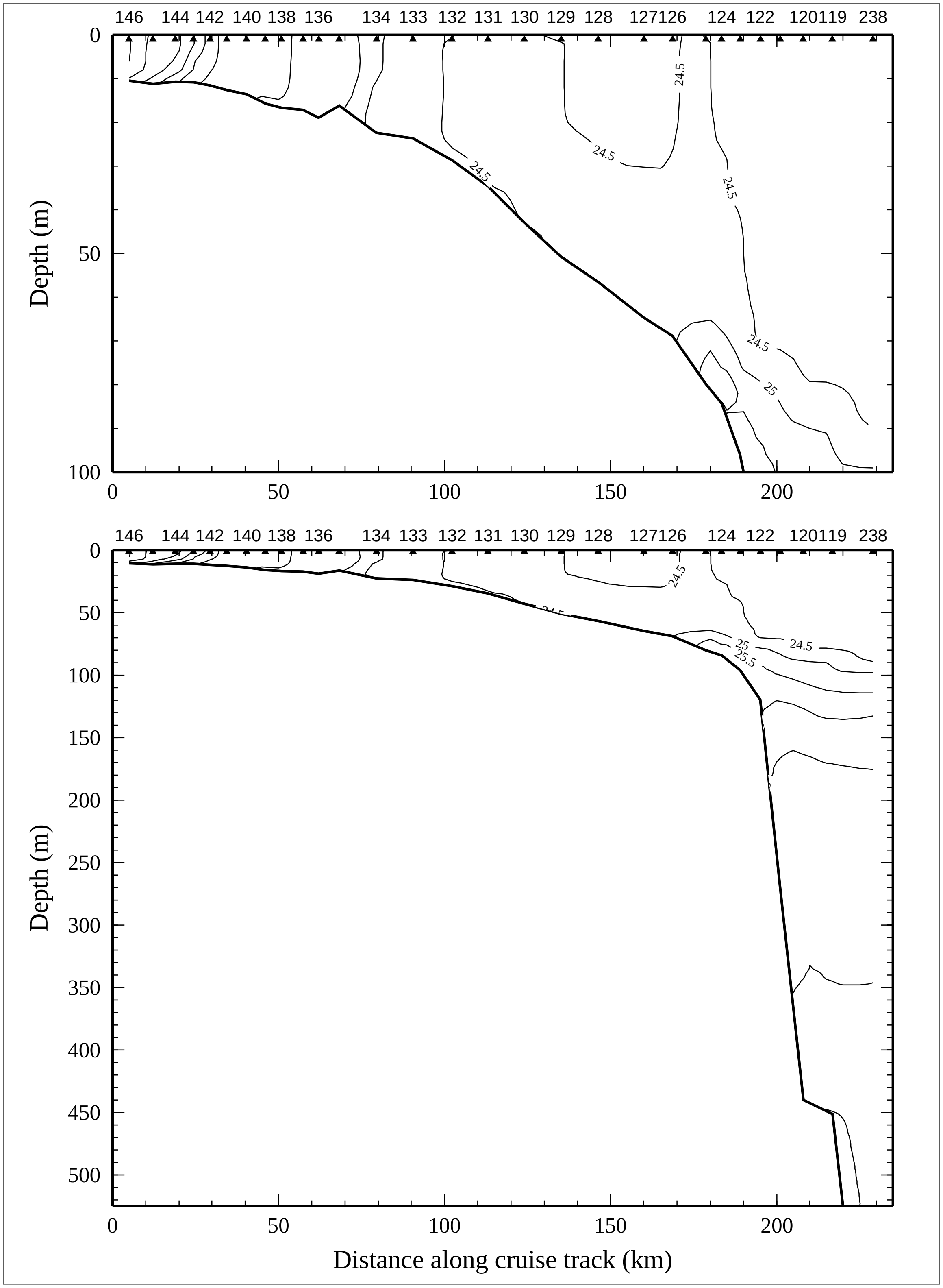

Figure 7.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H07, 6-22 November 1993.

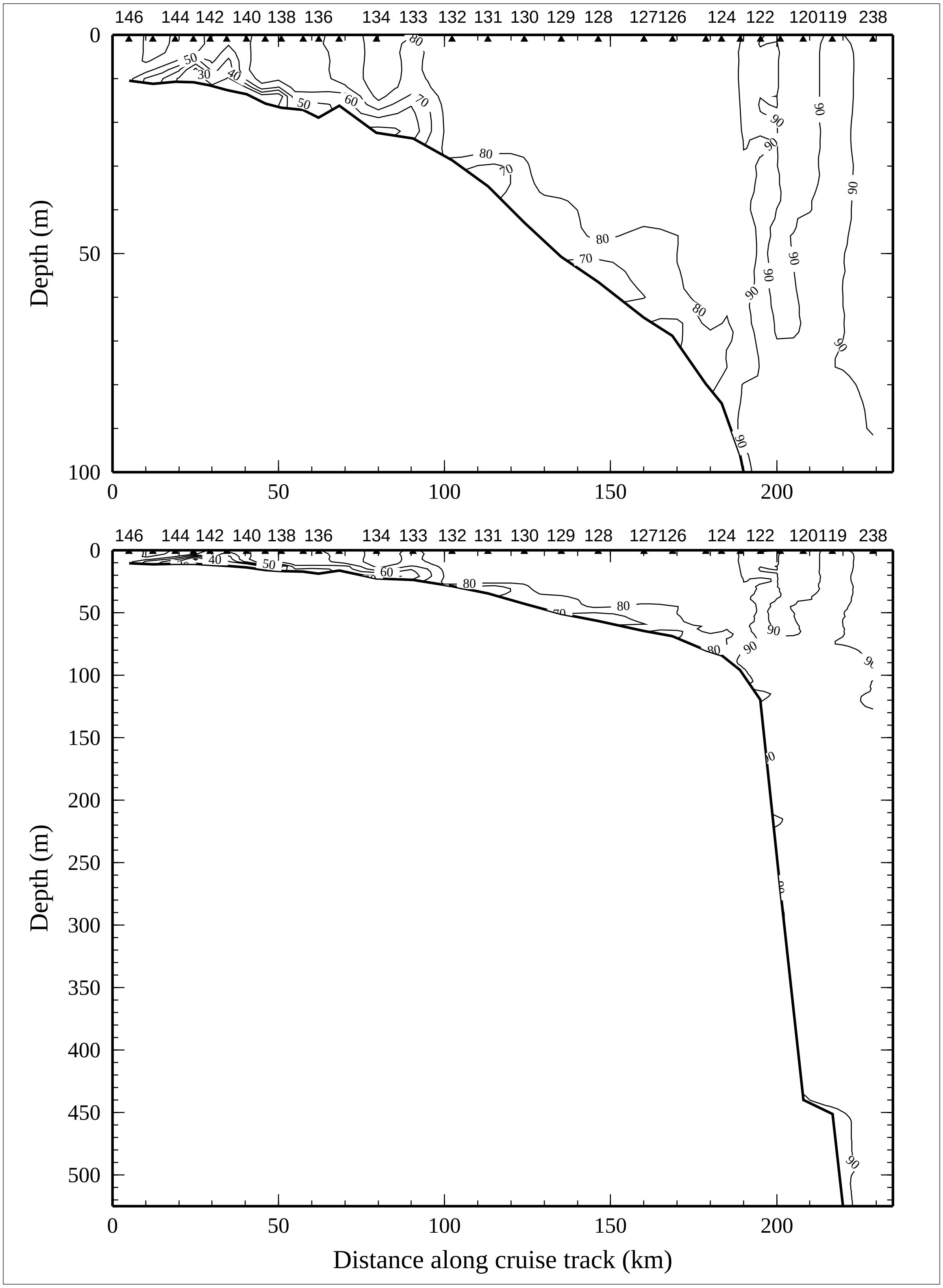

Figure 7.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H07, 6-22 November 1993.

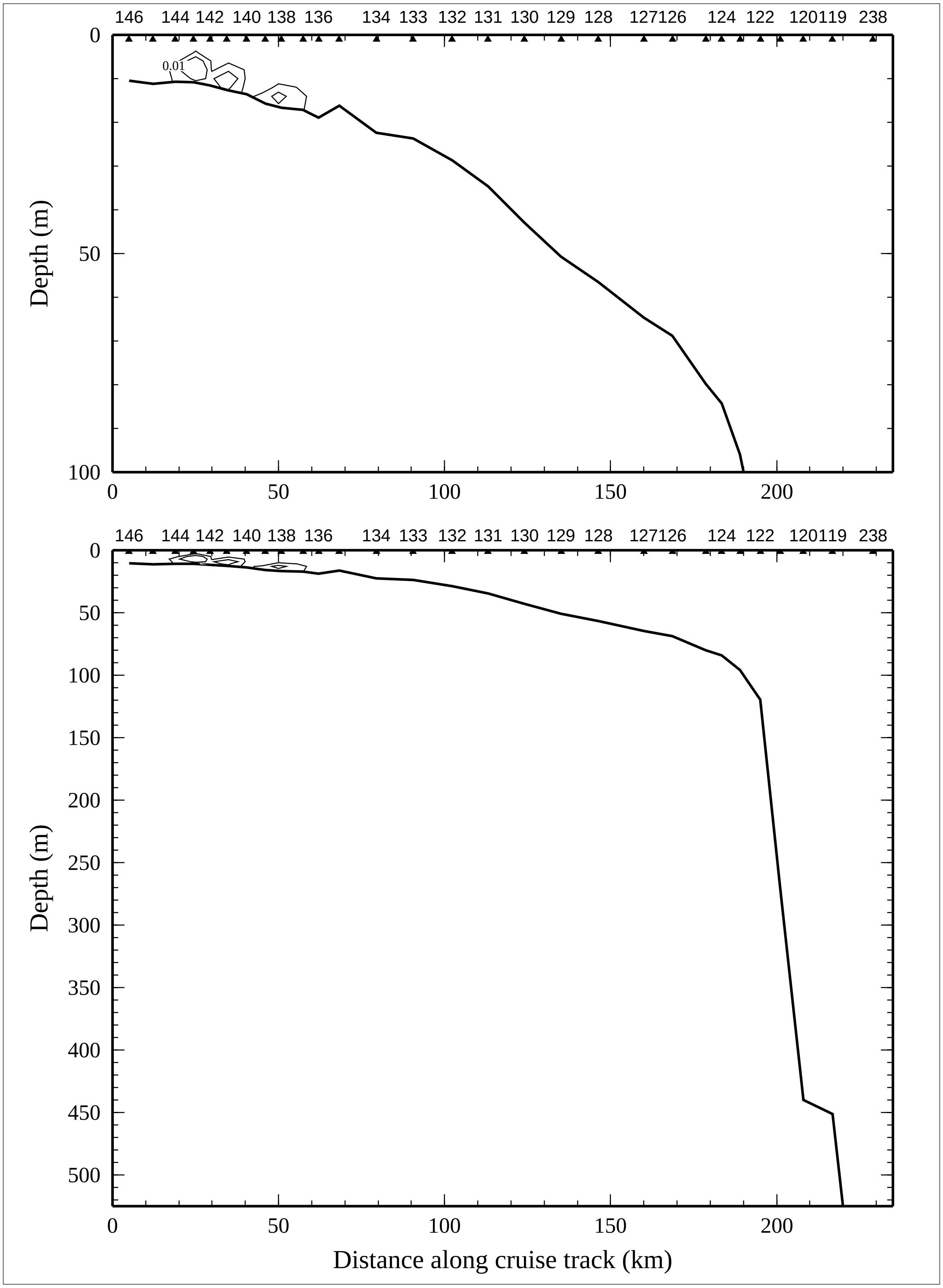

Figure 7.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H07, 6-22 November 1993.

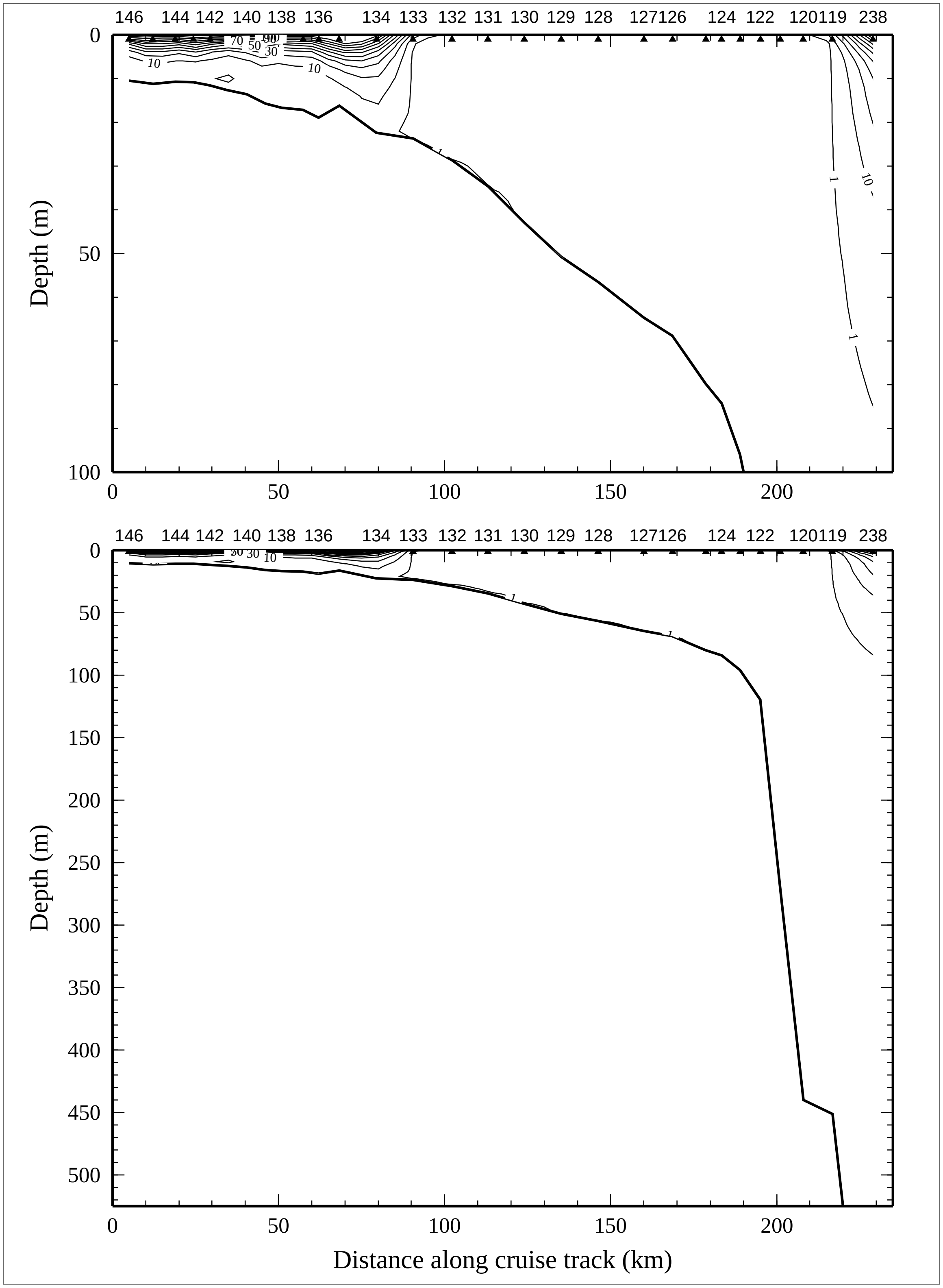

Figure 7.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H07, 6-22 November 1993.

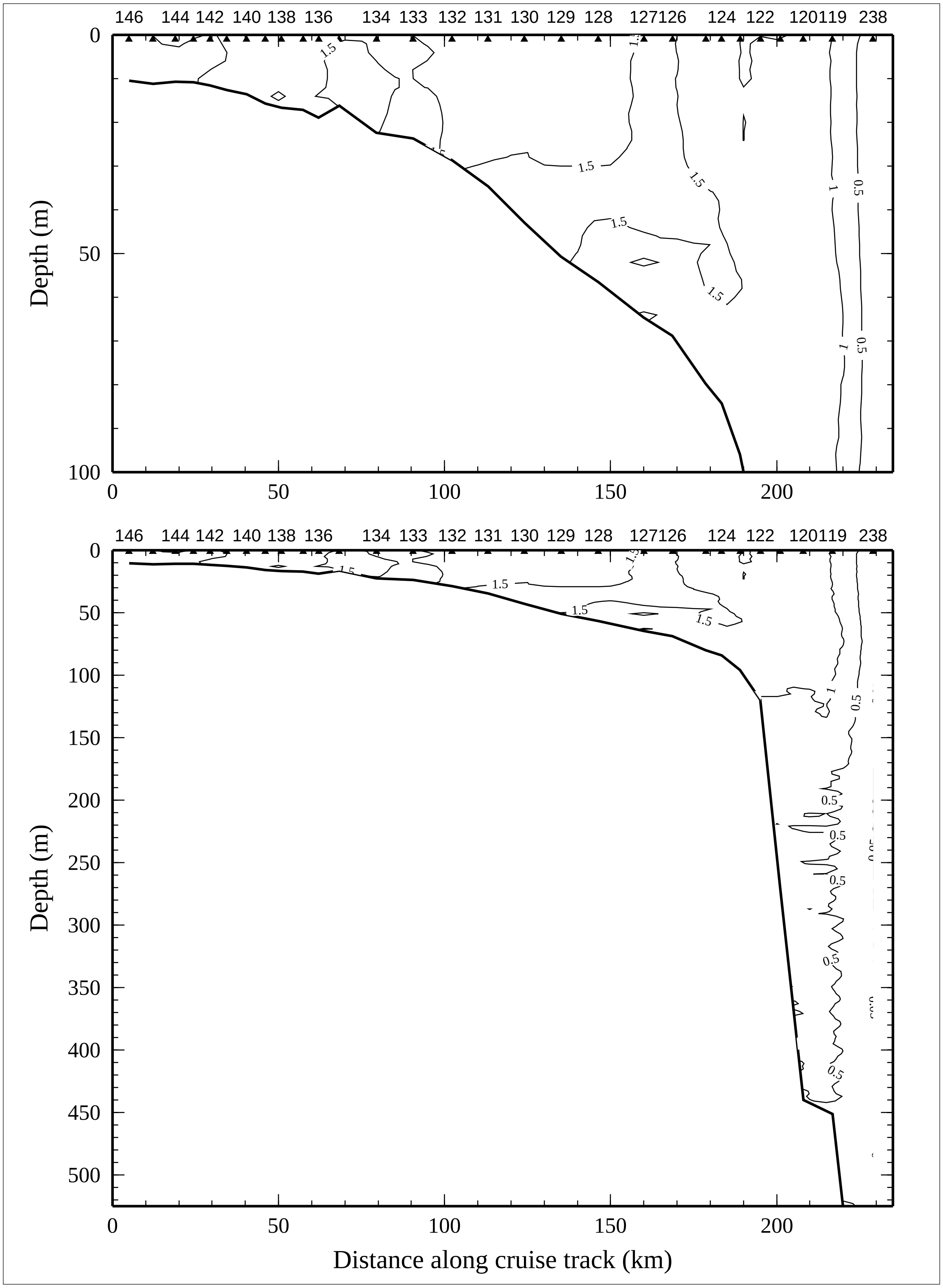

Figure 7.4.7. Relative fluorescence on line 4 of LATEX A survey H07, 6-22 November 1993.

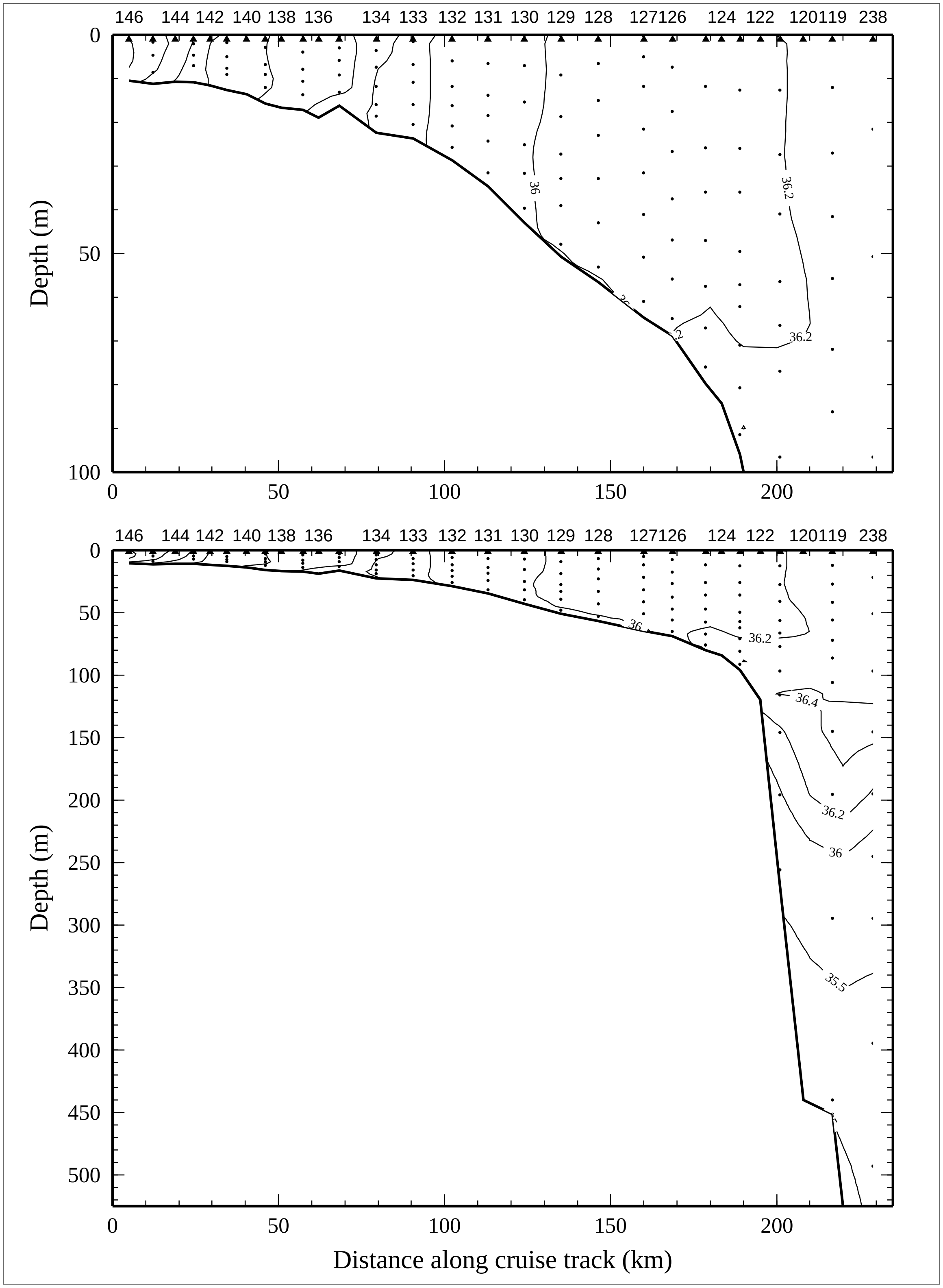

Figure 7.4.8. Bottle salinity on line 4 of LATEX A survey H07, 6-22 November 1993.

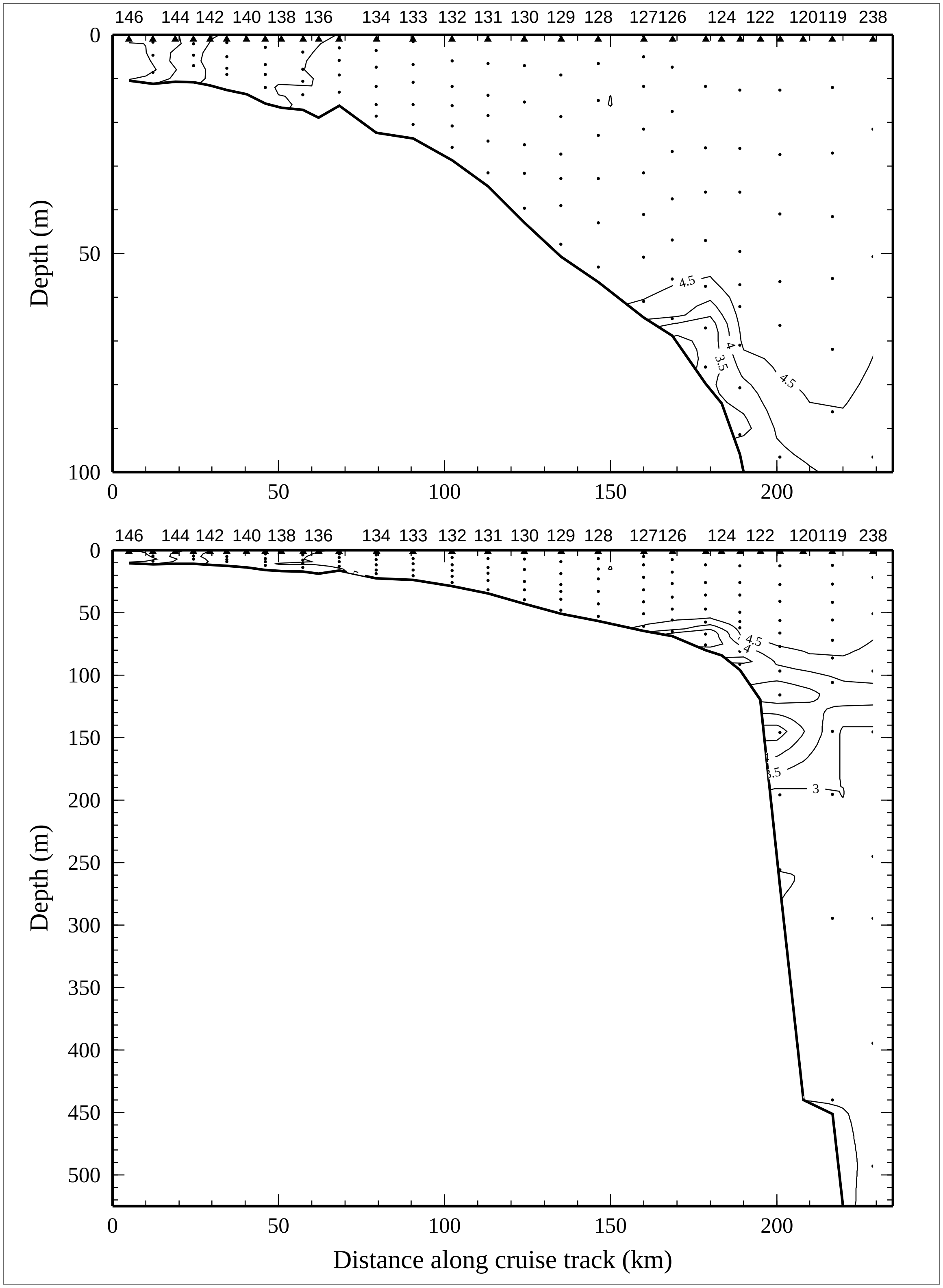

Figure 7.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H07, 6-22 November 1993.

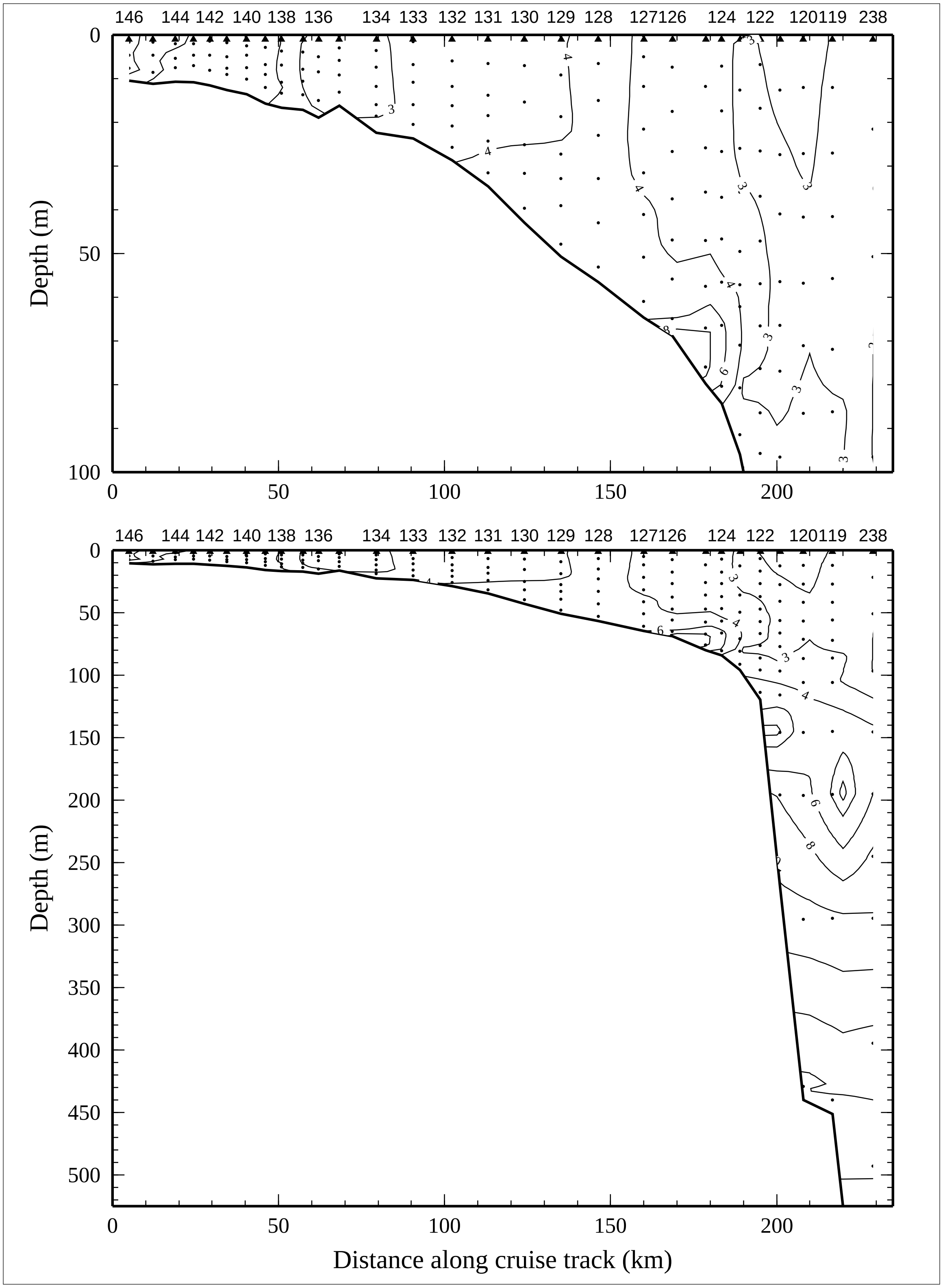

Figure 7.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H07, 6-22 November 1993.

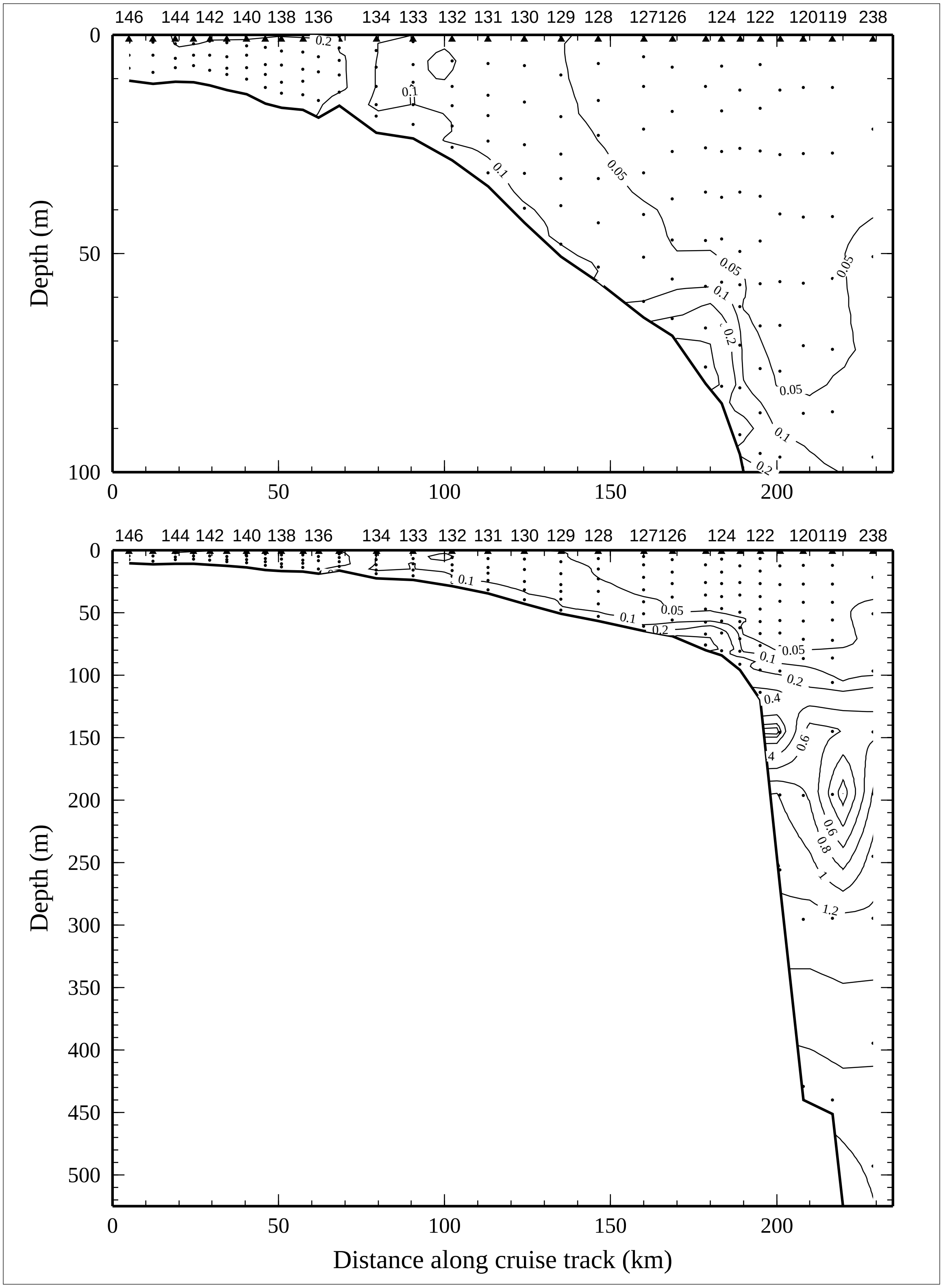

Figure 7.4.11. Phosphate (μmol·l⁻¹) on line 4 of LATEX A survey H07,
6-22 November 1993.

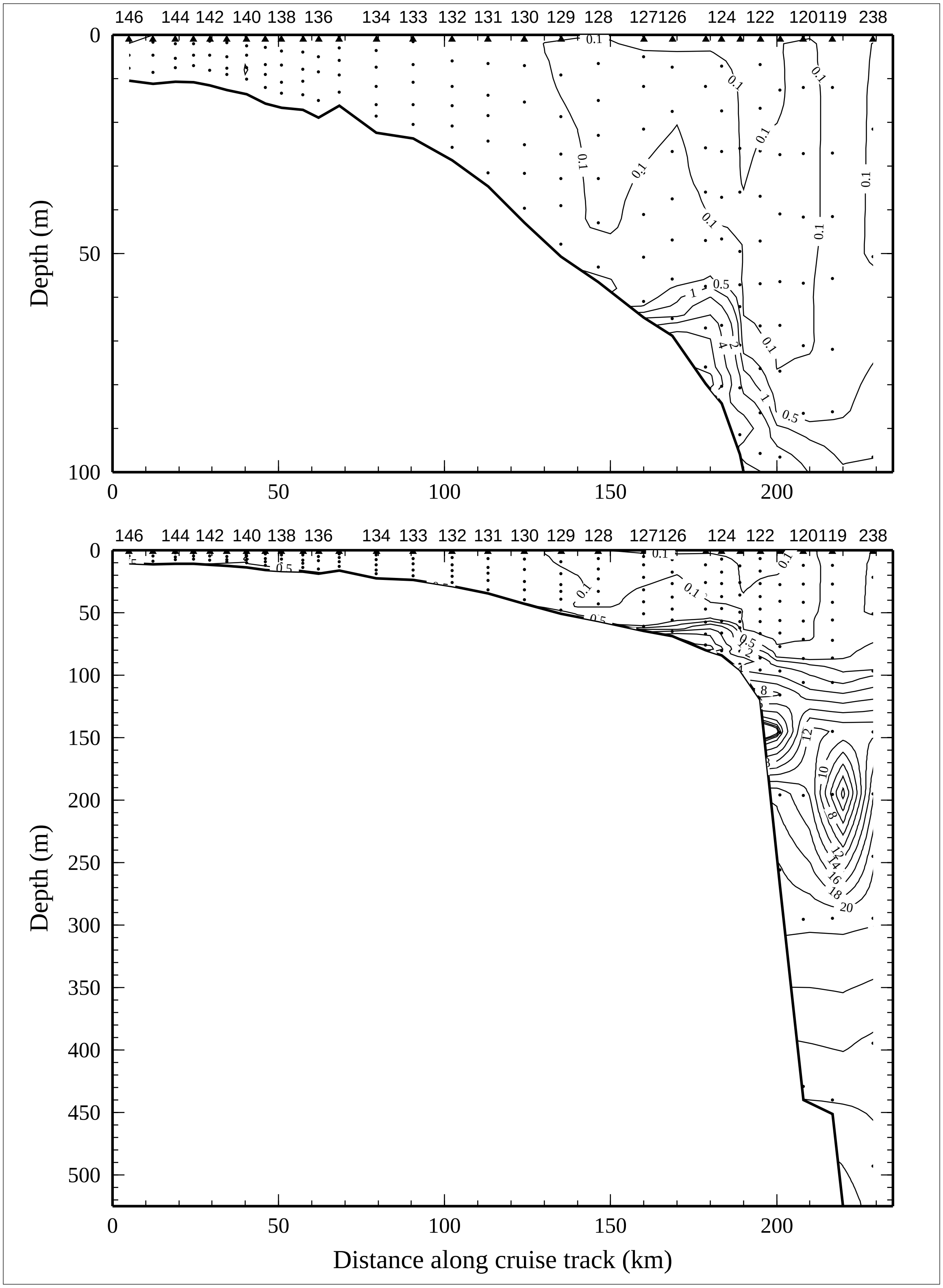

Figure 7.4.12. Nitrate (µmol·l^{-1}) on line 4 of LATEX A survey H07, 6-22 November 1993.

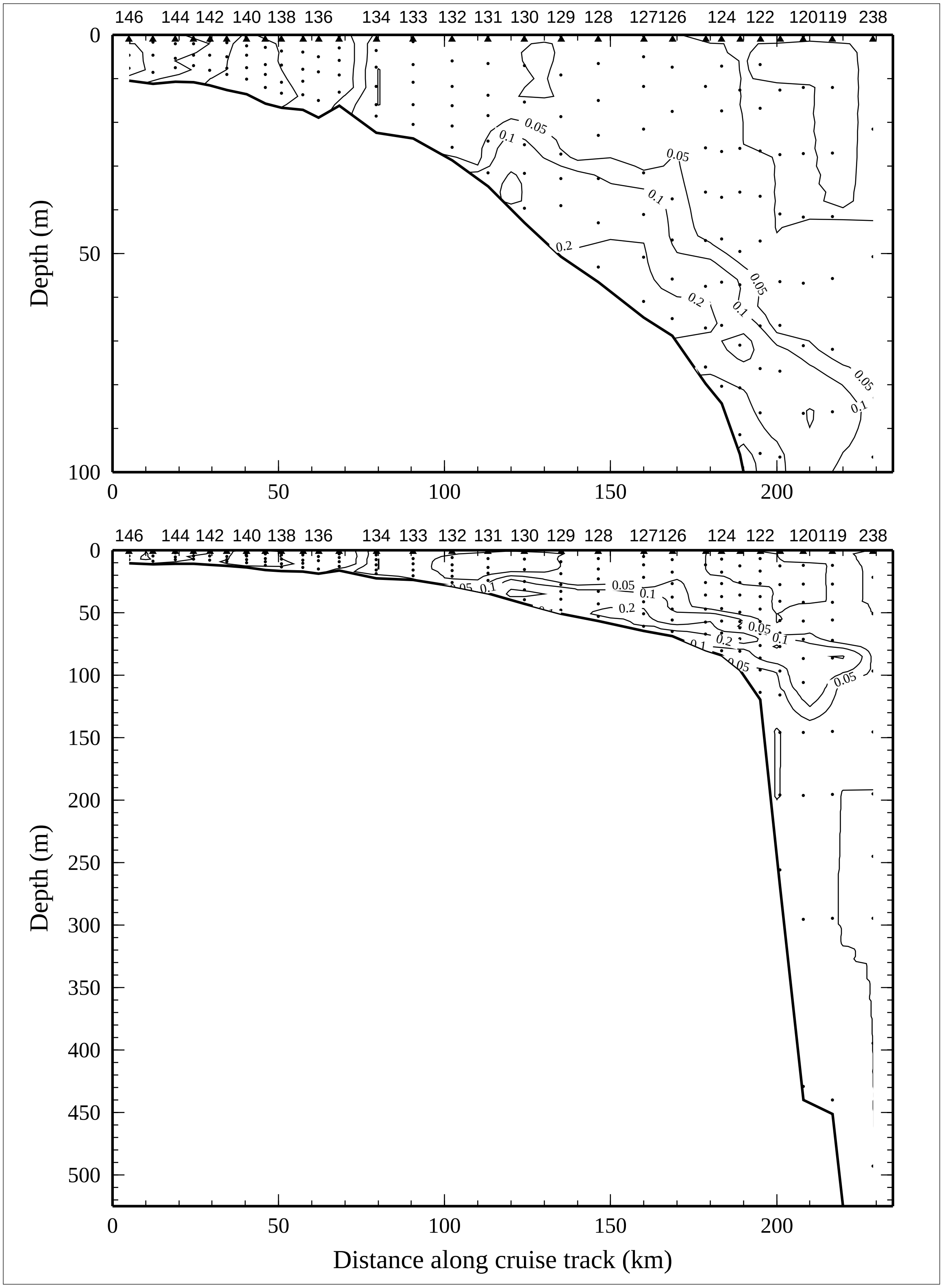

Figure 7.4.13. Nitrite (μmol·l-1) on line 4 of LATEX A survey H07,
6-22 November 1993.

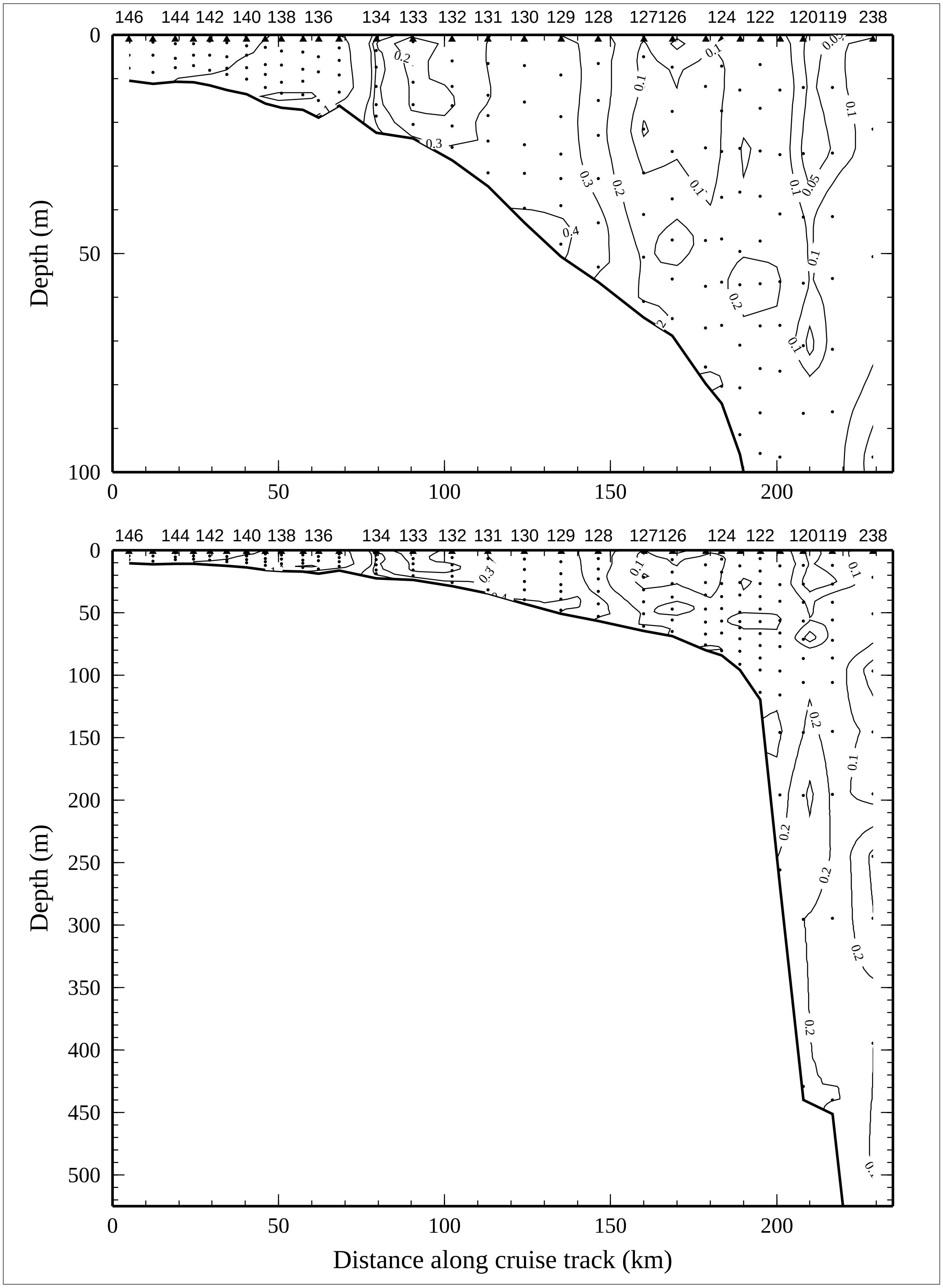

Figure 7.4.14. Ammonium (μmol·l-1) on line 4 of LATEX A survey H07, 6-22 November 1993.

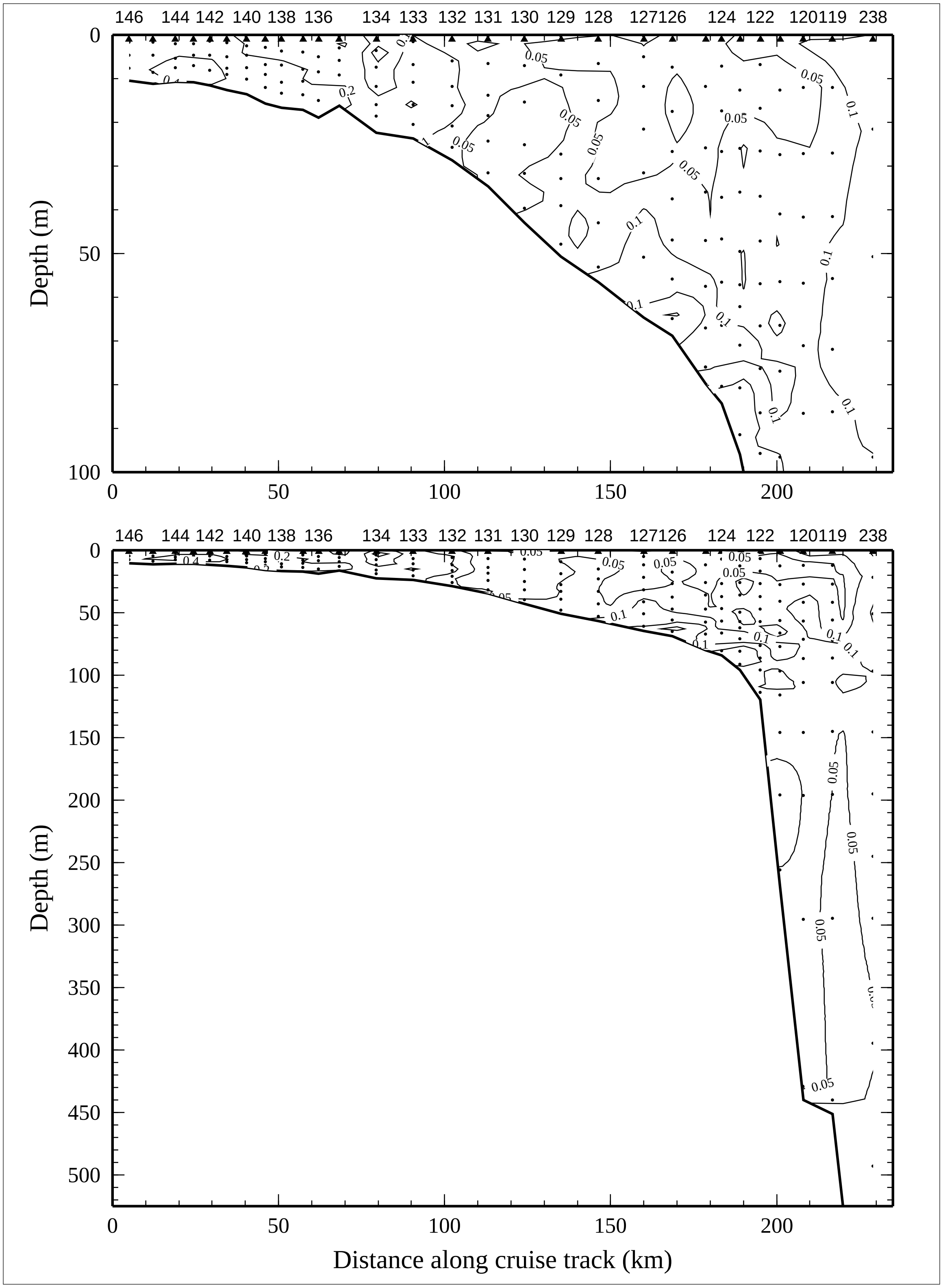

Figure 7.4.15. Urea (µmol·l-1) on line 4 of LATEX A survey H07, 6-22 November 1993.

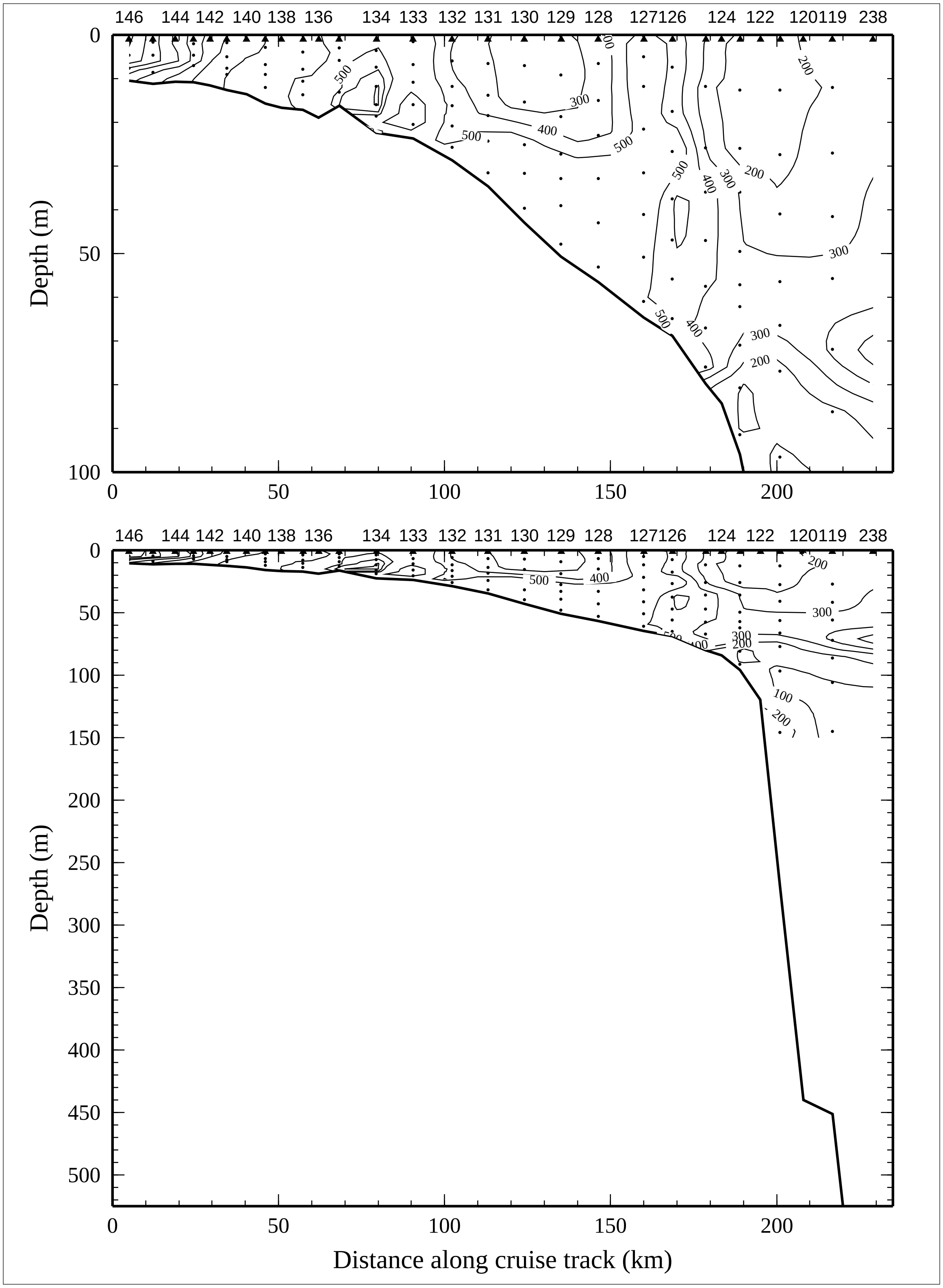

Figure 7.4.16. Chlorophyll a (ng·l-1) on line 4 of LATEX A survey H07, 6-22 November 1993.

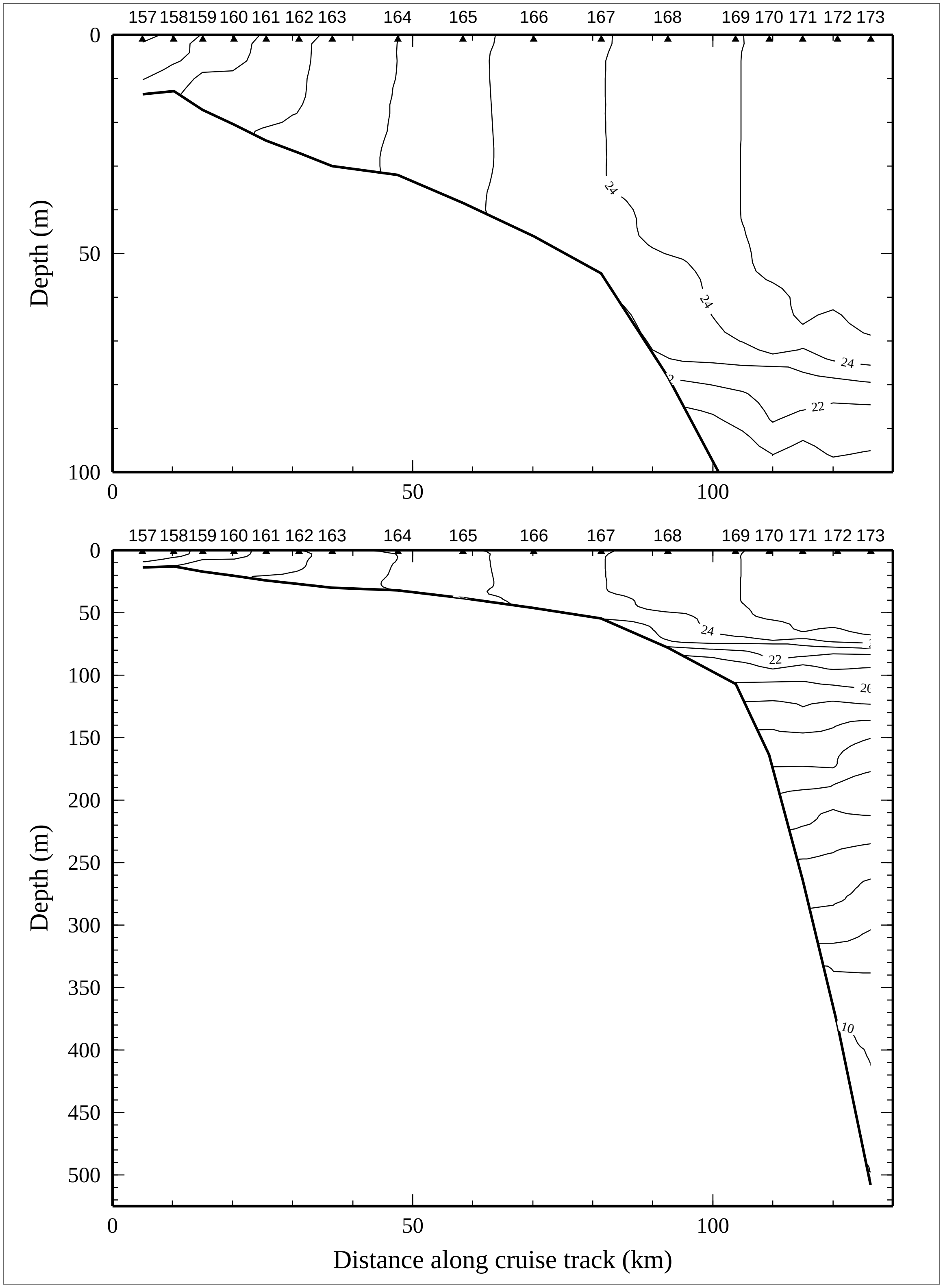

Figure 7.5.1. Potential temperature (˚C) on line 5 of LATEX A survey H07, 6-22 November 1993.

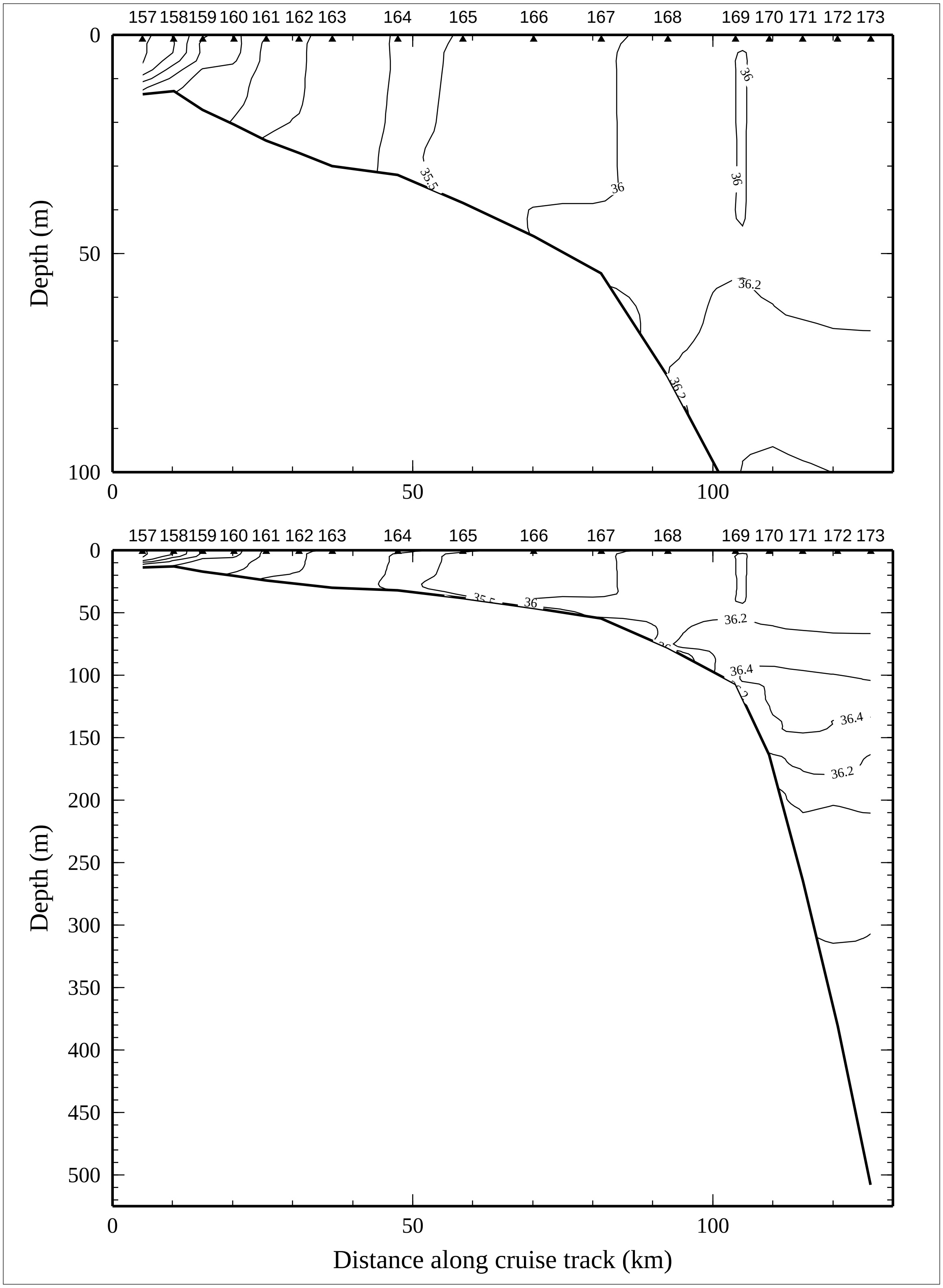

Figure 7.5.2. Salinity, derived from CTD data, on line 5 of LATEX A survey H07, 6-22 November 1993.

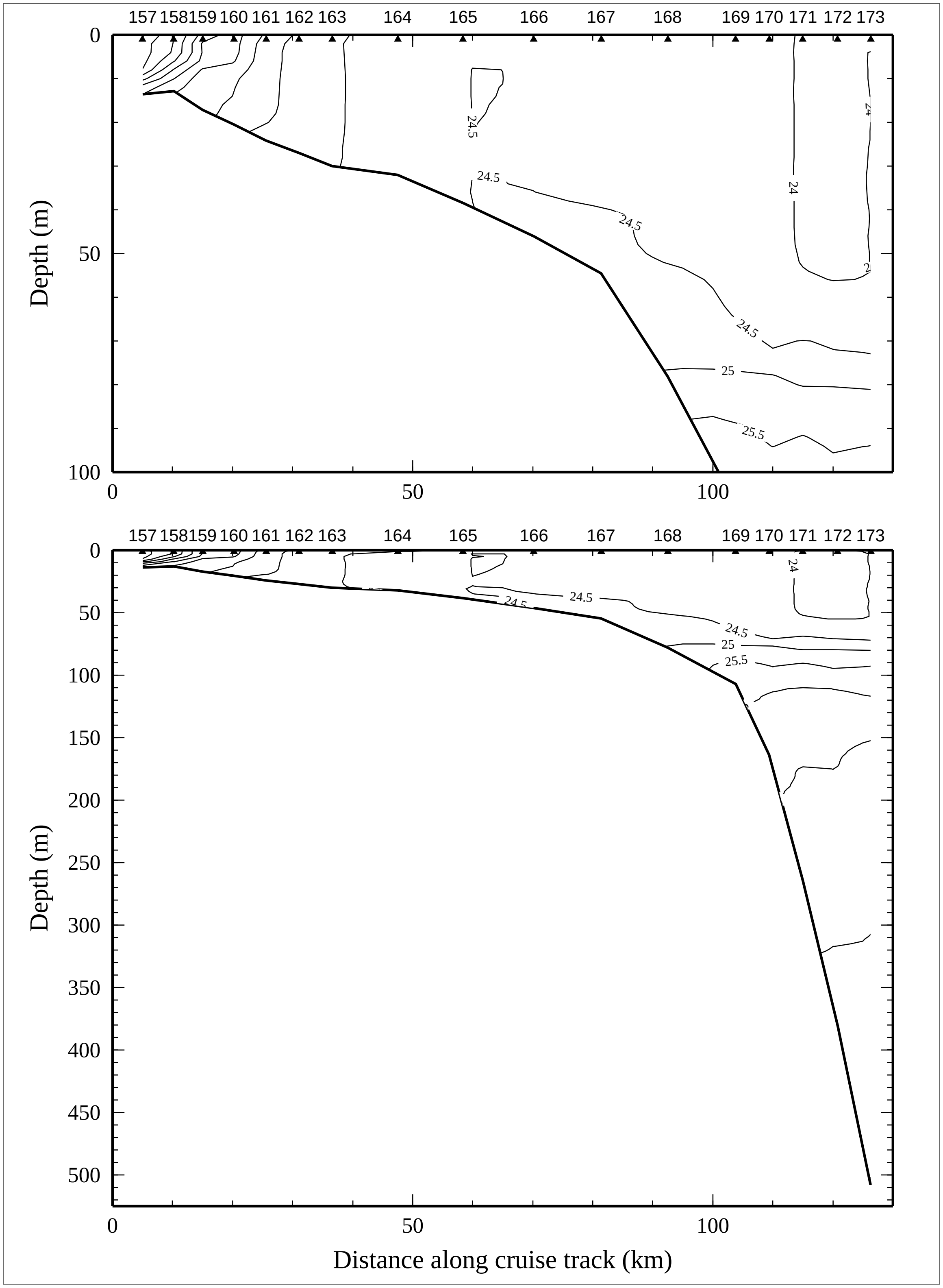

Figure 7.5.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 5 of LATEX A survey H07, 6-22 November 1993.

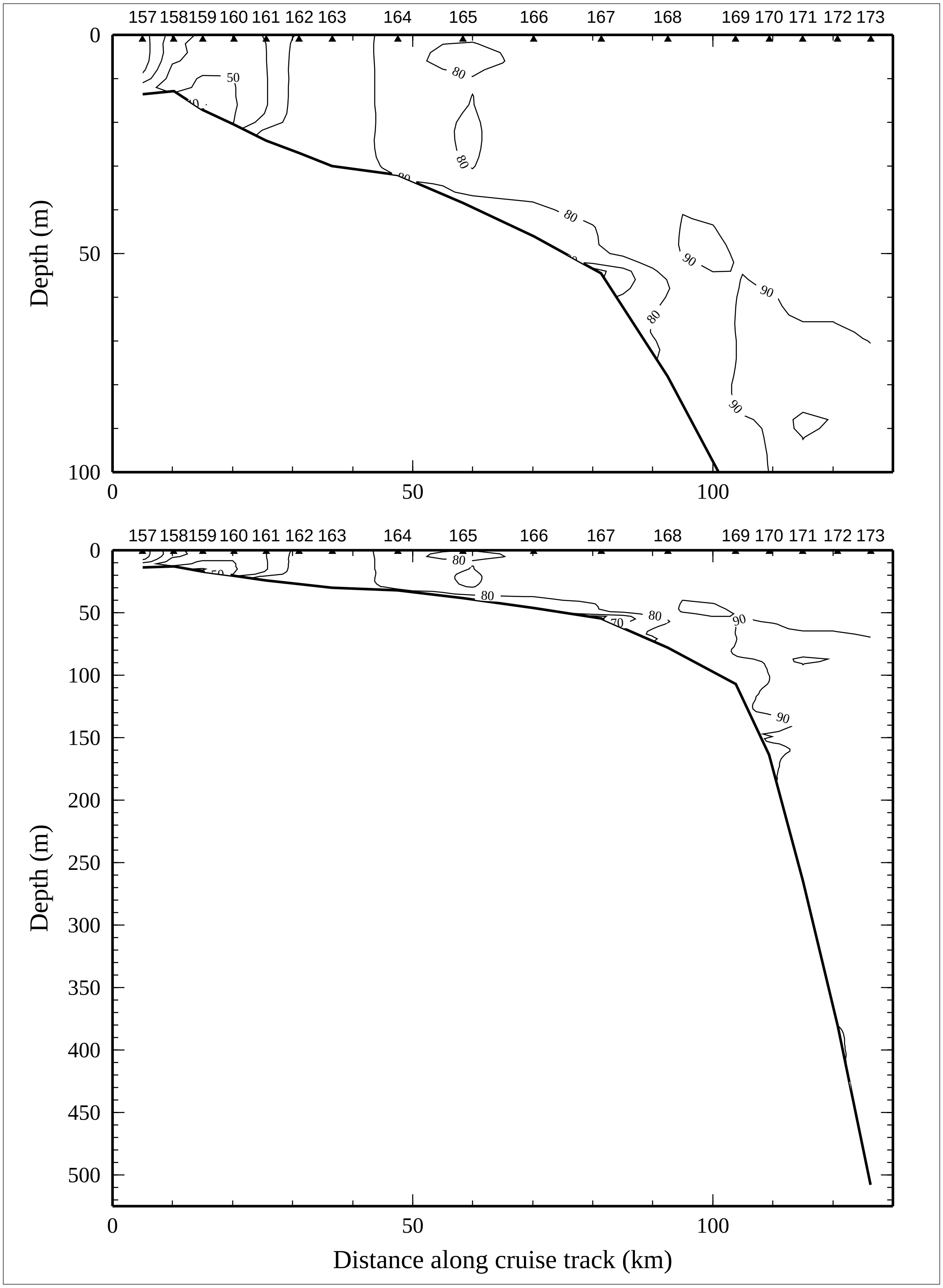

Figure 7.5.4. Percent transmission (660 nm wave length; 25-cm path length) on line 5 of LATEX A survey H07, 6-22 November 1993.

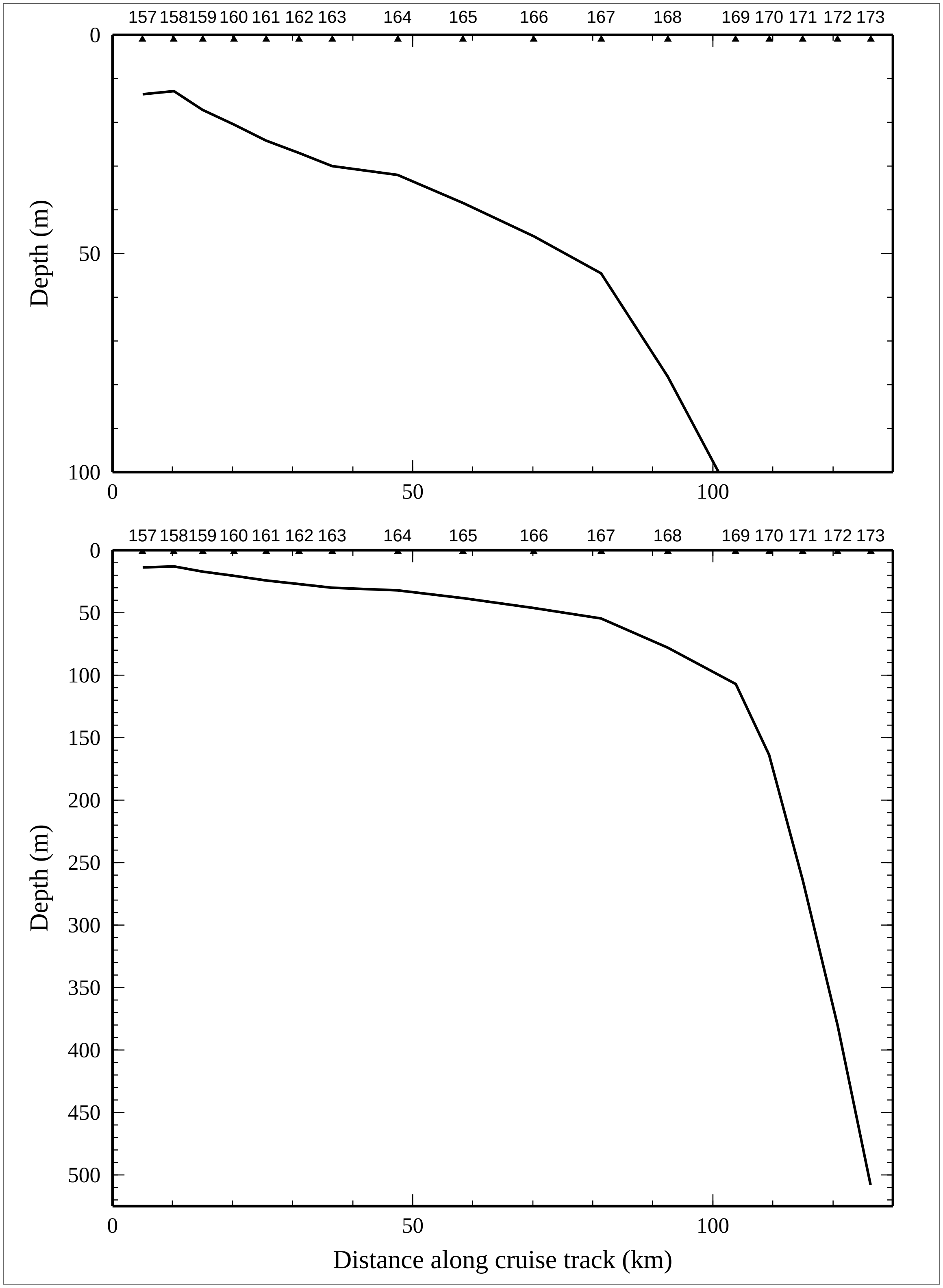

Figure 7.5.5. Optical backscatterance (voltage) on line 5 of LATEX A survey H07, 6-22 November 1993. Values were less than 0.05.

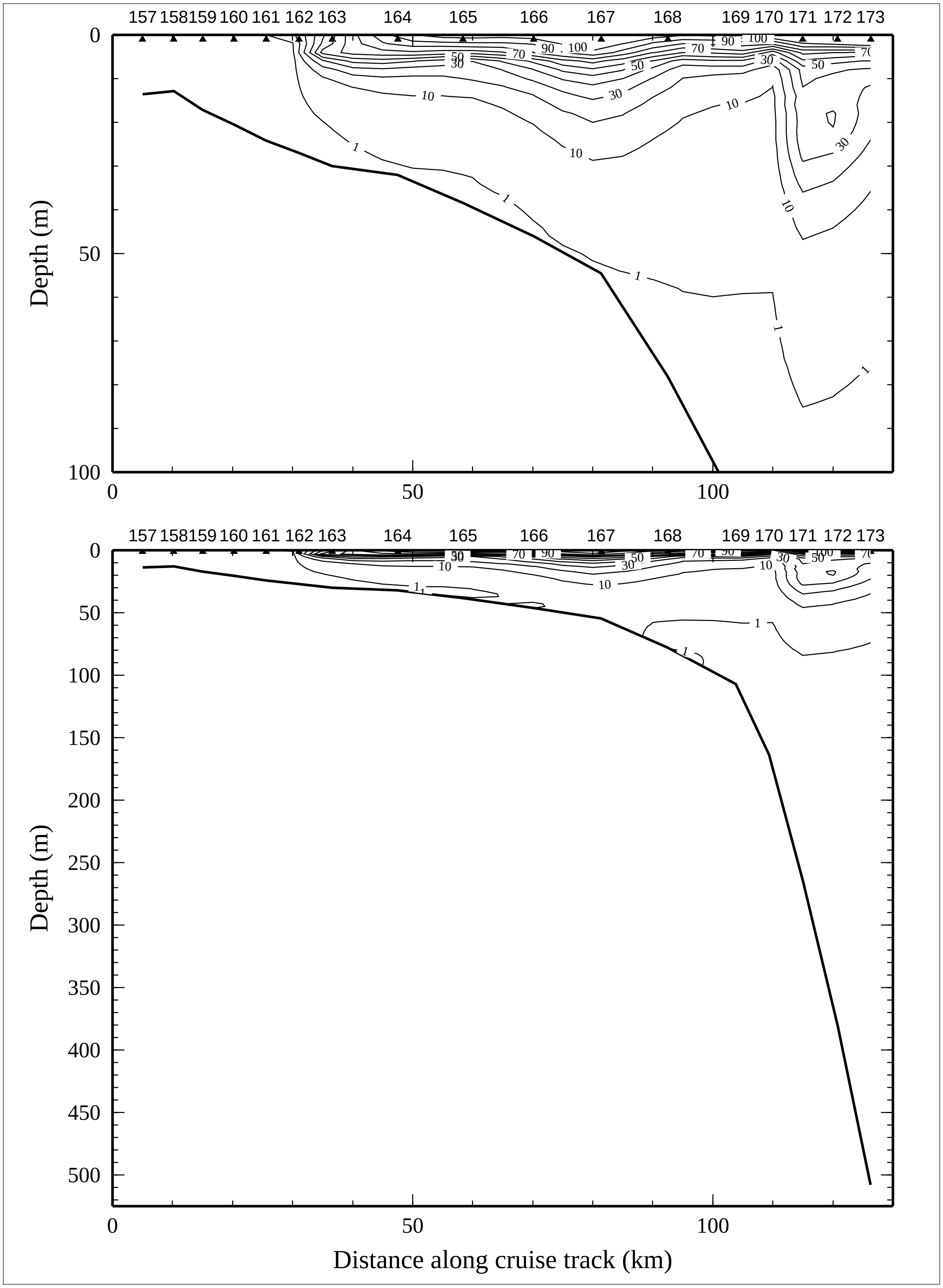

Figure 7.5.6. Downwelling irradiance as percent of surface irradiance on line 5 of LATEX A survey H07, 6-22 November 1993.

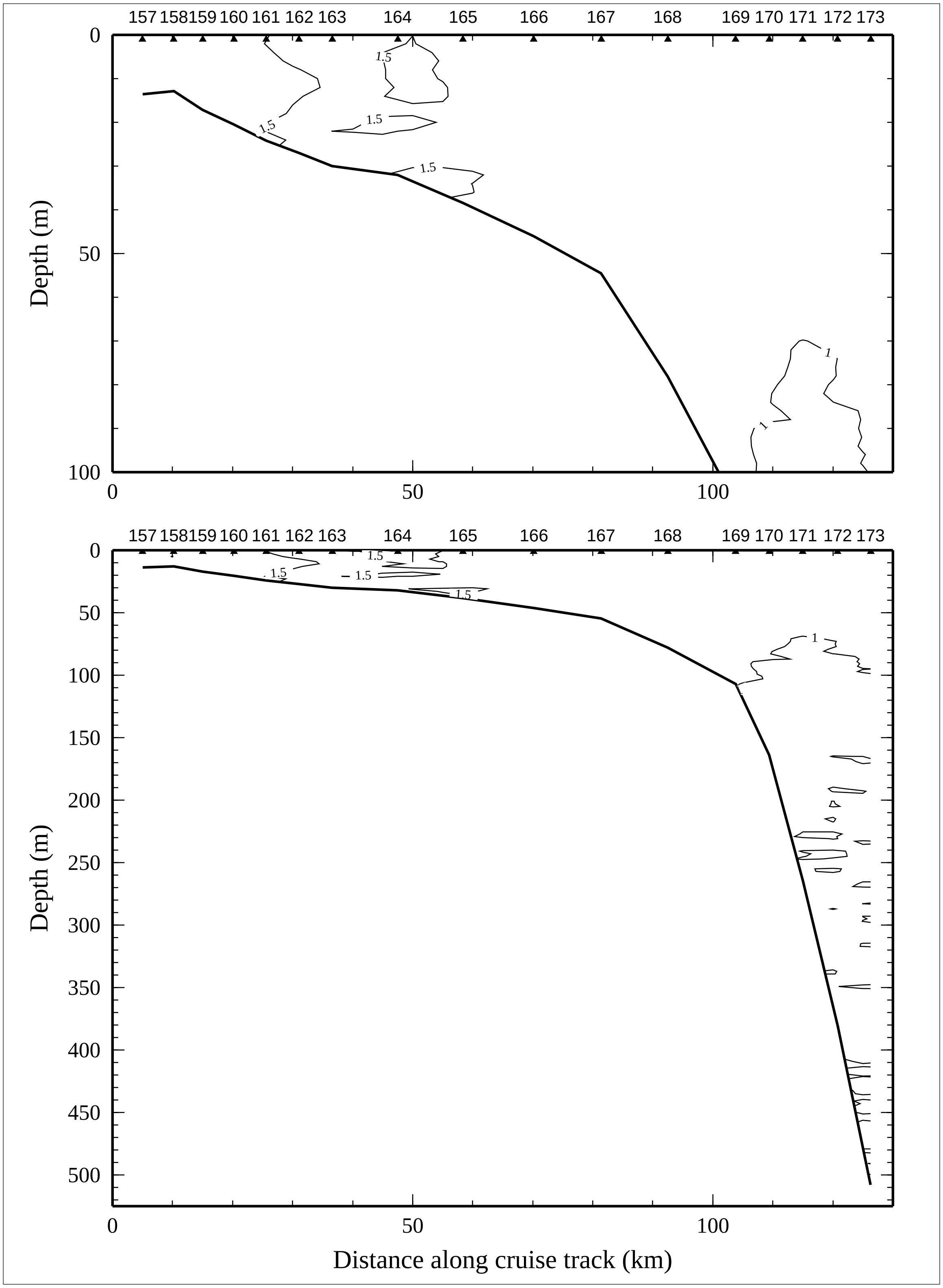

Figure 7.5.7. Relative fluorescence on line 5 of LATEX A survey H07, 6-22 November 1993.

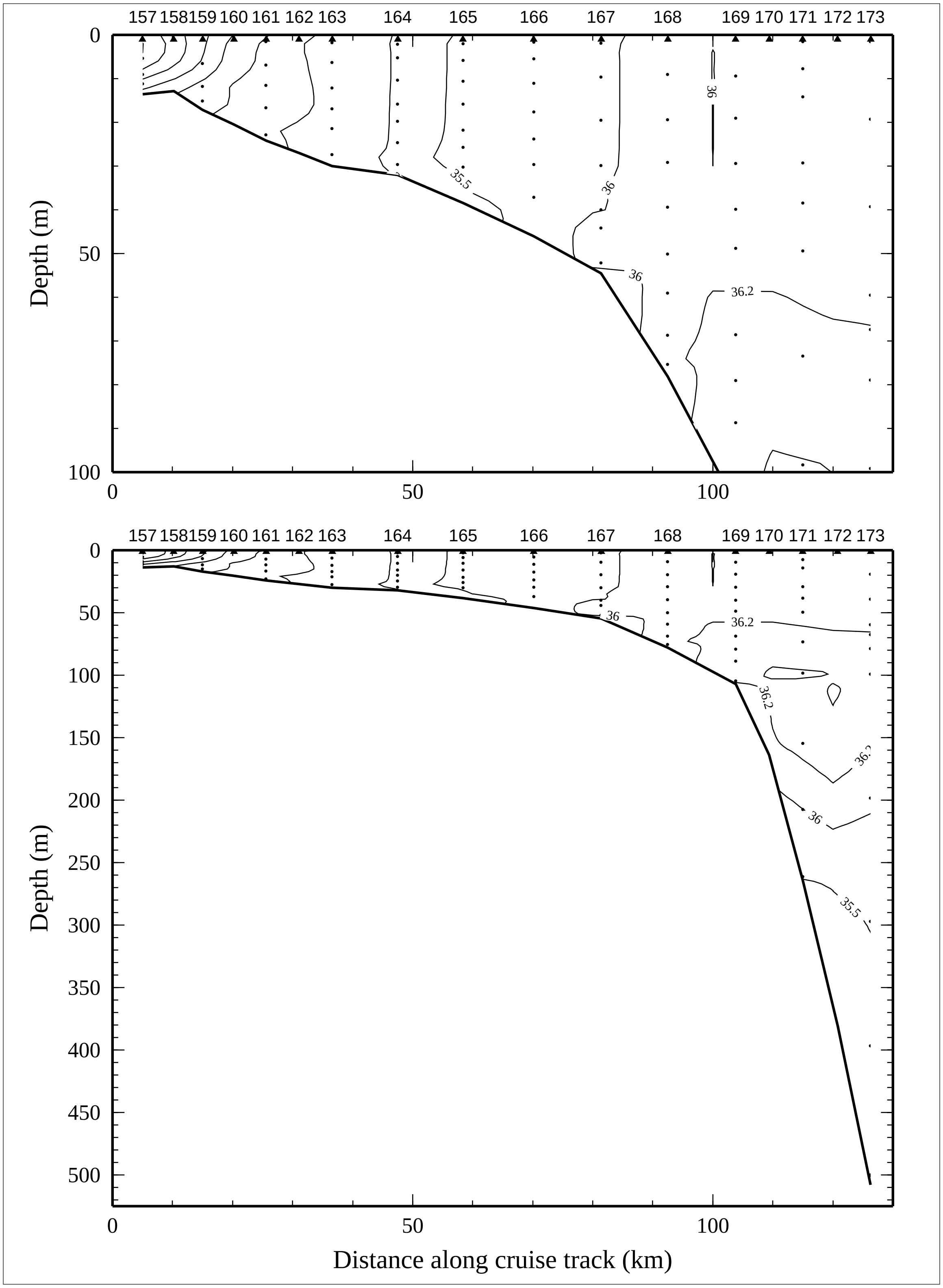

Figure 7.5.8. Bottle salinity on line 5 of LATEX A survey H07,
6-22 November 1993.

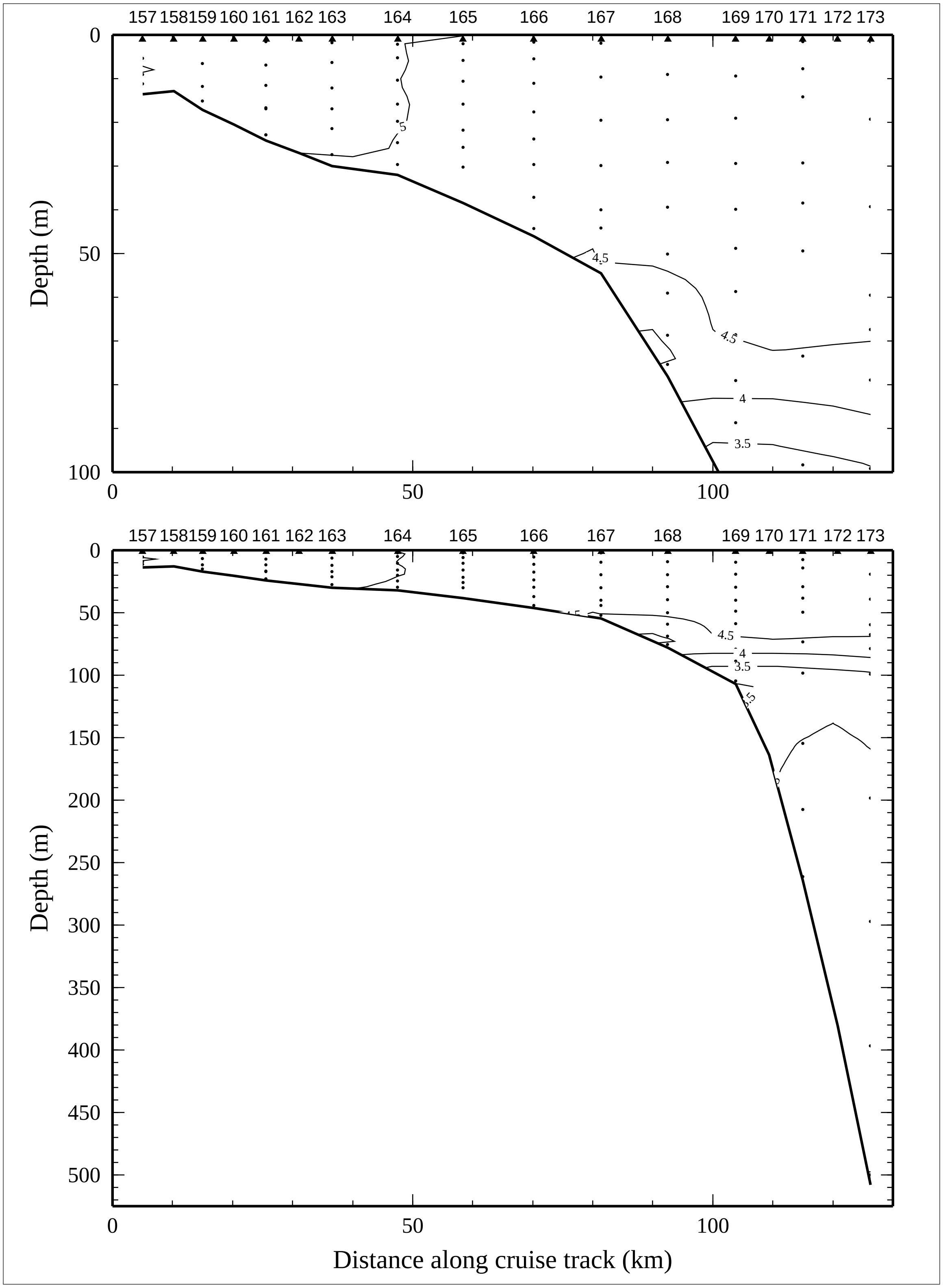

Figure 7.5.9. Dissolved oxygen (ml·l^{-1}) on line 5 of LATEX A survey H07, 6-22 November 1993.

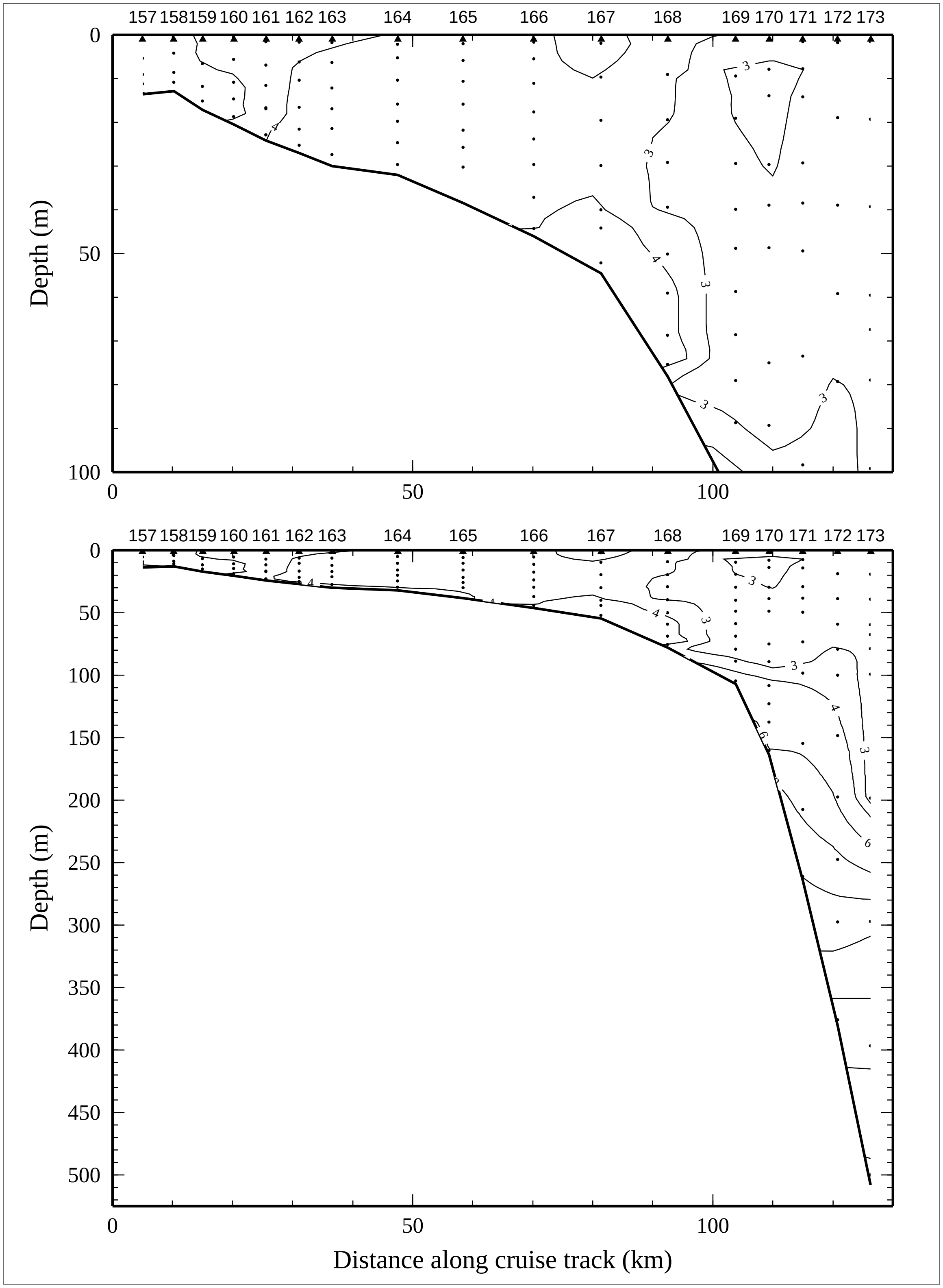

Figure 7.5.10. Silicate (μmol·l-1) on line 5 of LATEX A survey H07, 6-22 November 1993.

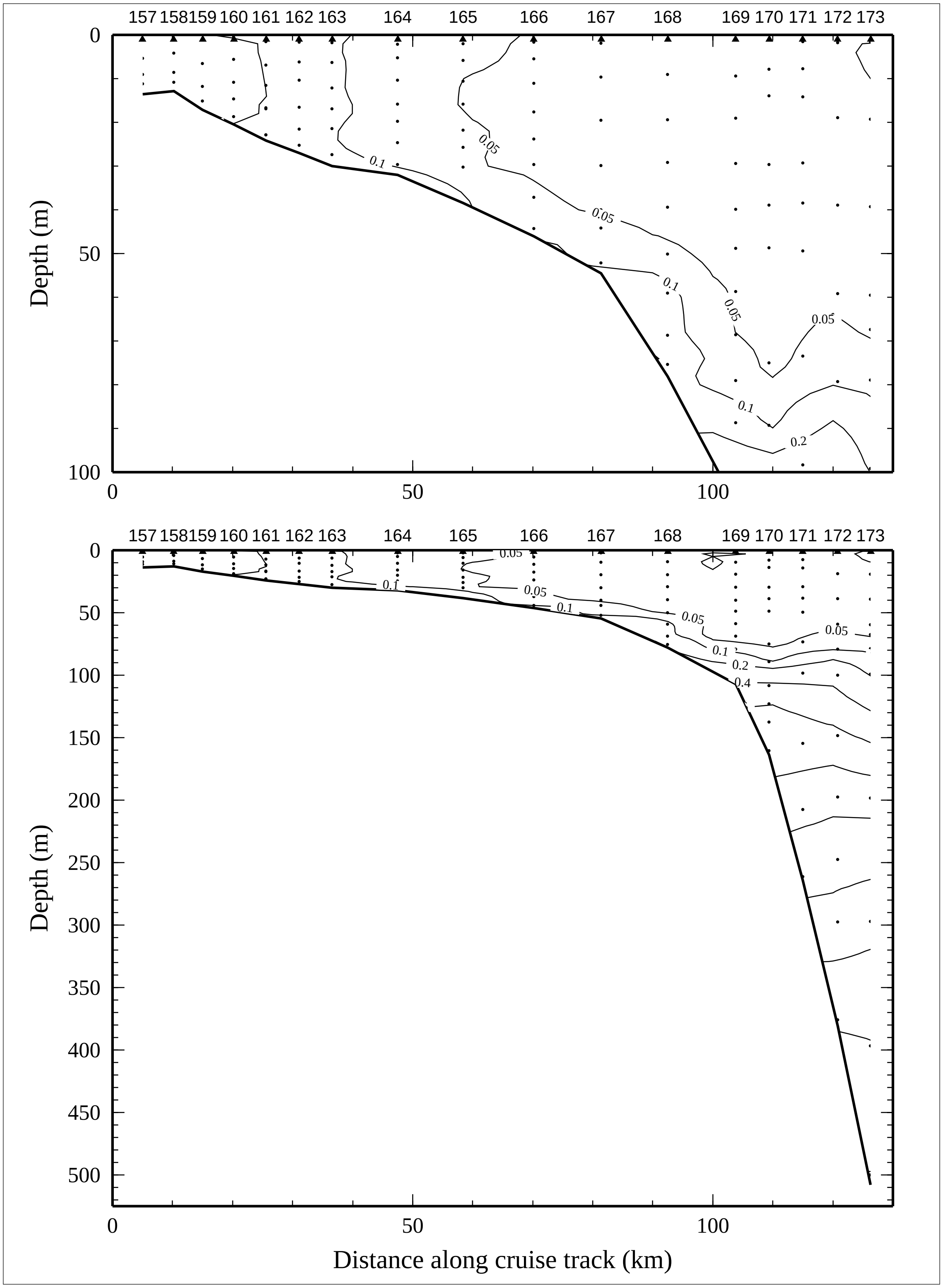

Figure 7.5.11. Phosphate (μmol·l⁻¹) on line 5 of LATEX A survey H07, 6-22 November 1993.

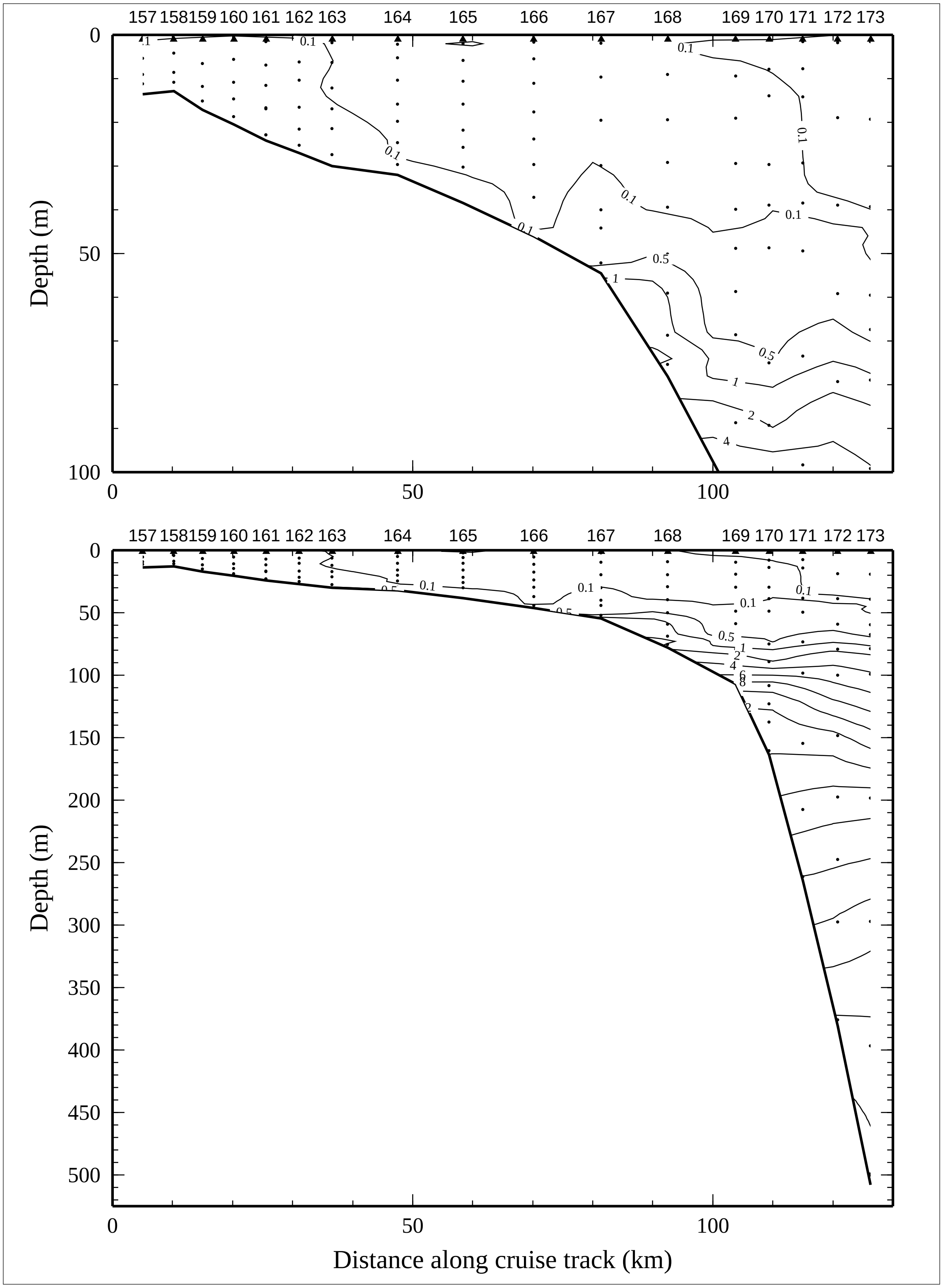

Figure 7.5.12. Nitrate (μmol·l^{-1}) on line 5 of LATEX A survey H07, 6-22 November 1993.

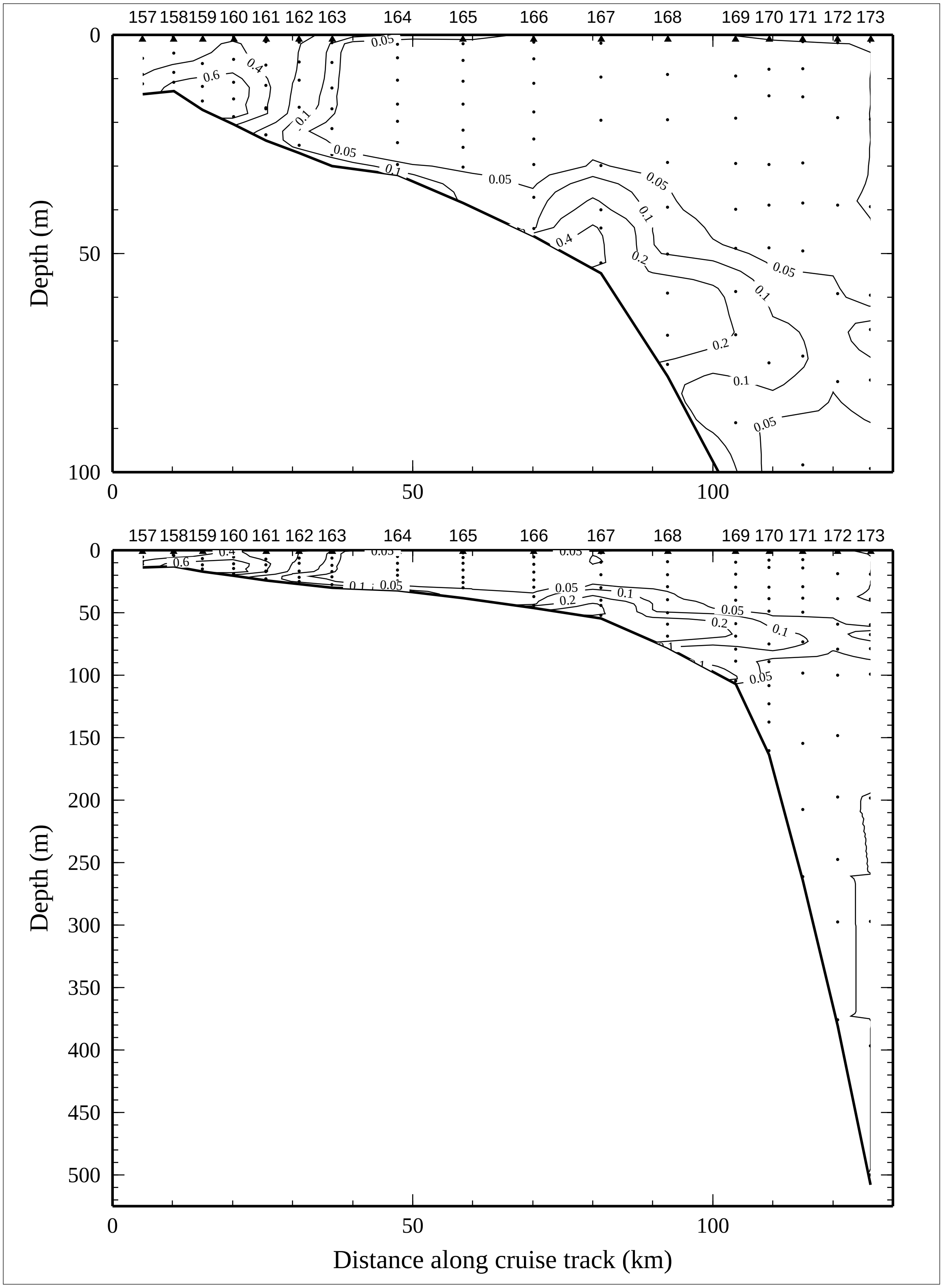

Figure 7.5.13. Nitrite (μmol·l⁻¹) on line 5 of LATEX A survey H07, 6-22 November 1993.

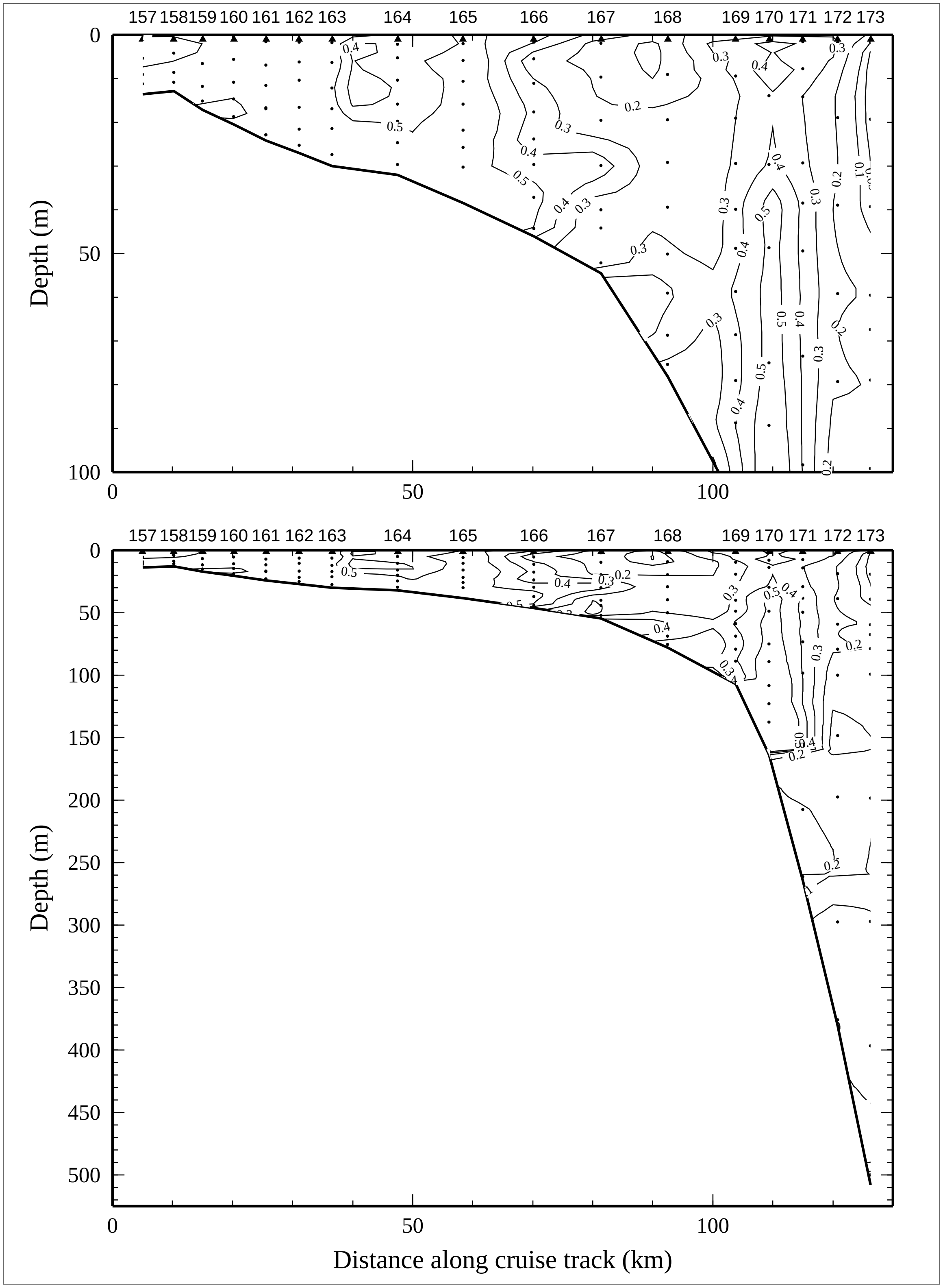

Figure 7.5.14. Ammonium (μmol·l⁻¹) on line 5 of LATEX A survey H07, 6-22 November 1993.

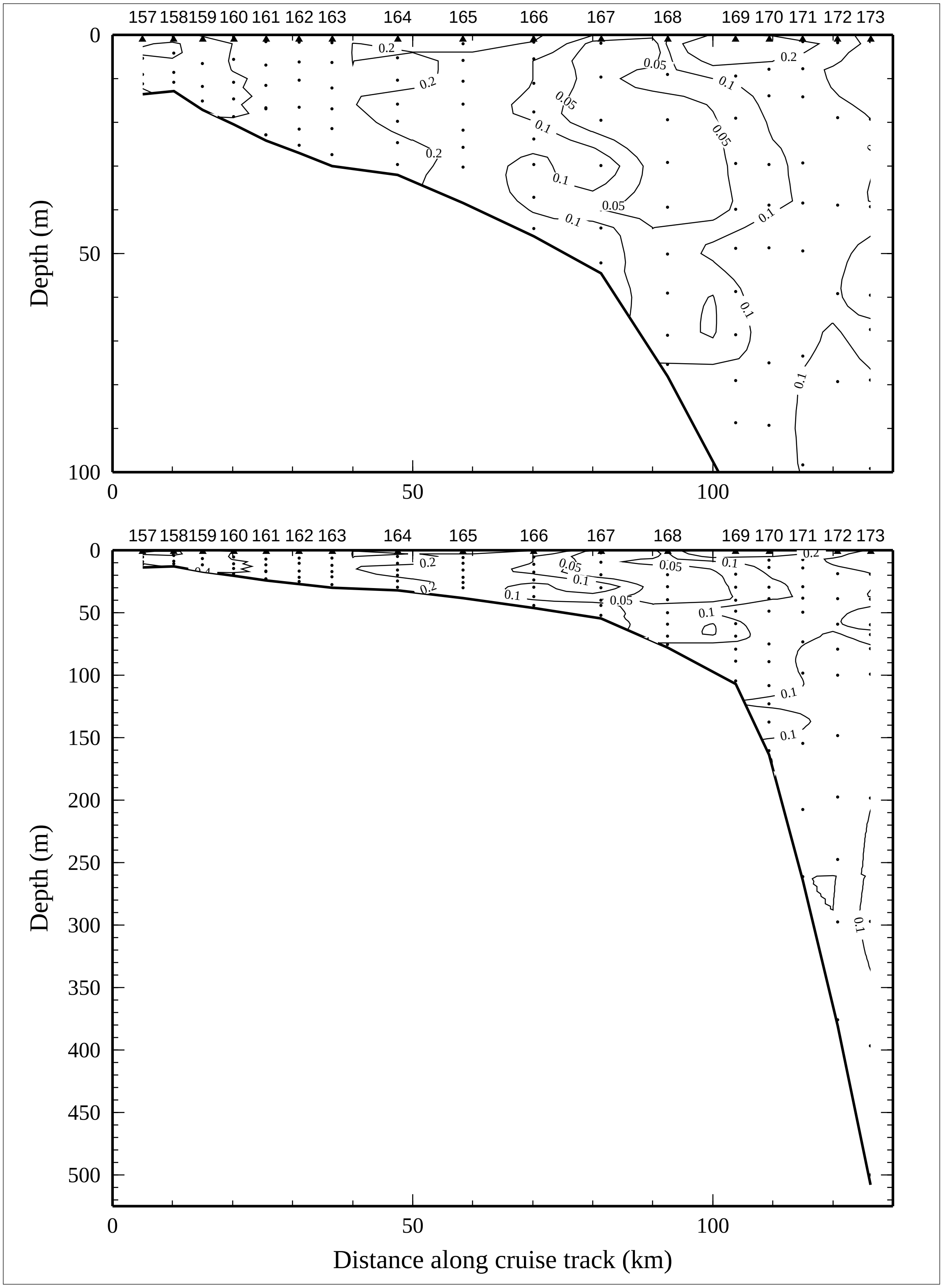

Figure 7.5.15. Urea ($\mu mol \cdot l^{-1}$) on line 5 of LATEX A survey H07, 6-22 November 1993.

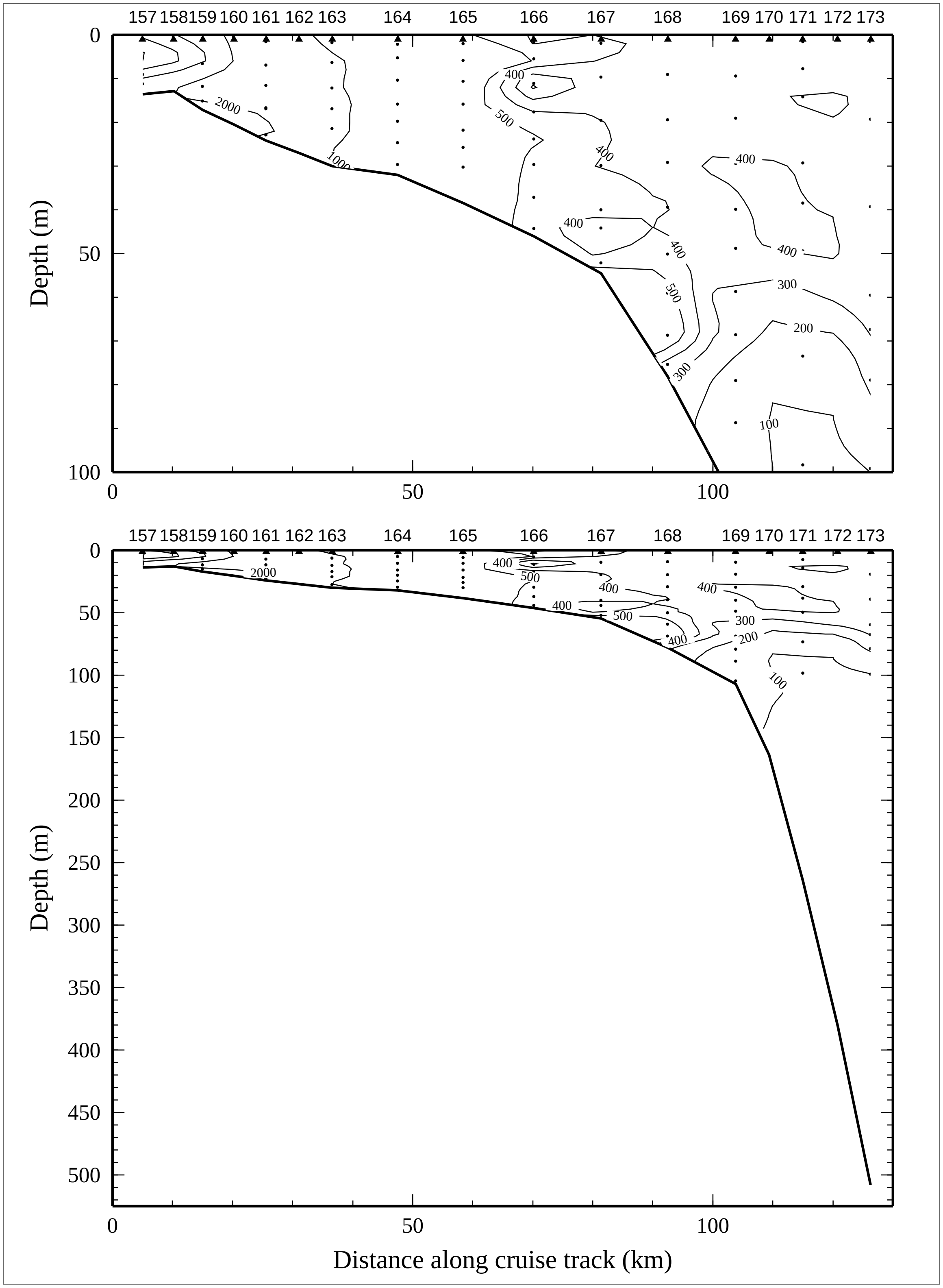

Figure 7.5.16. Chlorophyll a (ng·l-1) on line 5 of LATEX A survey H07, 6-22 November 1993.

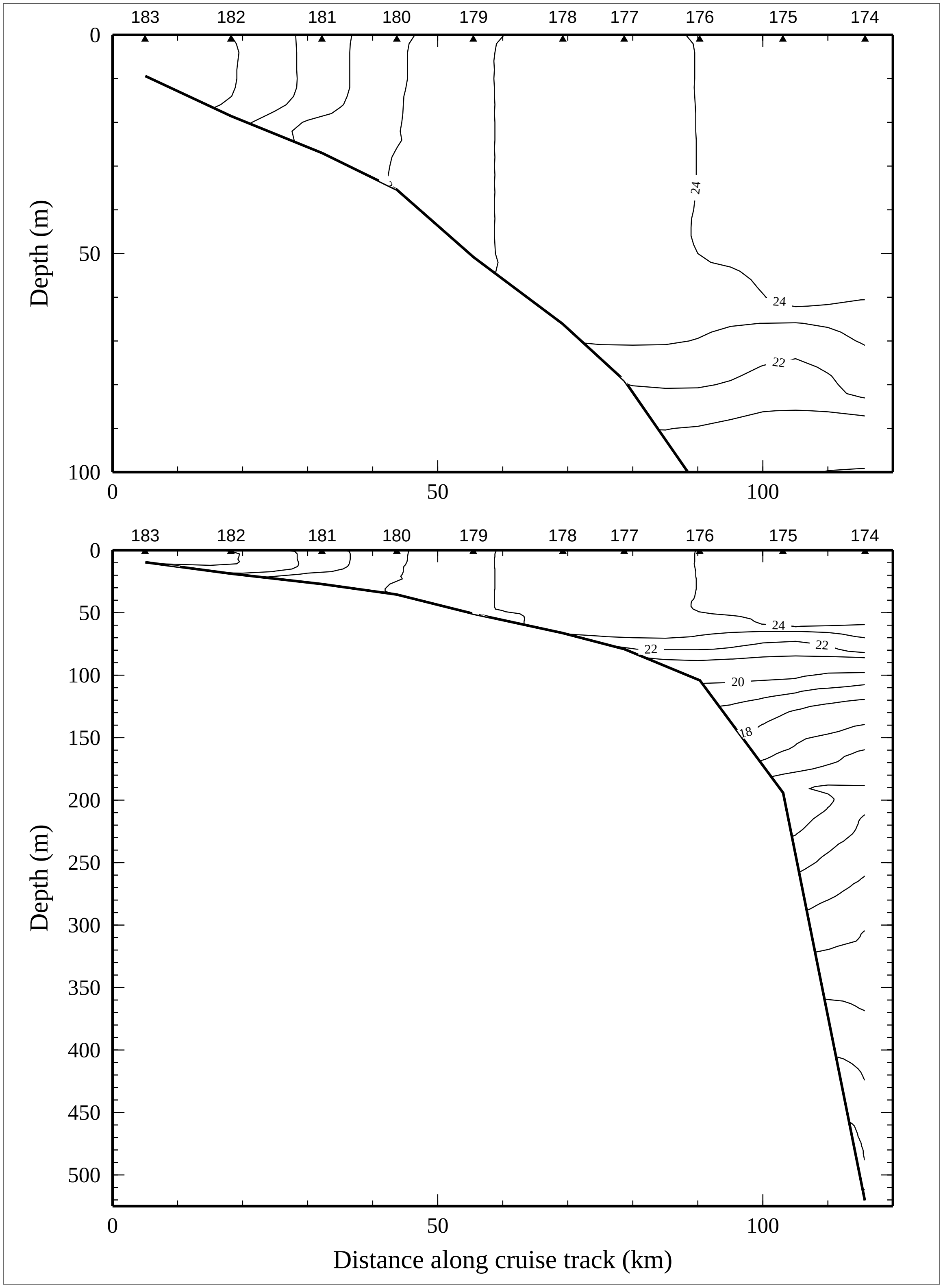

Figure 7.6.1. Potential temperature (˚C) on line 6 of LATEX A survey H07, 6-22 November 1993.

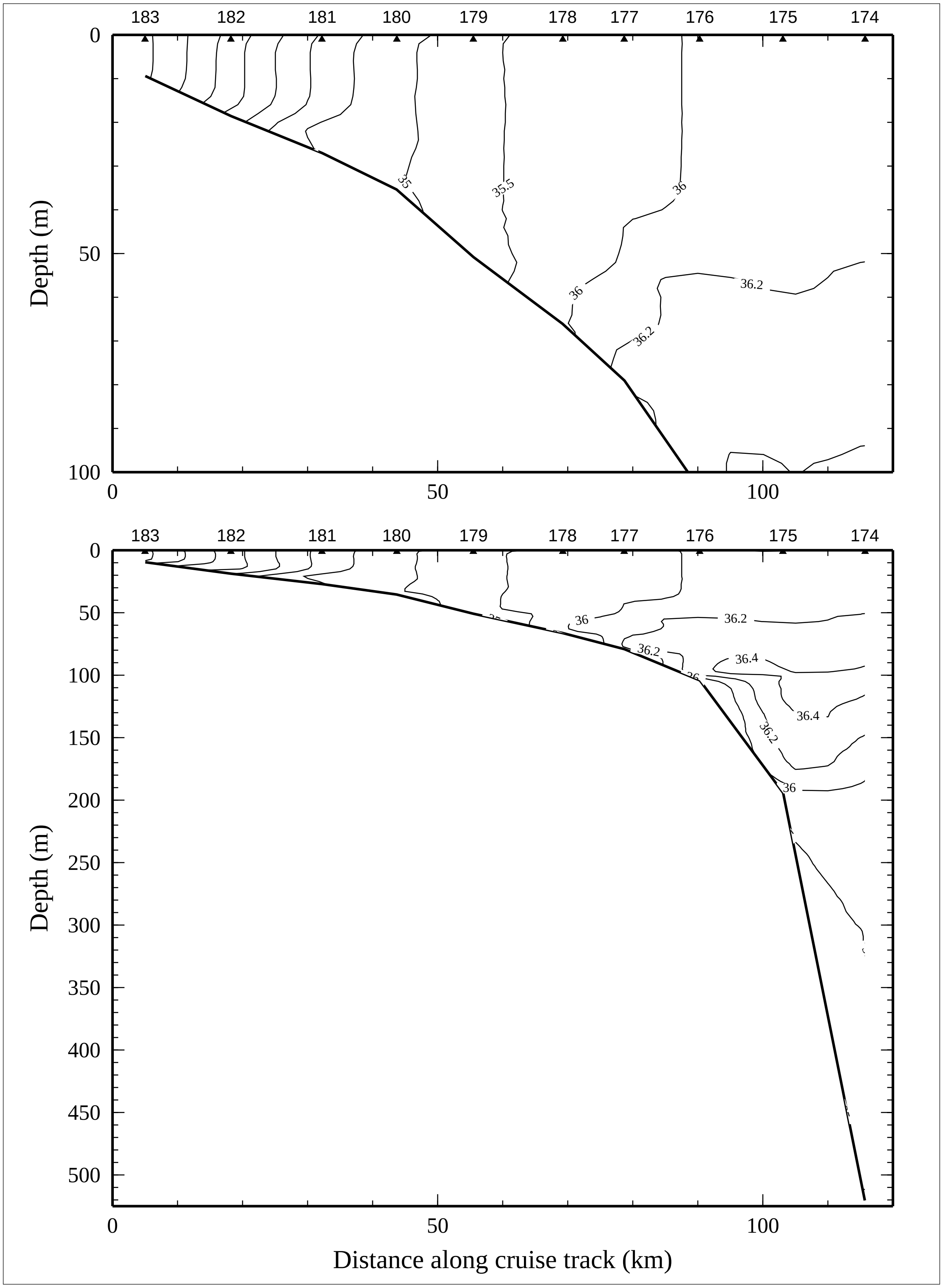

Figure 7.6.2. Salinity, derived from CTD data, on line 6 of LATEX A survey H07, 6-22 November 1993.

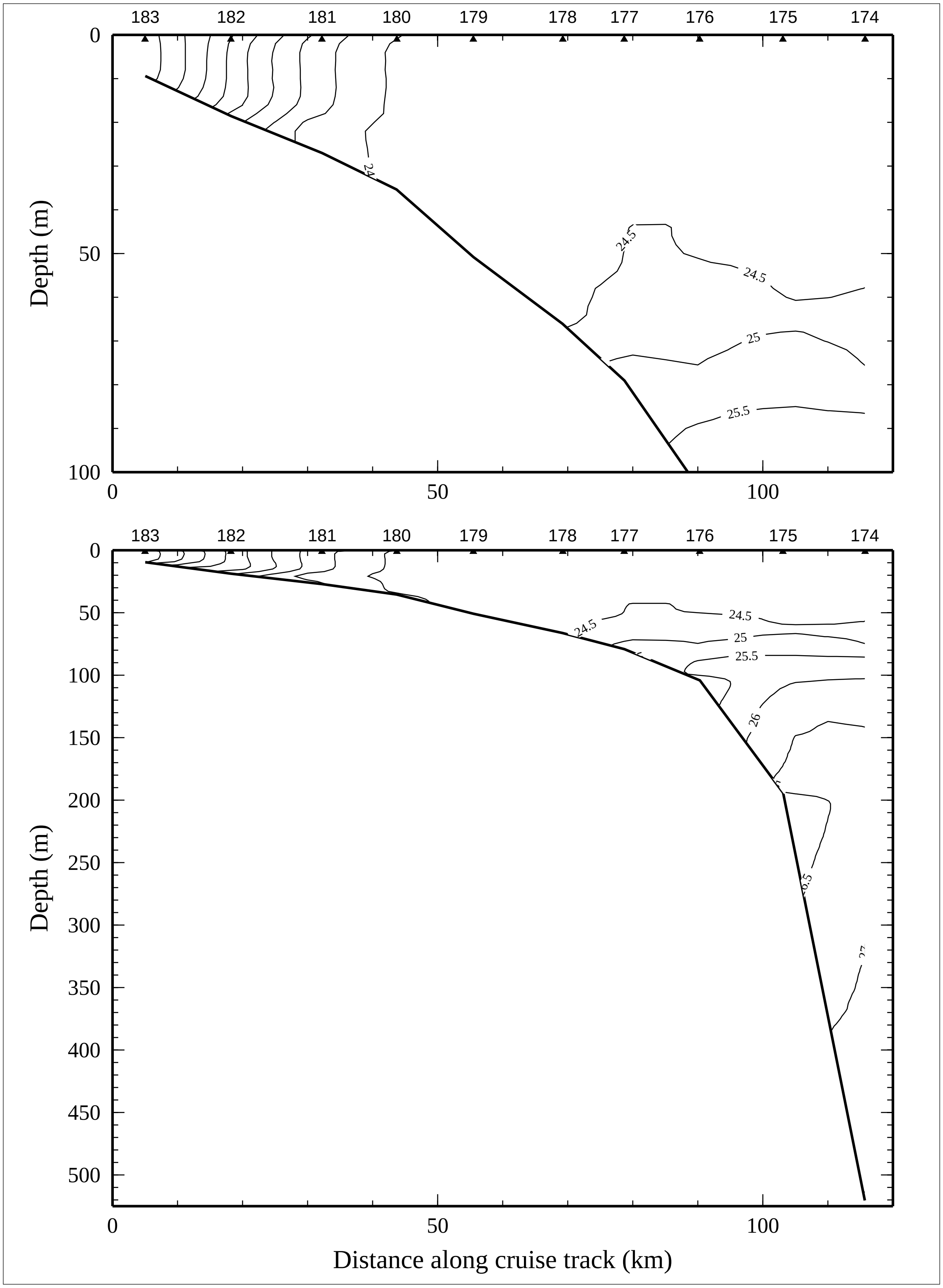

Figure 7.6.3. Density anomaly (σ_θ in kg·m^{-3}) on line 6 of LATEX A survey H07, 6-22 November 1993.

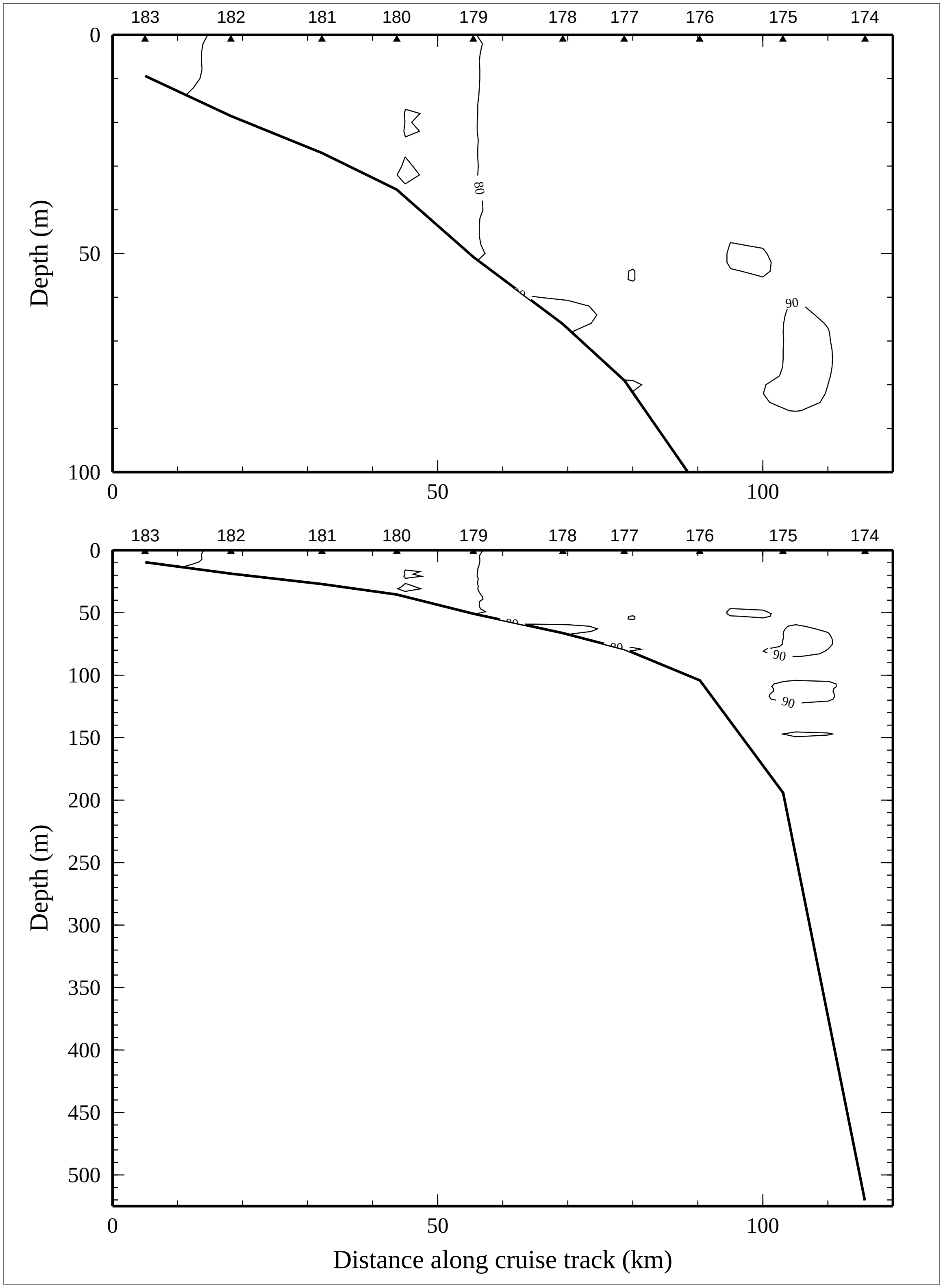

Figure 7.6.4. Percent transmission (660 nm wave length; 25-cm path length) on line 6 of LATEX A survey H07, 6-22 November 1993.

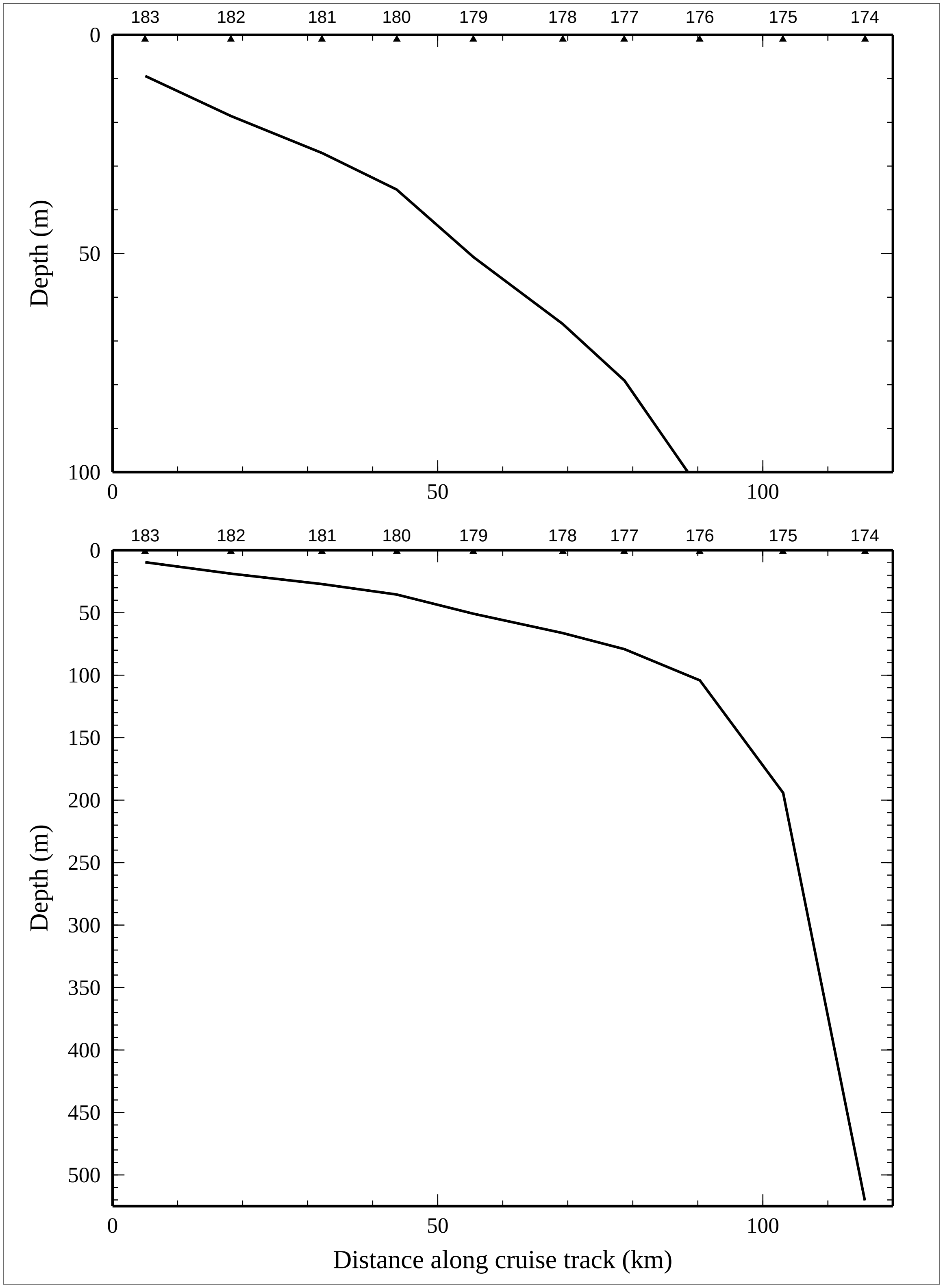

Figure 7.6.5. Optical backscatterance (voltage) on line 6 of LATEX A survey H07, 6-22 November 1993. Values were less than 0.05.

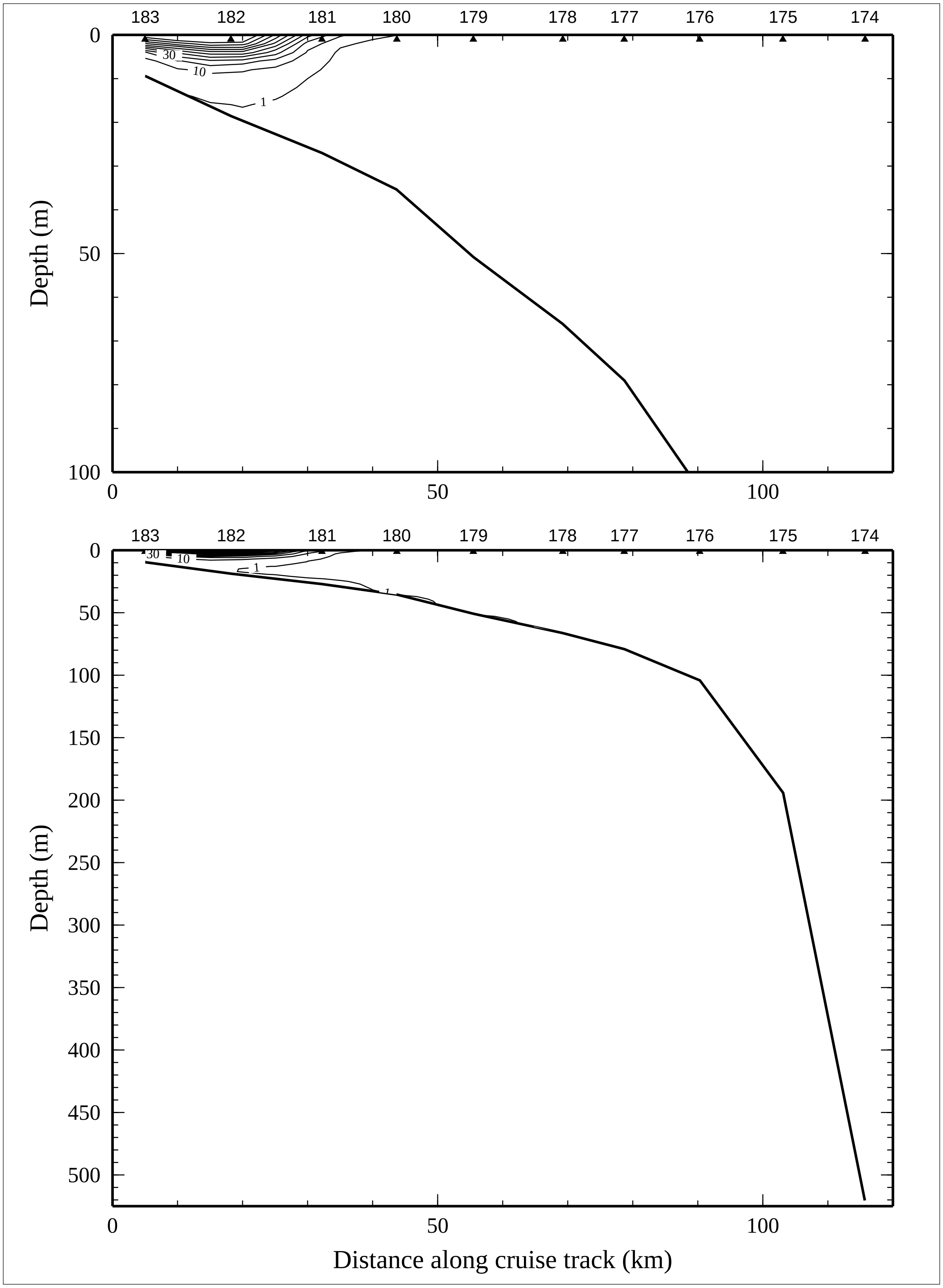

Figure 7.6.6. Downwelling irradiance as percent of surface irradiance on line 6 of LATEX A survey H07, 6-22 November 1993.

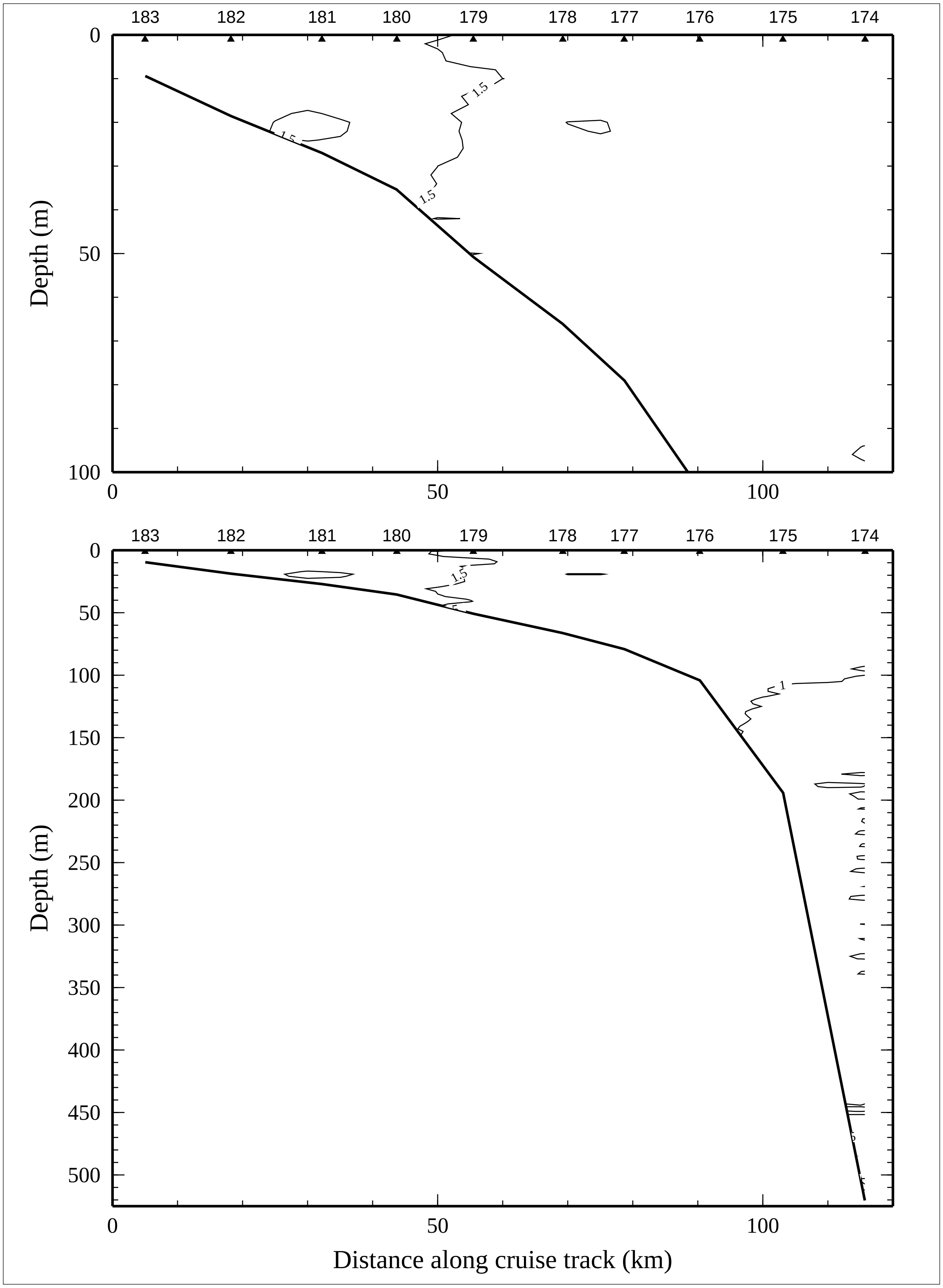

Figure 7.6.7. Relative fluorescence on line 6 of LATEX A survey H07,
6-22 November 1993.

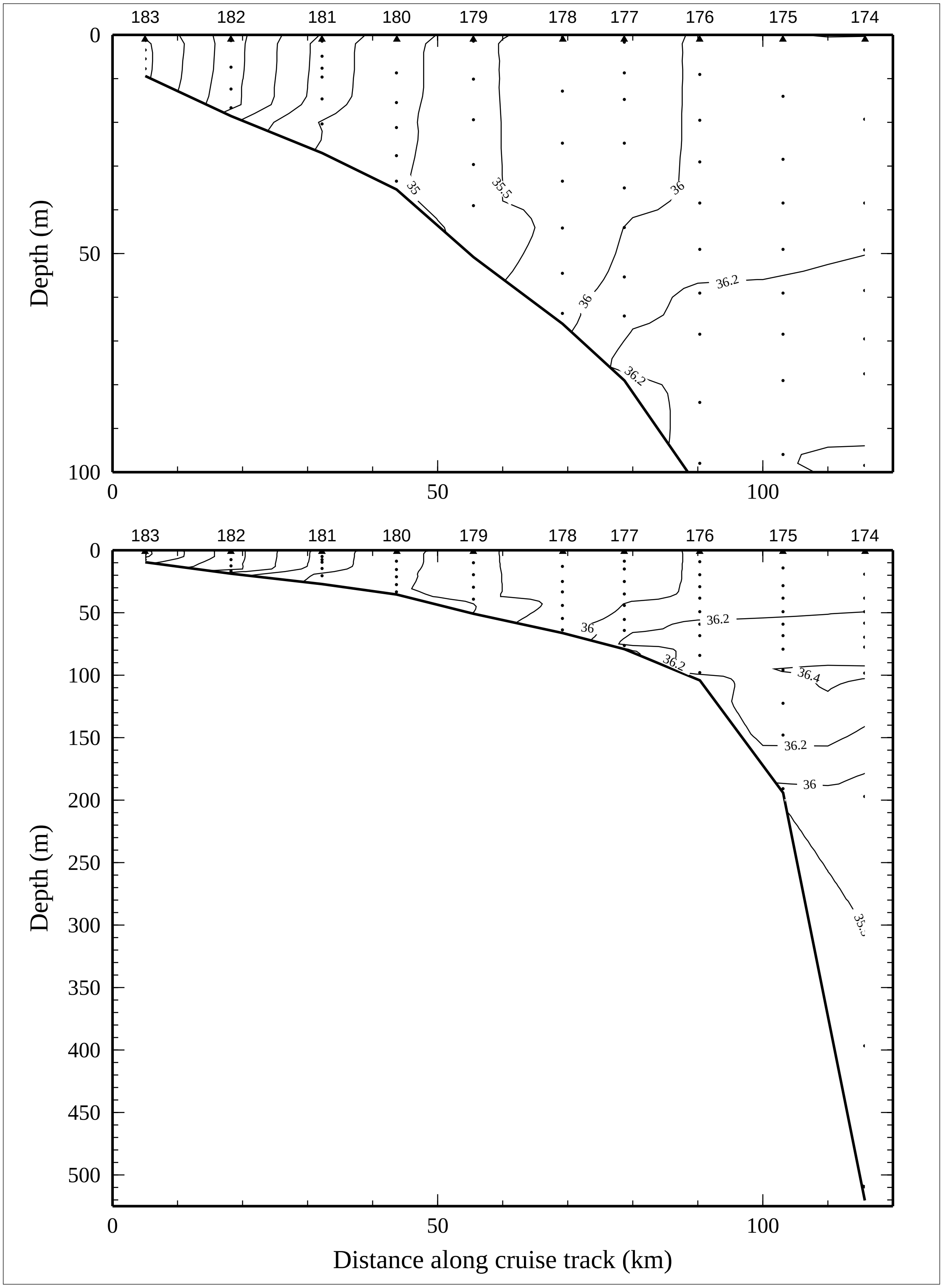

Figure 7.6.8. Bottle salinity on line 6 of LATEX A survey H07,
6-22 November 1993.

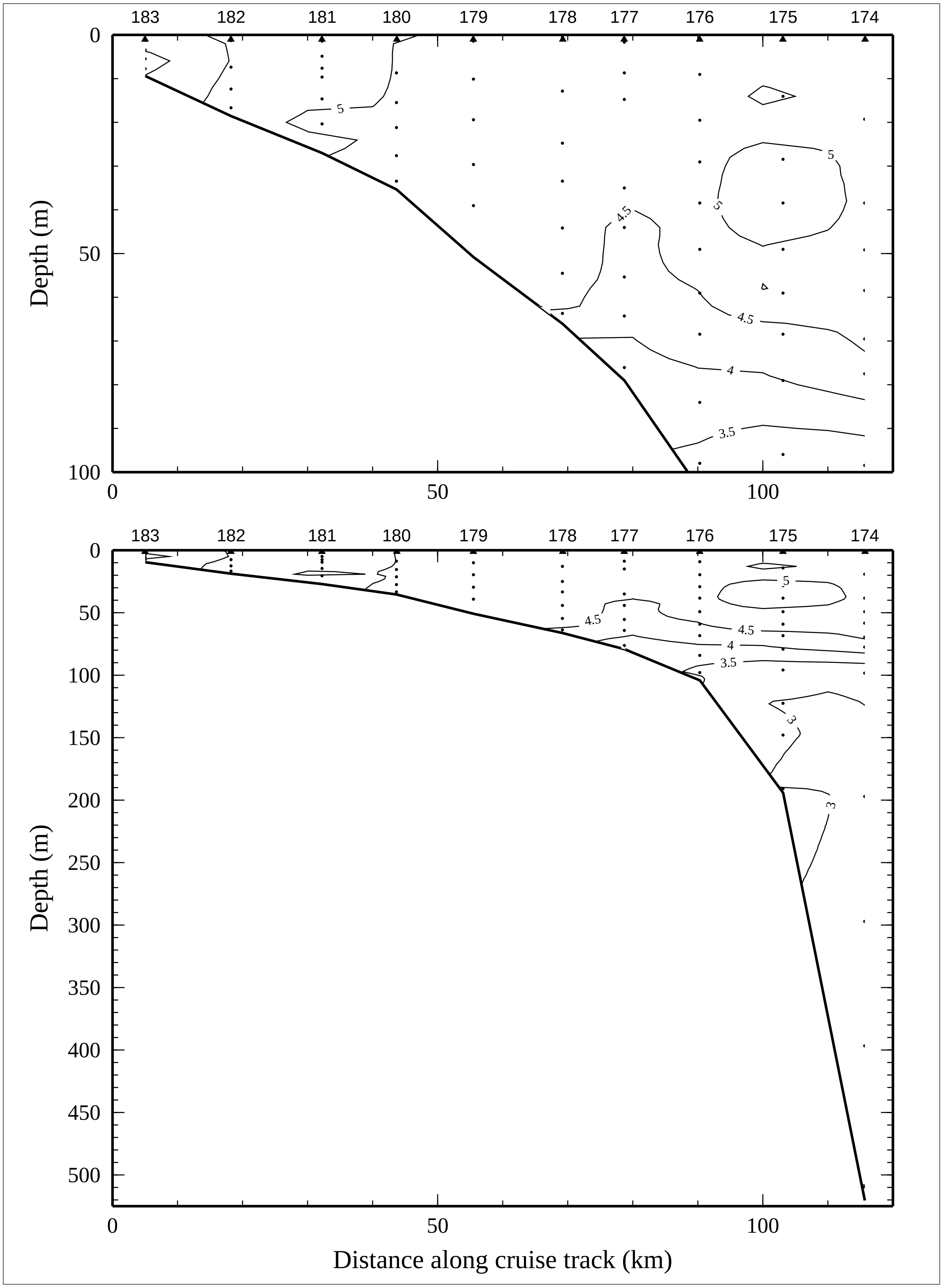

Figure 7.6.9. Dissolved oxygen (ml·l^{-1}) on line 6 of LATEX A survey H07, 6-22 November 1993.

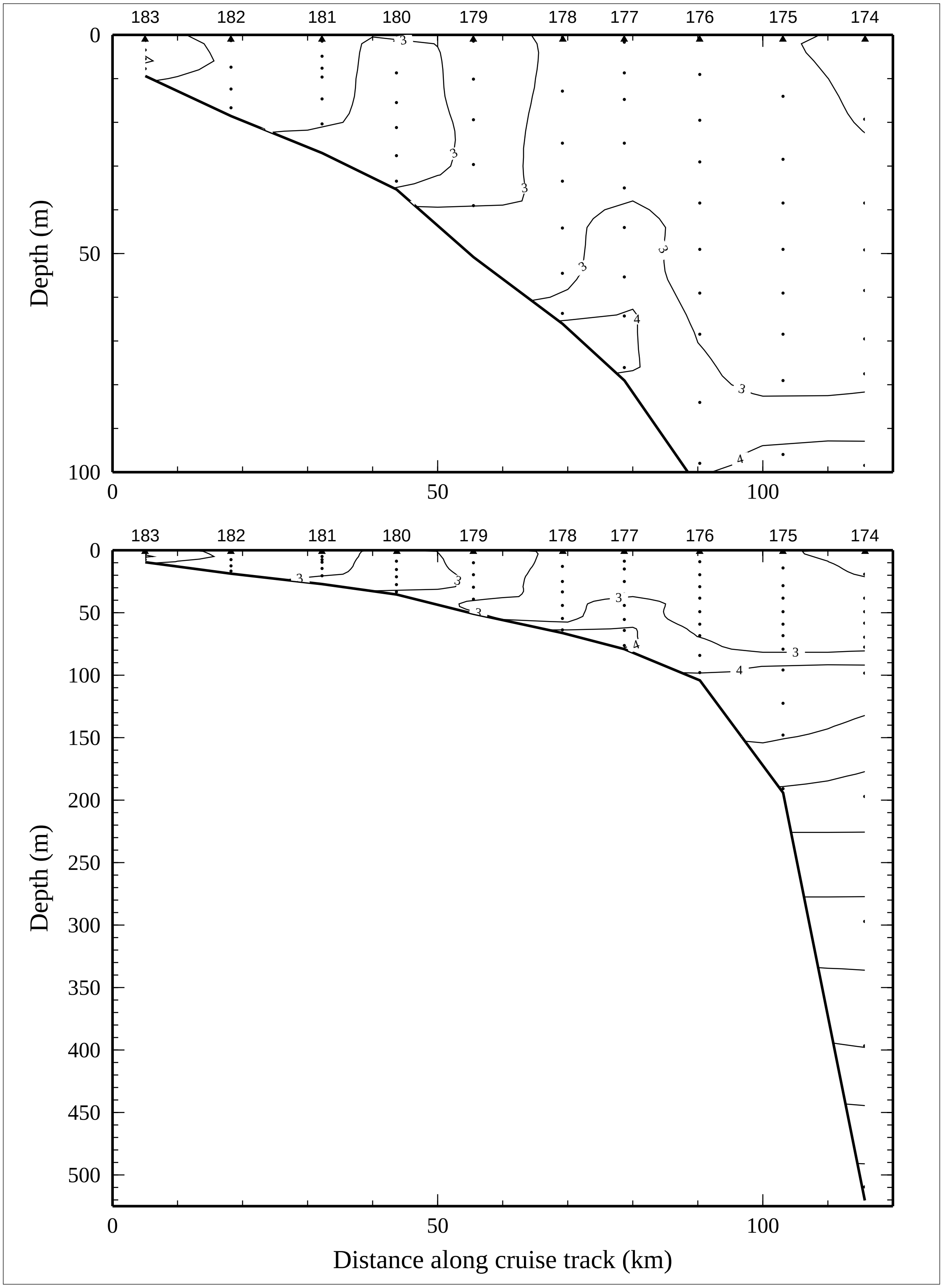

Figure 7.6.10. Silicate (μmol·l^{-1}) on line 6 of LATEX A survey H07, 6-22 November 1993.

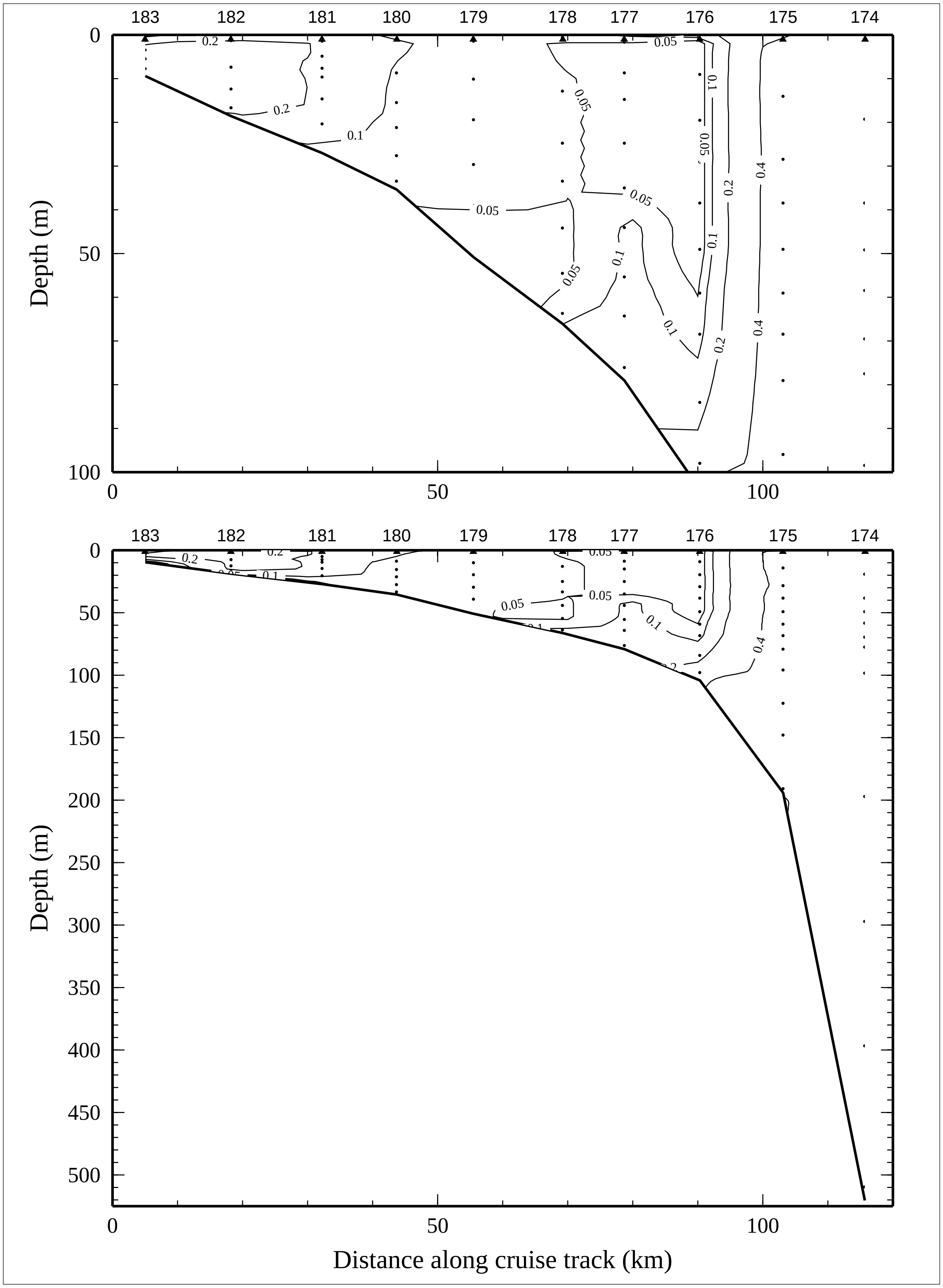

Figure 7.6.11. Phosphate (µmol·l-1) on line 6 of LATEX A survey H07,
6-22 November 1993.

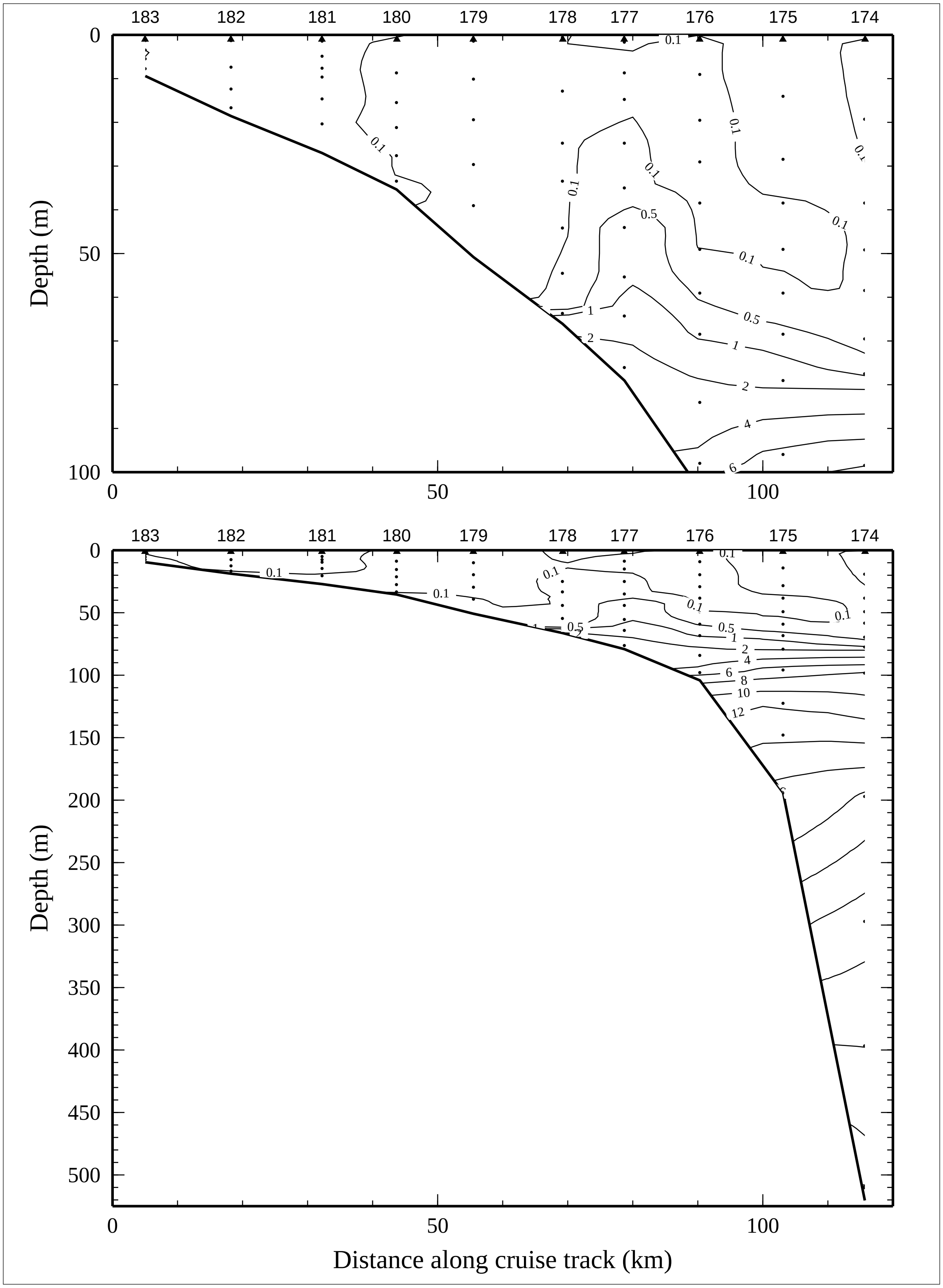

Figure 7.6.12. Nitrate (μmol·l⁻¹) on line 6 of LATEX A survey H07, 6-22 November 1993.

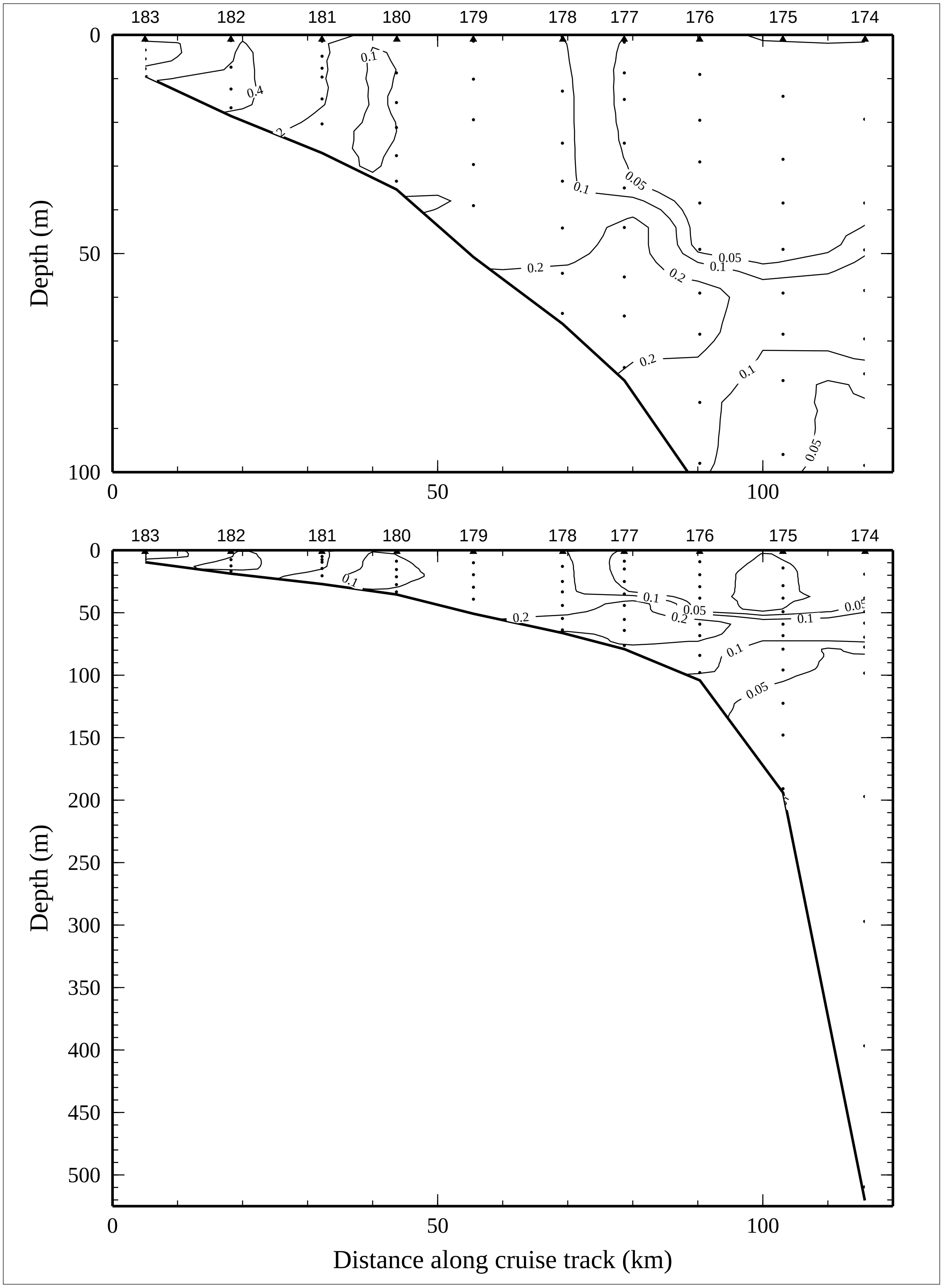

Figure 7.6.13. Nitrite (µmol·l^{-1}) on line 6 of LATEX A survey H07, 6-22 November 1993.

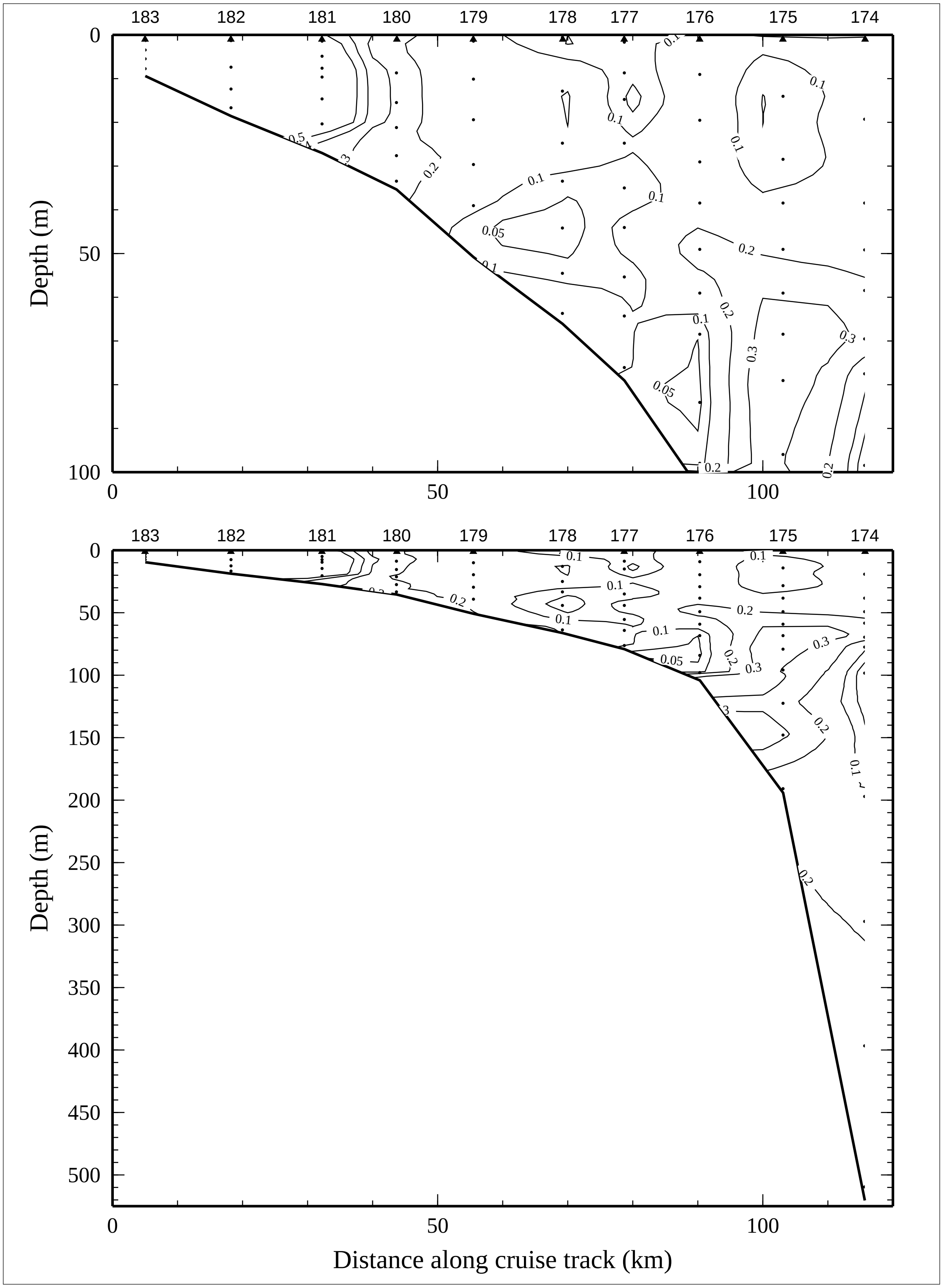

Figure 7.6.14. Ammonium (μmol·l-1) on line 6 of LATEX A survey H07, 6-22 November 1993.

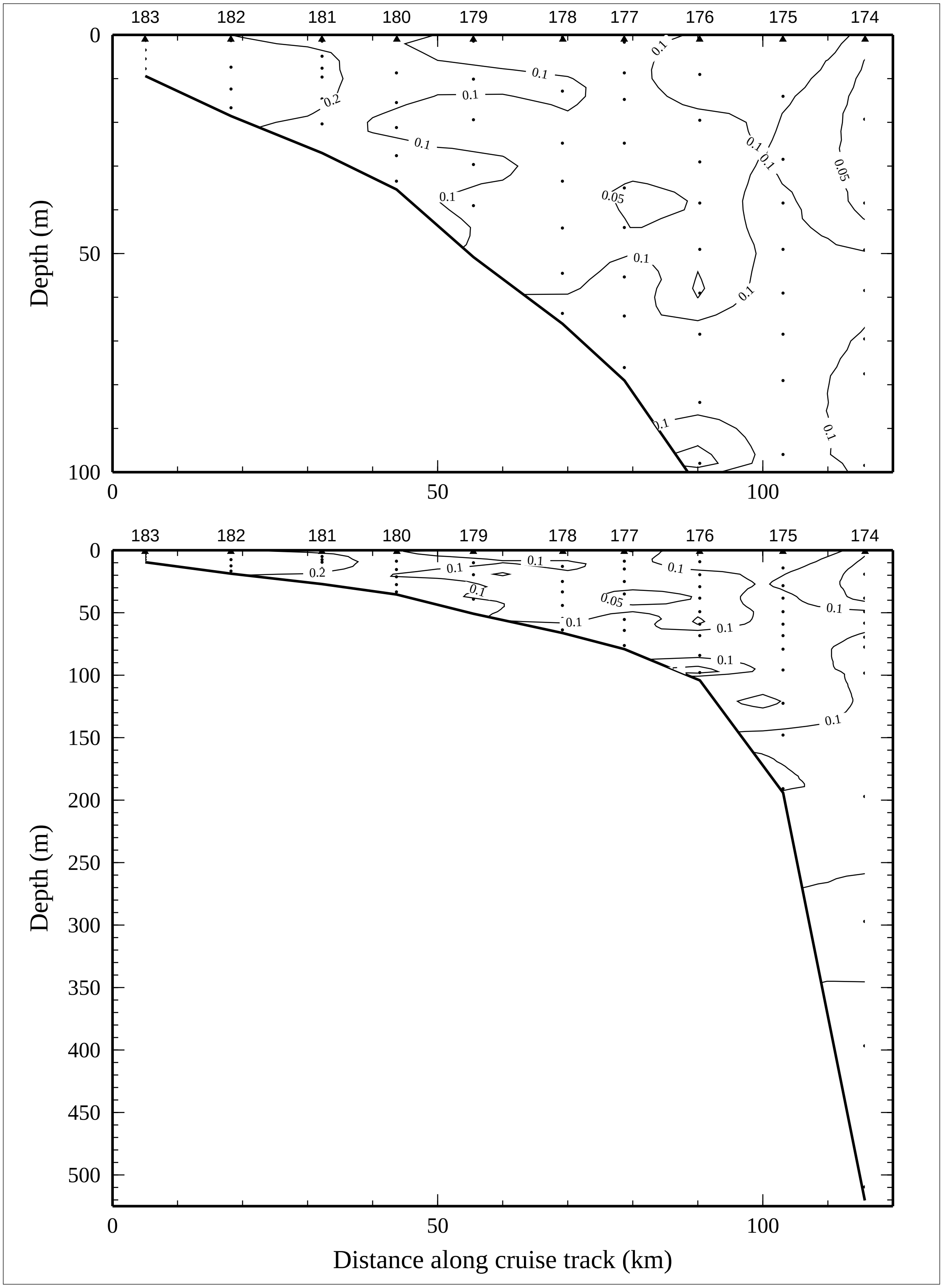

Figure 7.6.15. Urea (μmol·l^{-1}) on line 6 of LATEX A survey H07, 6-22 November 1993.

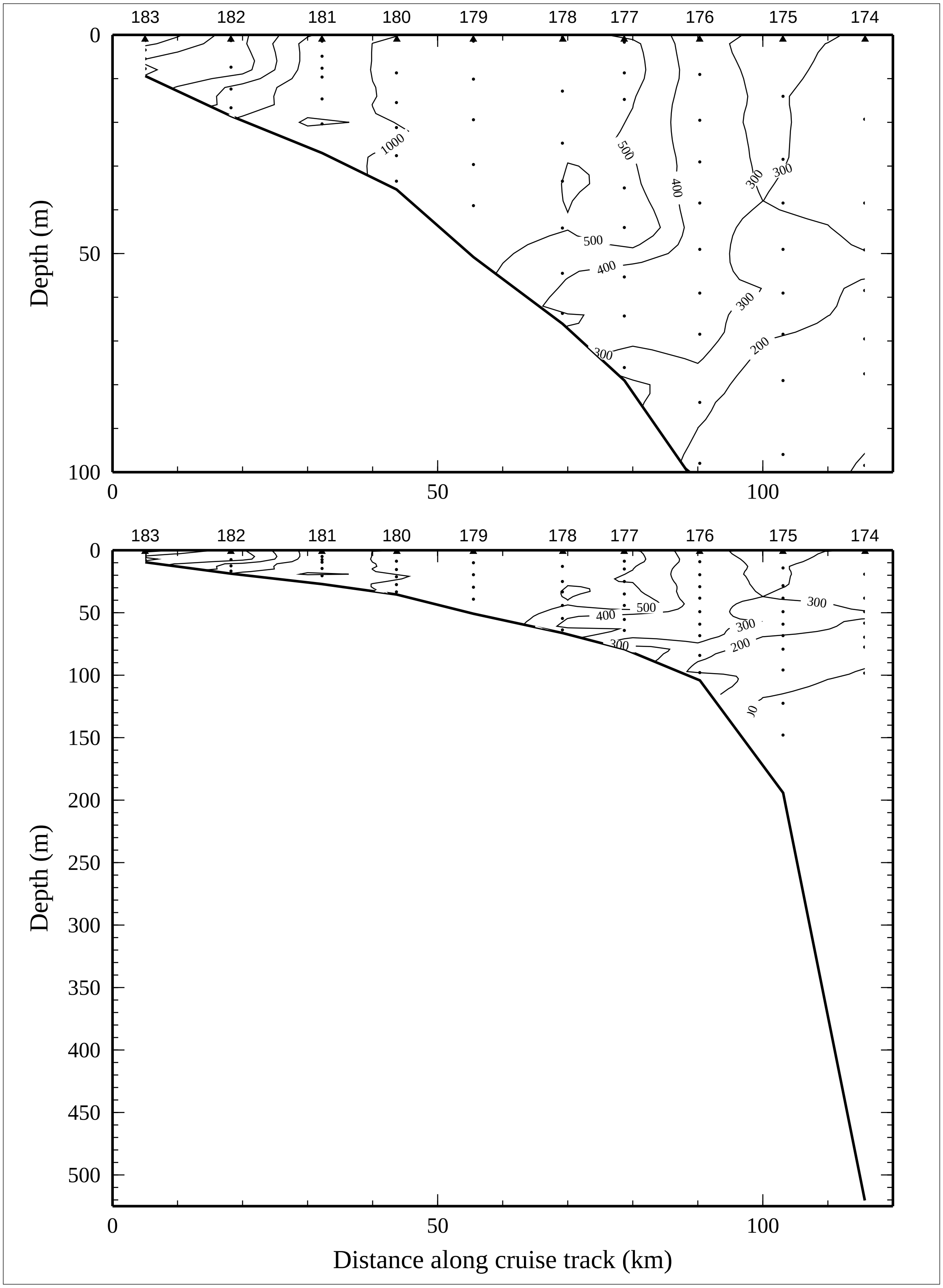

Figure 7.6.16. Chlorophyll a (ng·l^{-1}) on line 6 of LATEX A survey H07, 6-22 November 1993.

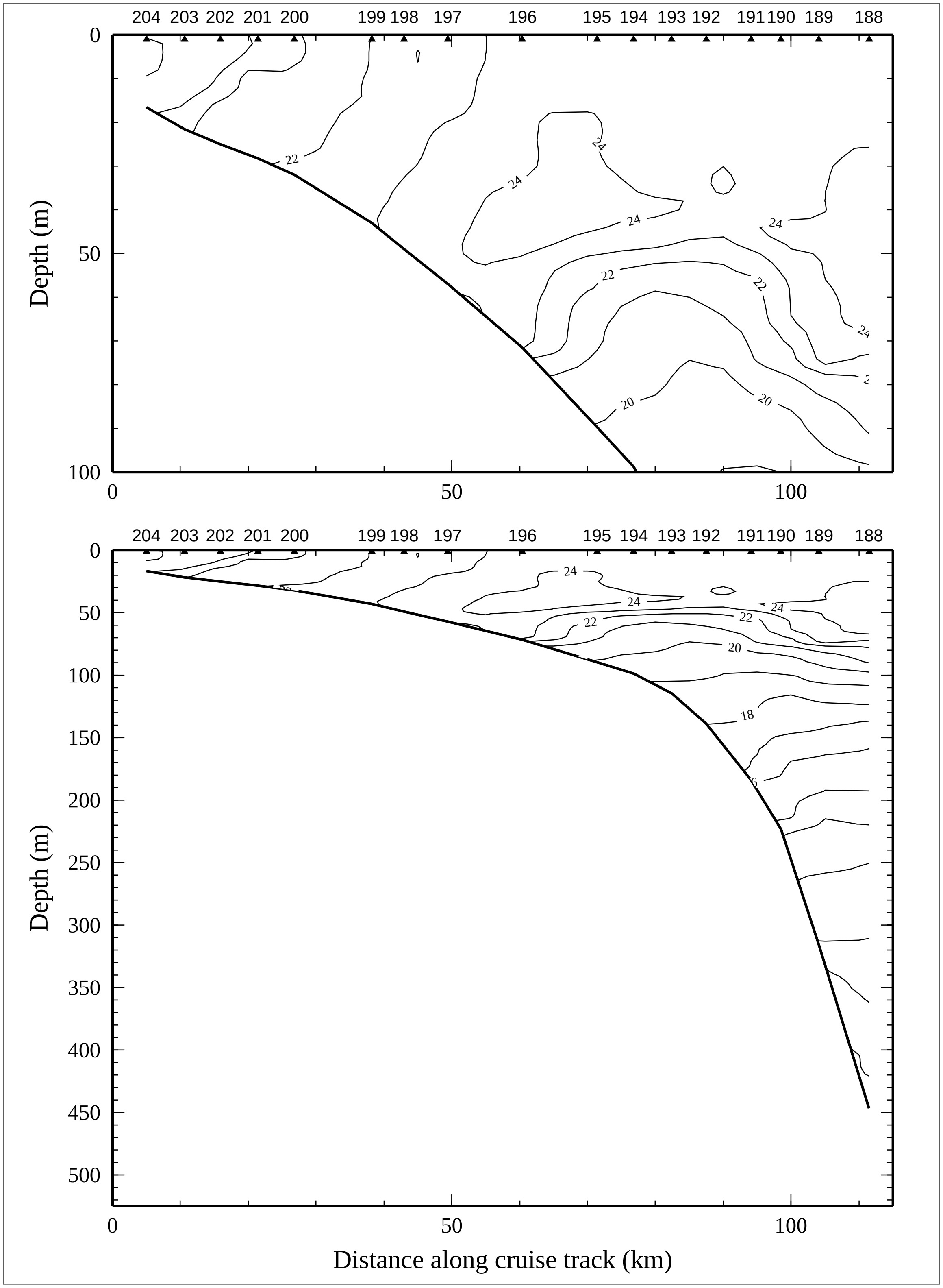

Figure 7.7.1. Potential temperature (˚C) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

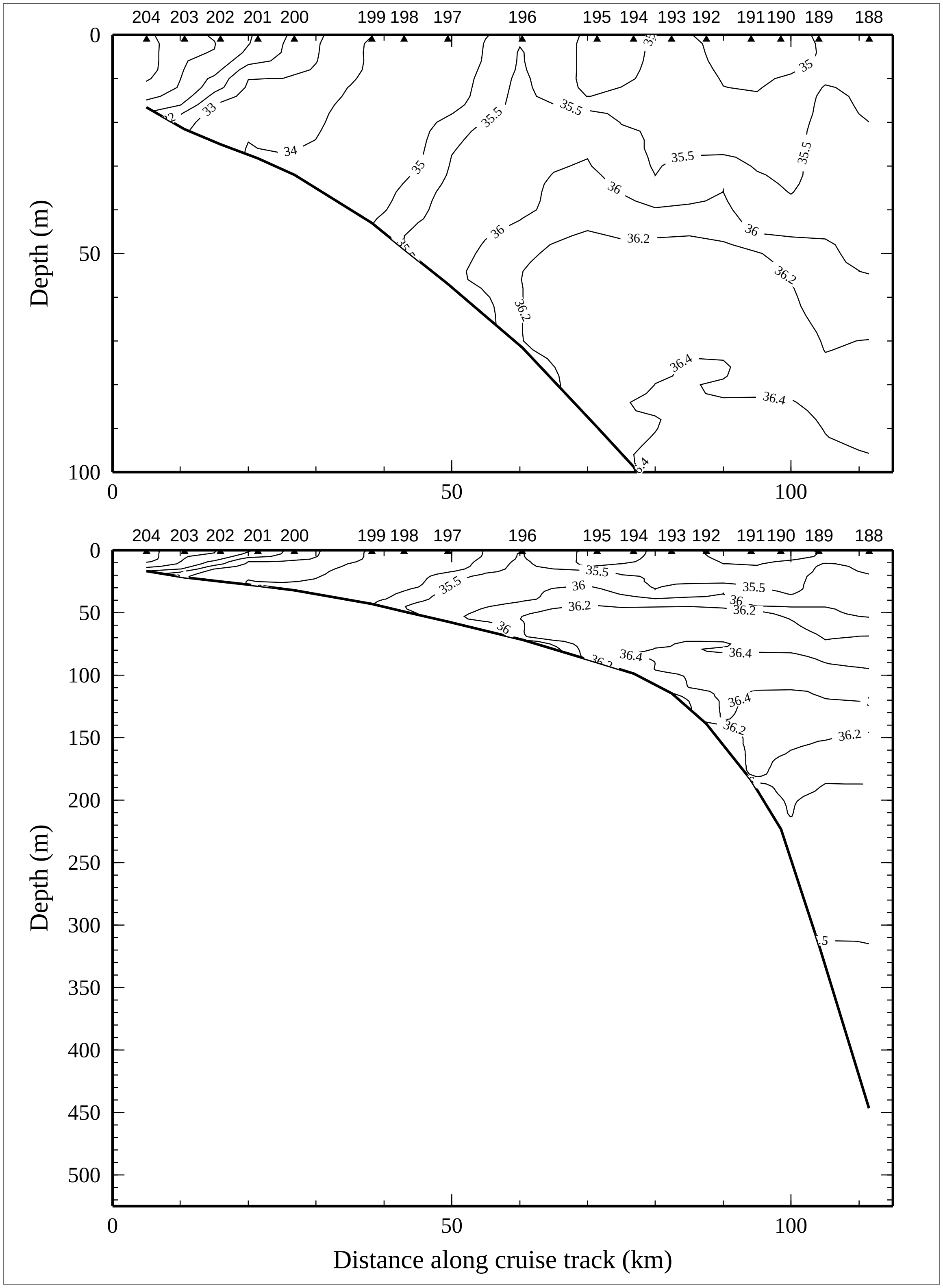

Figure 7.7.2. Salinity, derived from CTD data, on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

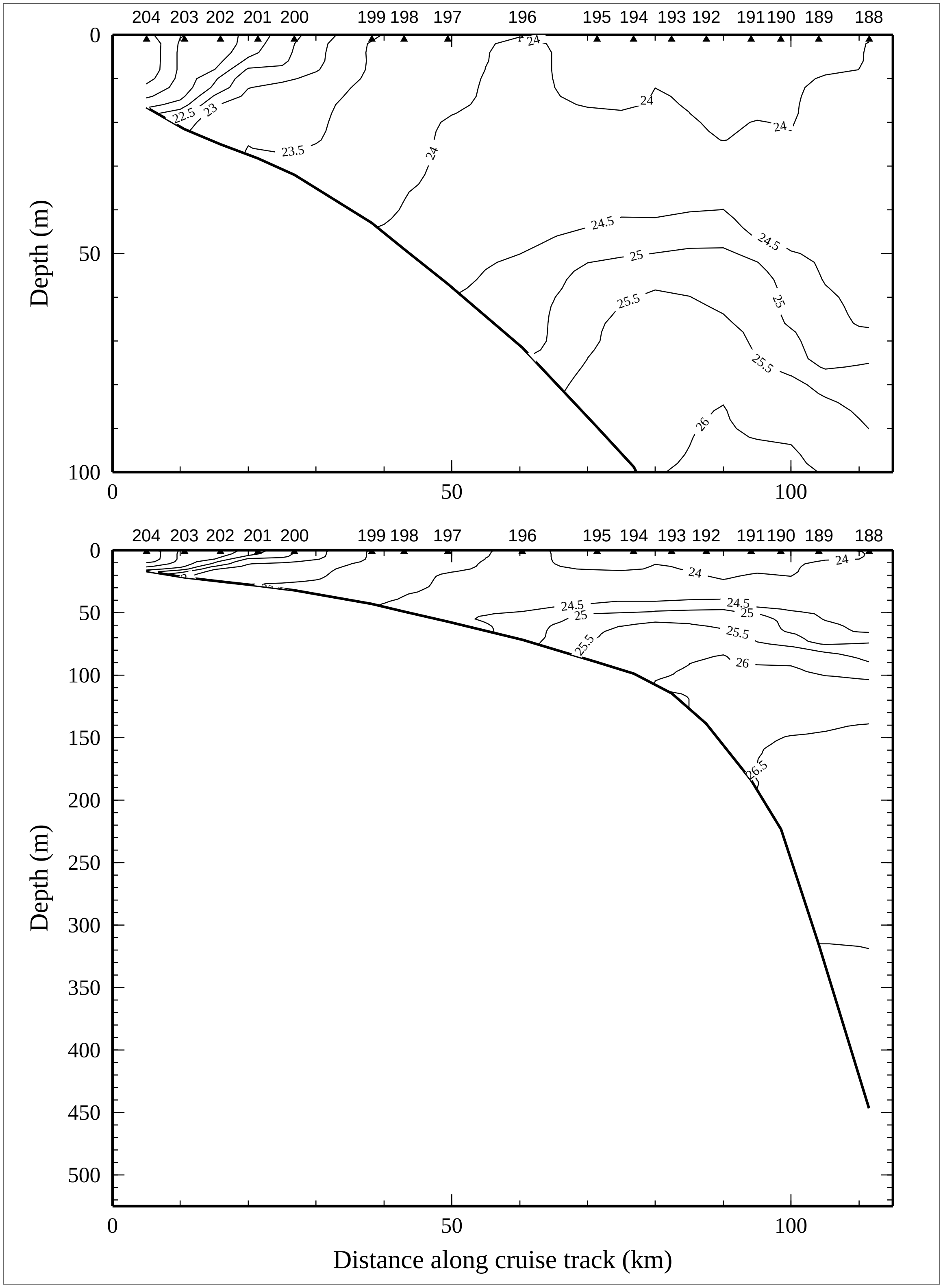

Figure 7.7.3. Density anomaly (σ_θ in kg·m^{-3}) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

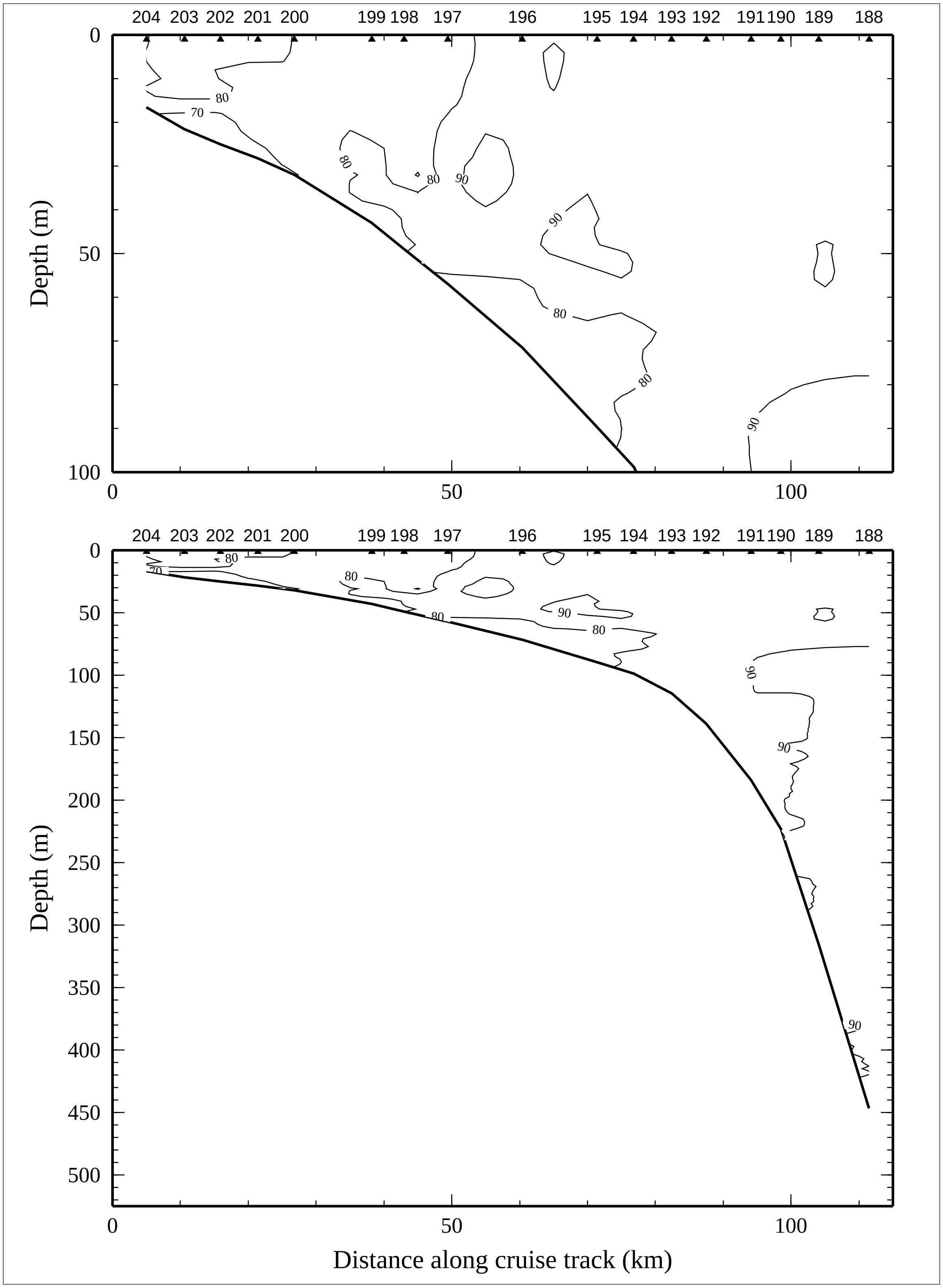

Figure 7.7.4. Percent transmission (660 nm wave length; 25-cm path length) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

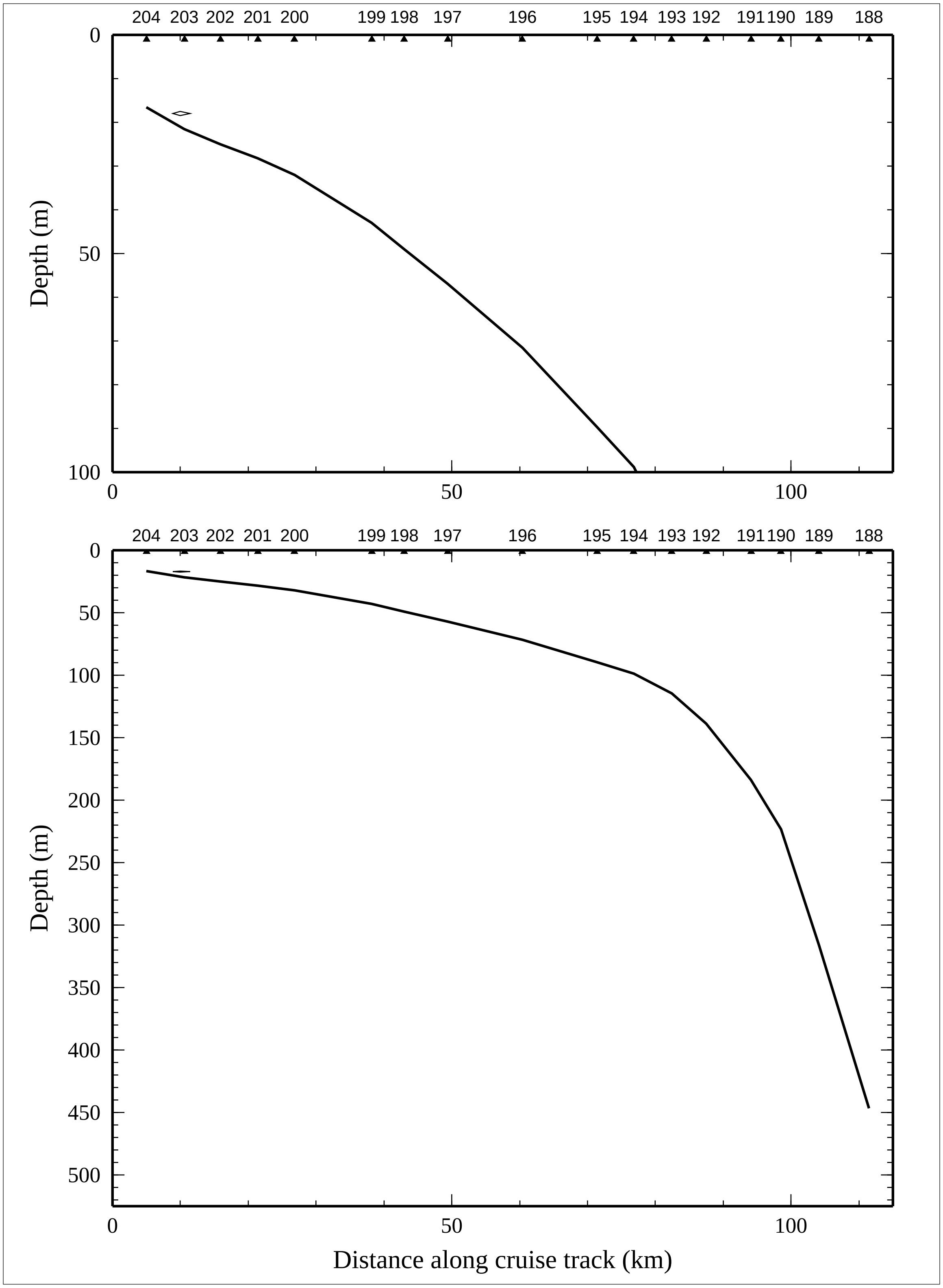

Figure 7.7.5. Optical backscatterance (voltage) on line 7 of LATEX A survey H07, 25 April - 11 May 1993. Values were 0.05 or less.

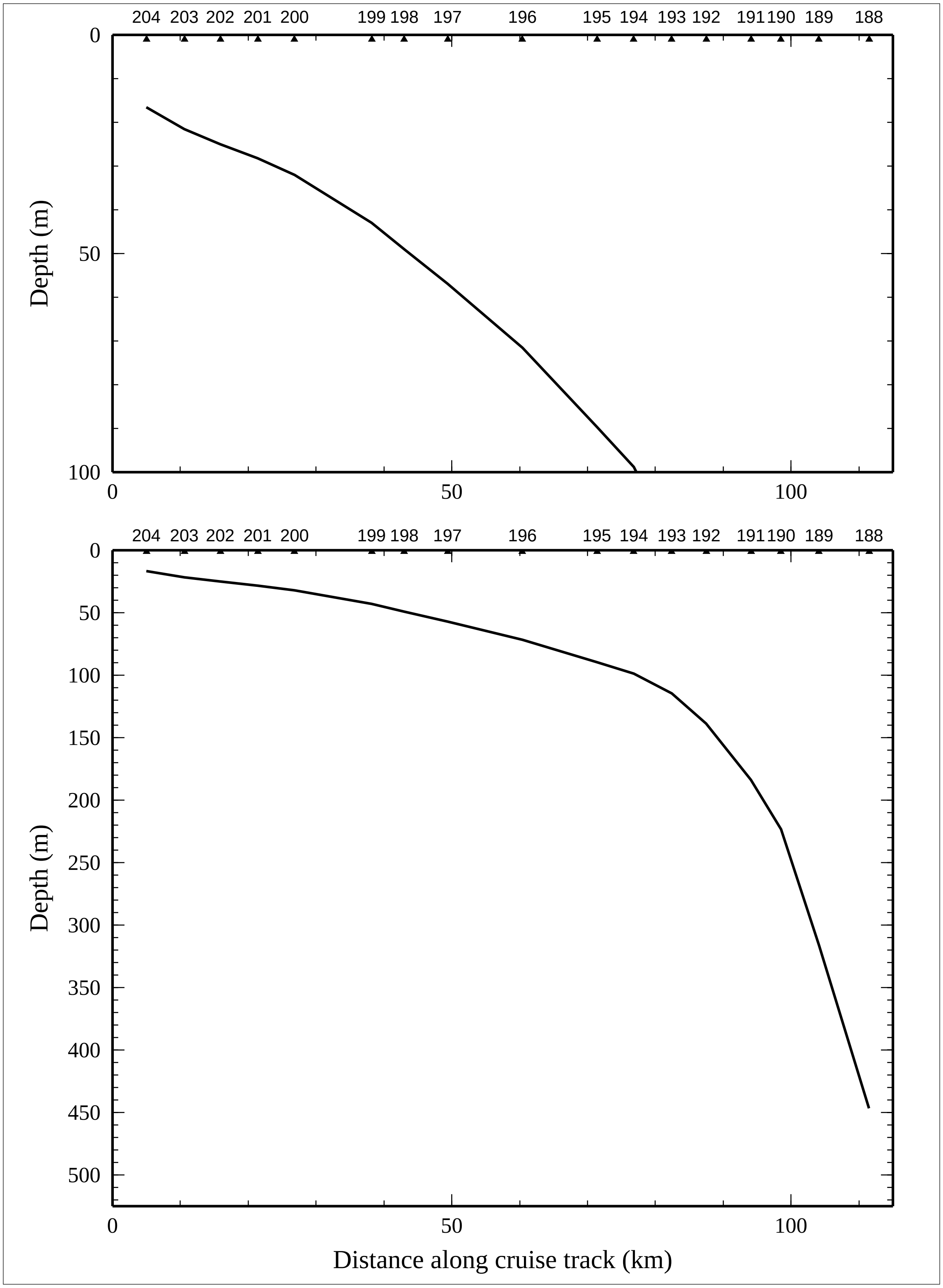

Figure 7.7.6. Downwelling irradiance as percent of surface irradiance on line 7 of LATEX A survey H07, 25 April - 11 May 1993. Night stations.

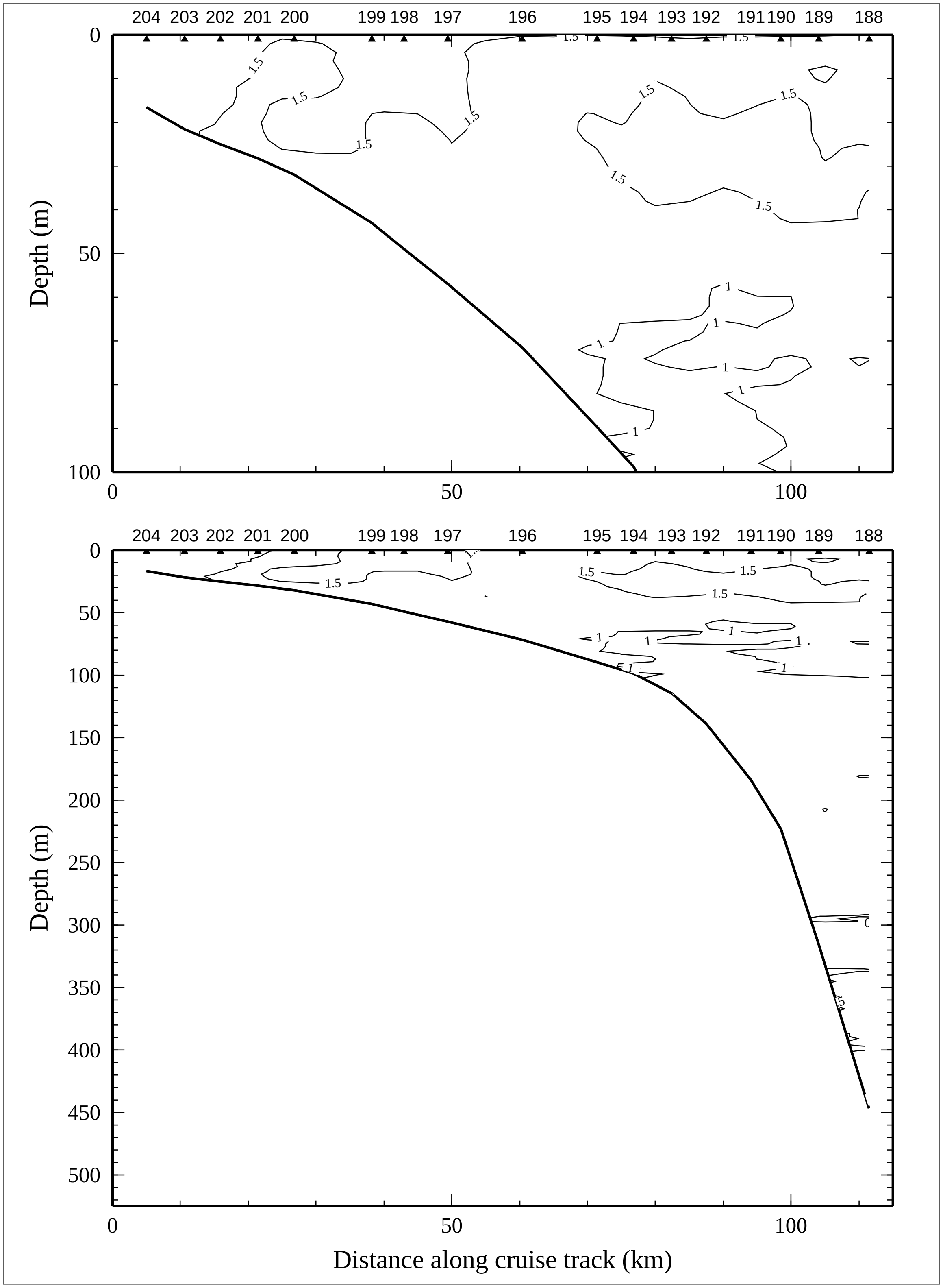

Figure 7.7.7. Relative fluorescence on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

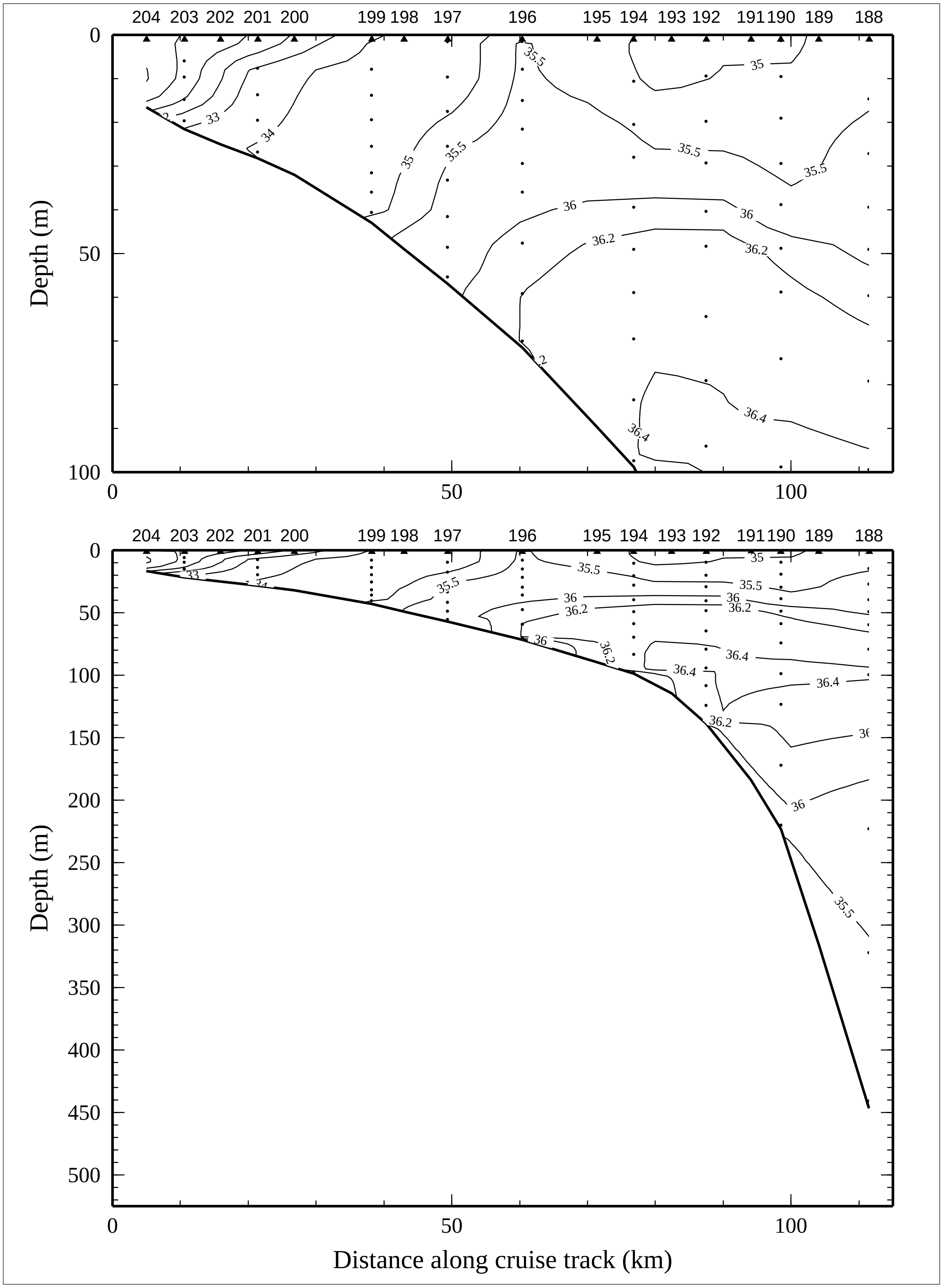

Figure 7.7.8. Bottle salinity on line 7 of LATEX A survey H07,
25 April - 11 May 1993.

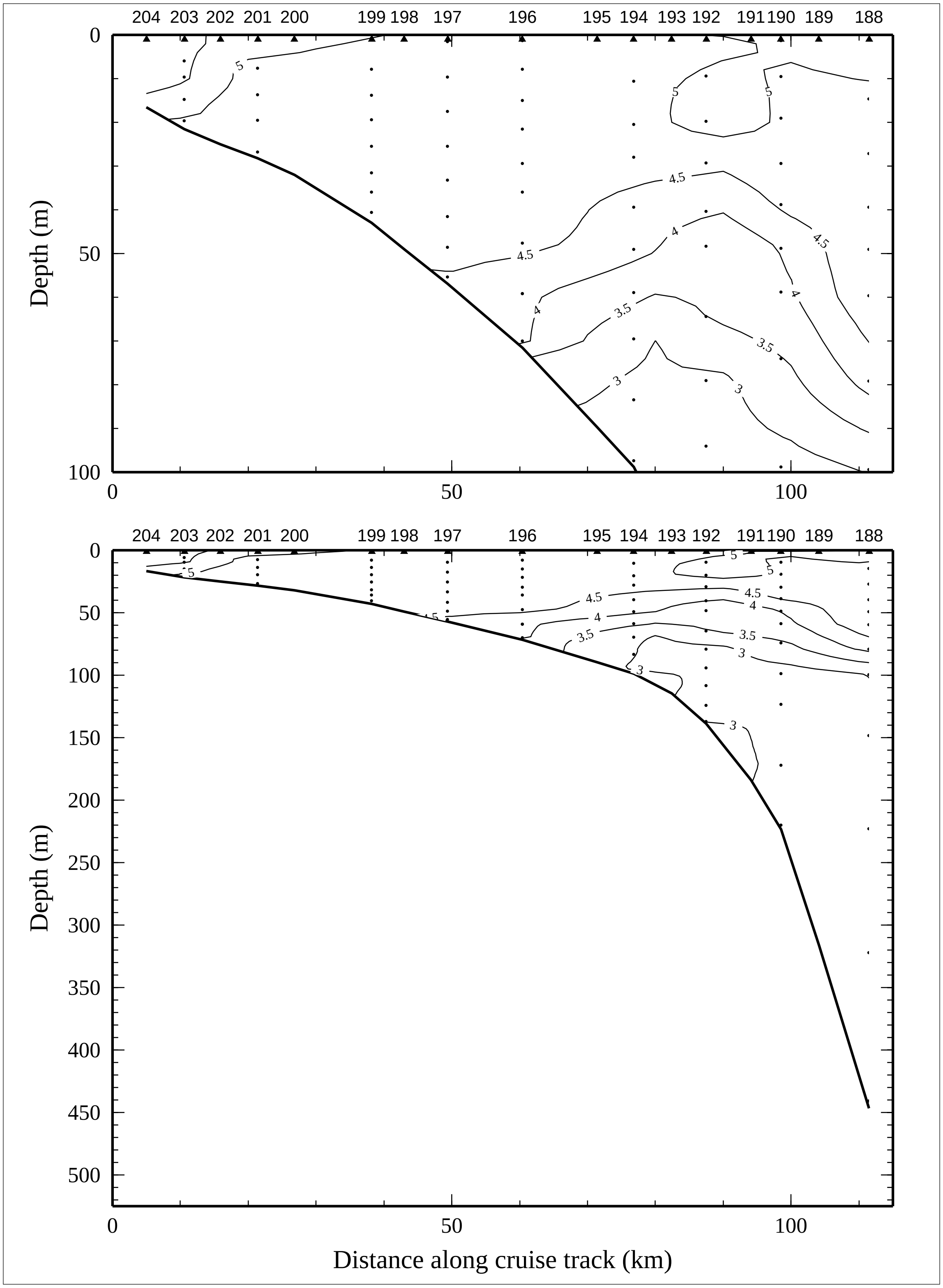

Figure 7.7.9. Dissolved oxygen (ml·l^{-1}) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

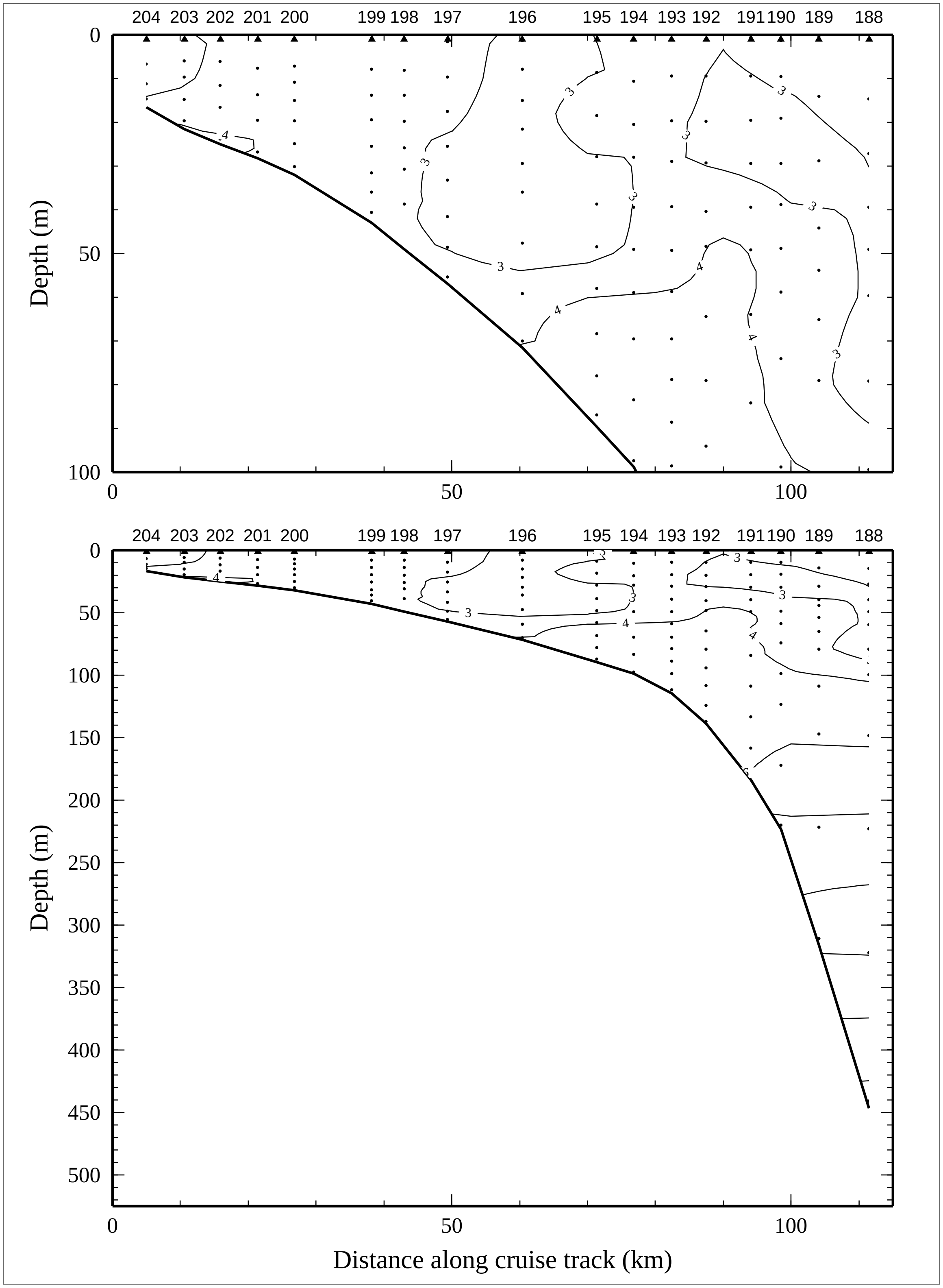

Figure 7.7.10. Silicate (μmol·l^{-1}) on line 7 of LATEX A survey H07,
25 April - 11 May 1993.

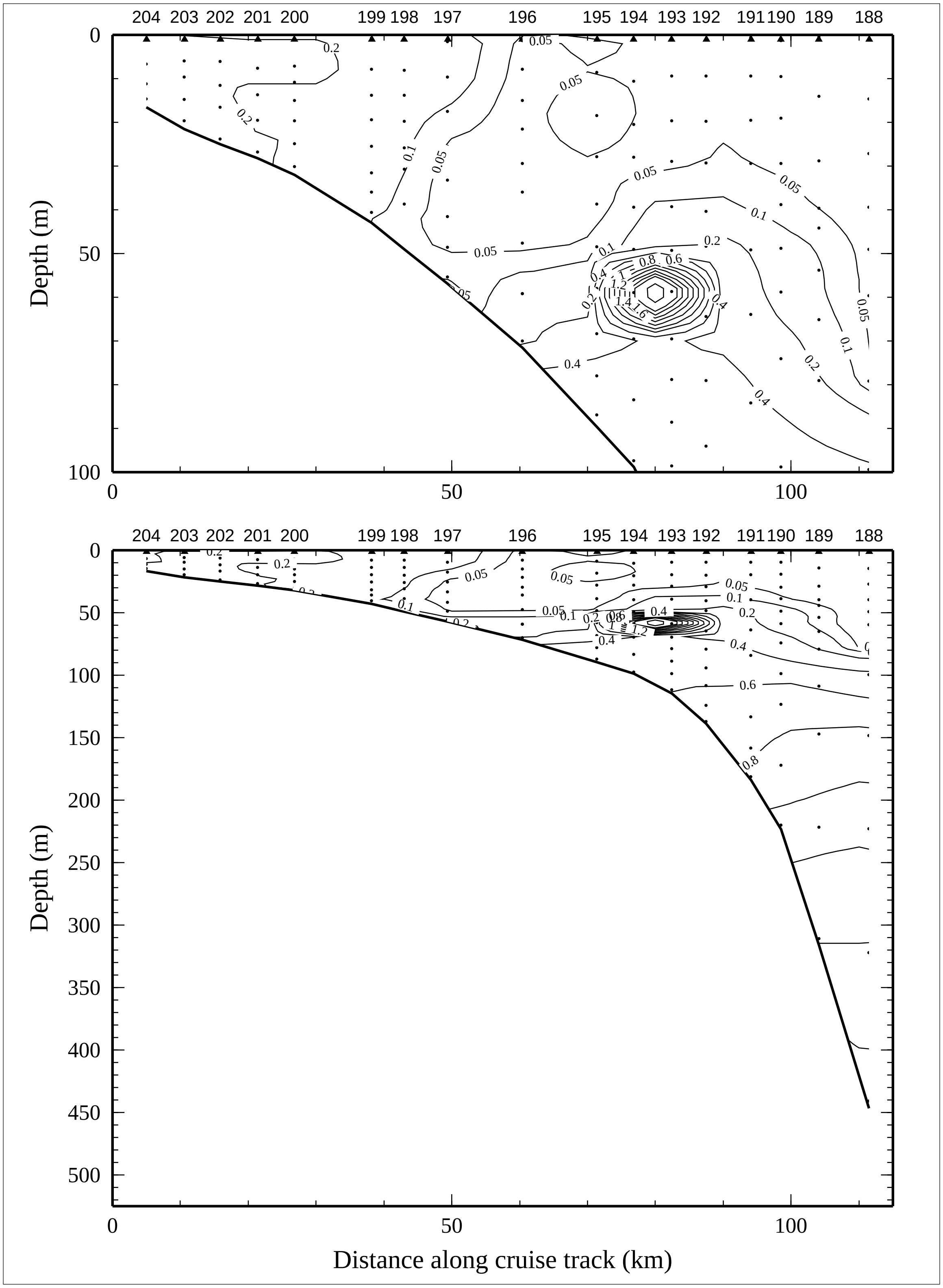

Figure 7.7.11. Phosphate (μmol·l^{-1}) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

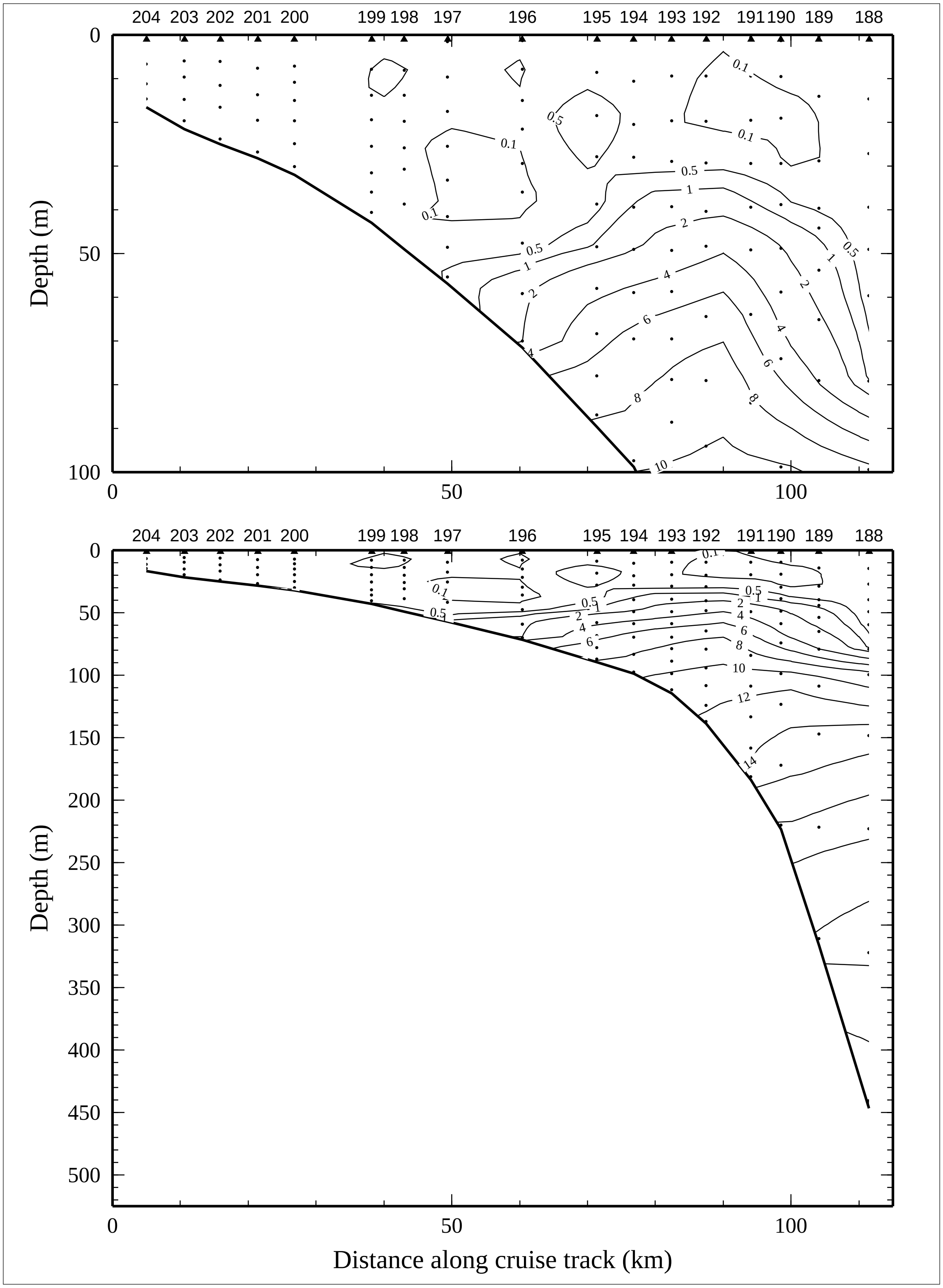

Figure 7.7.12. Nitrate (μmol·l⁻¹) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

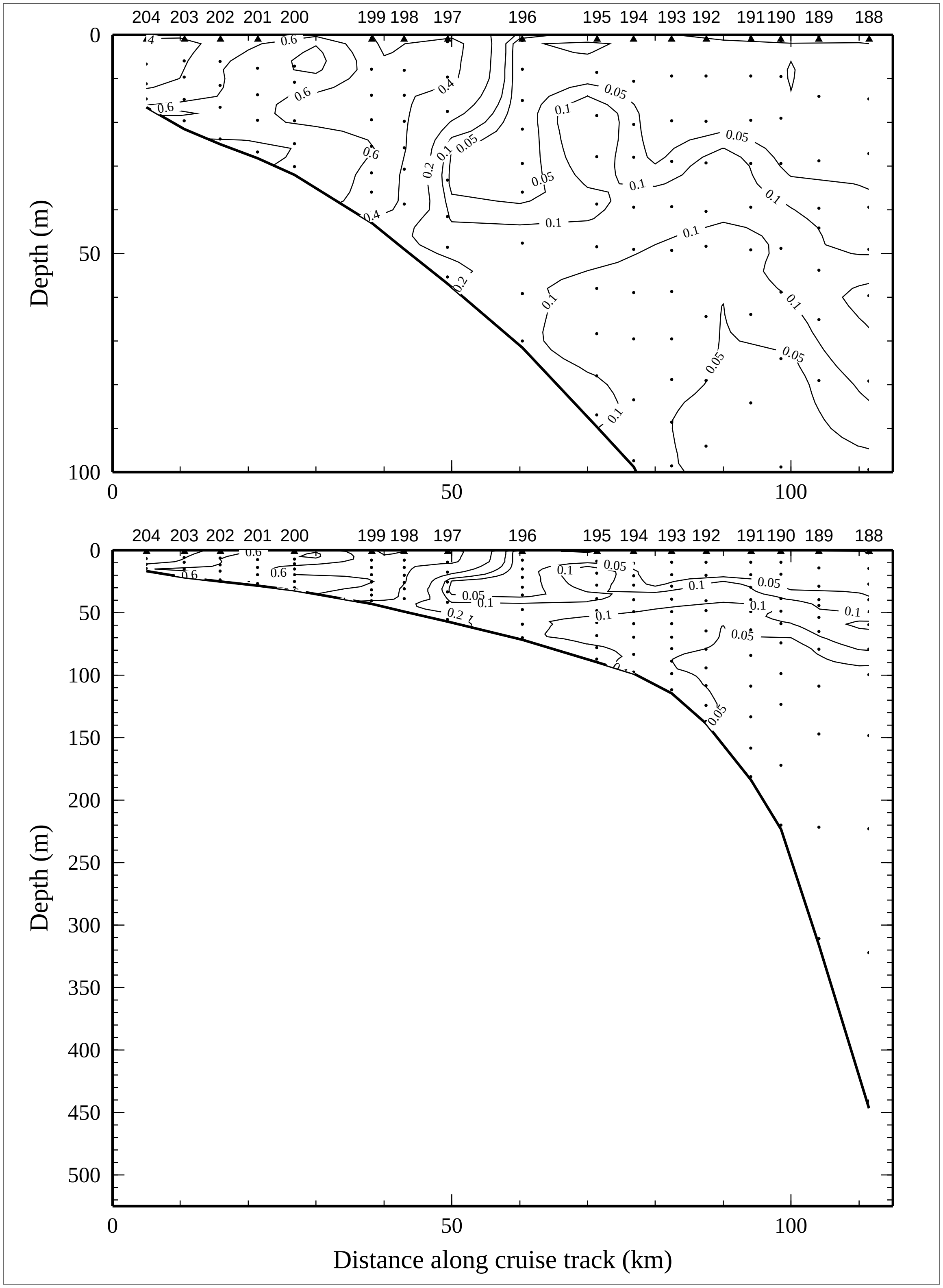

Figure 7.7.13. Nitrite ($\mu mol \cdot l^{-1}$) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

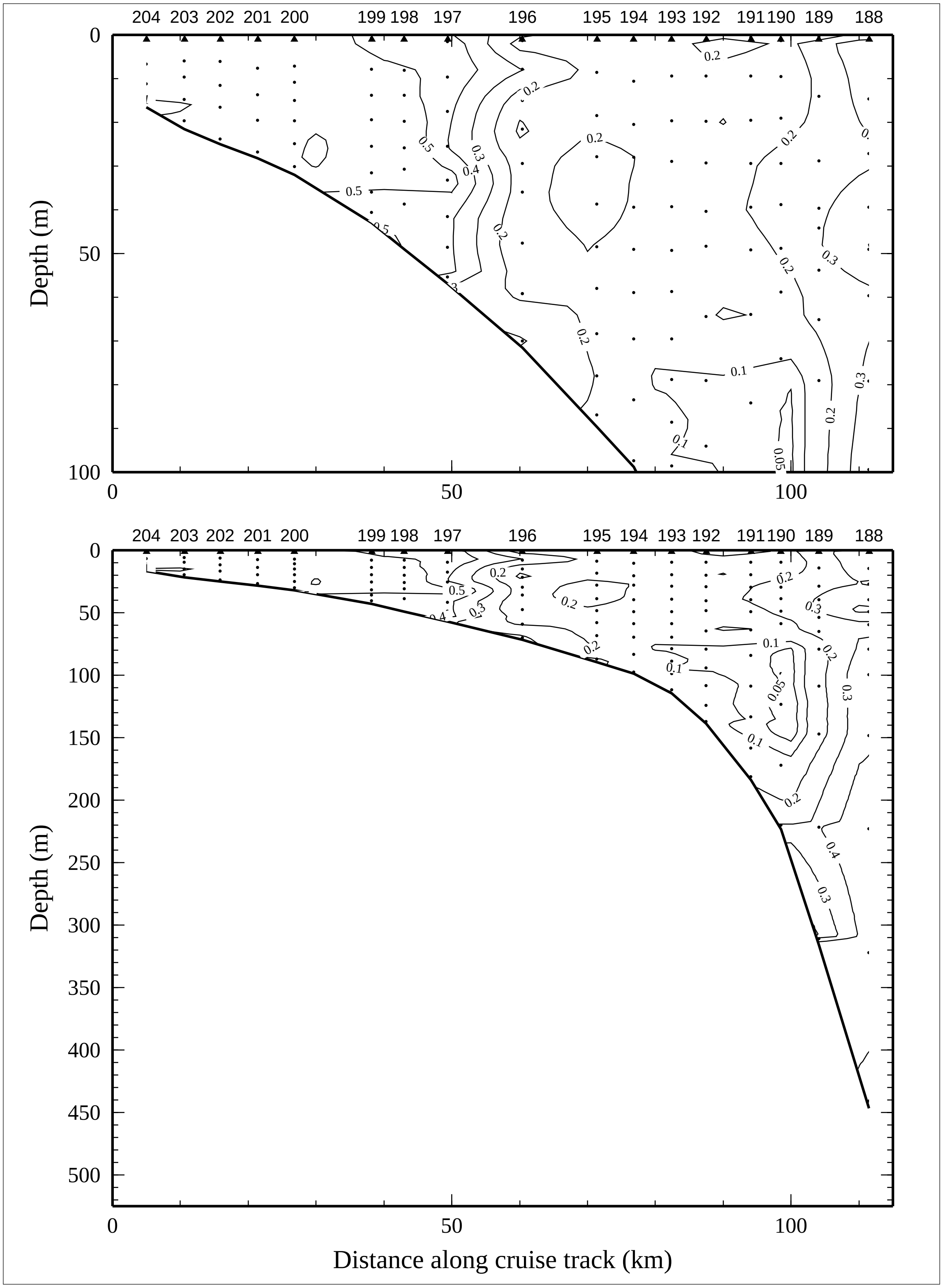

Figure 7.7.14. Ammonium (μmol·l^{-1}) on line 7 of LATEX A survey H07,
25 April - 11 May 1993.

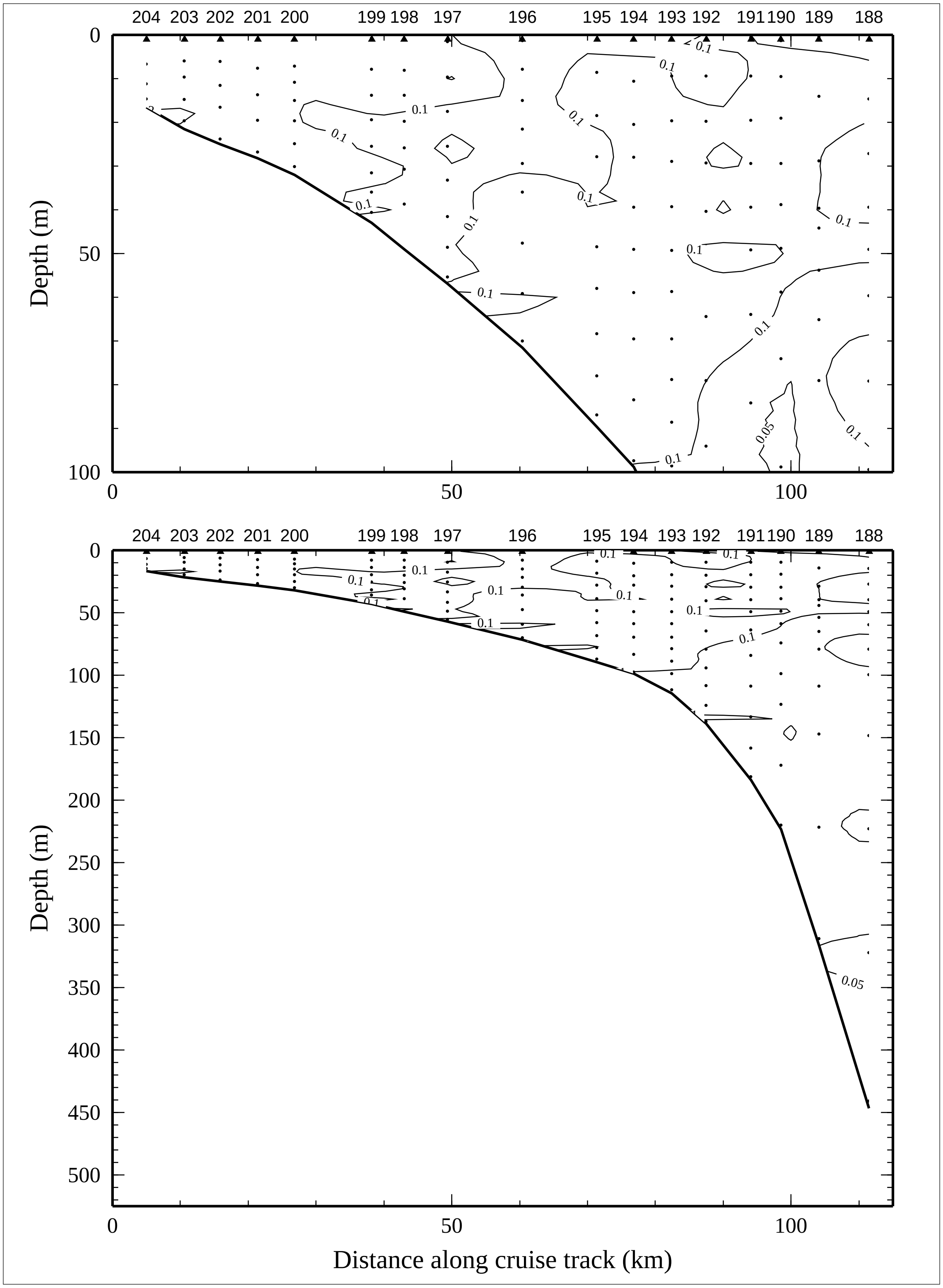

Figure 7.7.15. Urea (μmol·l^{-1}) on line 7 of LATEX A survey H07, 25 April - 11 May 1993.

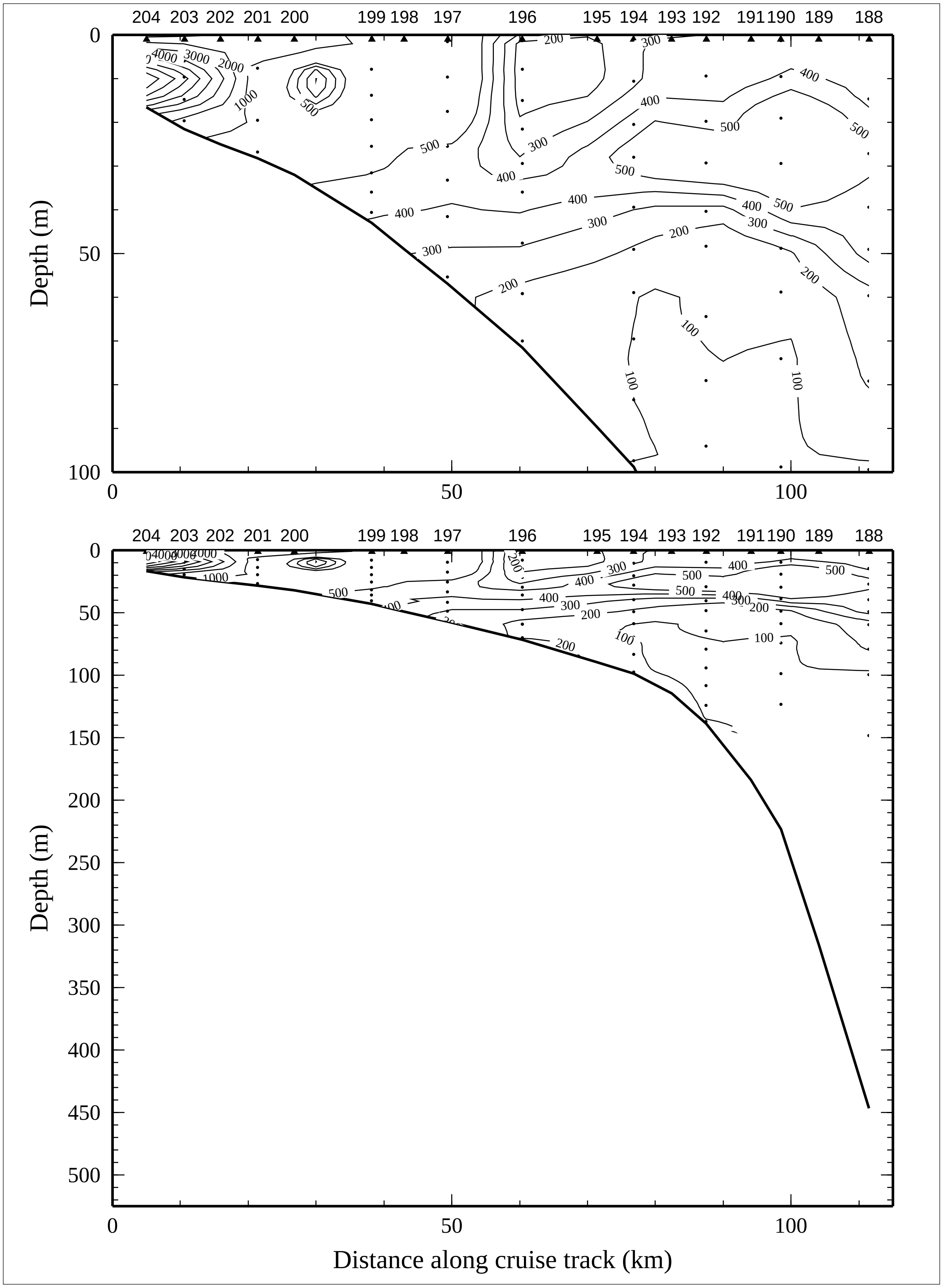

Figure 7.7.16. Chlorophyll a (ng·l^{-1}) on line 7 of LATEX A survey H07,
25 April - 11 May 1993.

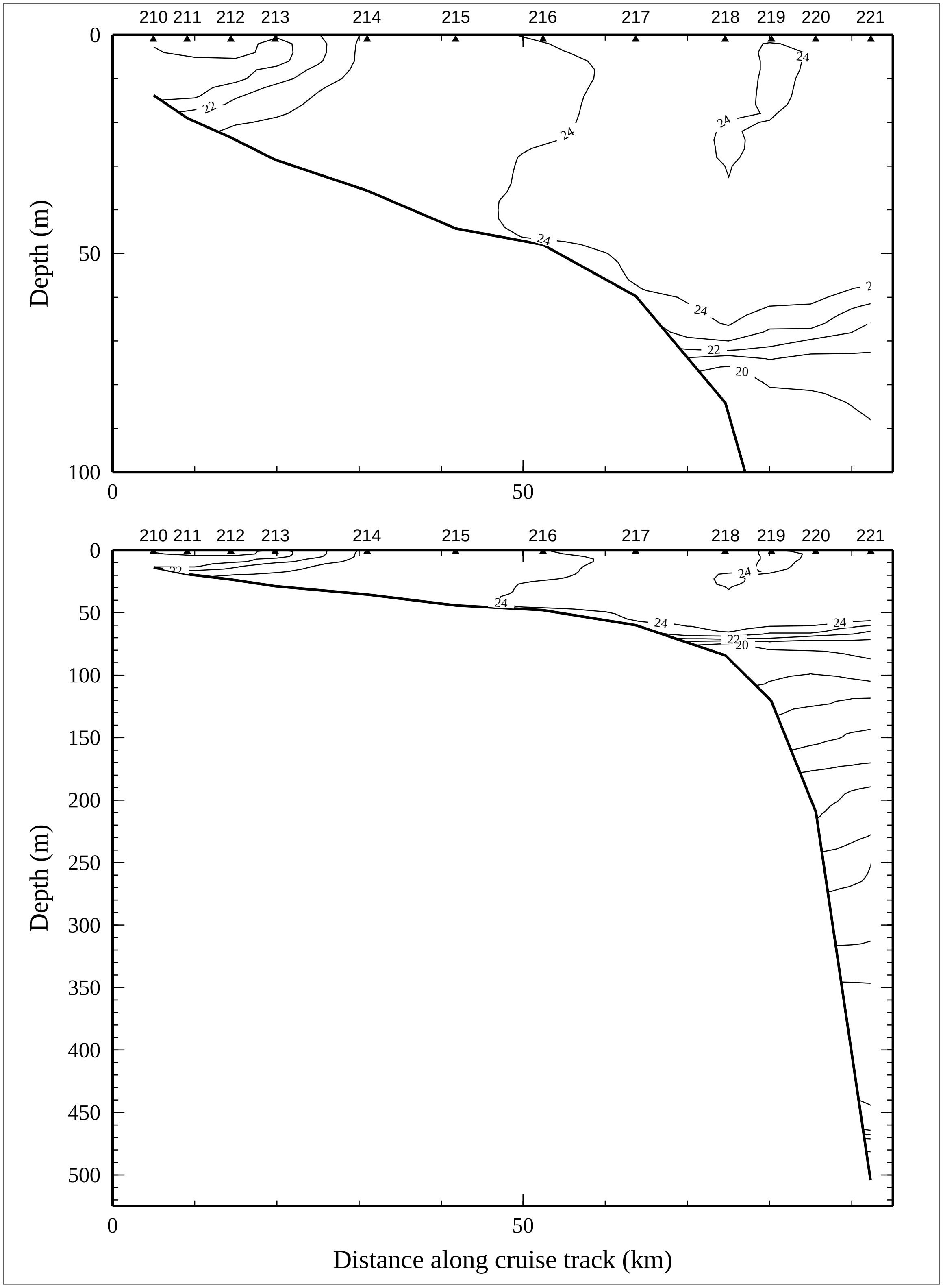

Figure 7.8.1. Potential temperature (˚C) on line 8 of LATEX A survey H07, 6-22 November 1993.

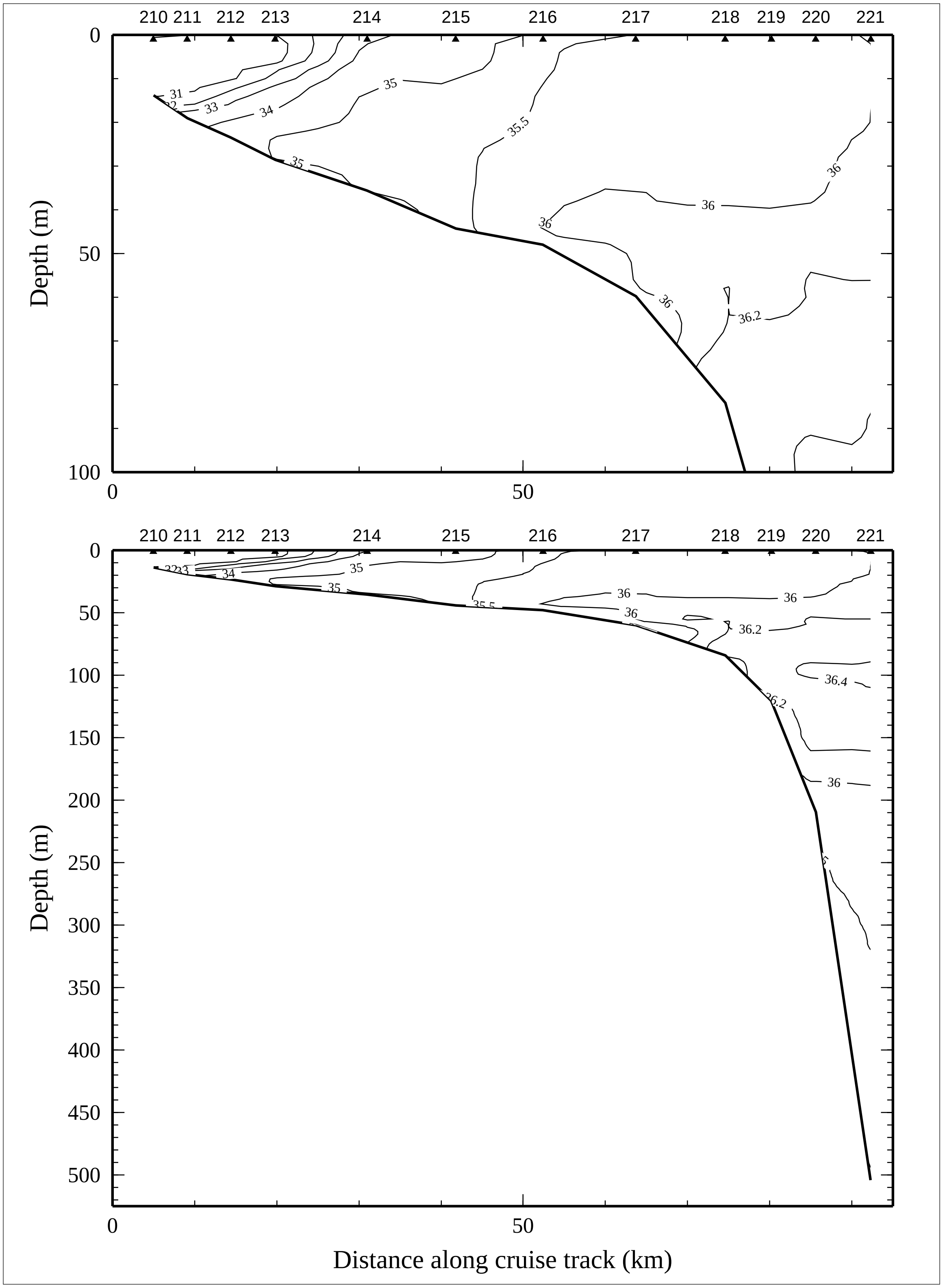

Figure 7.8.2. Salinity, derived from CTD data, on line 8 of LATEX A survey H07, 6-22 November 1993.

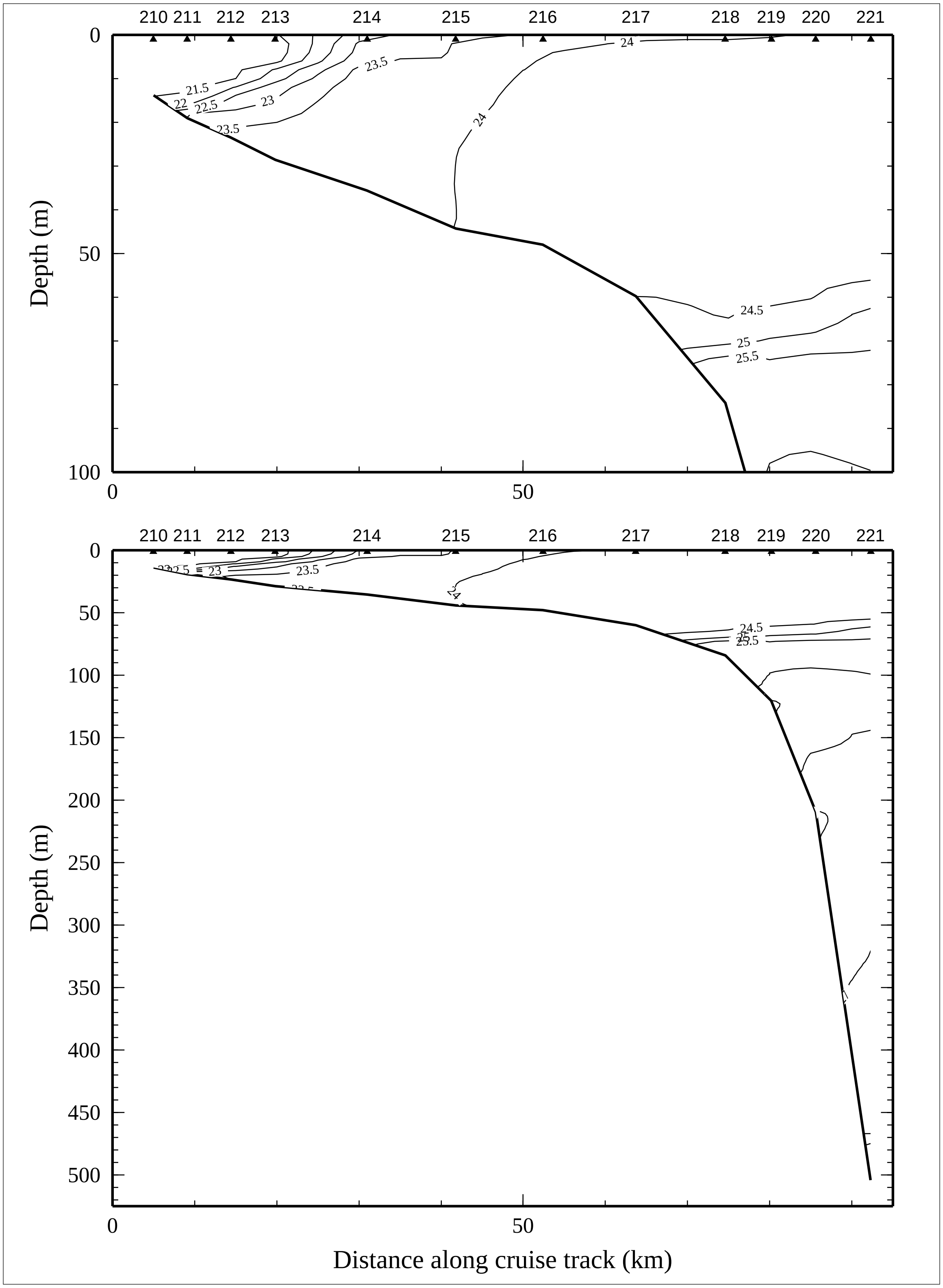

Figure 7.8.3. Density anomaly (σ_θ in kg·m^{-3}) on line 8 of LATEX A survey H07, 6-22 November 1993.

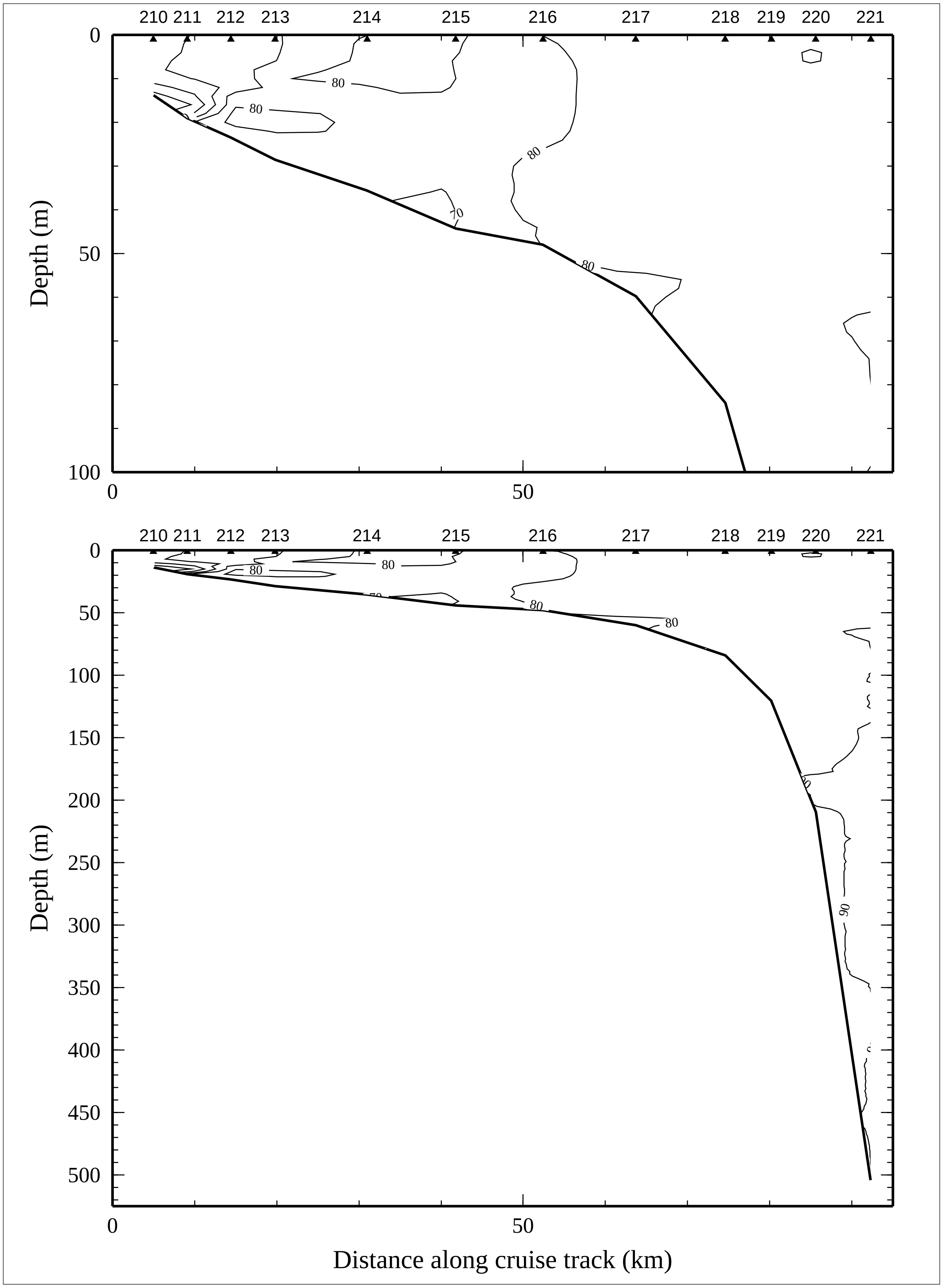

Figure 7.8.4. Percent transmission (660 nm wave length; 25-cm path length) on line 8 of LATEX A survey H07, 6-22 November 1993.

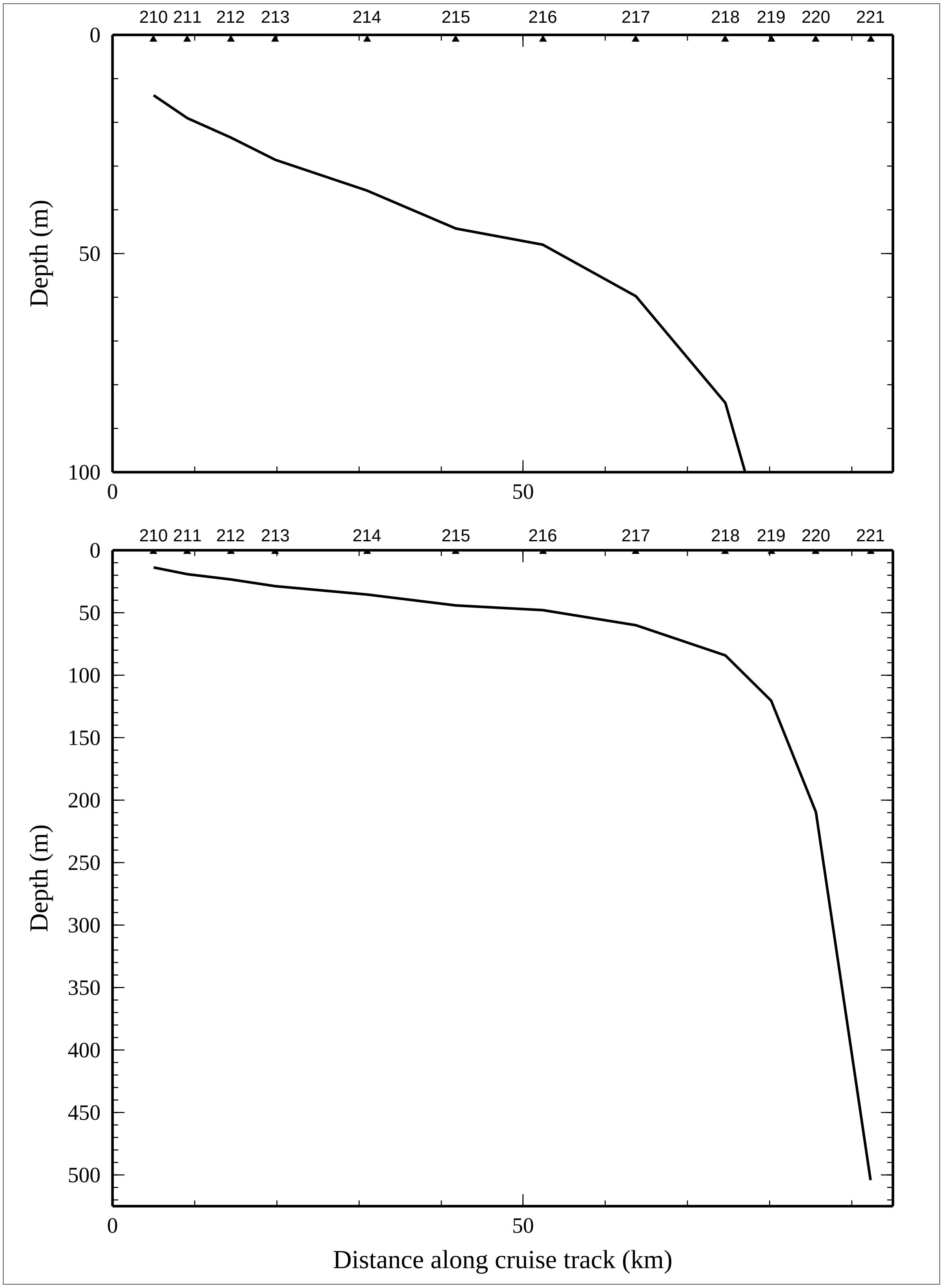

Figure 7.8.5. Optical backscatterance (voltage) on line 8 of LATEX A survey H07, 6-22 November 1993. Values less than 0.05.

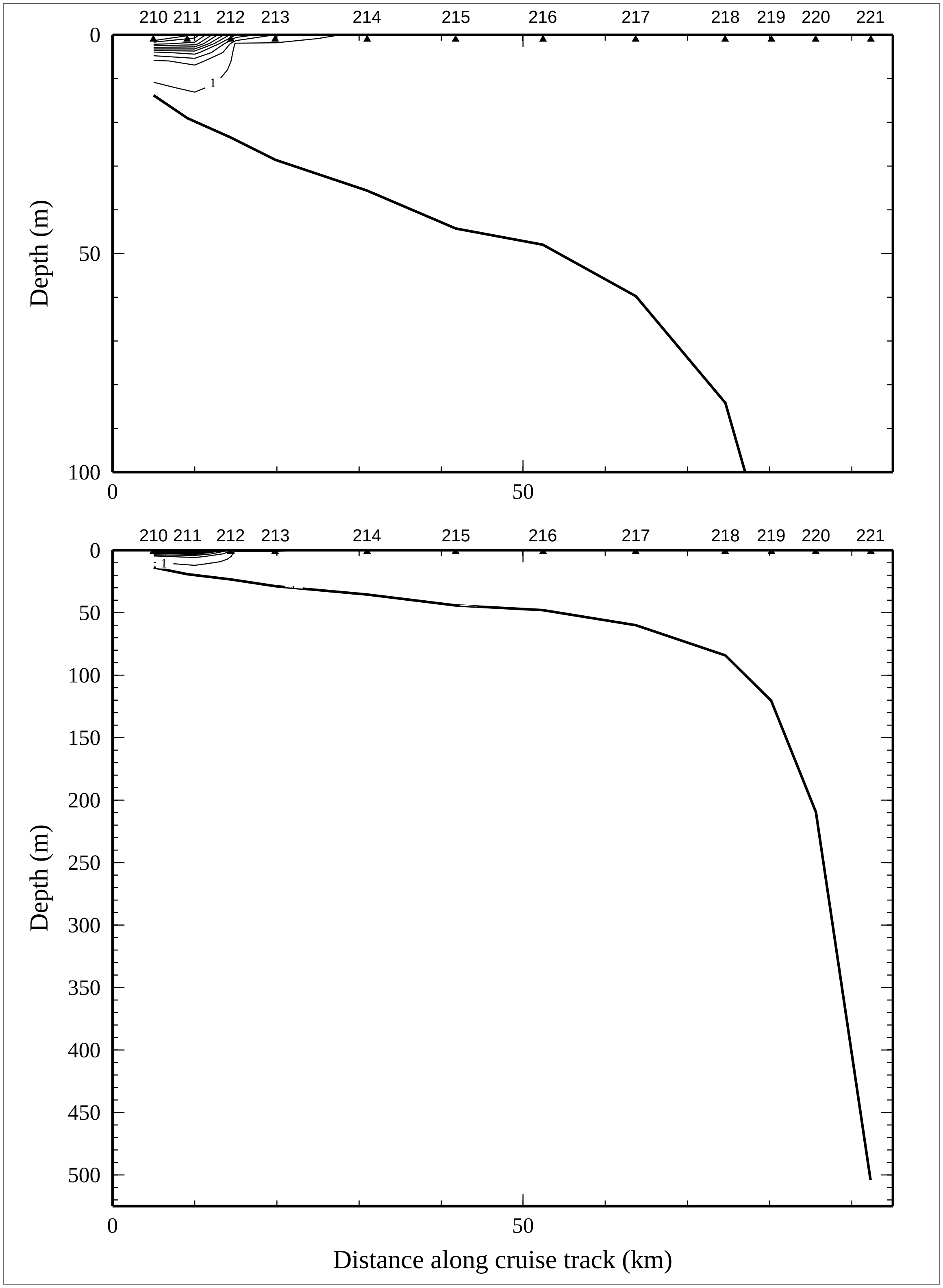

Figure 7.8.6. Downwelling irradiance as percent of surface irradiance on line 8 of LATEX A survey H07, 6-22 November 1993.

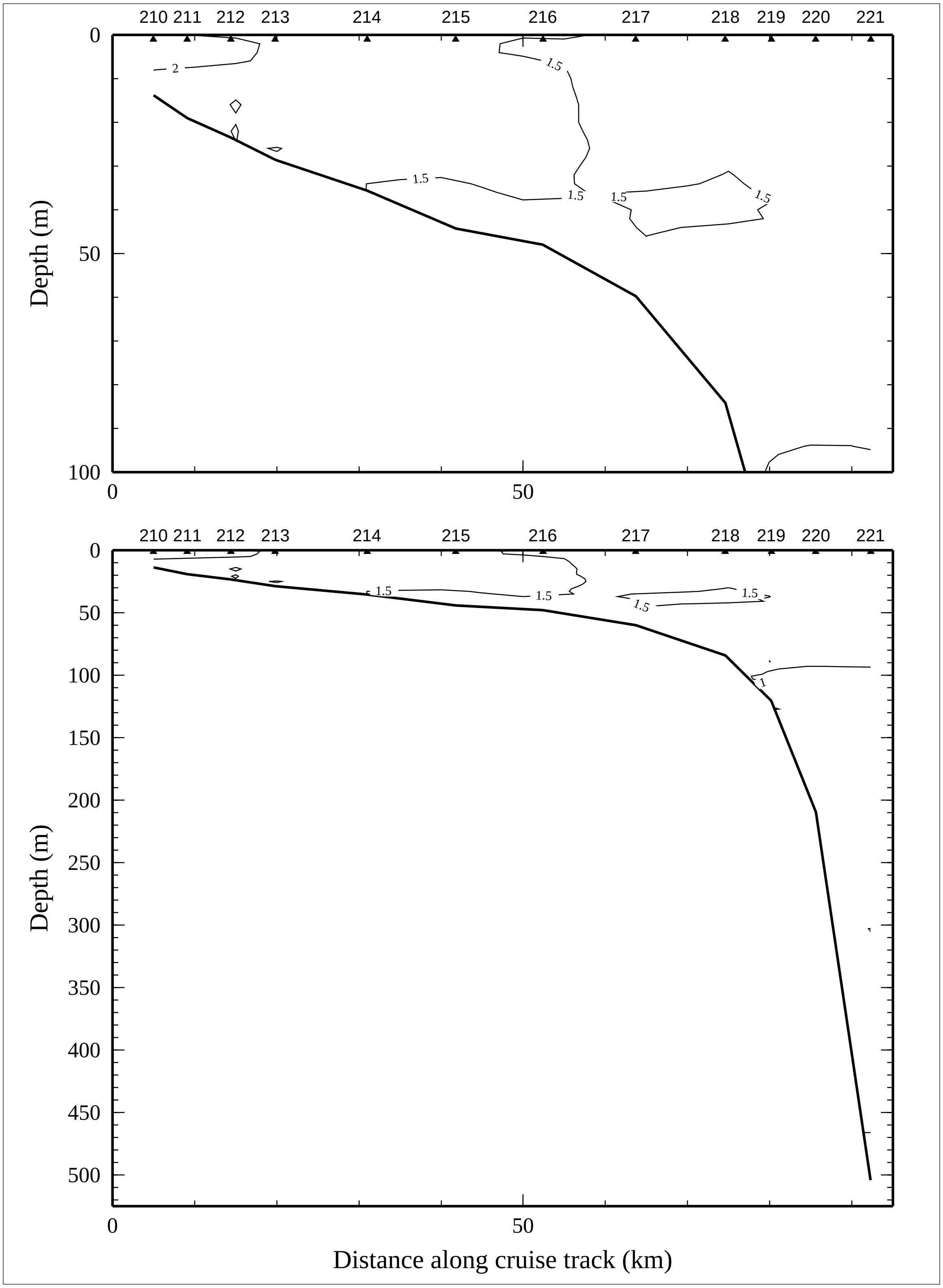

Figure 7.8.7. Relative fluorescence on line 8 of LATEX A survey H07, 6-22 November 1993.

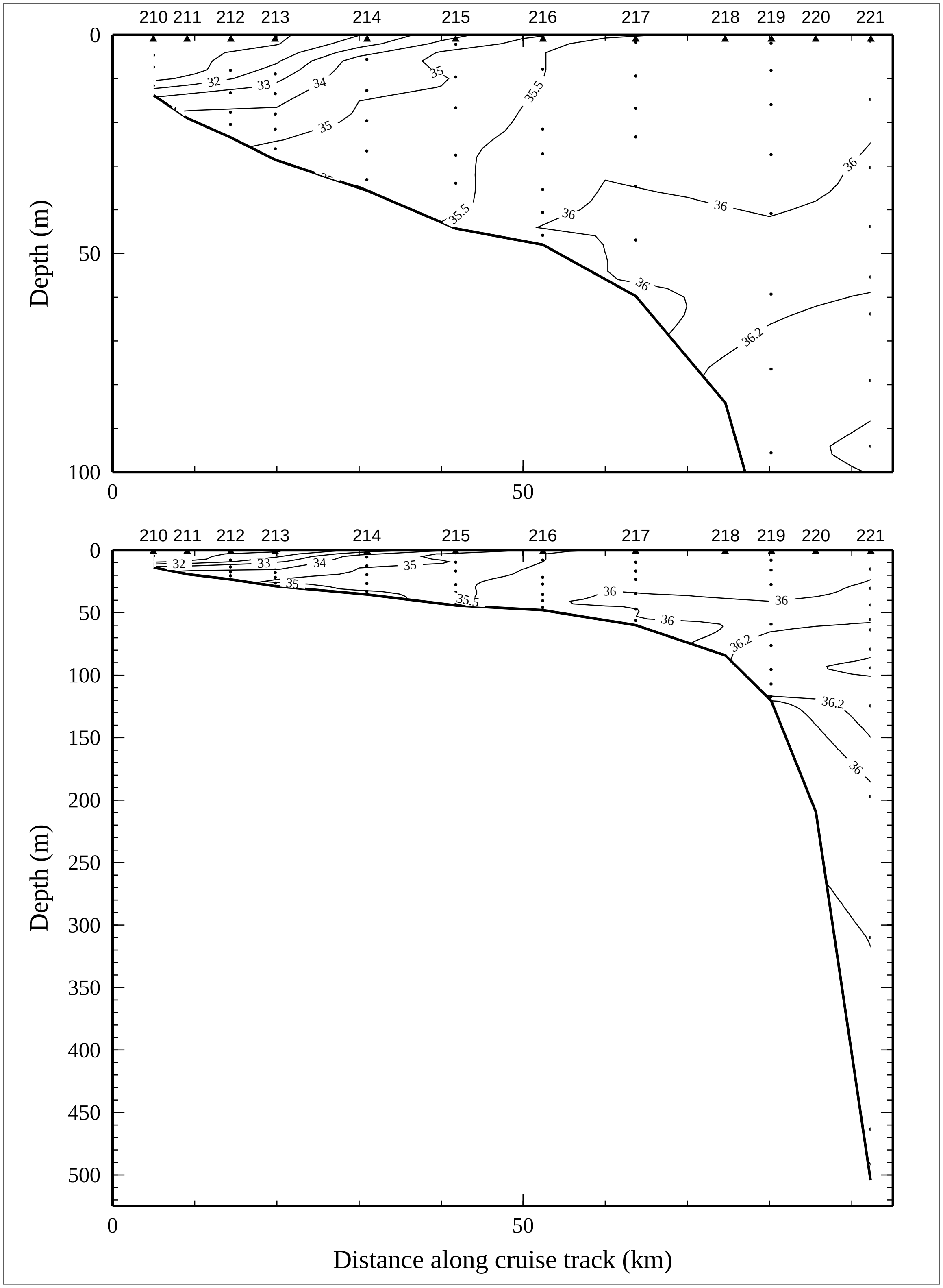

Figure 7.8.8. Bottle salinity on line 8 of LATEX A survey H07,
6-22 November 1993.

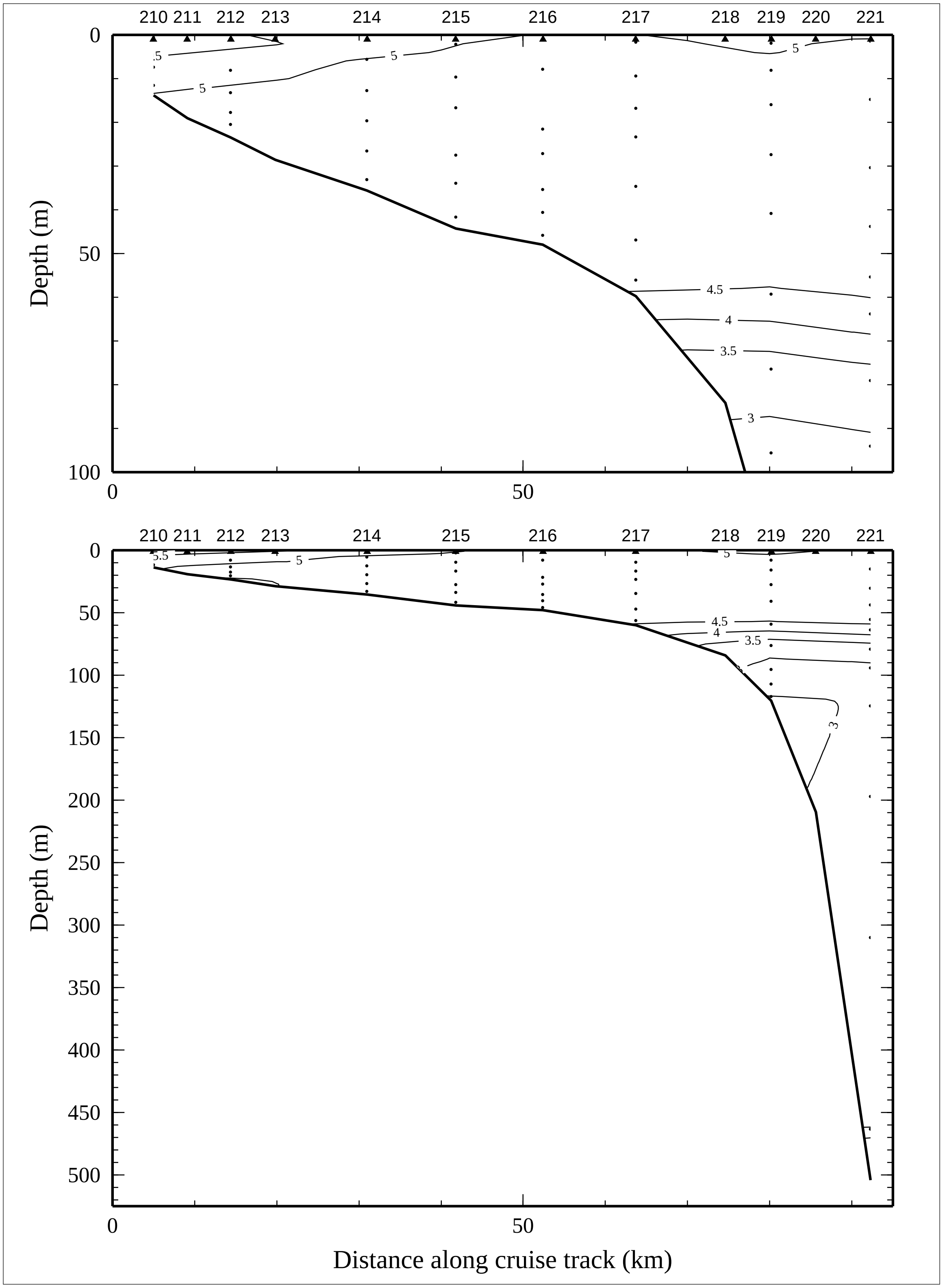

Figure 7.8.9. Dissolved oxygen (ml·l^{-1}) on line 8 of LATEX A survey H07, 6-22 November 1993.

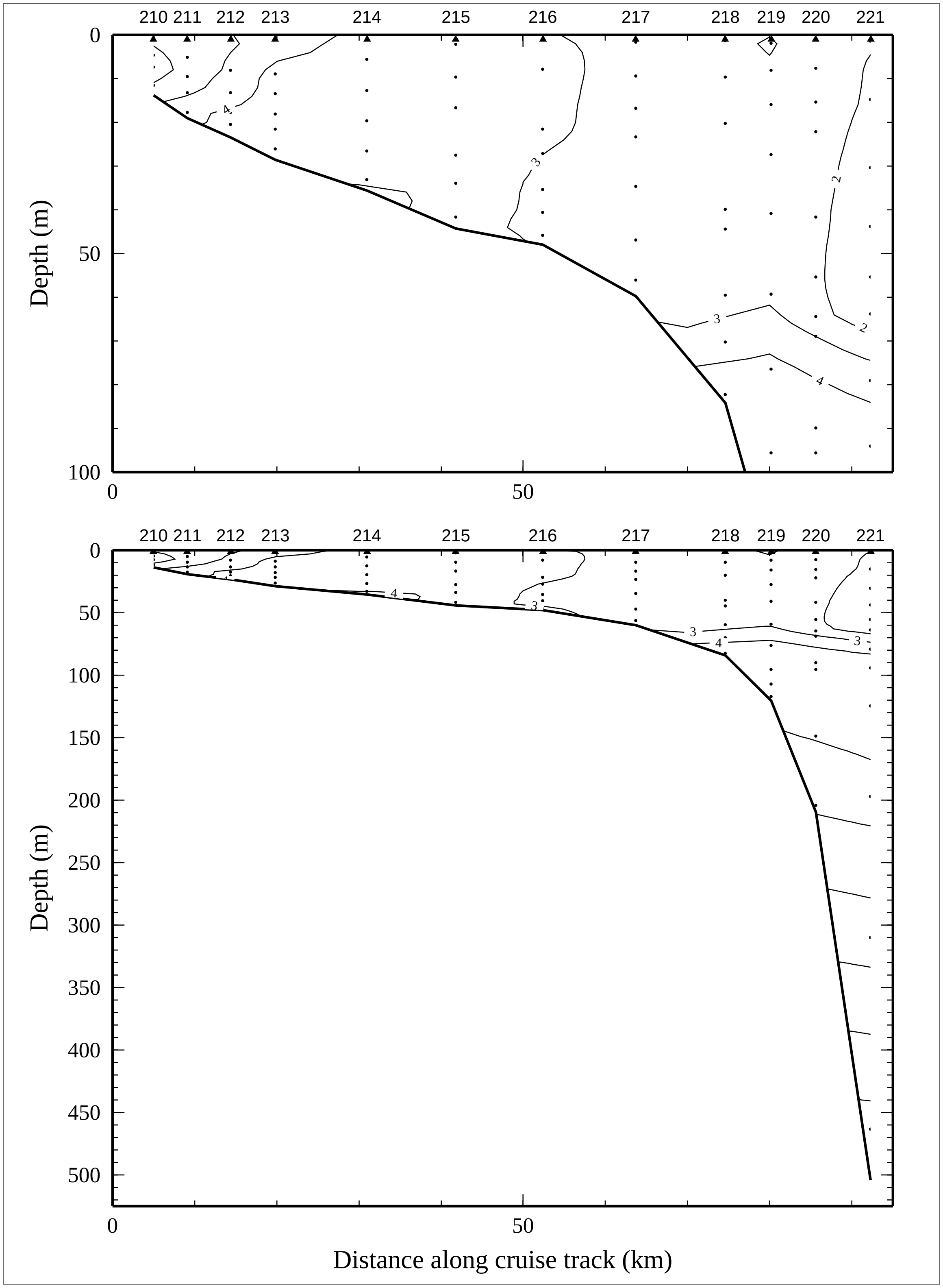

Figure 7.8.10. Silicate (μmol·l^{-1}) on line 8 of LATEX A survey H07,
6-22 November 1993.

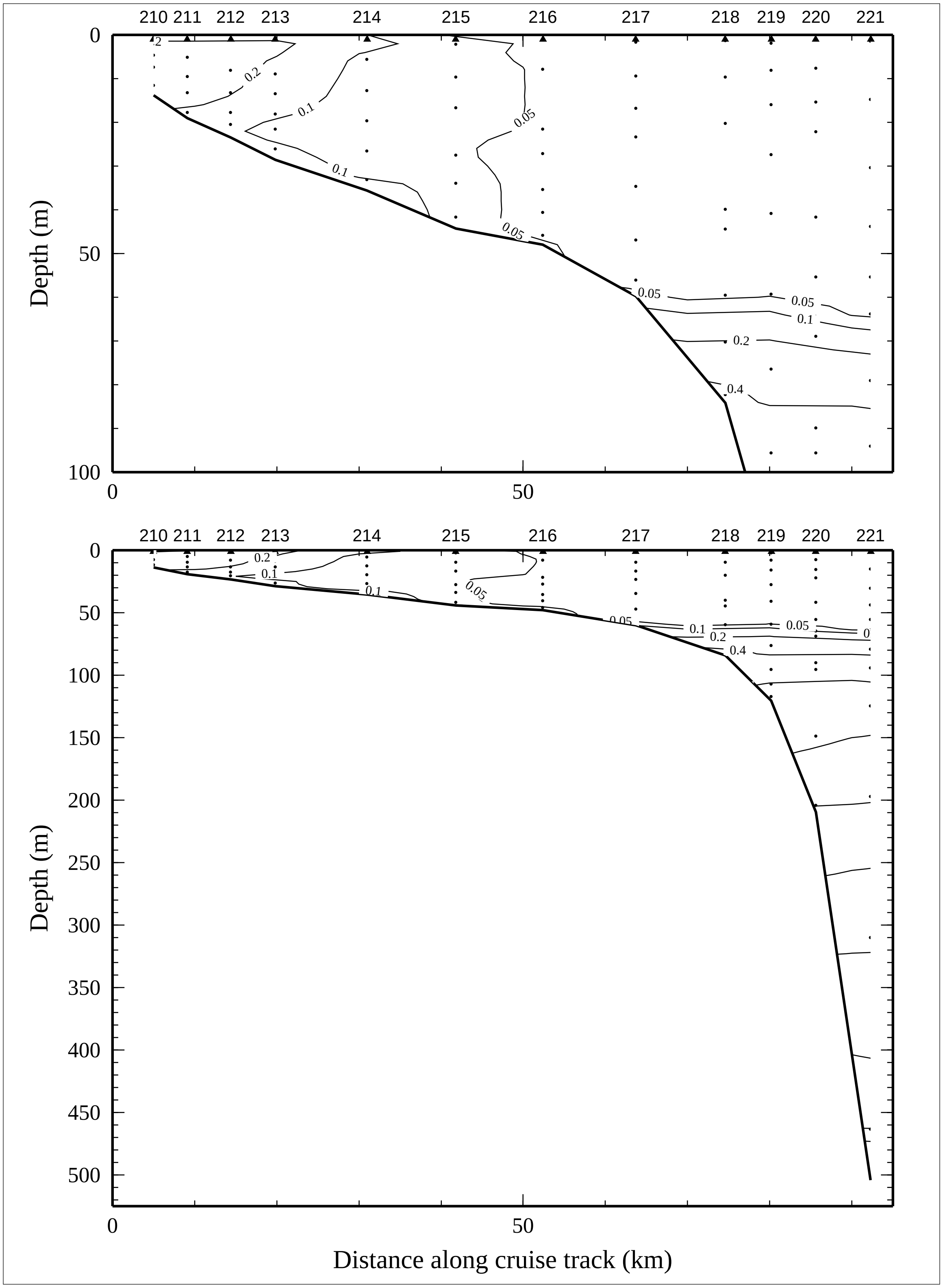

Figure 7.8.11. Phosphate (μmol·l⁻¹) on line 8 of LATEX A survey H07, 6-22 November 1993.

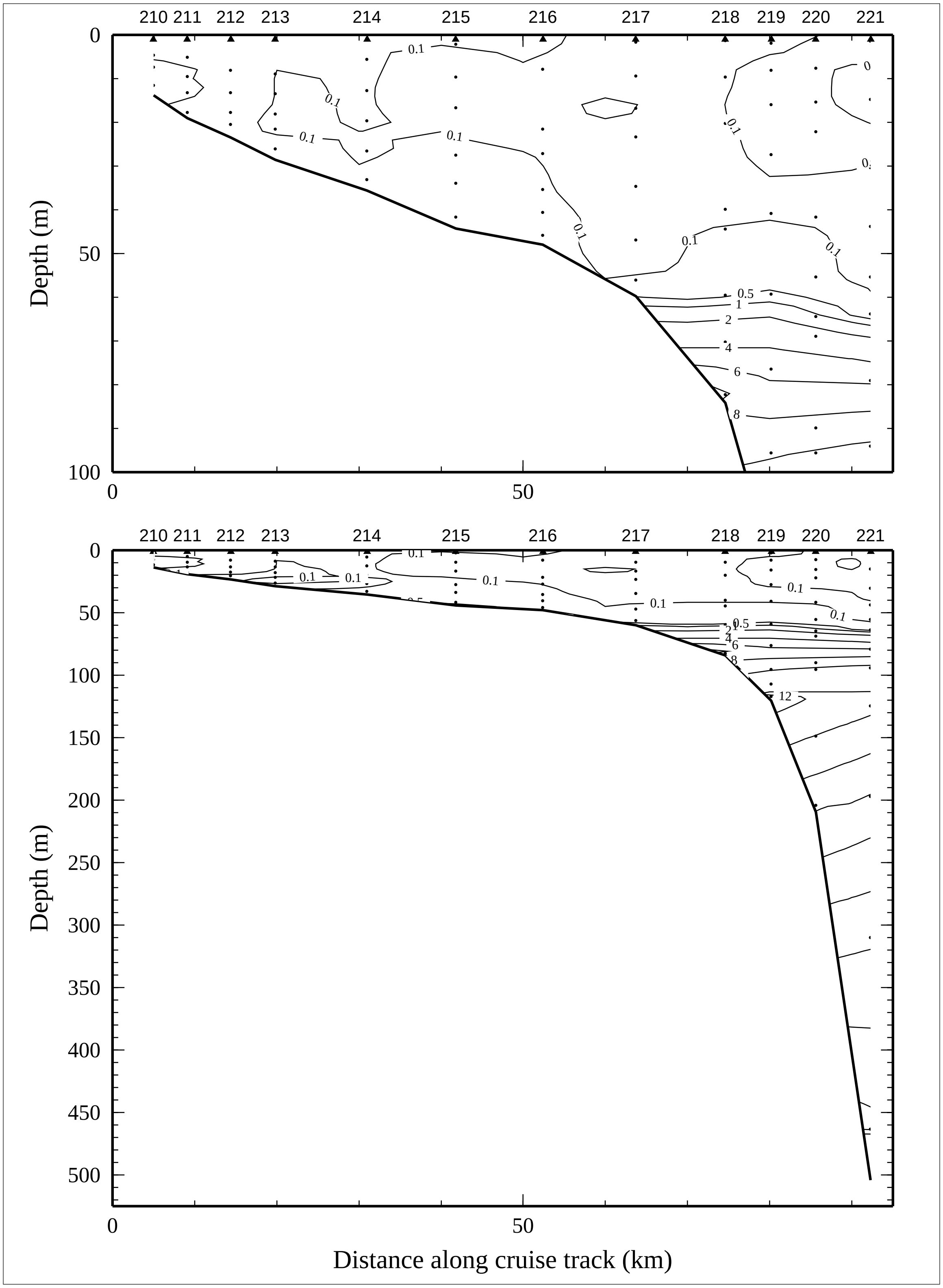

Figure 7.8.12. Nitrate (μmol·l-1) on line 8 of LATEX A survey H07, 6-22 November 1993.

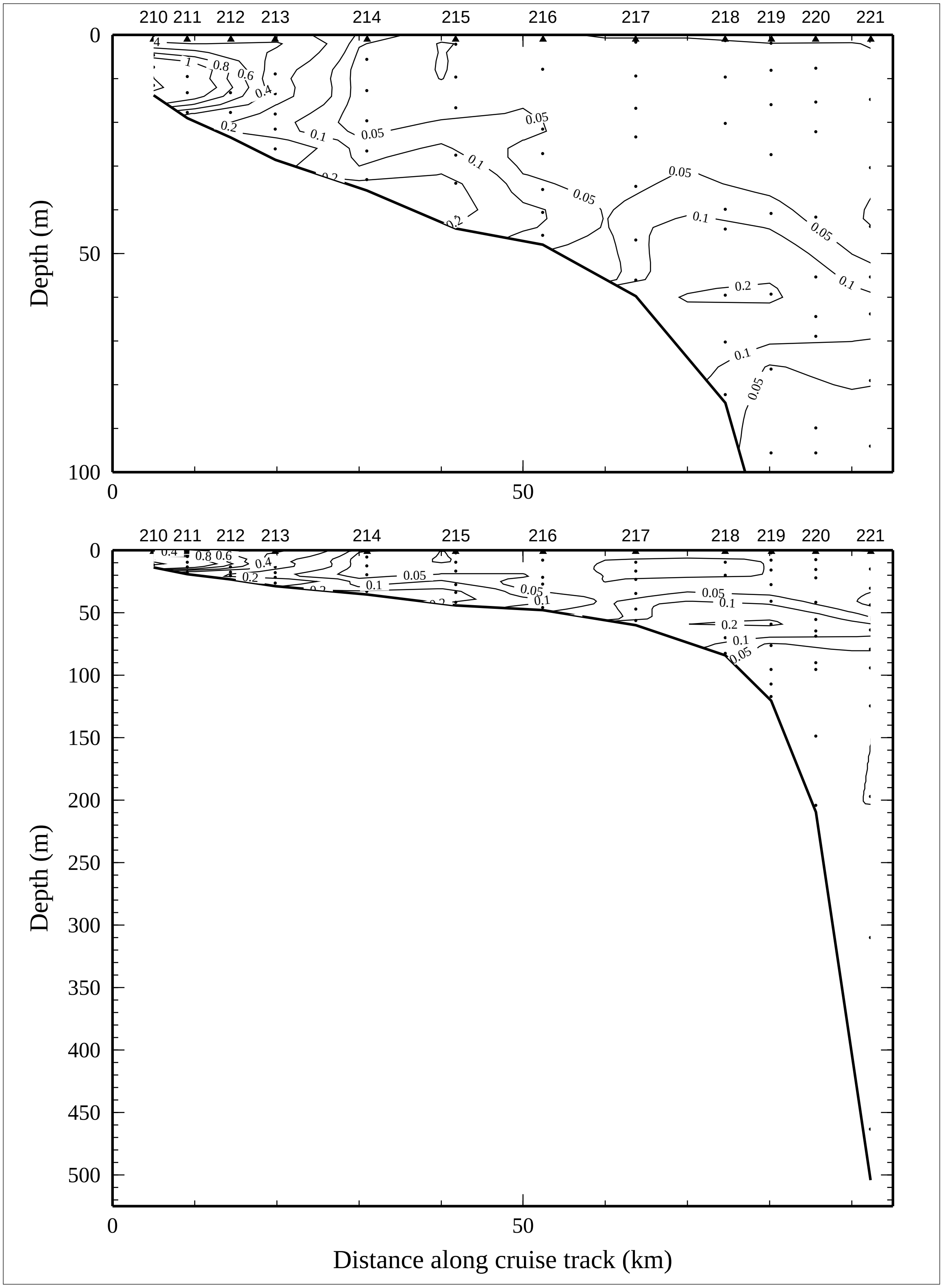

Figure 7.8.13. Nitrite (μmol·l-1) on line 8 of LATEX A survey H07, 6-22 November 1993.

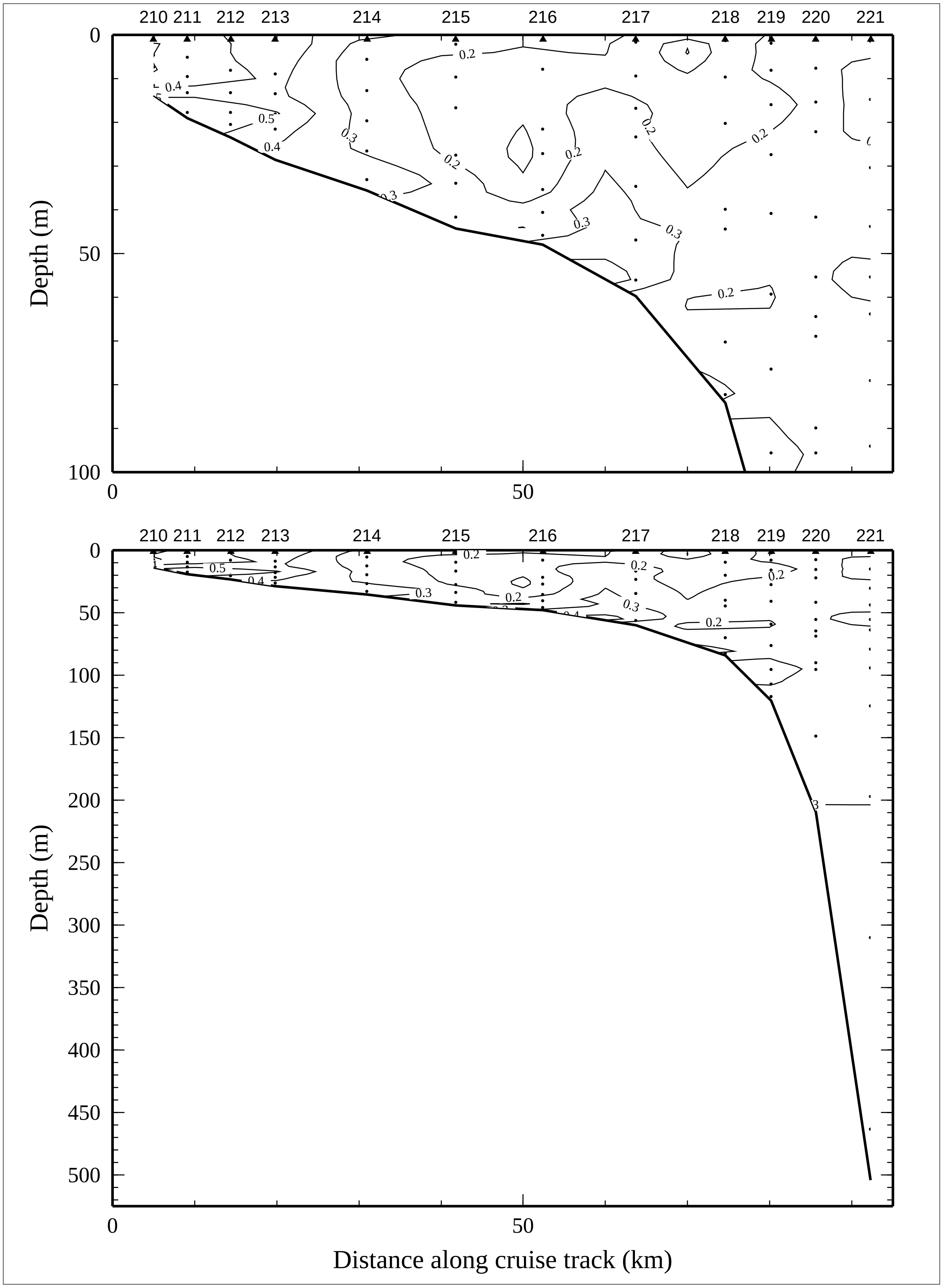

Figure 7.8.14. Ammonium (μmol·l⁻¹) on line 8 of LATEX A survey H07, 6-22 November 1993.

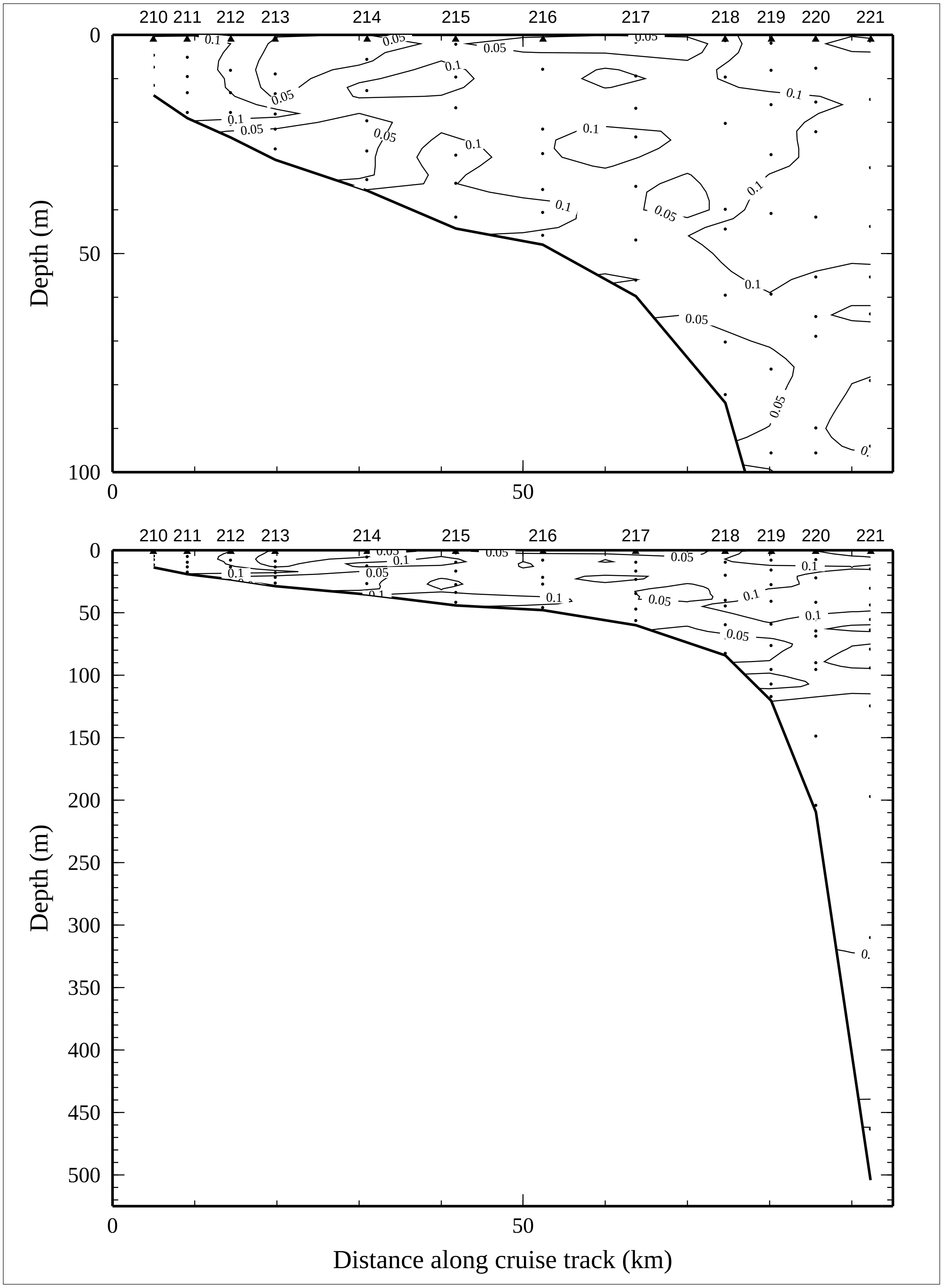

Figure 7.8.15. Urea (µmol·l-1) on line 8 of LATEX A survey H07, 6-22 November 1993.

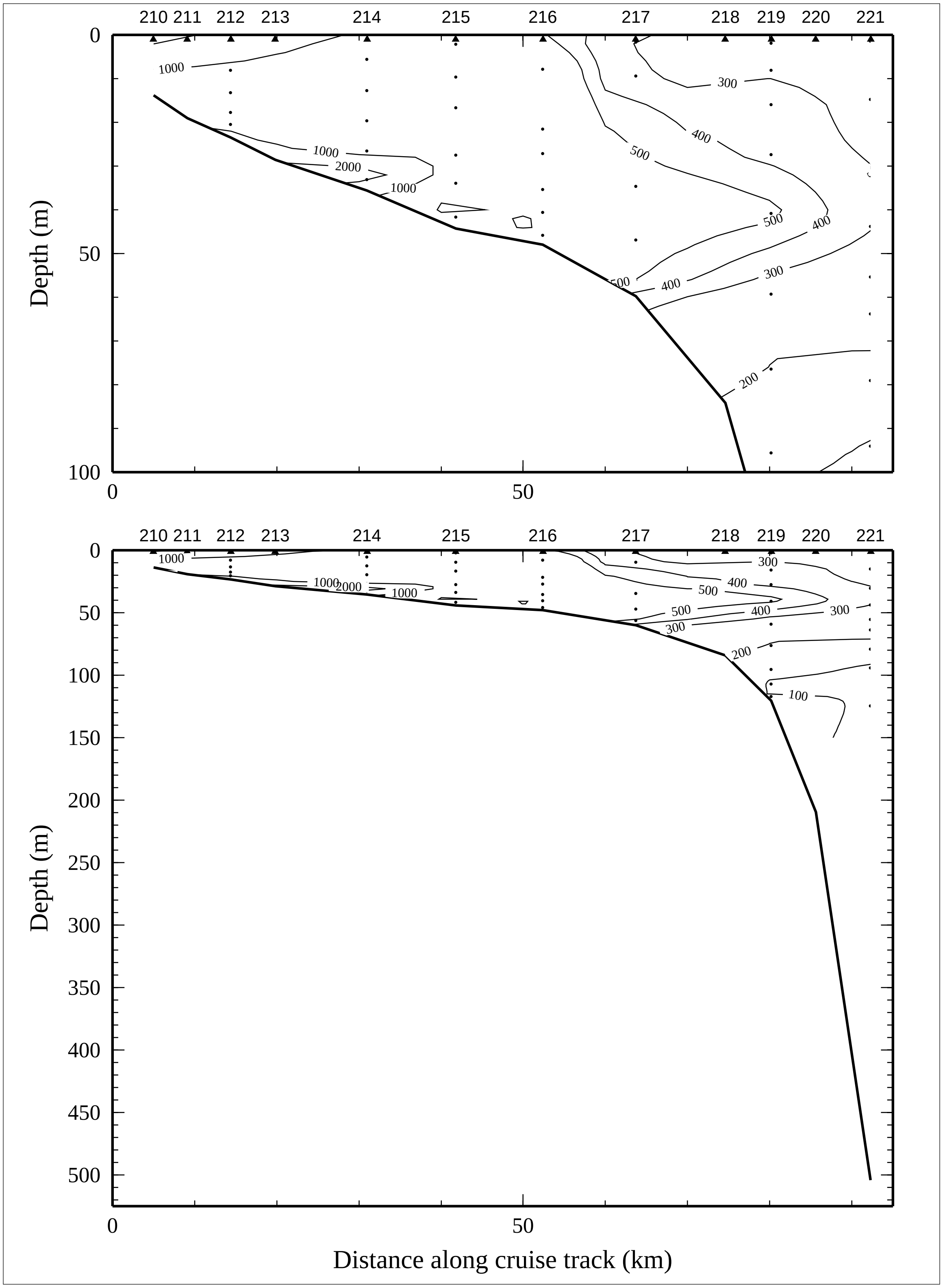

Figure 7.8.16. Chlorophyll a (ng·l-1) on line 8 of LATEX A survey H07, 6-22 November 1993.

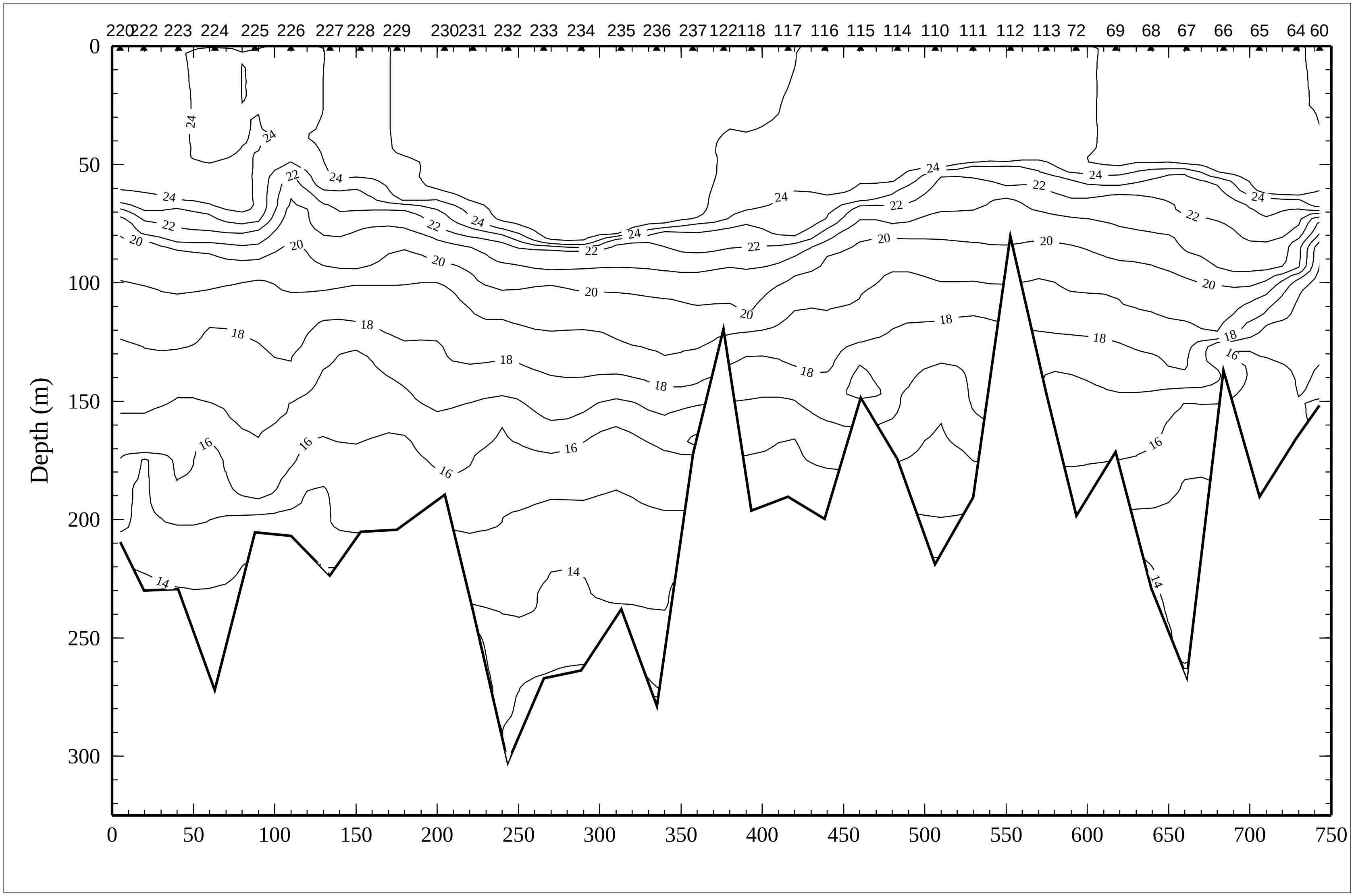

Figure 7.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H07, 6-22 November 1993.

G140

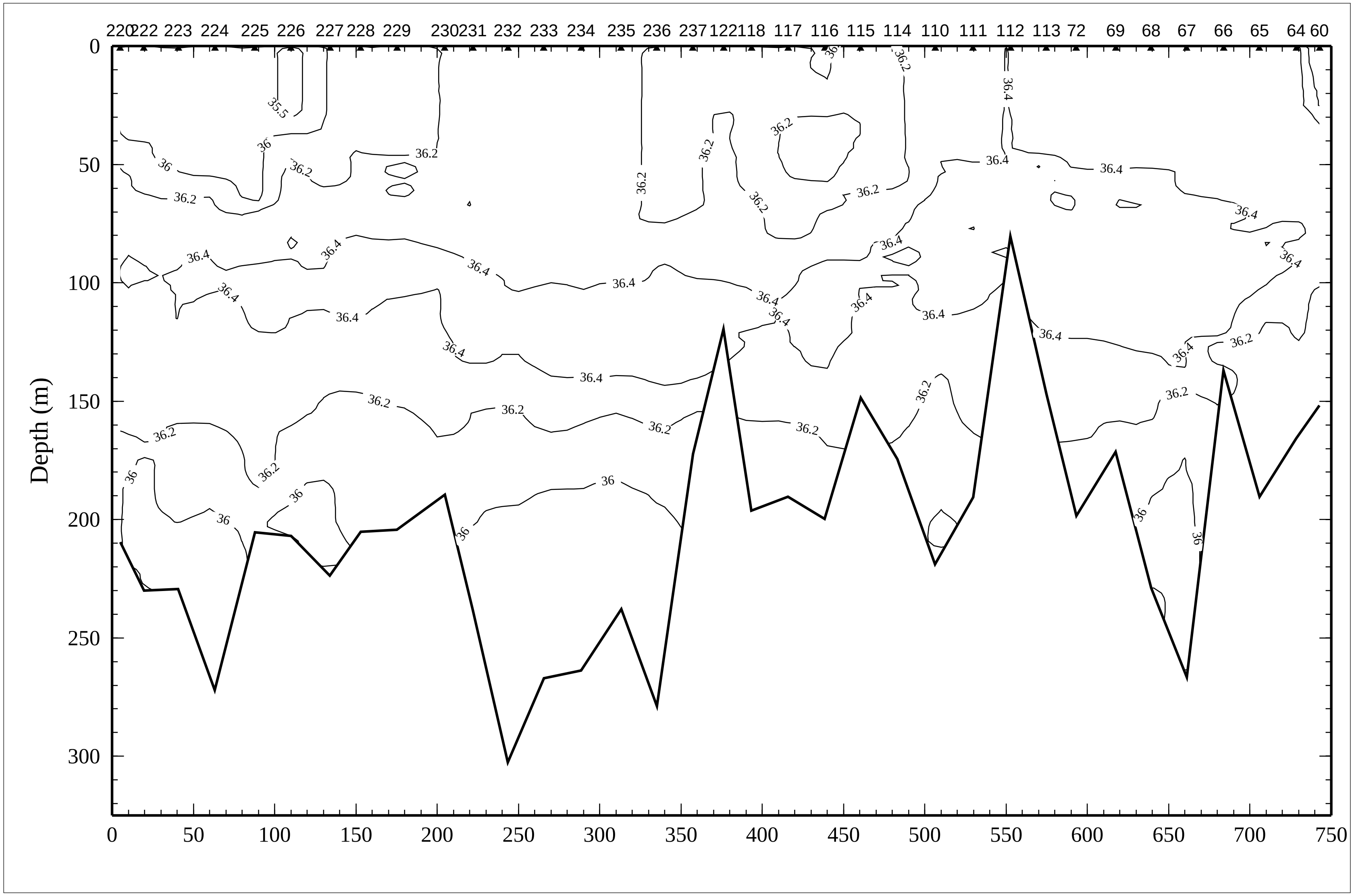

Figure 7.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H07, 6-22 November 1993.

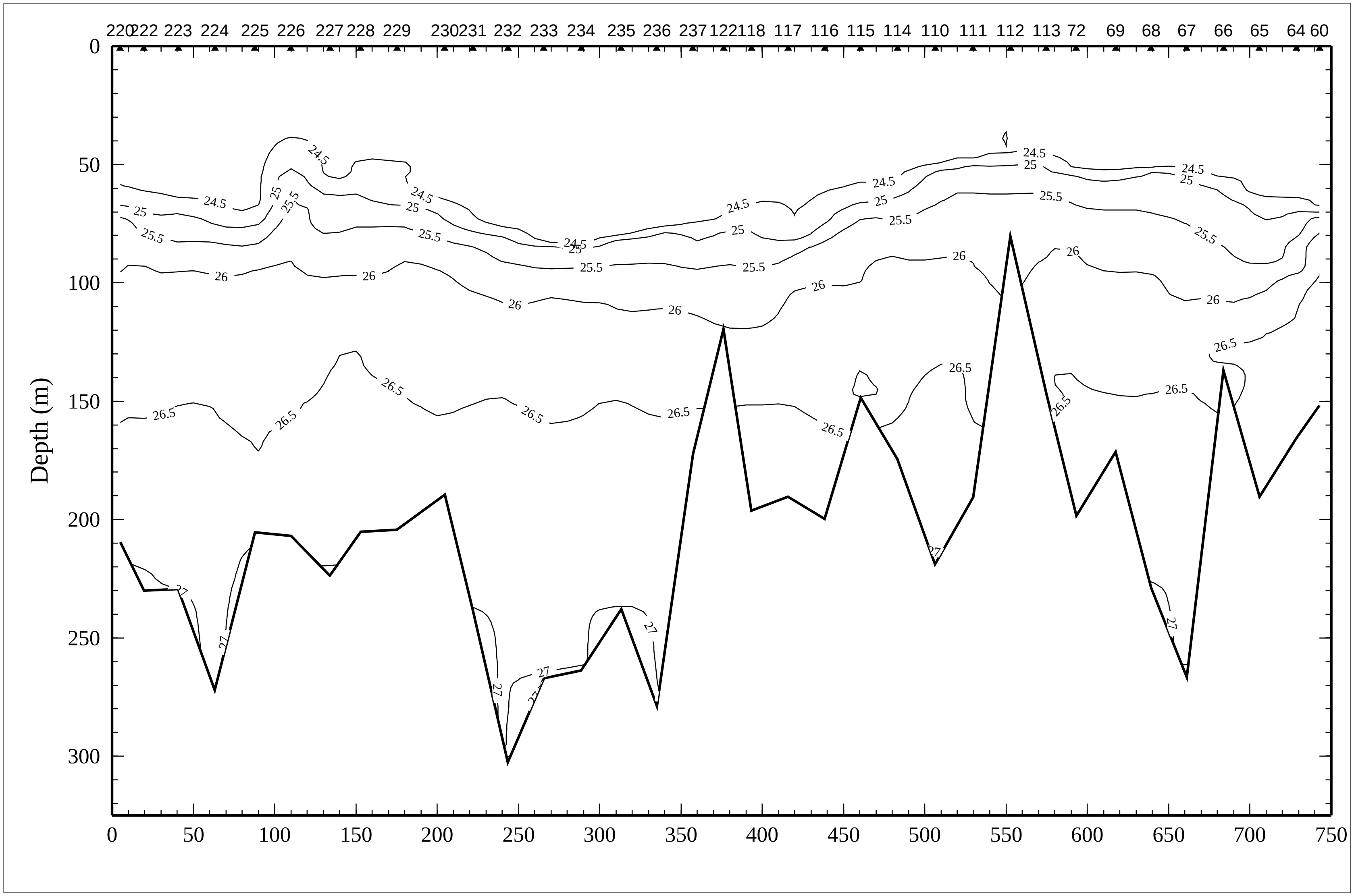

Figure 7.9.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 9 of LATEX A survey H07, 6-22 November 1993.

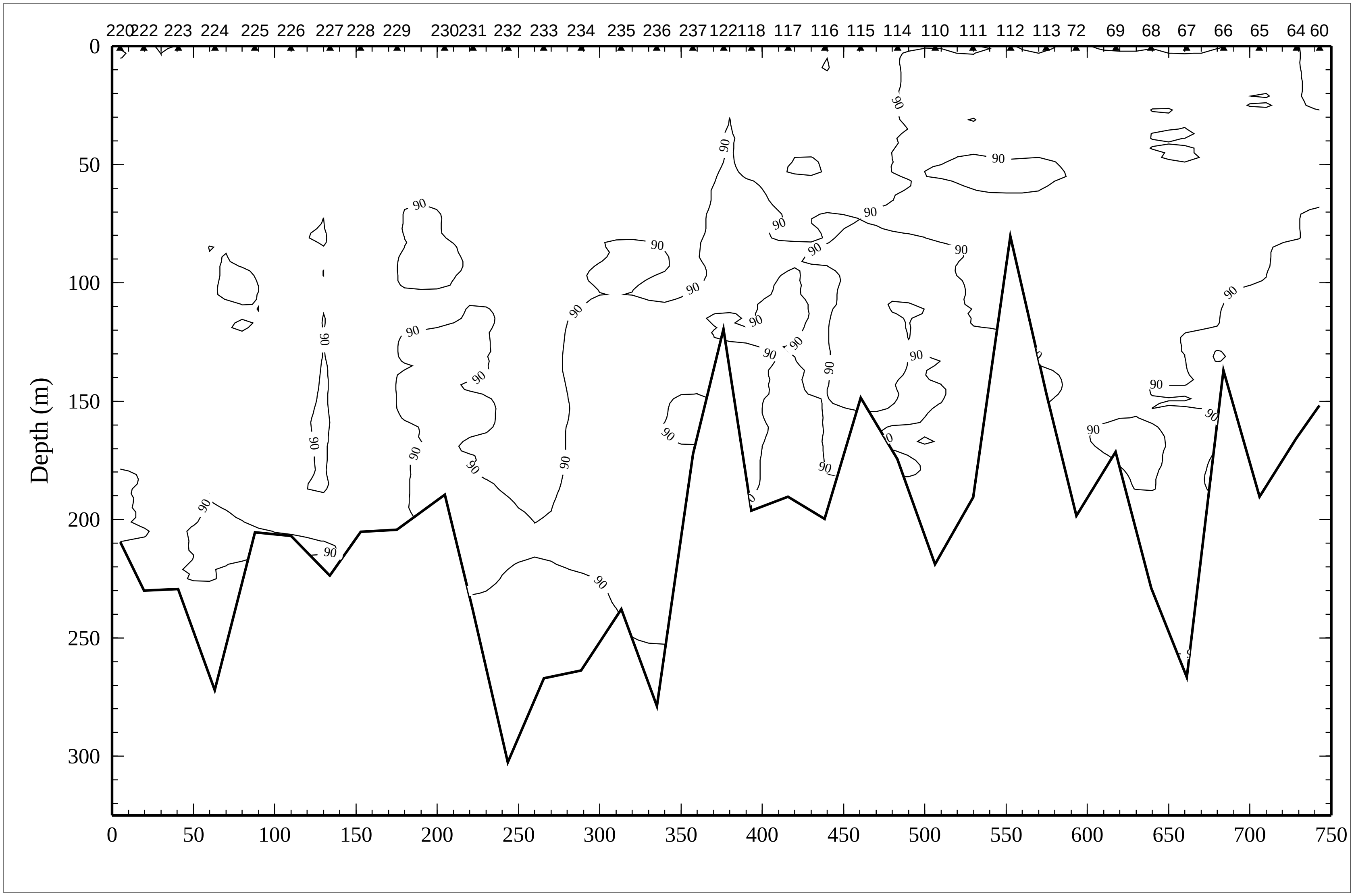

Figure 7.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H07, 6-22 November 1993.

Figure 7.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H07, 6-22 November 1993. Values of 0.05 or greater are shown.

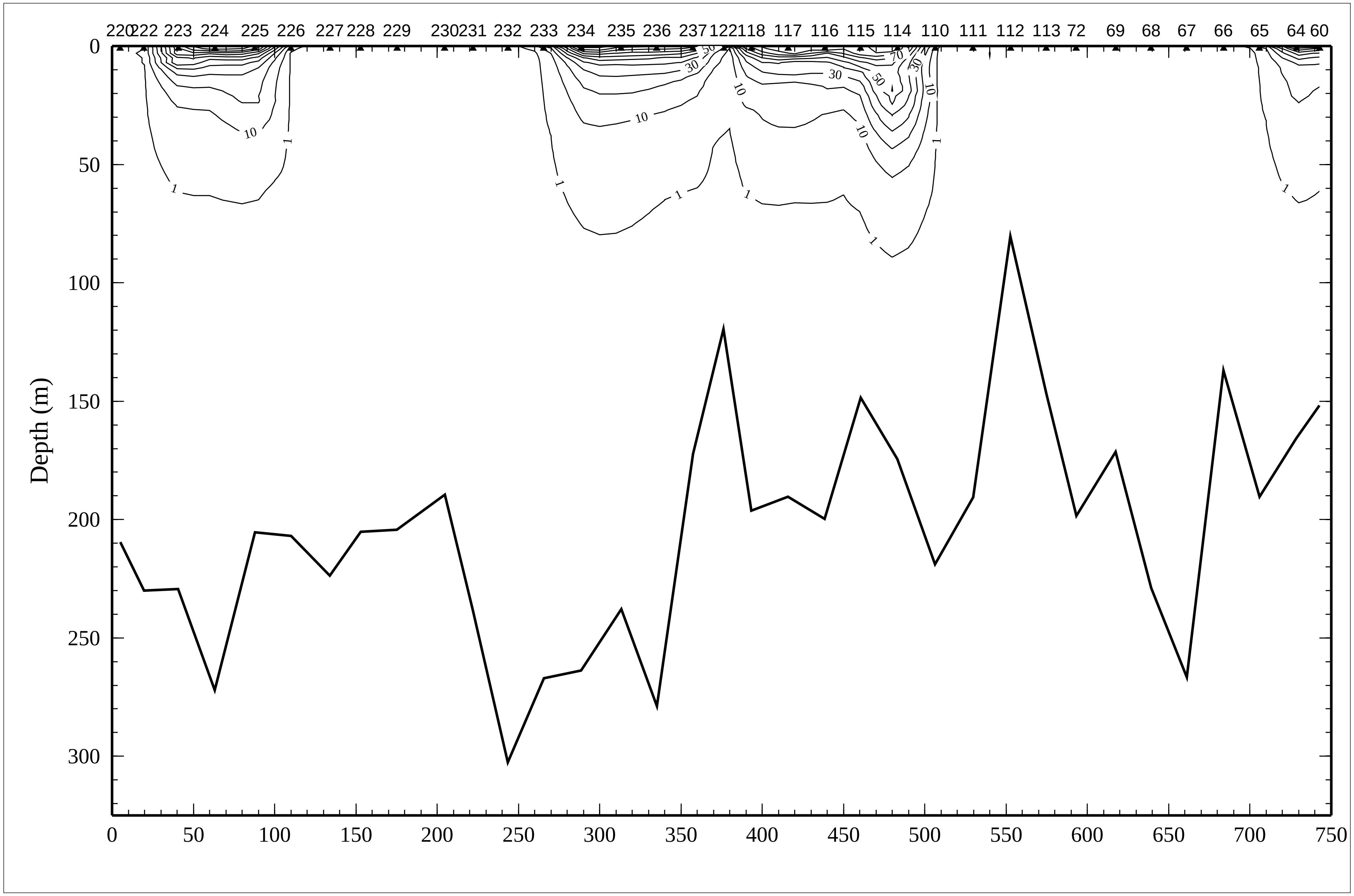

Figure 7.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H07, 6-22 November 1993.

G145

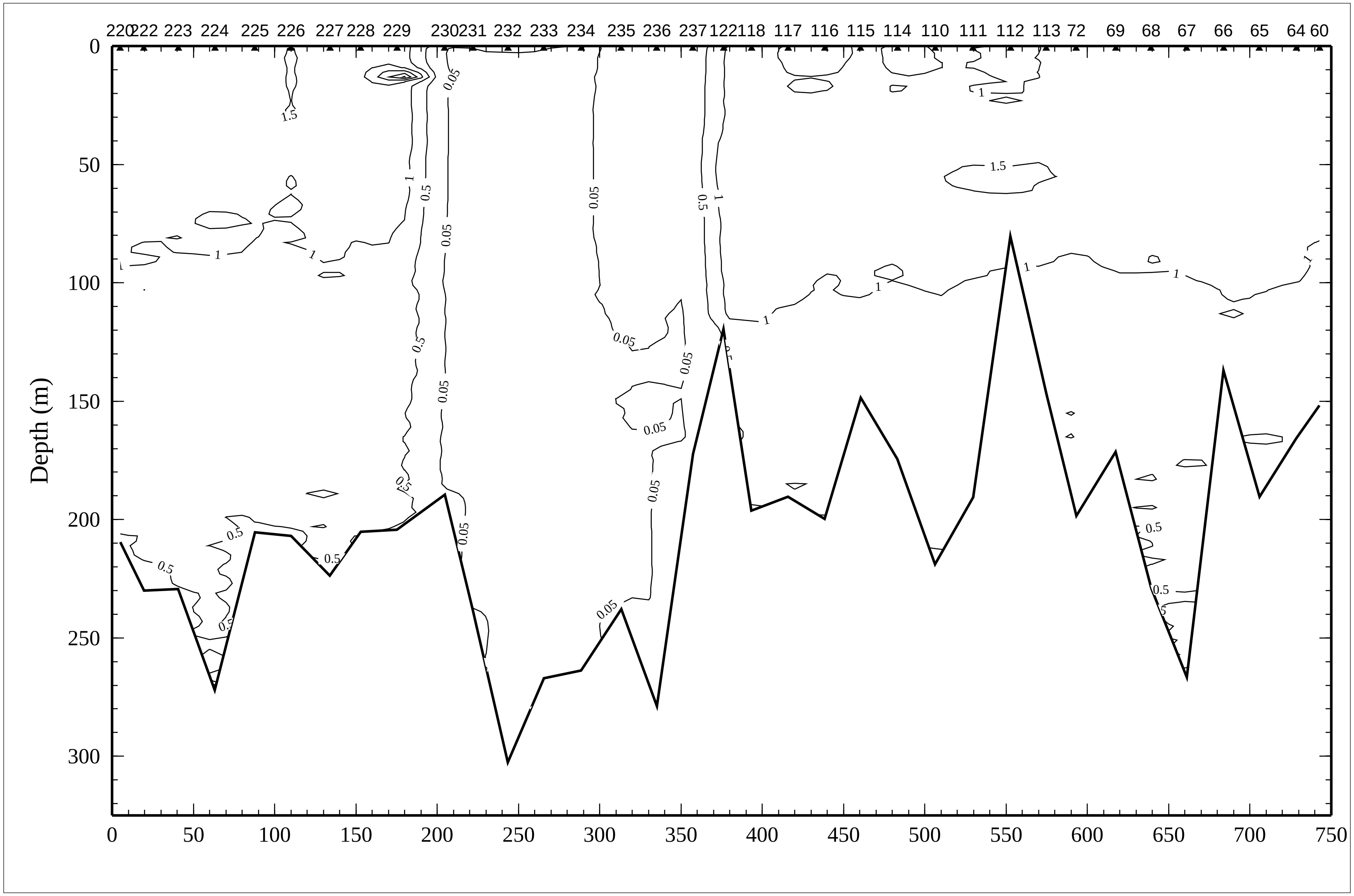

Figure 7.9.7. Relative fluorescence on line 9 of LATEX A survey H07, 6-22 November 1993.

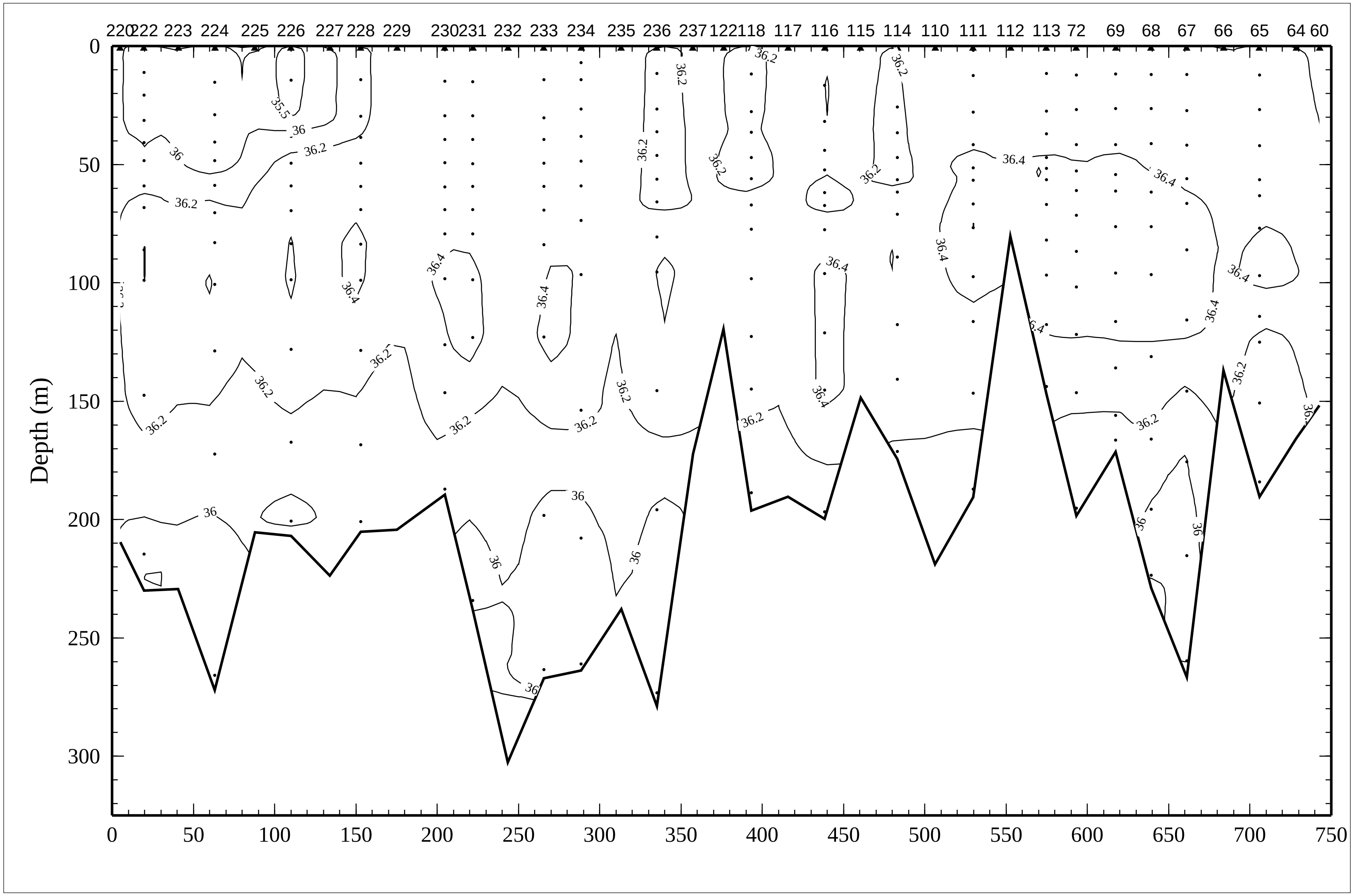

Figure 7.9.8. Bottle salinity on line 9 of LATEX A survey H07, 6-22 November 1993.

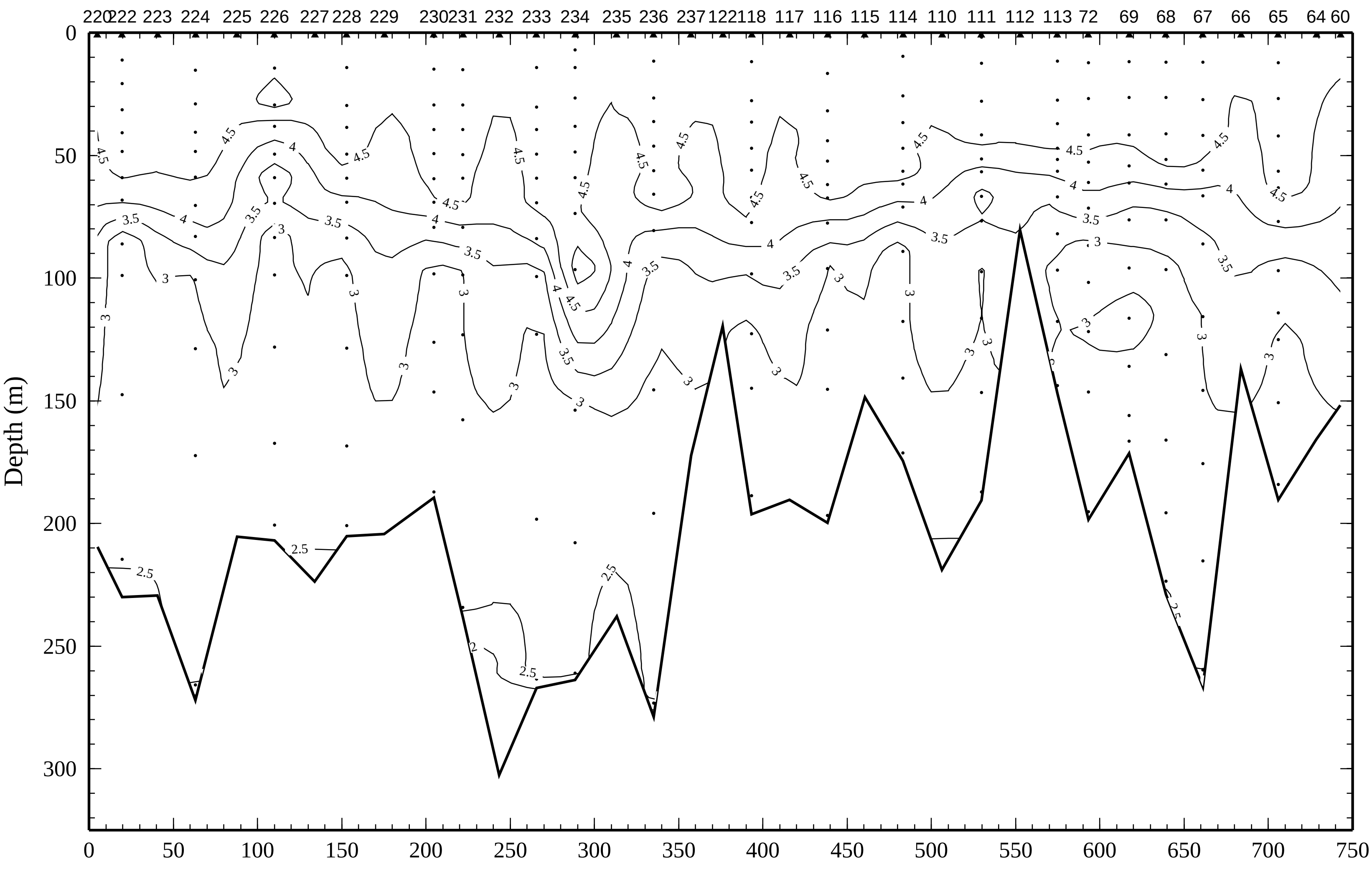

Figure 7.9.9. Dissolved oxygen (ml·l^{-1}) on line 9 of LATEX A survey H07, 6-22 November 1993.

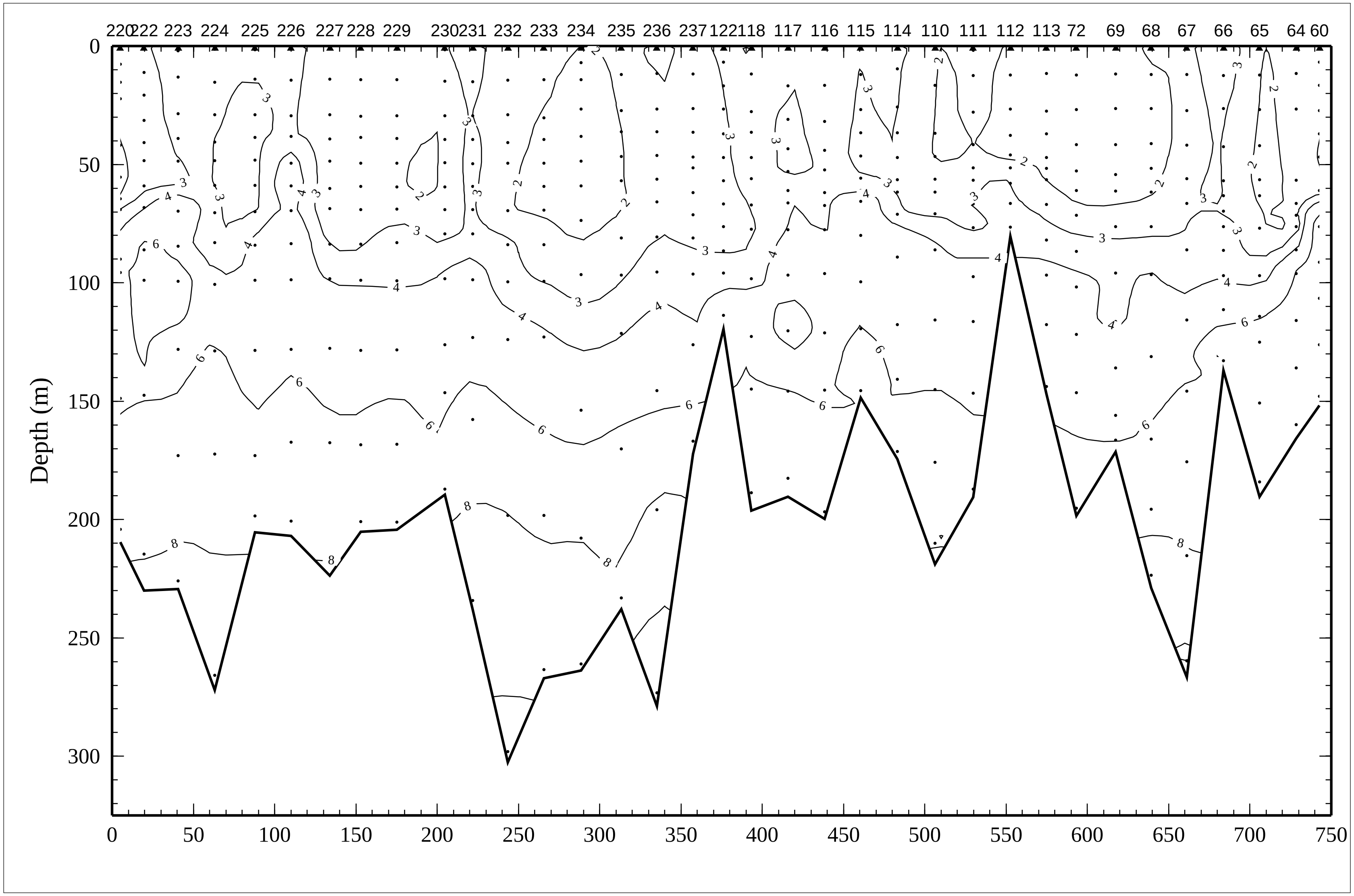

Figure 7.9.10. Silicate (μmol·l^{-1}) on line 9 of LATEX A survey H07, 6-22 November 1993.

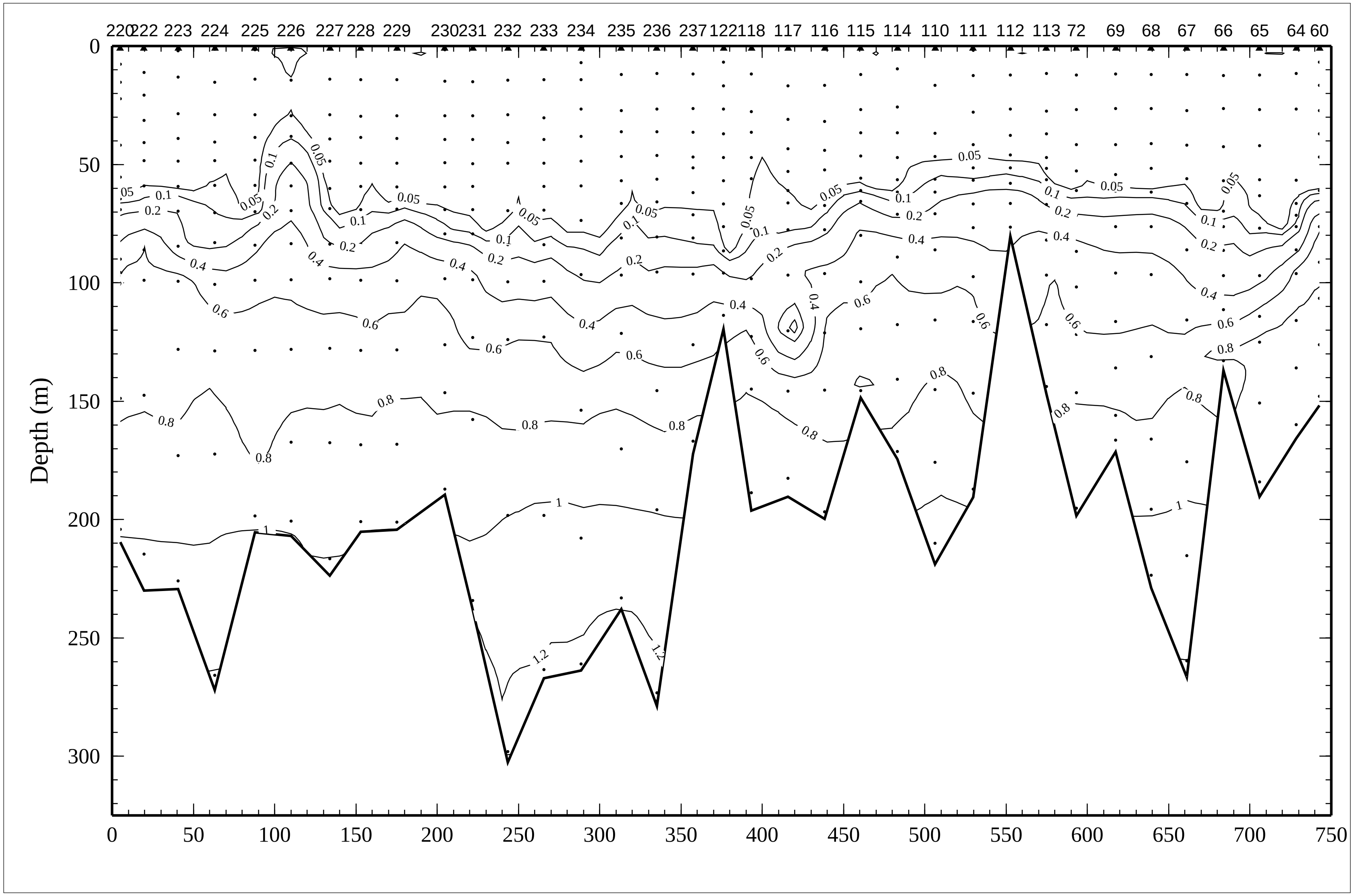

Figure 7.9.11. Phosphate (μmol·l^{-1}) on line 9 of LATEX A survey H07, 6-22 November 1993.

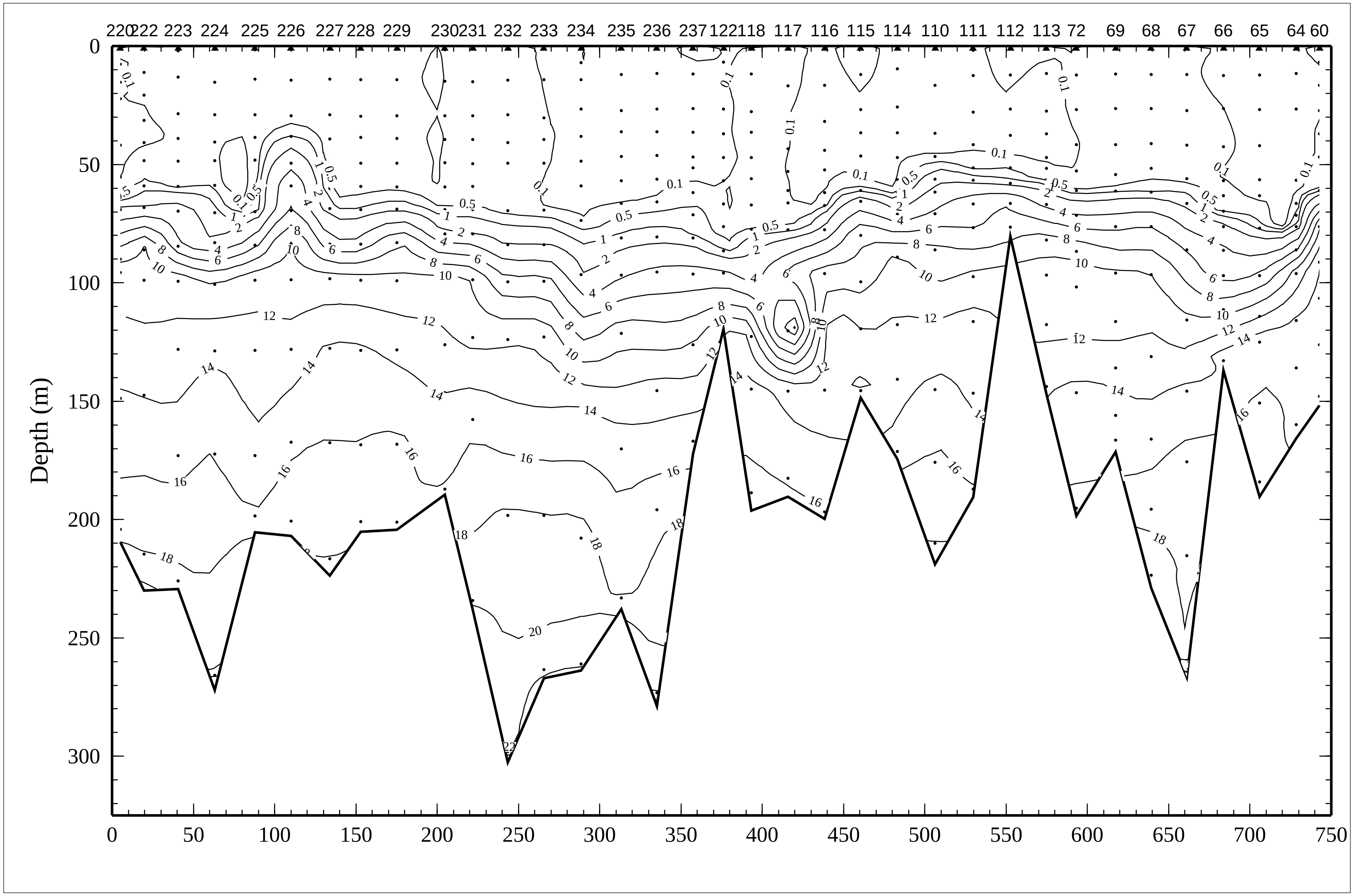

Figure 7.9.12. Nitrate (μmol·l^{-1}) on line 9 of LATEX A survey H07, 6-22 November 1993.

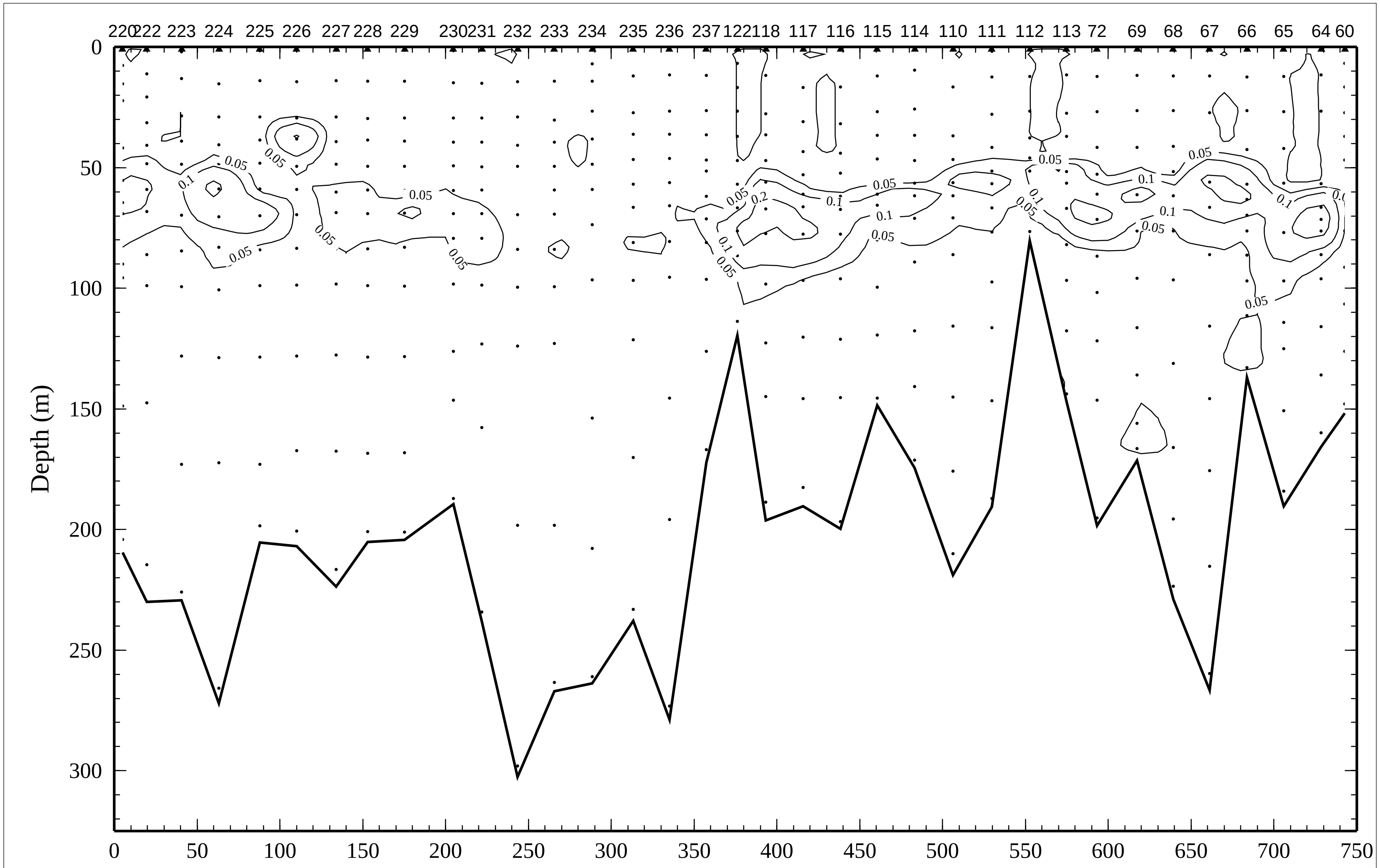

Figure 7.9.13. Nitrite (μmol·l⁻¹) on line 9 of LATEX A survey H07, 6-22 November 1993.

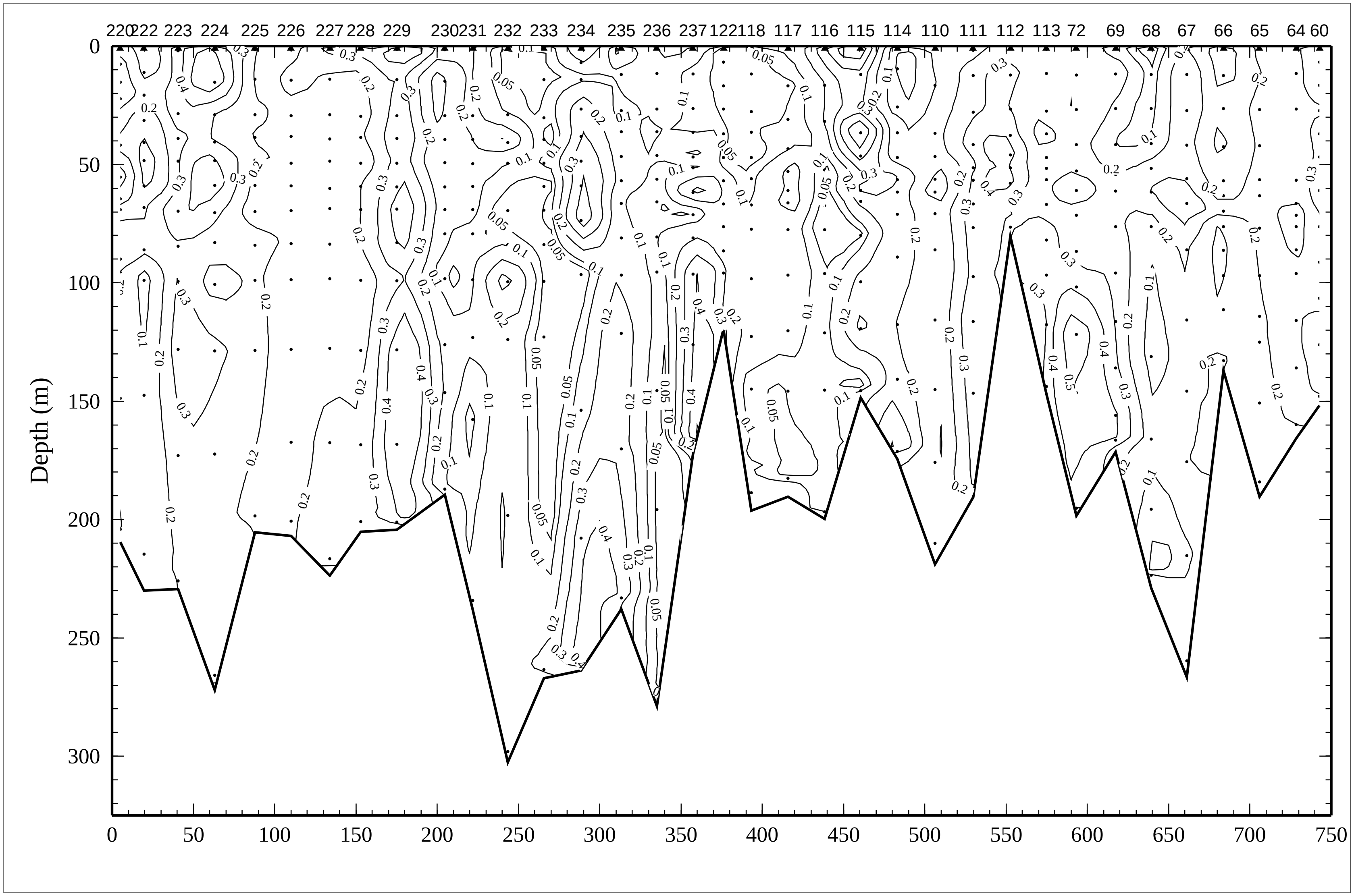

Figure 7.9.14. Ammonium (μmol·l^{-1}) on line 9 of LATEX A survey H07, 6-22 November 1993.

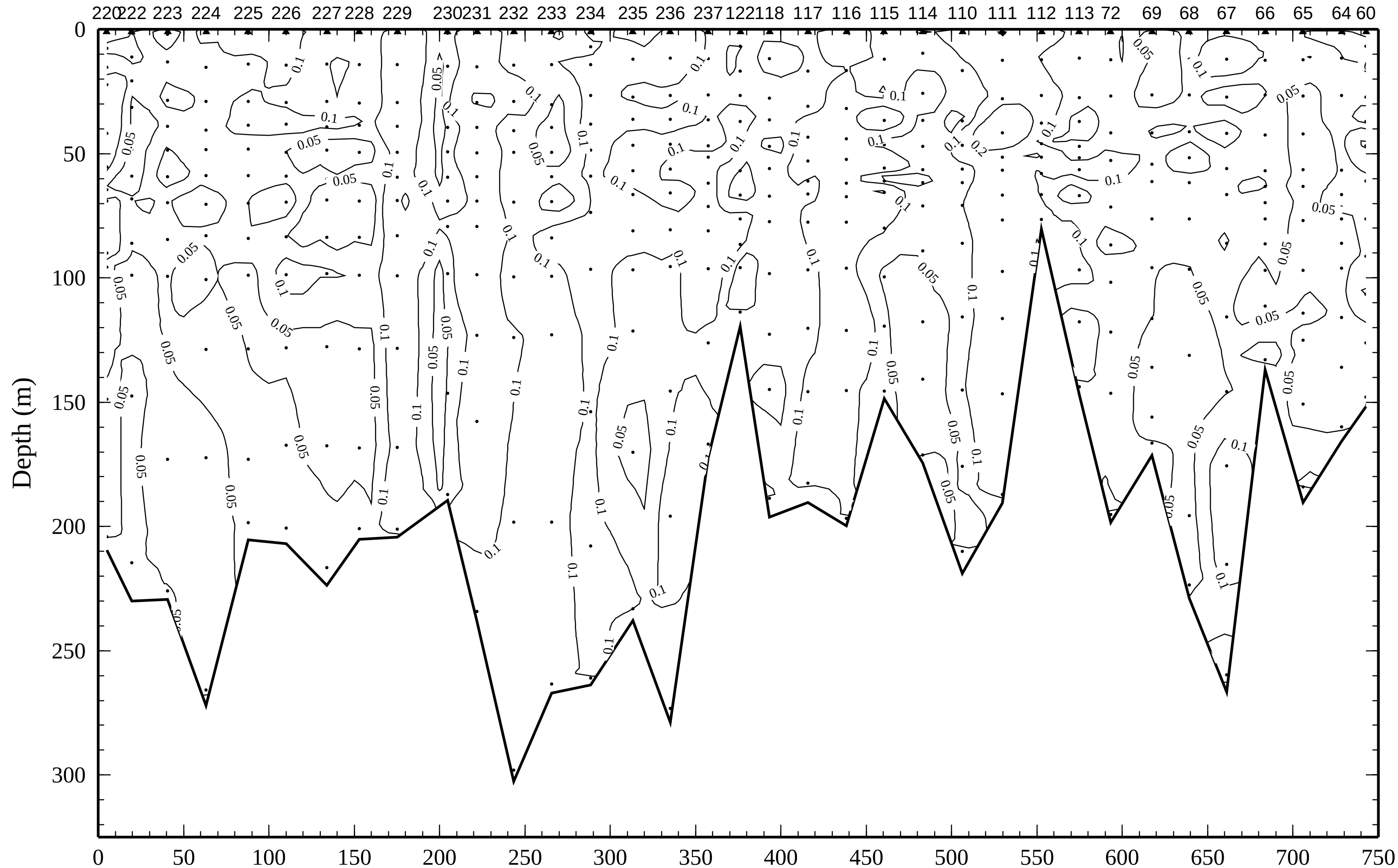

Figure 7.9.15. Urea (μmol·l⁻¹) on line 9 of LATEX A survey H07, 6-22 November 1993.

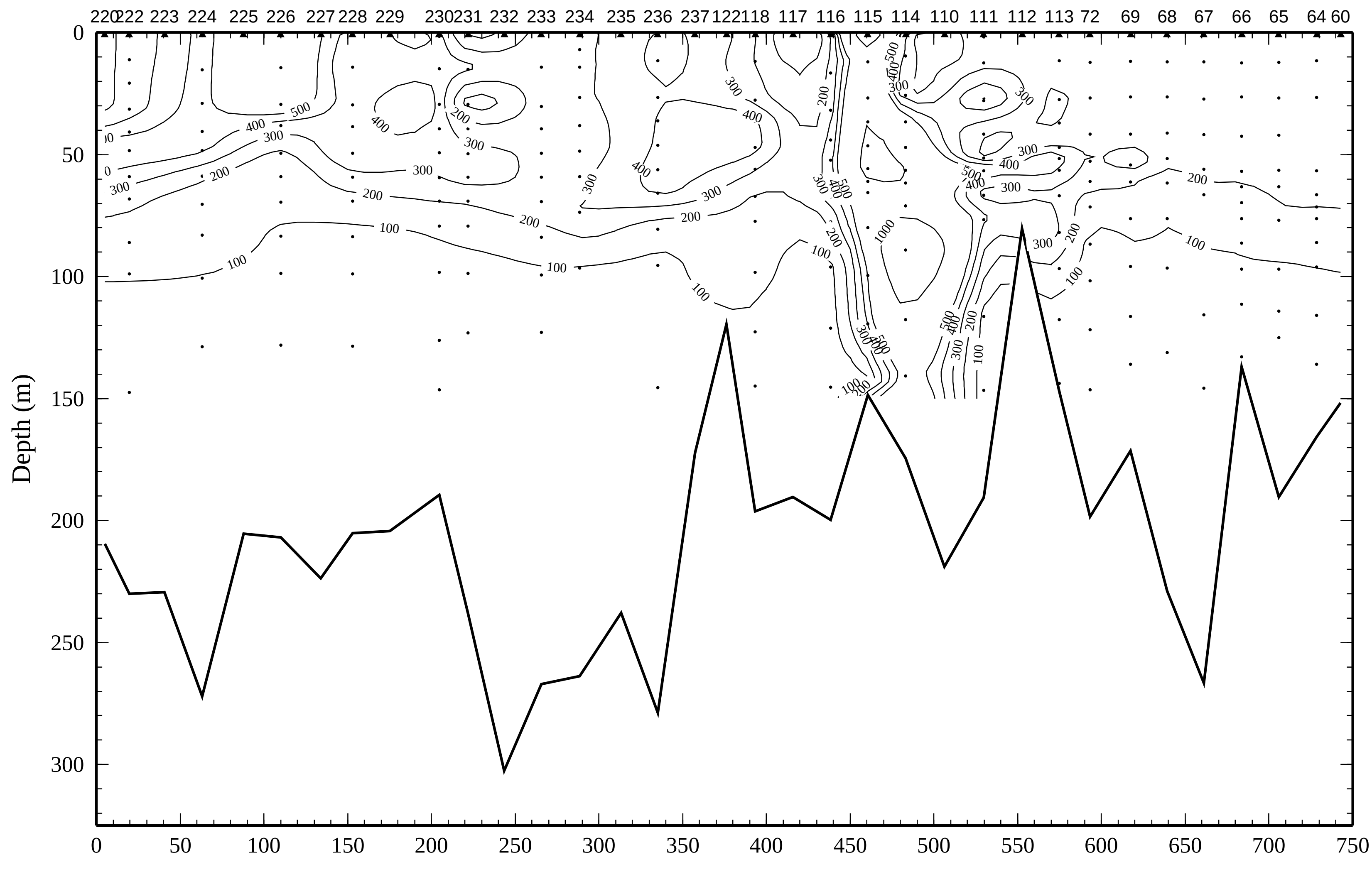

Figure 7.9.16. Chlorophyll a (ng·l^{-1}) on line 9 of LATEX A survey H07, 6-22 November 1993.

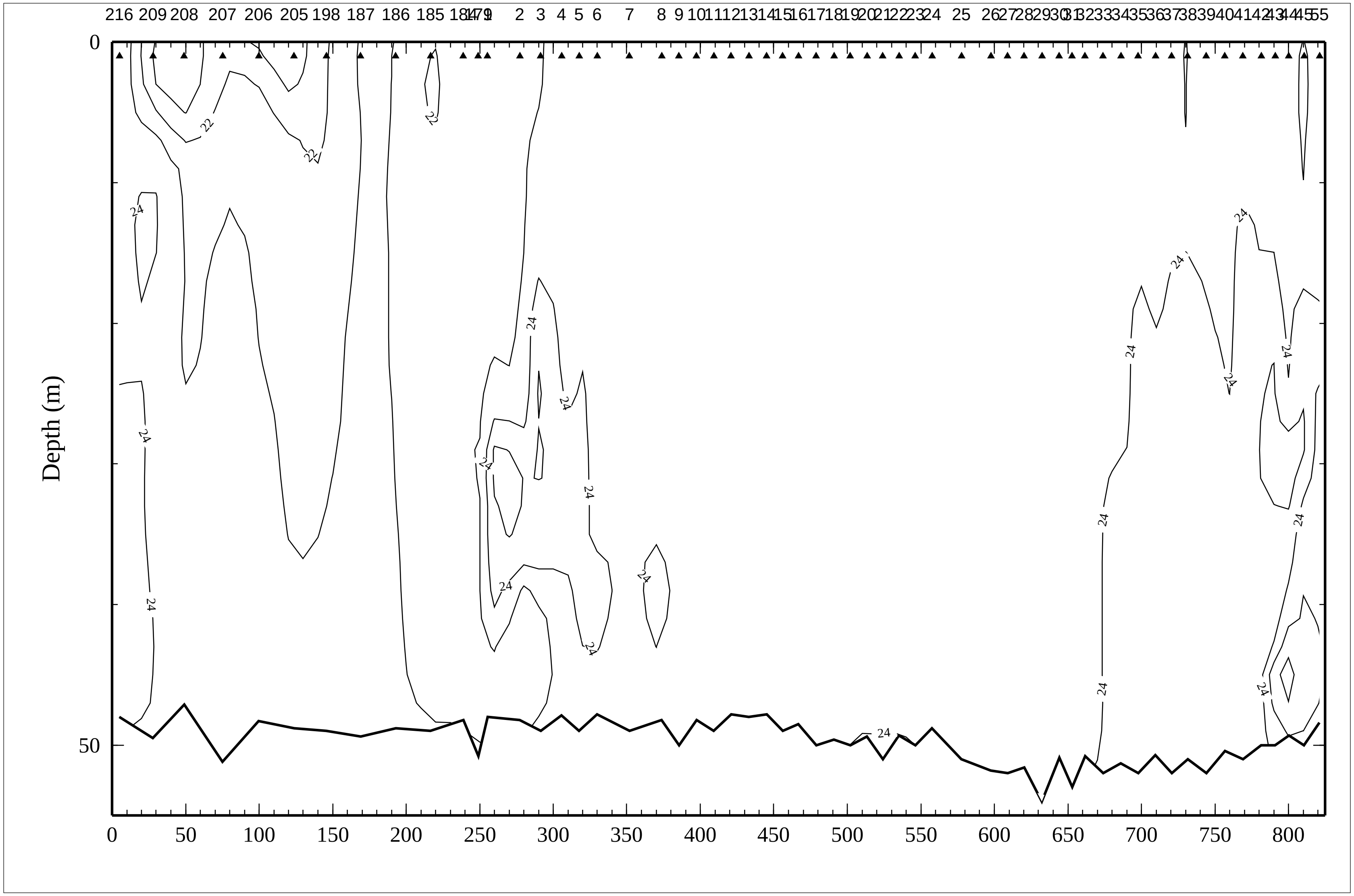

Figure 7.10.1. Potential temperature (˚C) on line 10 of LATEX A survey H07, 6-22 November 1993.

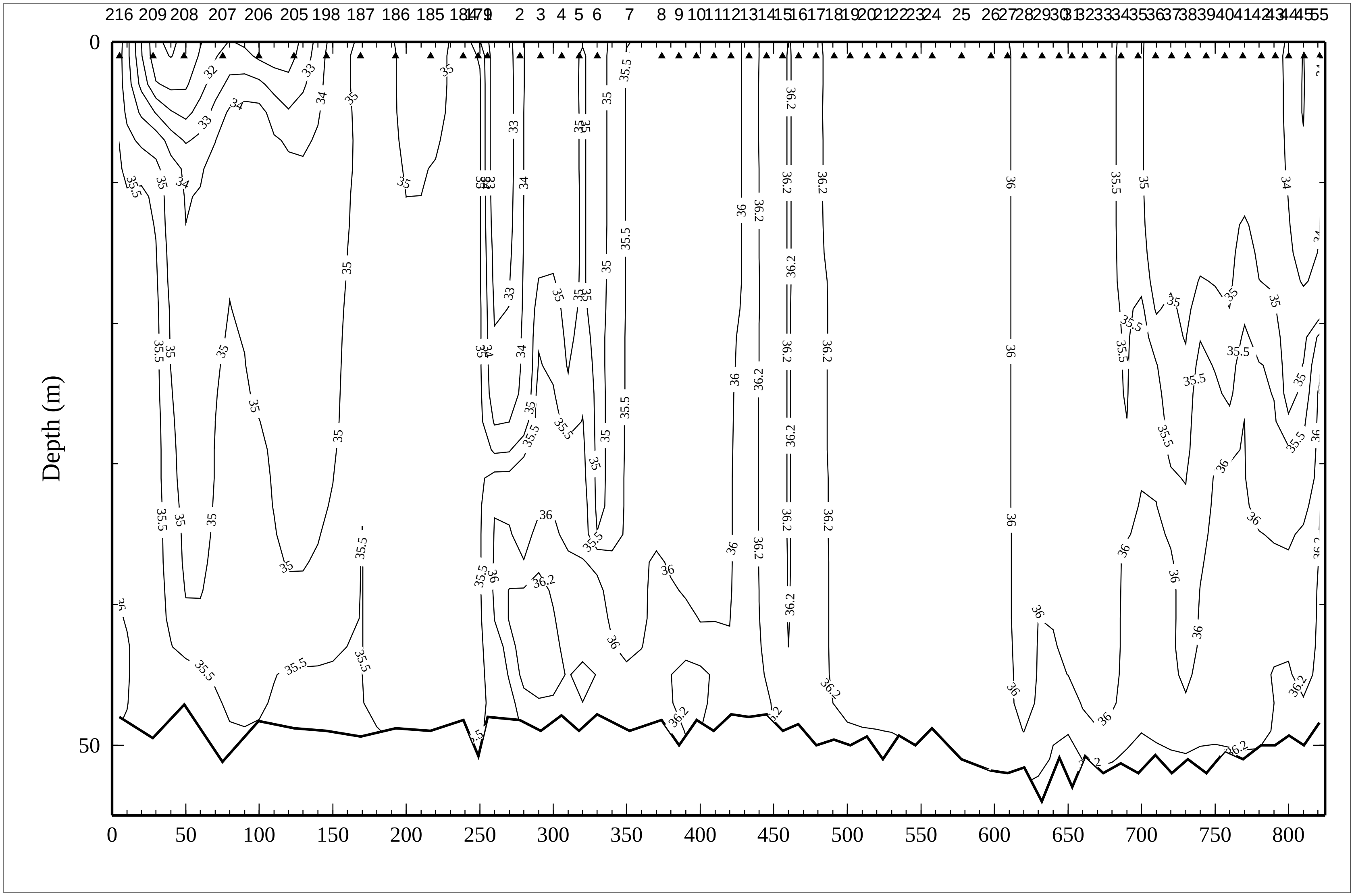

Figure 7.10.2. Salinity, derived from CTD data, on line 10 of LATEX A survey H07, 6-22 November 1993.

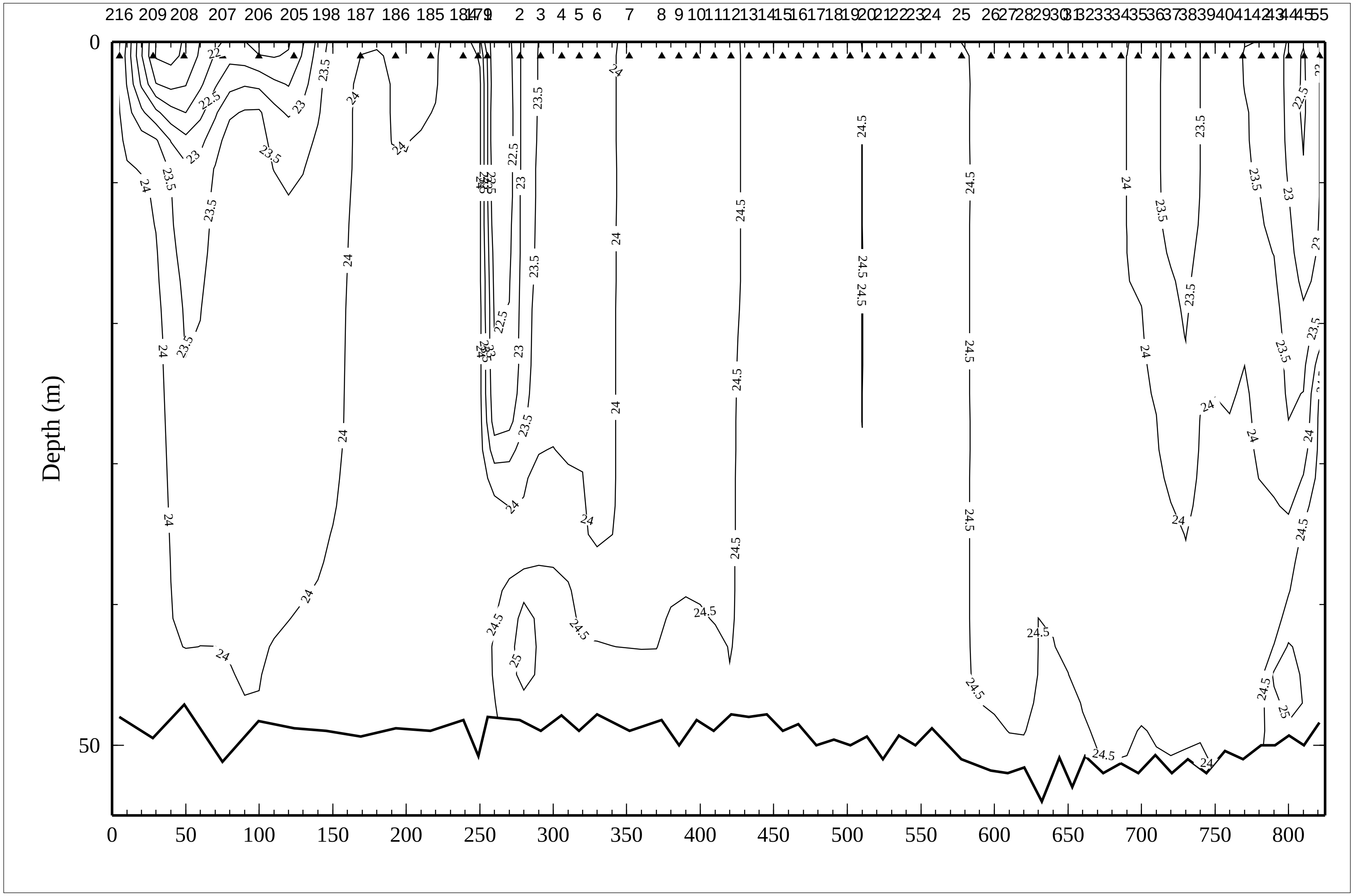

Figure 7.10.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 10 of LATEX A survey H07, 6-22 November 1993.

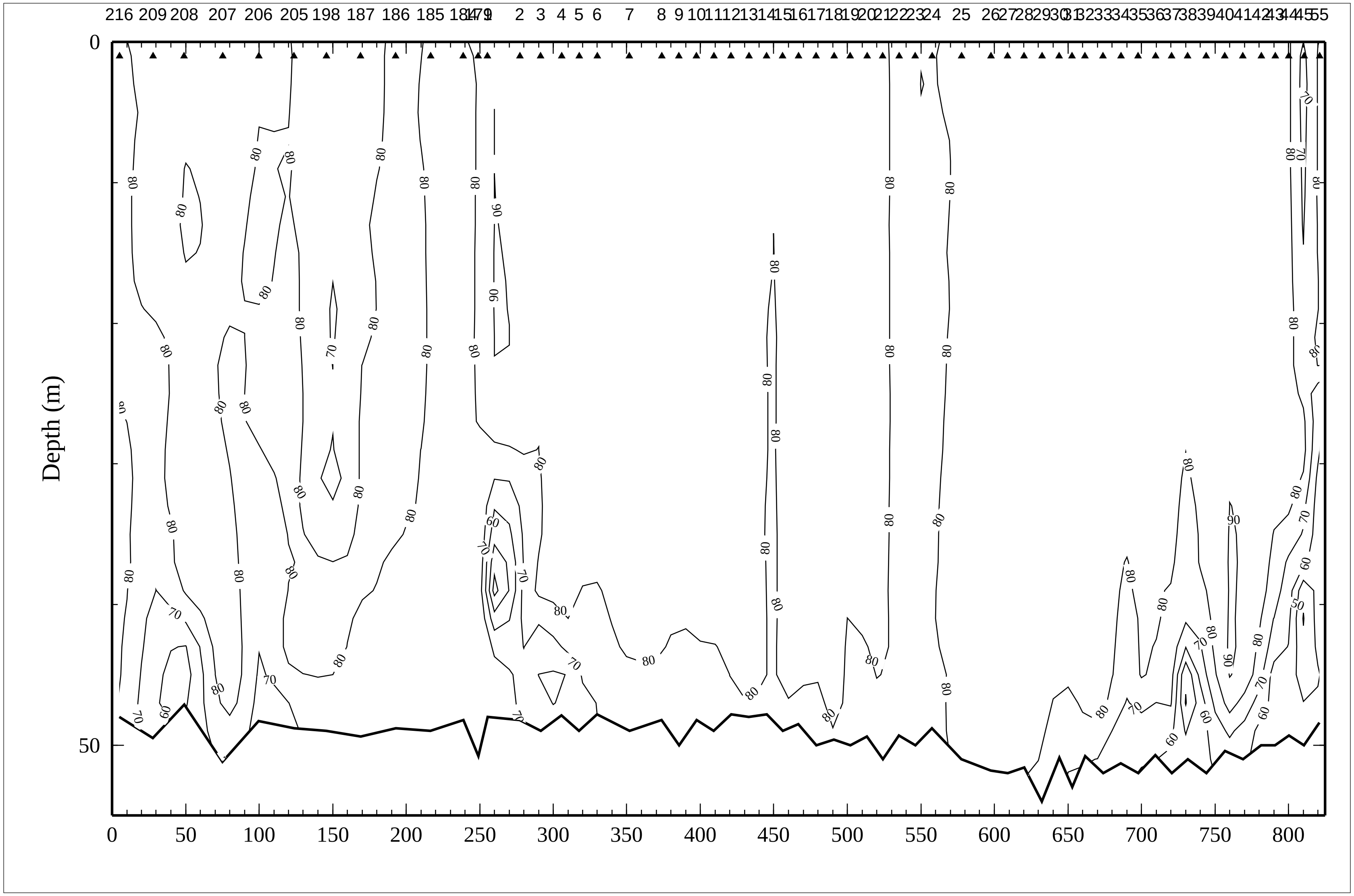

Figure 7.10.4. Percent transmission (660 nm wave length; 25-cm path length) on line 10 of LATEX A survey H07, 6-22 November 1993.

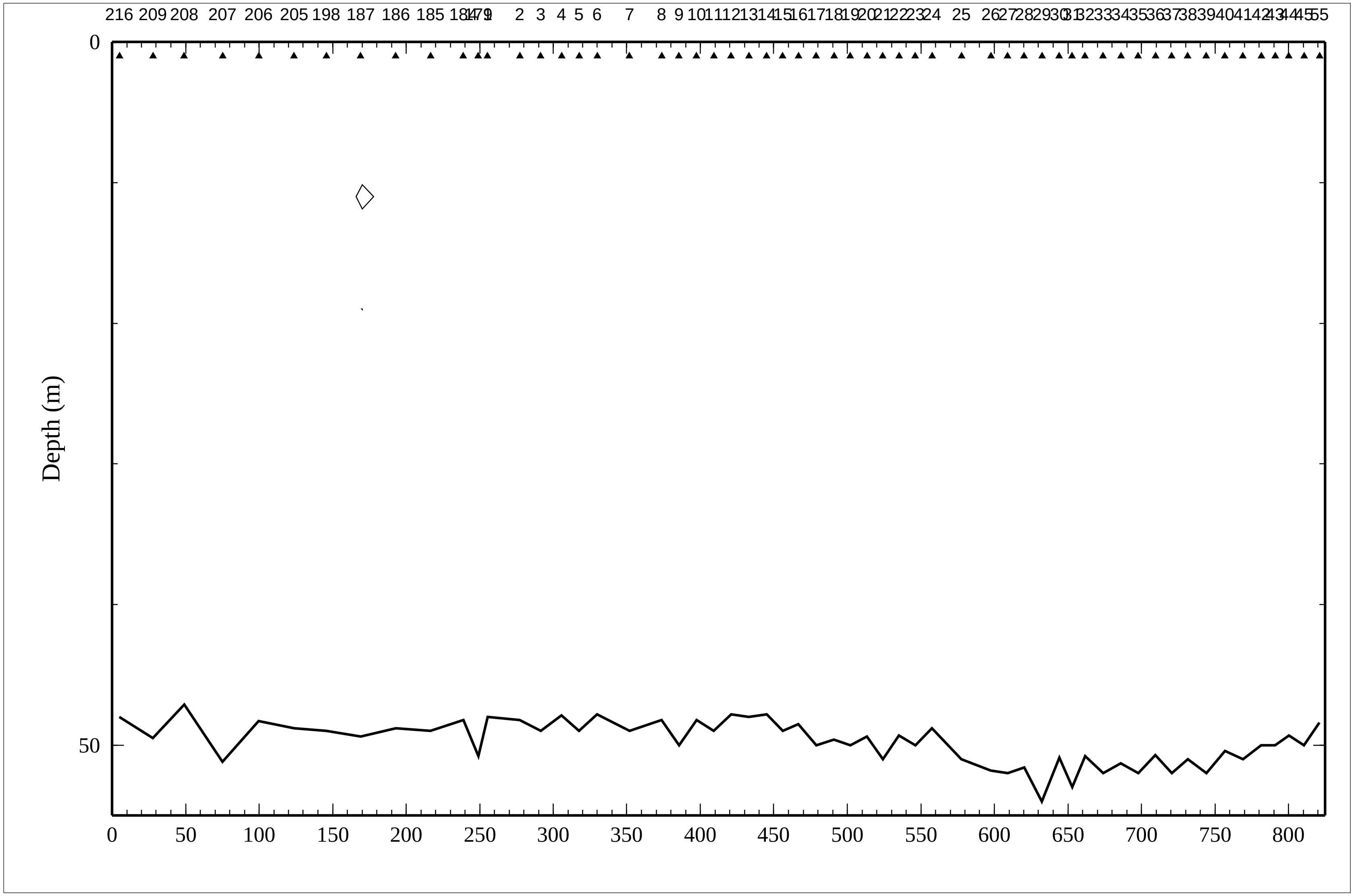

Figure 7.10.5. Optical backscatterance (voltage) on line 10 of LATEX A survey H07, 6-22 November 1993.
Values of 0.05 or greater are shown.

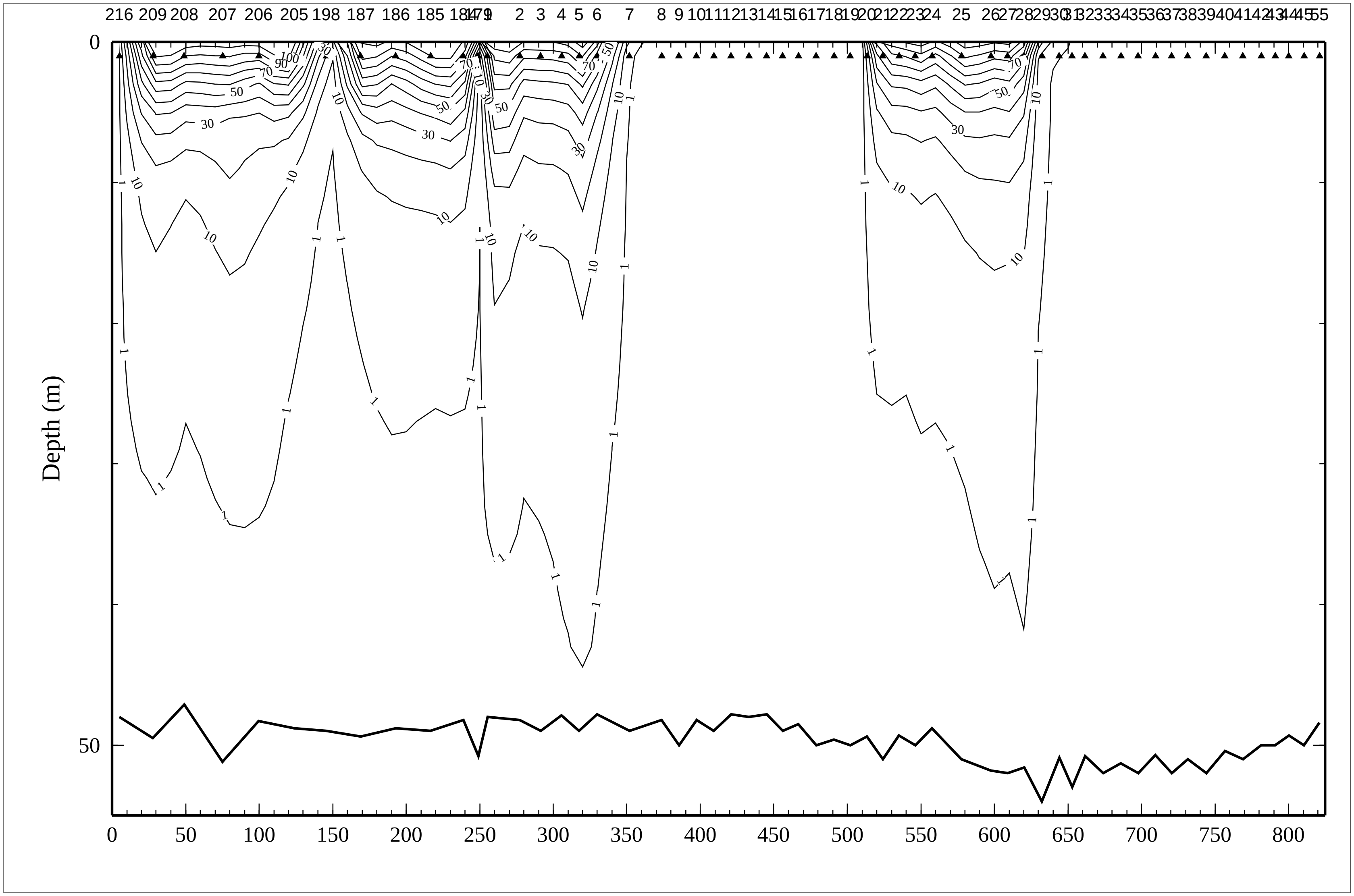

Figure 7.10.6. Downwelling irradiance as percent of surface irradiance on line 10 of LATEX A survey H07, 6-22 November 1993.

G160

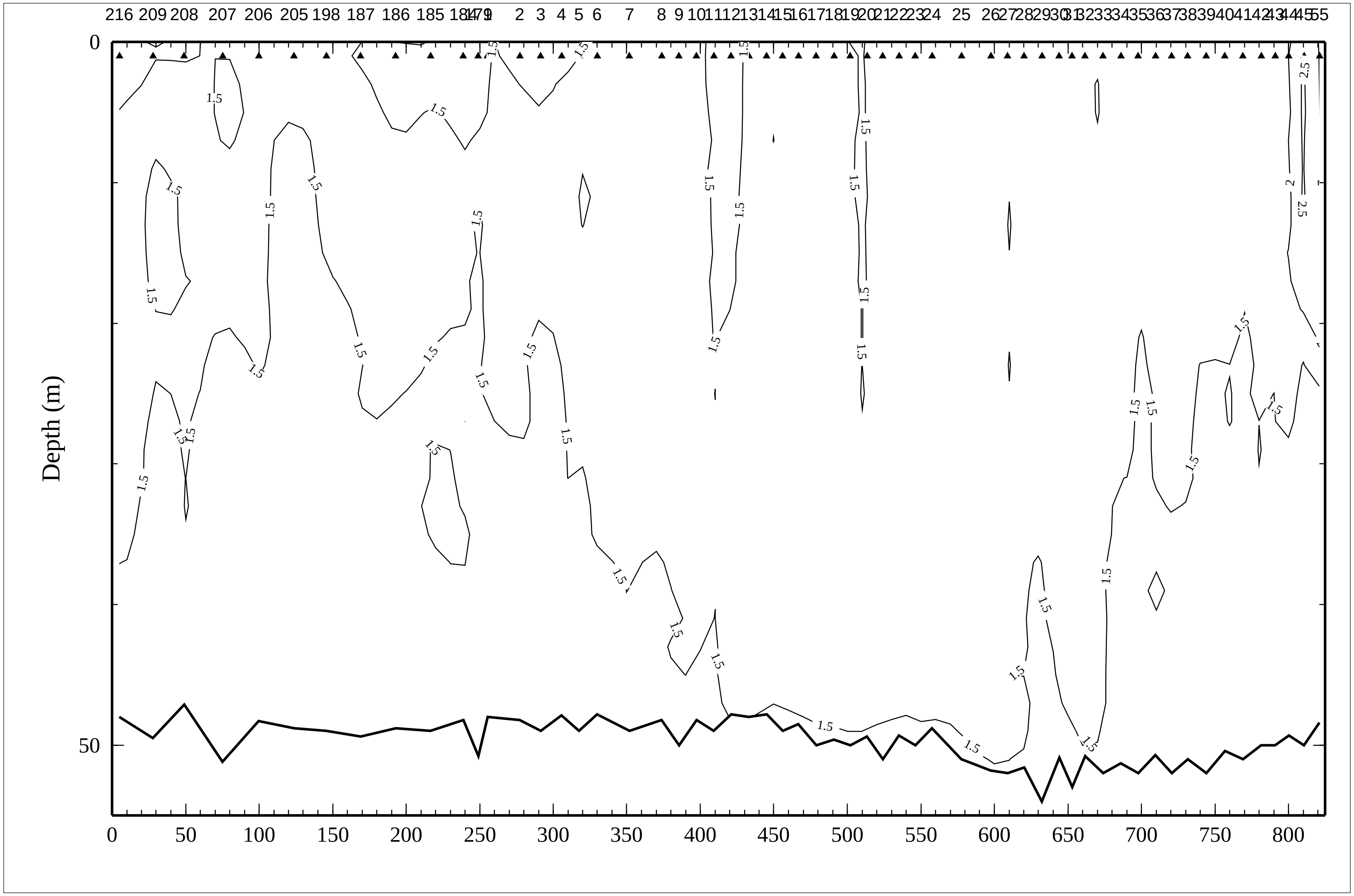

Figure 7.10.7. Relative fluorescence on line 10 of LATEX A survey H07, 6-22 November 1993.

G162

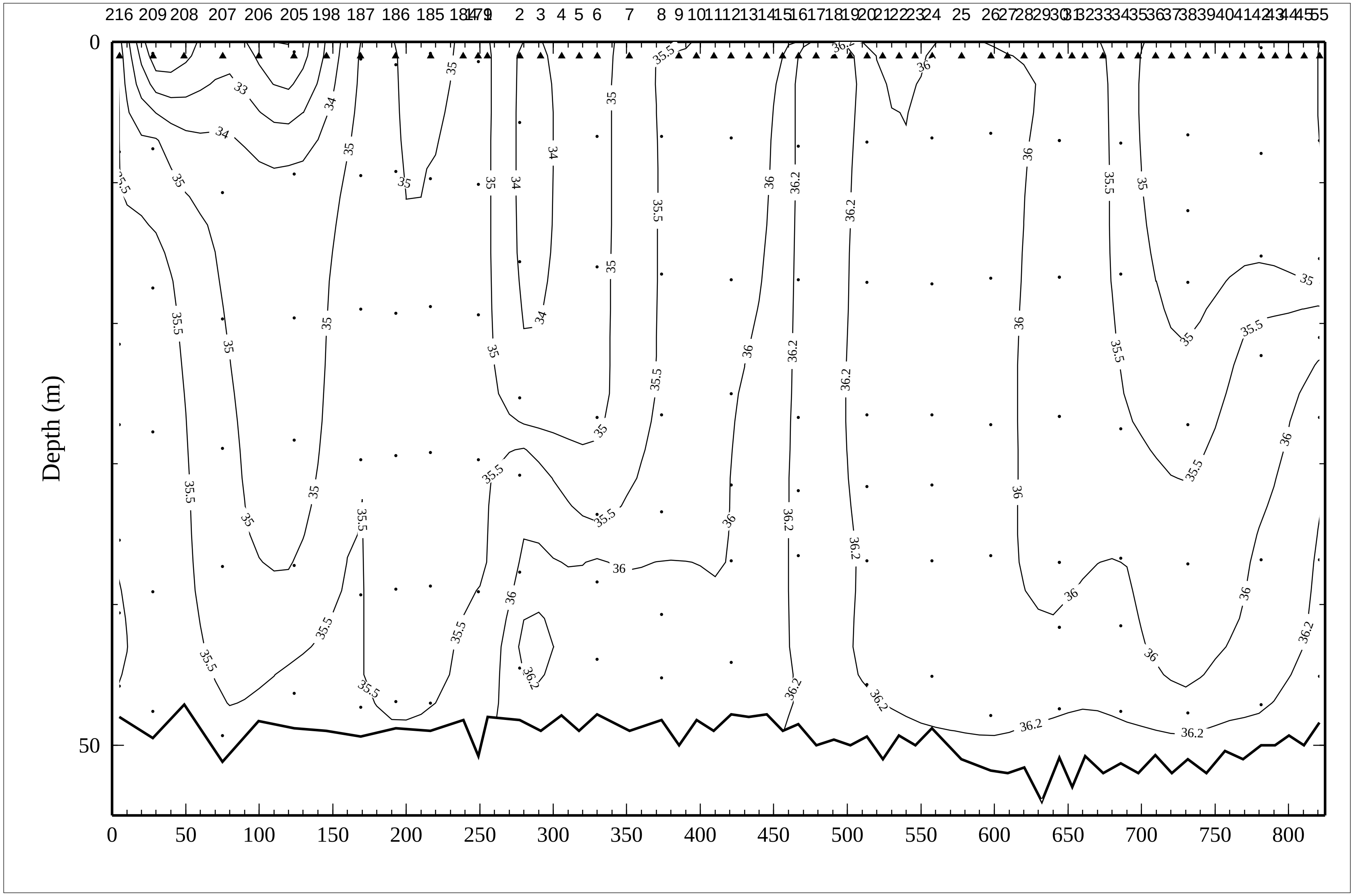

Figure 7.10.8. Bottle salinity on line 10 of LATEX A survey H07, 6-22 November 1993.

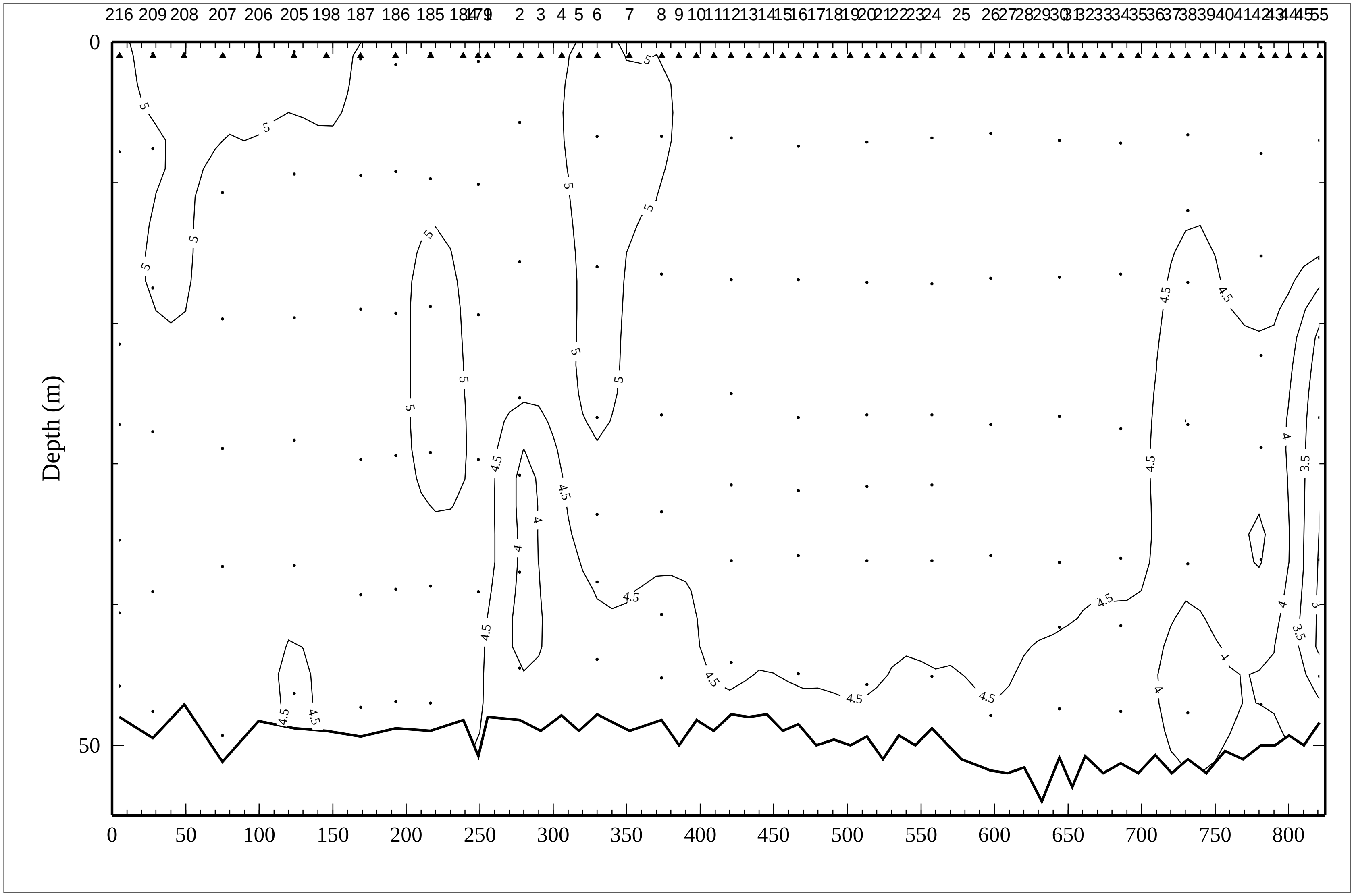

Figure 7.10.9. Dissolved oxygen (ml·l^{-1}) on line 10 of LATEX A survey H07, 6-22 November 1993.

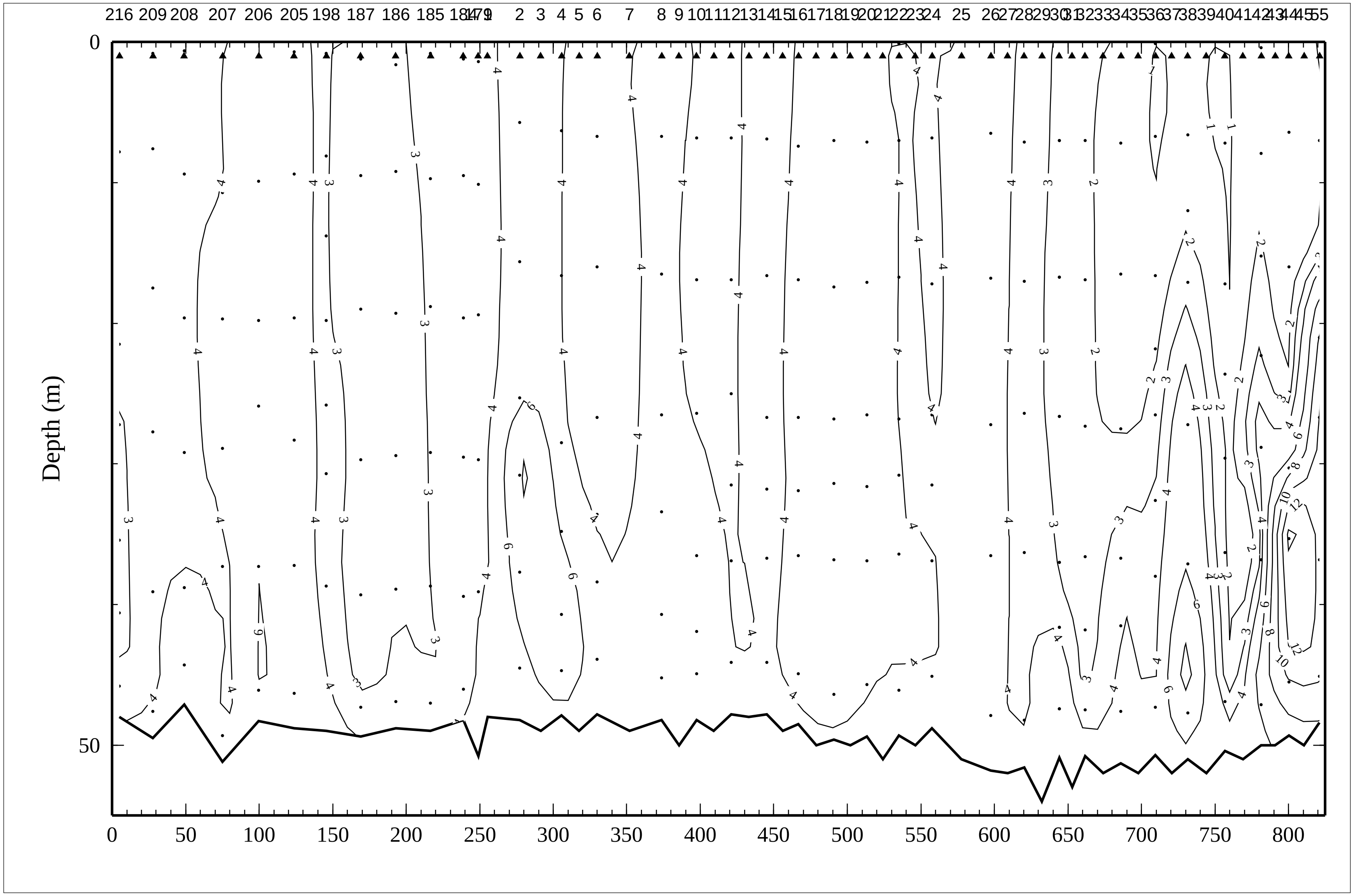

Figure 7.10.10. Silicate (μmol·l^{-1}) on line 10 of LATEX A survey H07, 6-22 November 1993.

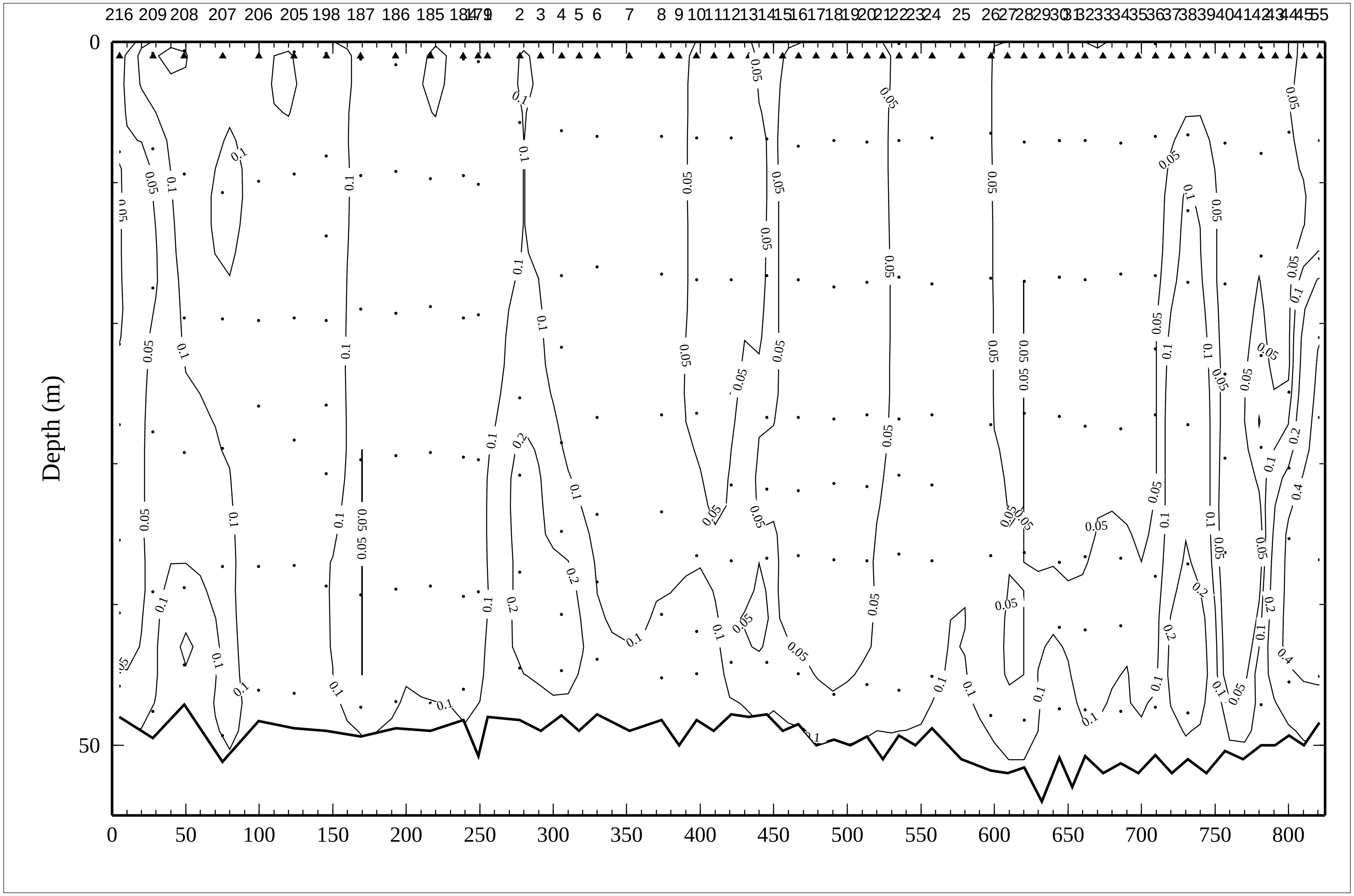

Figure 7.10.11. Phosphate (μmol·l⁻¹) on line 10 of LATEX A survey H07, 6-22 November 1993.

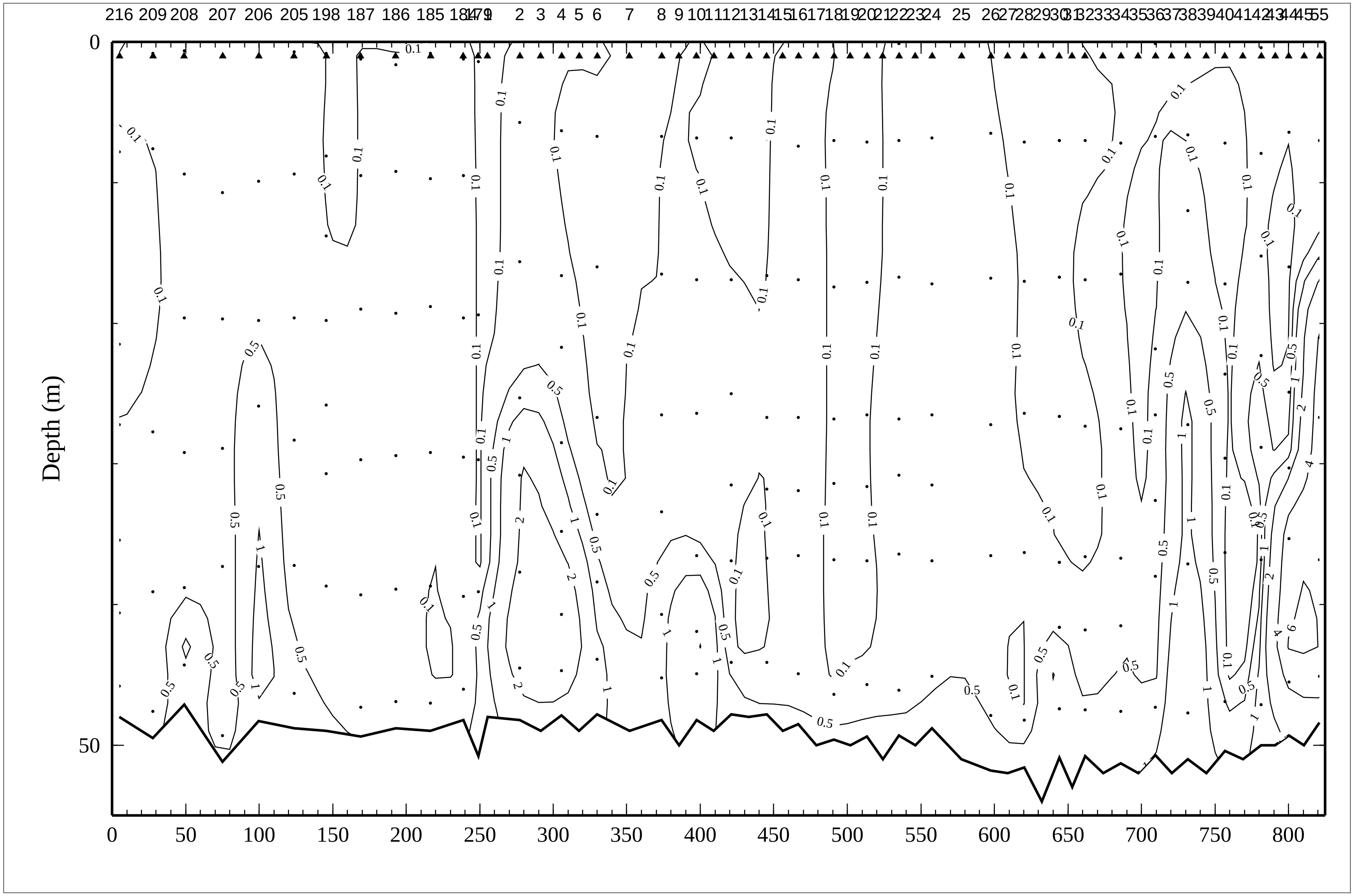

Figure 7.10.12. Nitrate (μmol·l⁻¹) on line 10 of LATEX A survey H07, 6-22 November 1993.

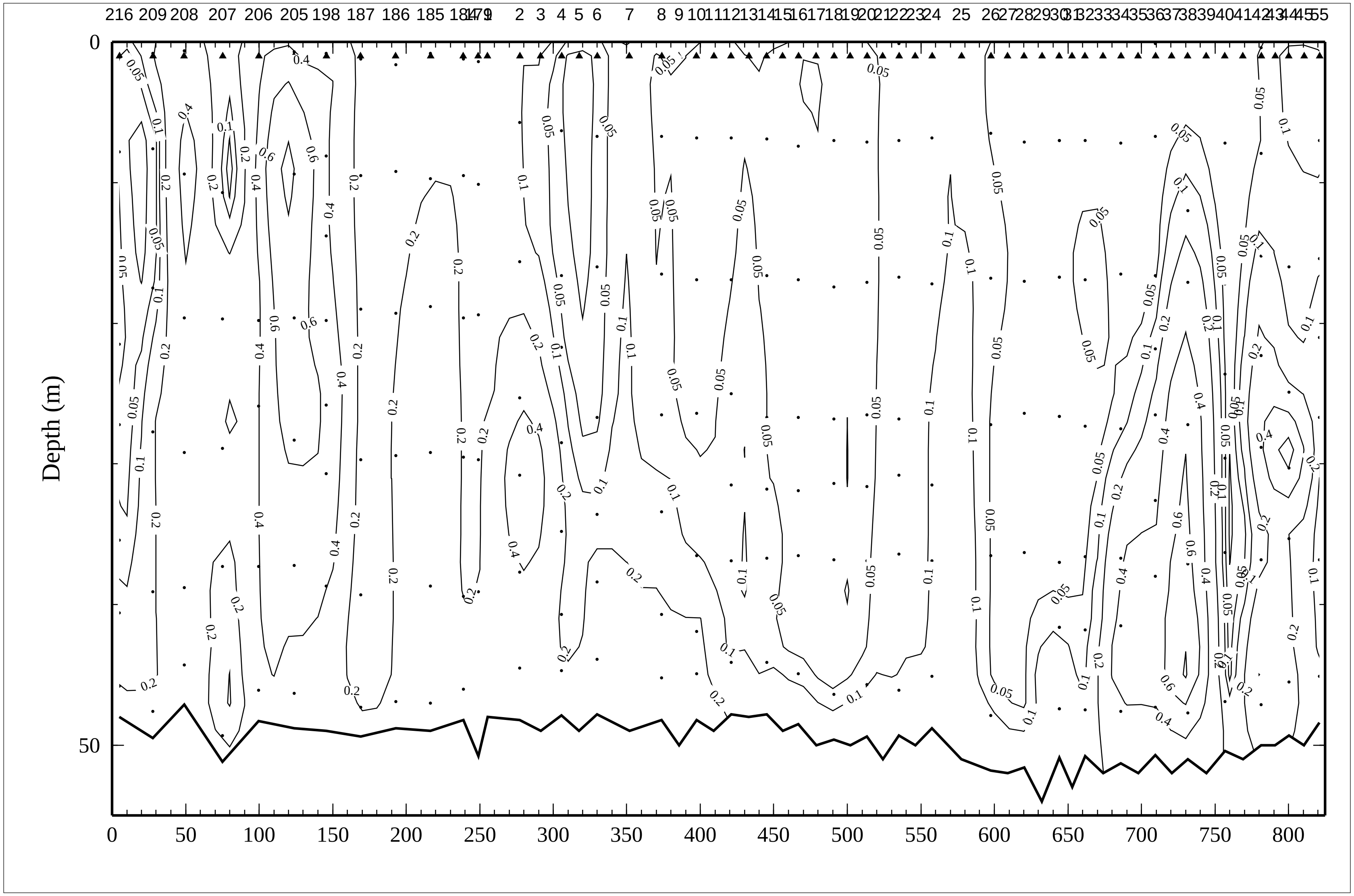

Figure 7.10.13. Nitrite (μmol·l⁻¹) on line 10 of LATEX A survey H07, 6-22 November 1993.

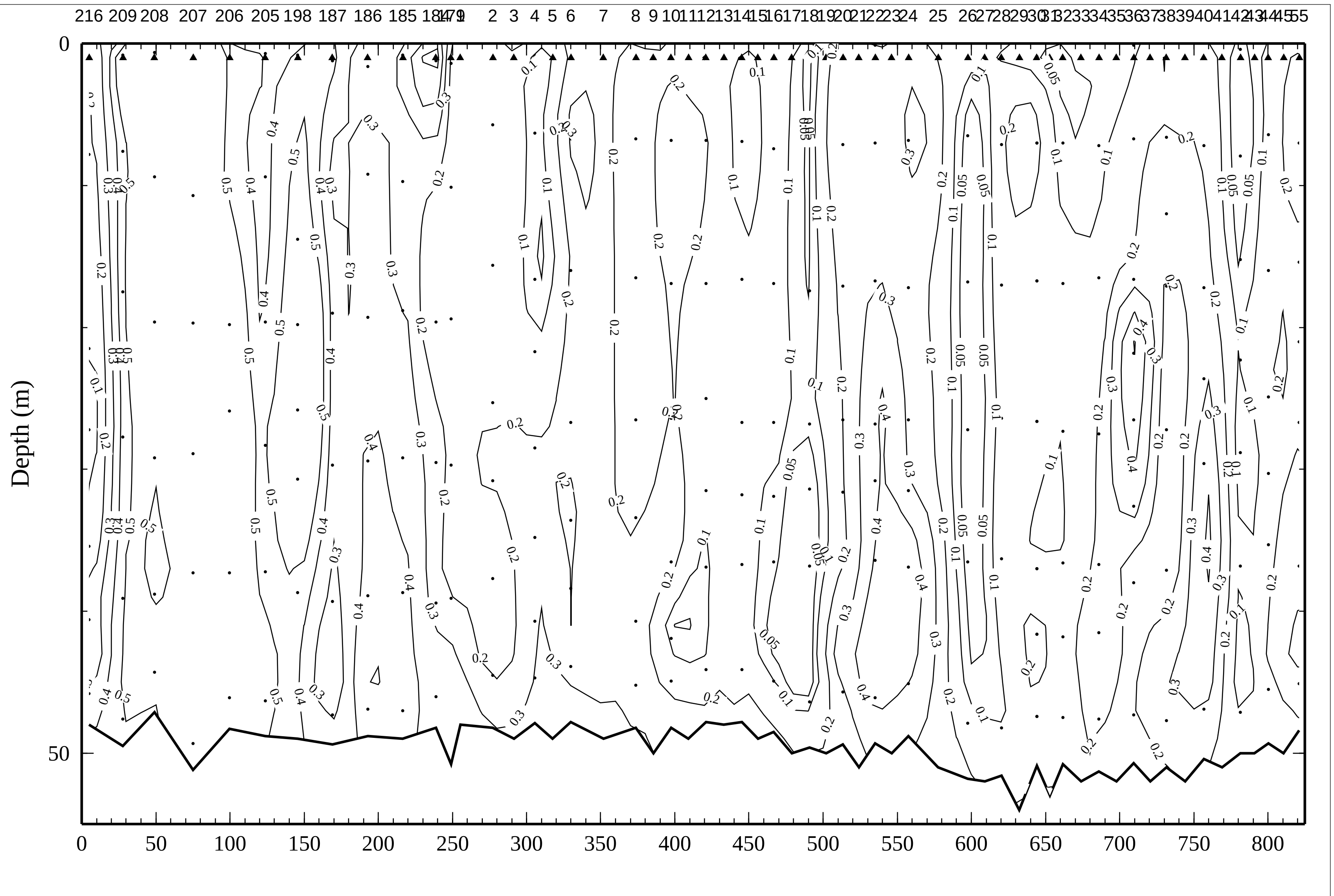

Figure 7.10.14. Ammonium (μmol·l^{-1}) on line 10 of LATEX A survey H07, 6-22 November 1993.

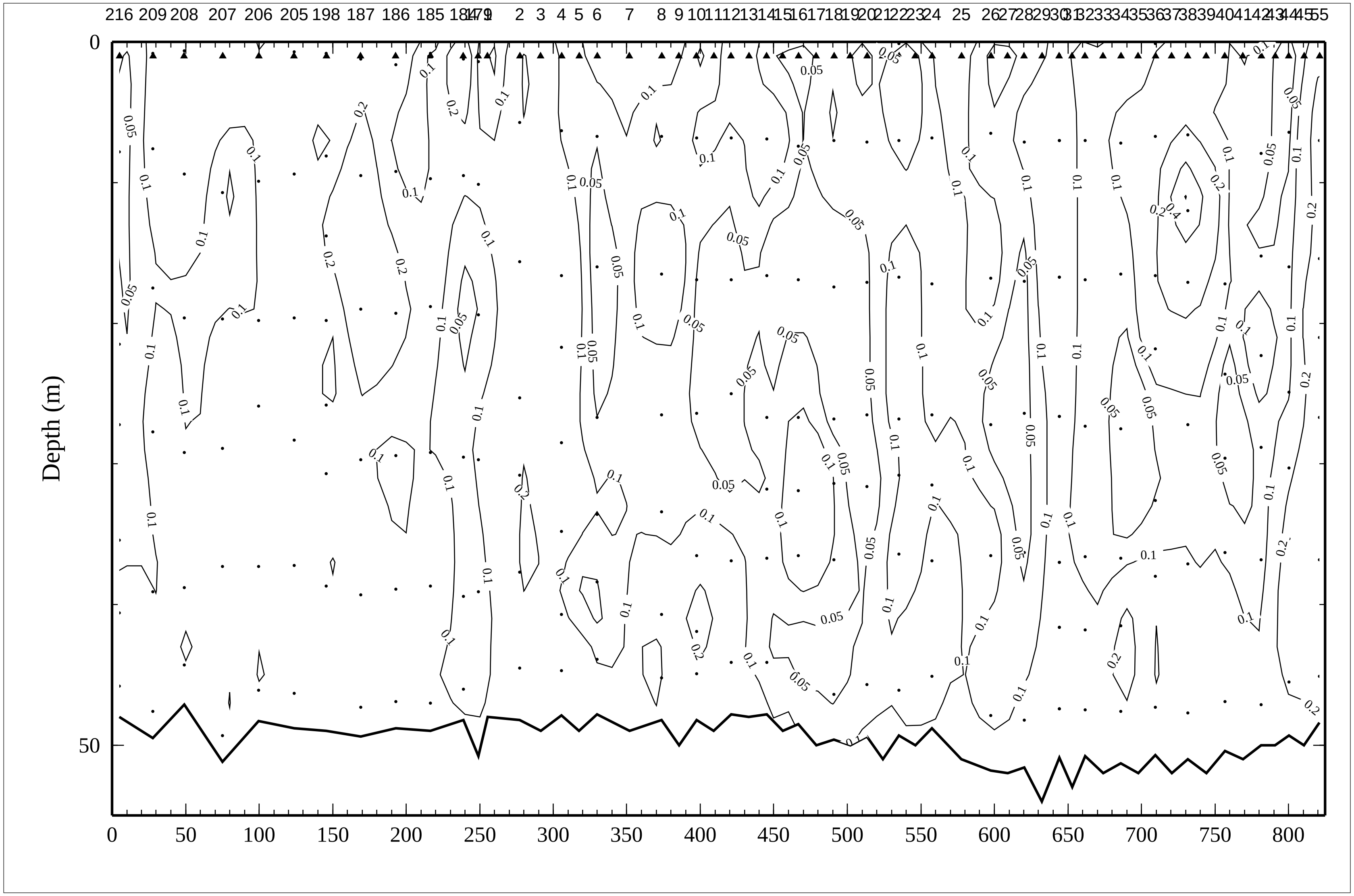

Figure 7.10.15. Urea (μmol·l-1) on line 10 of LATEX A survey H07, 6-22 November 1993.

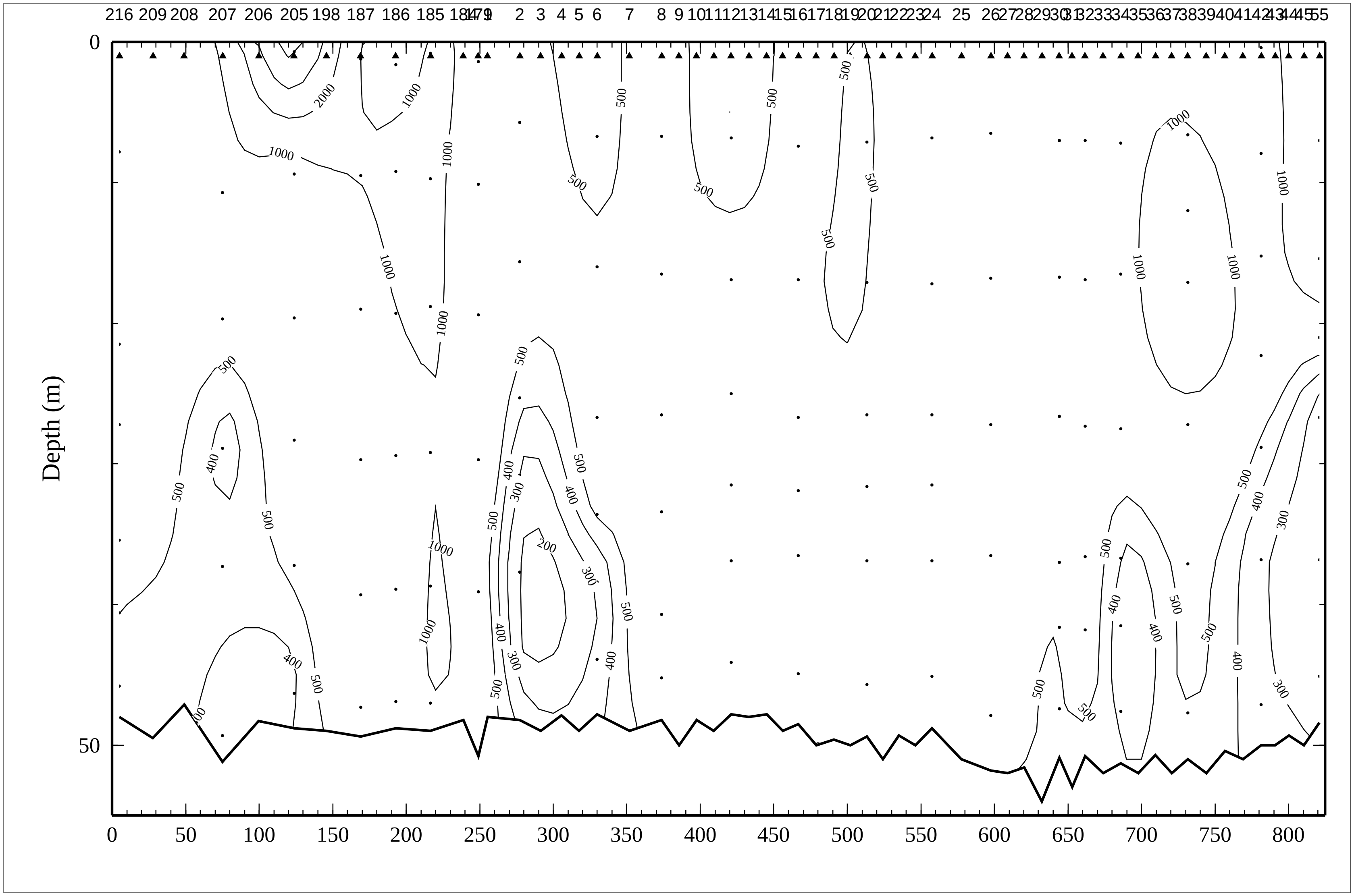

Figure 7.10.16. Chlorophyll a (ng·l^{-1}) on line 10 of LATEX A survey H07, 6-22 November 1993.

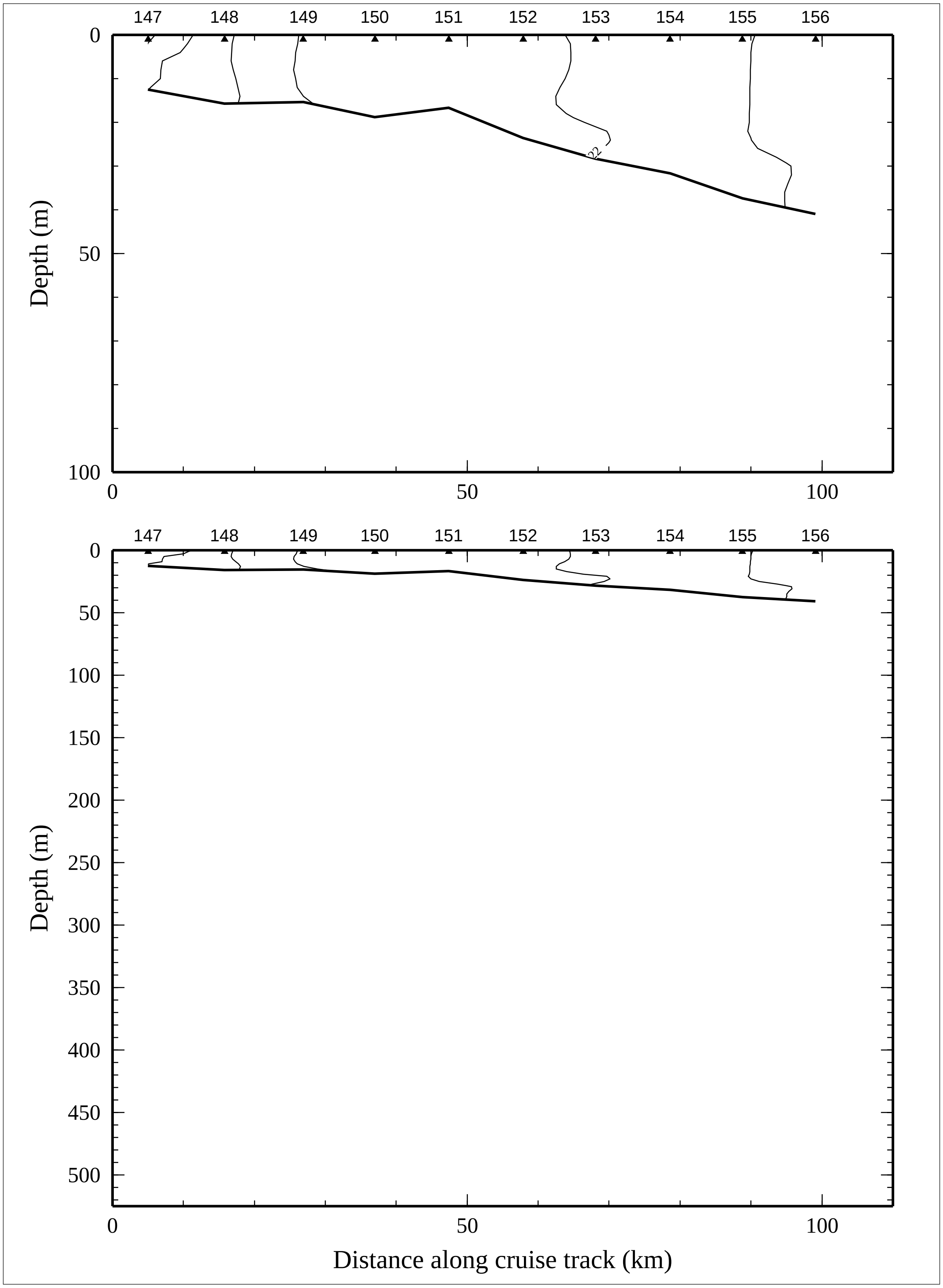

Figure 7.11.1. Potential temperature (˚C) on line 11 of LATEX A survey H07, 6-22 November 1993.

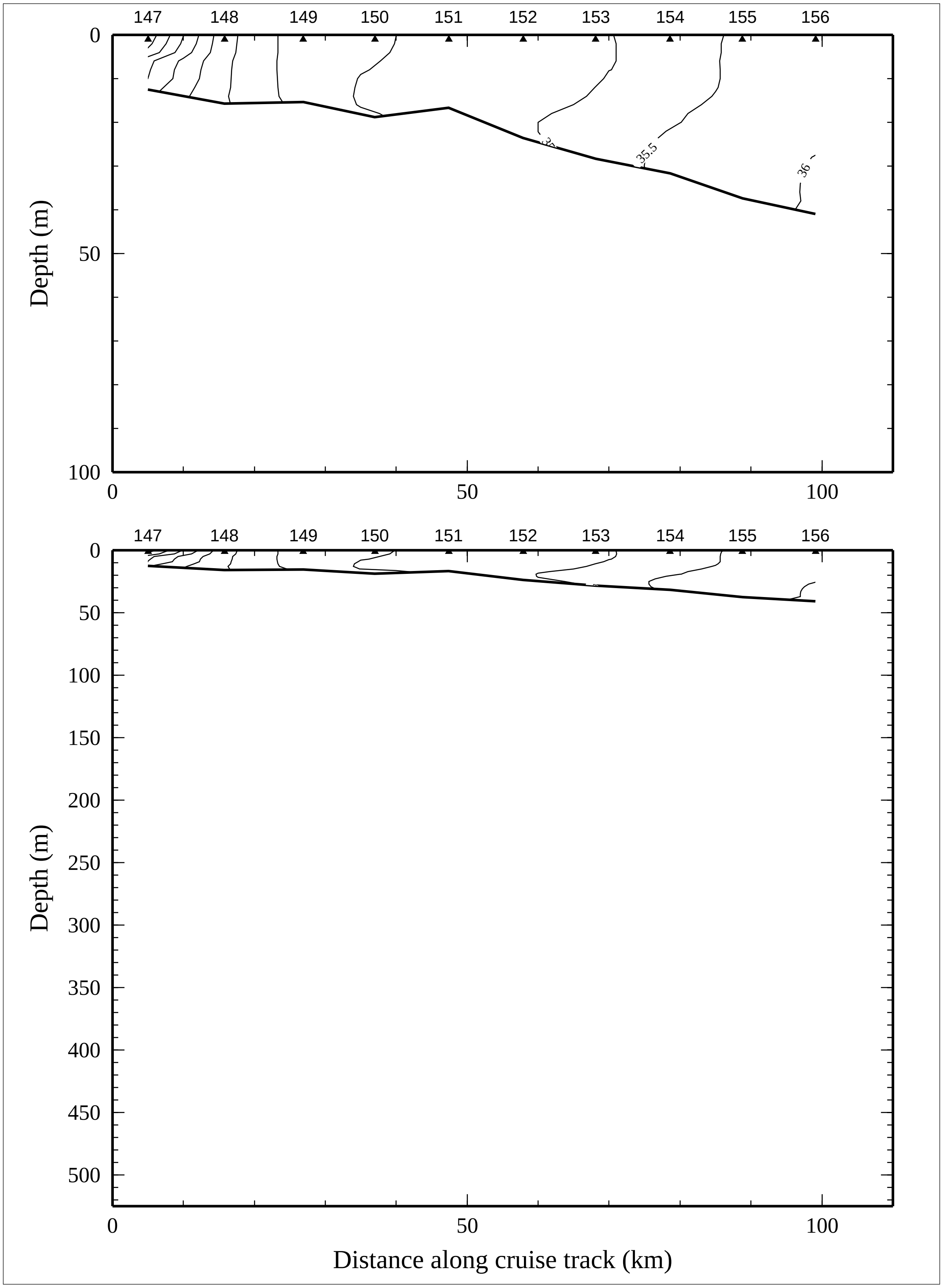

Figure 7.11.2. Salinity, derived from CTD data, on line 11 of LATEX A survey H07, 6-22 November 1993.

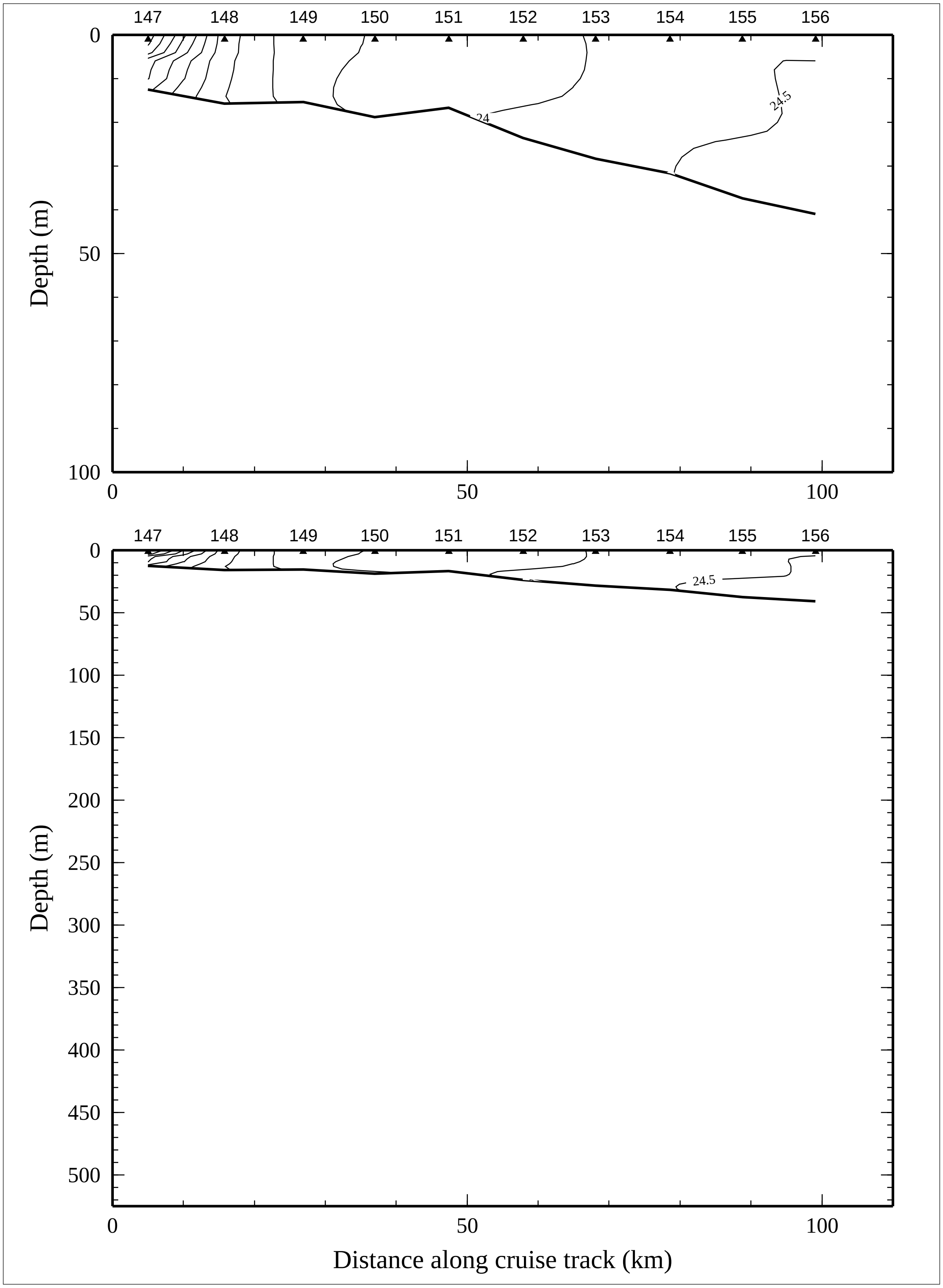

Figure 7.11.3. Density anomaly (σ_θ in kg·m^{-3}) on line 11 of LATEX A survey H07, 6-22 November 1993.

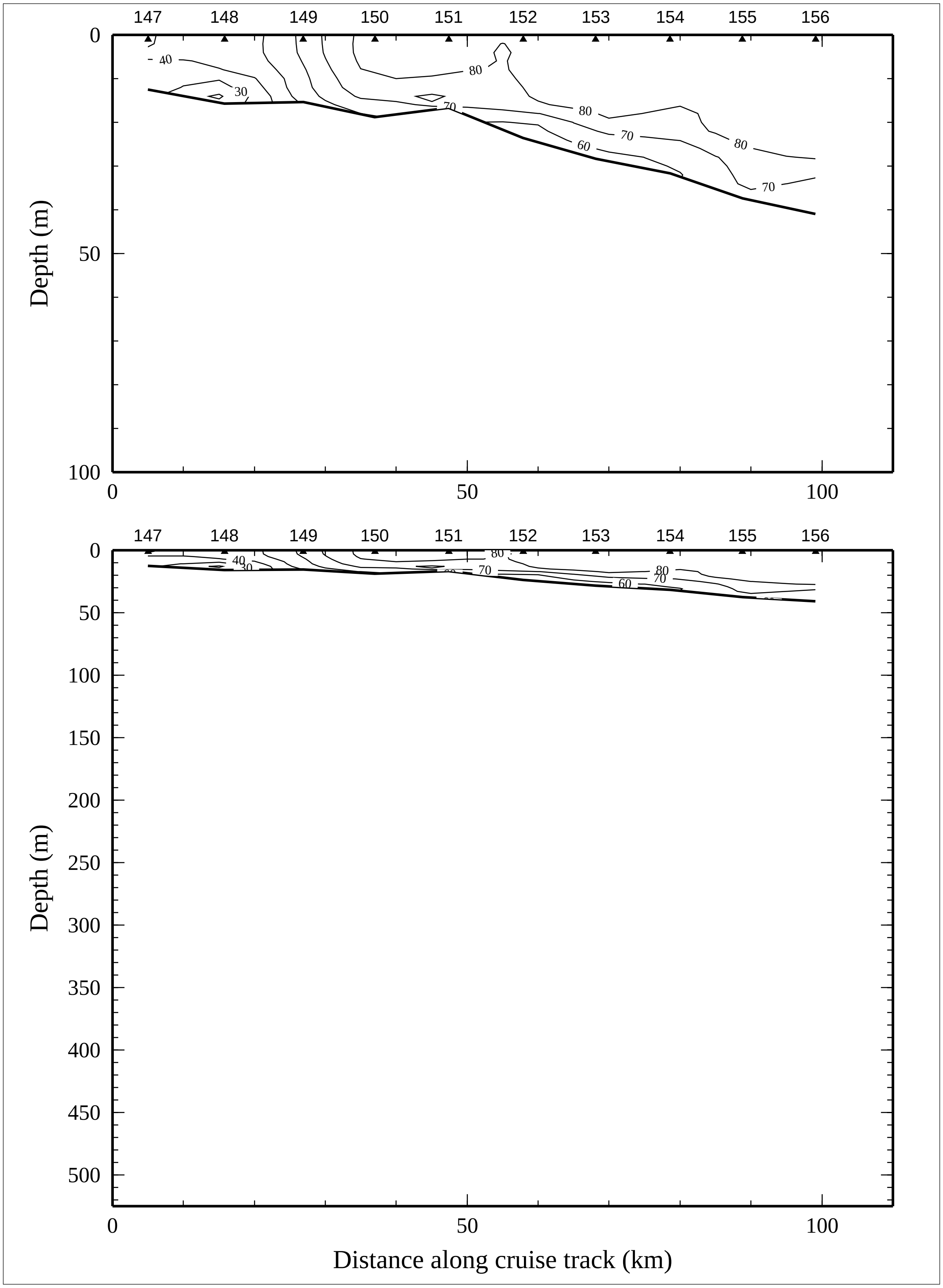

Figure 7.11.4. Percent transmission (660 nm wave length; 25-cm path length) on line 11 of LATEX A survey H07, 6-22 November 1993.

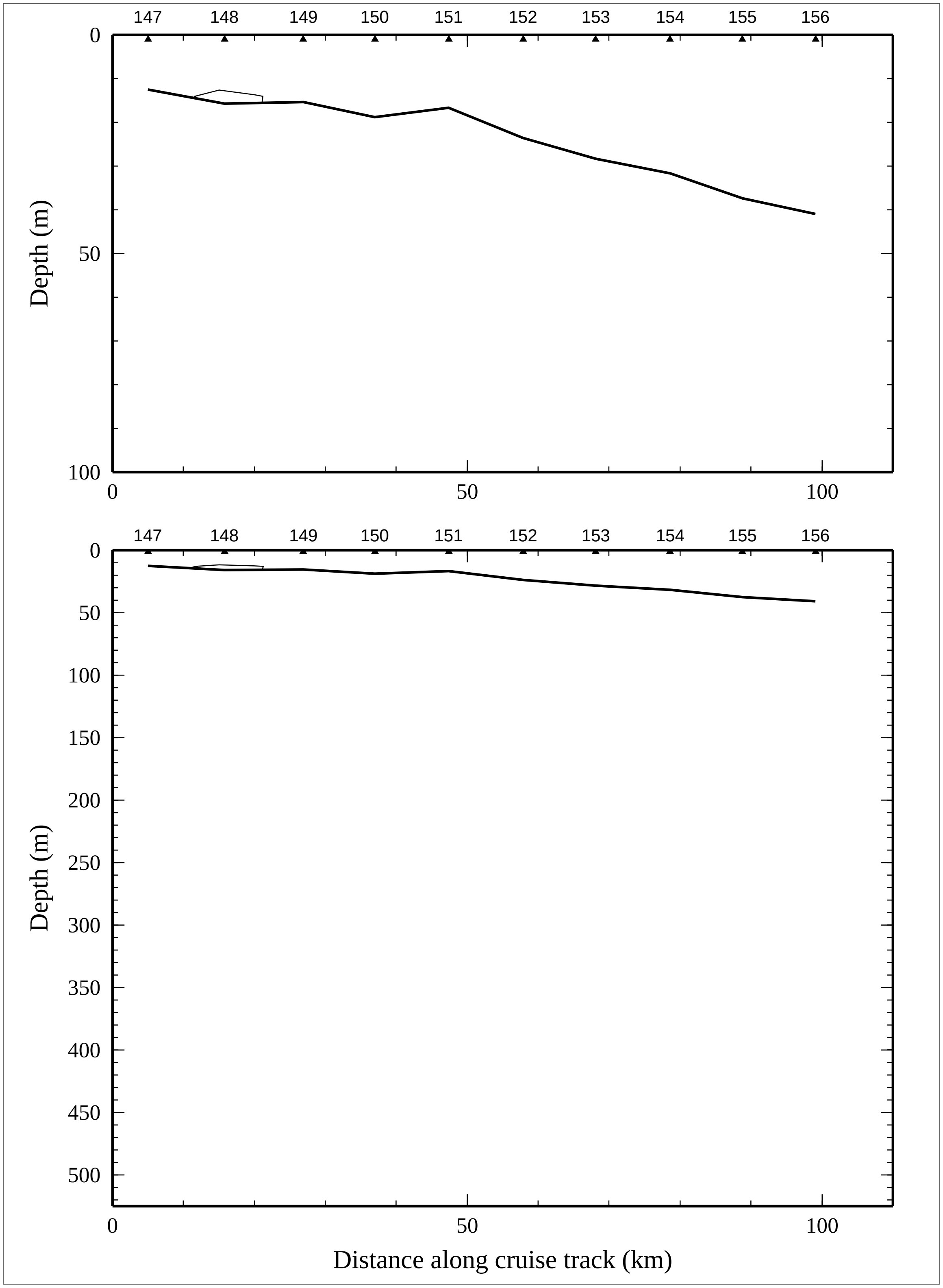

Figure 7.11.5. Optical backscatterance (voltage) on line 11 of LATEX A survey H07, 6-22 November 1993. Values were 0.05 or less.

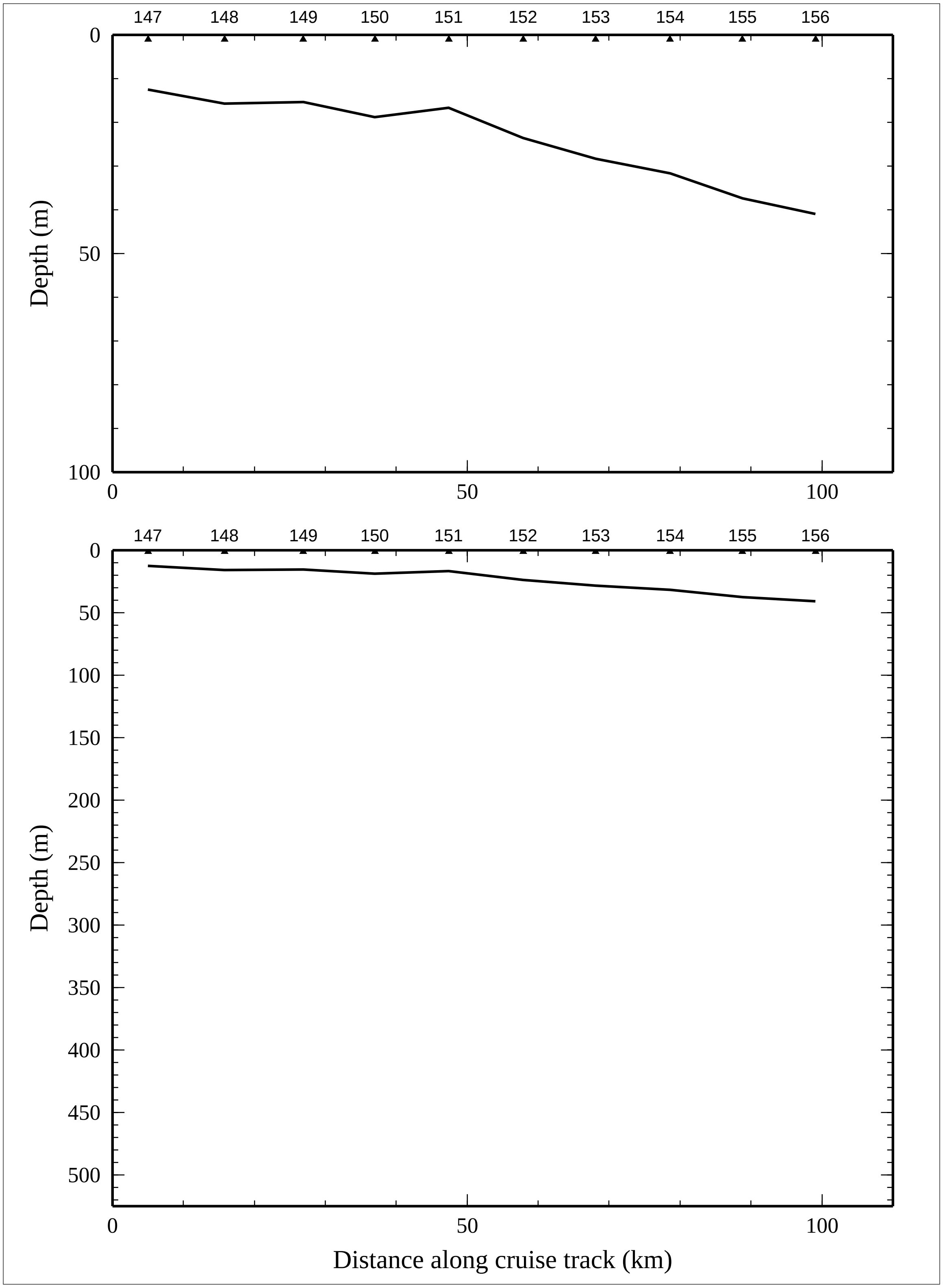

Figure 7.11.6. Downwelling irradiance as percent of surface irradiance on line 11 of LATEX A survey H07, 6-22 November 1993. Night stations.

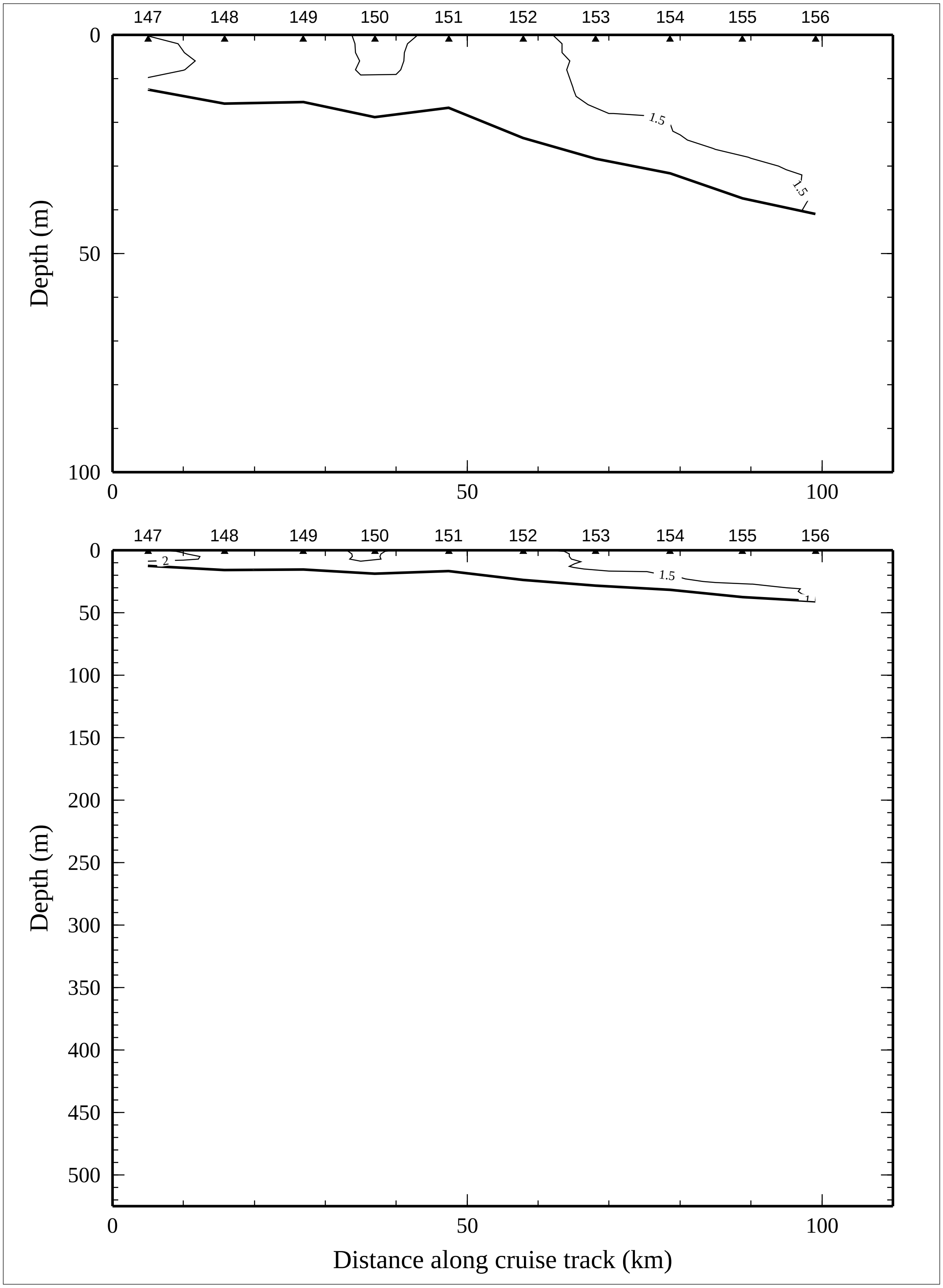

Figure 7.11.7. Relative fluorescence on line 11 of LATEX A survey H07, 6-22 November 1993.

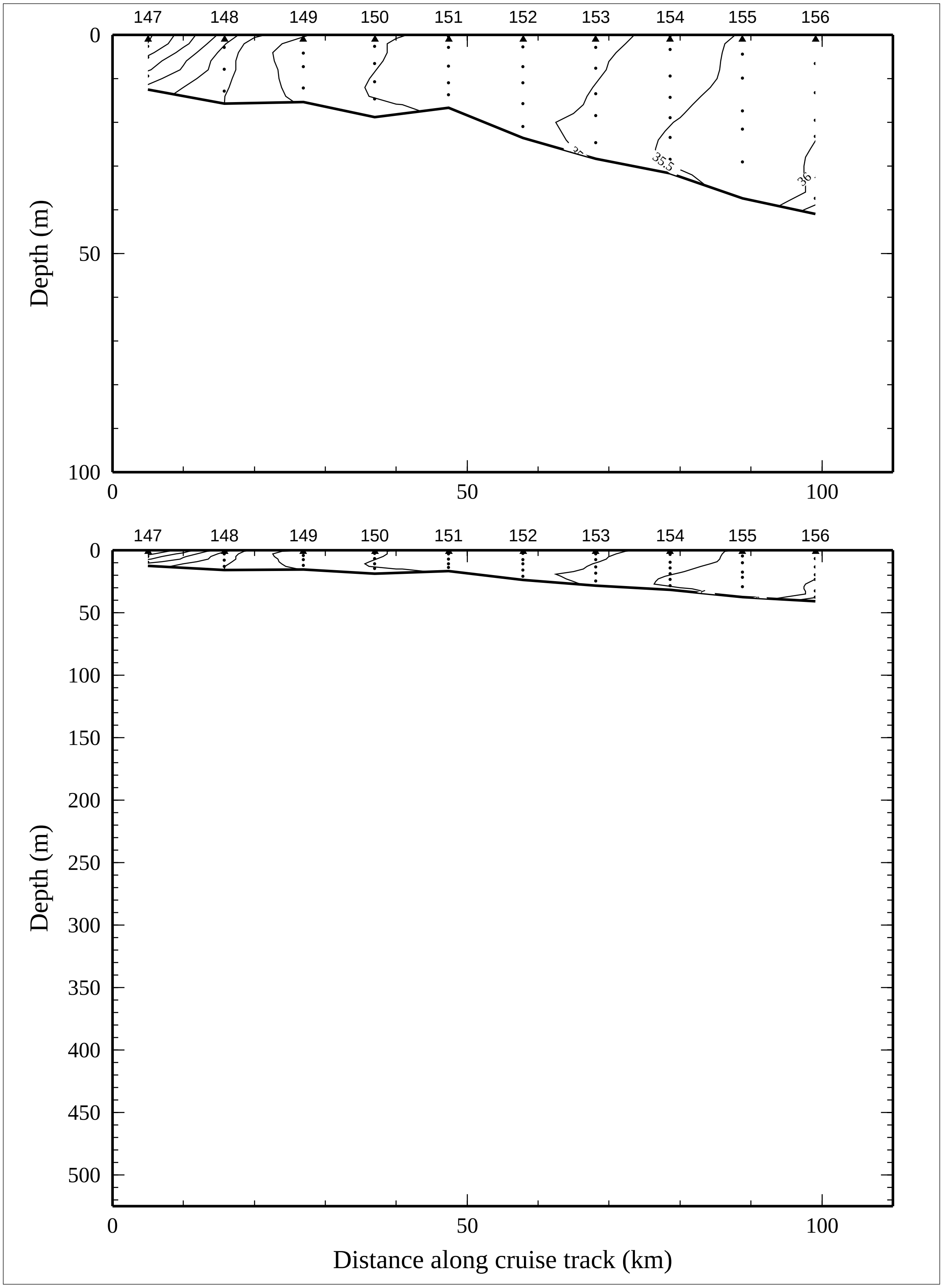

Figure 7.11.8. Bottle salinity on line 11 of LATEX A survey H07, 6-22 November 1993.

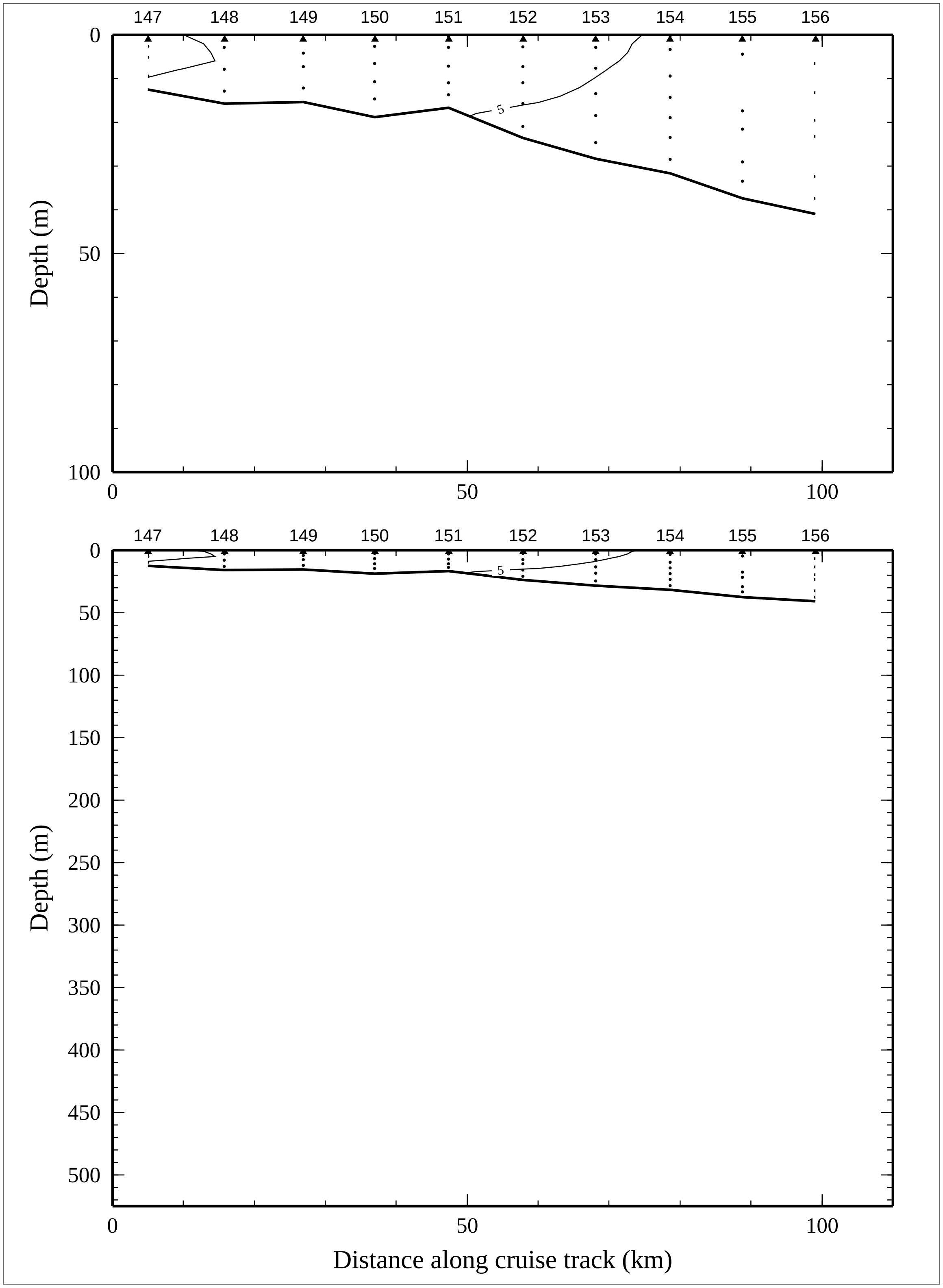

Figure 7.11.9. Dissolved oxygen (ml·l^{-1}) on line 11 of LATEX A survey H07, 6-22 November 1993.

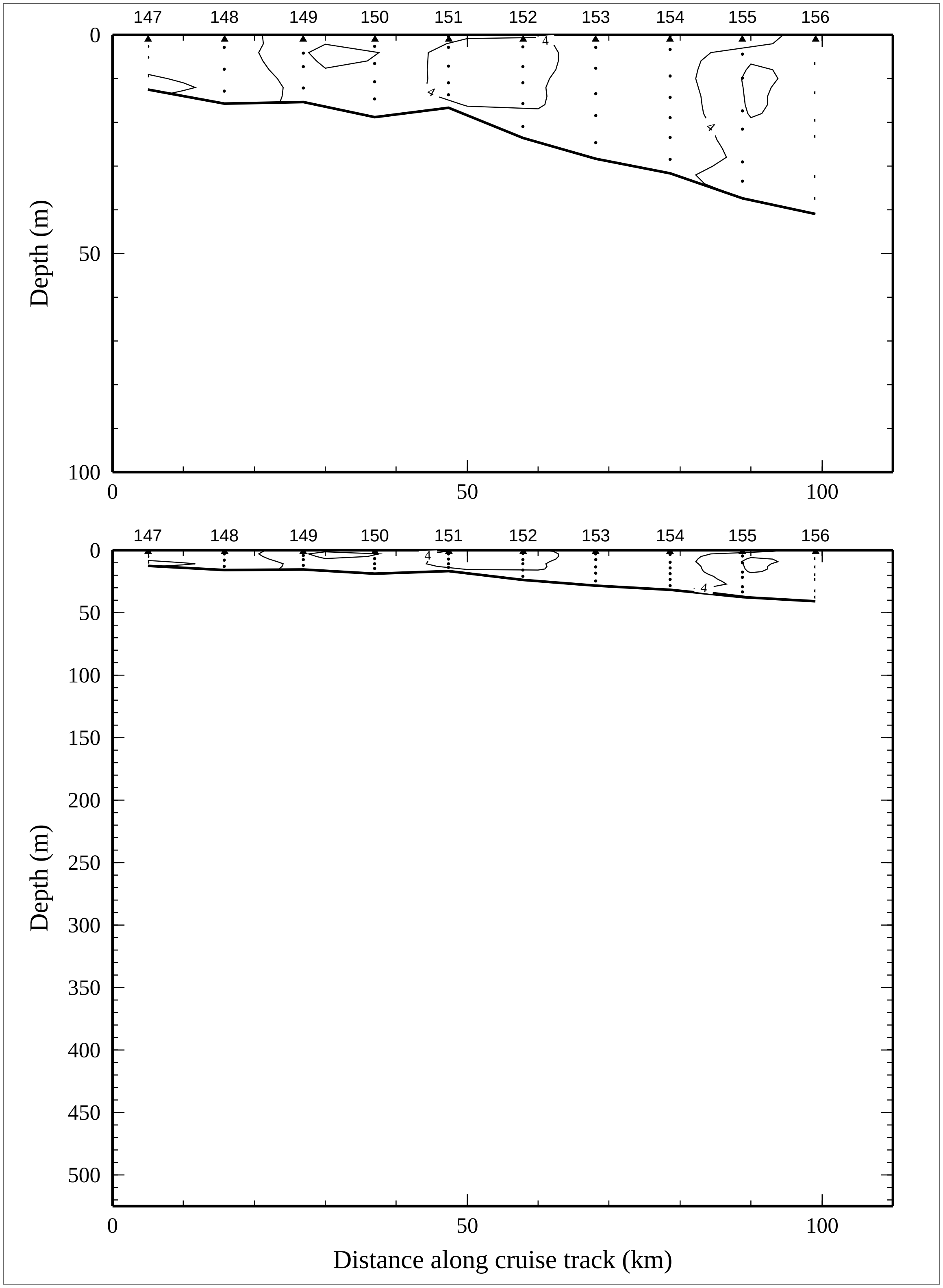

Figure 7.11.10. Silicate (µmol·l^{-1}) on line 11 of LATEX A survey H07, 6-22 November 1993.

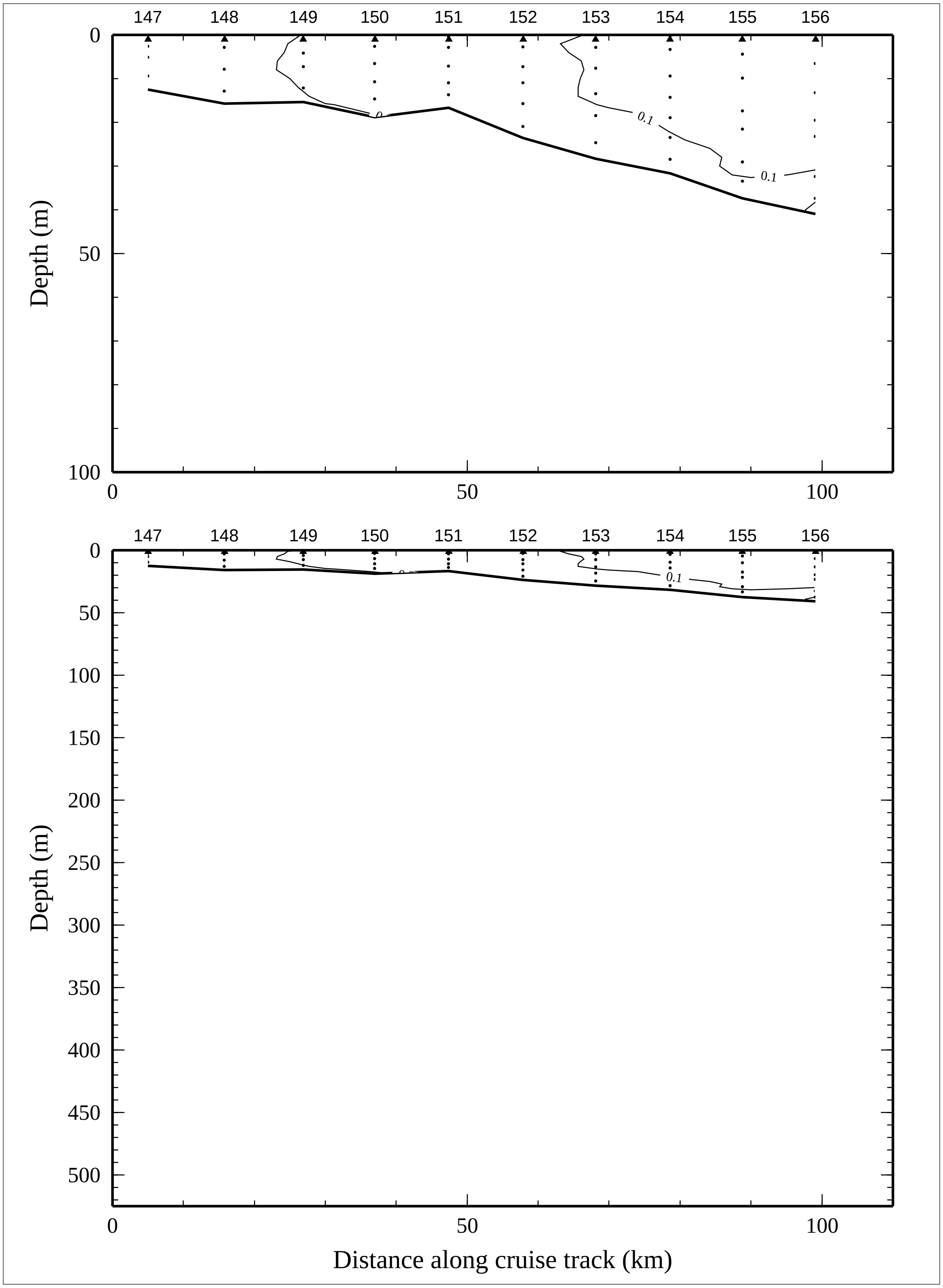

Figure 7.11.11. Phosphate (μmol·l-1) on line 11 of LATEX A survey H07, 6-22 November 1993.

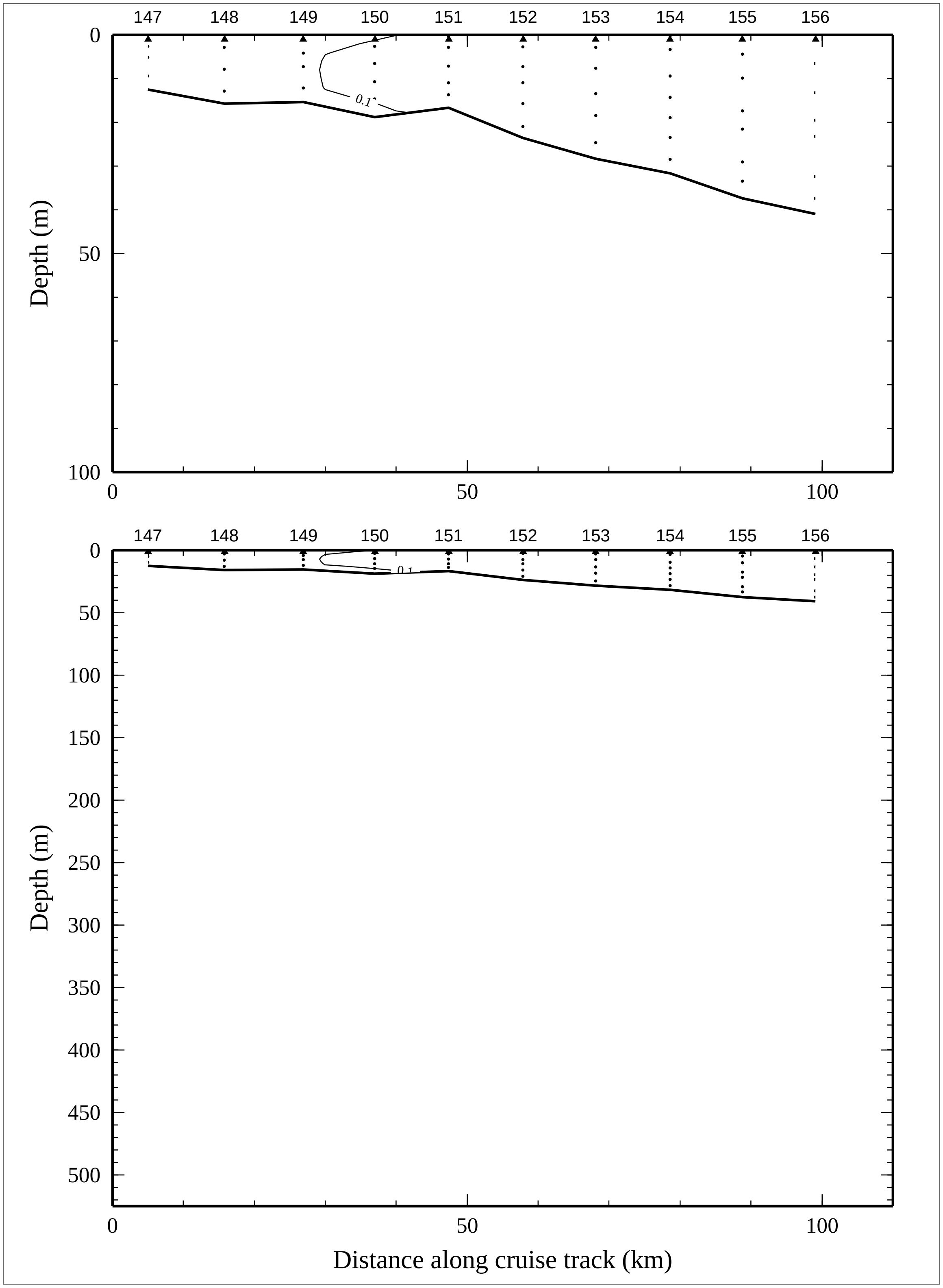

Figure 7.11.12. Nitrate (μmol·l-1) on line 11 of LATEX A survey H07, 6-22 November 1993.

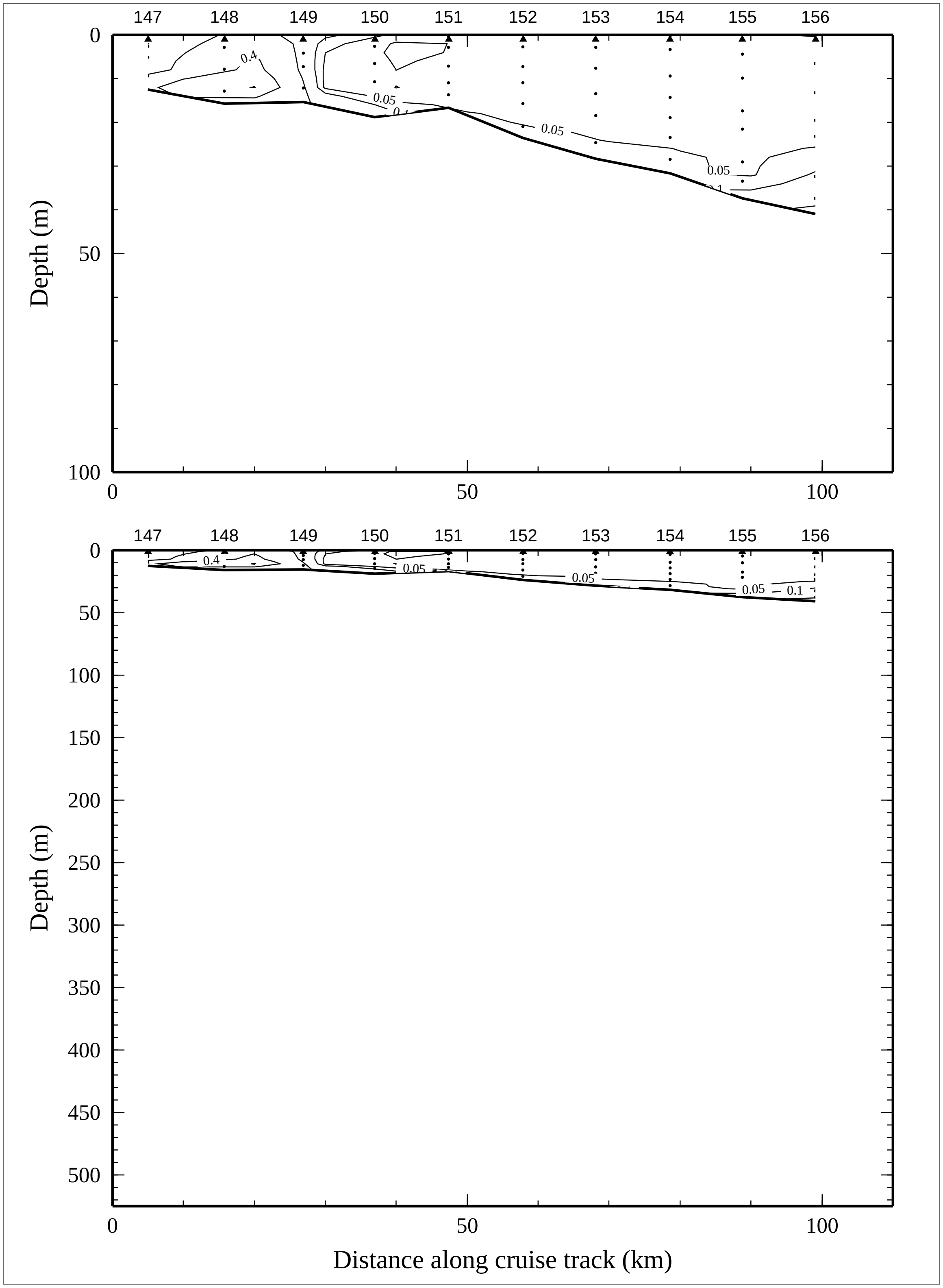

Figure 7.11.13. Nitrite ($\mu mol \cdot l^{-1}$) on line 11 of LATEX A survey H07, 6-22 November 1993.

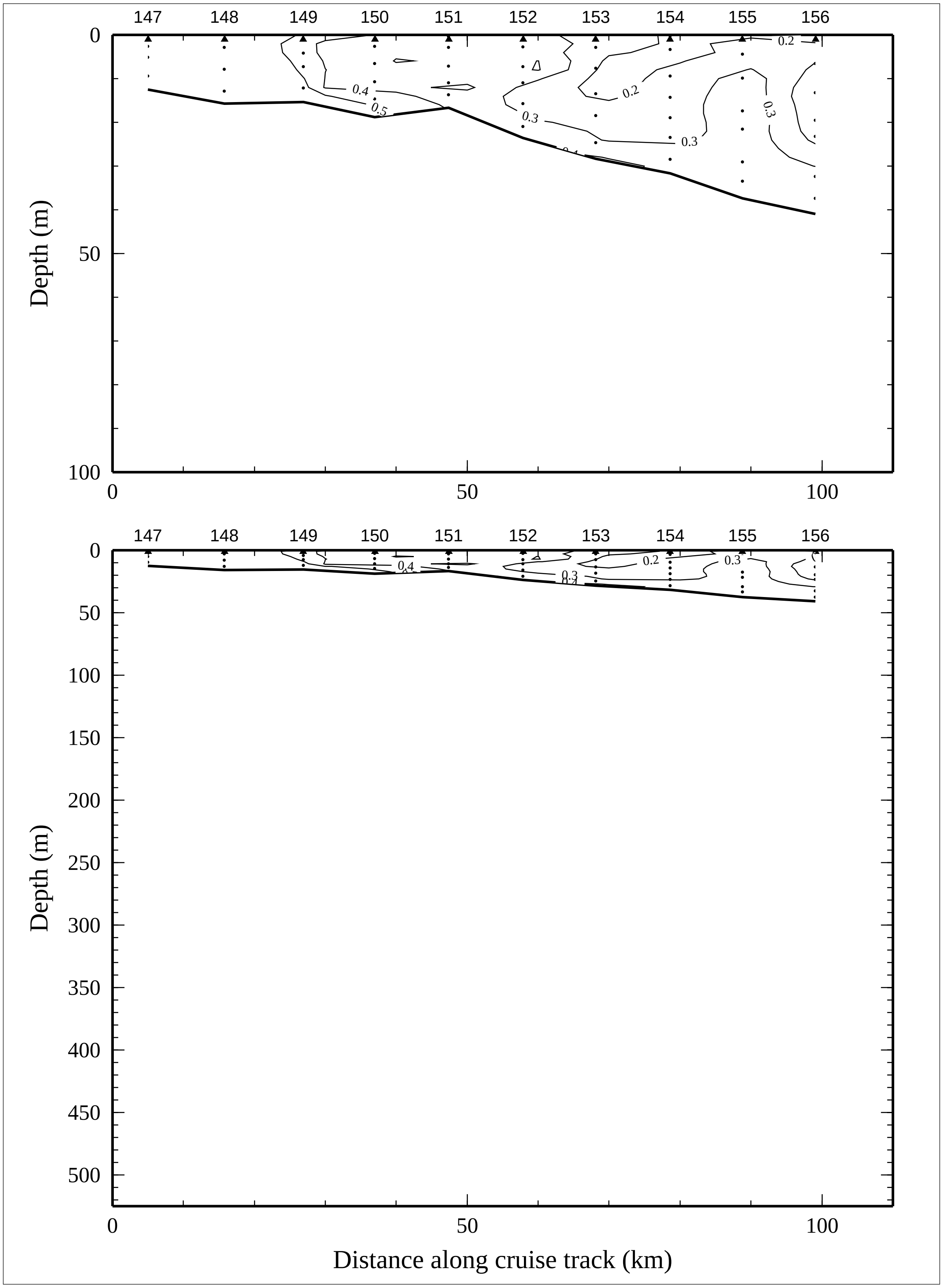

Figure 7.11.14. Ammonium (μmol·l^{-1}) on line 11 of LATEX A survey H07, 6-22 November 1993.

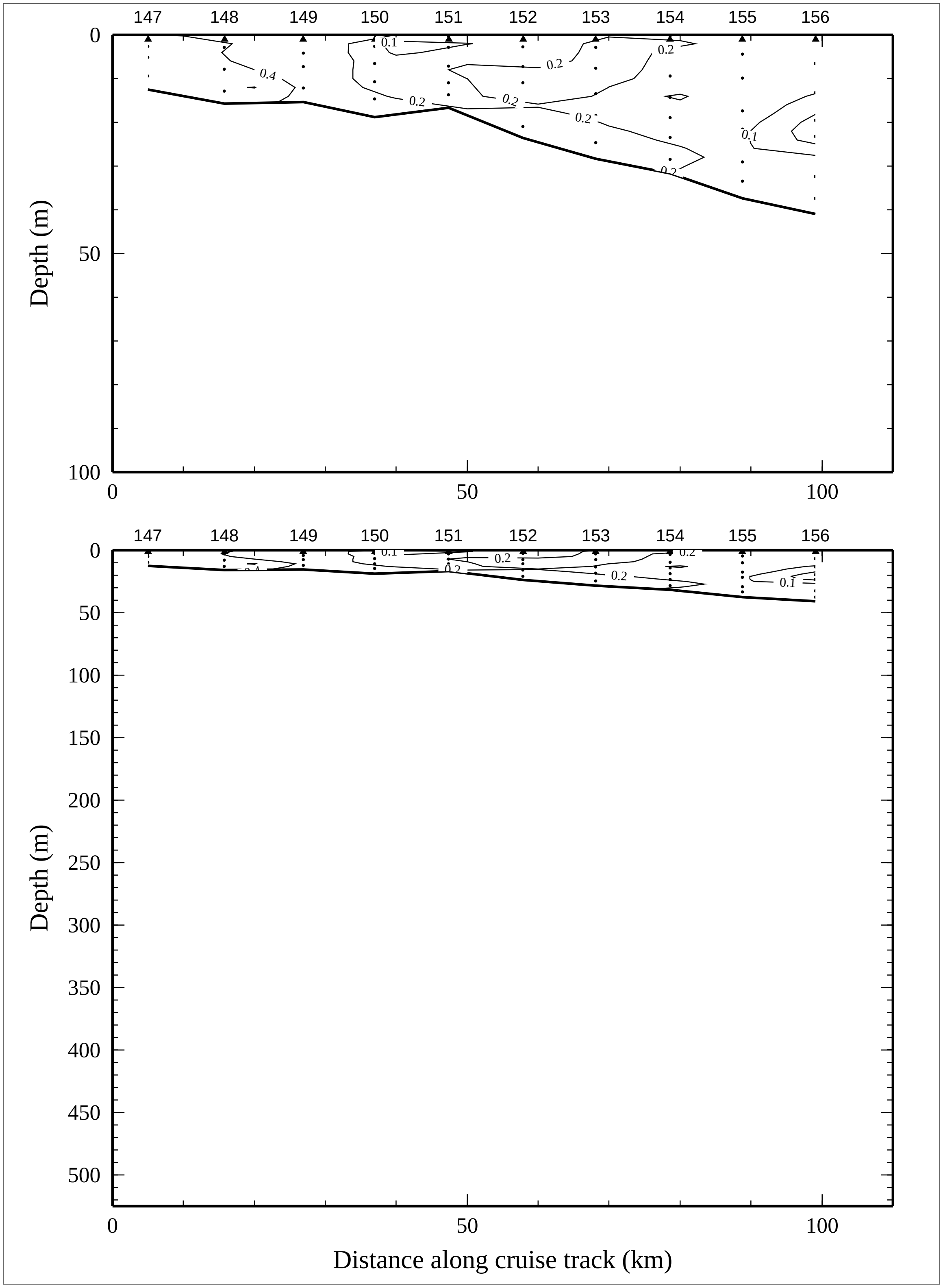

Figure 7.11.15. Urea (μmol·l-1) on line 11 of LATEX A survey H07, 6-22 November 1993.

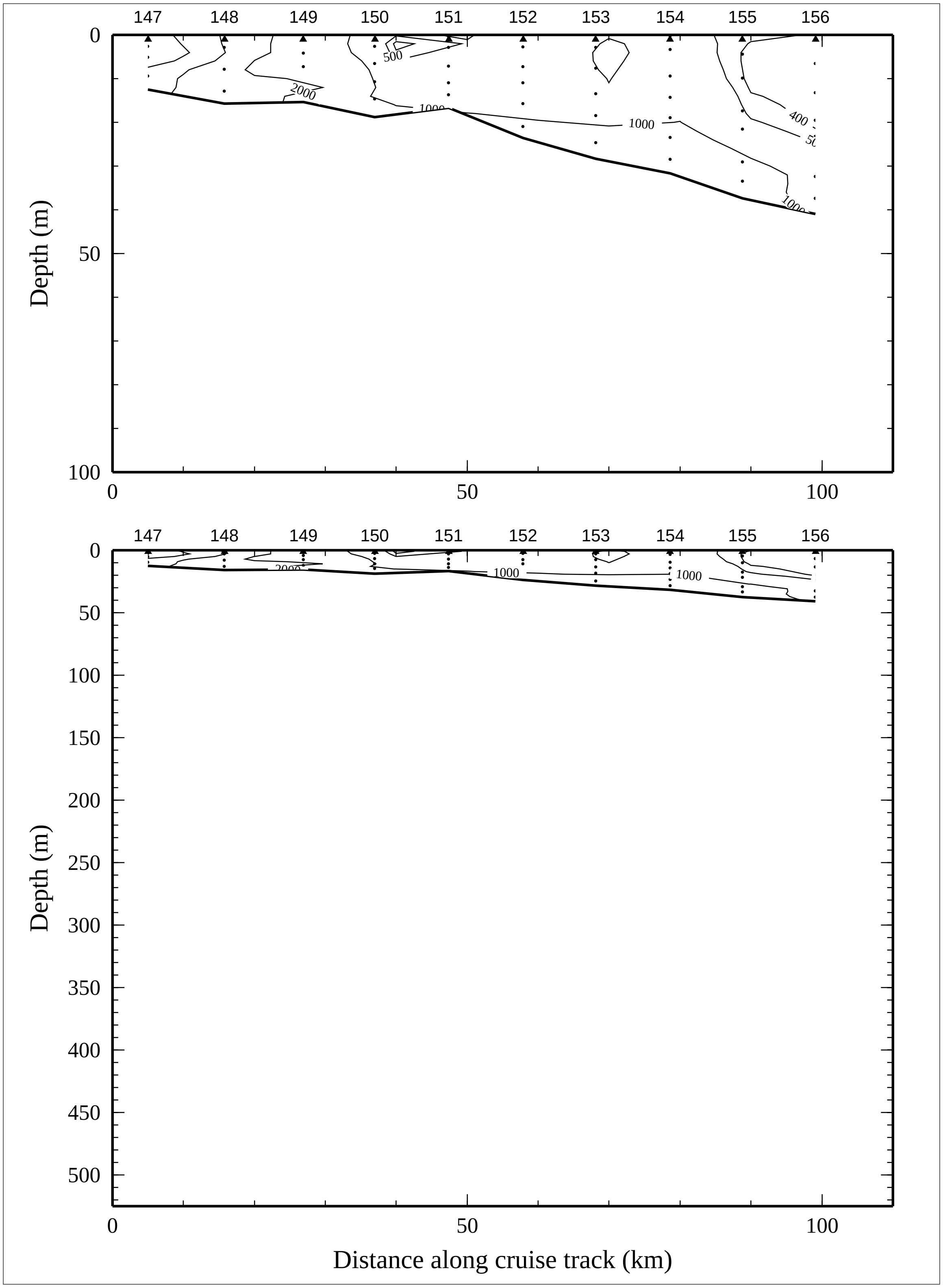

Figure 7.11.16. Chlorophyll a (ng·l^{-1}) on line 11 of LATEX A survey H07, 6-22 November 1993.

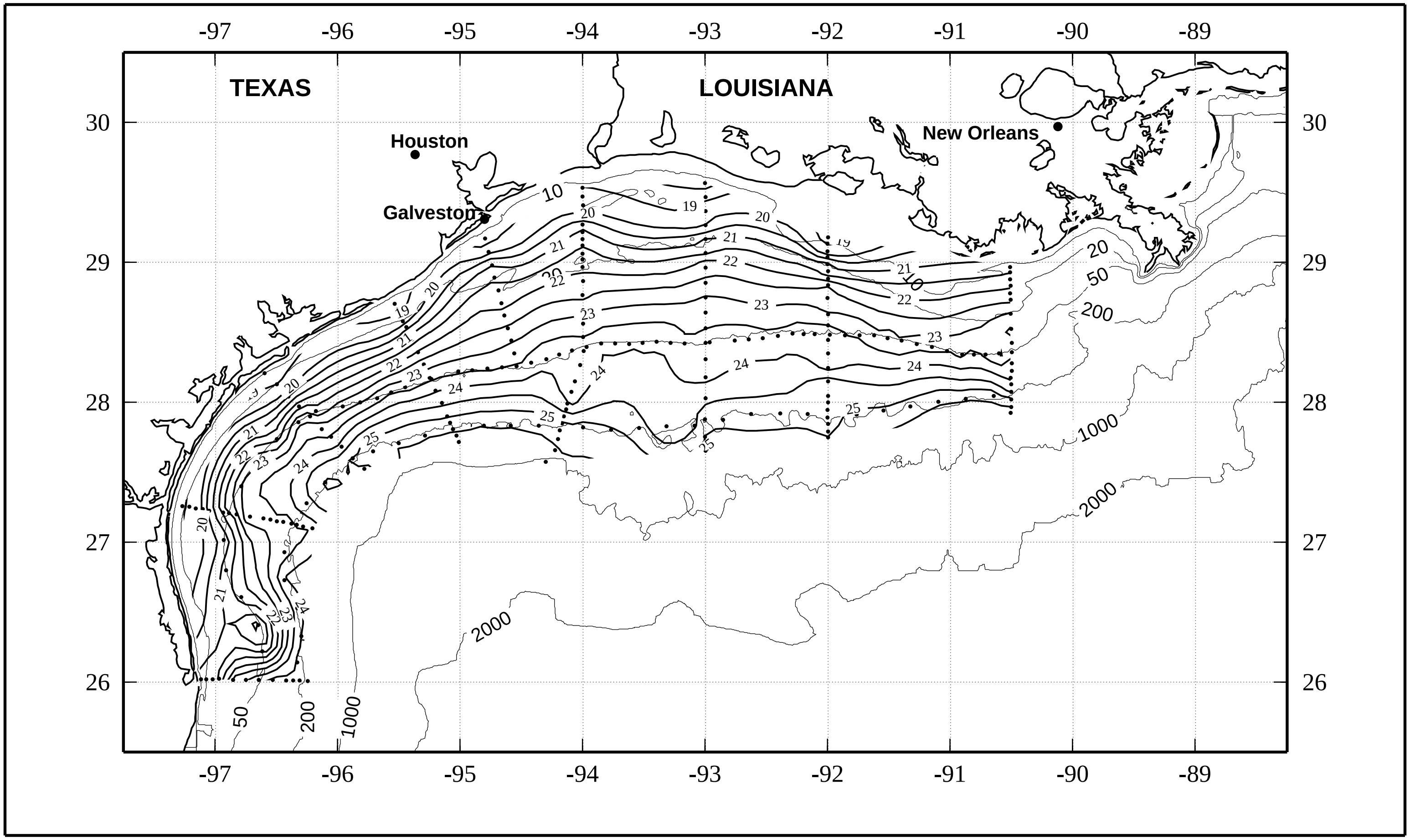

Figure 7.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H07, 6-22 November 1993.

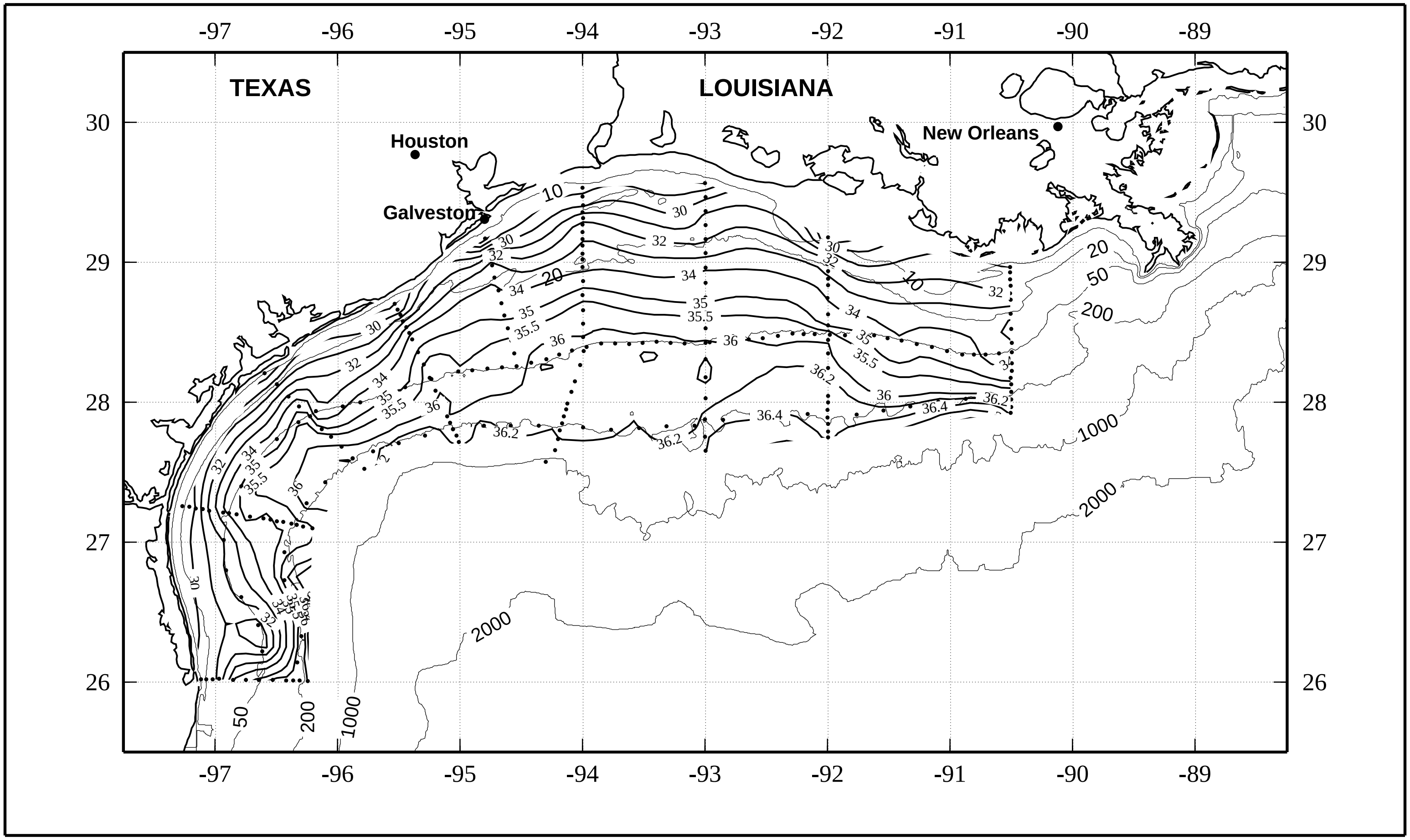

Figure 7.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H07, 6-22 November 1993.

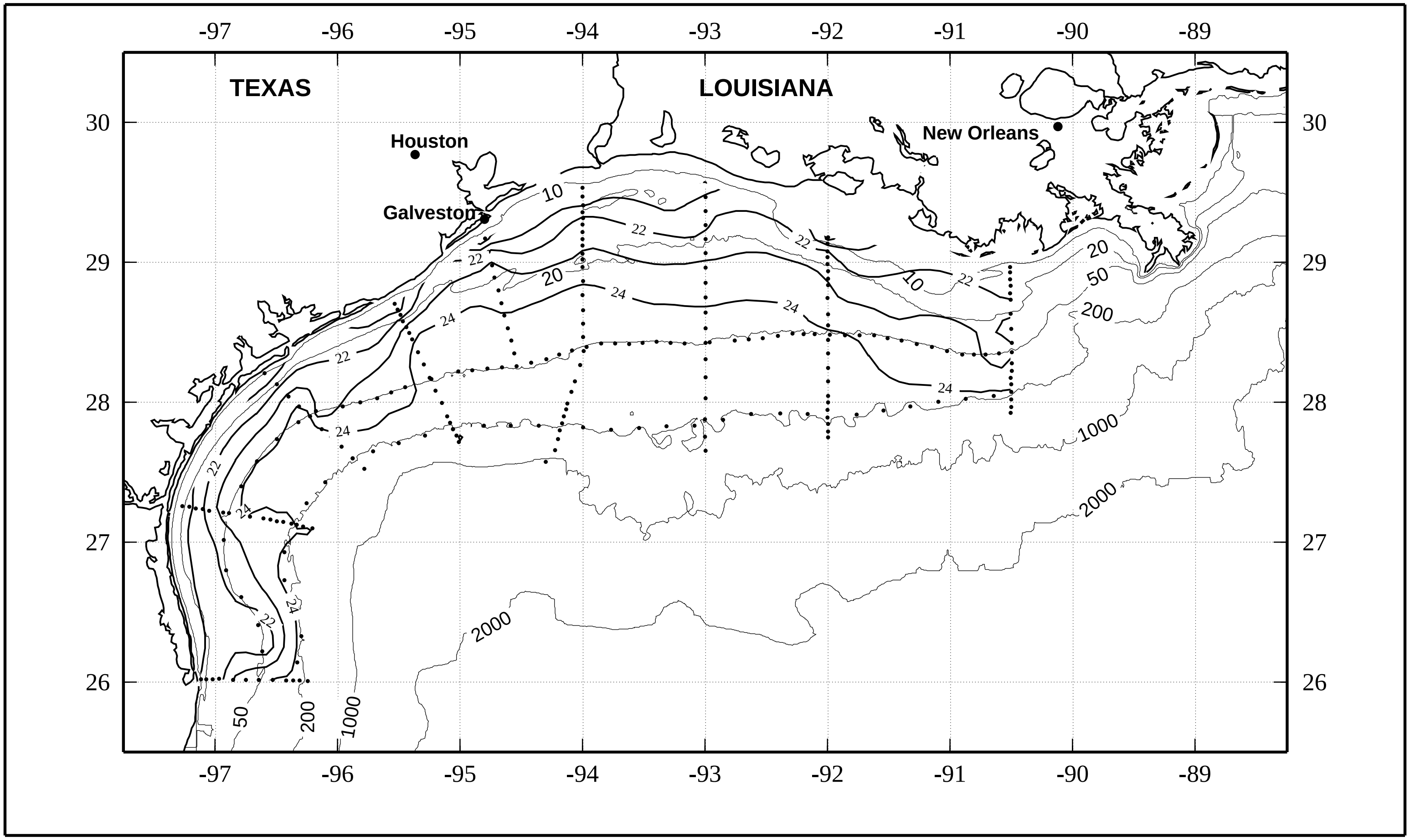

Figure 7.12.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) at 3 m on LATEX A survey H07, 6-22 November 1993.

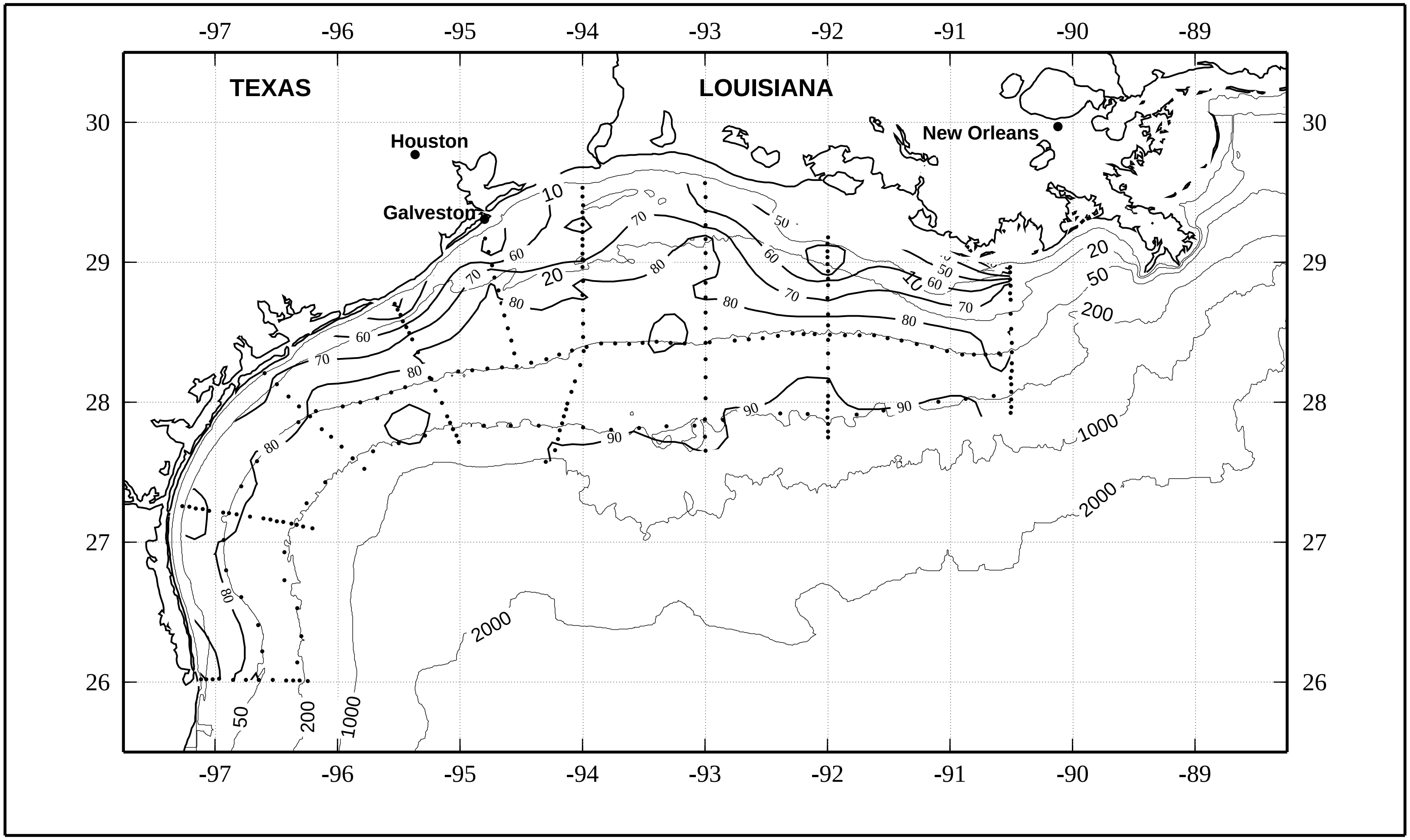

Figure 7.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H07, 6-22 November 1993.

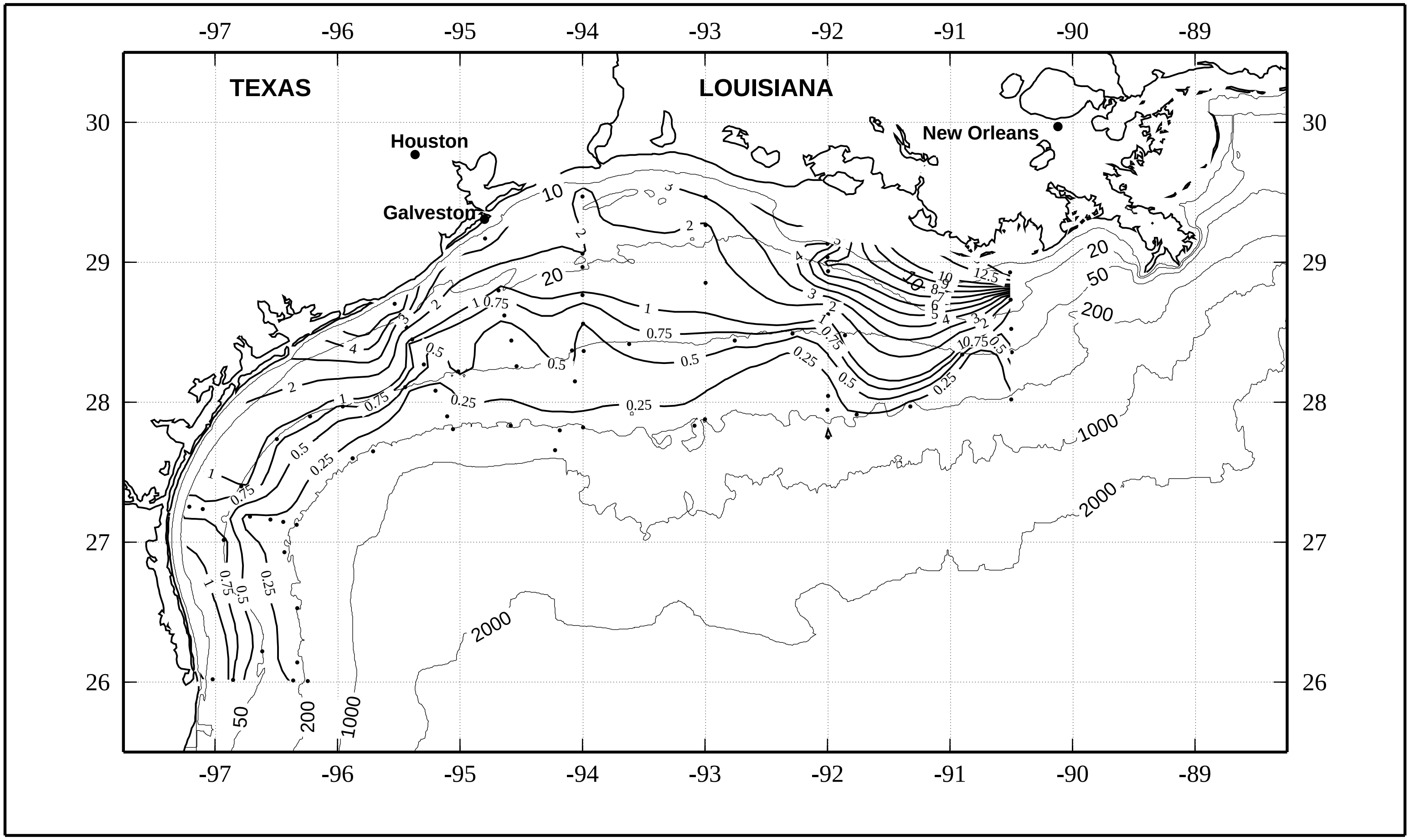

Figure 7.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H07, 6-22 November 1993.

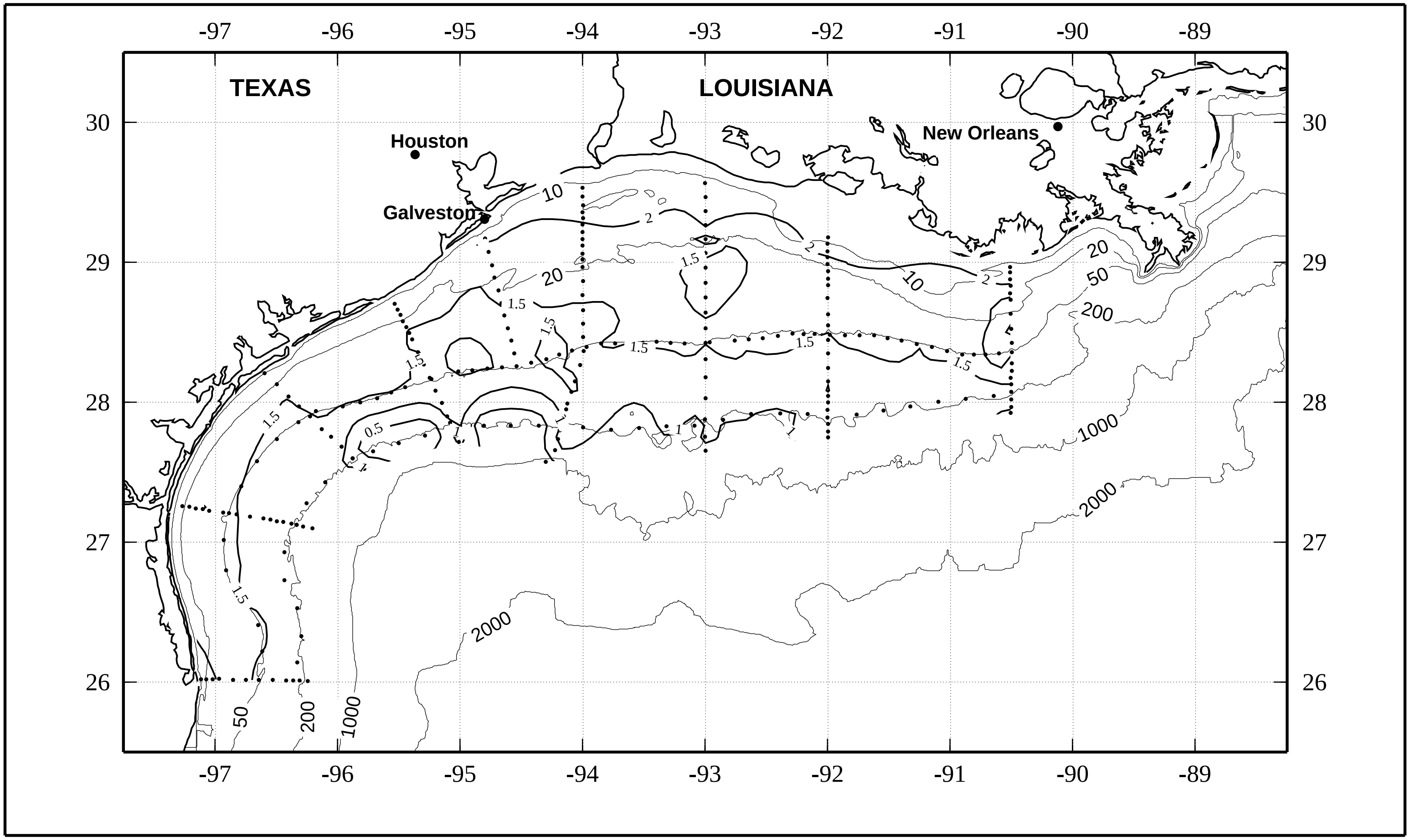

Figure 7.12.7. Relative fluorescence at 3 m on LATEX A survey H07, 6-22 November 1993.

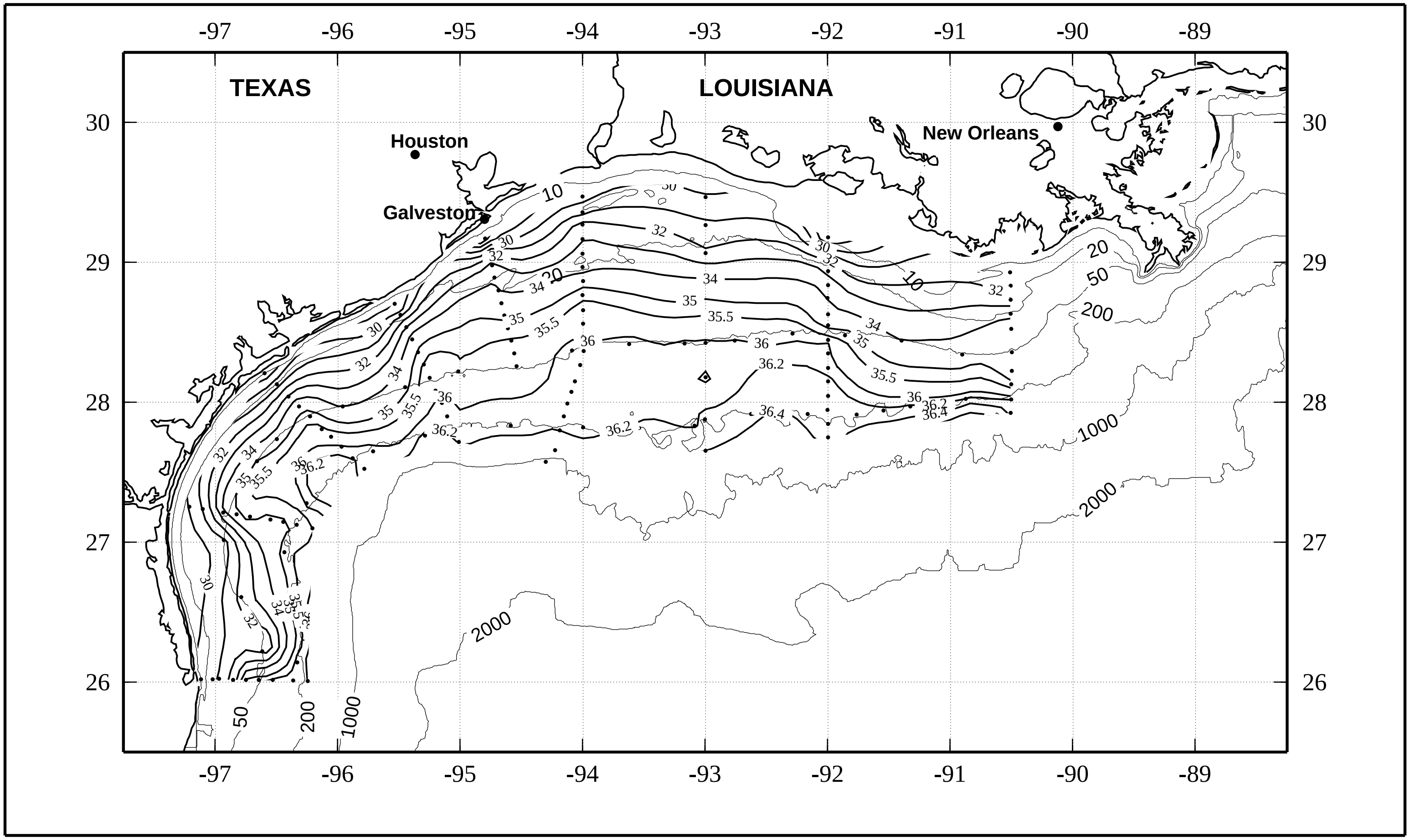

Figure 7.12.8. Bottle salinity at 3 m on LATEX A survey H07, 6-22 November 1993.

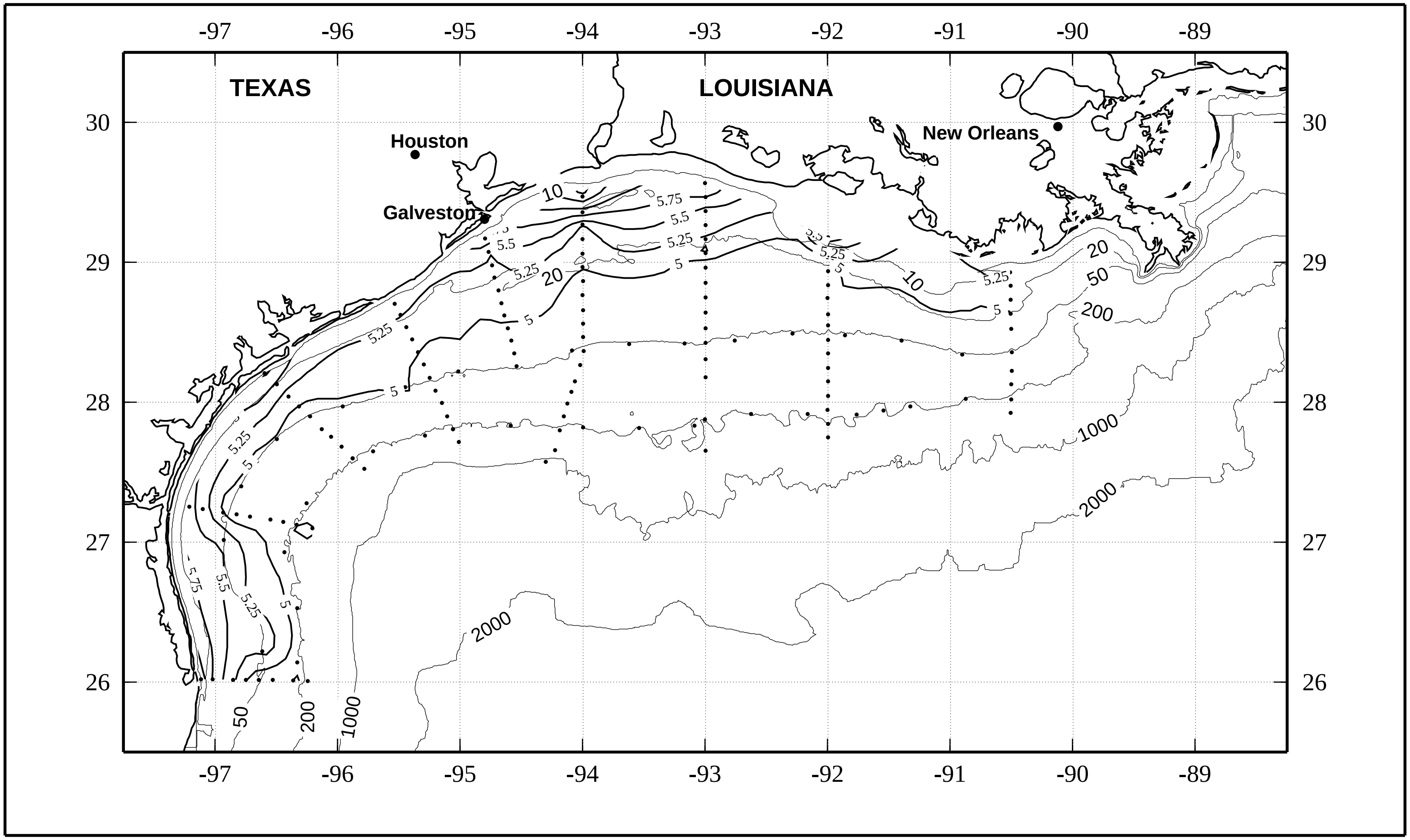

Figure 7.12.9. Dissolved oxygen (ml·l^{-1}) at 3 m on LATEX A survey H07, 6-22 November 1993.

G195

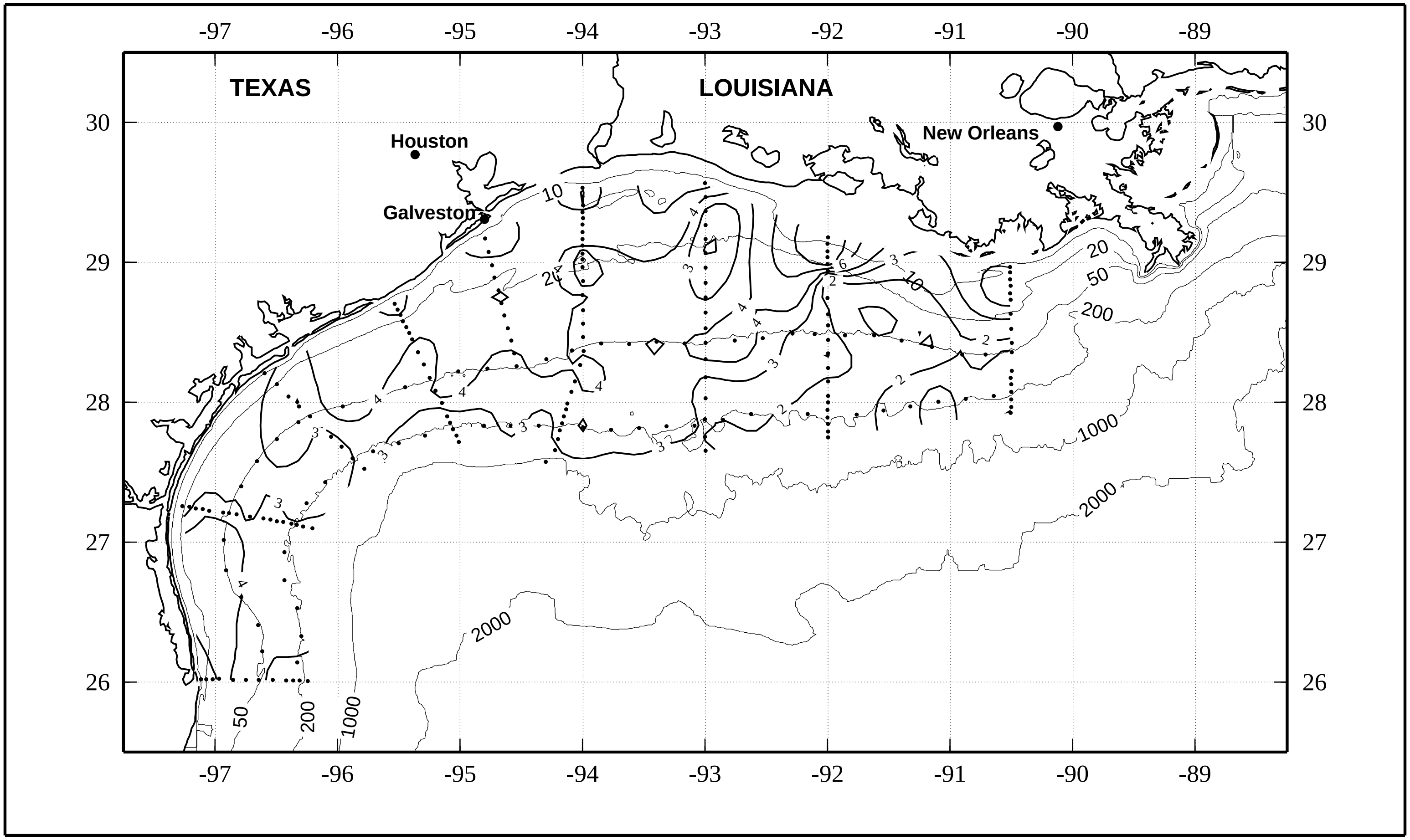

Figure 7.12.10. Silicate (μmol·l^{-1}) at 3 m on LATEX A survey H07, 6-22 November 1993.

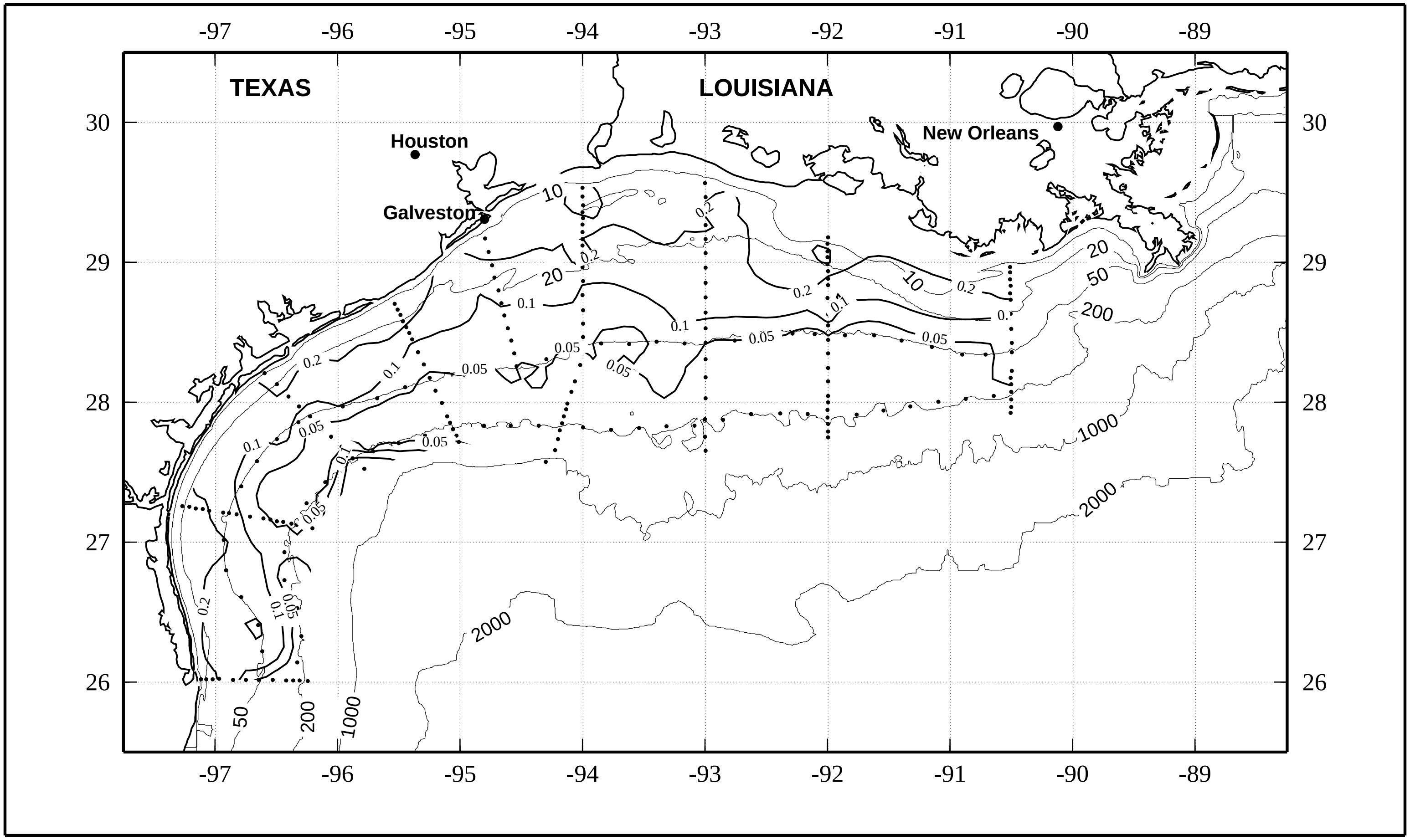

Figure 7.12.11. Phosphate (μmol·l-1) at 3 m on LATEX A survey H07, 6-22 November 1993.

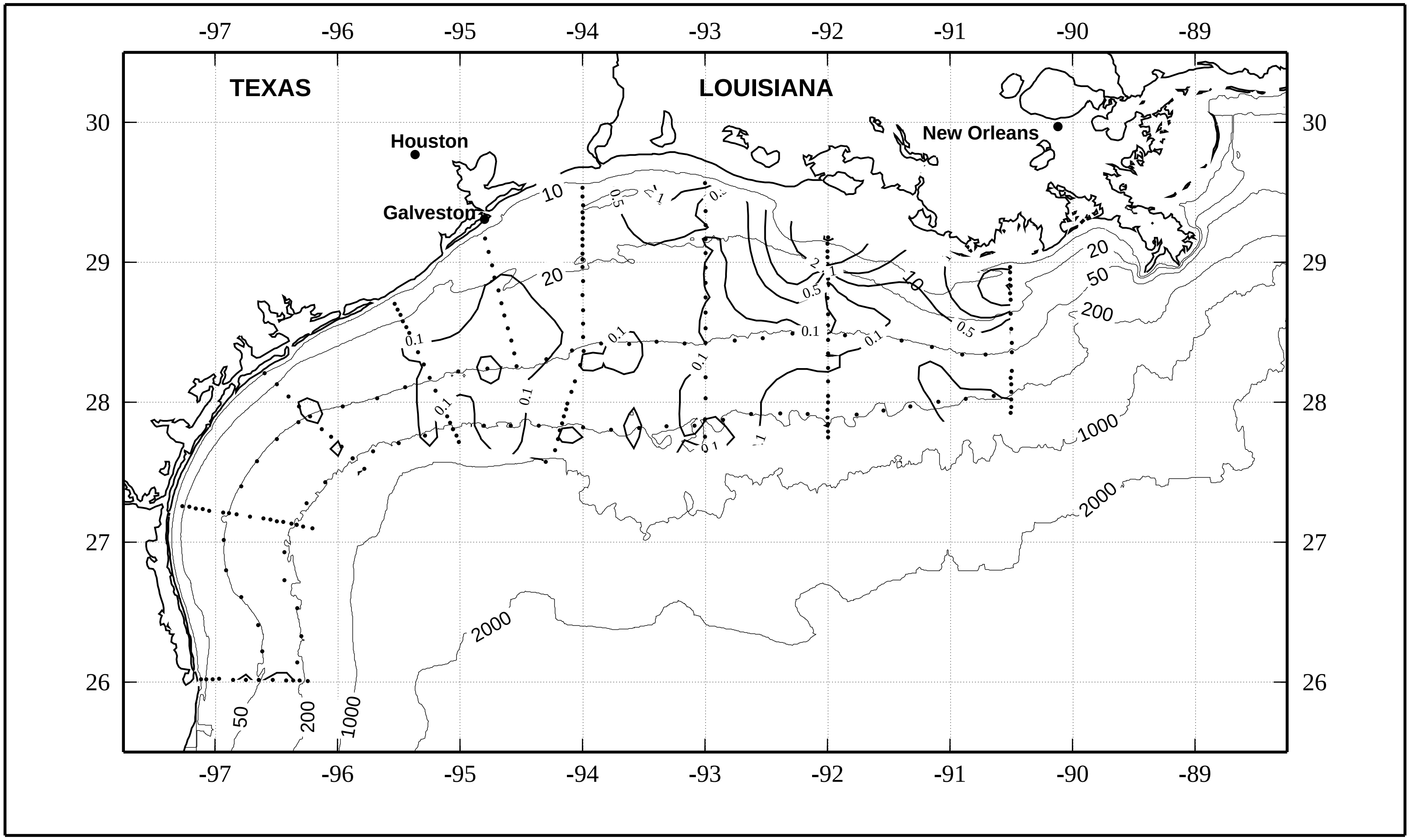

Figure 7.12.12. Nitrate (μmol·l^{-1}) at 3 m on LATEX A survey H07, 6-22 November 1993.

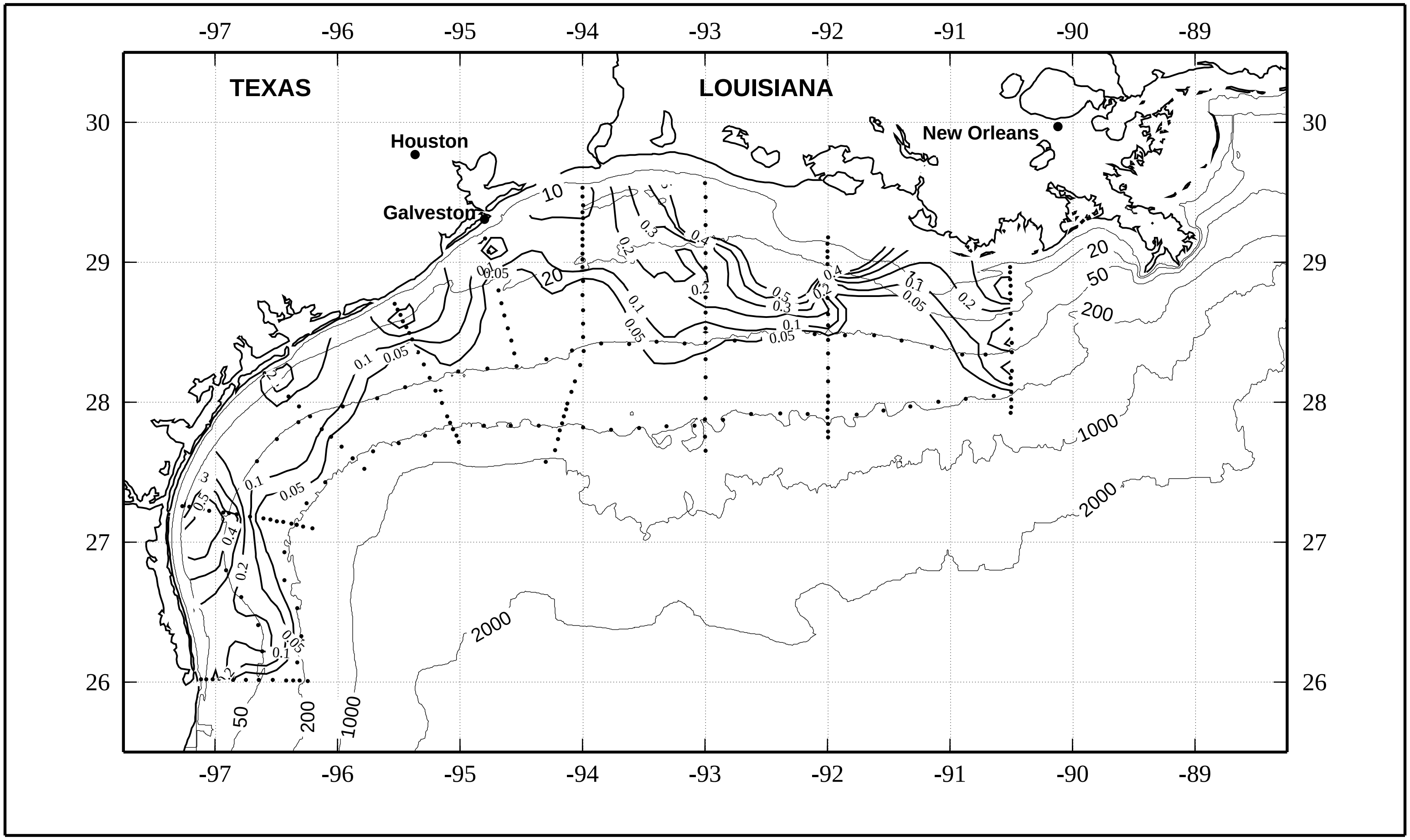

Figure 7.12.13. Nitrite (µmol·l^{-1}) at 3 m on LATEX A survey H07, 6-22 November 1993.

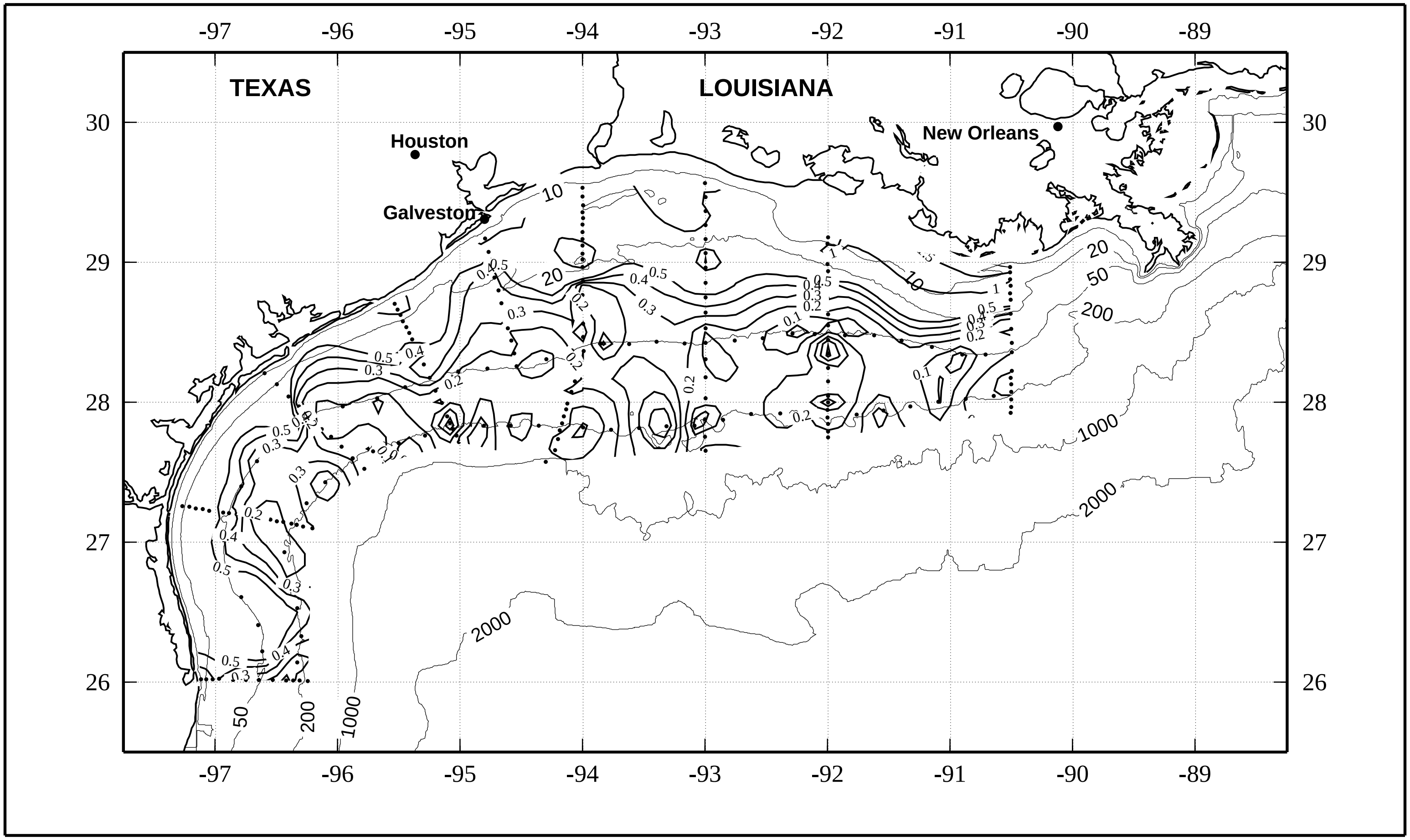

Figure 7.12.14. Ammonium (µmol·l^{-1}) at 3 m on LATEX A survey H07, 6-22 November 1993.

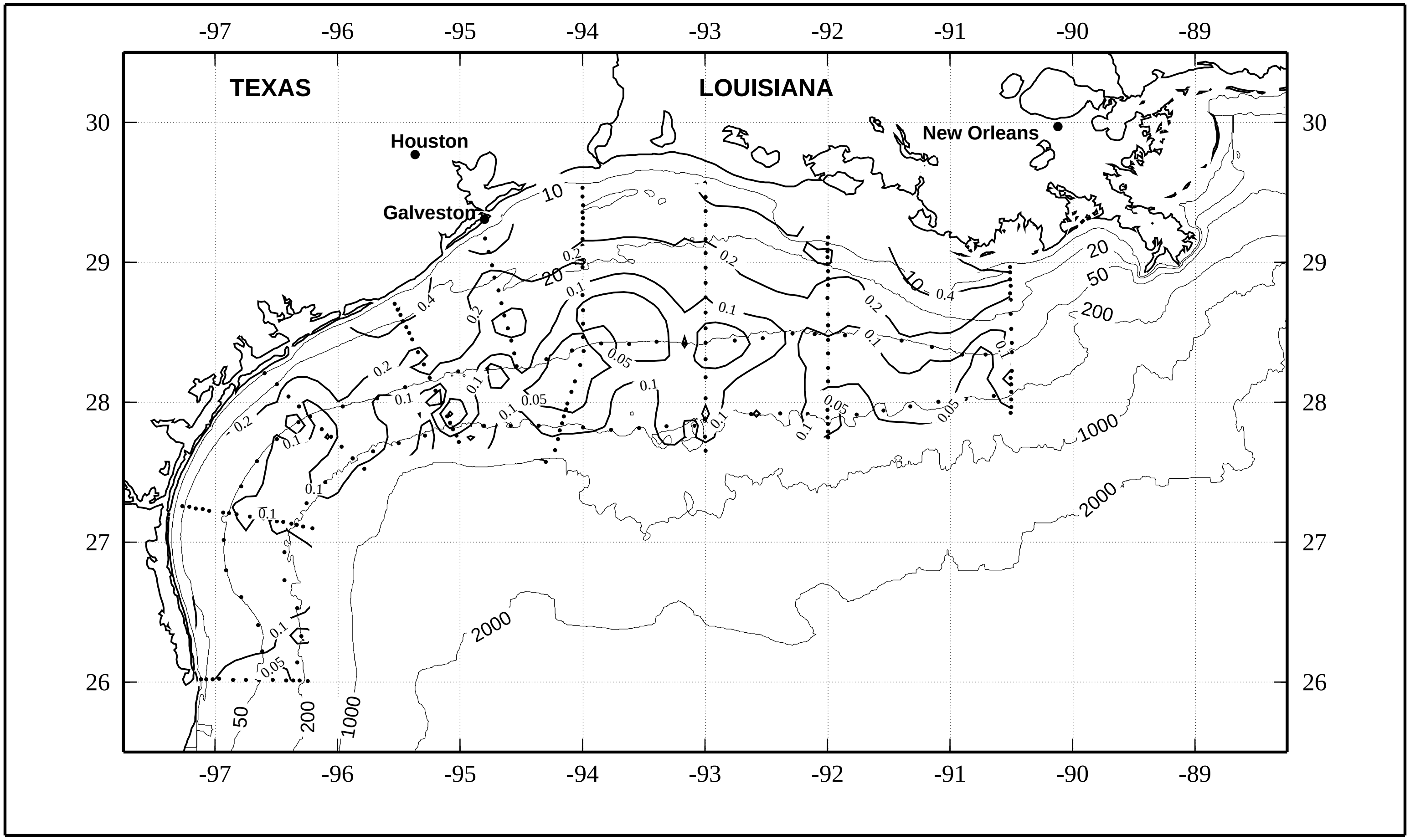

Figure 7.12.15. Urea (μmol·l^{-1}) on LATEX A survey H07, 6-22 November 1993.

G201

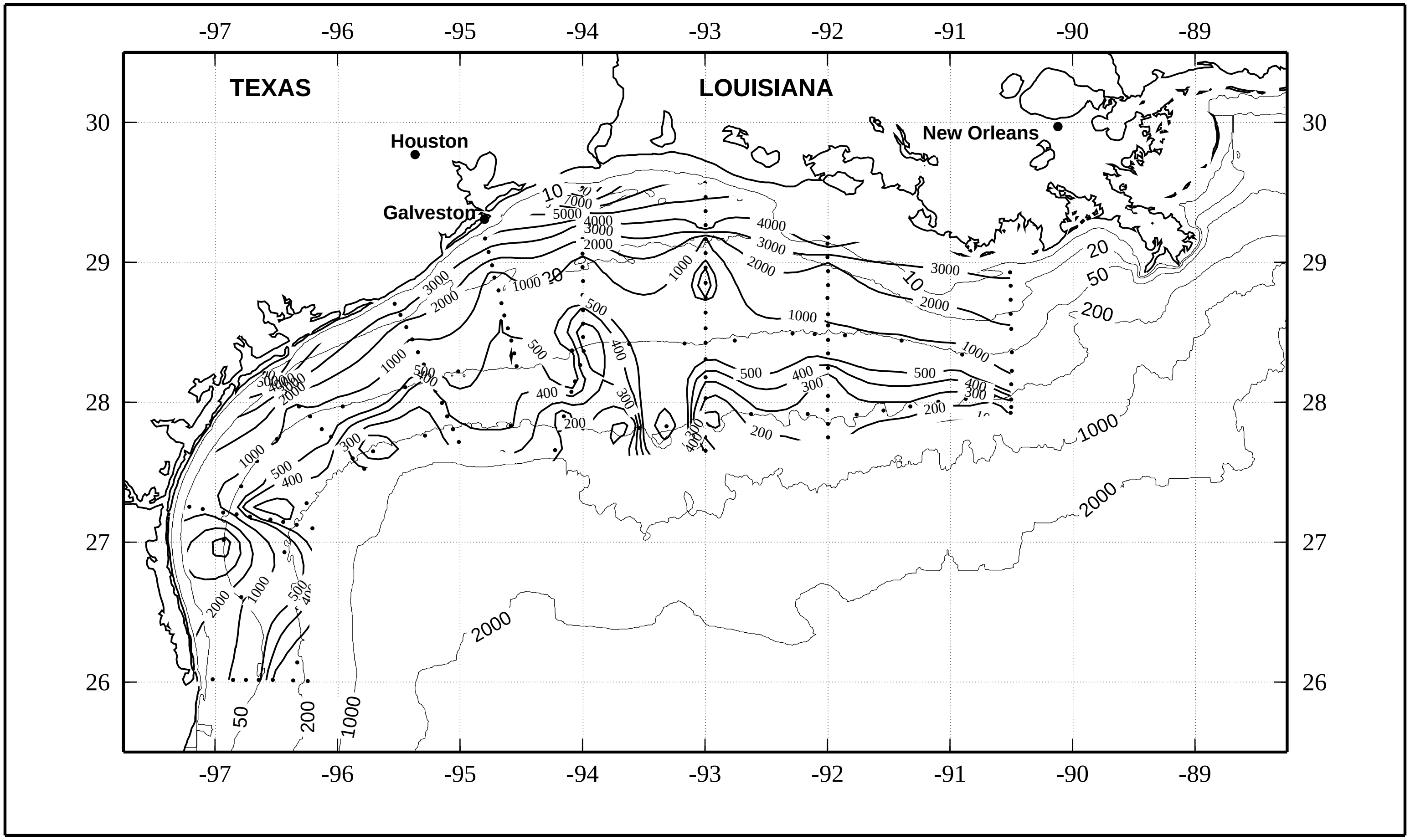

Figure 7.12.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H07, 6-22 November 1993.

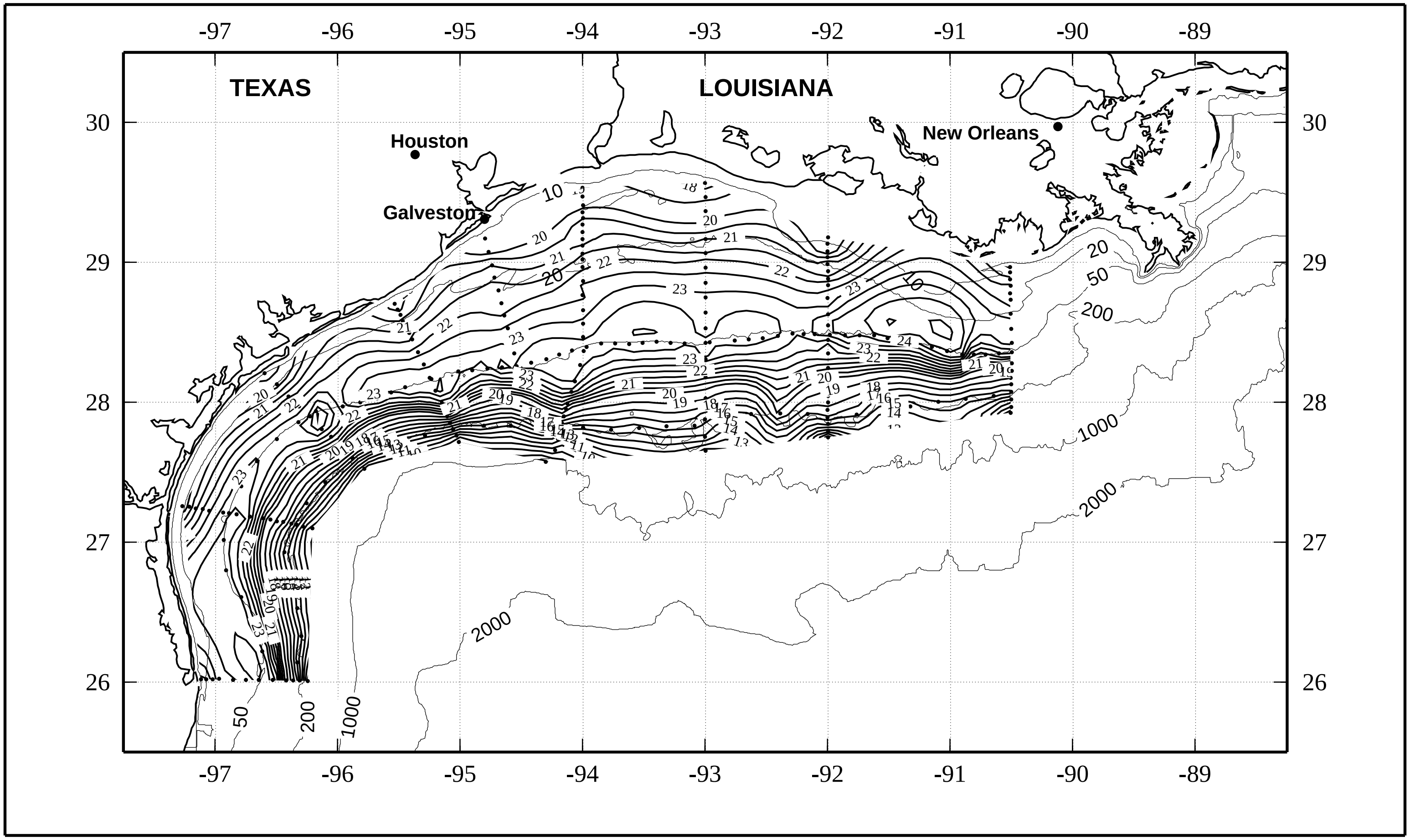

Figure 7.13.1. Potential temperature (˚C) near bottom on LATEX A survey H07, 6-22 November 1993.

G203

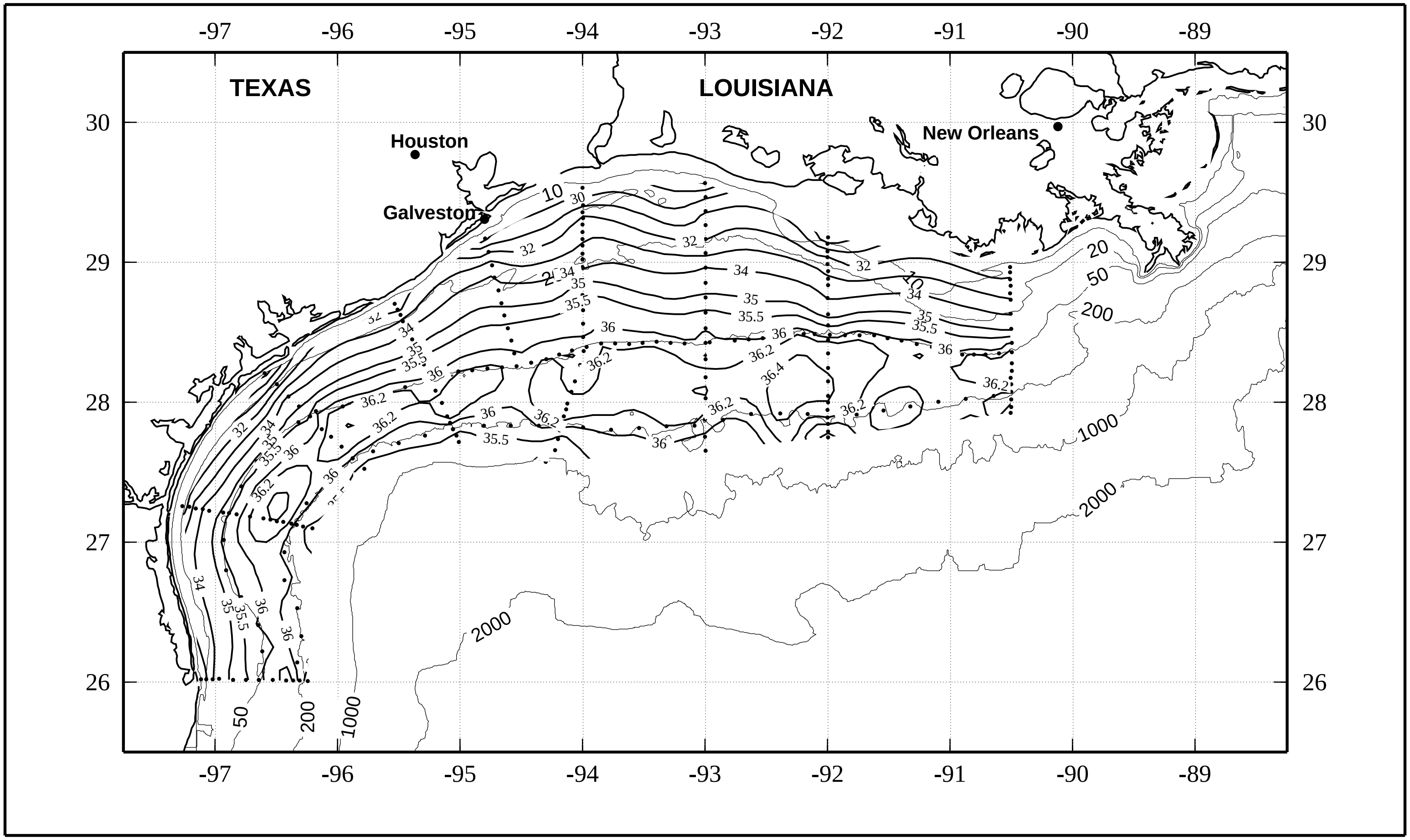

Figure 7.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H07, 6-22 November 1993.

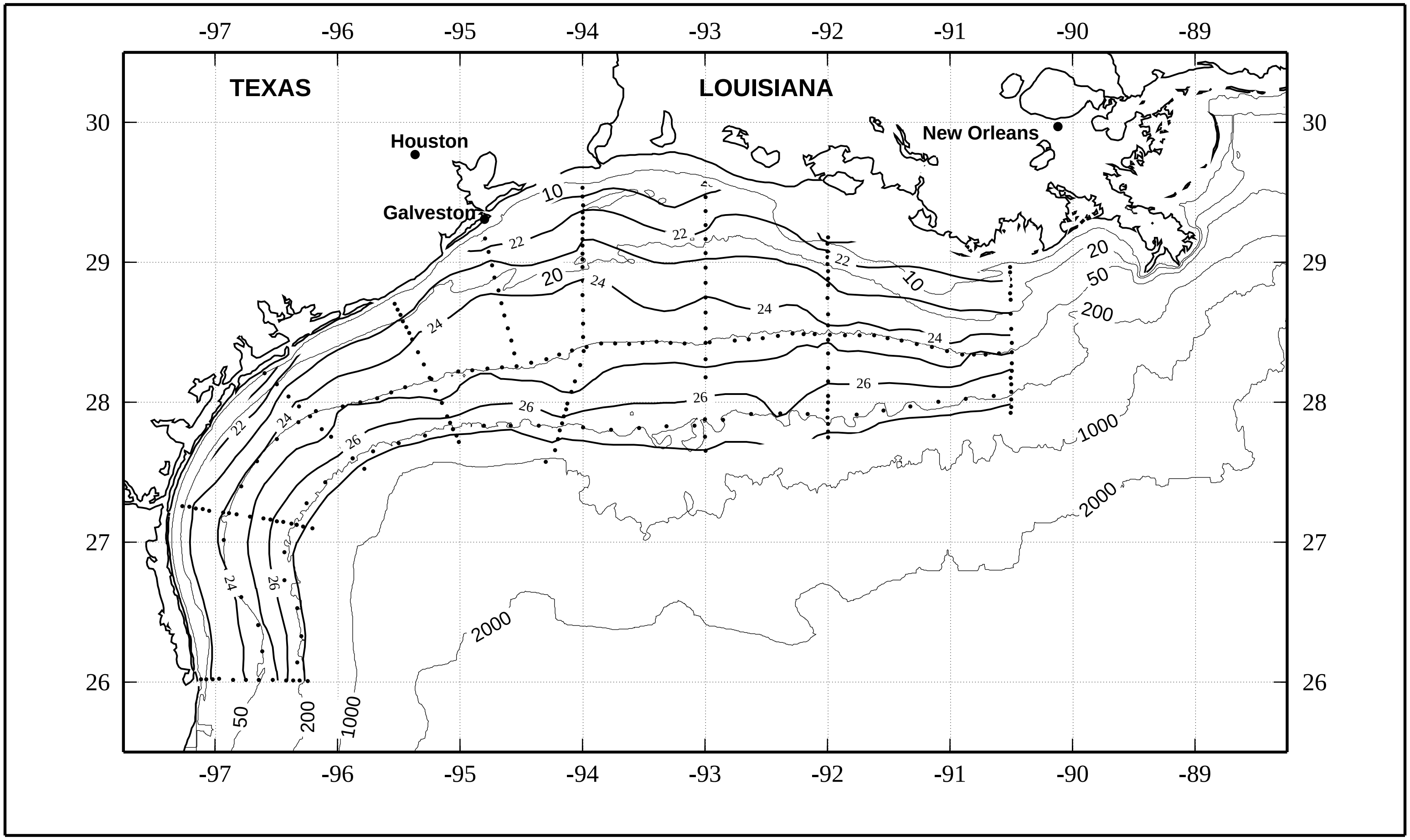

Figure 7.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H07, 6-22 November 1993.

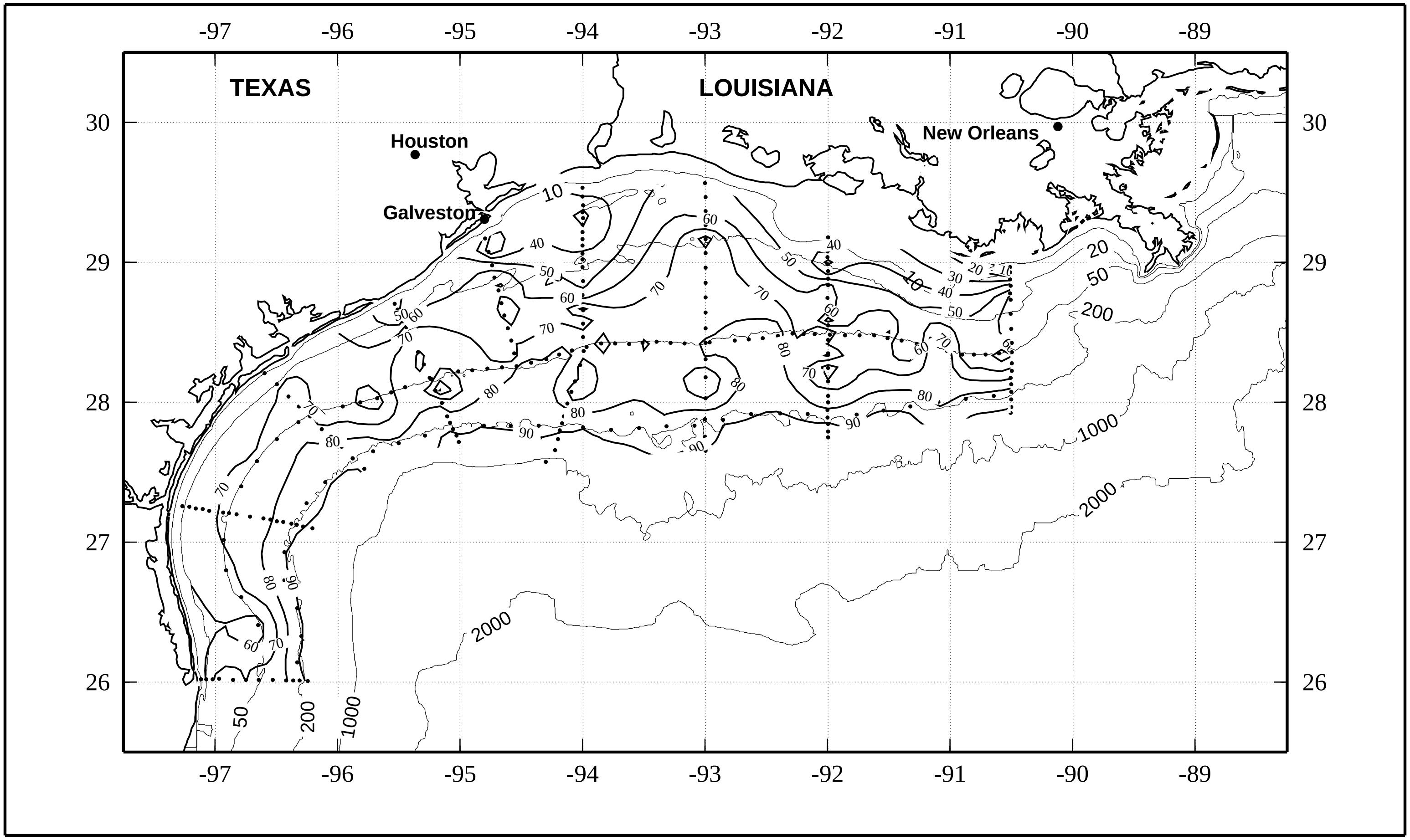

Figure 7.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H07, 6-22 November 1993.

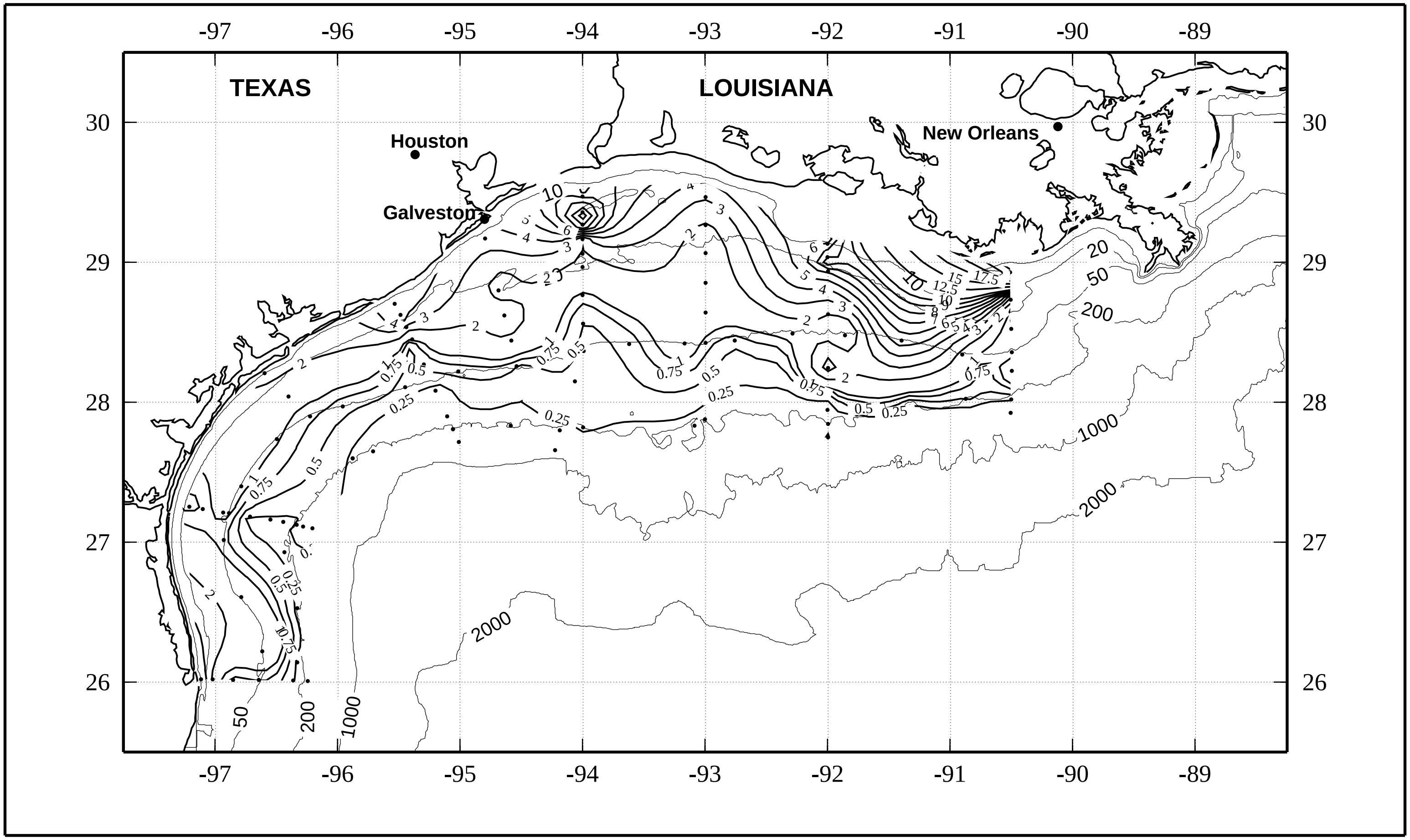

Figure 7.13.5. Suspended particulate material (mg·l-1) near bottom on LATEX A survey H07, 6-22 November 1993.

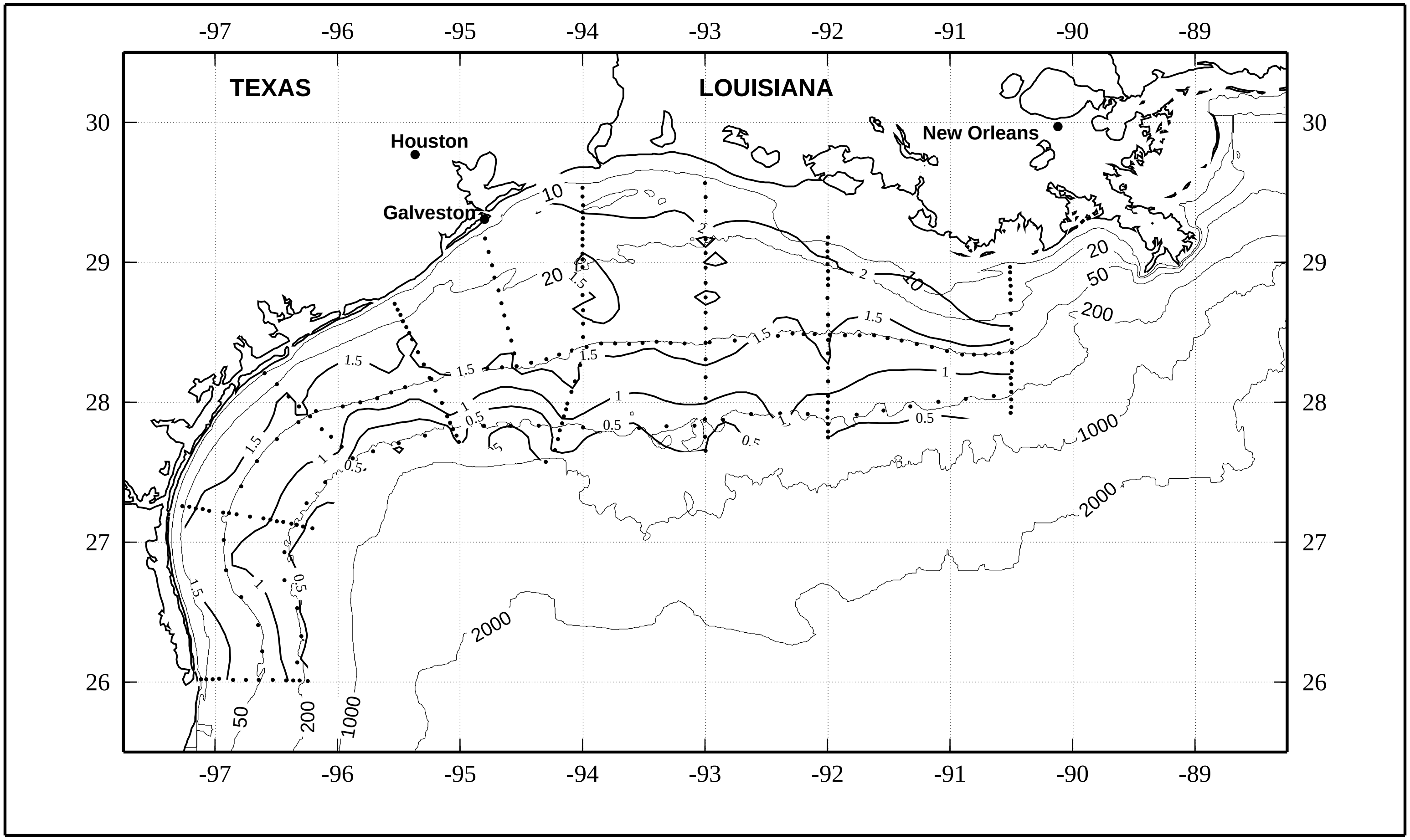

Figure 7.13.7. Relative fluorescence near bottom on LATEX A survey H07, 6-22 November 1993.

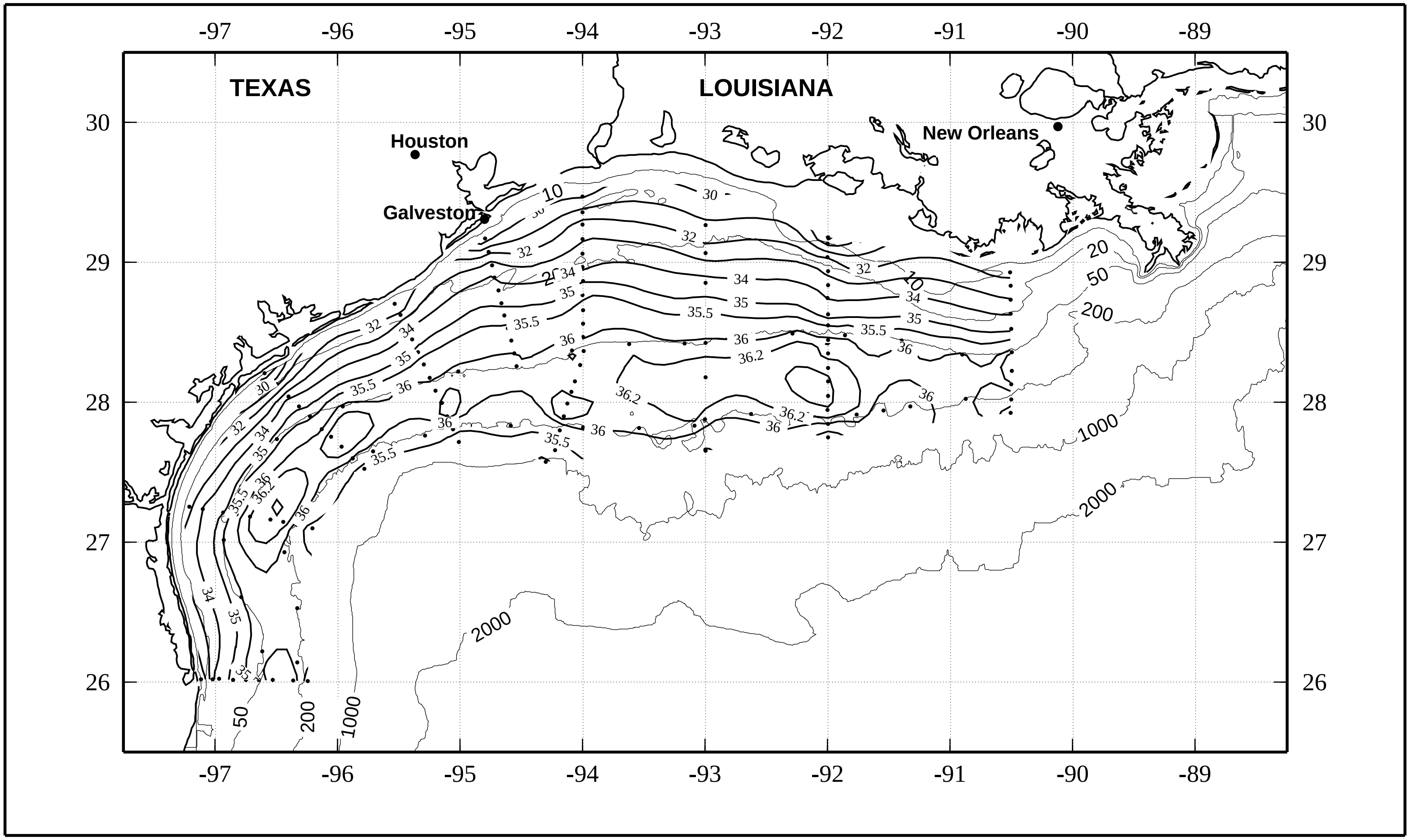

Figure 7.13.8. Bottle salinity near bottom on LATEX A survey H07, 6-22 November 1993.

G209

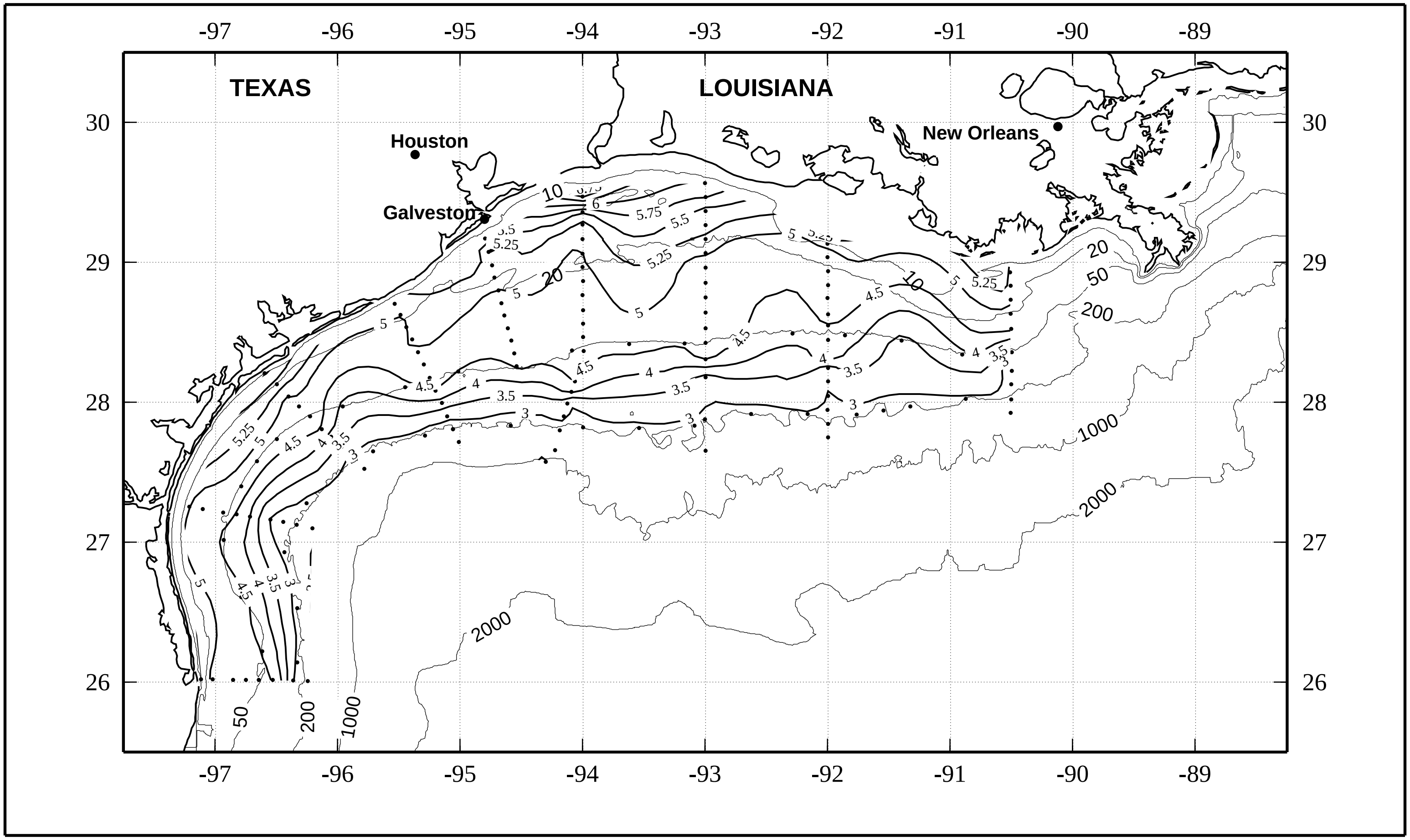

Figure 7.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H07, 6-22 November 1993.

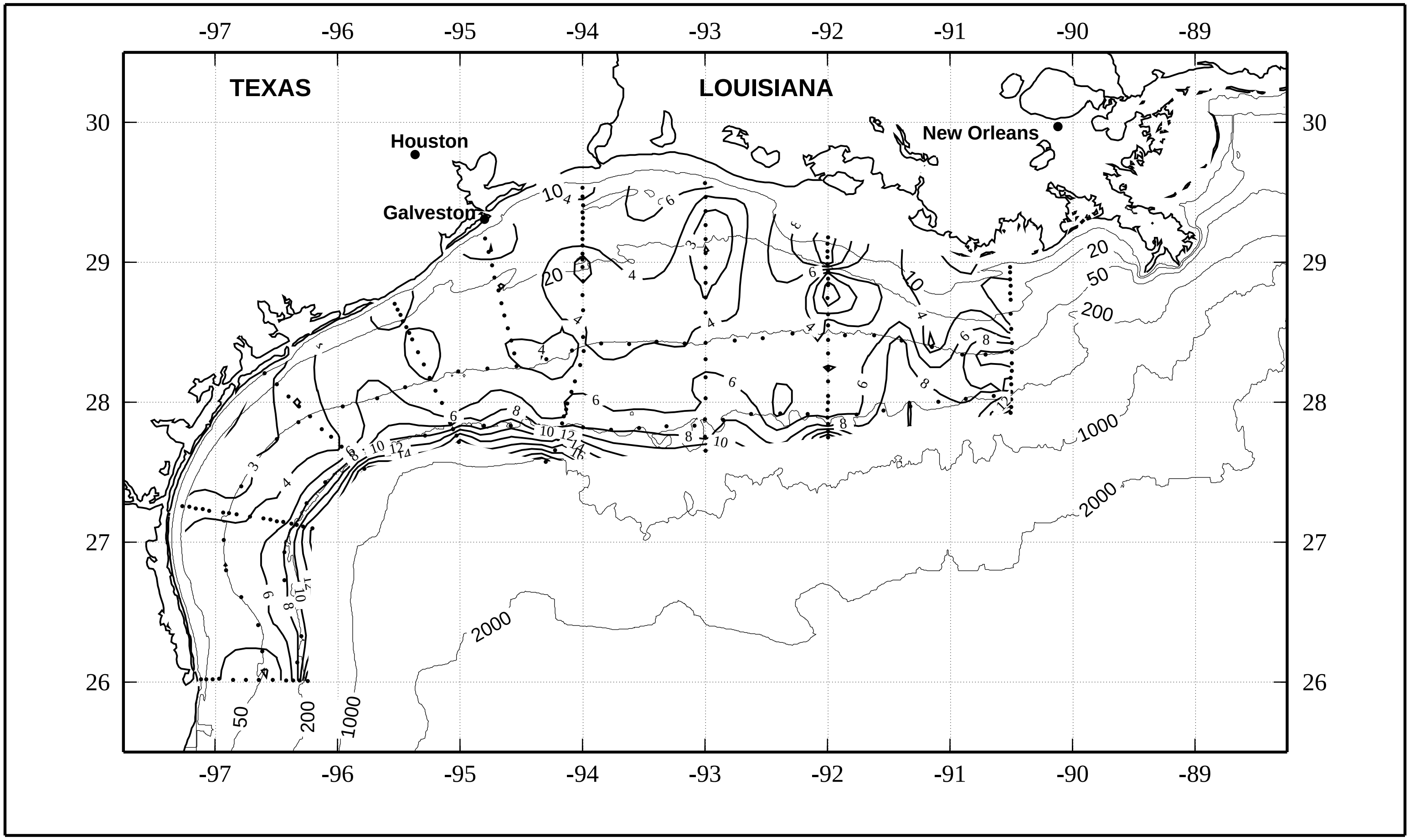

Figure 7.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H07, 6-22 November 1993.

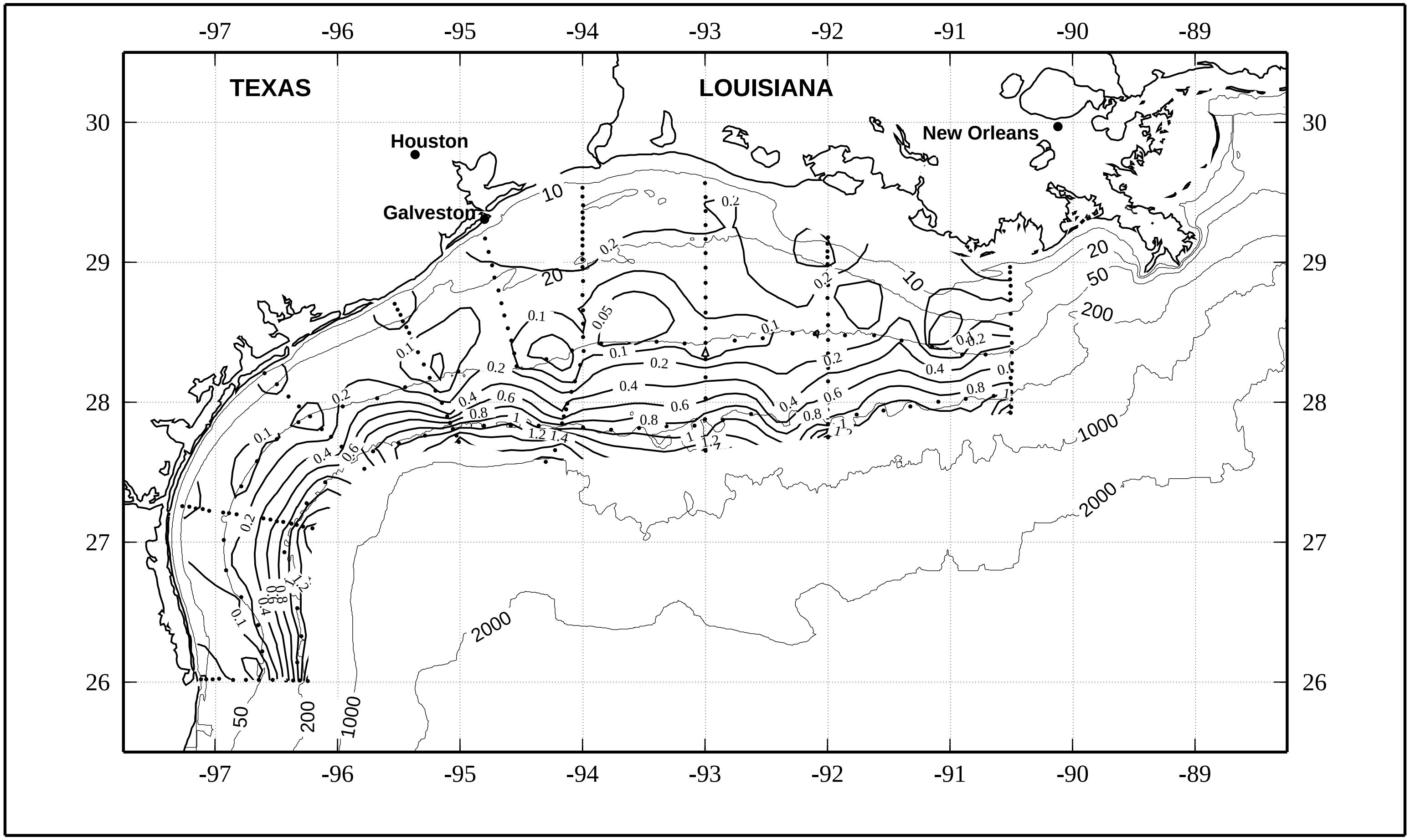

Figure 7.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H07, 6-22 November 1993.

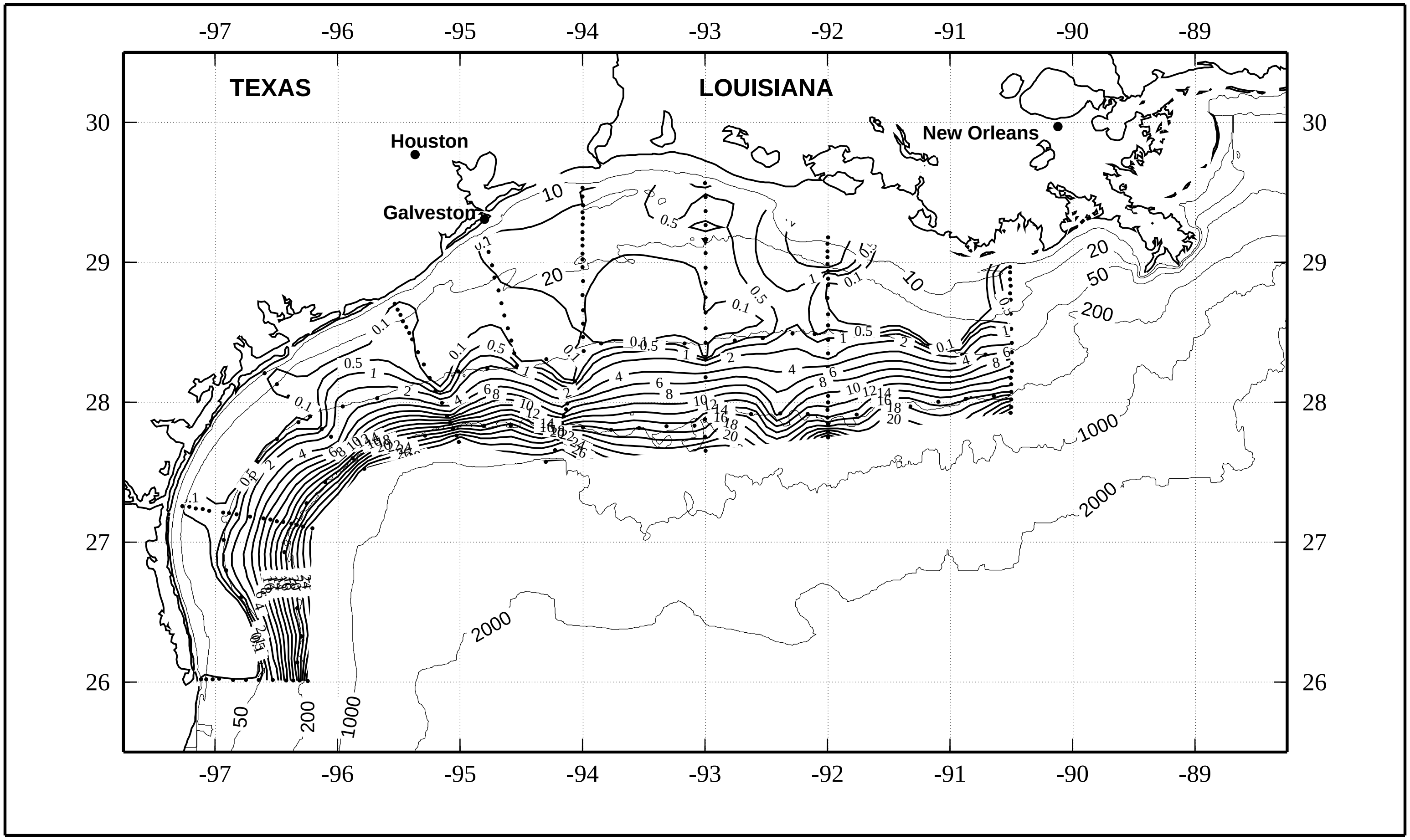

Figure 7.13.12. Nitrate (μmol·l-1) near bottom on LATEX A survey H07, 6-22 November 1993.

G213

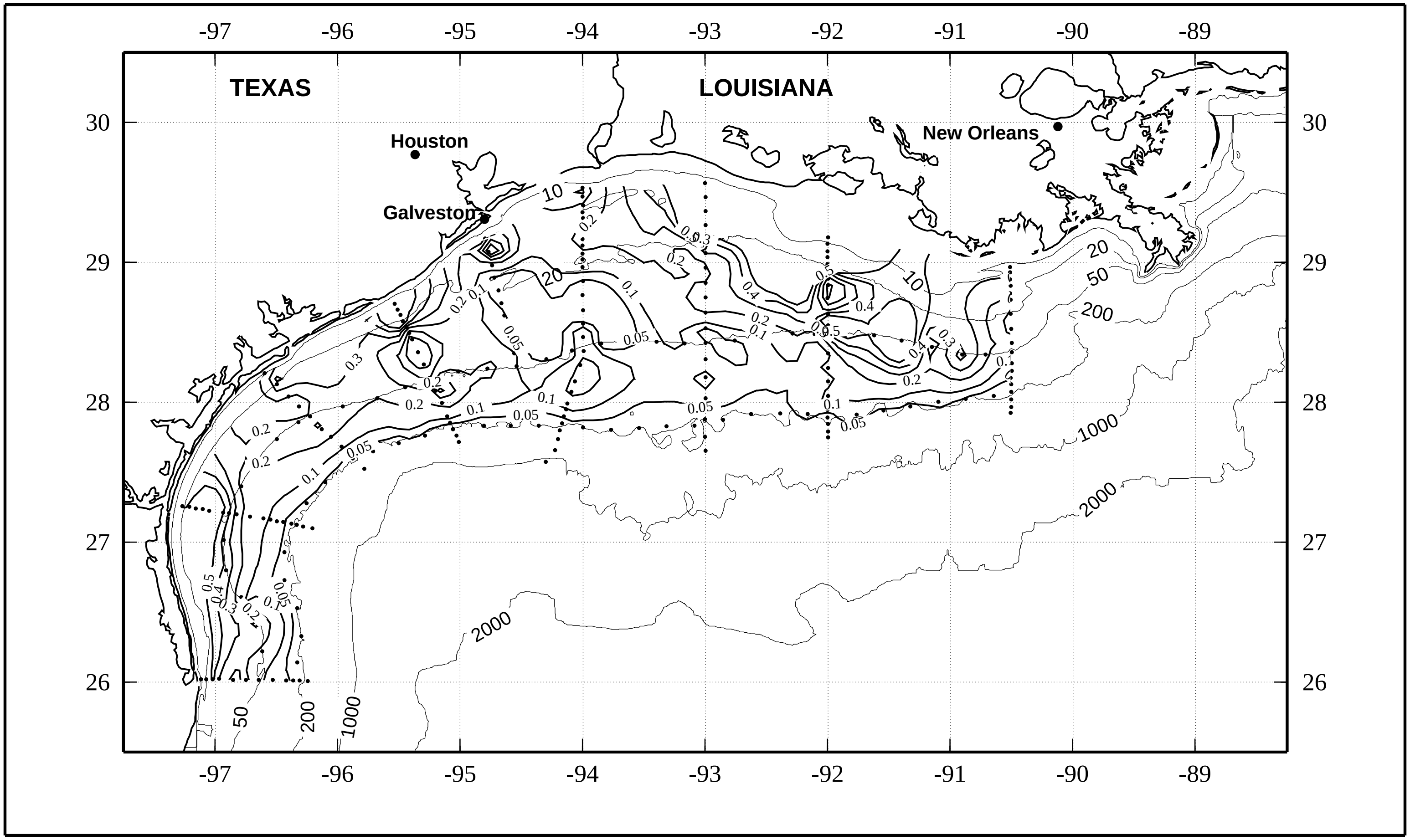

Figure 7.13.13. Nitrite (μmol·l^{-1}) near bottom on LATEX A survey H07, 6-22 November 1993.

G214

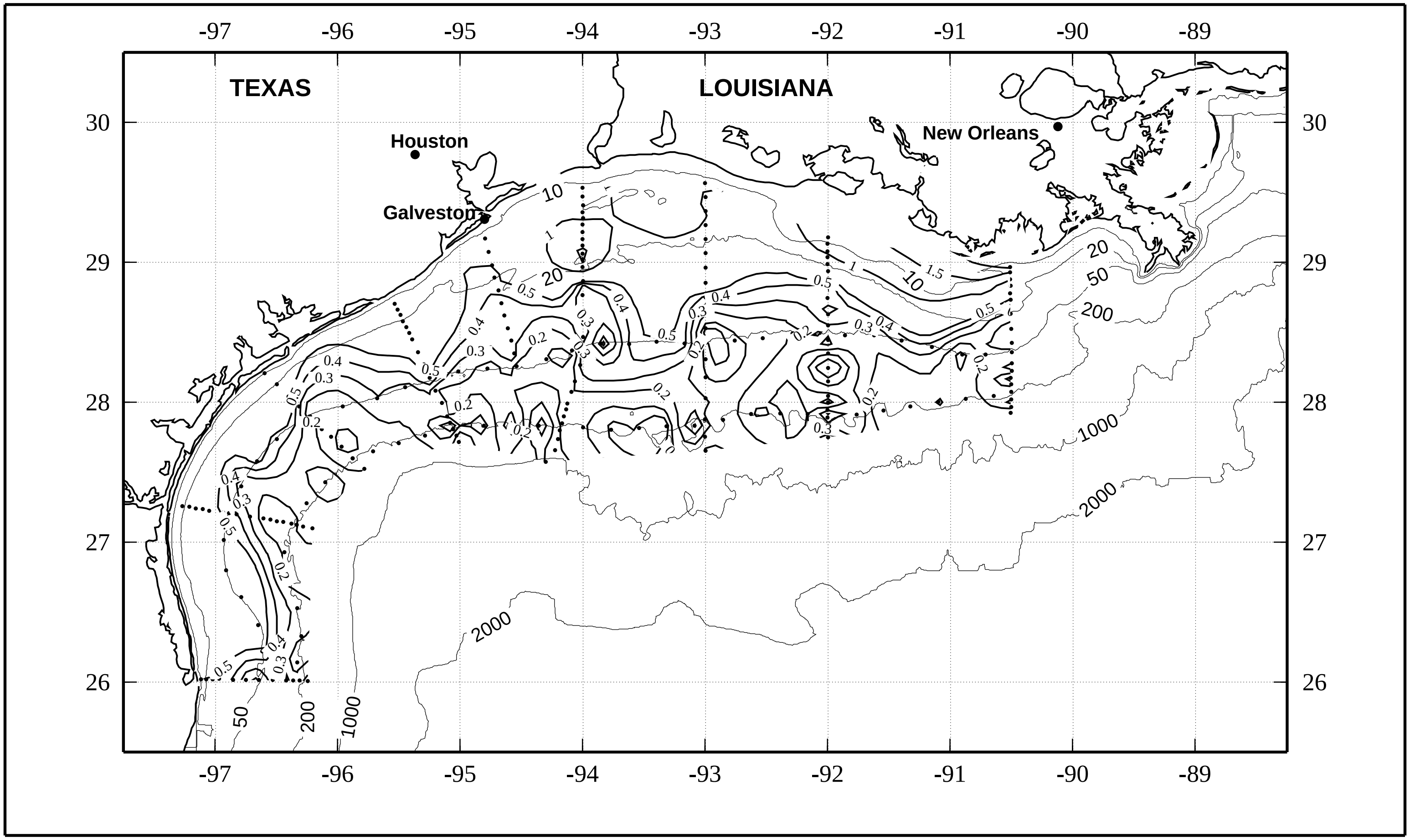

Figure 7.13.14. Ammonium (µmol·l^{-1}) near bottom on LATEX A survey H07, 6-22 November 1993.

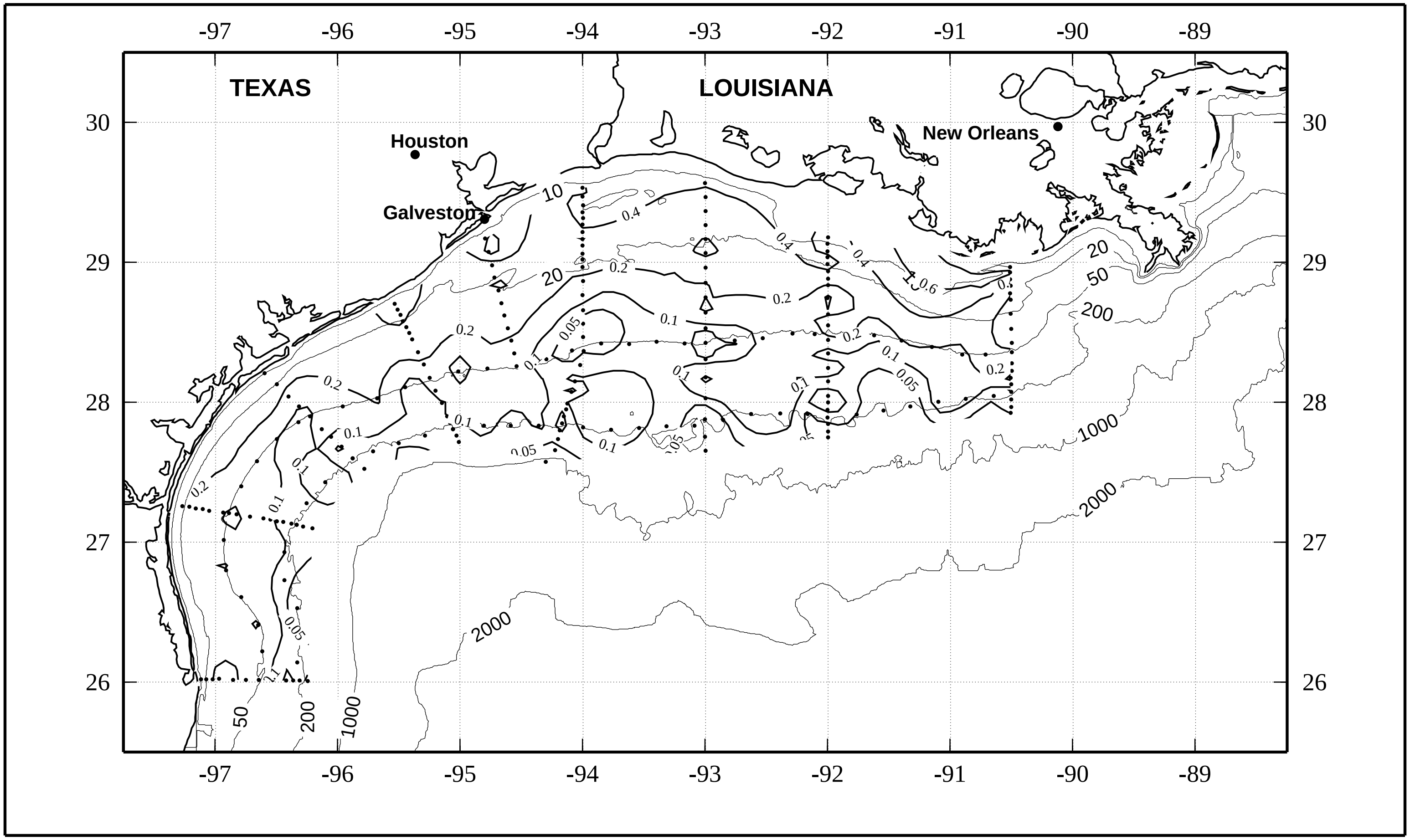

Figure 7.13.15. Urea (μmol·l^{-1}) on LATEX A survey H07, 6-22 November 1993.

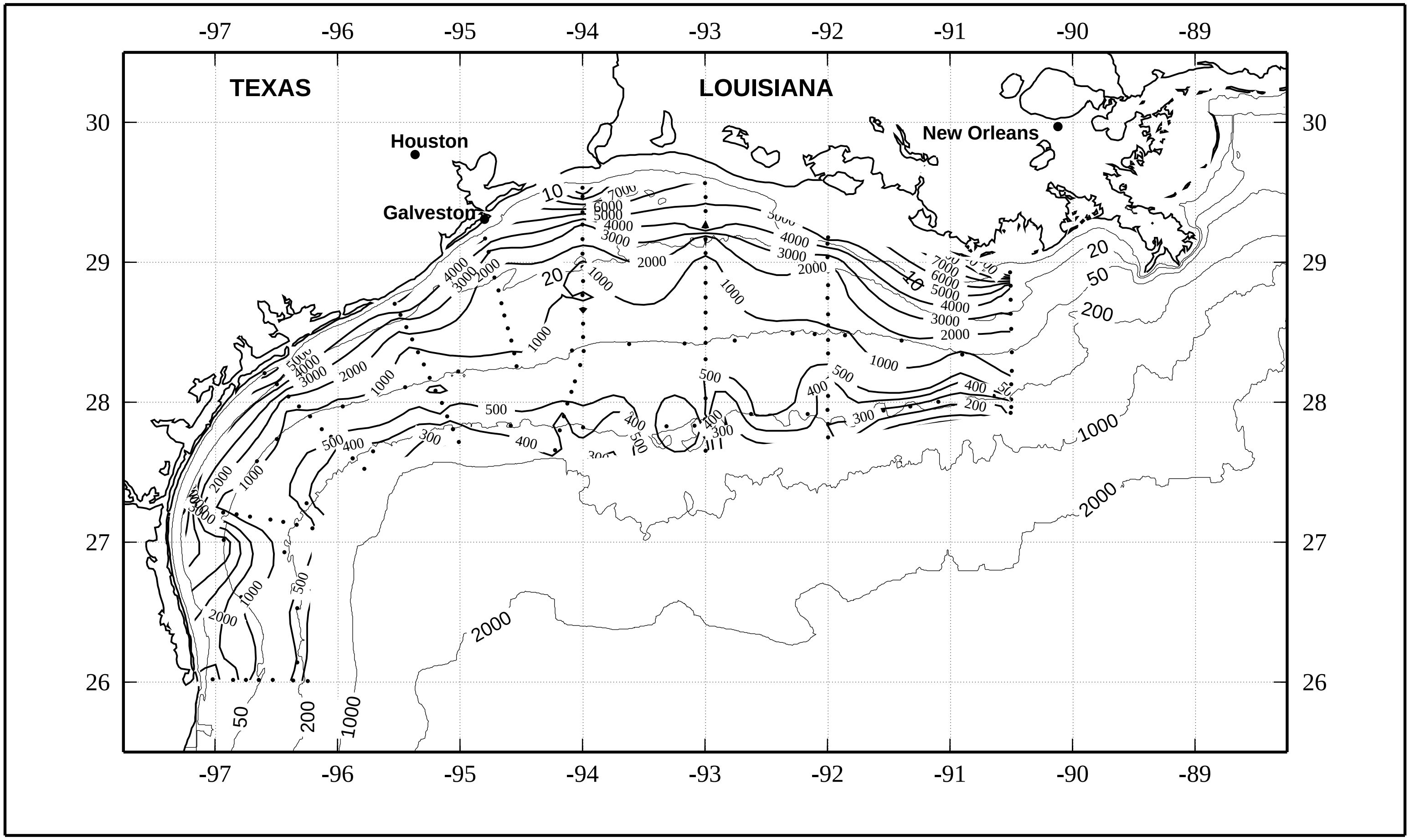

Figure 7.13.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H07, 6-22 November 1993.

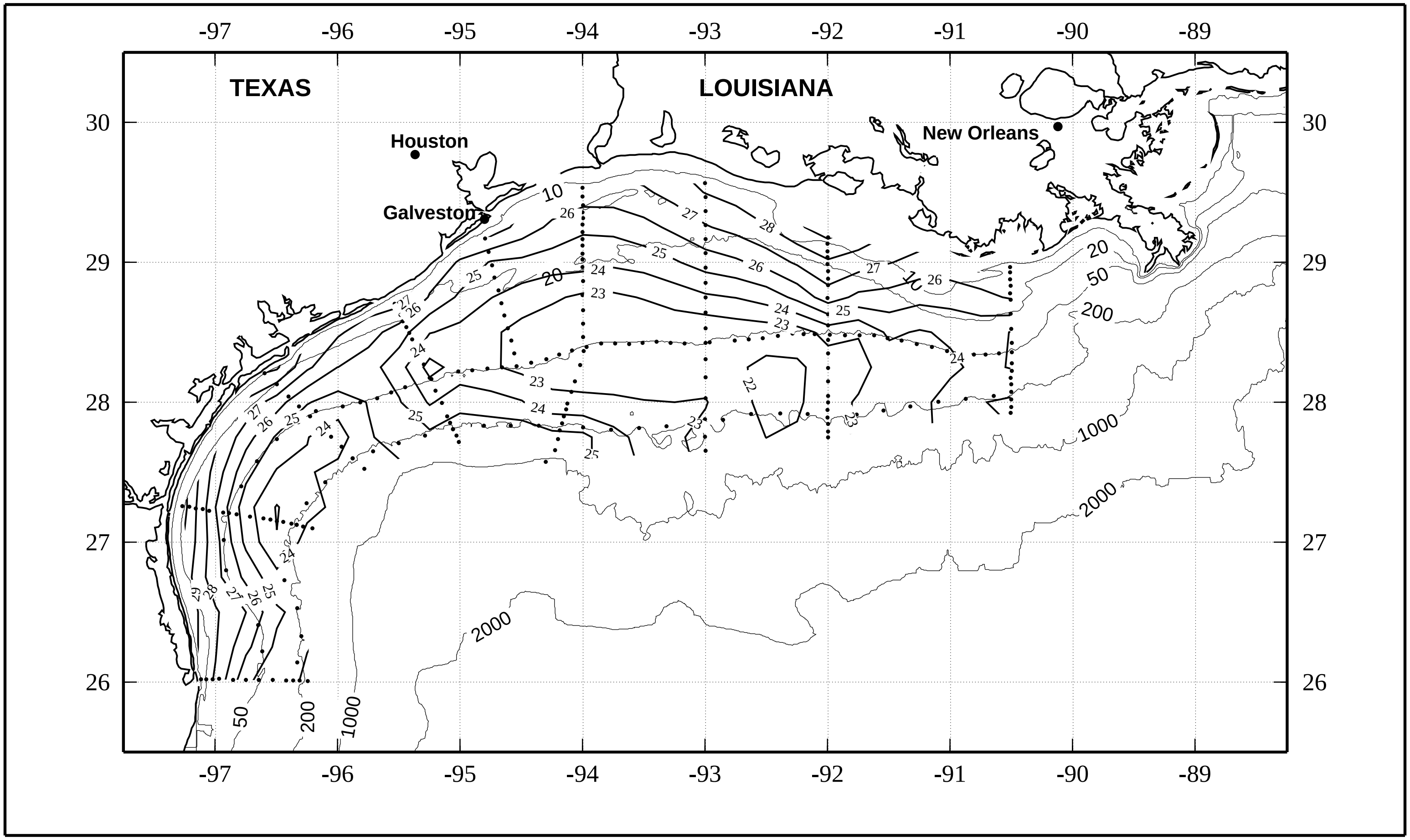

Figure 7.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H07, 6-22 November 1993.

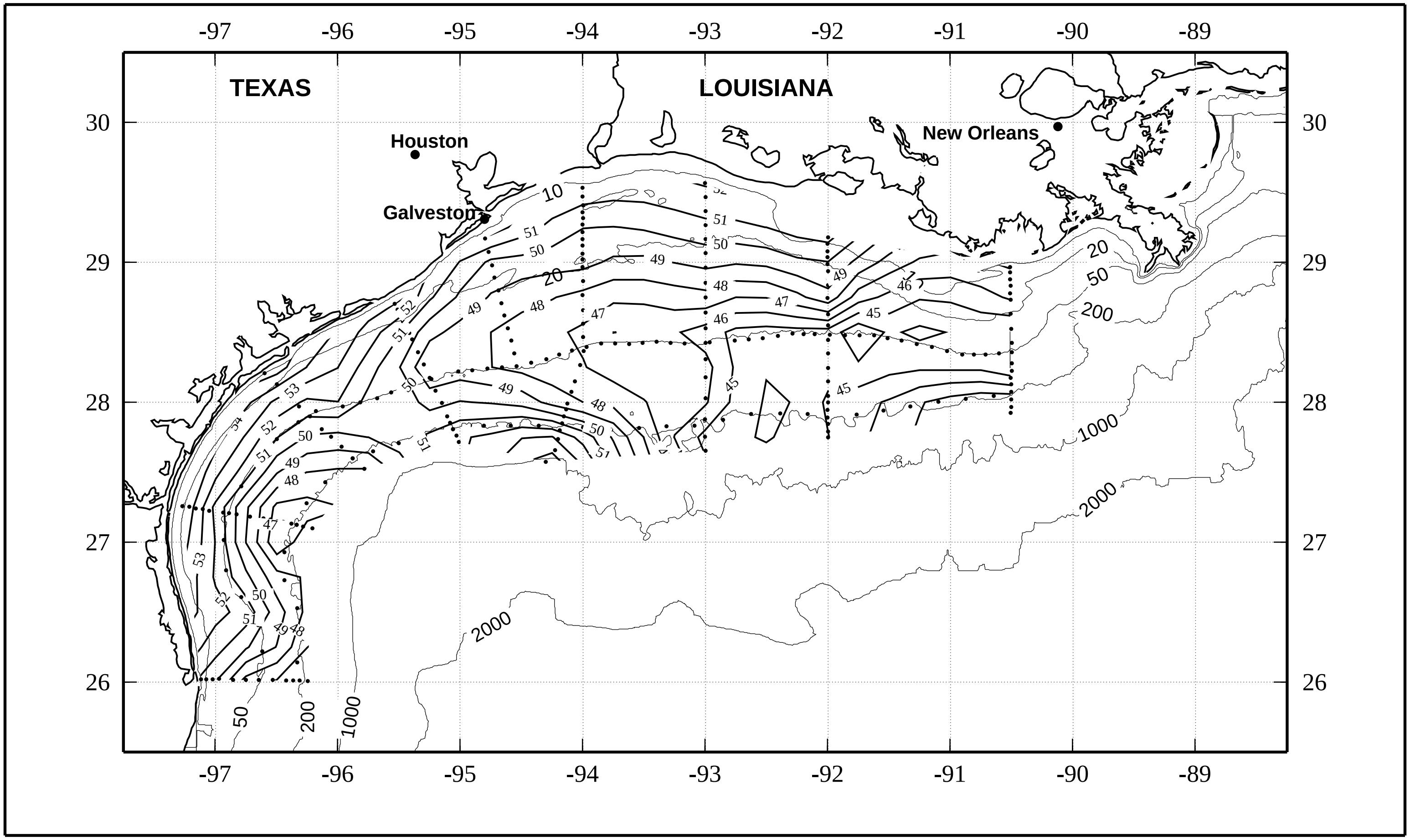

Figure 7.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H07, 6-22 November 1993.

G218

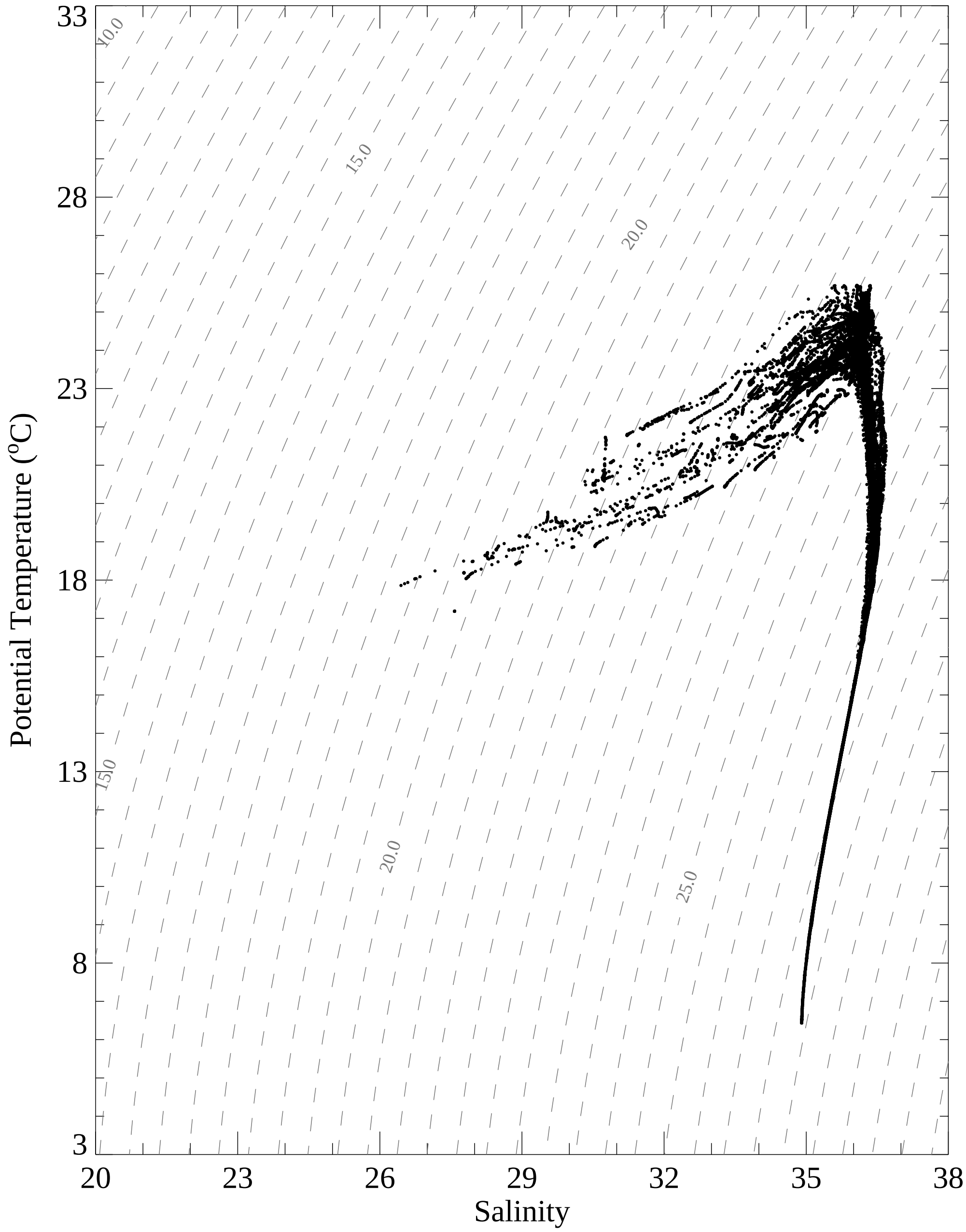

Figure 7.16. Composite potential temperature-salinity diagram for stations from cruise H07, 6 - 22 November 1993.

LATEX A Hydrographic Survey Data Report

APPENDIX H: Cruise H08
April/May 1994

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Technical Report No. 96-6-T
September 1998

Hydrographic Survey H08

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H08, which was conducted 23 April - 7 May 1994 aboard the *R/V Gyre*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 8.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 8.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 8.12.6 or 8.13.6.

Table 8.1. Definitions for "x.y.z" figure numbering scheme for cruise H08.

---

cruise number (x):
8 = hydrographic survey H08

plot type (y):
0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = none for H08
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 8.1. Definitions for "x.y.z" figure numbering scheme for cruise H08. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

Chlorophyll *a* and phaeopigments were determined for each pigment station, using a Turner fluorometer. Only chlorophyll *a* is shown in the plots.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 8.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H08. Figure 8.0 shows the location map for the stations.

Following Figure 8.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m

increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

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Table 8.2. Station times and positions for LATEX A cruise H08.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	24-APR-1994	1823	27°49.65'	94°10.84'	185.0	12
2	24-APR-1994	2032	27°49.23'	94°00.02'	206.2	12
3	24-APR-1994	2301	27°48.29'	93°46.27'	189.6	12
4	25-APR-1994	0200	27°49.03'	93°32.57'	196.4	12
5	25-APR-1994	0408	27°49.87'	93°19.14'	147.4	12
6	25-APR-1994	0638	27°50.08'	93°05.29'	182.6	12
7	25-APR-1994	0933	27°52.51'	92°51.39'	213.9	12
8	25-APR-1994	1148	27°55.16'	92°37.47'	192.1	12
9	25-APR-1994	1402	27°55.13'	92°23.39'	87.3	9
10	25-APR-1994	1603	27°55.14'	92°09.97'	142.6	12
11	25-APR-1994	1800	27°54.95'	91°57.93'	146.2	12
12	25-APR-1994	2103	27°54.78'	91°45.89'	172.0	11
13	25-APR-1994	2317	27°56.62'	91°32.67'	224.8	8
14	26-APR-1994	0152	27°58.14'	91°19.54'	264.1	12
15	26-APR-1994	0428	28°00.39'	91°05.85'	134.0	11
16	26-APR-1994	0636	28°01.37'	90°52.41'	189.0	12
17	26-APR-1994	0851	28°02.72'	90°38.58'	163.8	12
18	26-APR-1994	1254	27°39.71'	90°29.99'	925.4	12
19	26-APR-1994	1542	27°45.72'	90°29.99'	820.6	12
20	26-APR-1994	1808	27°51.71'	90°30.00'	653.7	12
21	26-APR-1994	2028	27°57.97'	90°30.13'	436.8	12
22	26-APR-1994	2244	28°04.64'	90°30.19'	150.3	12
23	27-APR-1994	0011	28°10.47'	90°30.29'	91.6	11
24	27-APR-1994	0134	28°16.81'	90°30.00'	60.5	9
25	27-APR-1994	0235	28°21.00'	90°29.97'	48.2	7
26	27-APR-1994	0359	28°25.42'	90°29.97'	43.1	7
27	27-APR-1994	0525	28°31.63'	90°30.19'	34.0	6
28	27-APR-1994	0635	28°37.96'	90°30.35'	18.8	5
29	27-APR-1994	0755	28°43.95'	90°30.37'	17.0	5
30	27-APR-1994	0854	28°49.98'	90°30.61'	17.0	5
31	27-APR-1994	0950	28°54.00'	90°30.61'	15.0	4
32	27-APR-1994	1101	28°58.11'	90°30.63'	11.0	4
33	27-APR-1994	2118	29°10.86'	92°00.00'	6.5	5
34	27-APR-1994	2245	29°06.59'	92°00.06'	10.8	4
35	27-APR-1994	2350	29°02.29'	92°00.10'	15.3	5
36	28-APR-1994	0115	28°56.23'	91°59.98'	20.0	5
37	28-APR-1994	0230	28°50.27'	92°00.00'	24.0	6
38	28-APR-1994	0349	28°44.71'	92°00.09'	30.6	6
39	28-APR-1994	0519	28°37.74'	91°59.89'	39.5	6
40	28-APR-1994	0630	28°33.03'	91°59.86'	44.1	6
41	28-APR-1994	0742	28°26.77'	91°59.87'	55.1	7
42	28-APR-1994	0912	28°21.13'	91°59.80'	60.0	7
43	28-APR-1994	1032	28°14.70'	91°59.90'	68.5	7
44	28-APR-1994	1210	28°08.93'	91°59.93'	82.2	11

Table 8.2. Station times and positions for LATEX A cruise H08 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	28-APR-1994	1337	28°02.71'	91°59.96'	105.3	12
46	28-APR-1994	1517	27°56.81'	92°00.07'	99.7	10
47	28-APR-1994	1644	27°50.69'	91°59.98'	198.2	12
48	28-APR-1994	1822	27°44.93'	91°59.91'	494.8	12
49	28-APR-1994	2015	27°38.95'	91°59.95'	841.3	12
50	28-APR-1994	2232	27°32.94'	91°59.97'	735.5	12
51	29-APR-1994	0632	27°27.41'	92°59.96'	952.9	12
52	29-APR-1994	0911	27°33.41'	92°59.95'	660.0	12
53	29-APR-1994	1108	27°39.42'	92°59.93'	315.3	12
54	29-APR-1994	1240	27°45.27'	93°00.16'	204.7	12
55	29-APR-1994	1428	27°52.86'	93°00.12'	191.0	12
56	29-APR-1994	1608	28°01.82'	92°59.87'	102.5	10
57	29-APR-1994	1733	28°10.84'	92°59.92'	70.8	10
58	29-APR-1994	1858	28°18.50'	92°59.89'	52.4	8
59	29-APR-1994	2016	28°25.38'	92°59.92'	47.8	8
60	29-APR-1994	2132	28°31.86'	92°59.97'	42.9	7
61	29-APR-1994	2253	28°38.40'	92°59.92'	33.0	7
62	29-APR-1994	2356	28°44.92'	92°59.93'	29.7	6
63	30-APR-1994	0108	28°51.41'	93°00.00'	24.9	5
64	30-APR-1994	0206	28°57.82'	92°59.99'	22.2	5
65	30-APR-1994	0311	29°03.99'	92°59.97'	21.4	5
66	30-APR-1994	0419	29°10.04'	93°00.06'	18.5	5
67	30-APR-1994	0515	29°15.94'	93°00.19'	16.2	5
68	30-APR-1994	0618	29°22.01'	92°59.98'	13.9	4
69	30-APR-1994	0729	29°27.93'	92°59.97'	12.5	4
70	30-APR-1994	0831	29°34.06'	93°00.08'	10.6	4
71	30-APR-1994	1431	29°32.04'	94°00.17'	10.7	4
72	30-APR-1994	1540	29°26.63'	94°00.10'	11.2	4
73	30-APR-1994	1629	29°21.61'	94°00.13'	10.7	4
74	30-APR-1994	1728	29°16.19'	94°00.10'	12.8	5
75	30-APR-1994	1825	29°10.01'	94°00.08'	16.5	5
76	30-APR-1994	1926	29°03.77'	94°00.14'	18.4	5
77	30-APR-1994	2017	28°57.91'	94°00.12'	16.6	5
78	30-APR-1994	2116	28°51.88'	93°59.96'	24.0	6
79	30-APR-1994	2209	28°46.00'	94°00.07'	24.6	6
80	30-APR-1994	2309	28°39.62'	93°59.94'	29.8	6
81	01-MAY-1994	0016	28°33.81'	93°59.93'	36.0	7
82	01-MAY-1994	0117	28°27.94'	93°59.97'	42.8	6
83	01-MAY-1994	0219	28°21.94'	94°00.00'	51.3	7
84	01-MAY-1994	0334	28°16.00'	94°01.28'	57.8	8
85	01-MAY-1994	0438	28°08.96'	94°03.76'	64.2	8
86	01-MAY-1994	0537	28°04.64'	94°05.52'	69.0	8
87	01-MAY-1994	0634	27°59.52'	94°07.50'	80.3	9
88	01-MAY-1994	0747	27°54.13'	94°09.32'	96.0	10

Table 8.2. Station times and positions for LATEX A cruise H08 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	01-MAY-1994	0921	27°47.97'	94°11.42'	263.6	12
90	01-MAY-1994	1038	27°44.25'	94°12.22'	451.9	12
91	01-MAY-1994	1215	27°39.61'	94°13.47'	427.0	11
92	01-MAY-1994	1421	27°33.60'	94°14.64'	646.8	12
93	01-MAY-1994	1612	27°27.73'	94°16.20'	1007.0	12
94	01-MAY-1994	2348	28°15.60'	94°32.41'	47.6	6
95	02-MAY-1994	0052	28°21.00'	94°33.57'	41.8	7
96	02-MAY-1994	0159	28°26.40'	94°35.15'	38.6	7
97	02-MAY-1994	0304	28°31.77'	94°36.60'	34.0	7
98	02-MAY-1994	0404	28°37.18'	94°38.42'	29.9	7
99	02-MAY-1994	0509	28°42.56'	94°39.89'	25.5	6
100	02-MAY-1994	0623	28°48.00'	94°41.46'	19.7	5
101	02-MAY-1994	0724	28°53.38'	94°43.23'	18.5	5
102	02-MAY-1994	0824	28°58.76'	94°44.45'	16.0	4
103	02-MAY-1994	0932	29°04.44'	94°46.24'	16.7	4
104	02-MAY-1994	1043	29°10.16'	94°47.98'	14.0	4
105	02-MAY-1994	1604	28°42.20'	95°32.20'	13.3	4
106	02-MAY-1994	1659	28°37.45'	95°29.30'	17.4	4
107	02-MAY-1994	1759	28°32.36'	95°26.34'	25.2	5
108	02-MAY-1994	1905	28°27.00'	95°23.47'	30.6	6
109	02-MAY-1994	2014	28°21.62'	95°20.85'	32.7	7
110	02-MAY-1994	2139	28°16.42'	95°17.84'	38.8	7
111	02-MAY-1994	2248	28°10.43'	95°15.06'	46.5	7
112	02-MAY-1994	2358	28°05.02'	95°12.11'	55.0	7
113	03-MAY-1994	0109	27°59.64'	95°09.10'	77.6	9
114	03-MAY-1994	0208	27°54.07'	95°06.41'	107.3	11
115	03-MAY-1994	0321	27°48.55'	95°03.57'	266.5	12
116	03-MAY-1994	0455	27°43.01'	95°00.68'	506.2	12
117	03-MAY-1994	0645	27°37.69'	94°57.58'	703.9	12
118	03-MAY-1994	0938	27°32.38'	94°54.81'	853.2	12
119	03-MAY-1994	1455	27°23.40'	95°37.32'	920.4	12
120	03-MAY-1994	1701	27°27.61'	95°42.13'	704.9	12
121	03-MAY-1994	1845	27°31.49'	95°47.11'	519.9	12
122	03-MAY-1994	2026	27°36.11'	95°52.68'	191.0	12
123	03-MAY-1994	2142	27°41.12'	95°58.25'	101.5	10
124	03-MAY-1994	2251	27°45.31'	96°03.31'	78.6	7
125	03-MAY-1994	2348	27°48.62'	96°07.86'	66.1	7
126	04-MAY-1994	0102	27°53.97'	96°13.51'	49.7	6
127	04-MAY-1994	0158	27°58.20'	96°18.94'	36.3	6
128	04-MAY-1994	0254	28°02.39'	96°24.05'	26.5	5
129	04-MAY-1994	0359	28°07.81'	96°30.02'	19.3	5
130	04-MAY-1994	0503	28°12.60'	96°36.04'	9.4	4
131	04-MAY-1994	1155	27°15.42'	97°16.05'	16.8	4
132	04-MAY-1994	1255	27°14.42'	97°09.61'	25.1	5

Table 8.2. Station times and positions for LATEX A cruise H08 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
133	04-MAY-1994	1357	27°13.54'	97°03.12'	32.4	6
134	04-MAY-1994	1456	27°12.69'	96°56.22'	42.5	8
135	04-MAY-1994	1600	27°11.91'	96°49.60'	56.5	8
136	04-MAY-1994	1717	27°11.05'	96°42.91'	71.3	9
137	04-MAY-1994	1817	27°10.17'	96°36.37'	89.2	10
138	04-MAY-1994	1918	27°09.09'	96°29.80'	114.0	12
139	04-MAY-1994	2042	27°08.11'	96°22.81'	185.0	12
140	04-MAY-1994	2205	27°06.88'	96°16.97'	313.5	12
141	04-MAY-1994	2326	27°05.98'	96°12.59'	442.3	12
142	05-MAY-1994	0108	27°05.27'	96°05.25'	615.1	12
143	05-MAY-1994	0252	27°04.31'	95°58.92'	720.8	12
144	05-MAY-1994	1105	26°00.97'	95°58.34'	1029.4	12
145	05-MAY-1994	1317	26°00.99'	96°05.13'	822.1	12
146	05-MAY-1994	1510	26°00.62'	96°11.56'	652.5	12
147	05-MAY-1994	1653	26°00.80'	96°18.66'	210.9	12
148	05-MAY-1994	1808	26°00.71'	96°25.25'	83.8	8
149	05-MAY-1994	1918	26°00.96'	96°31.83'	59.6	7
150	05-MAY-1994	2022	26°00.98'	96°38.62'	47.8	7
151	05-MAY-1994	2119	26°00.96'	96°44.99'	43.7	6
152	05-MAY-1994	2218	26°00.96'	96°51.45'	36.5	6
153	05-MAY-1994	2322	26°01.48'	96°58.11'	28.6	6
154	06-MAY-1994	0018	26°01.37'	97°04.54'	19.3	5
155	06-MAY-1994	0519	26°08.61'	96°19.93'	235.3	12
156	06-MAY-1994	0710	26°19.80'	96°17.85'	261.4	12
157	06-MAY-1994	0912	26°31.82'	96°19.93'	301.7	12
158	06-MAY-1994	1124	26°43.76'	96°26.25'	206.4	12
159	06-MAY-1994	1322	26°55.82'	96°26.25'	207.6	12
160	06-MAY-1994	1507	27°06.31'	96°20.73'	230.4	12
161	06-MAY-1994	1731	27°16.79'	96°15.21'	204.8	12
162	06-MAY-1994	1921	27°25.79'	96°06.24'	204.9	12
163	06-MAY-1994	2114	27°32.41'	95°54.48'	272.6	12
164	06-MAY-1994	2310	27°39.04'	95°42.68'	249.7	12
165	07-MAY-1994	0106	27°42.49'	95°30.13'	311.7	12
166	07-MAY-1994	0302	27°45.69'	95°17.21'	267.2	12
167	07-MAY-1994	0458	27°47.90'	95°02.91'	312.6	12
168	07-MAY-1994	0653	27°50.16'	94°48.58'	238.7	12
169	07-MAY-1994	0841	27°50.13'	94°35.31'	271.6	12
170	07-MAY-1994	1033	27°50.05'	94°21.66'	172.4	12

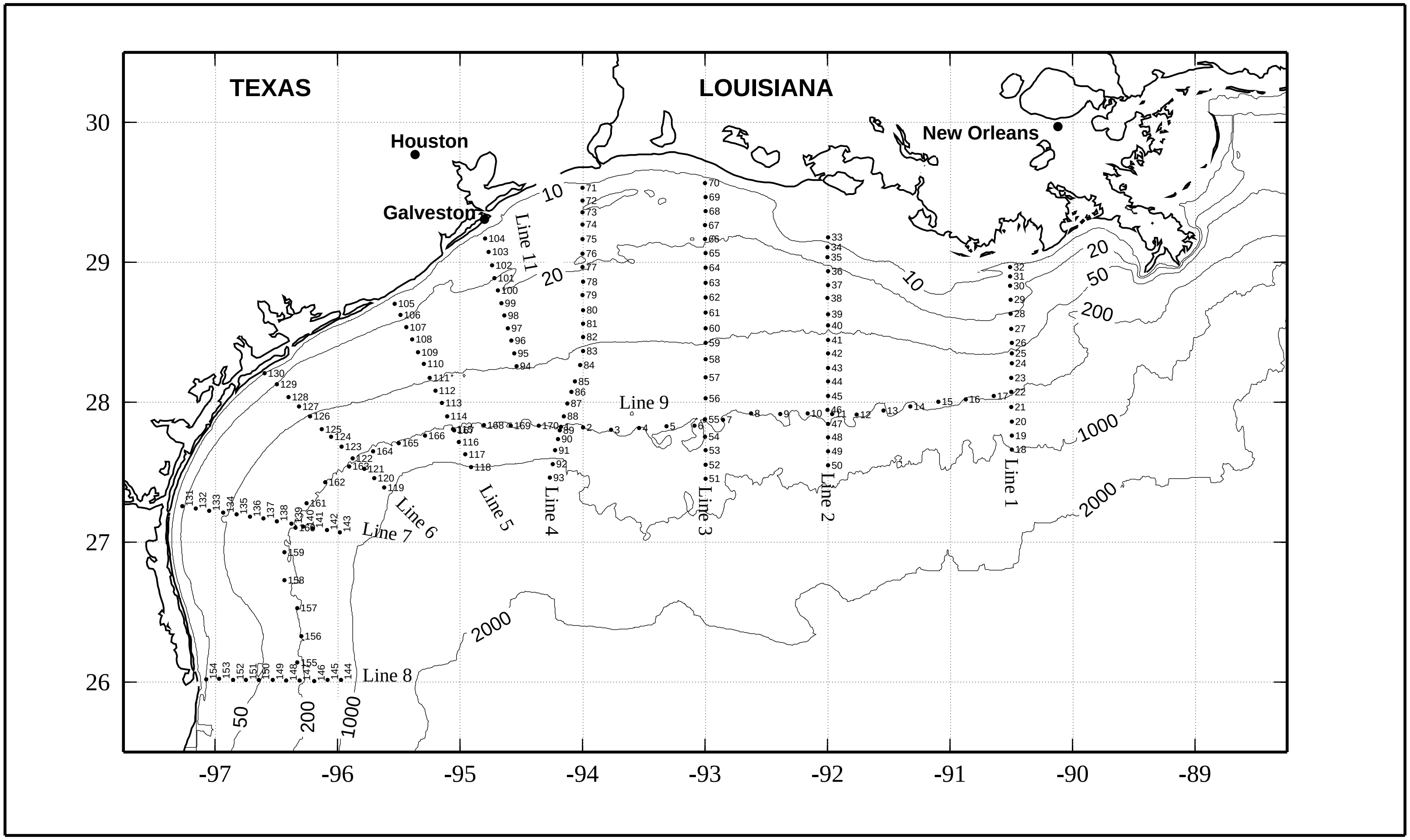

Figure 8.0. Cruise track and station locations for LATEX A Hydrographic Survey H08, 23 April - 7 May 1994.

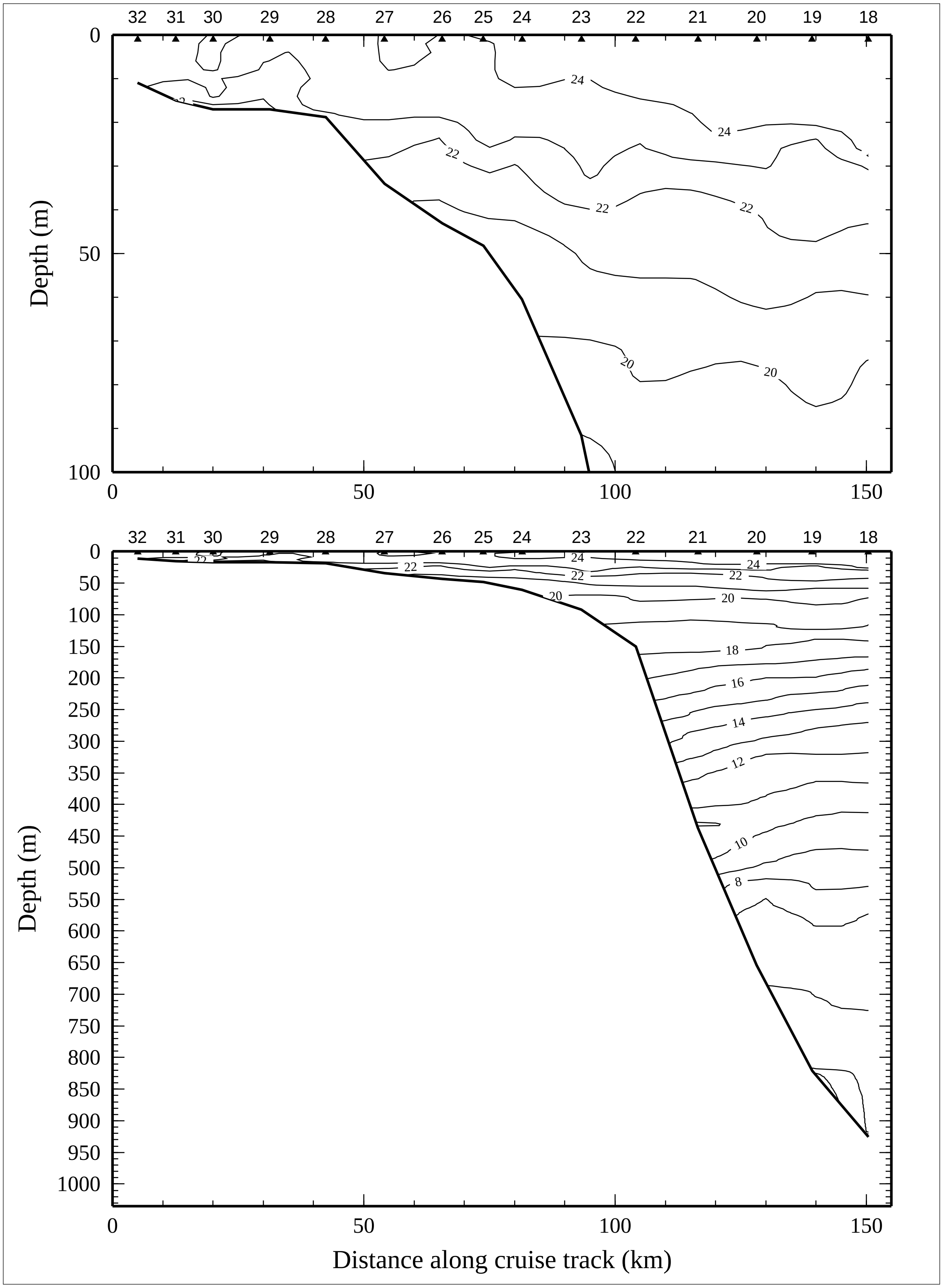

Figure 8.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

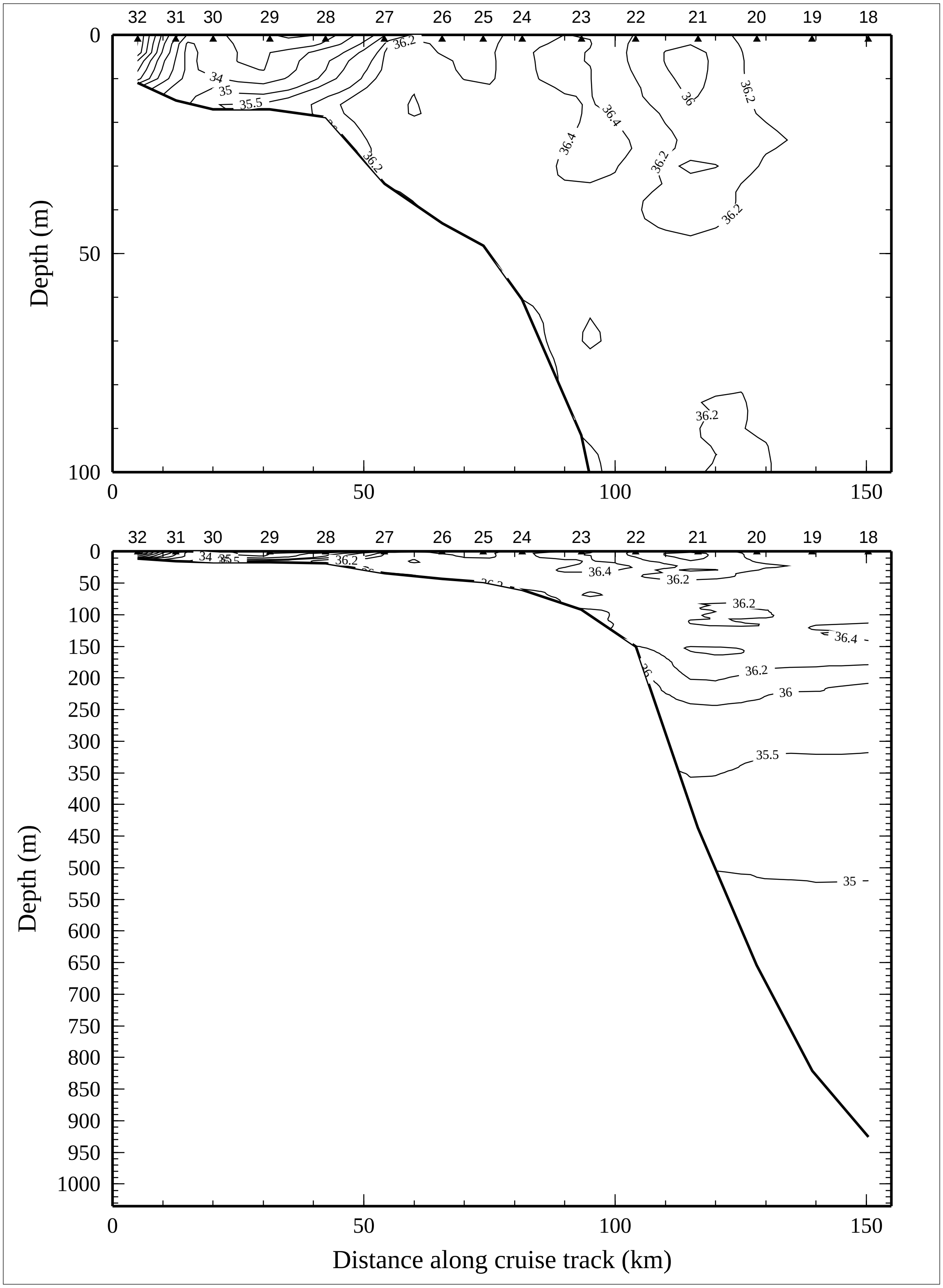

Figure 8.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

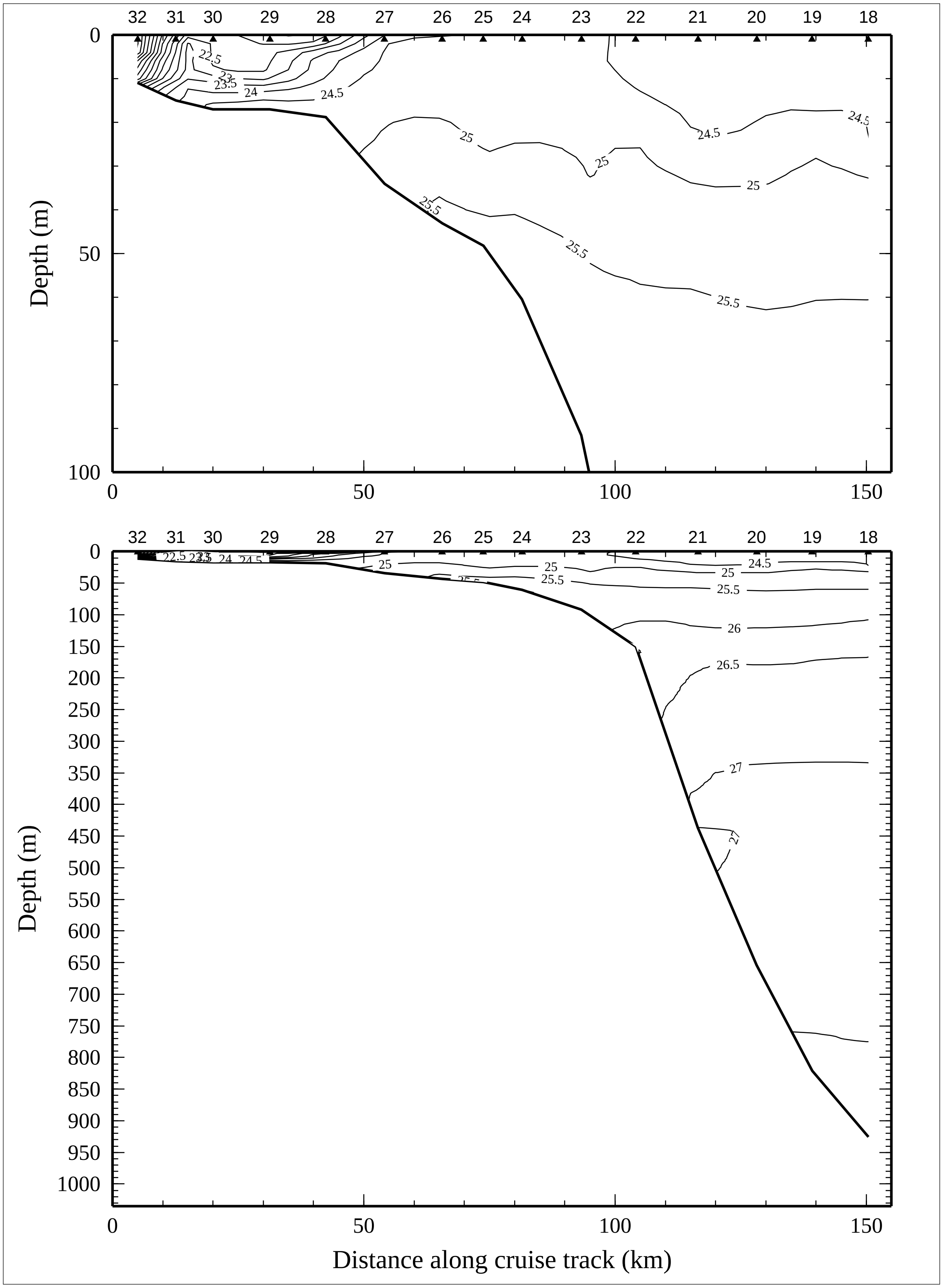

Figure 8.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

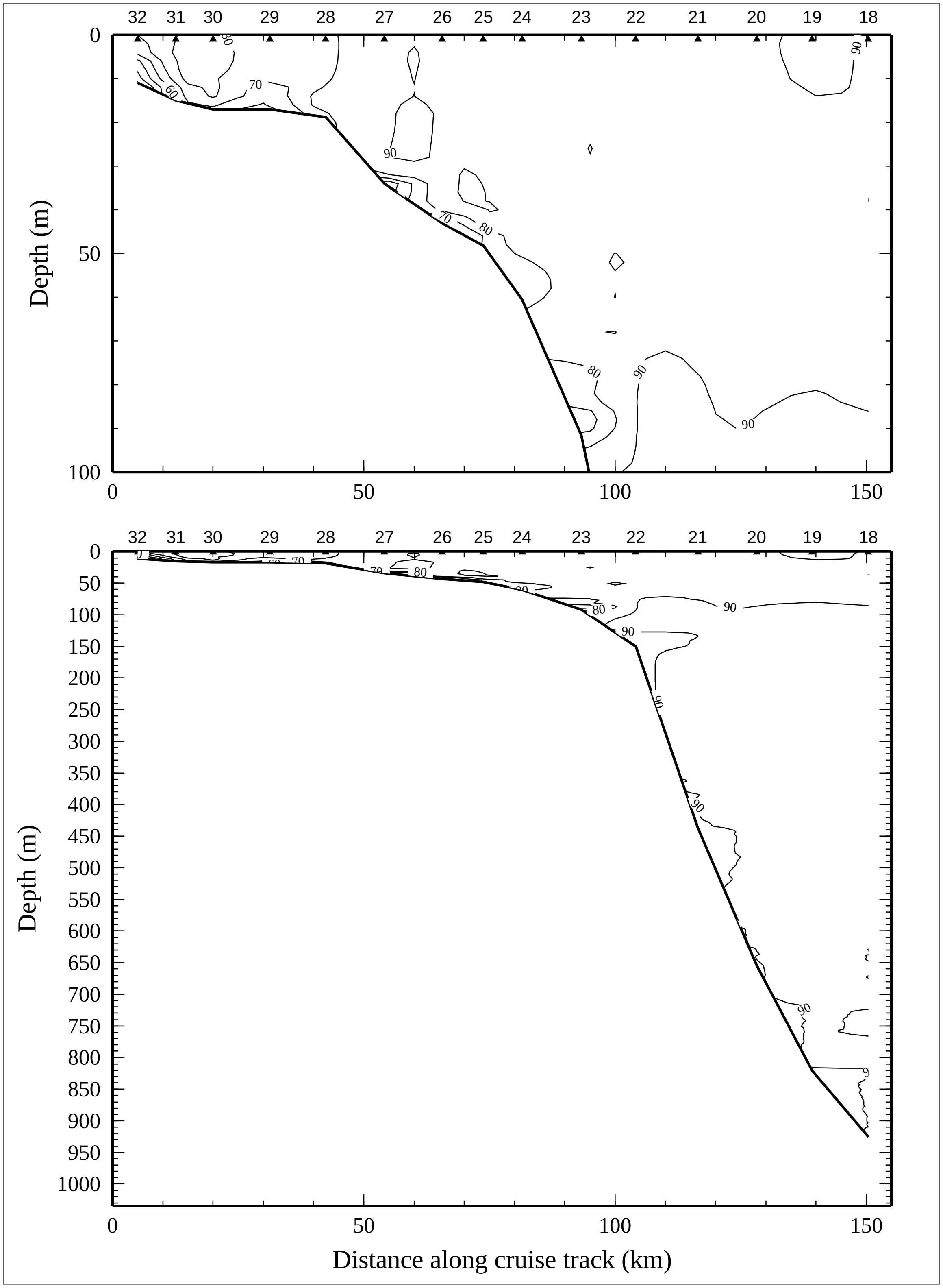

Figure 8.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

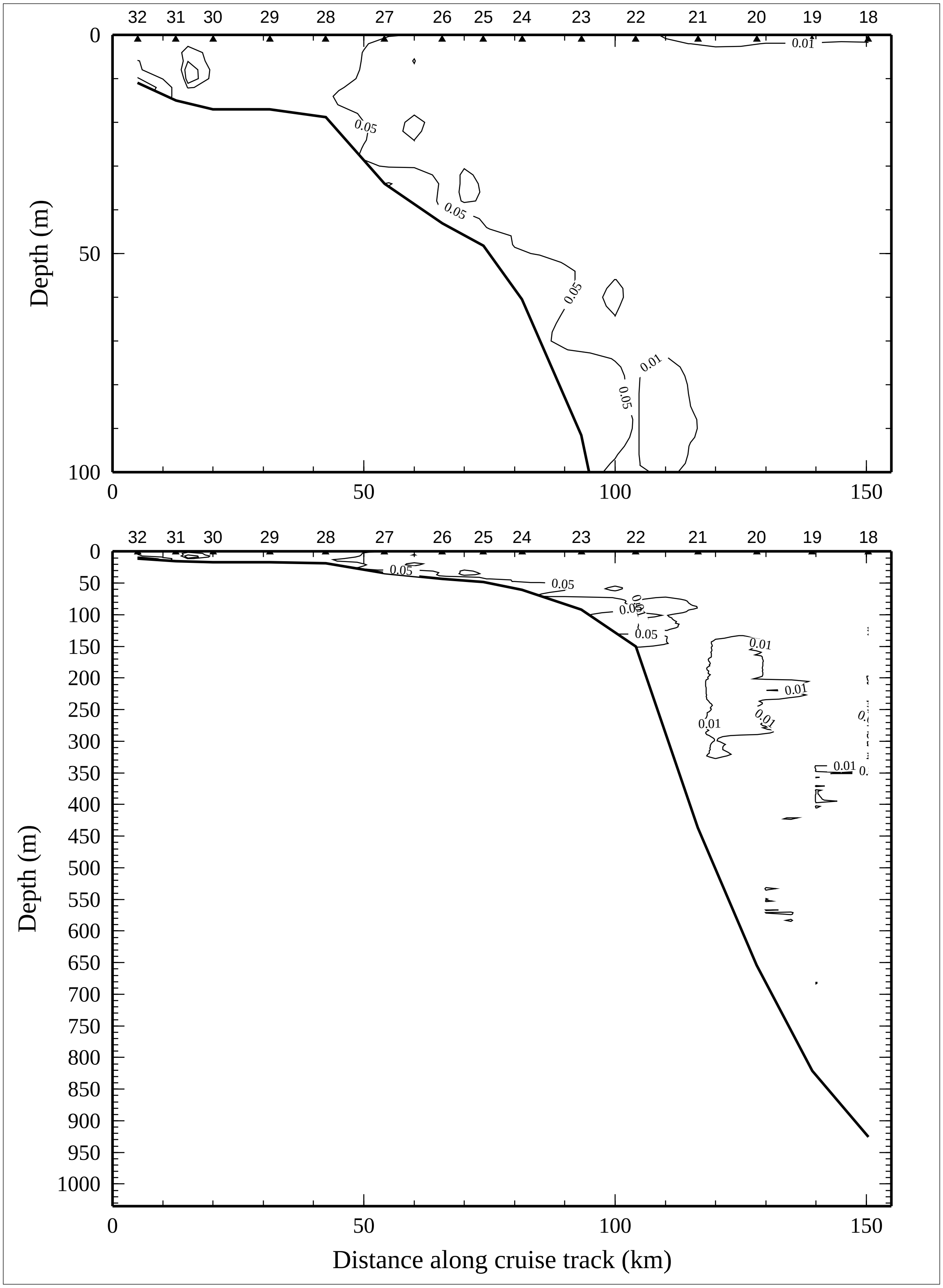

Figure 8.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

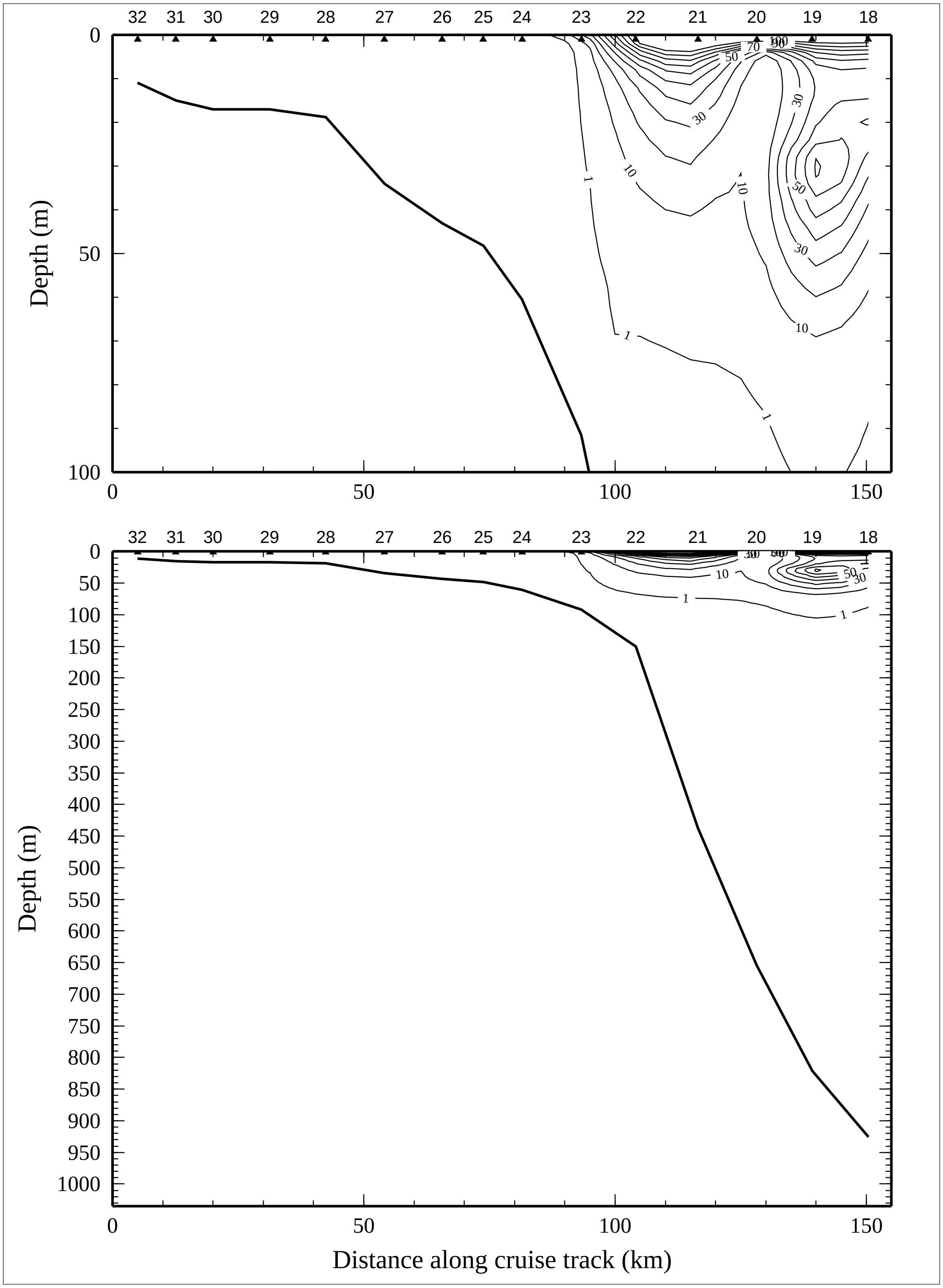

Figure 8.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

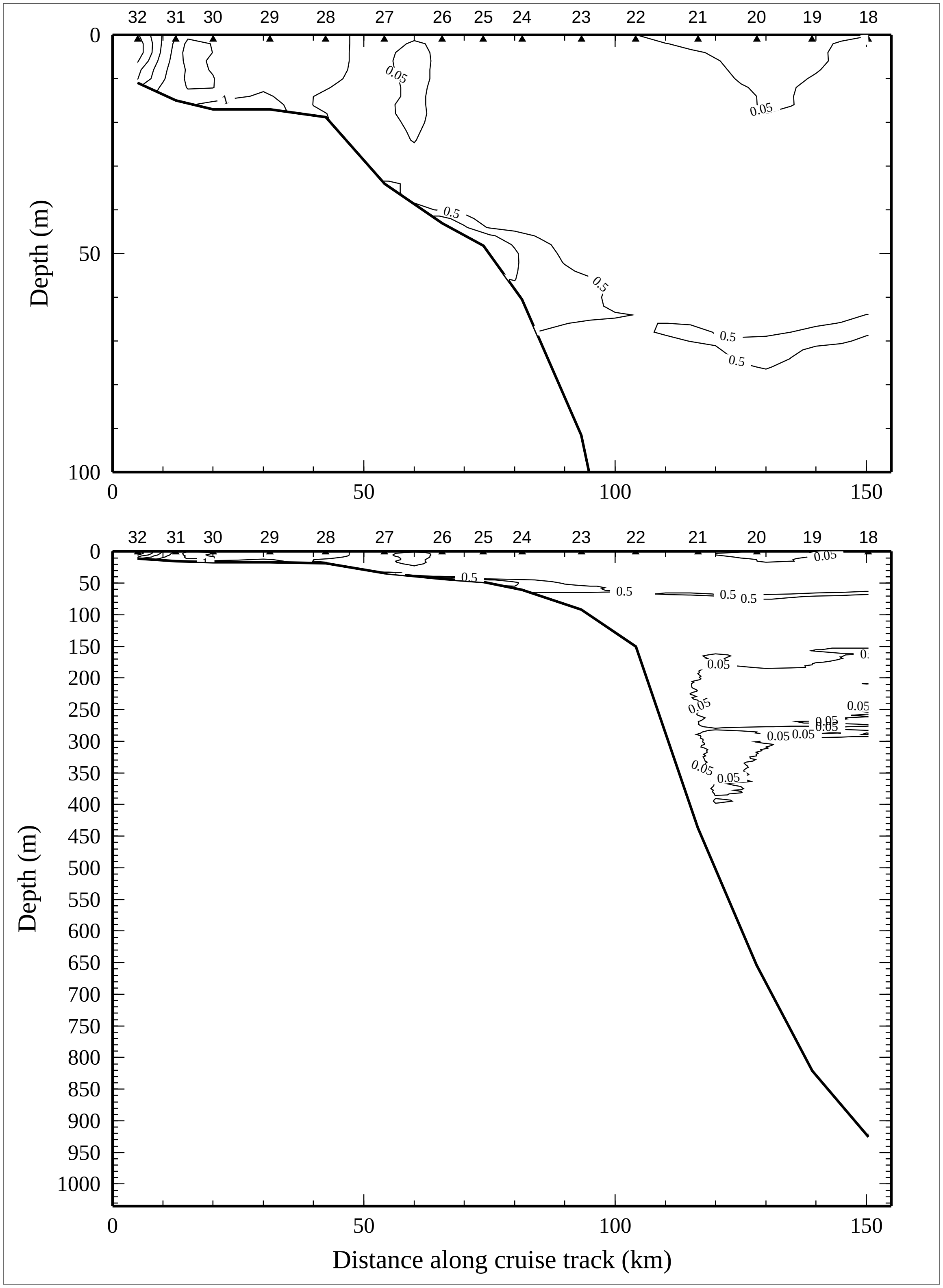

Figure 8.1.7. Relative fluorescence on line 1 of LATEX A survey H08,
23 April - 7 May 1994.

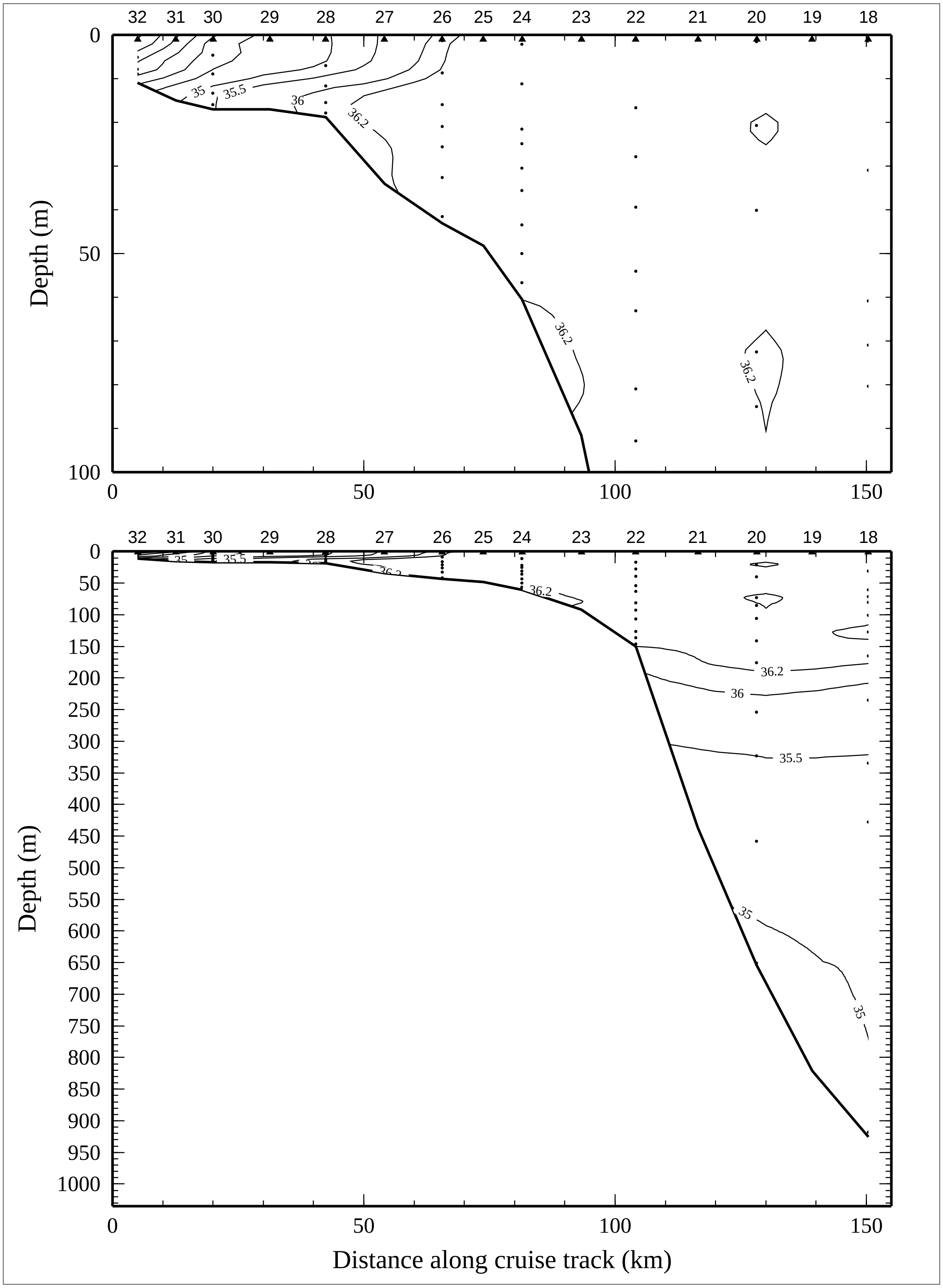

Figure 8.1.8. Bottle salinity on line 1 of LATEX A survey H08,
23 April - 7 May 1994.

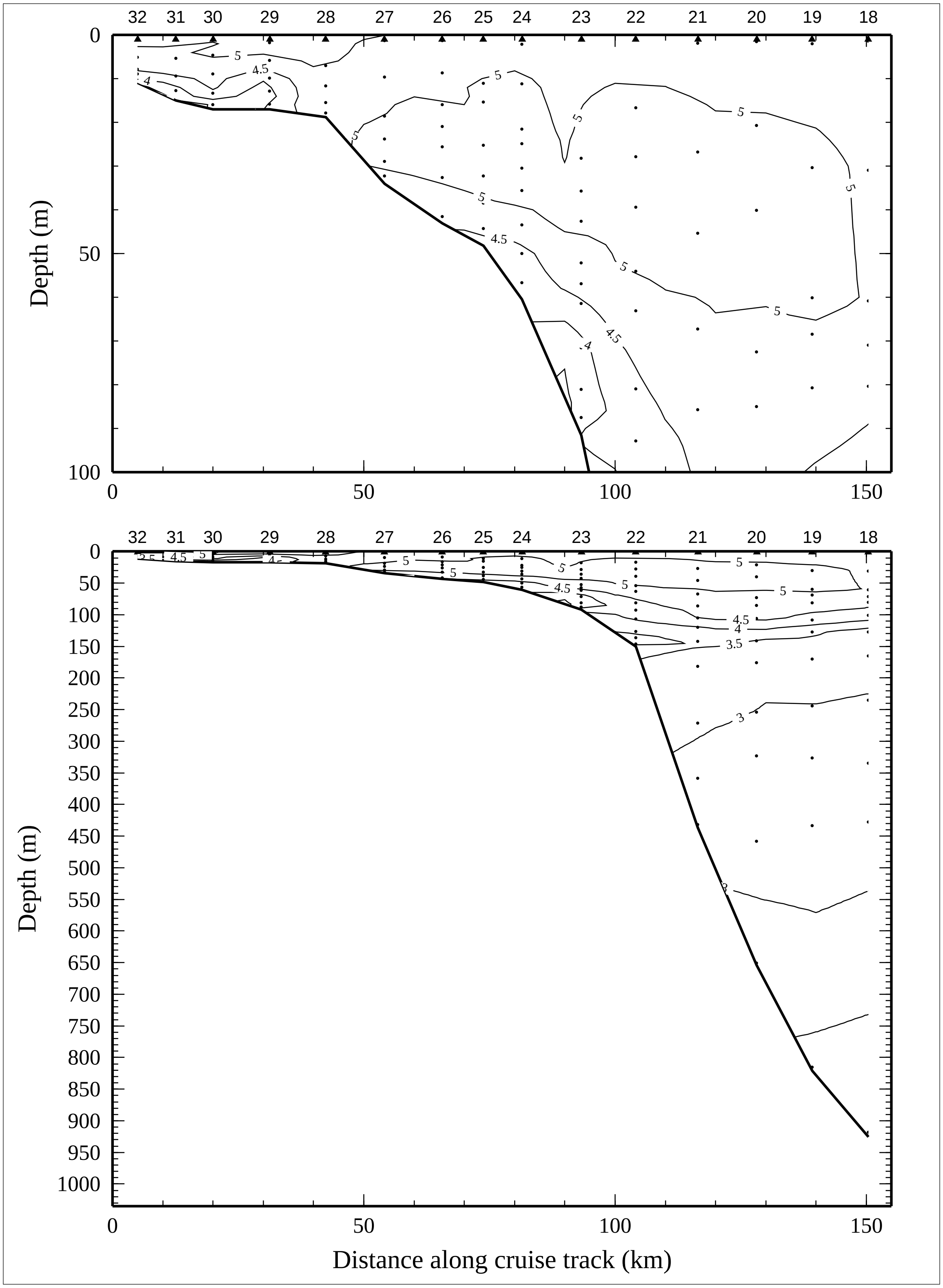

Figure 8.1.9. Dissolved oxygen (ml·l⁻¹) on line 1 of LATEX A survey H08,
23 April - 7 May 1994.

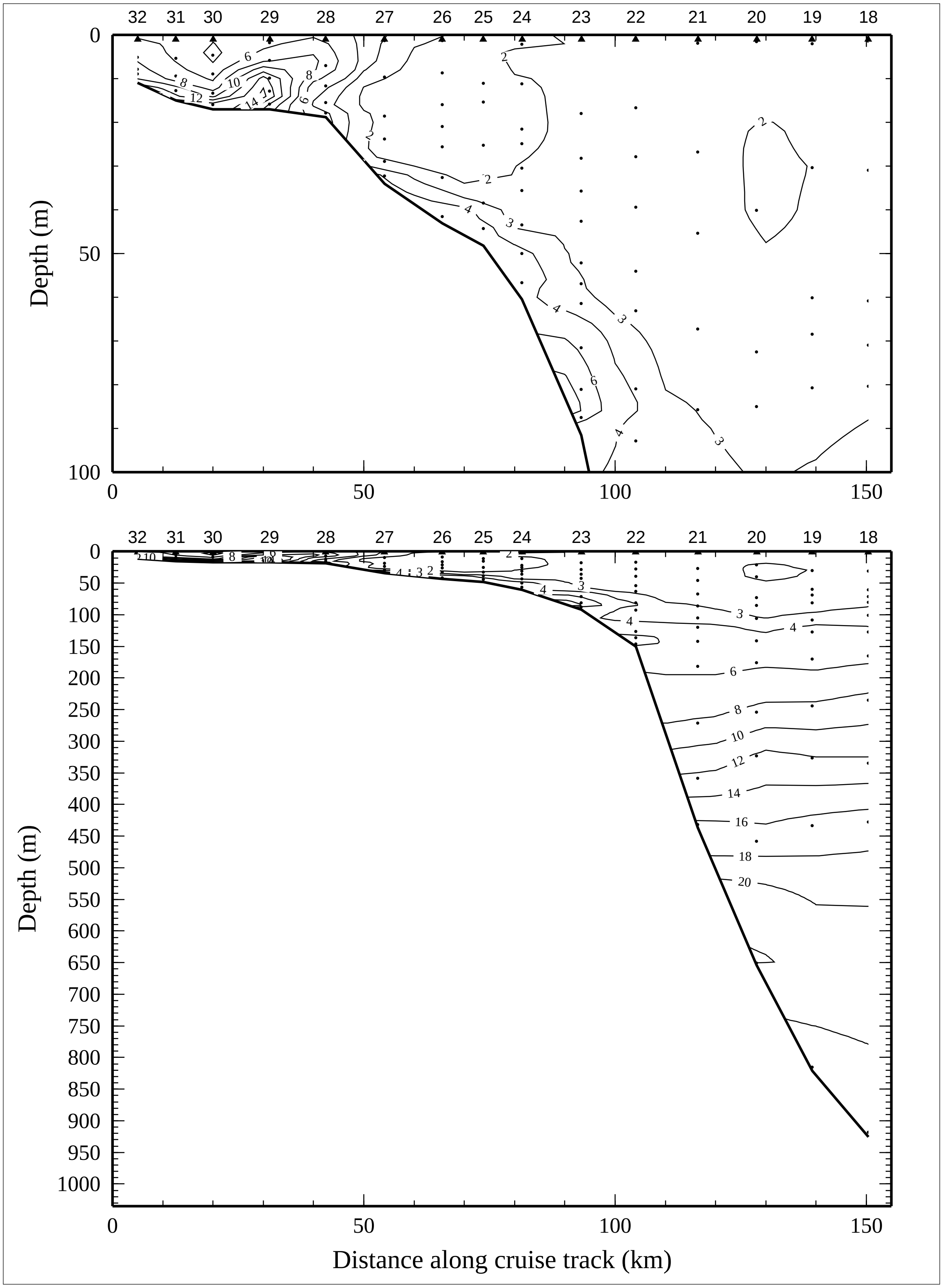

Figure 8.1.10. Silicate (μmol·l⁻¹) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

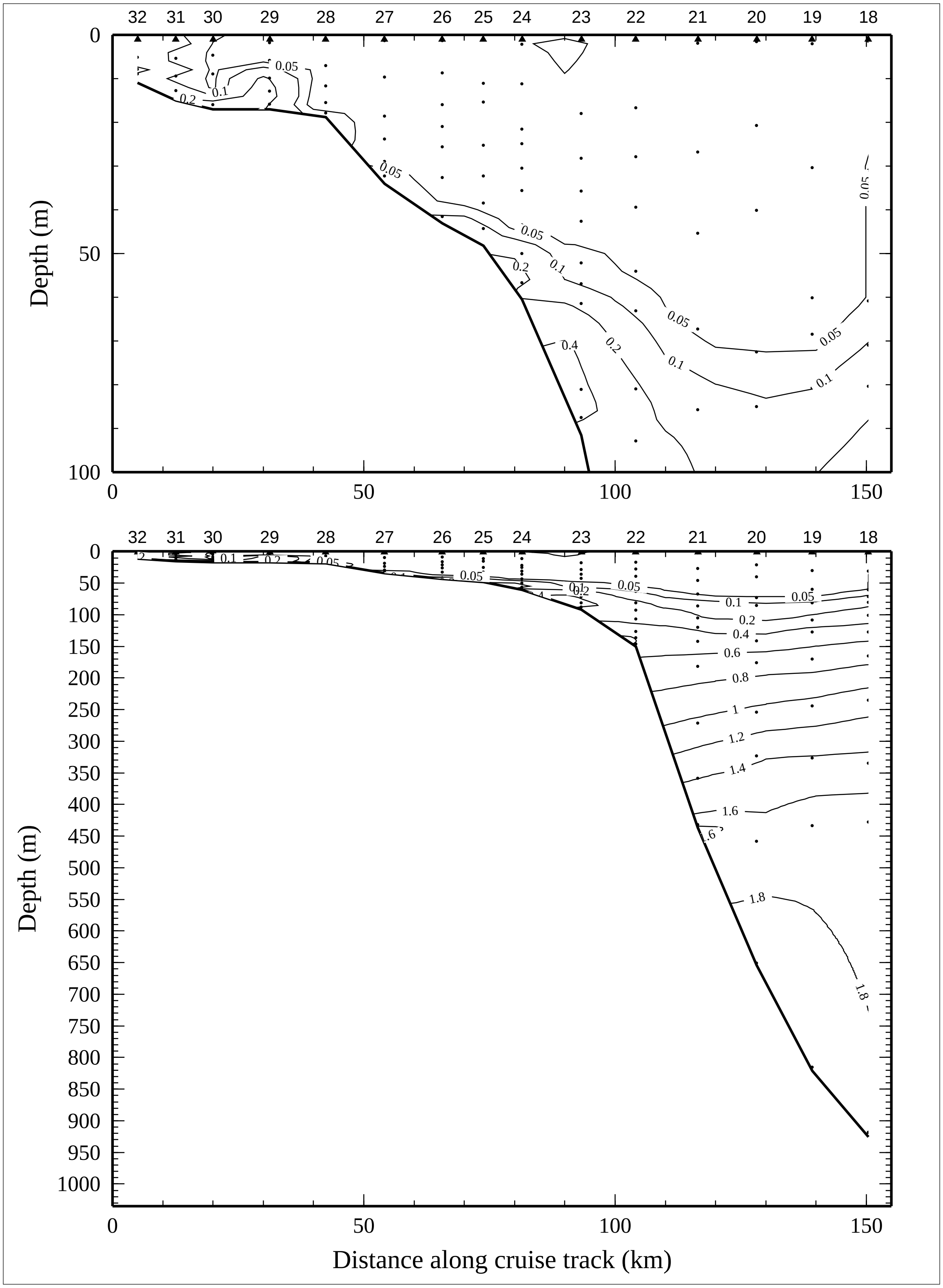

Figure 8.1.11. Phosphate (μmol·l⁻¹) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

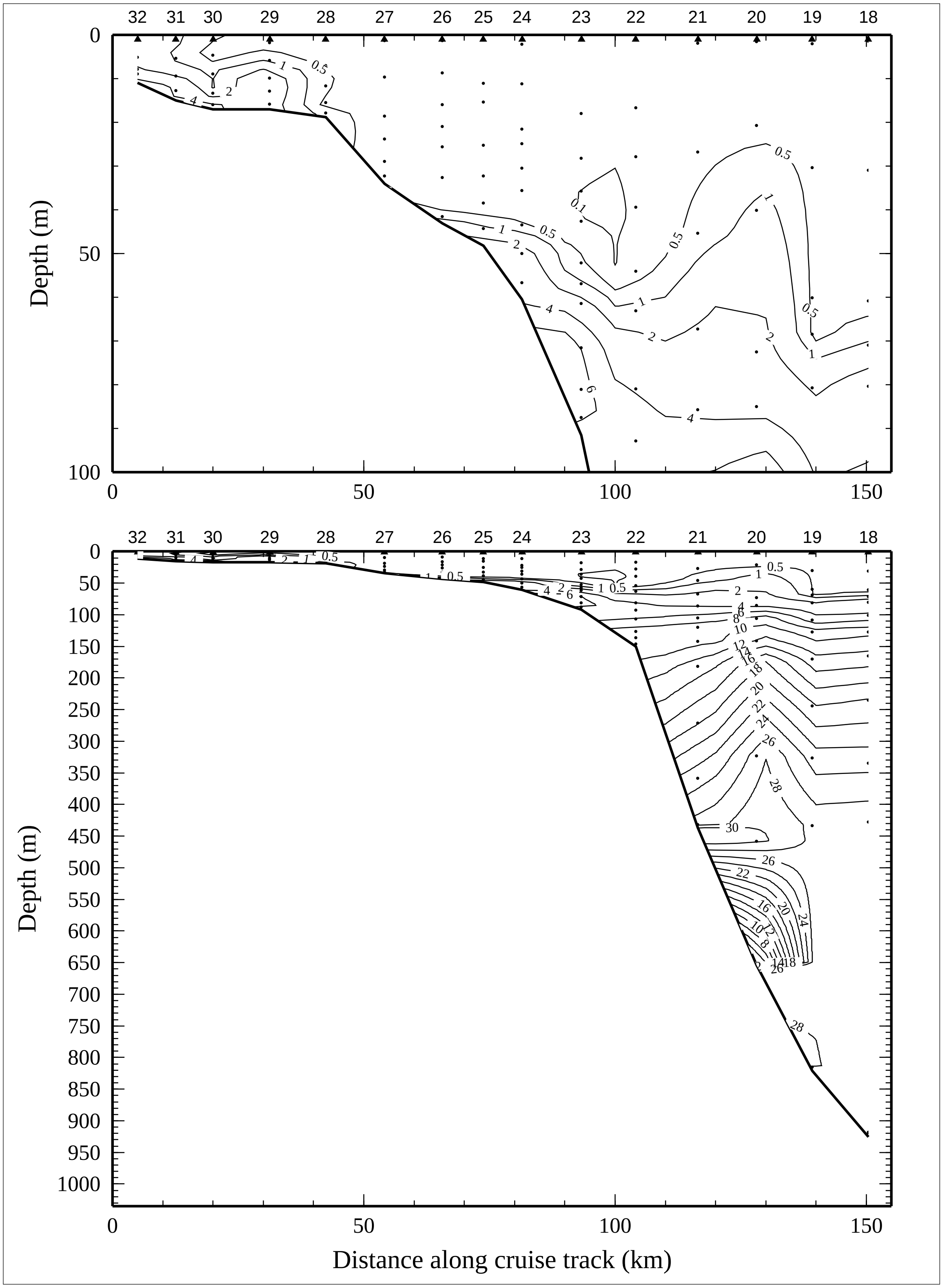

Figure 8.1.12. Nitrate (μmol·l[-1]) on line 1 of LATEX A survey H08,
23 April - 7 May 1994.

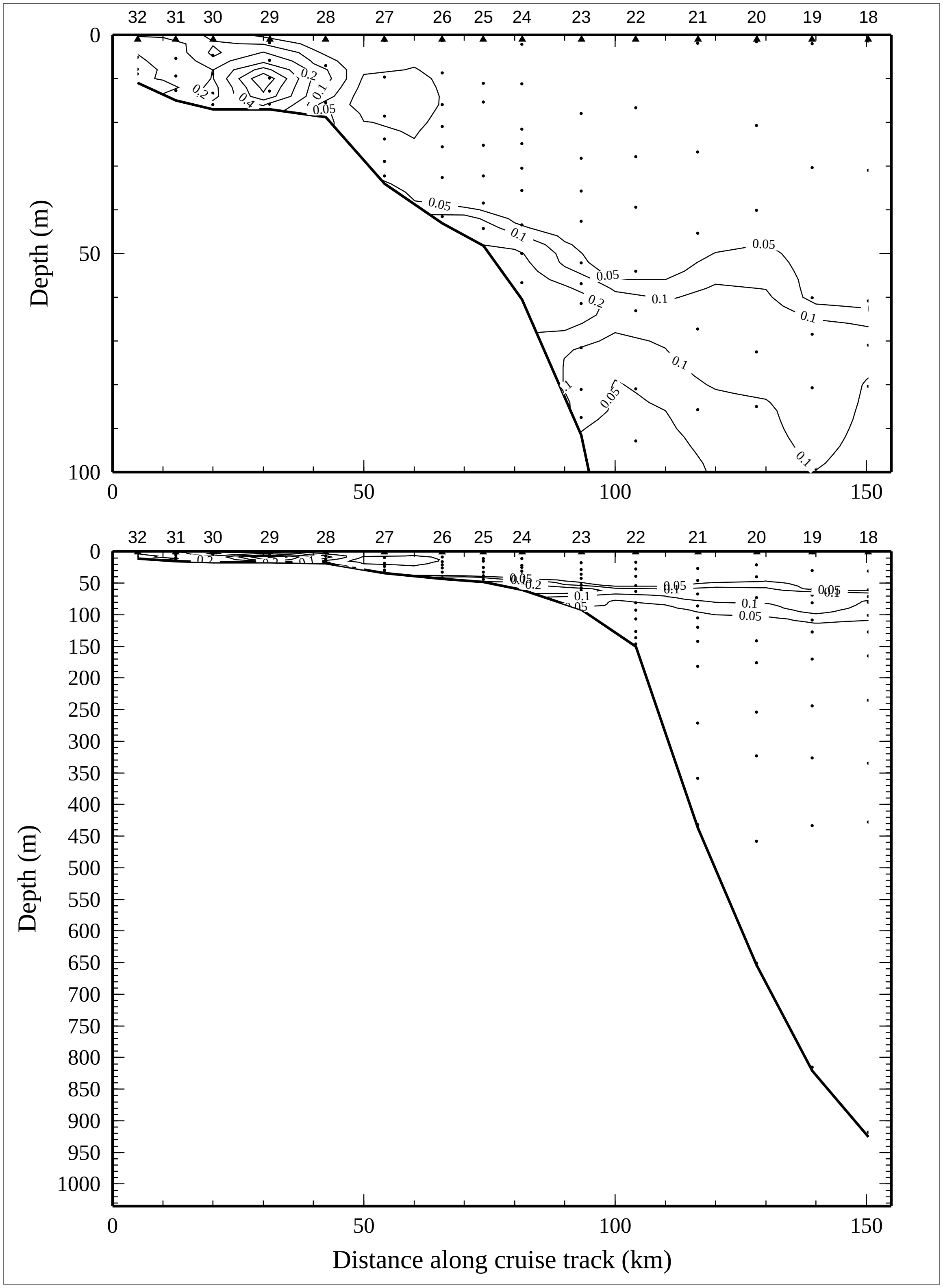

Figure 8.1.13. Nitrite (µmol·l^{-1}) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

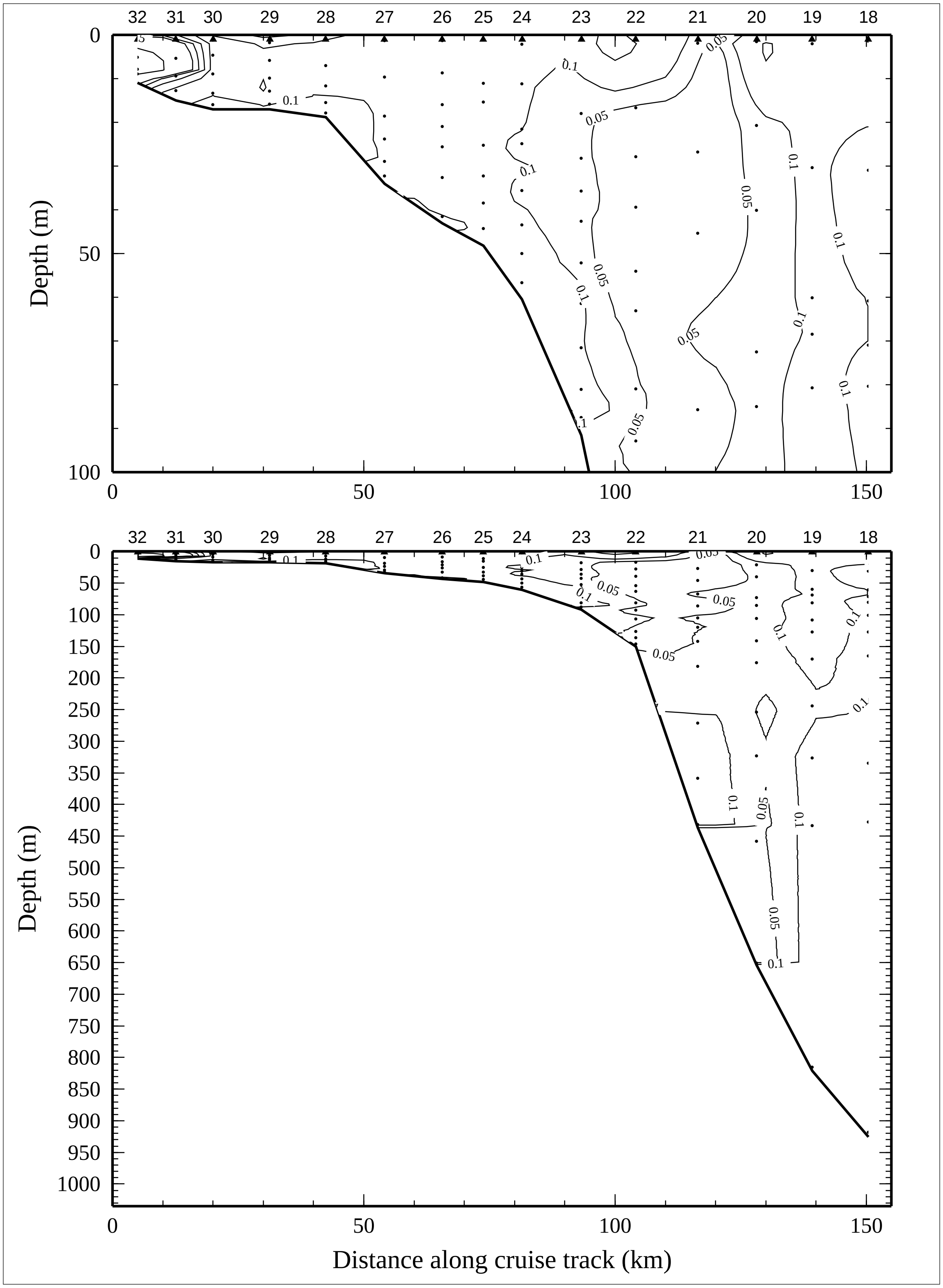

Figure 8.1.14. Ammonium (μmol·l^{-1}) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

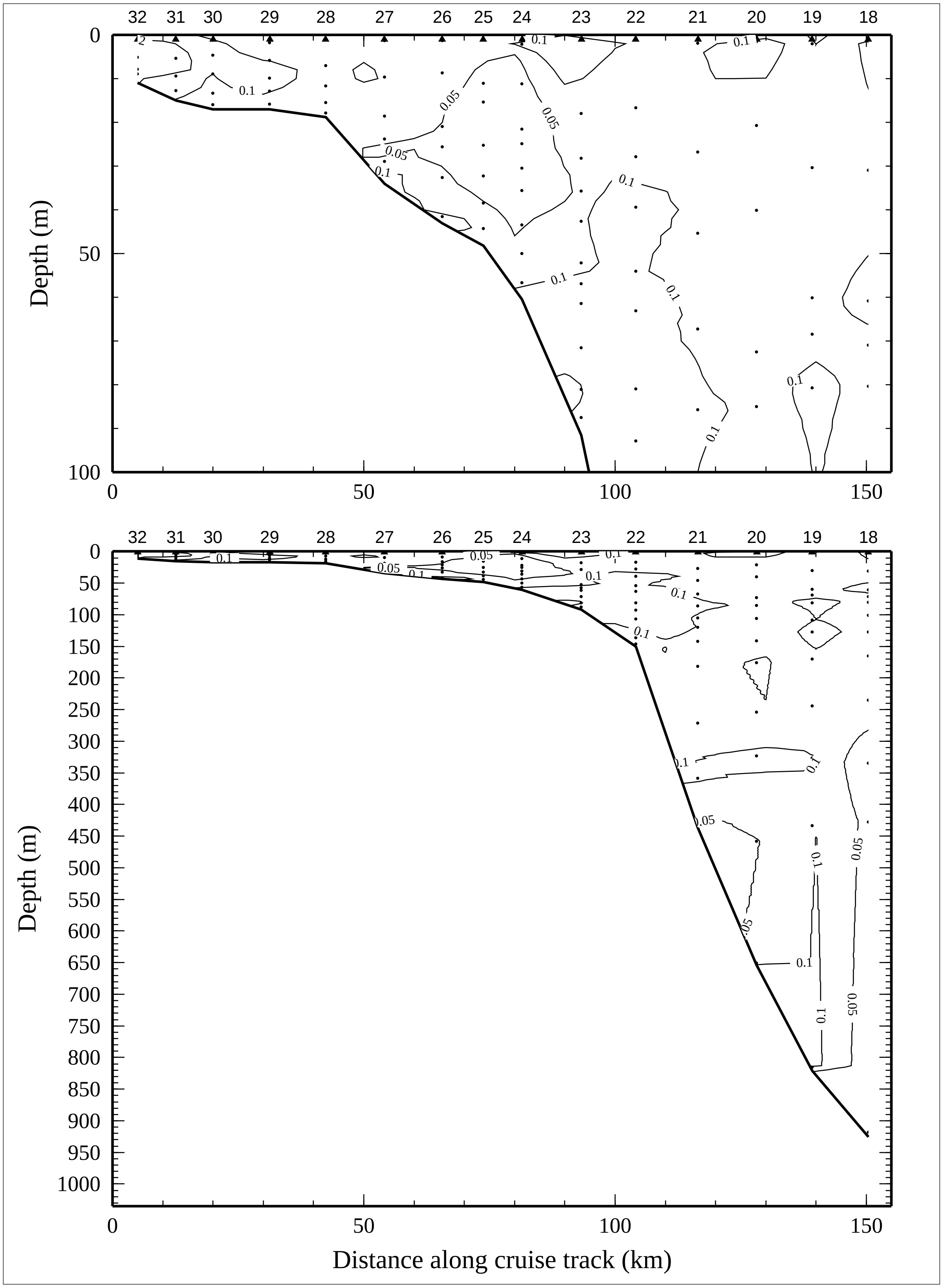

Figure 8.1.15. Urea (µmol·l^{-1}) on line 1 of LATEX A survey H08, 23 April - 7 May 1994.

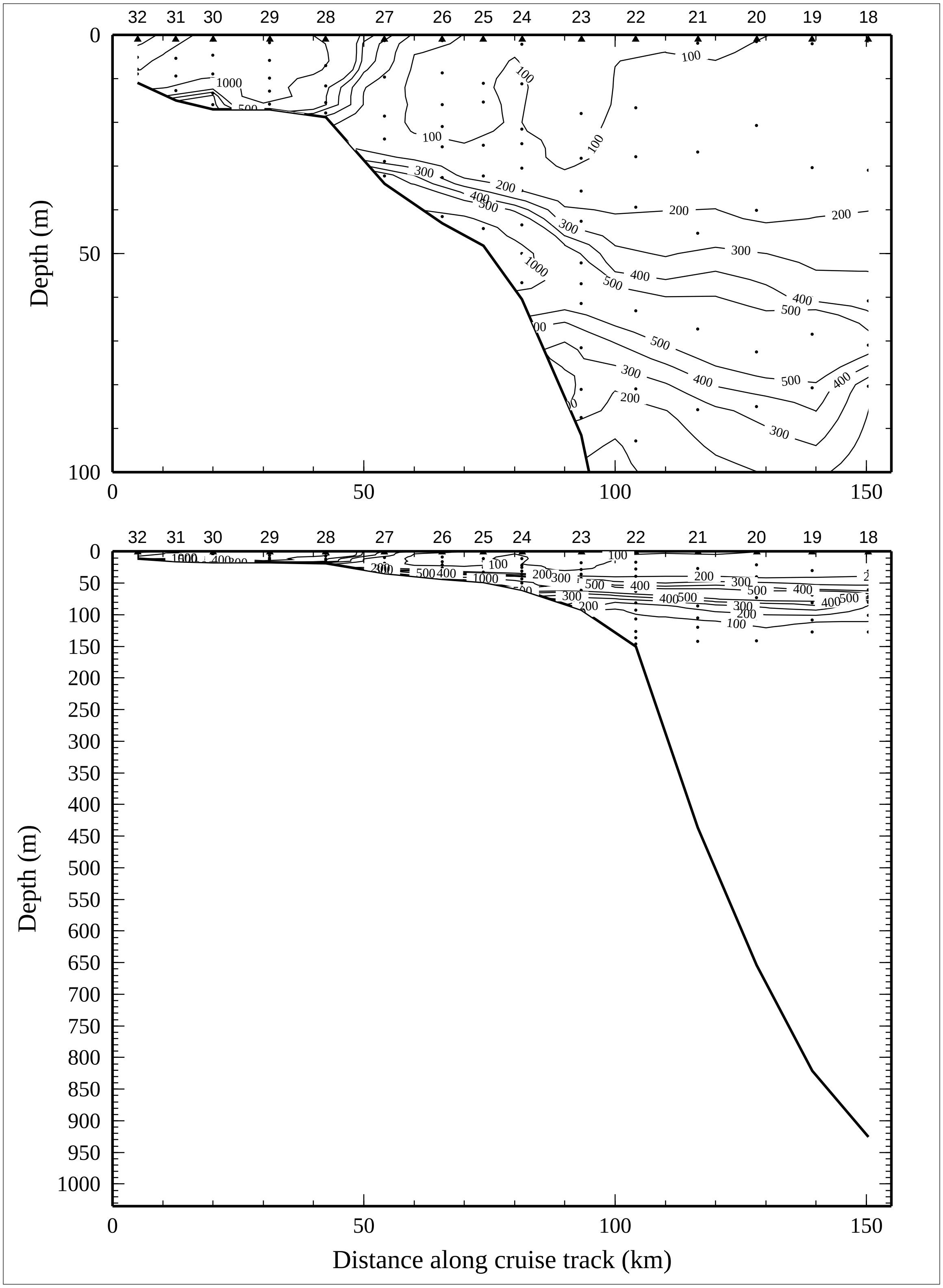

Figure 8.1.16. Chlorophyll a (ng·l⁻¹) on line 1 of LATEX A survey H08,
23 April - 7 May 1994.

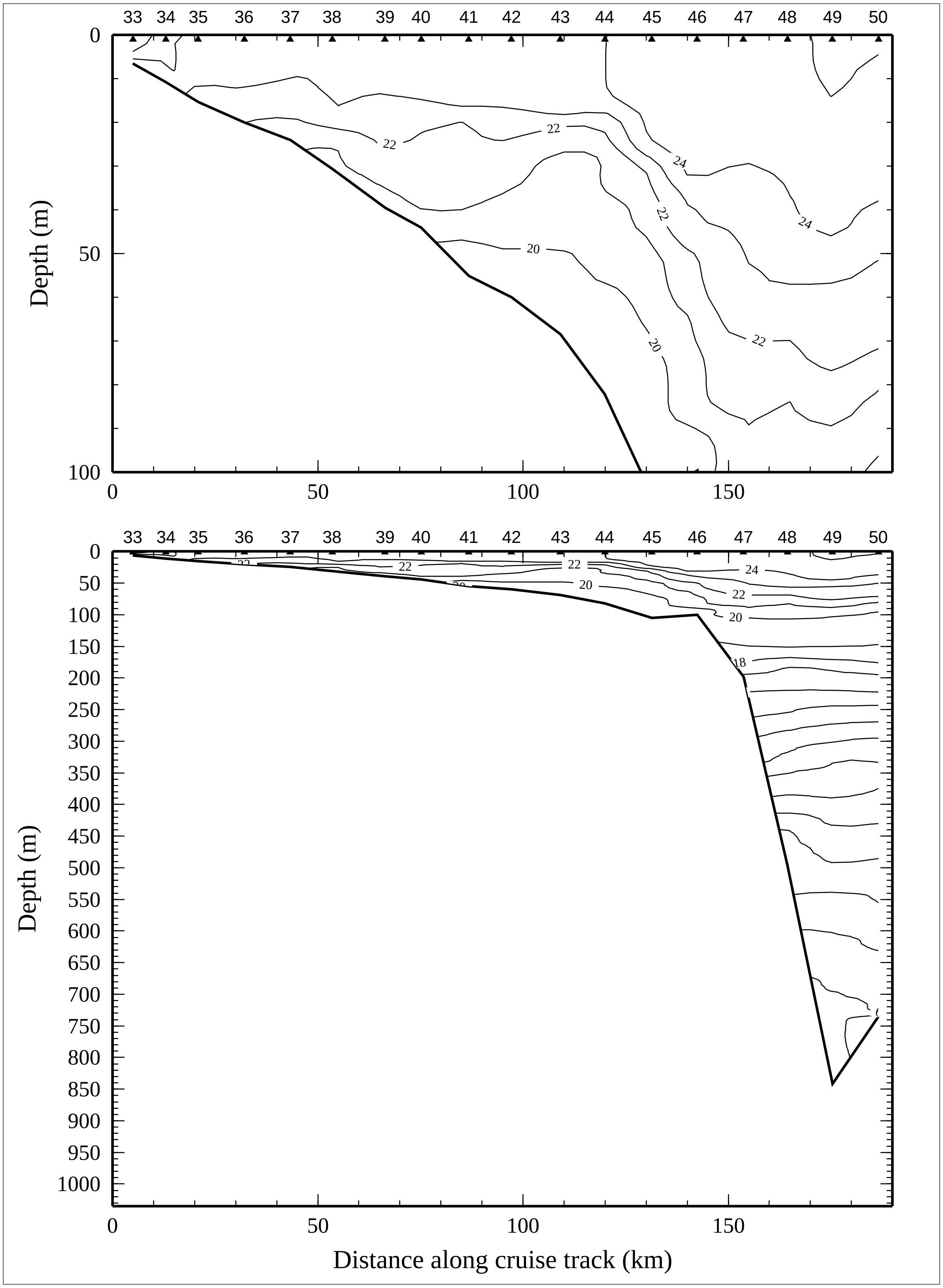

Figure 8.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

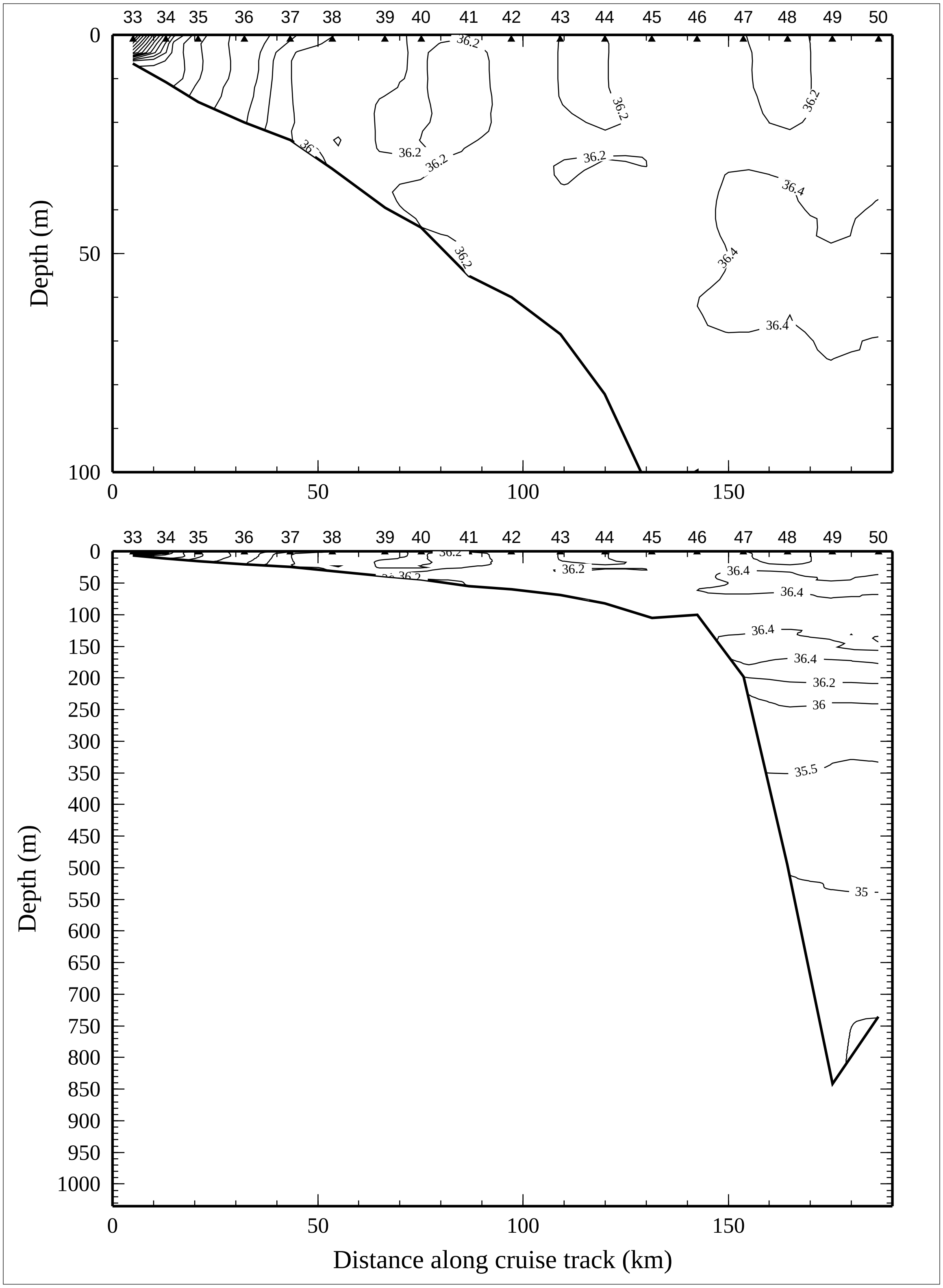

Figure 8.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

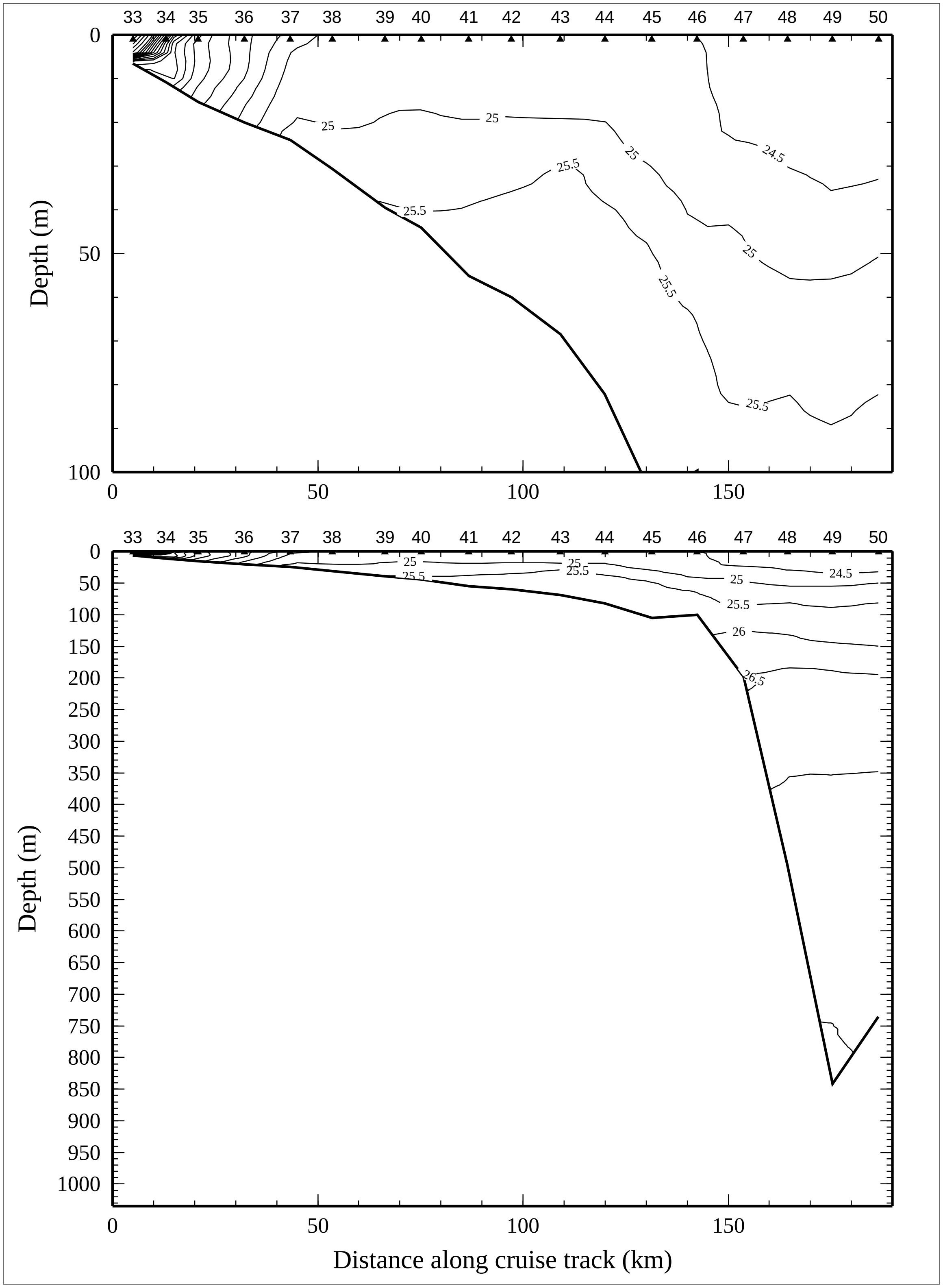

Figure 8.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

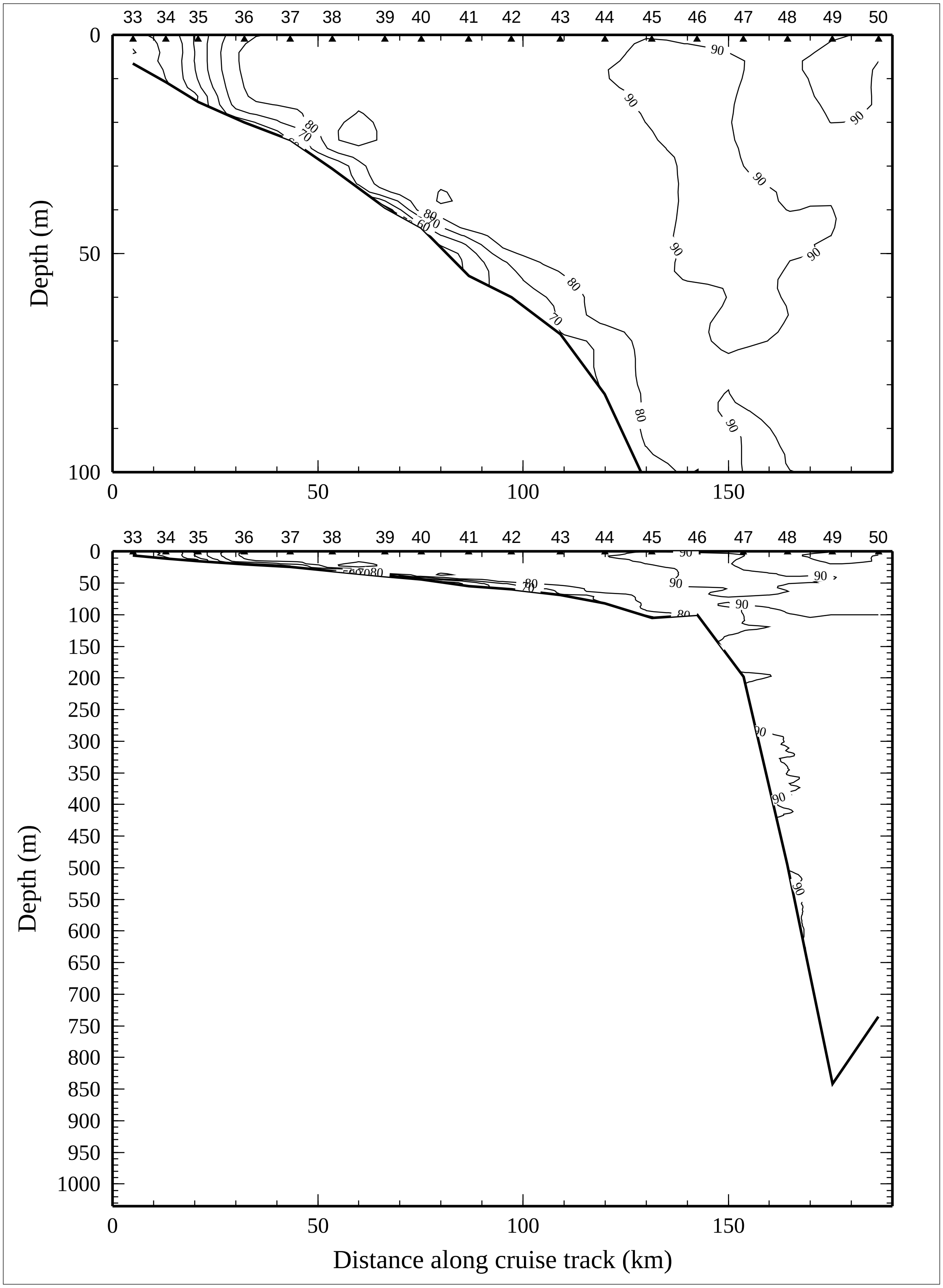

Figure 8.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

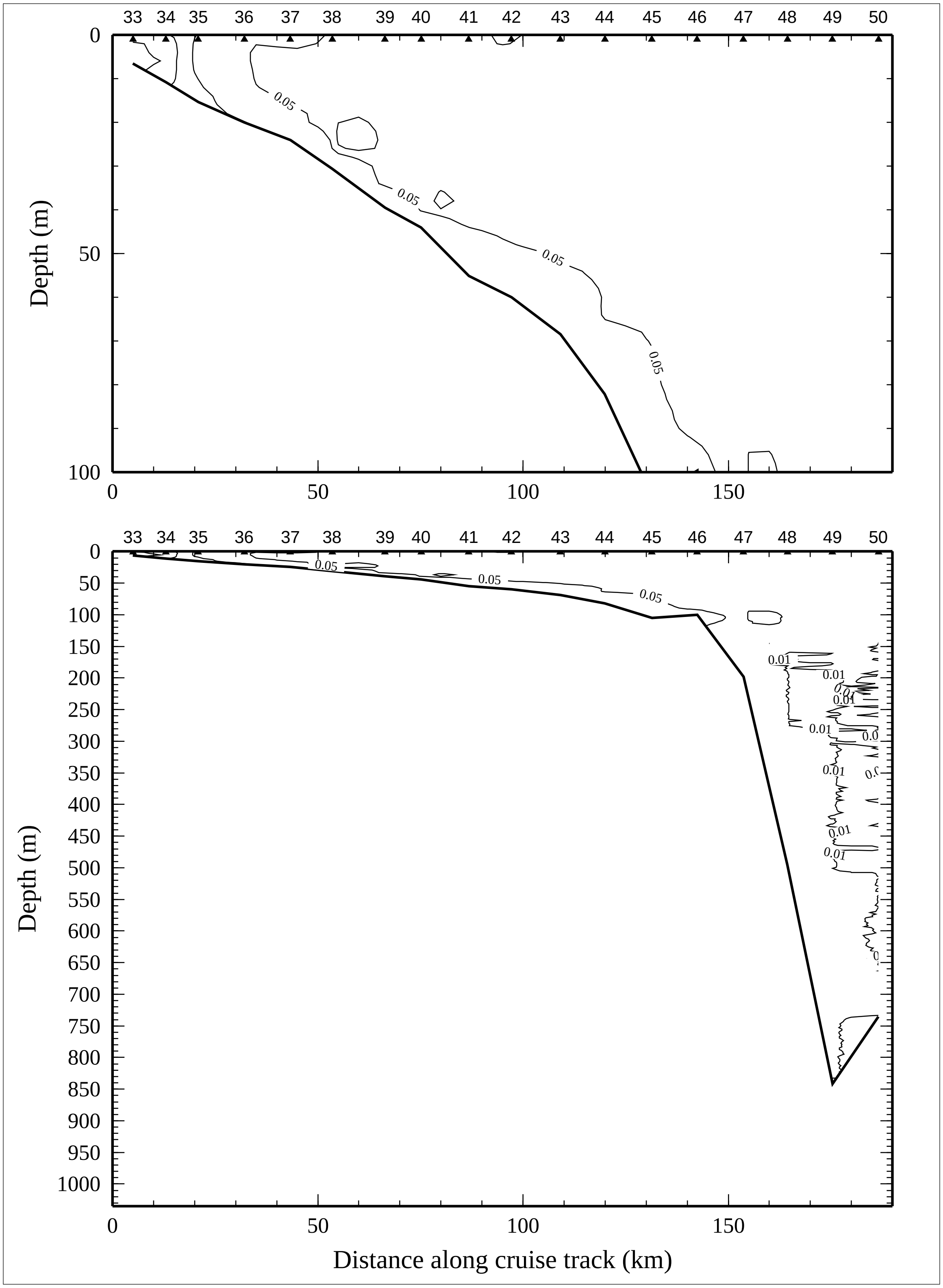

Figure 8.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

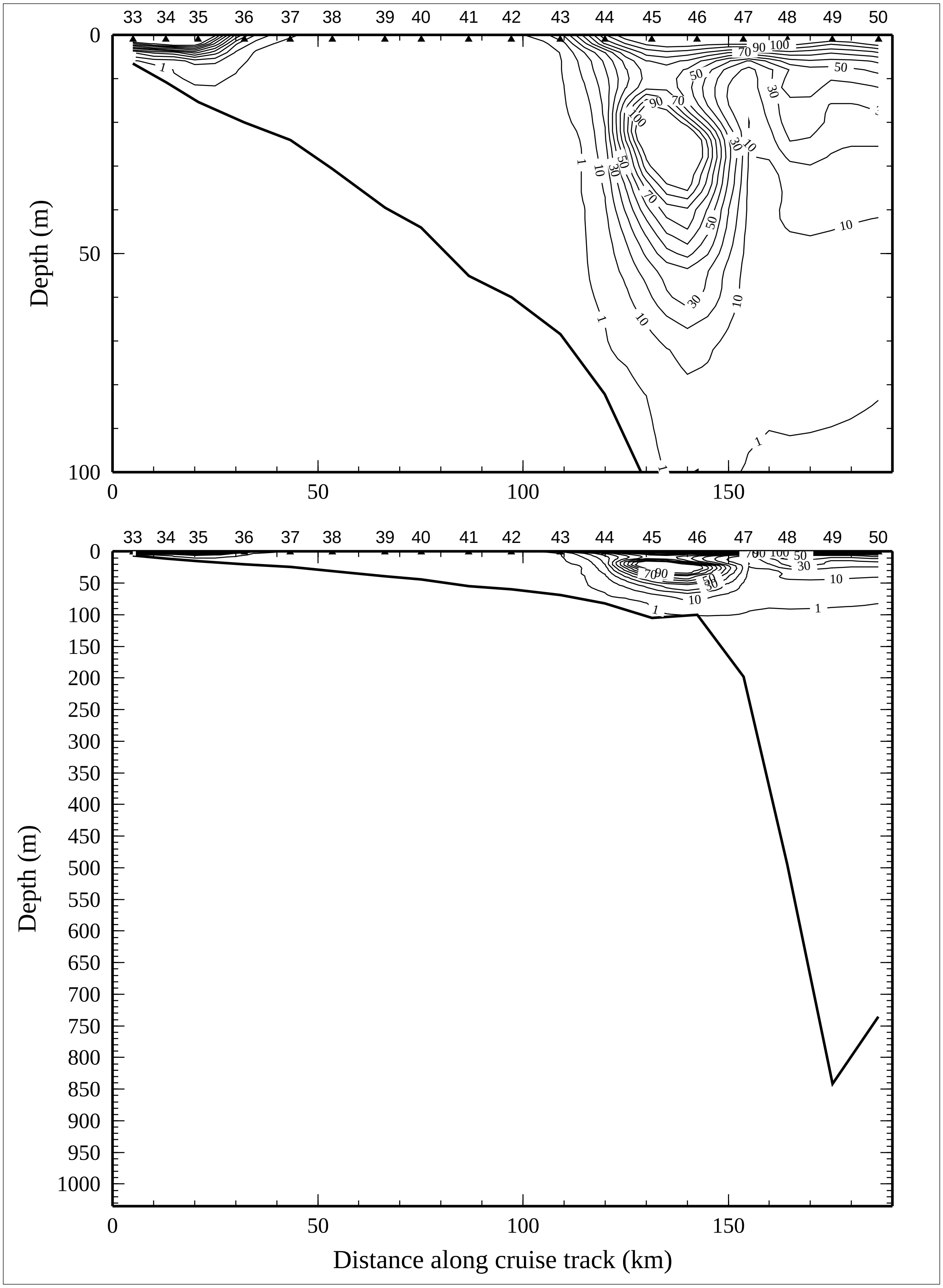

Figure 8.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

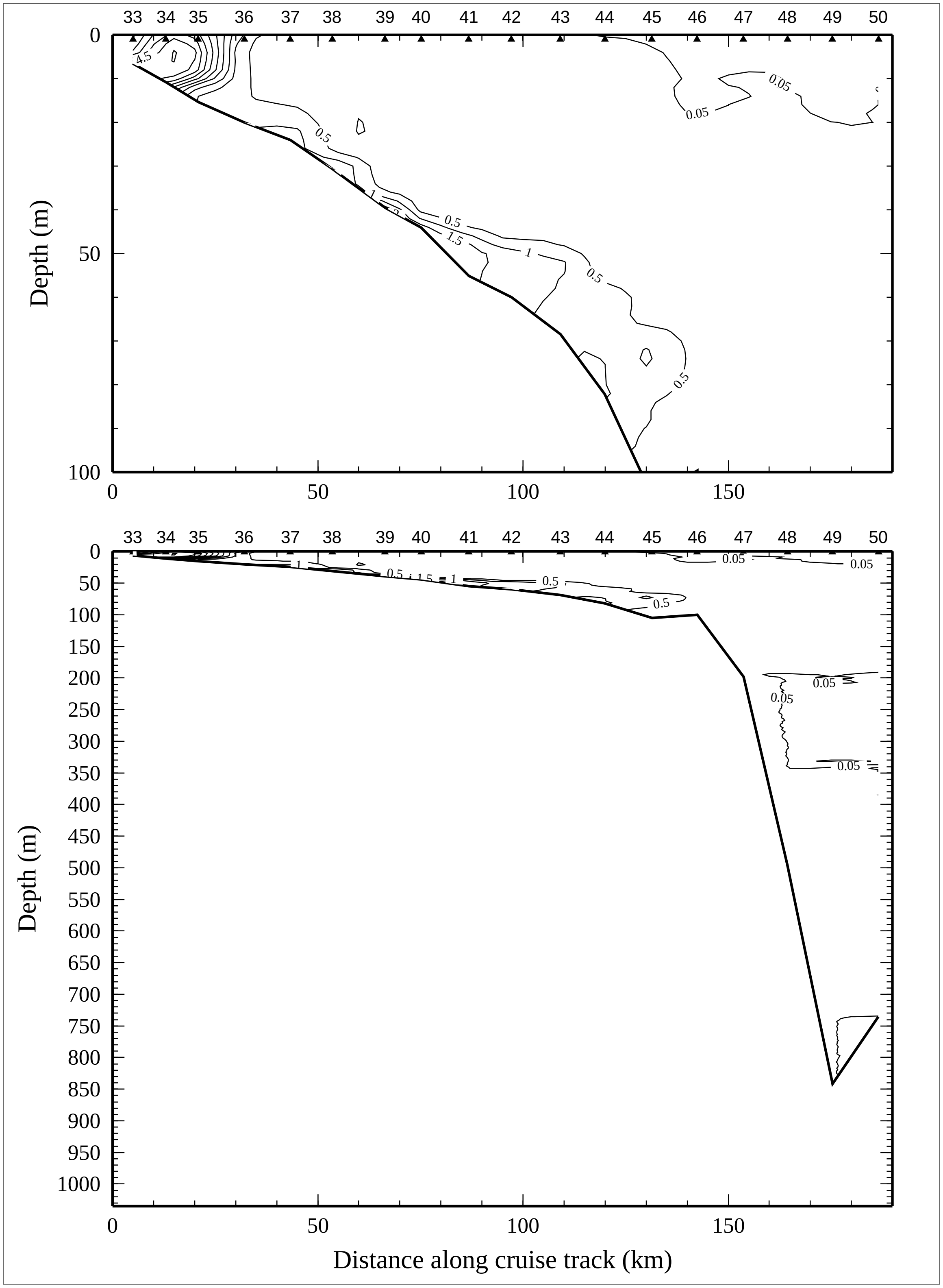

Figure 8.2.7. Relative fluorescence on line 2 of LATEX A survey H08,
23 April - 7 May 1994.

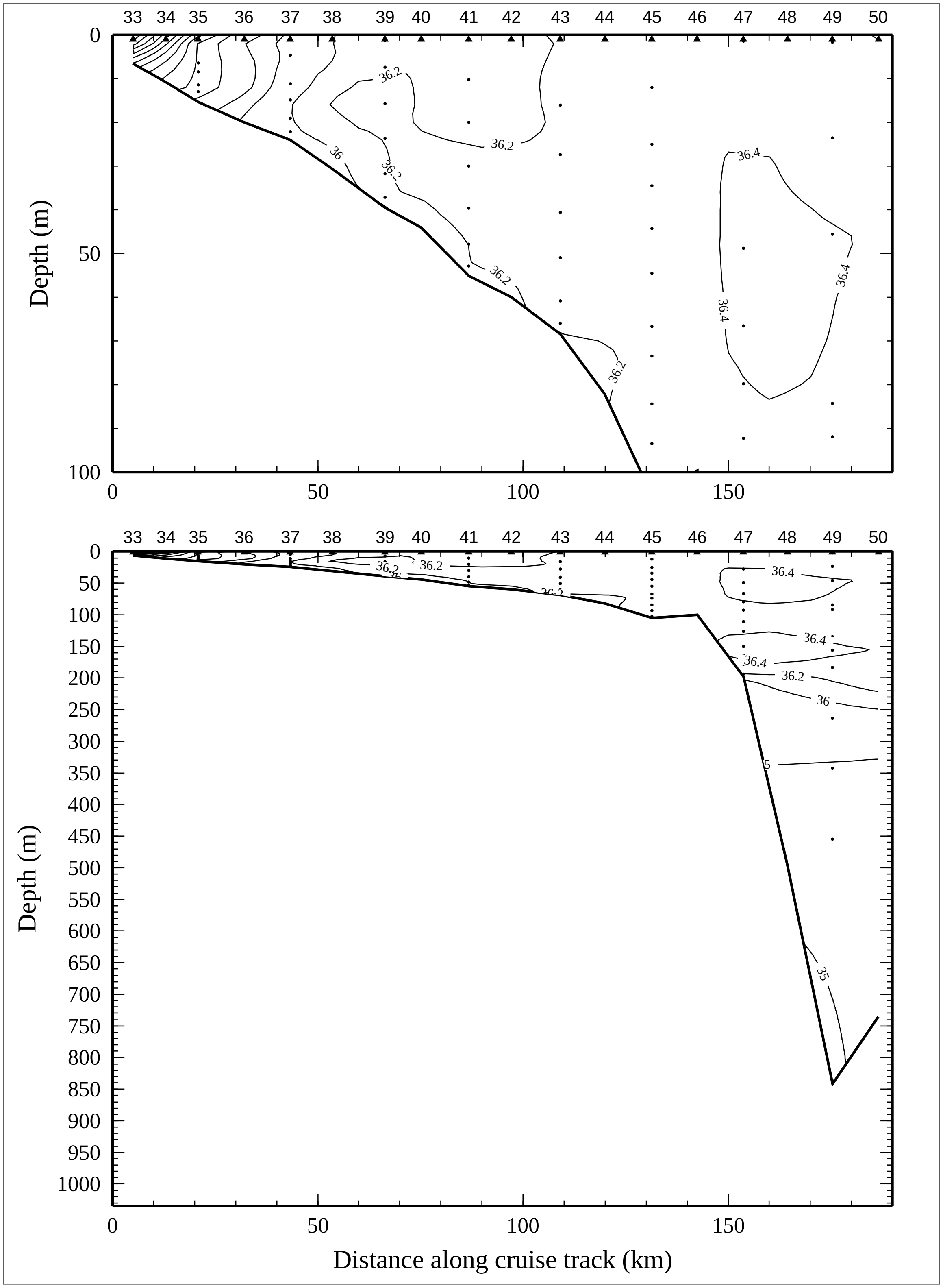

Figure 8.2.8. Bottle salinity on line 2 of LATEX A survey H08,
23 April - 7 May 1994.

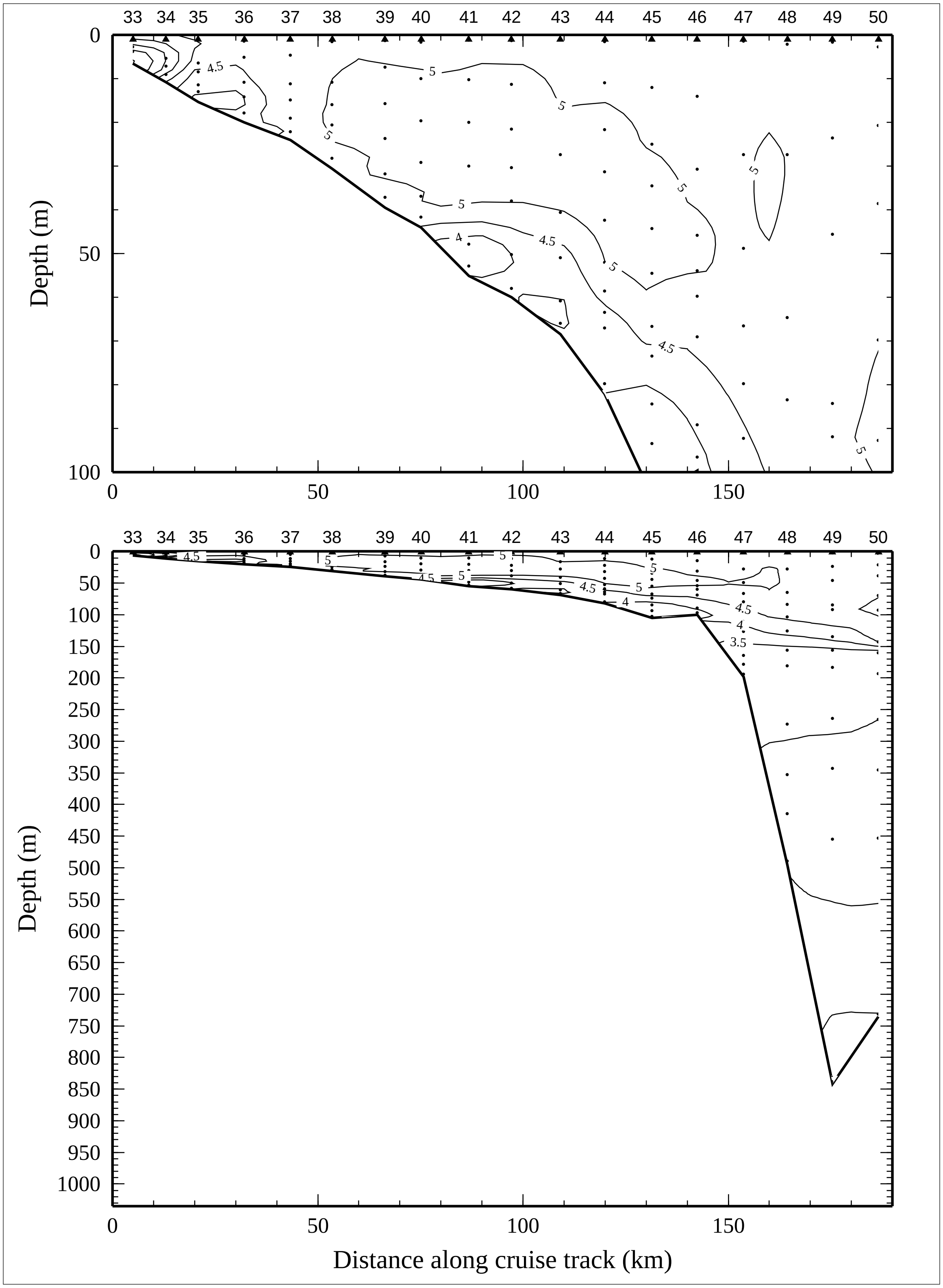

Figure 8.2.9. Dissolved oxygen ($ml \cdot l^{-1}$) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

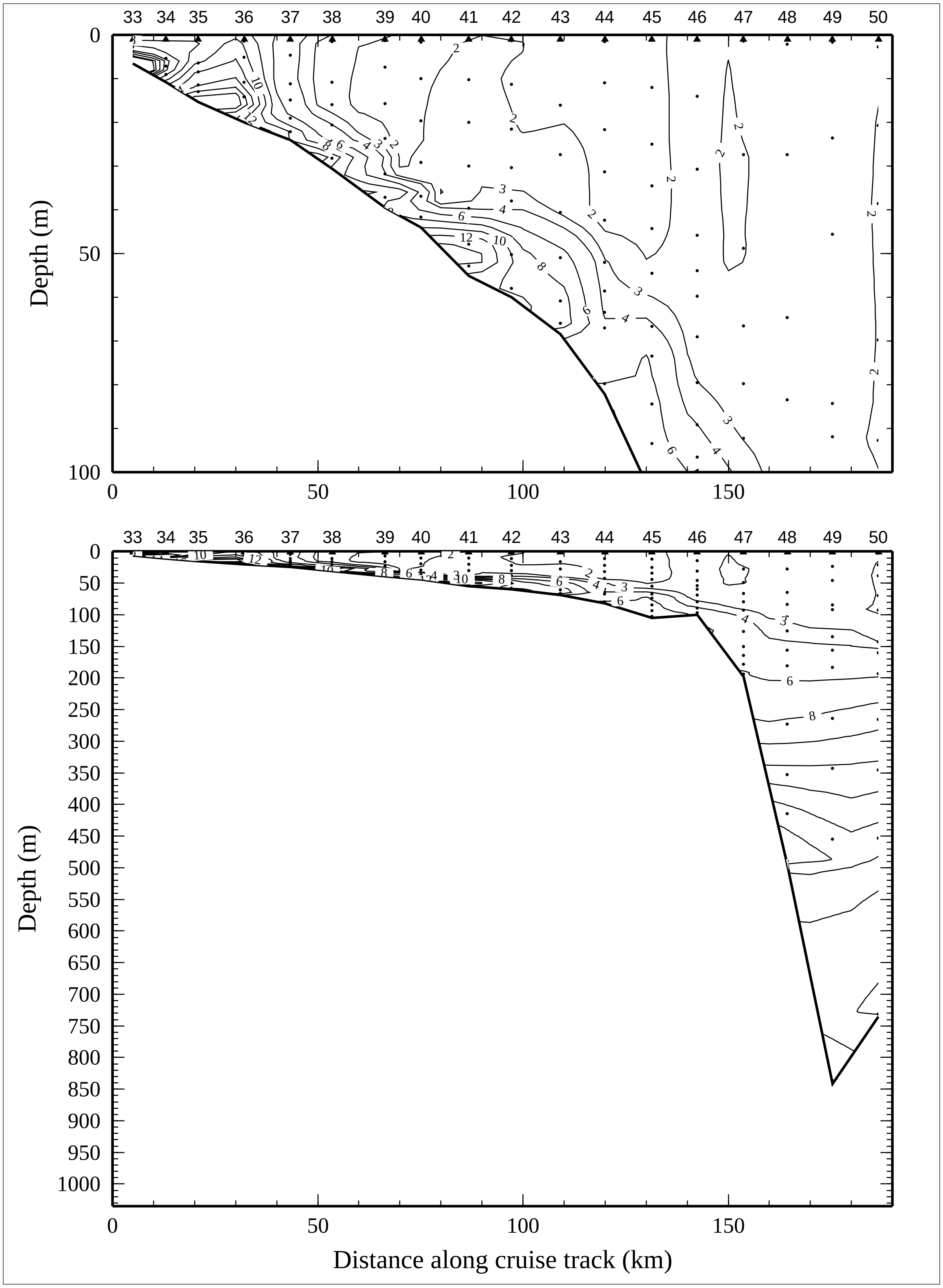

Figure 8.2.10. Silicate (μmol·l^{-1}) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

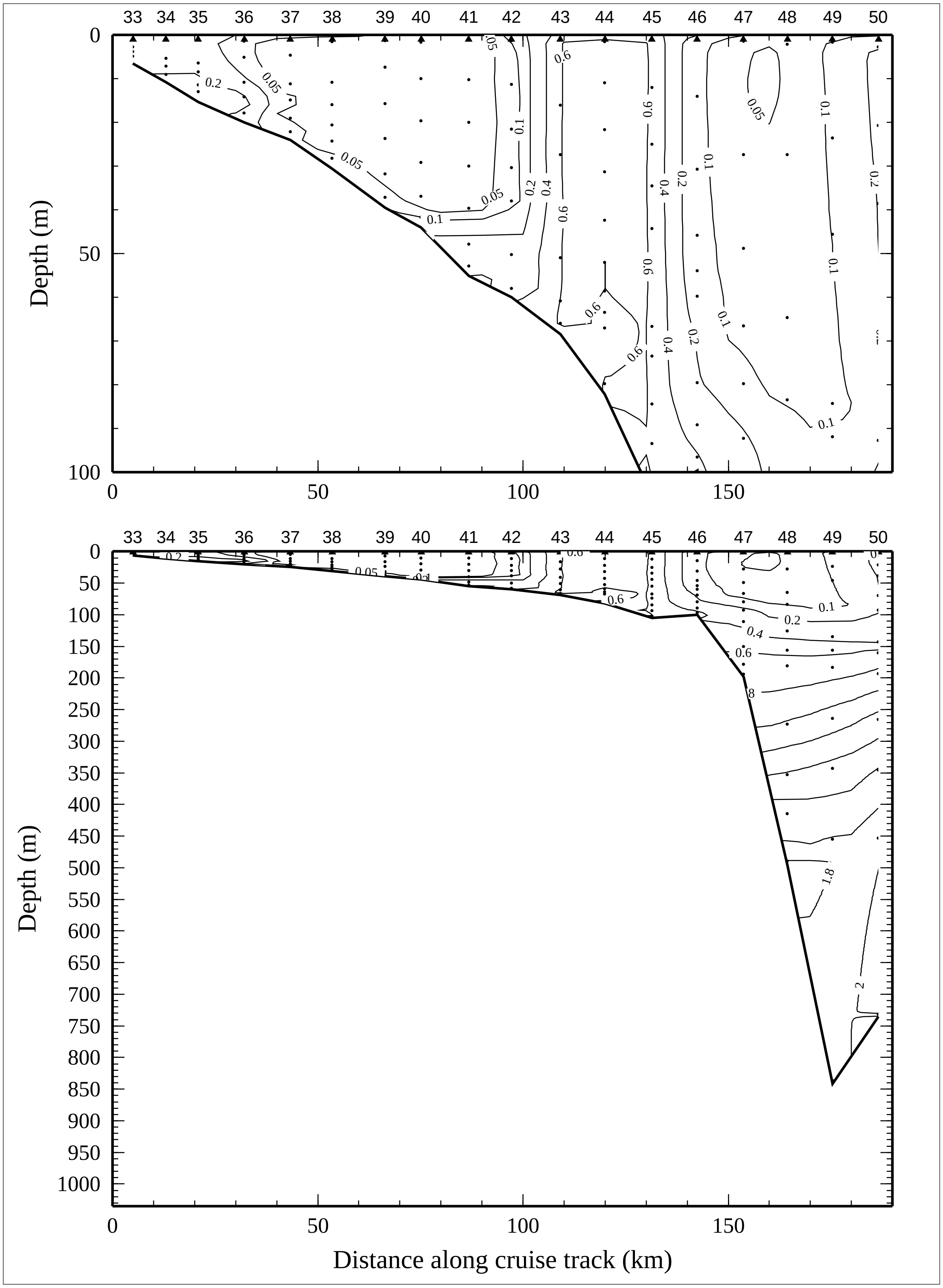

Figure 8.2.11. Phosphate (µmol·l^{-1}) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

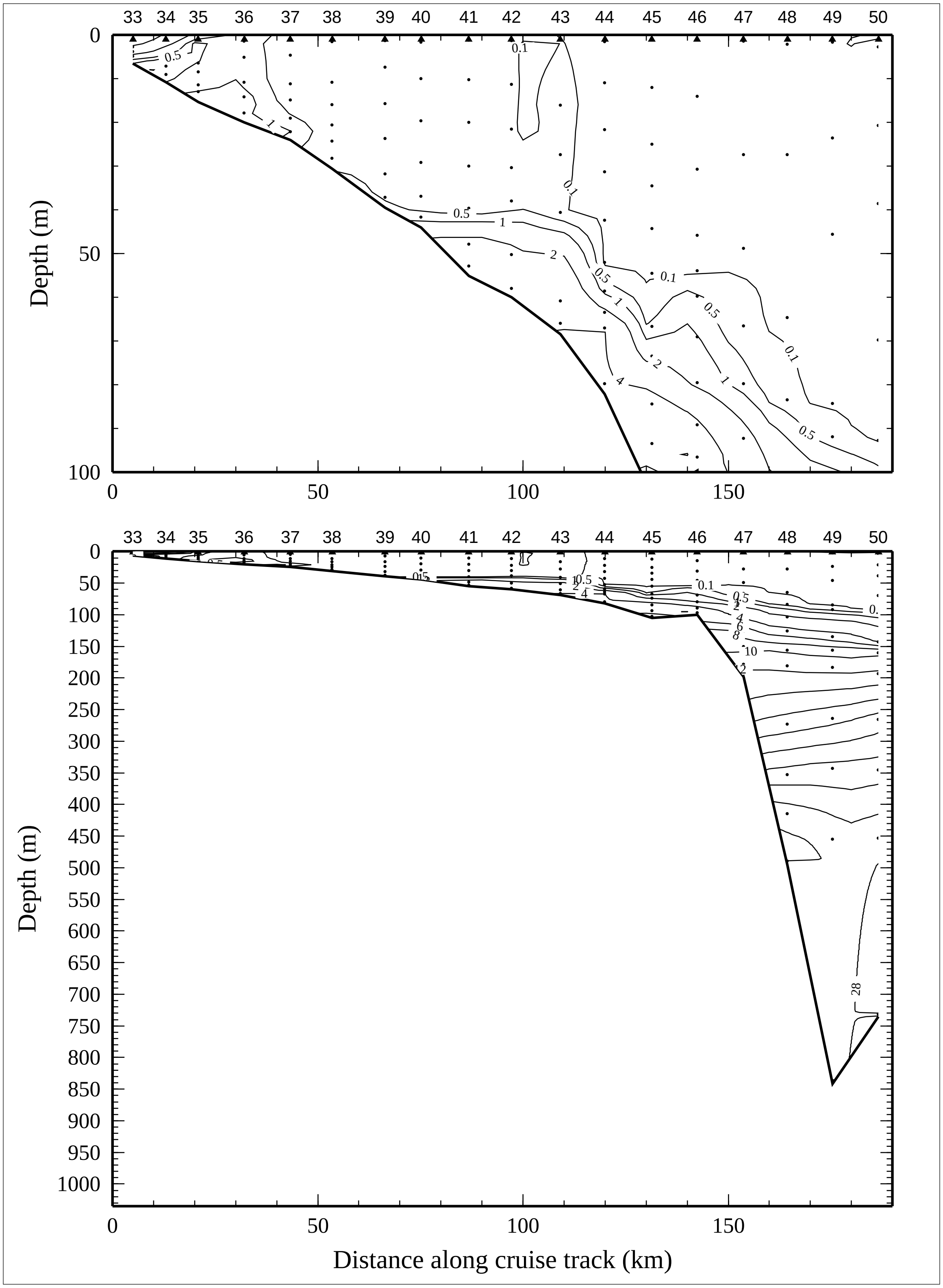

Figure 8.2.12. Nitrate (μmol·l⁻¹) on line 2 of LATEX A survey H08,
23 April - 7 May 1994.

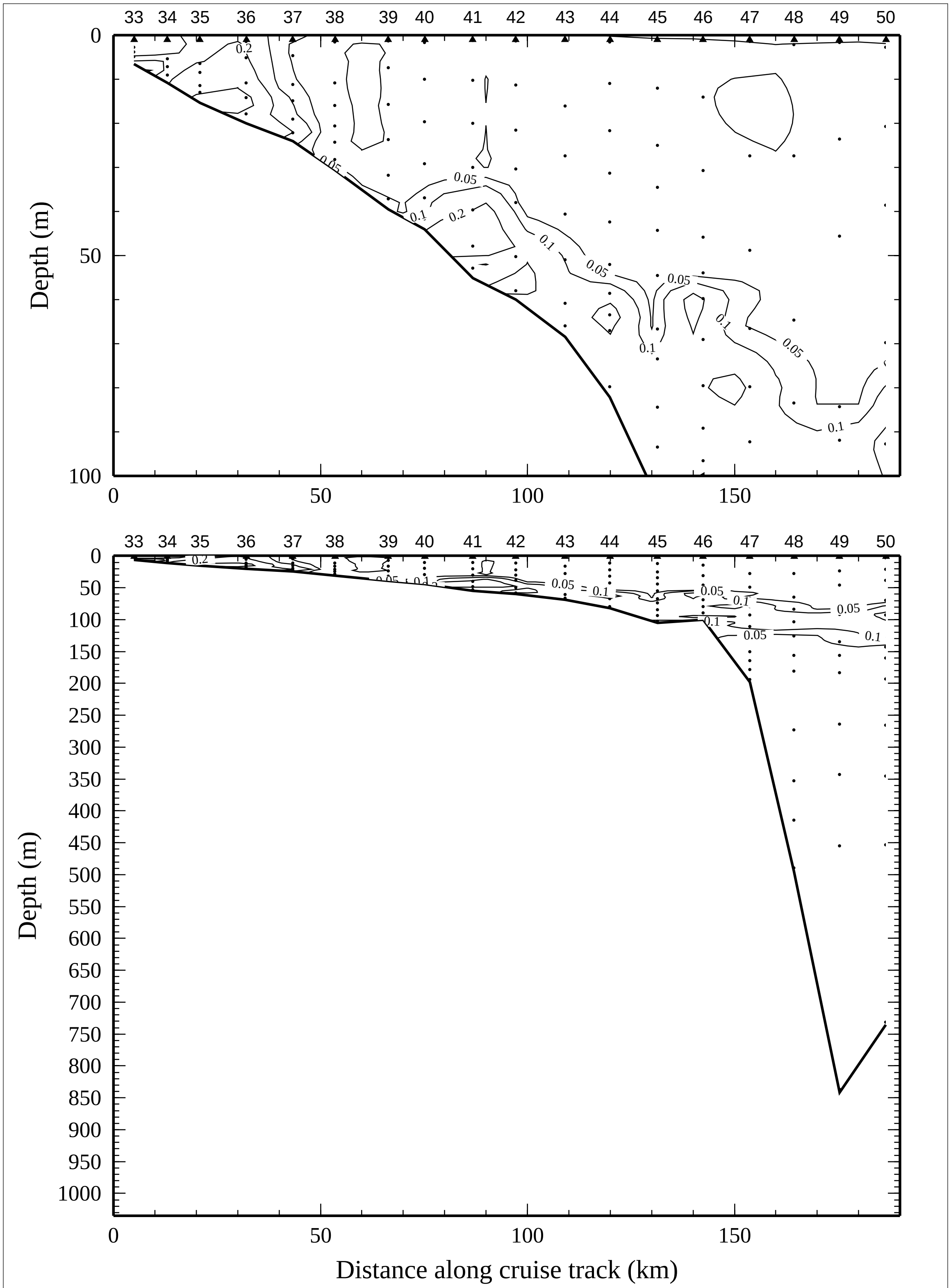

Figure 8.2.13. Nitrite (µmol·l^{-1}) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

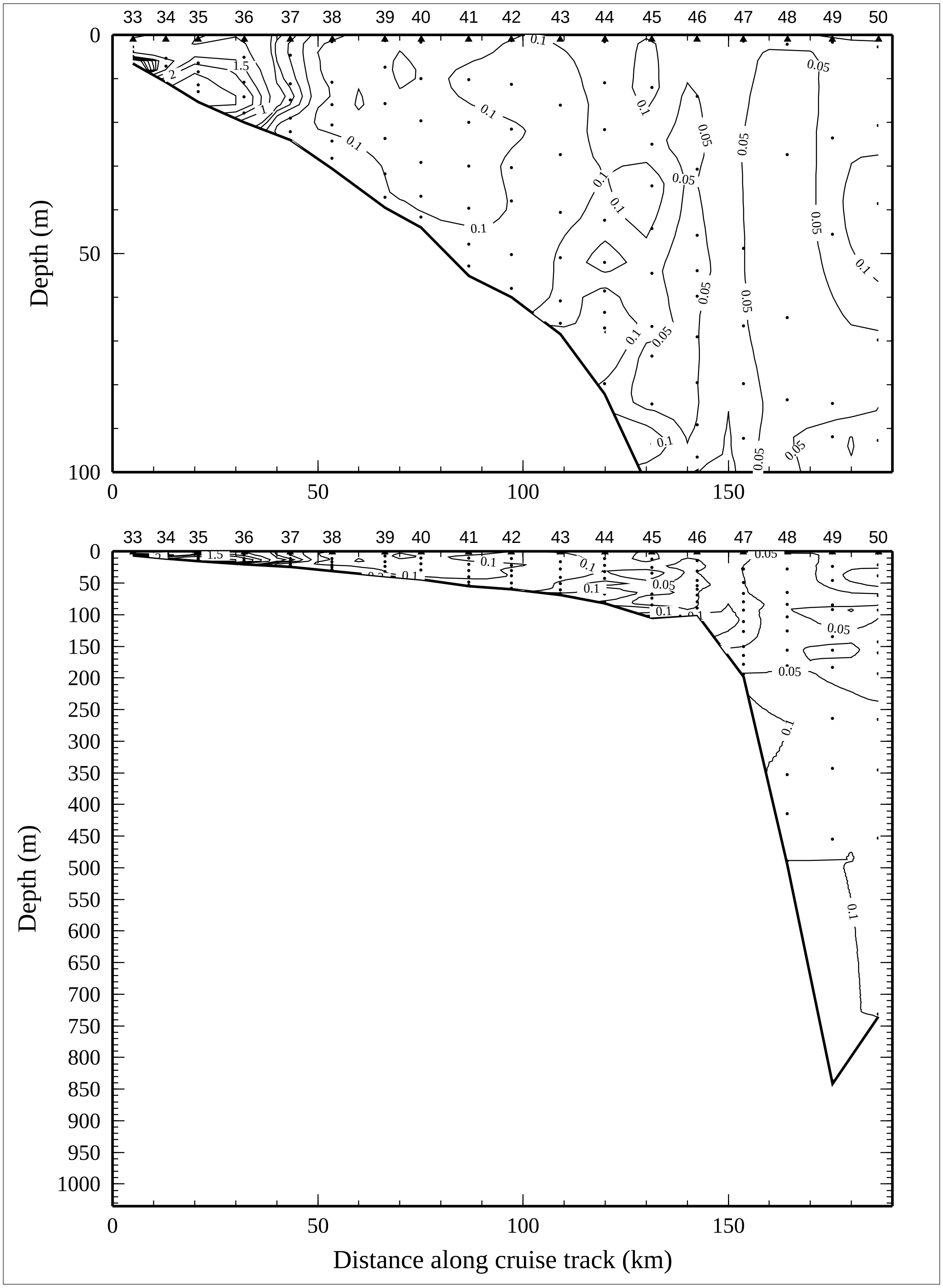

Figure 8.2.14. Ammonium (μmol·l^{-1}) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

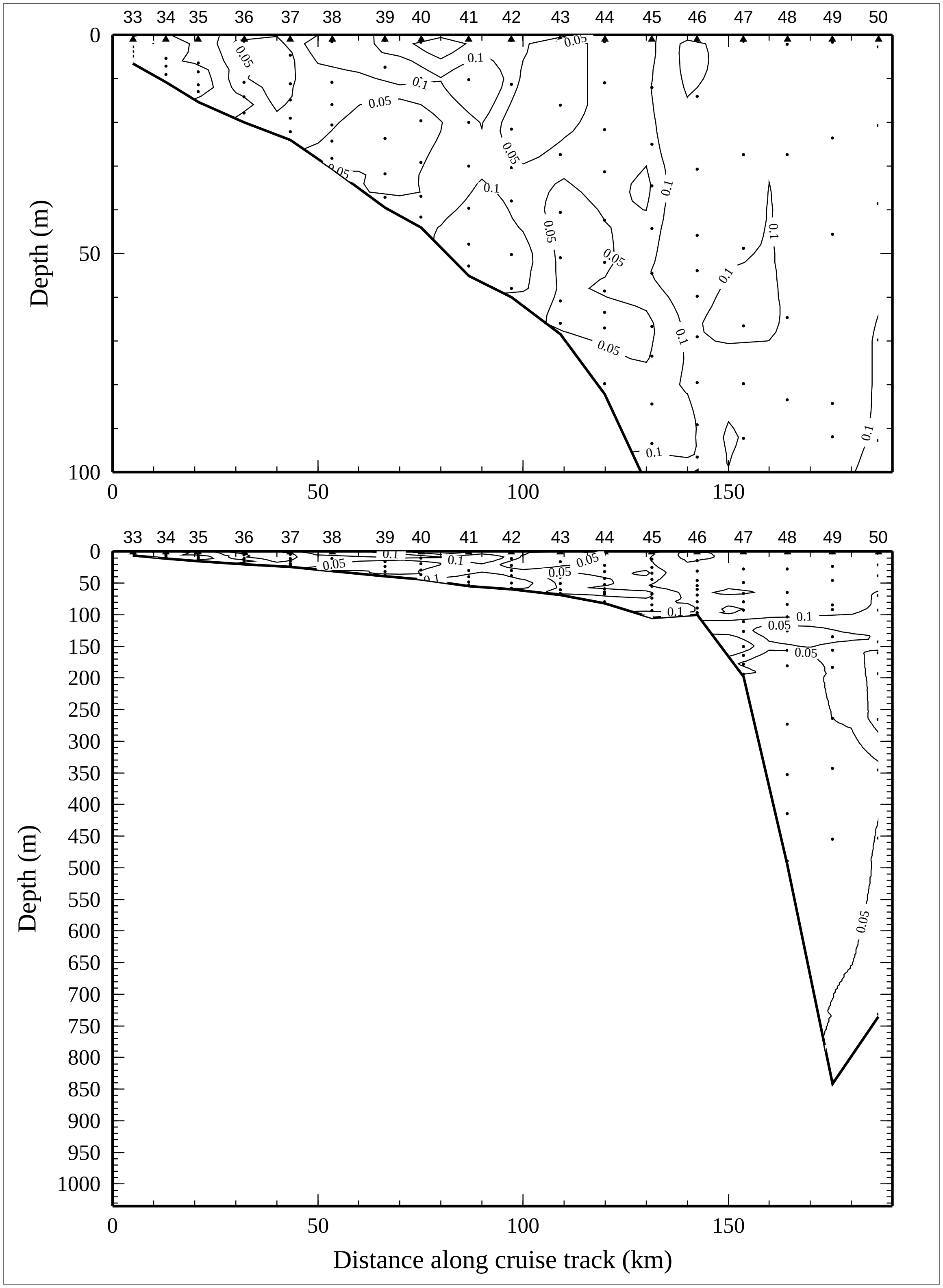

Figure 8.2.15. Urea (µmol·l[-1]) on line 2 of LATEX A survey H08, 23 April - 7 May 1994.

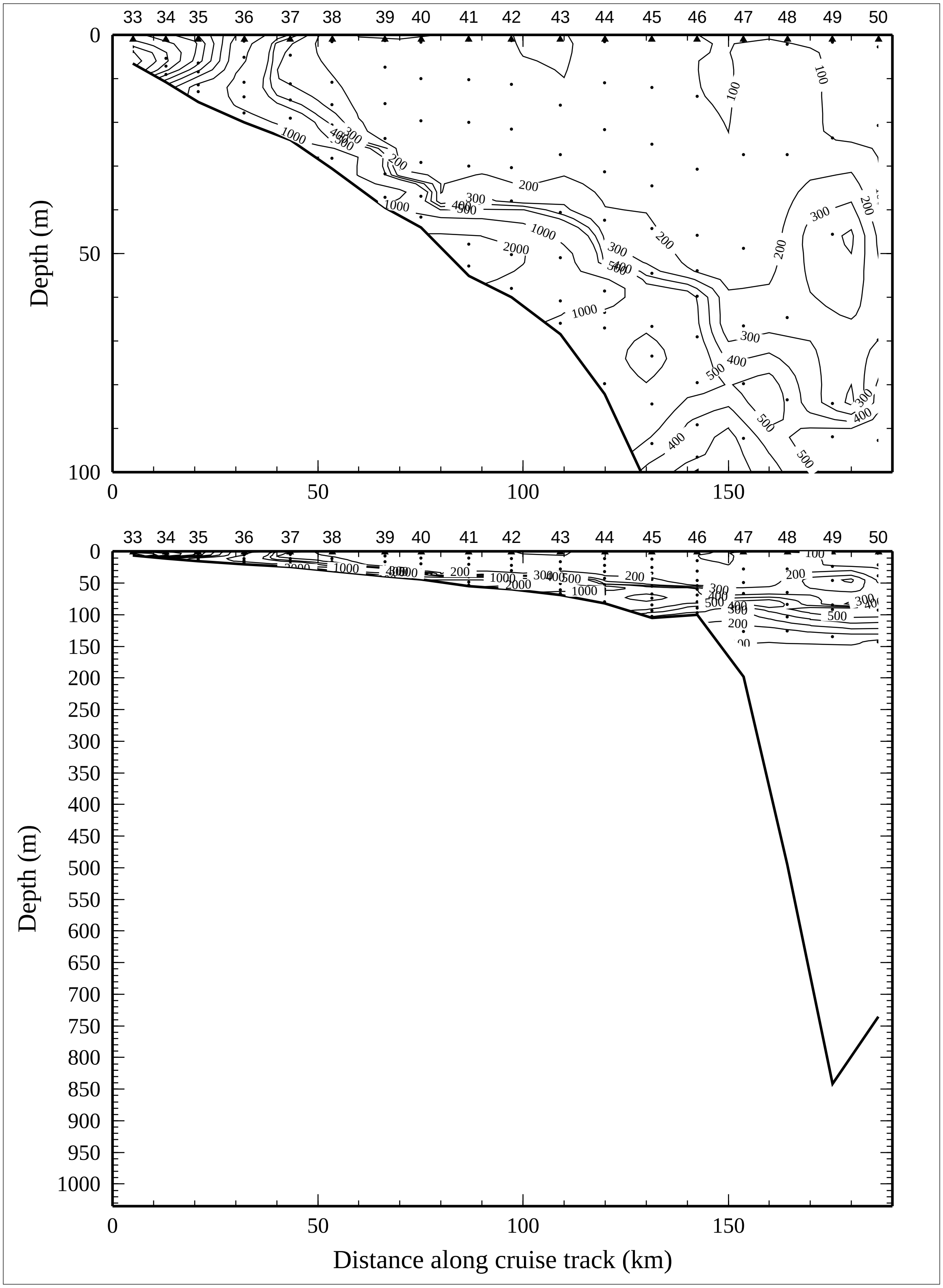

Figure 8.2.16. Chlorophyll a (ng·l^{-1}) on line 2 of LATEX A survey H08,
23 April - 7 May 1994.

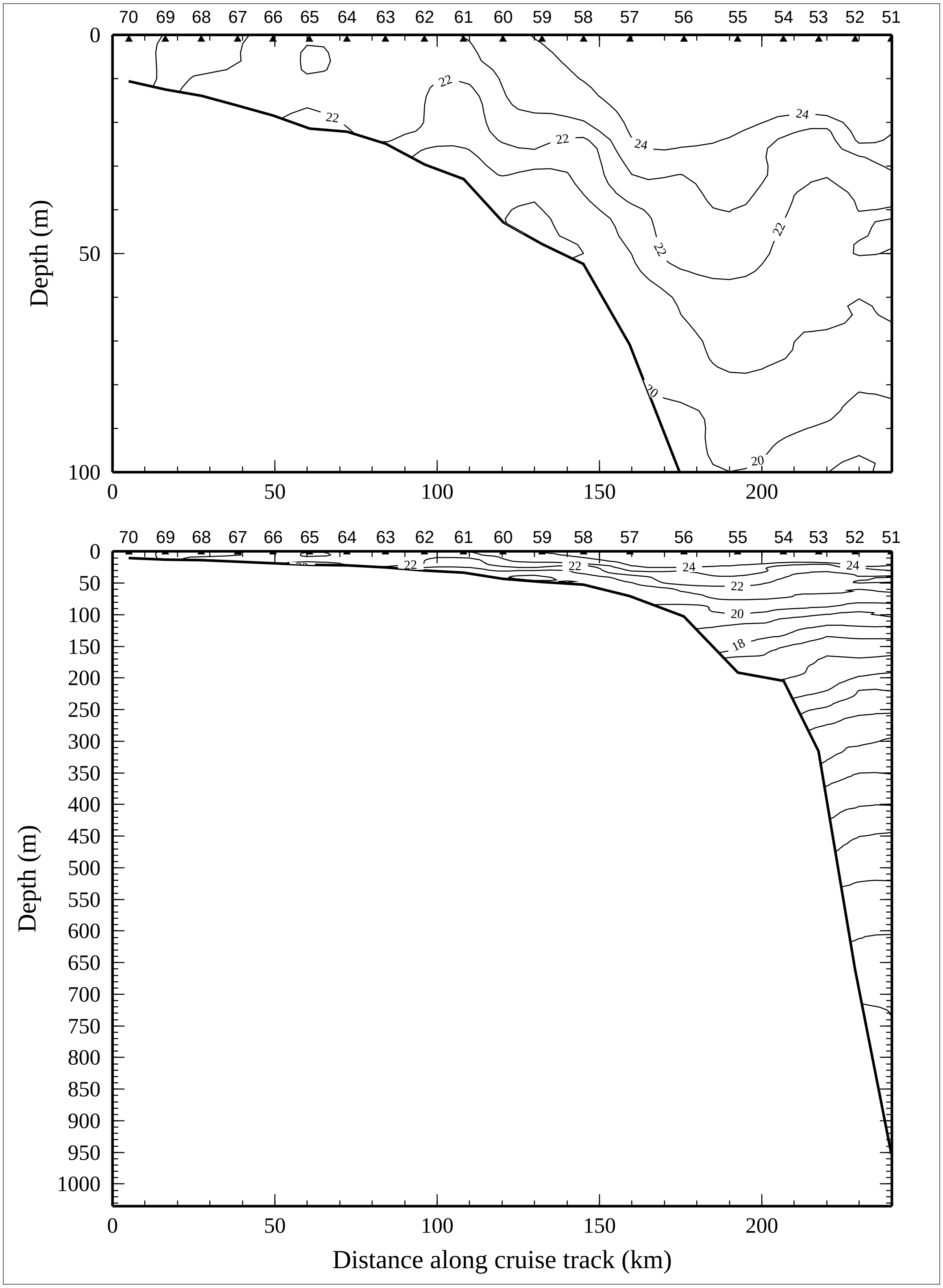

Figure 8.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

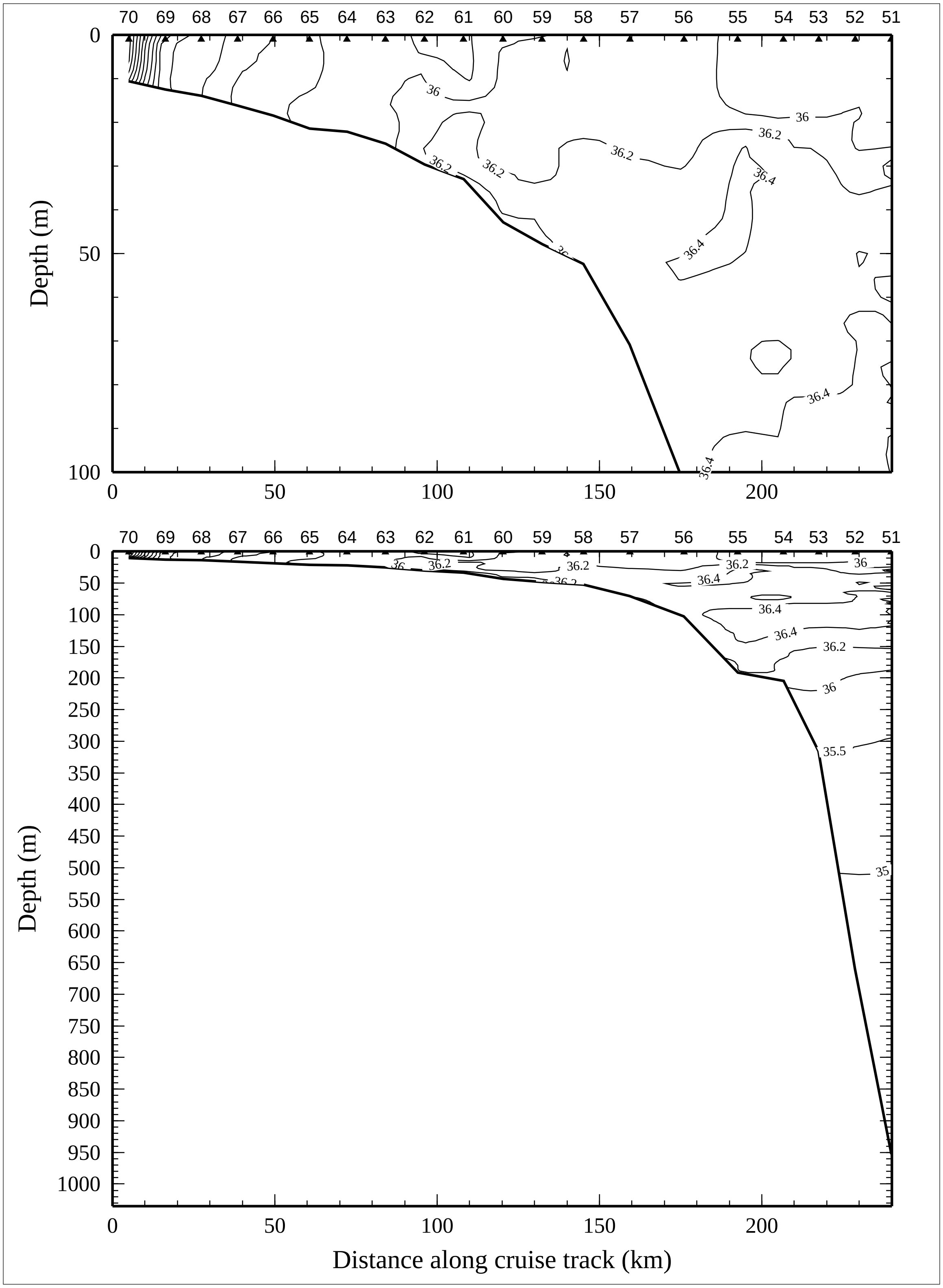

Figure 8.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

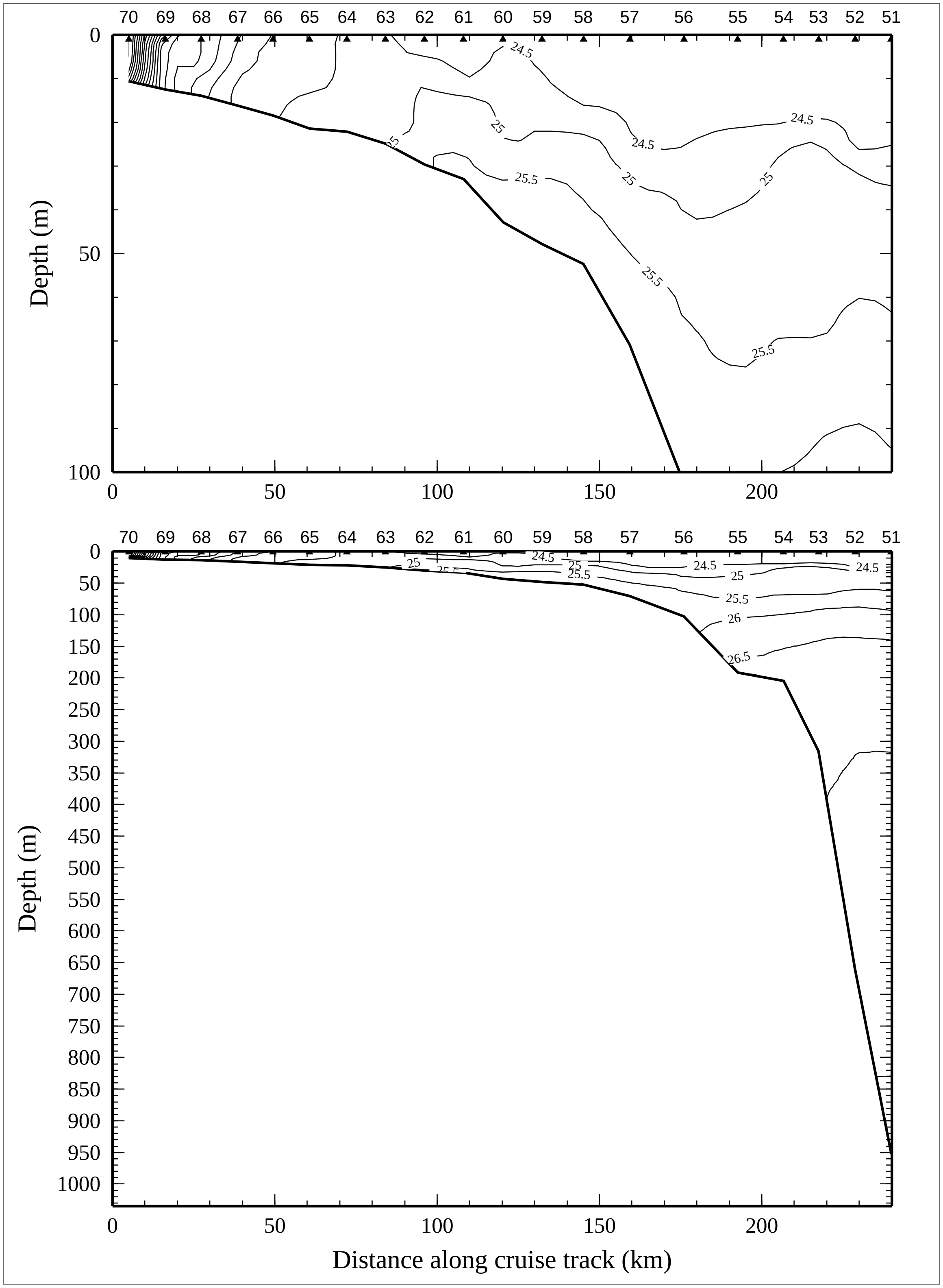

Figure 8.3.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

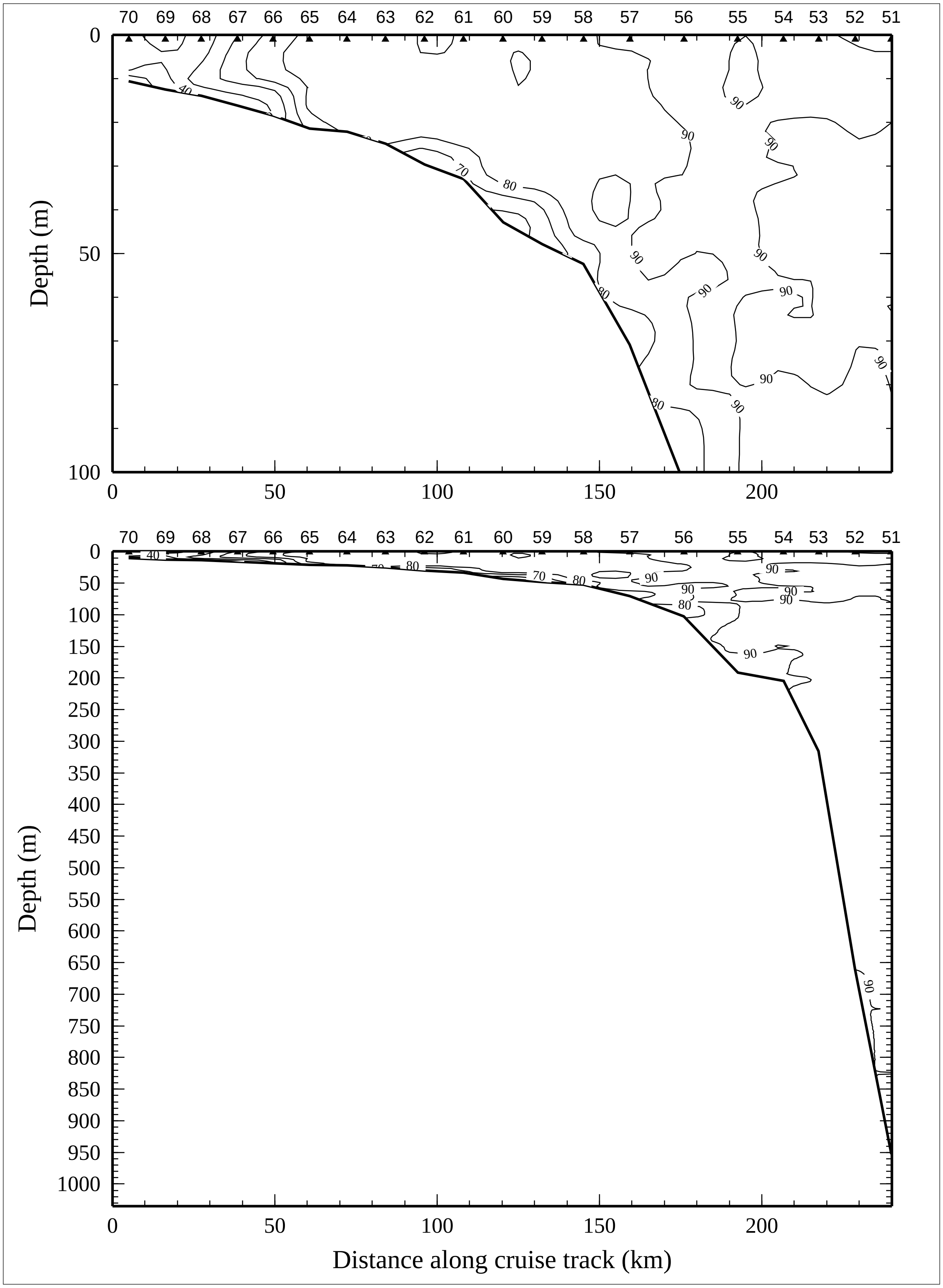

Figure 8.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

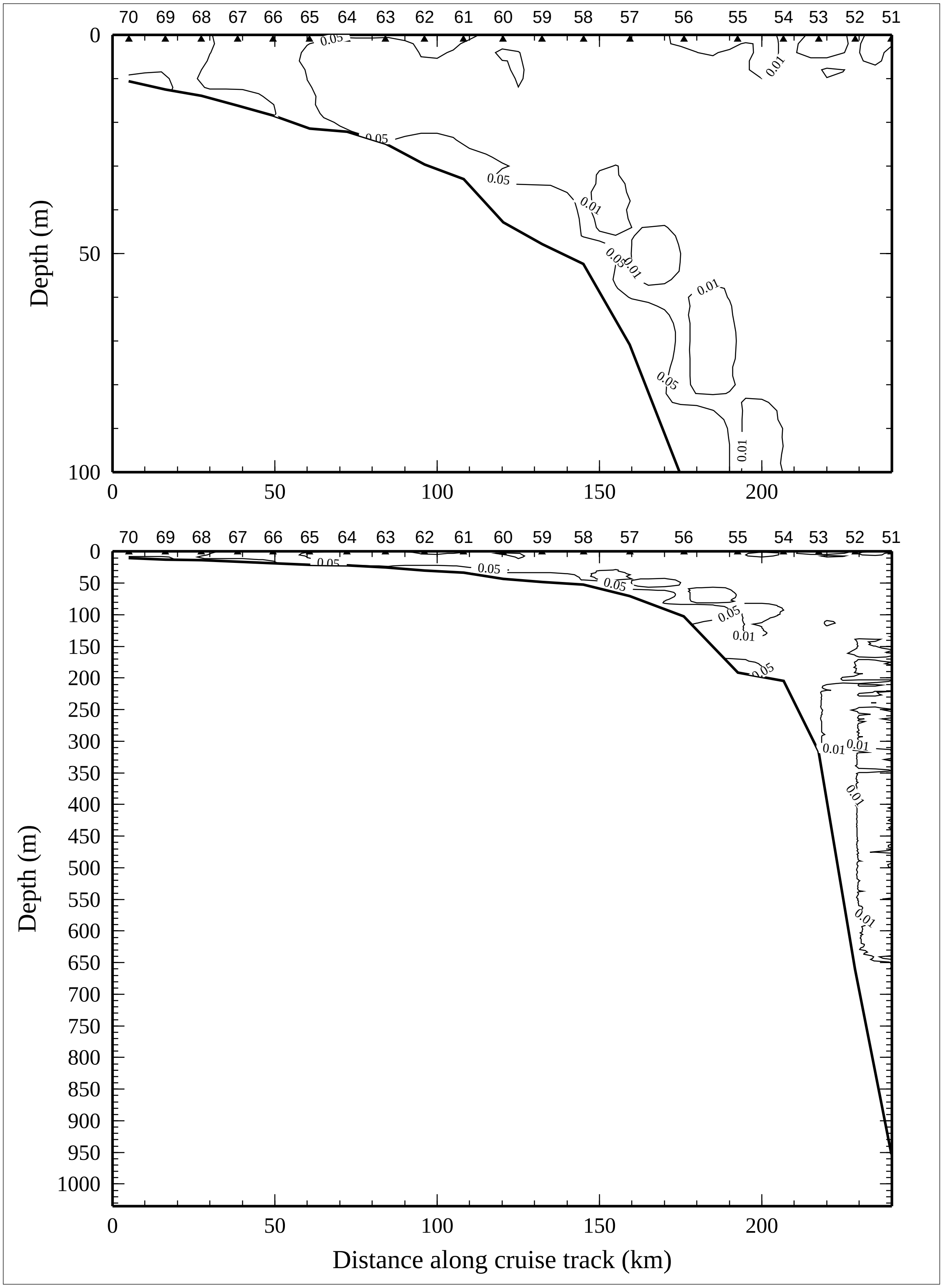

Figure 8.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

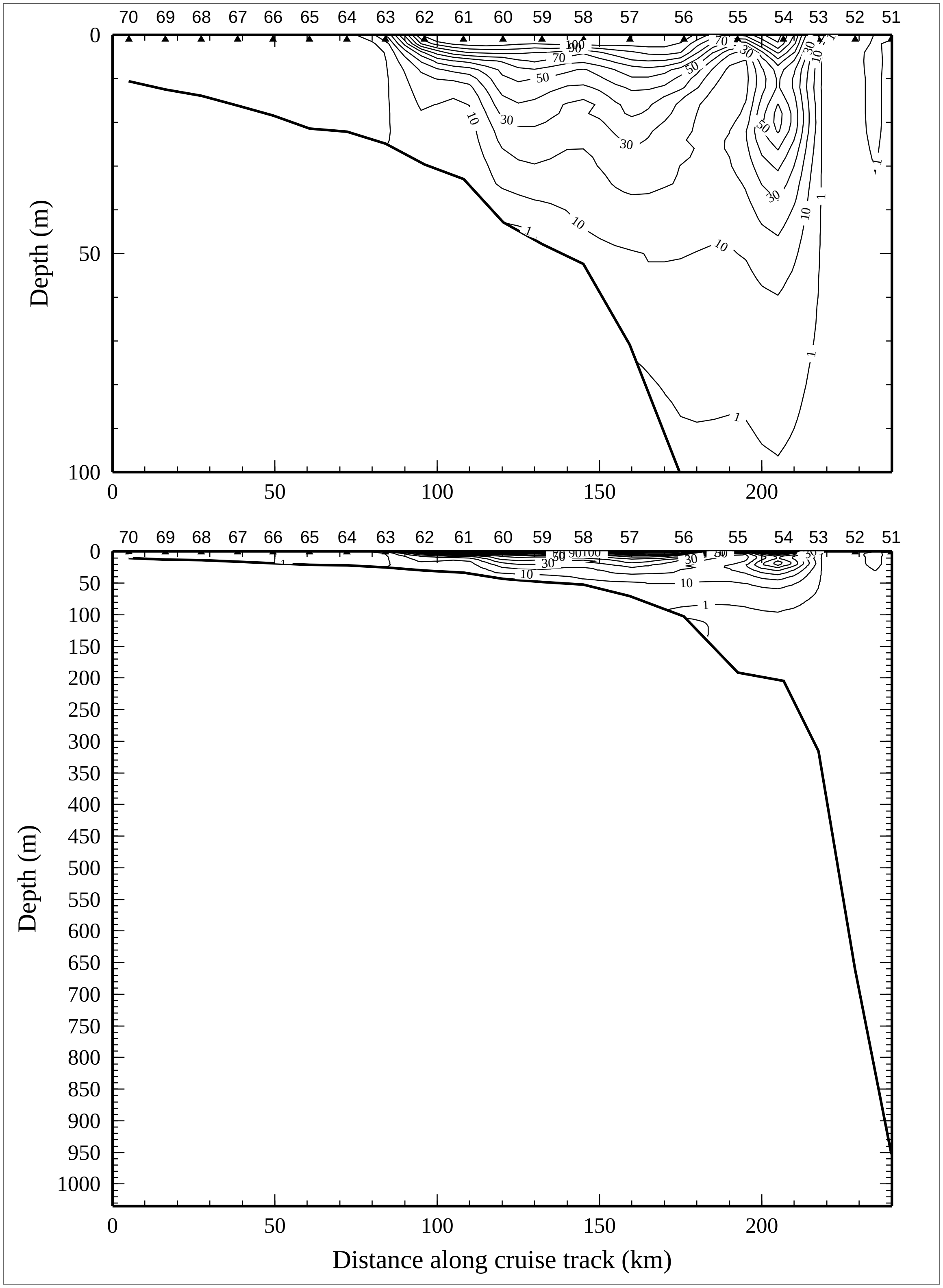

Figure 8.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

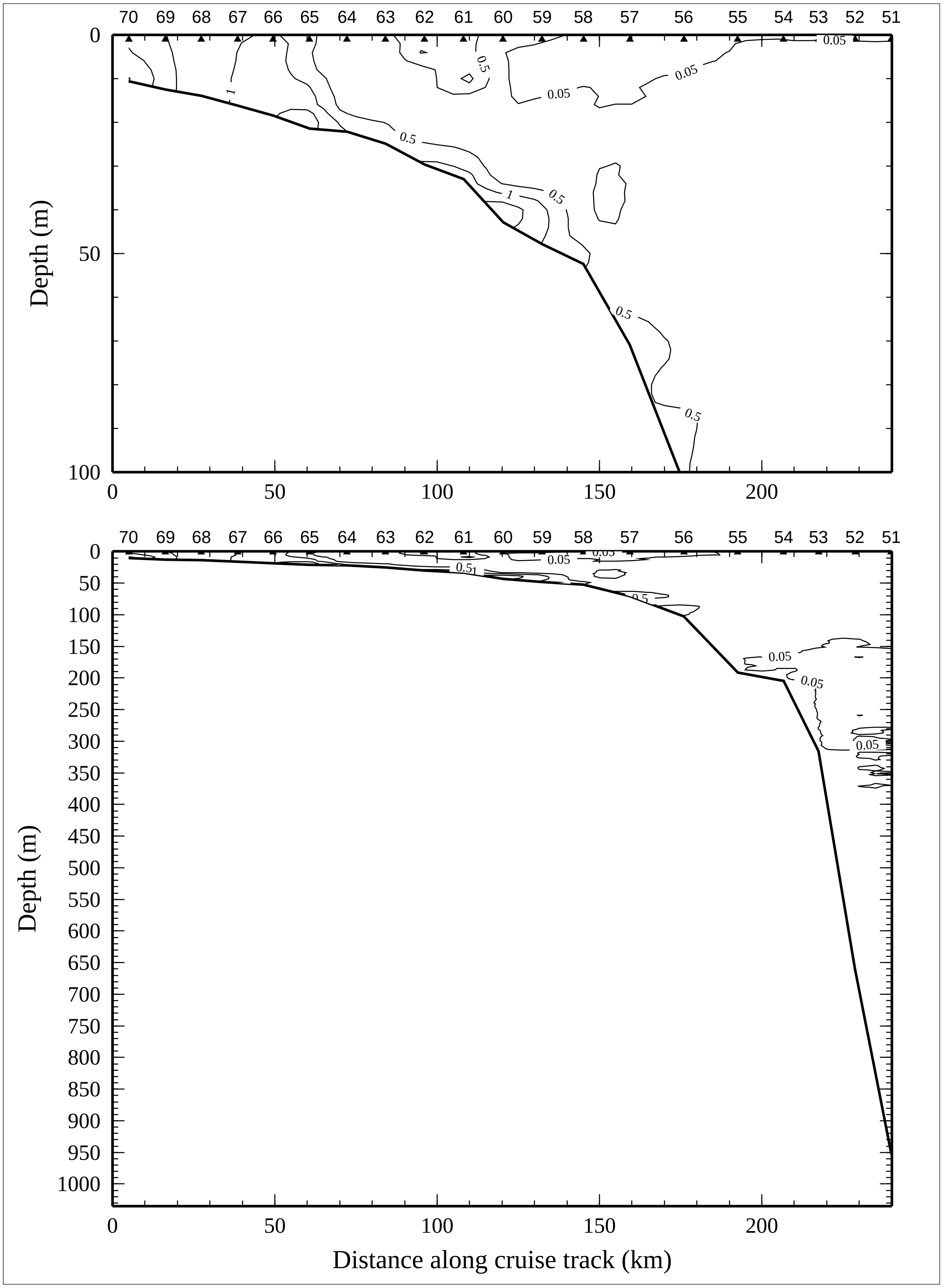

Figure 8.3.7. Relative fluorescence on line 3 of LATEX A survey H08,
23 April - 7 May 1994.

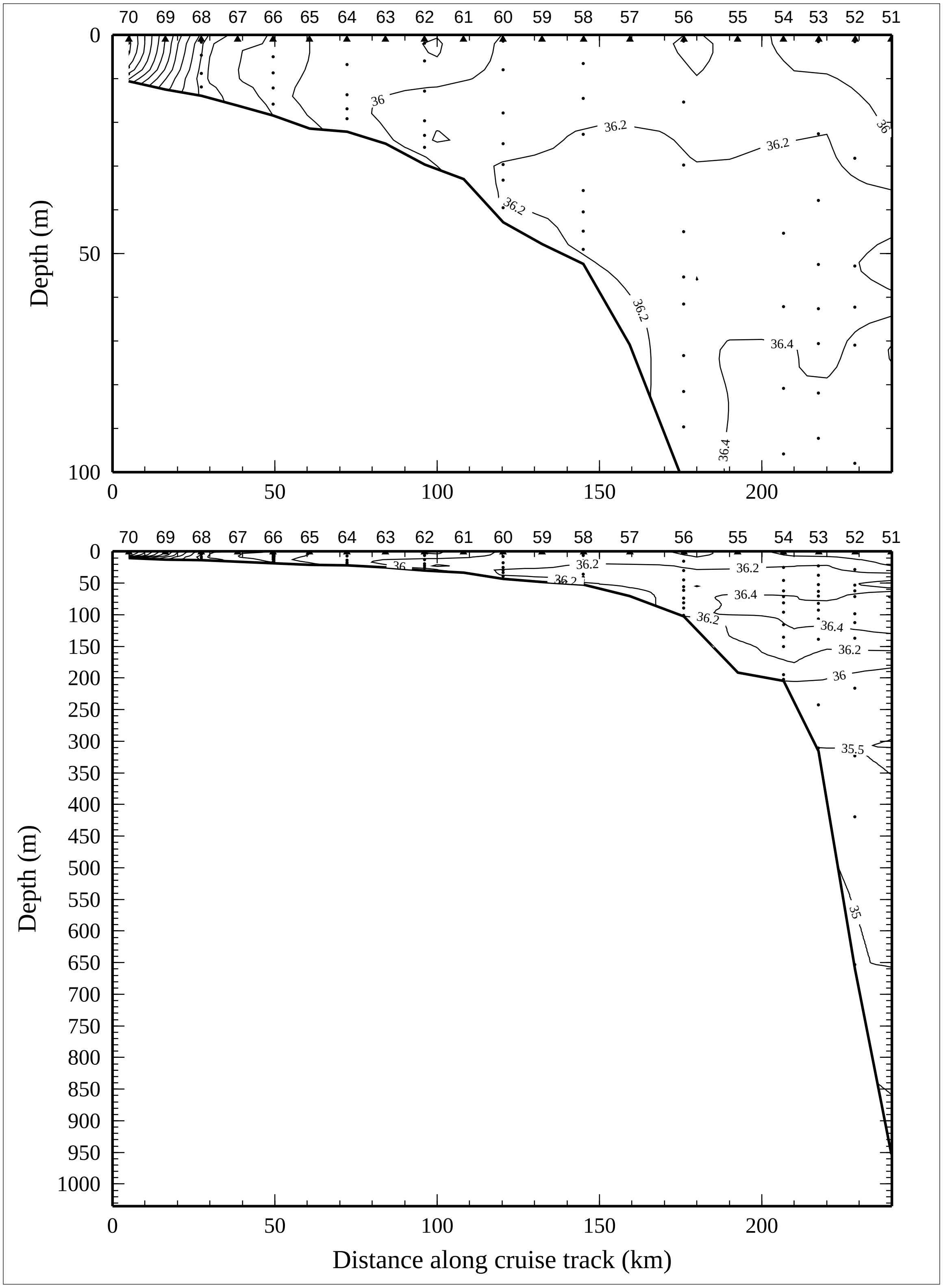

Figure 8.3.8. Bottle salinity on line 3 of LATEX A survey H08,
23 April - 7 May 1994.

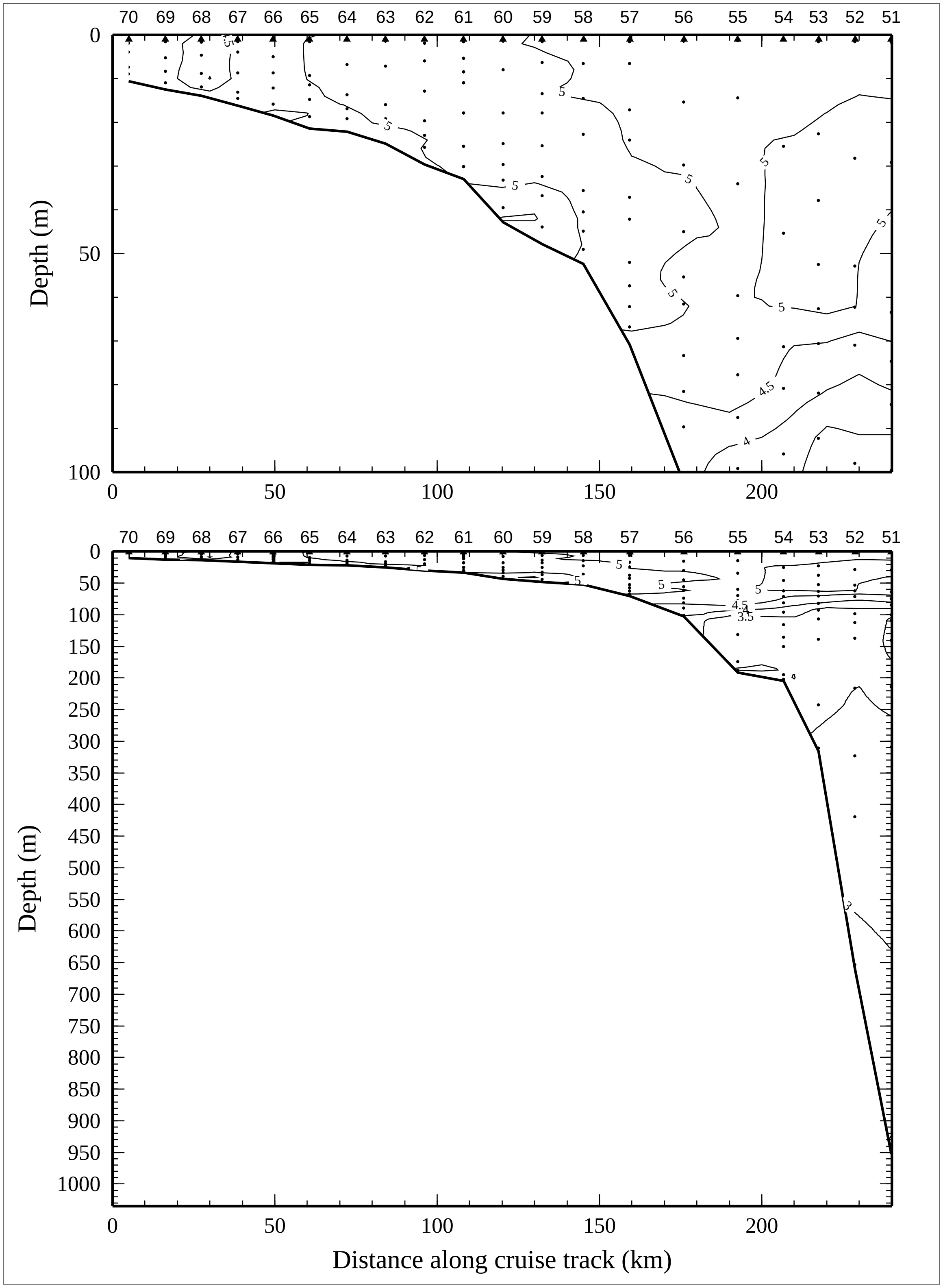

Figure 8.3.9. Dissolved oxygen (ml·l-1) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

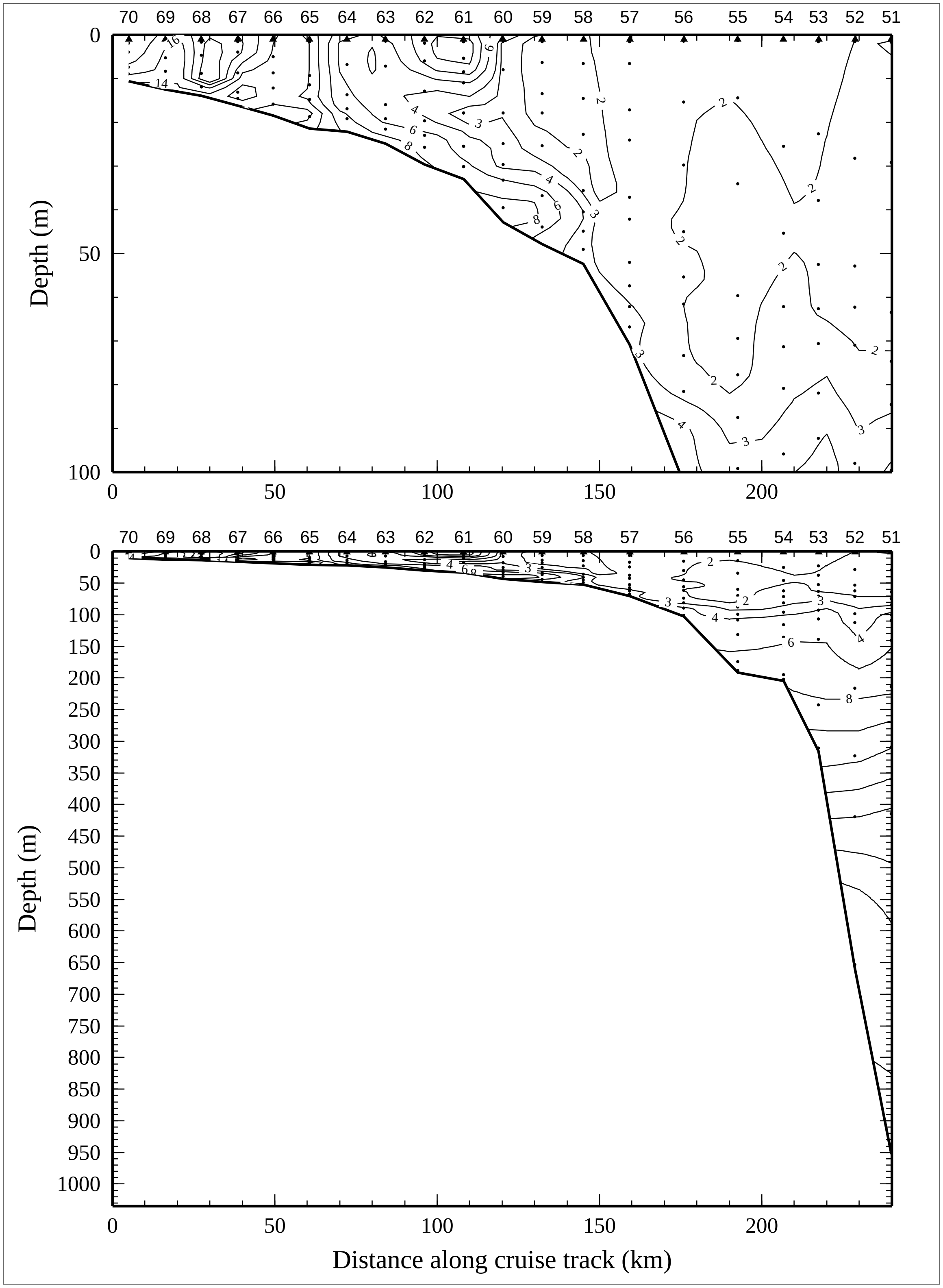

Figure 8.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

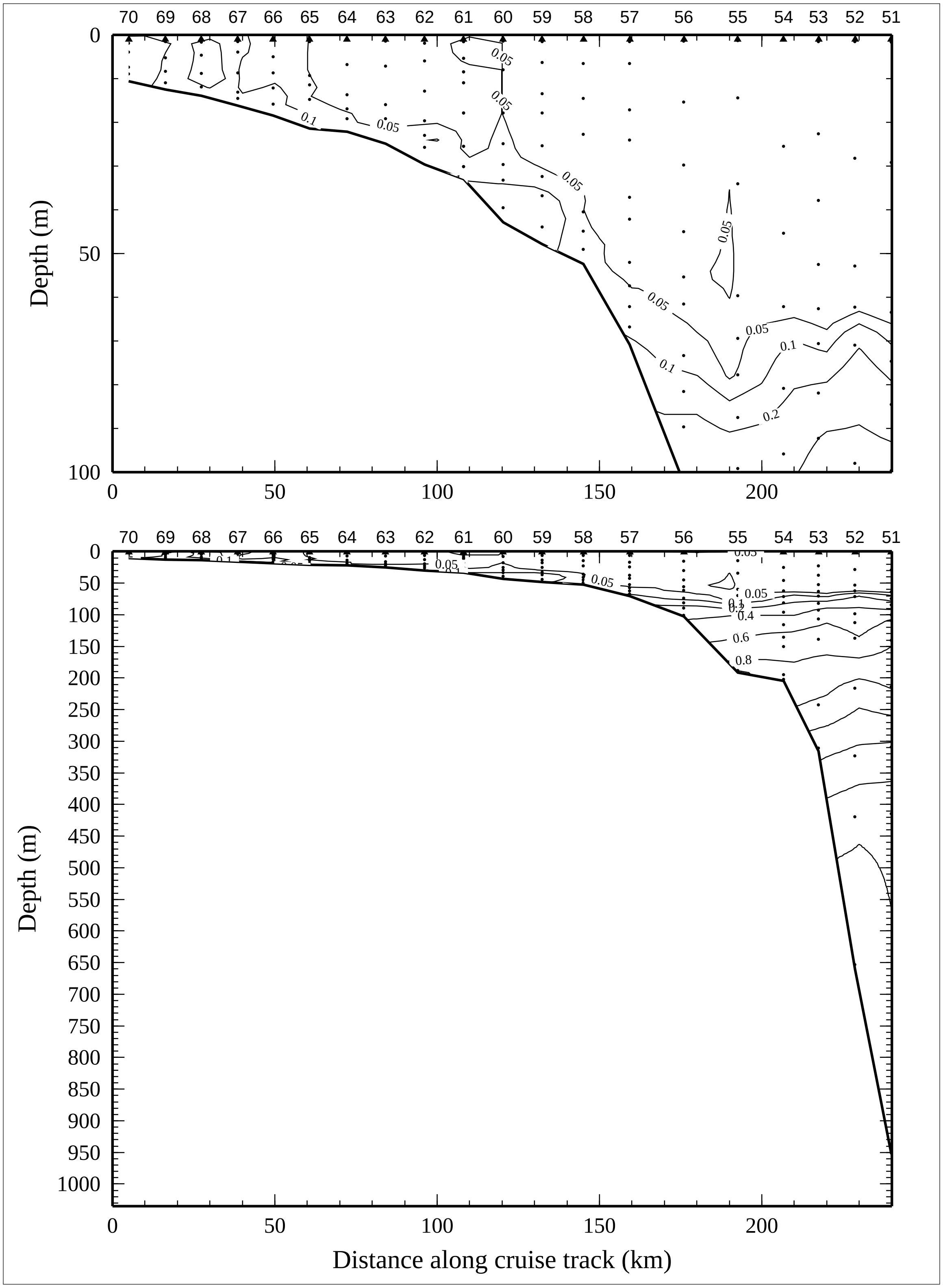

Figure 8.3.11. Phosphate (μmol·l-1) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

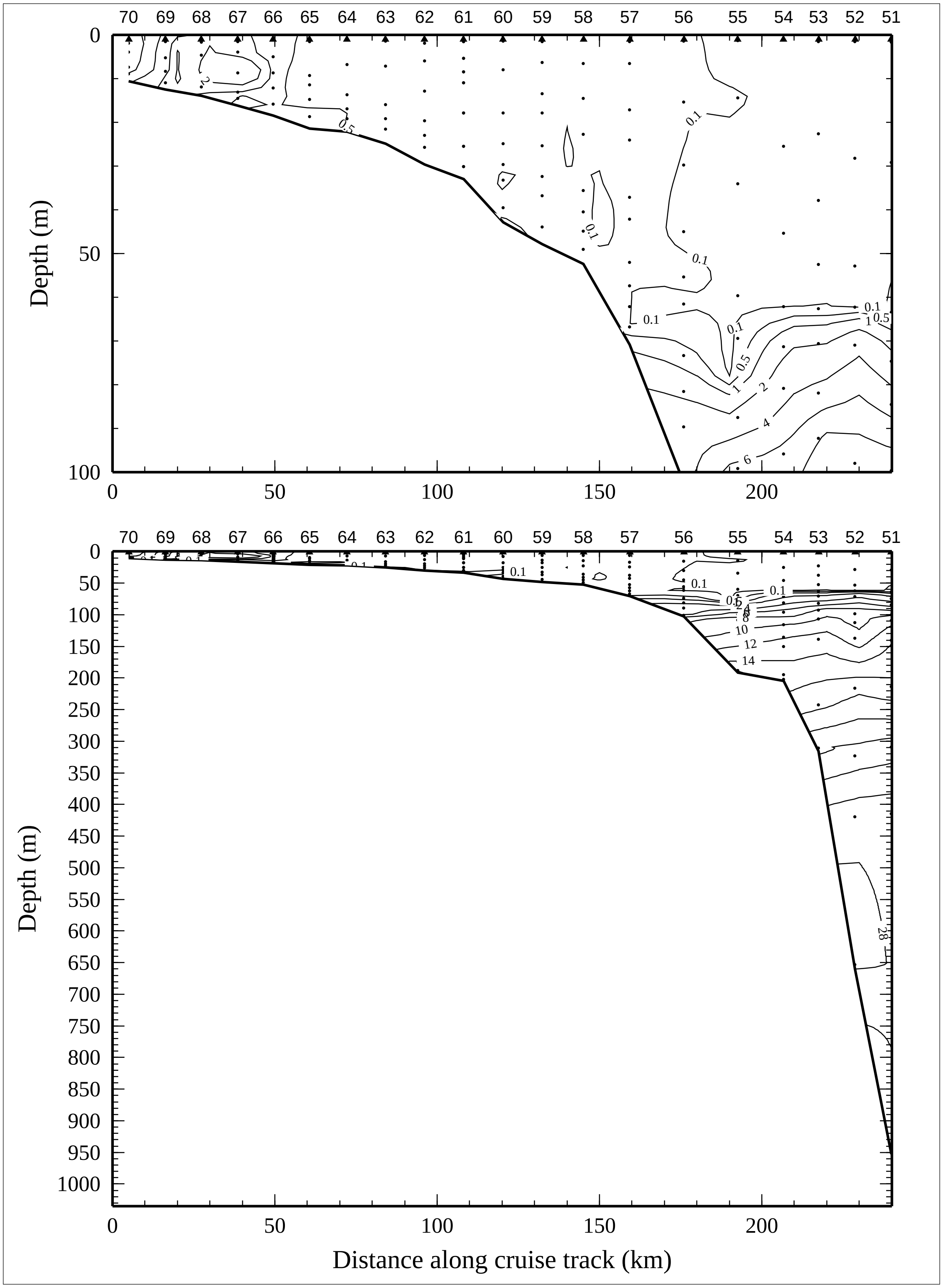

Figure 8.3.12. Nitrate (μmol·l-1) on line 3 of LATEX A survey H08,
23 April - 7 May 1994.

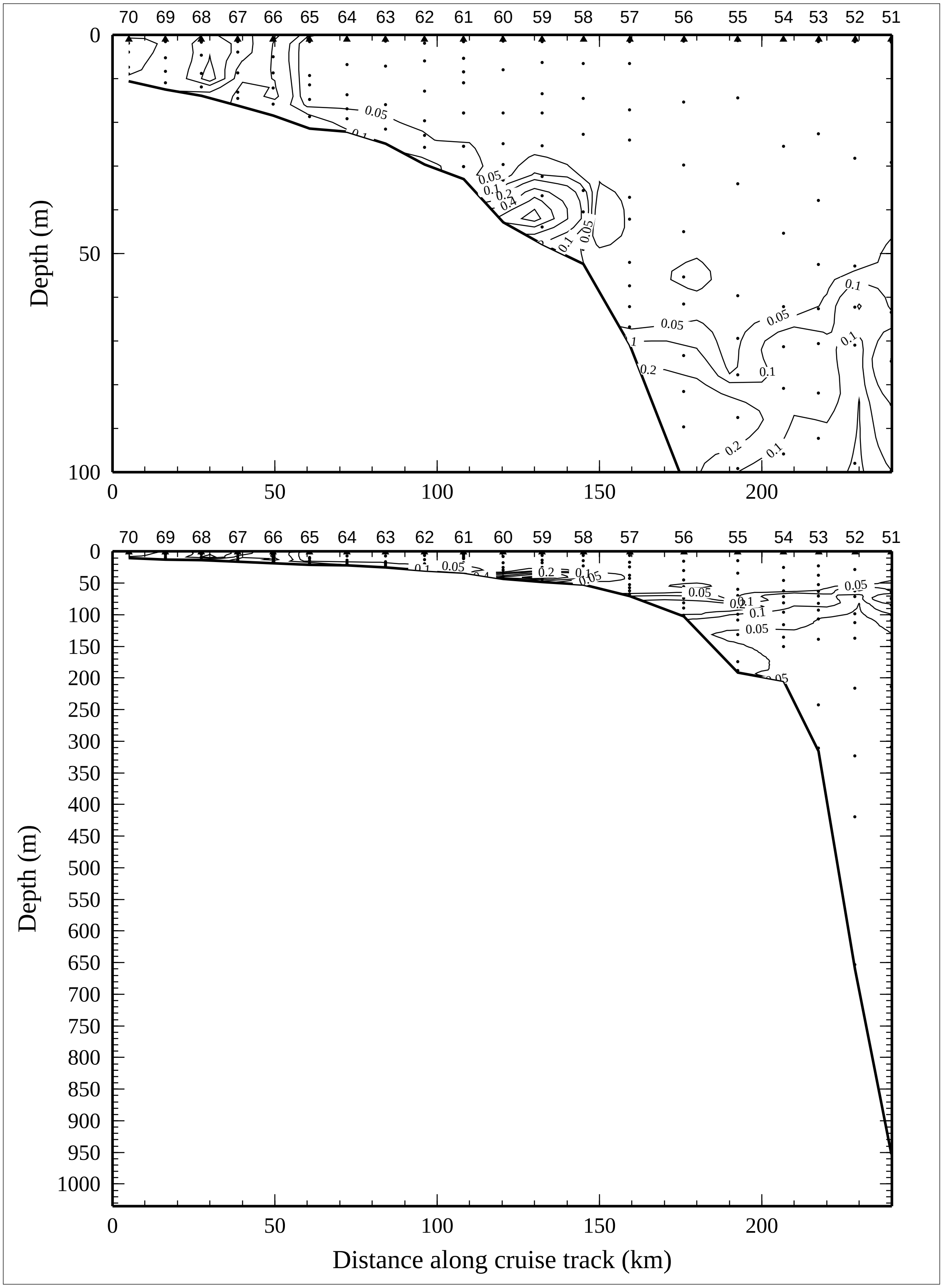

Figure 8.3.13. Nitrite (µmol·l[-1]) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

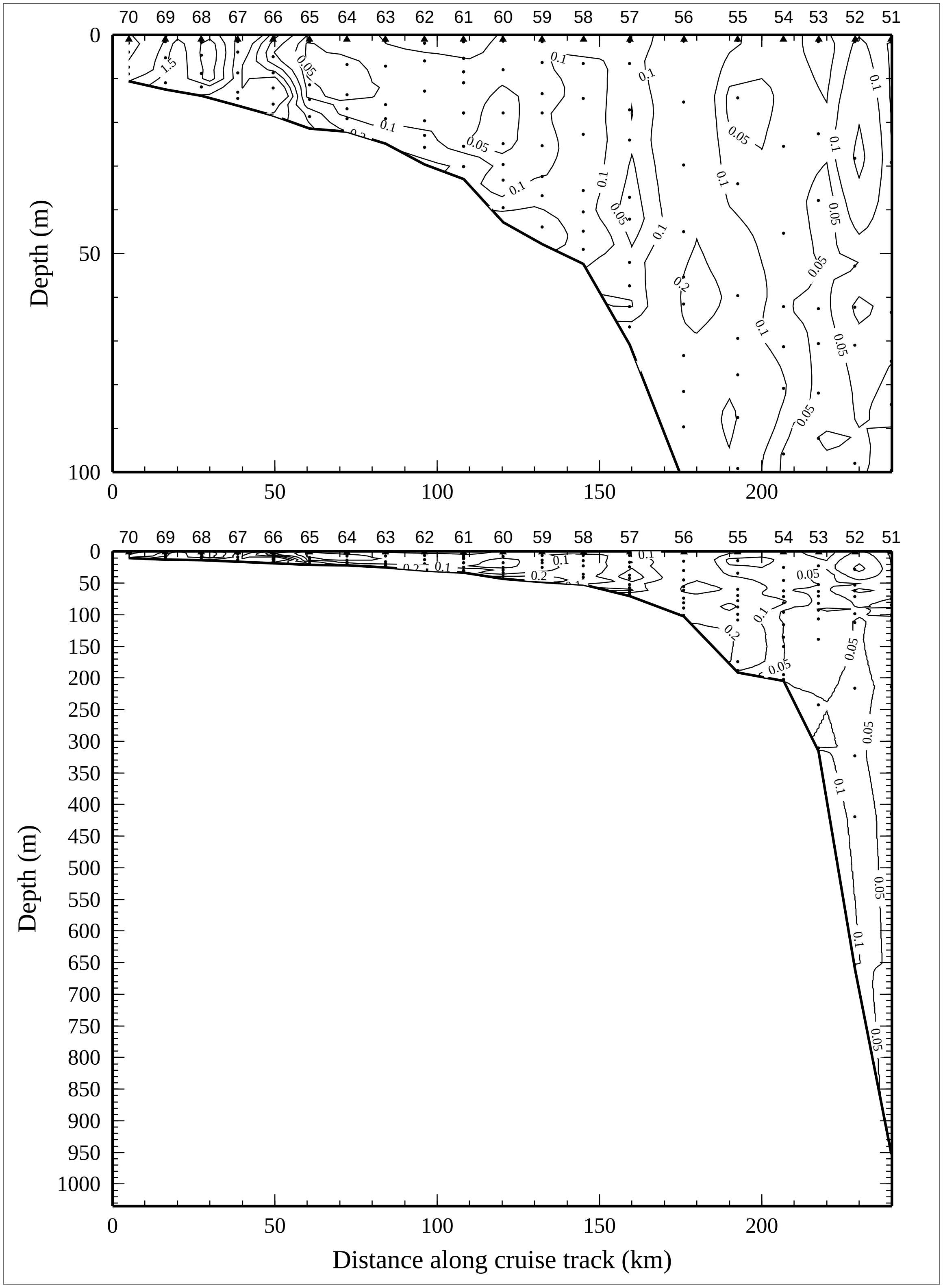

Figure 8.3.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

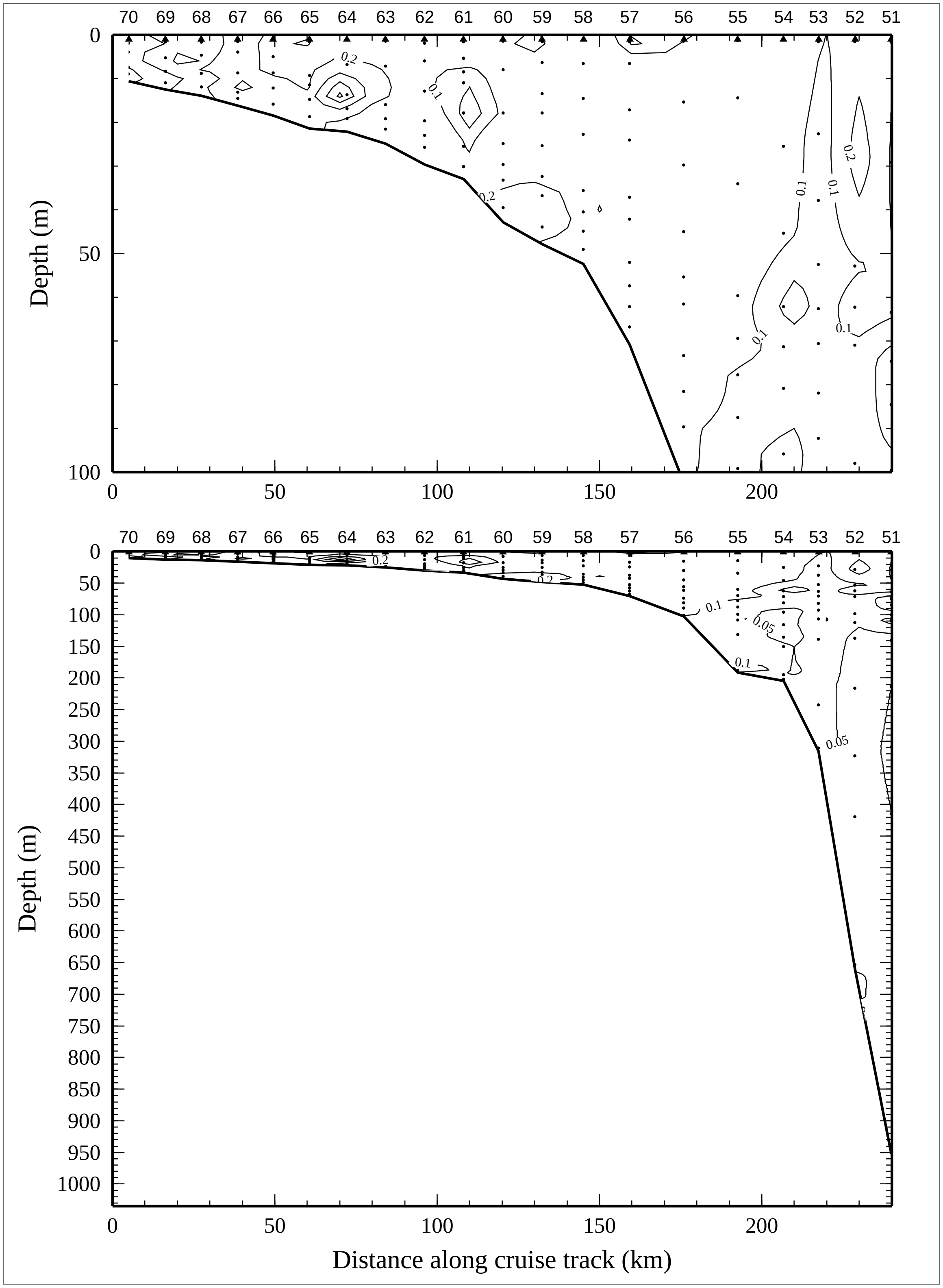

Figure 8.3.15. Urea (μmol·l^{-1}) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

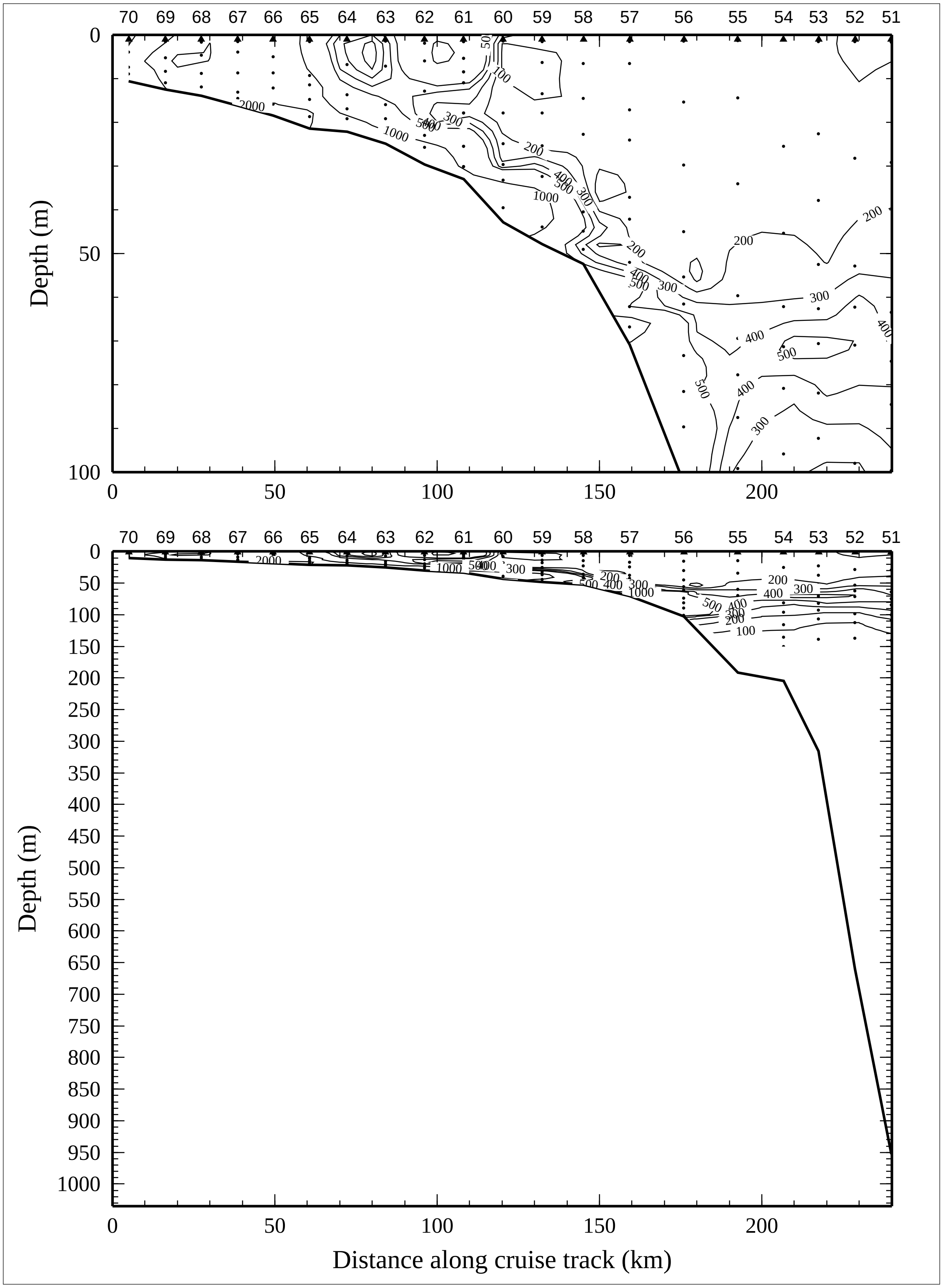

Figure 8.3.16. Chlorophyll a (ng·l-1) on line 3 of LATEX A survey H08, 23 April - 7 May 1994.

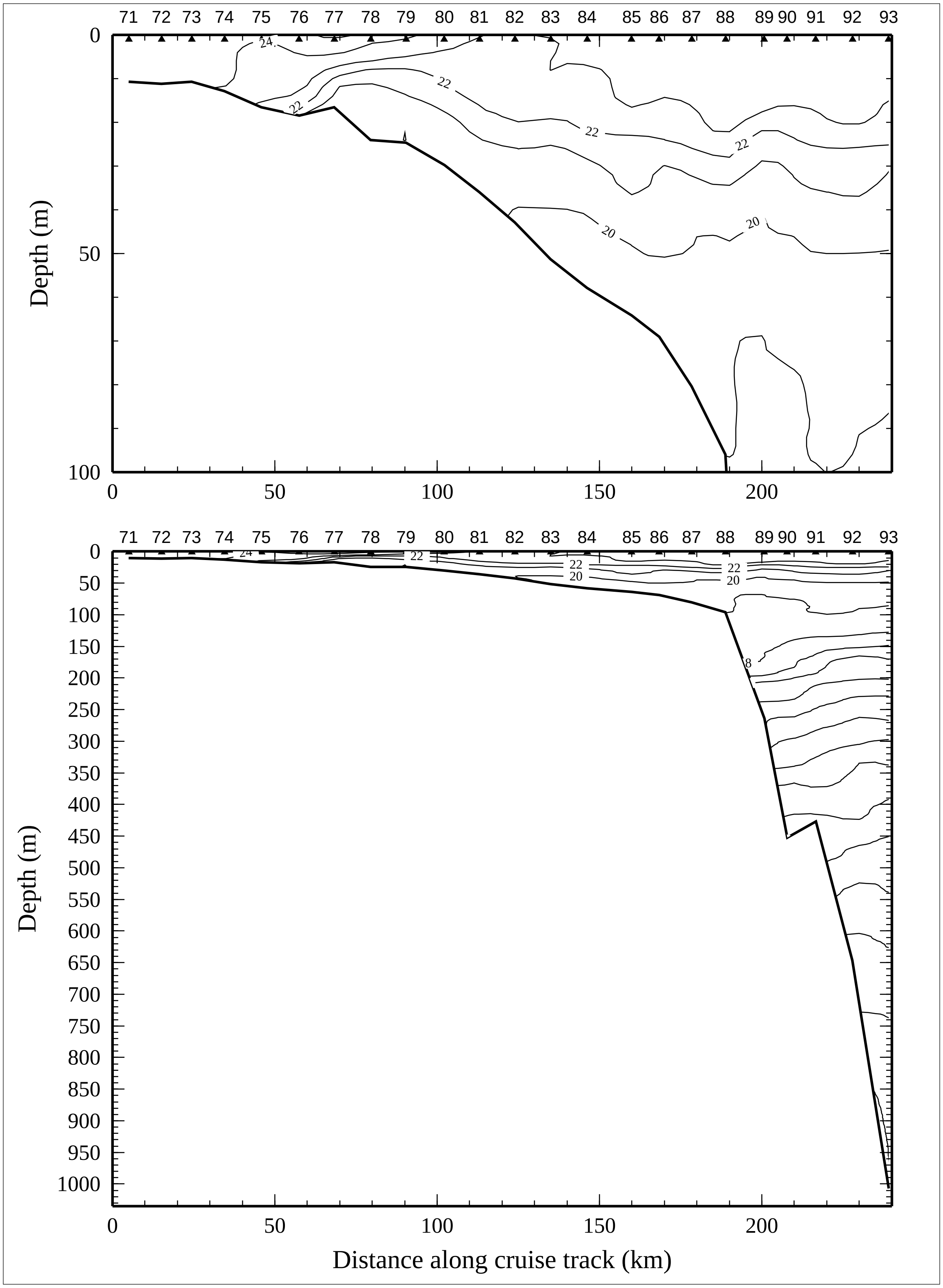

Figure 8.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

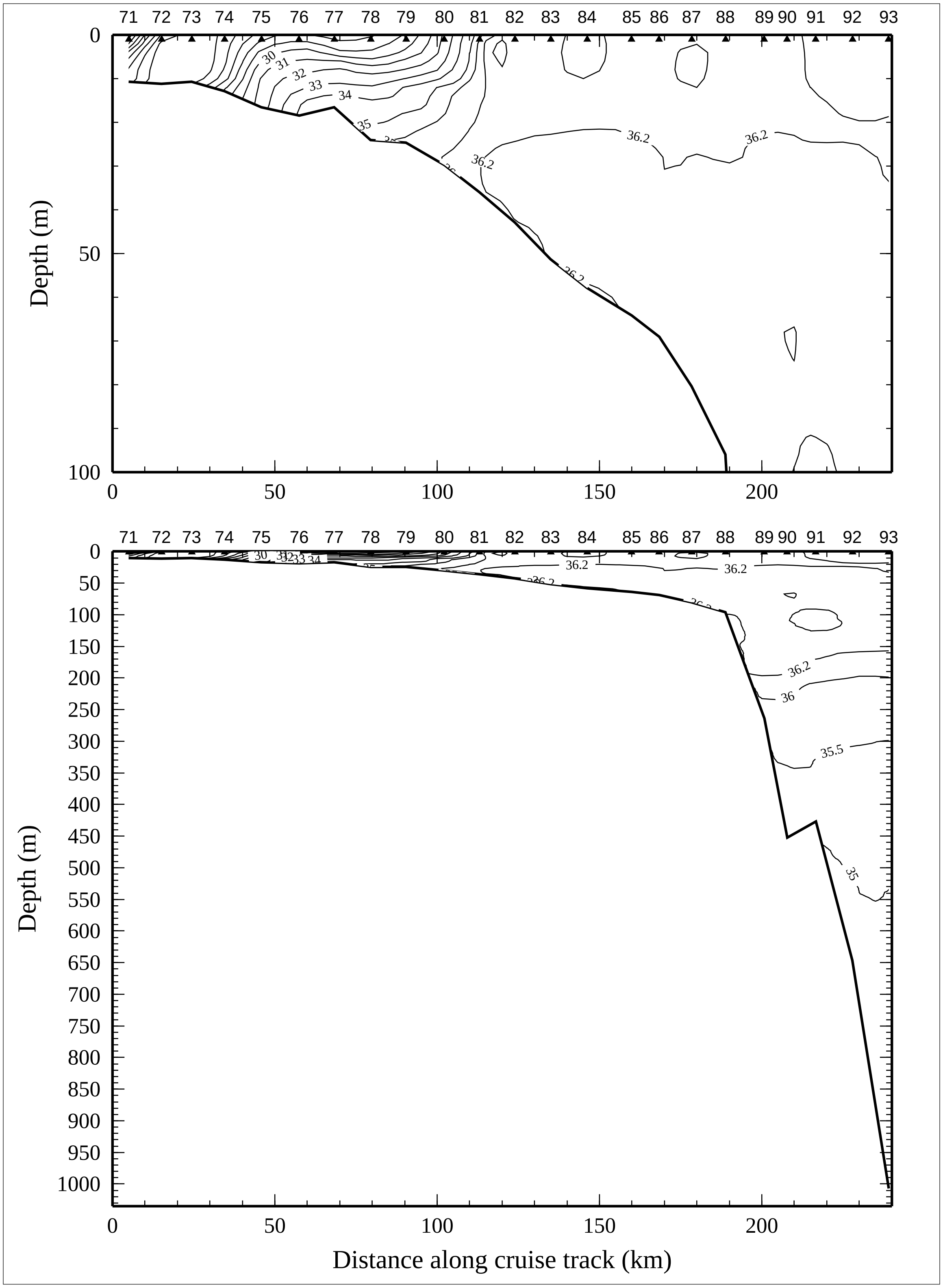

Figure 8.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

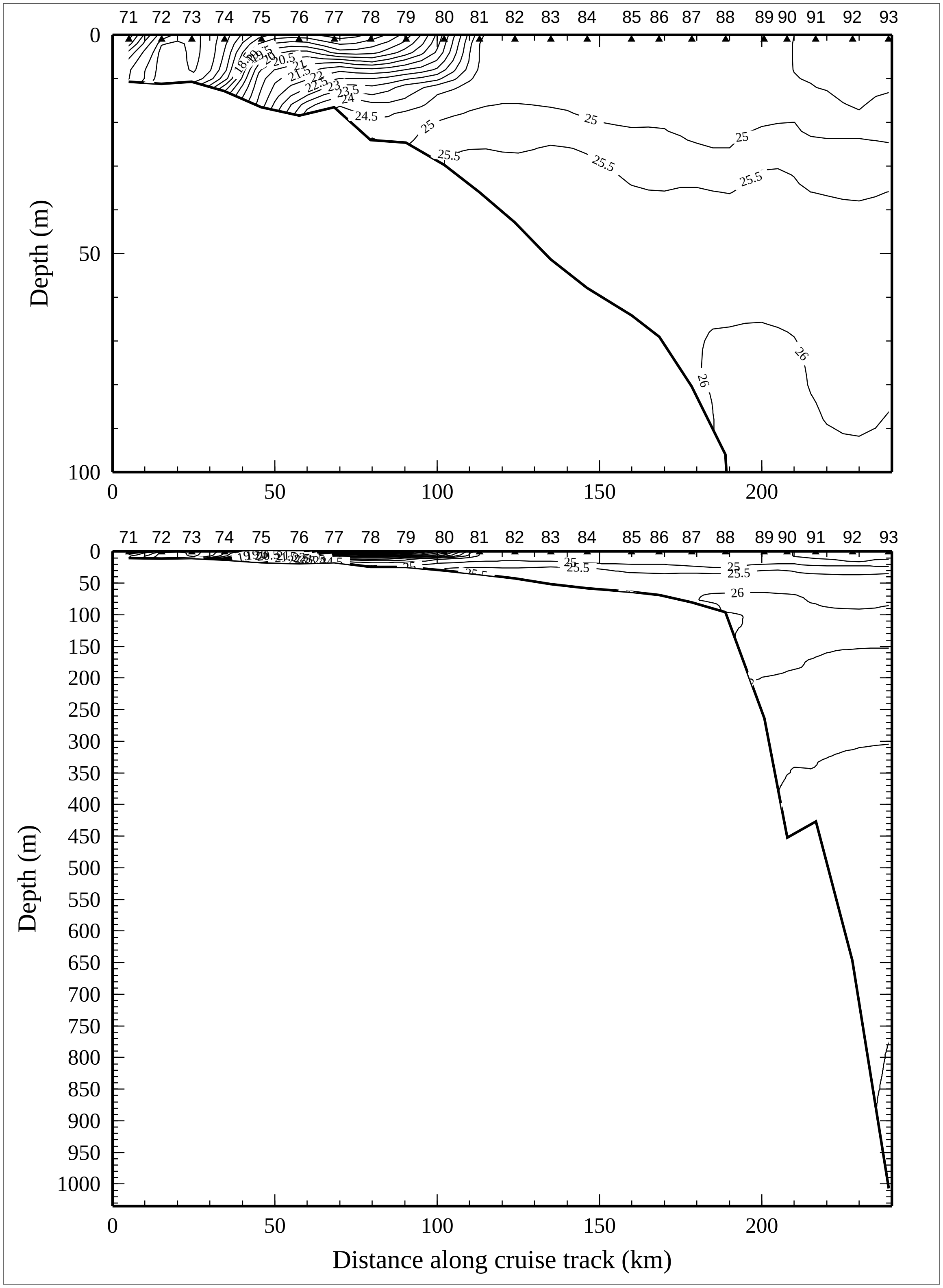

Figure 8.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

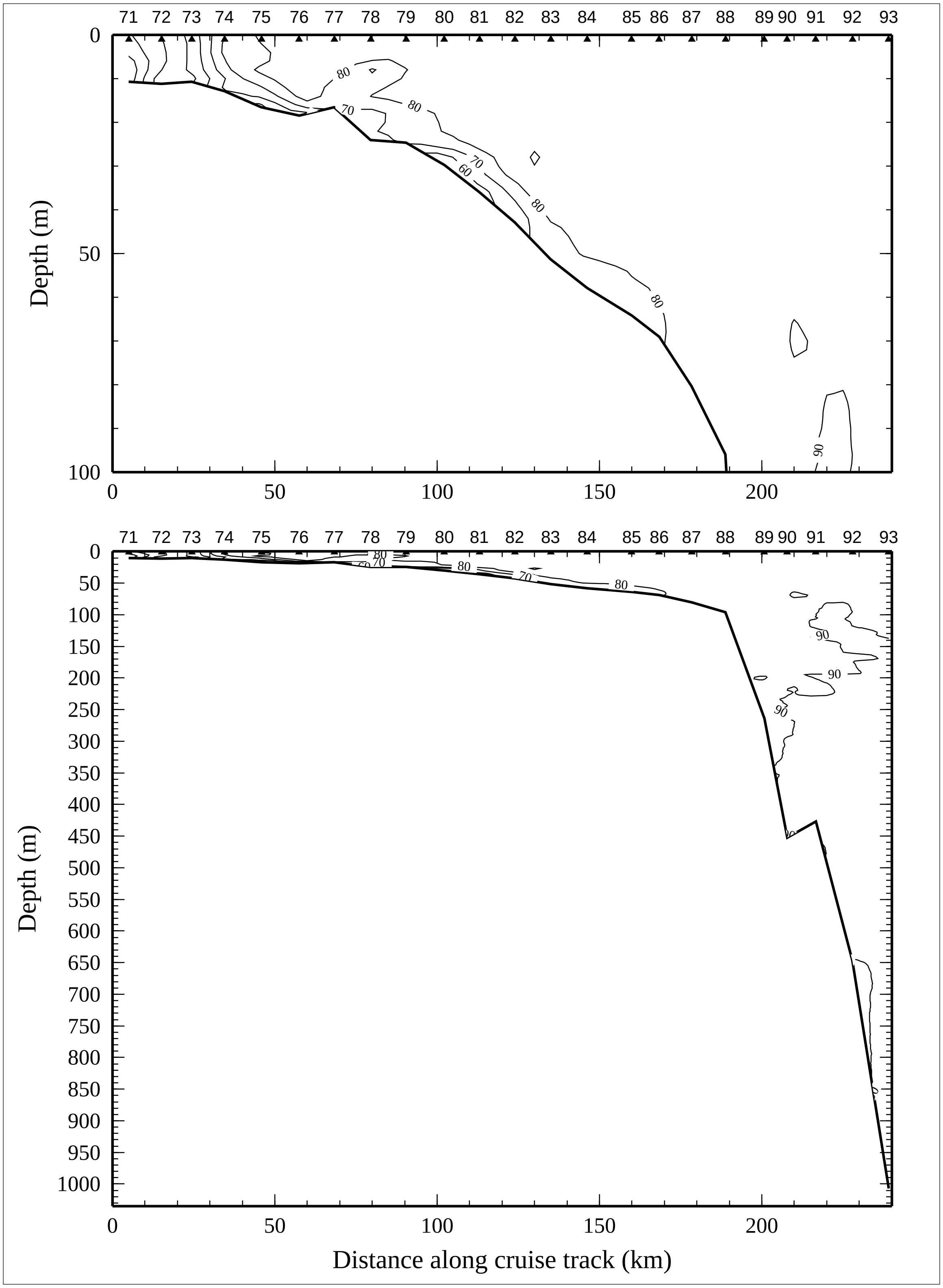

Figure 8.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

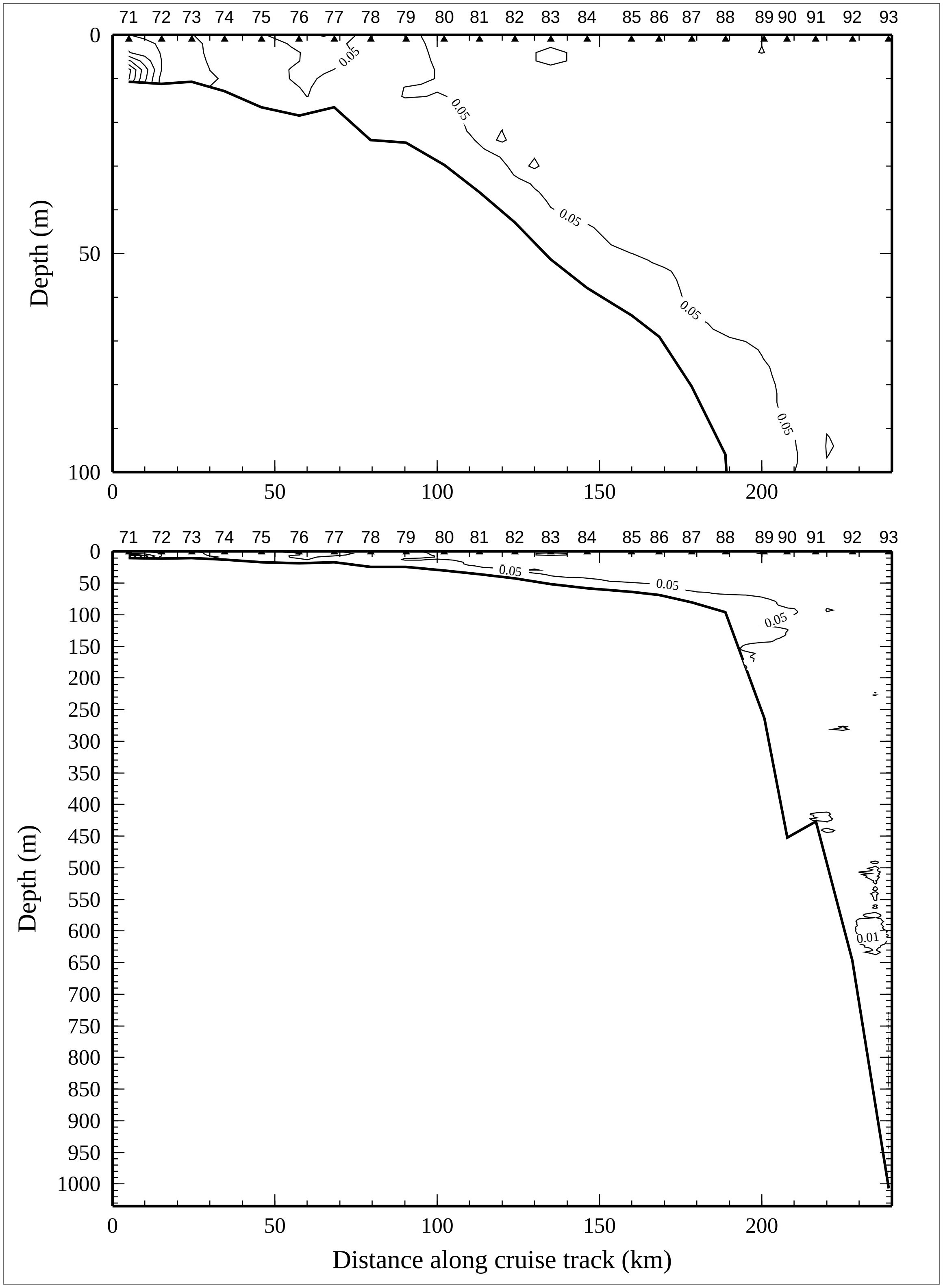

Figure 8.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

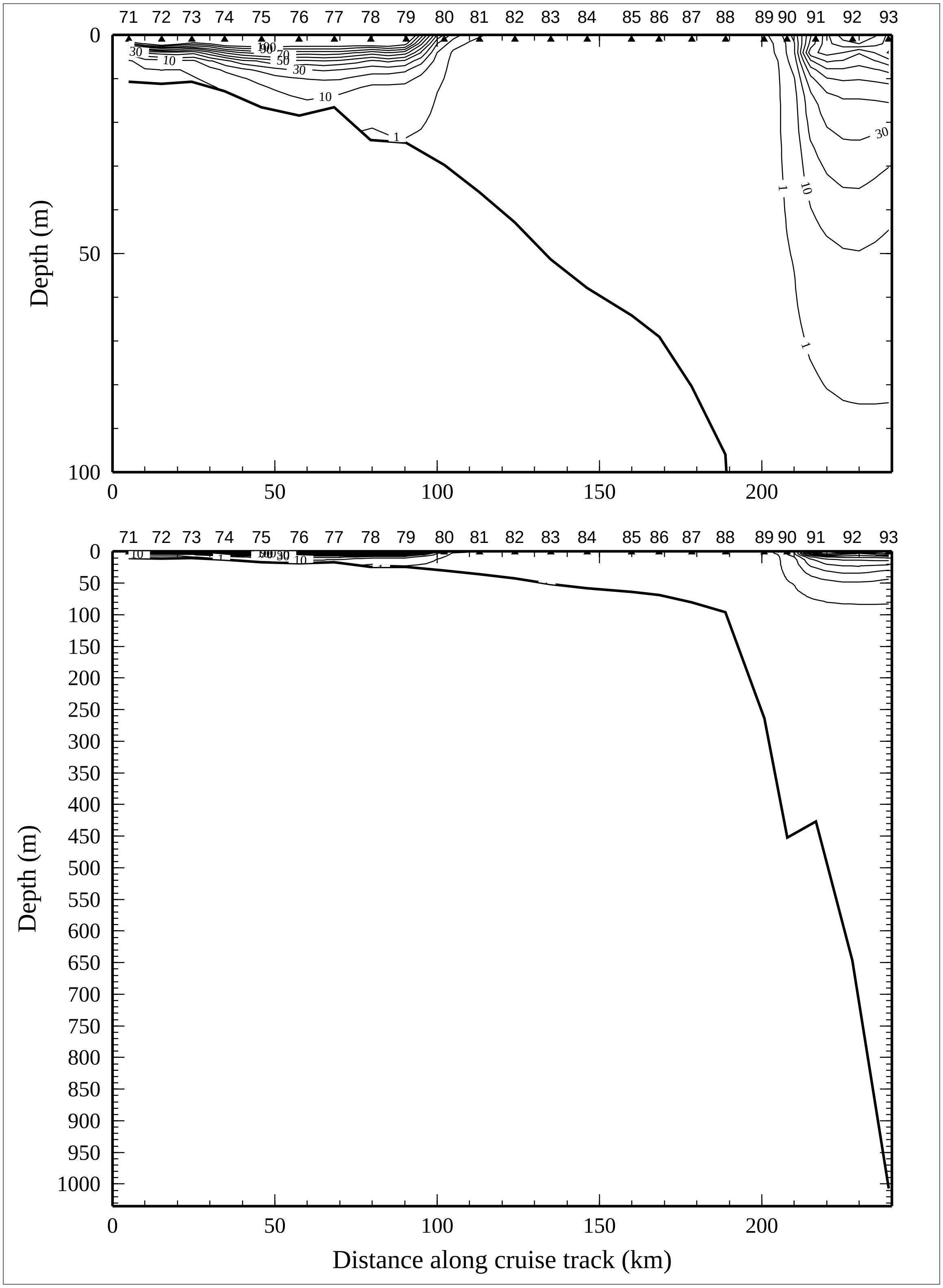

Figure 8.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

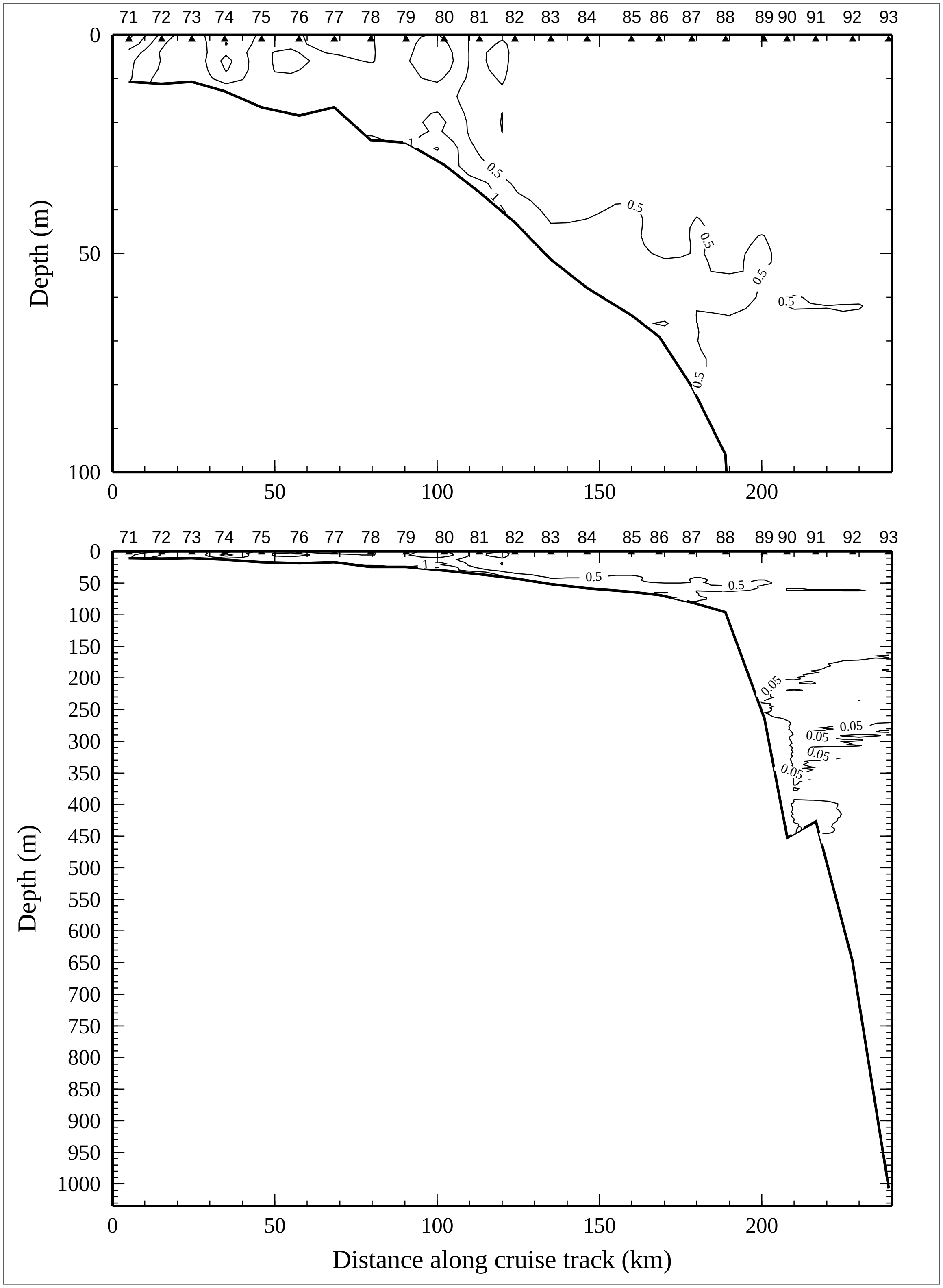

Figure 8.4.7. Relative fluorescence on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

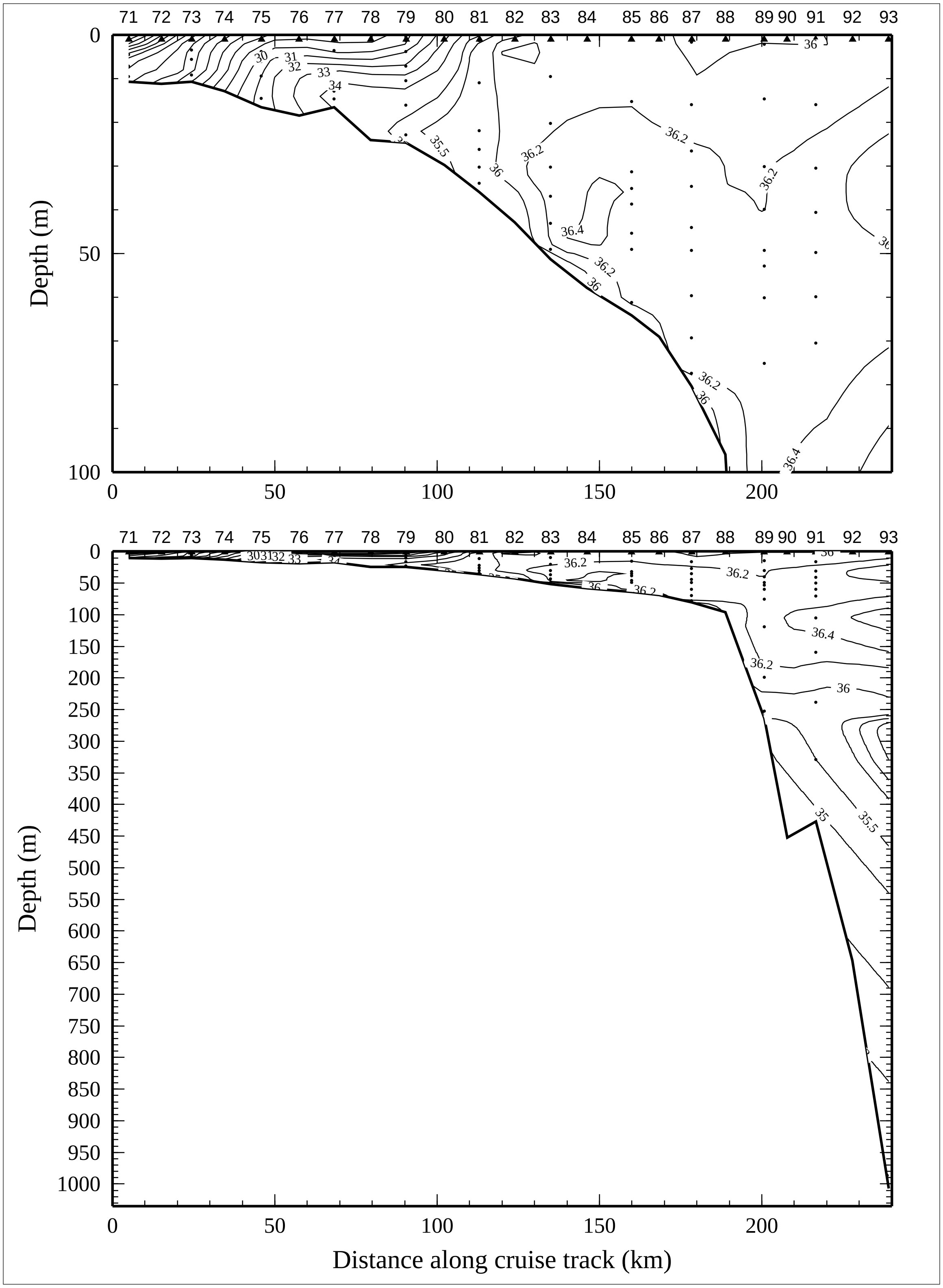

Figure 8.4.8. Bottle salinity on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

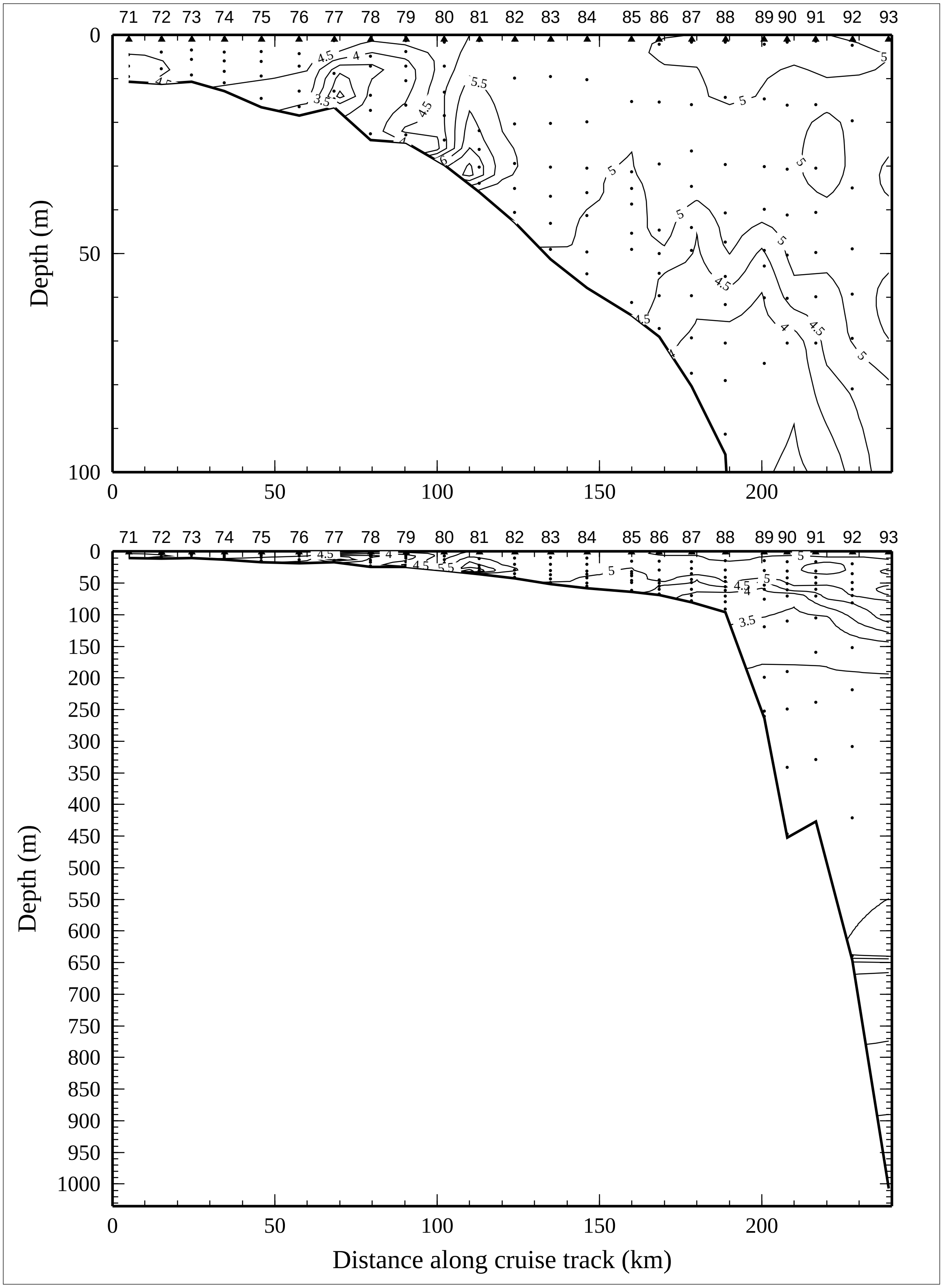

Figure 8.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

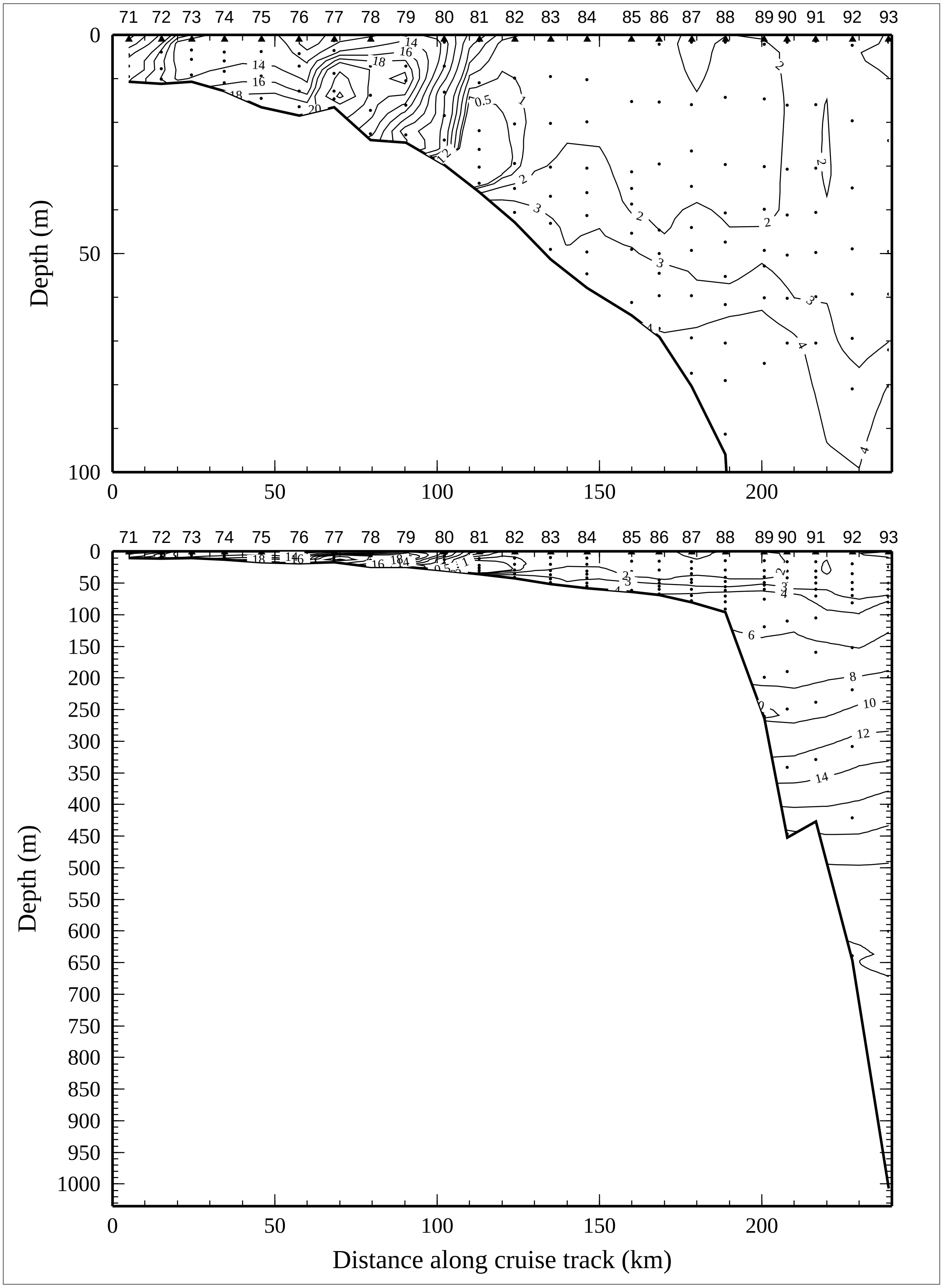

Figure 8.4.10. Silicate (µmol·l-1) on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

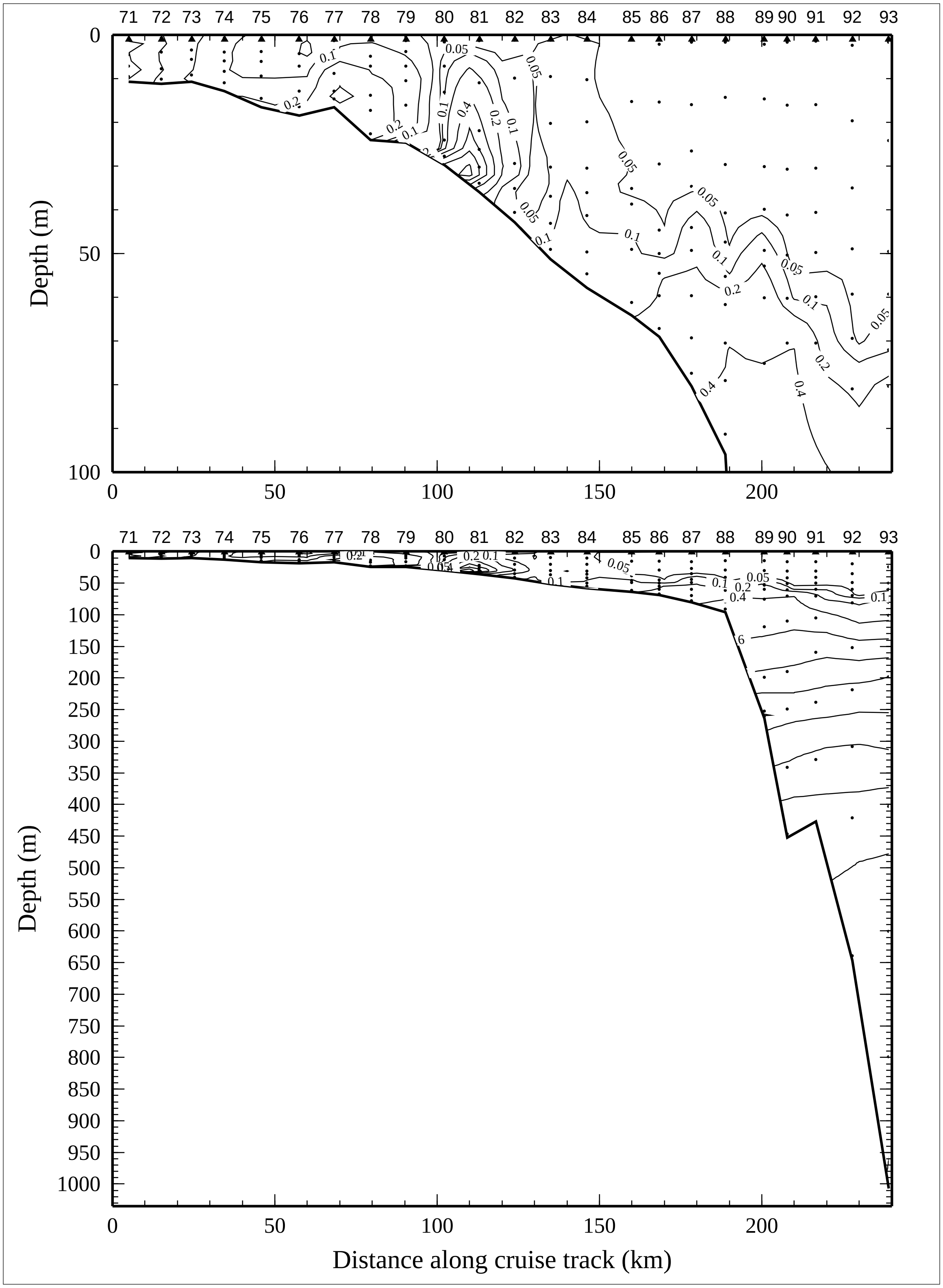

Figure 8.4.11. Phosphate (μmol·l⁻¹) on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

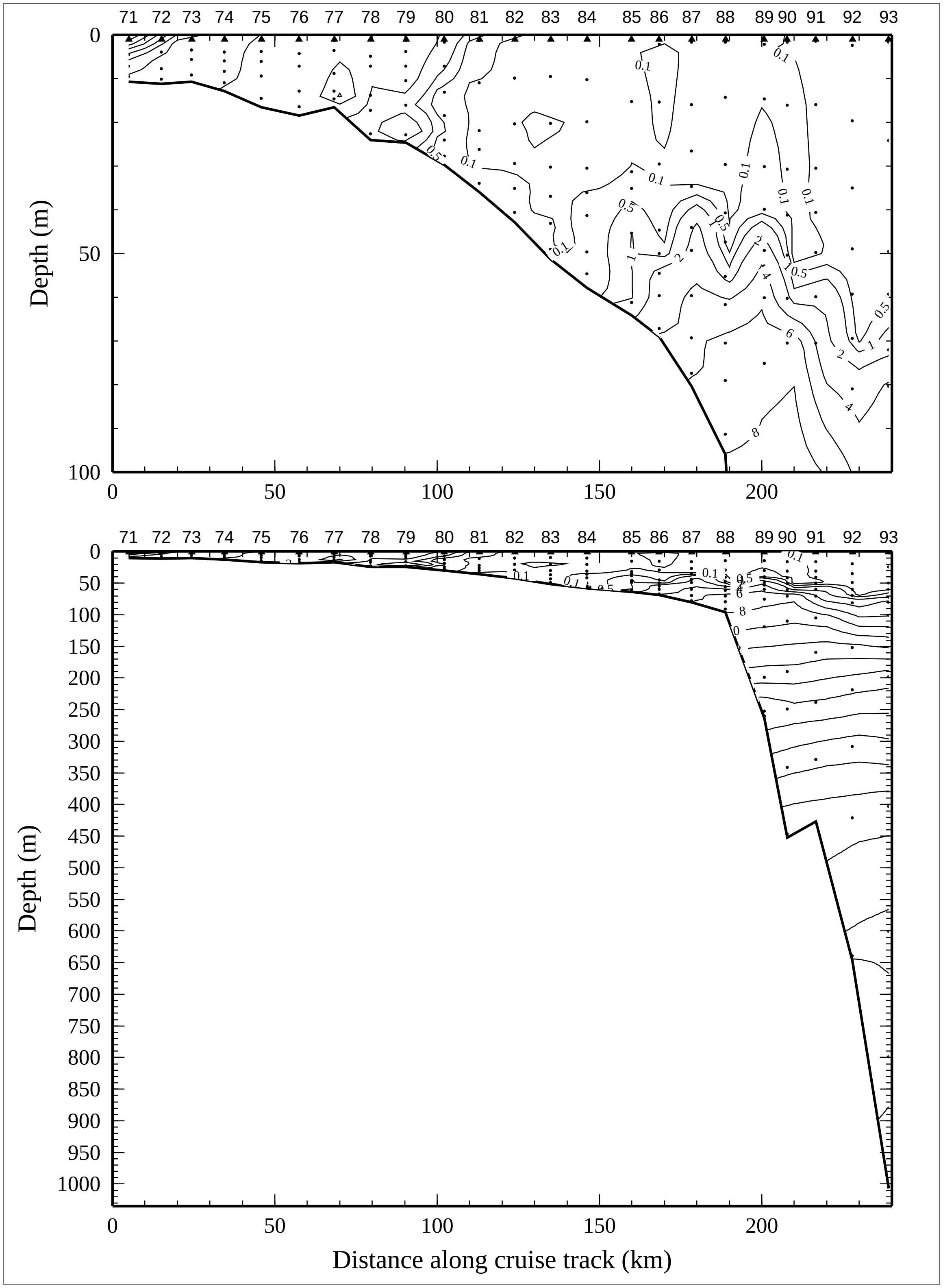

Figure 8.4.12. Nitrate (μmol·l⁻¹) on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

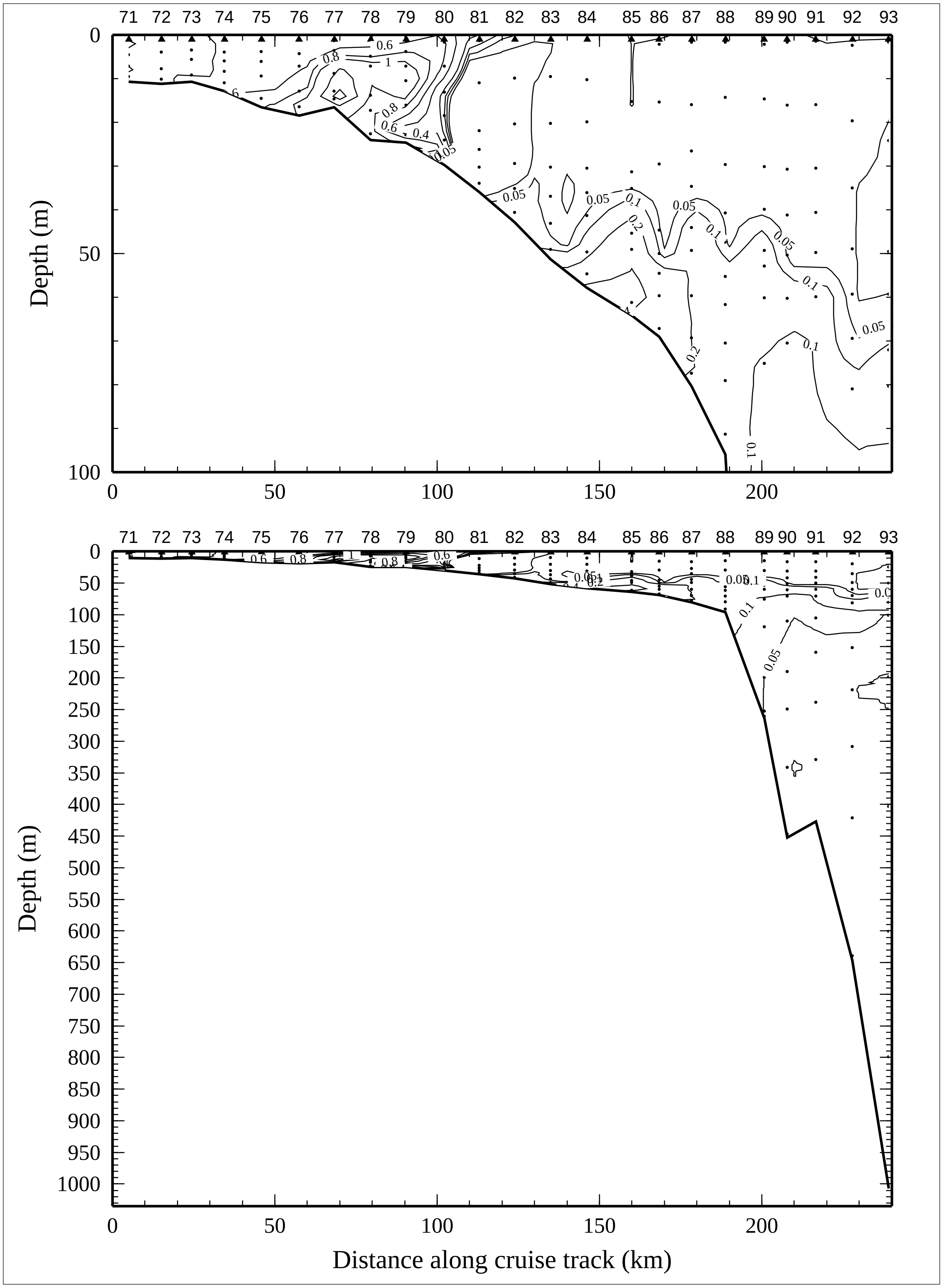

Figure 8.4.13. Nitrite (μmol·l[-1]) on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

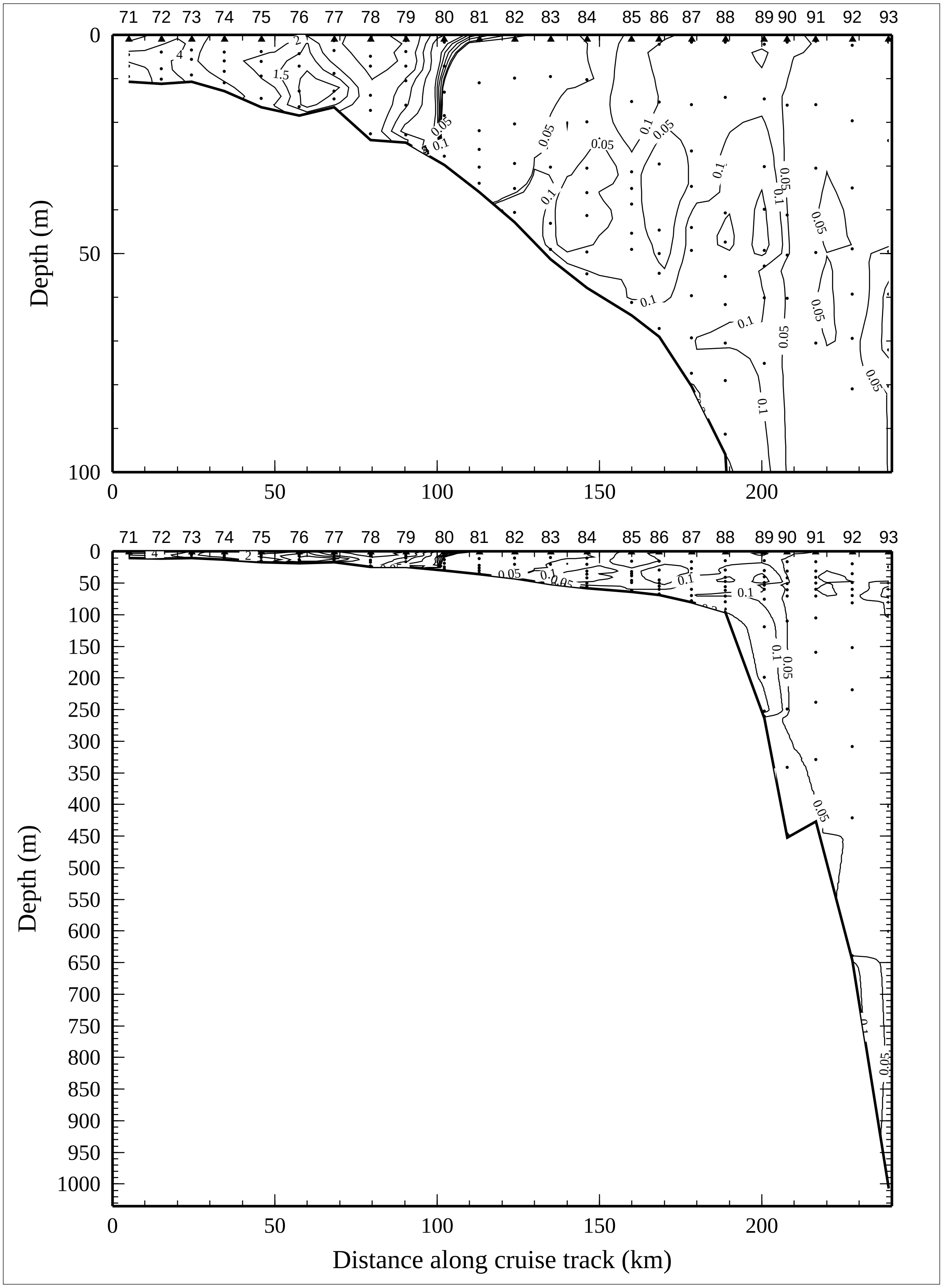

Figure 8.4.14. Ammonium (μmol·l^{-1}) on line 4 of LATEX A survey H08, 23 April - 7 May 1994.

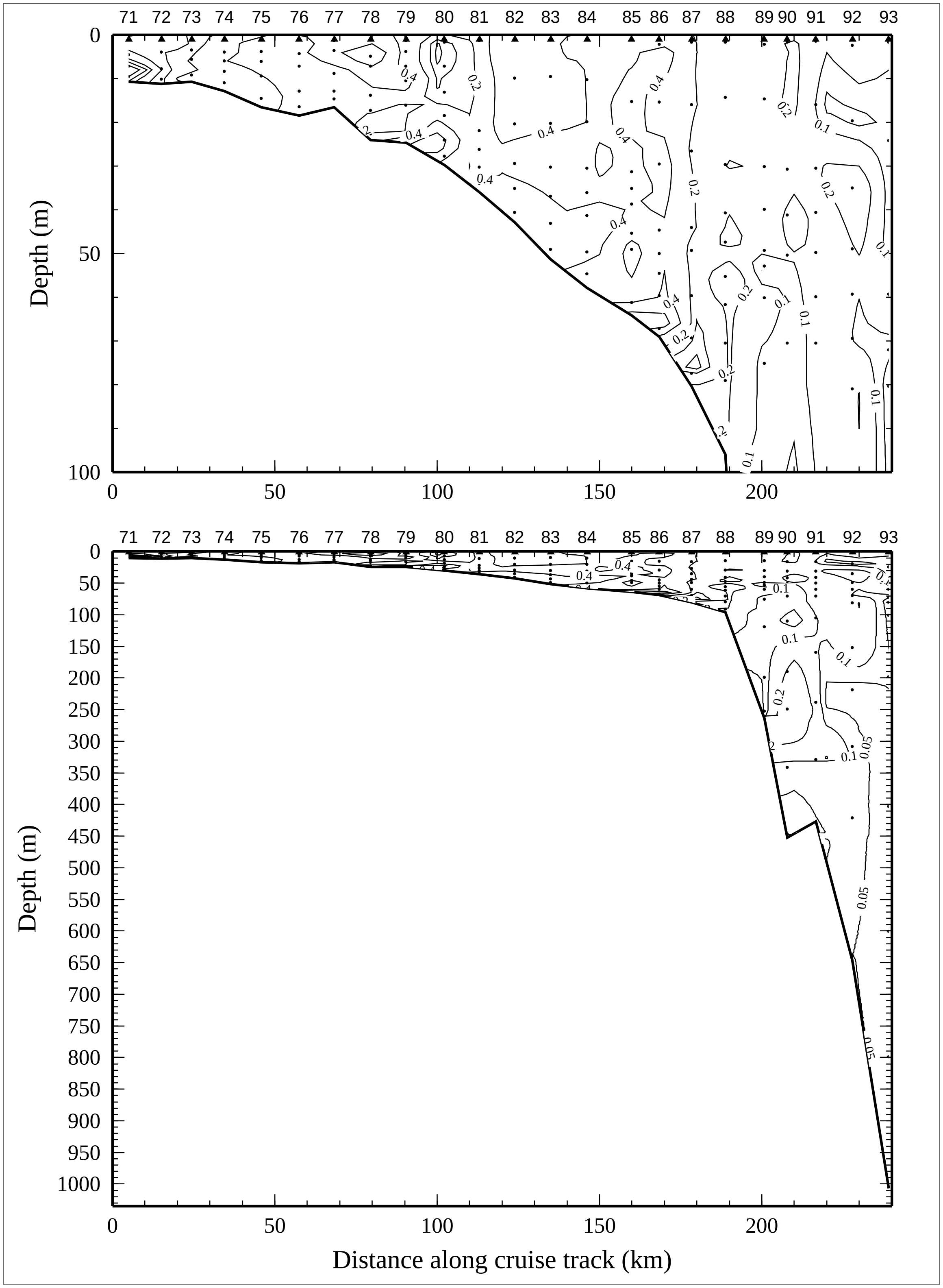

Figure 8.4.15. Urea (μmol·l-1) on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

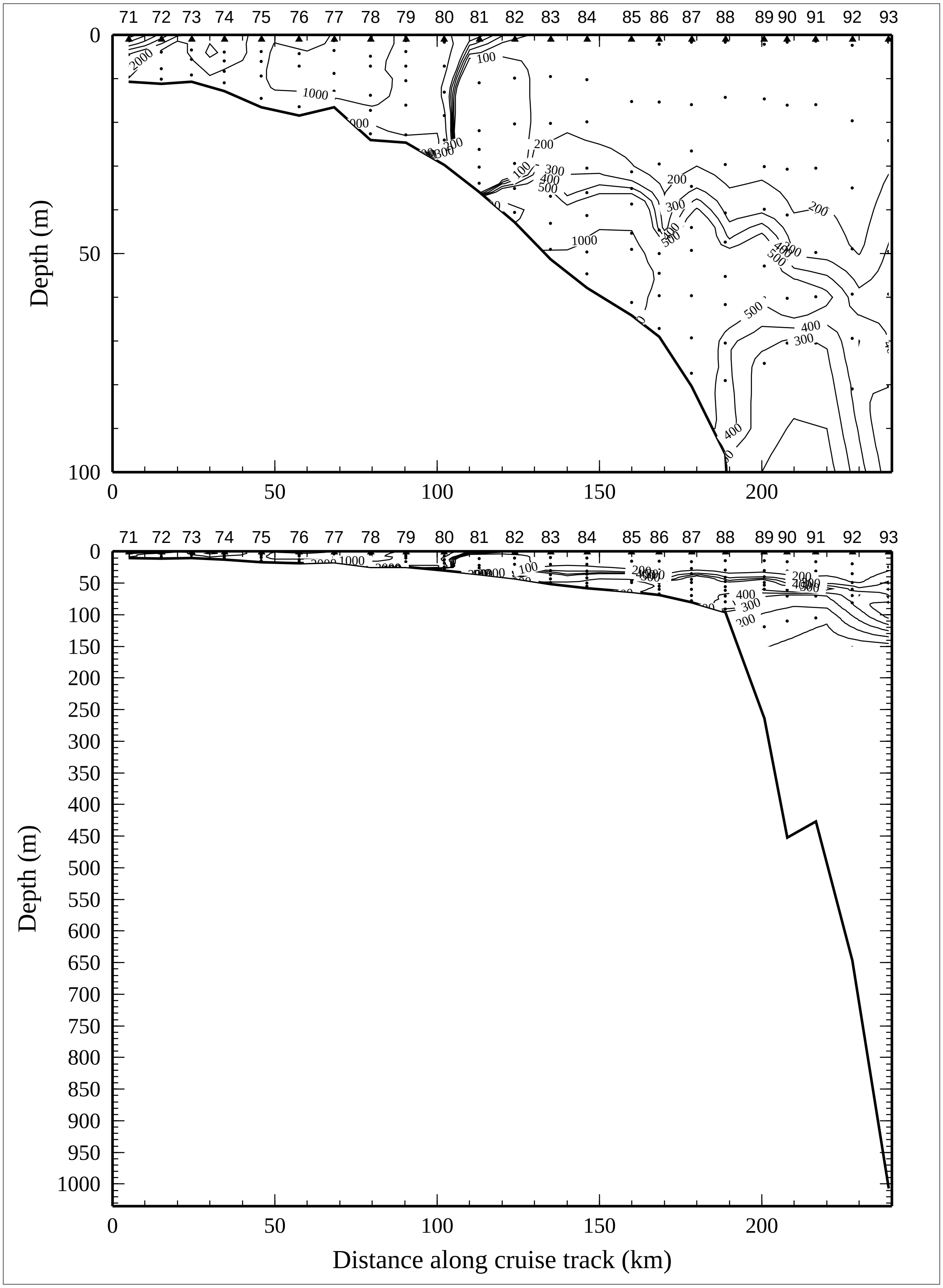

Figure 8.4.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 4 of LATEX A survey H08,
23 April - 7 May 1994.

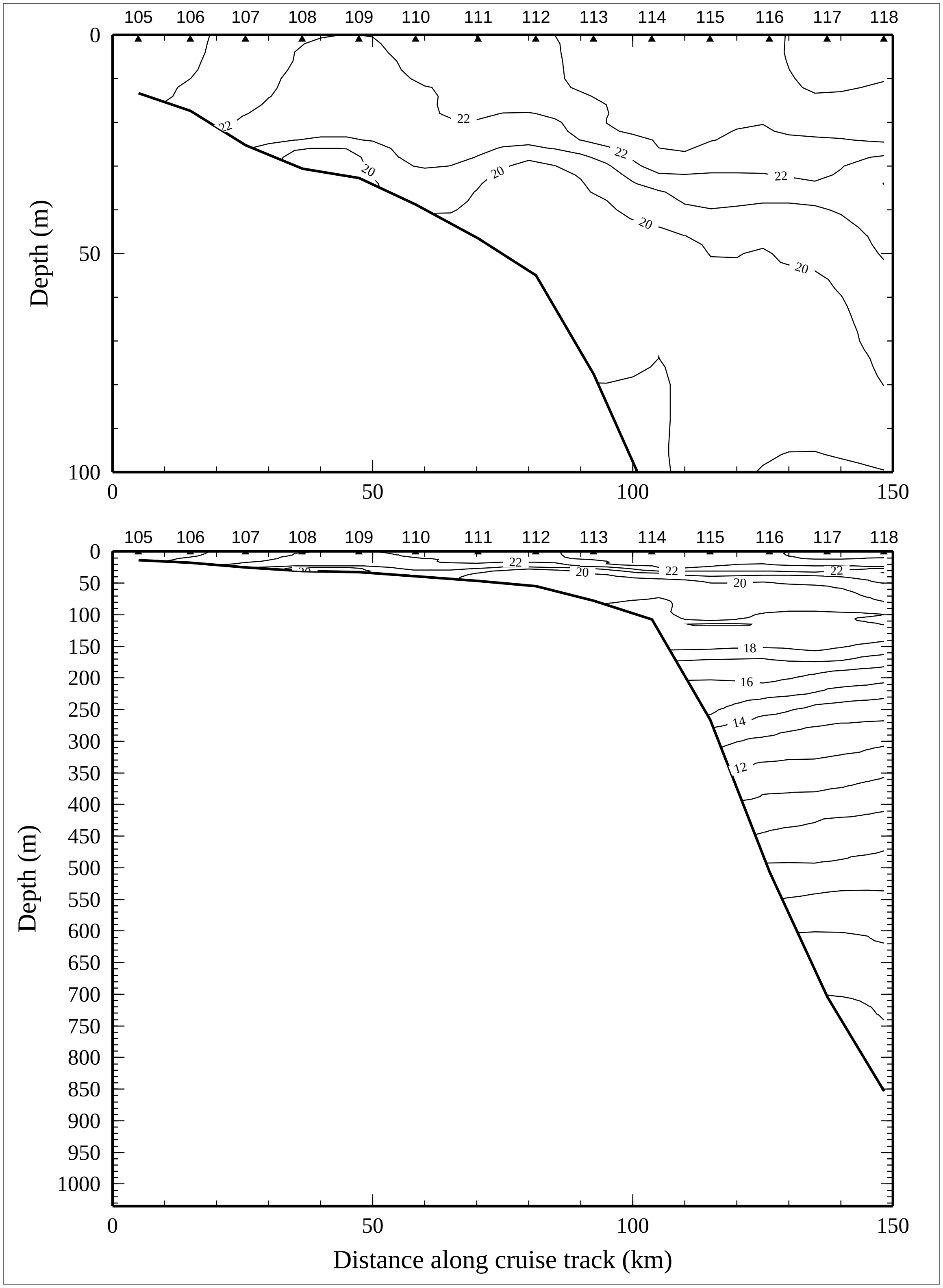

Figure 8.5.1. Potential temperature (˚C) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

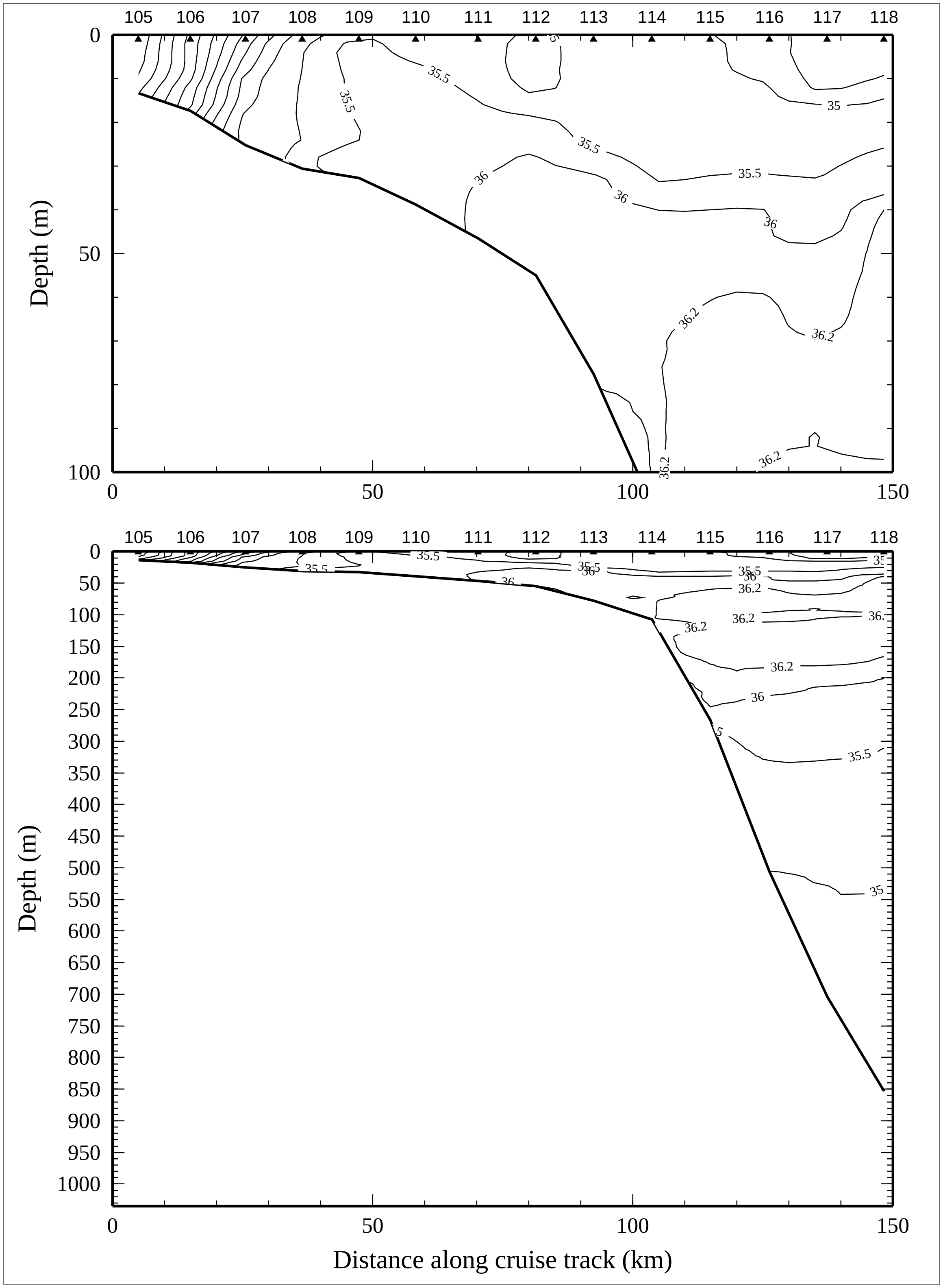

Figure 8.5.2. Salinity, derived from CTD data, on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

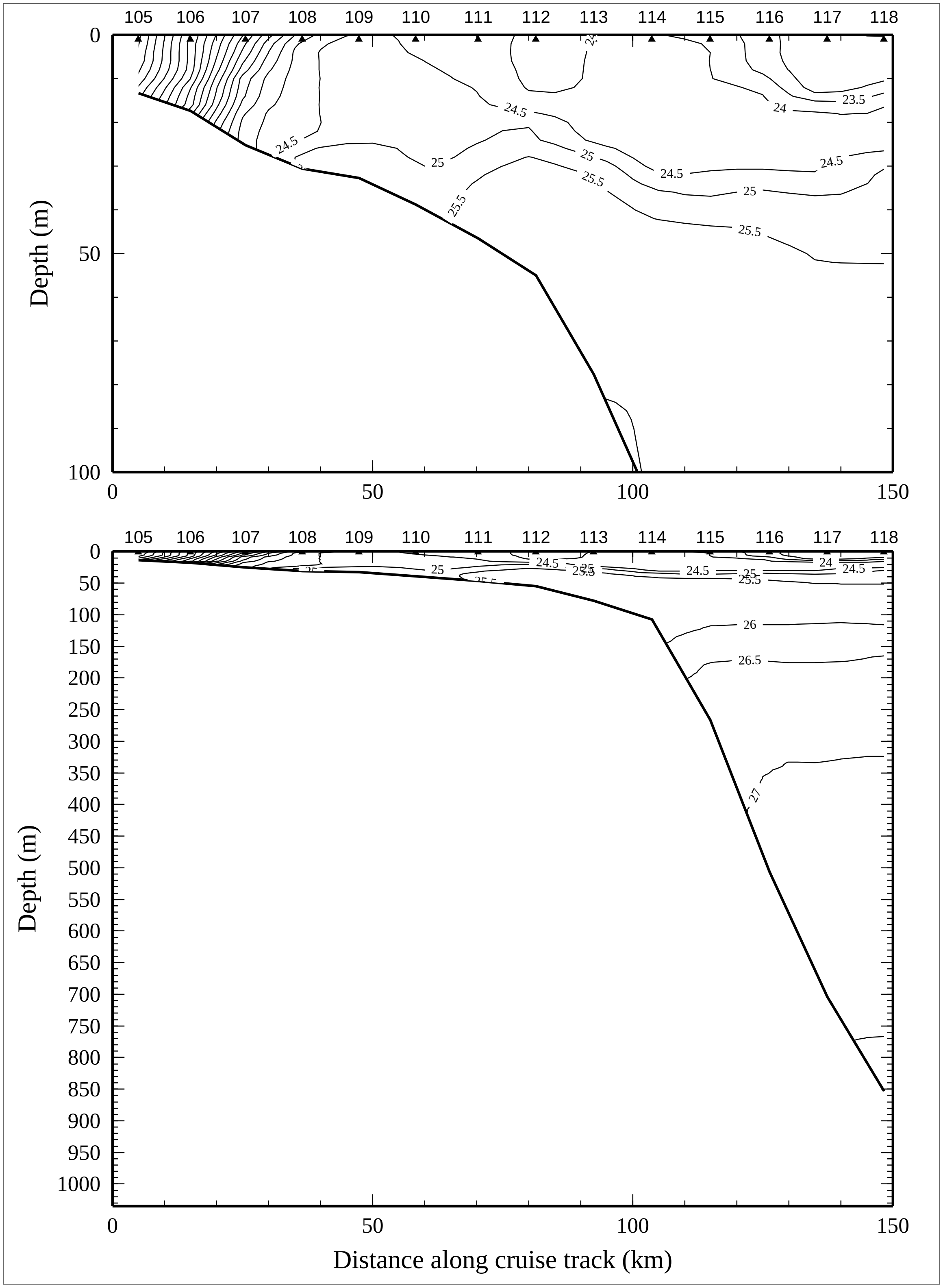

Figure 8.5.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

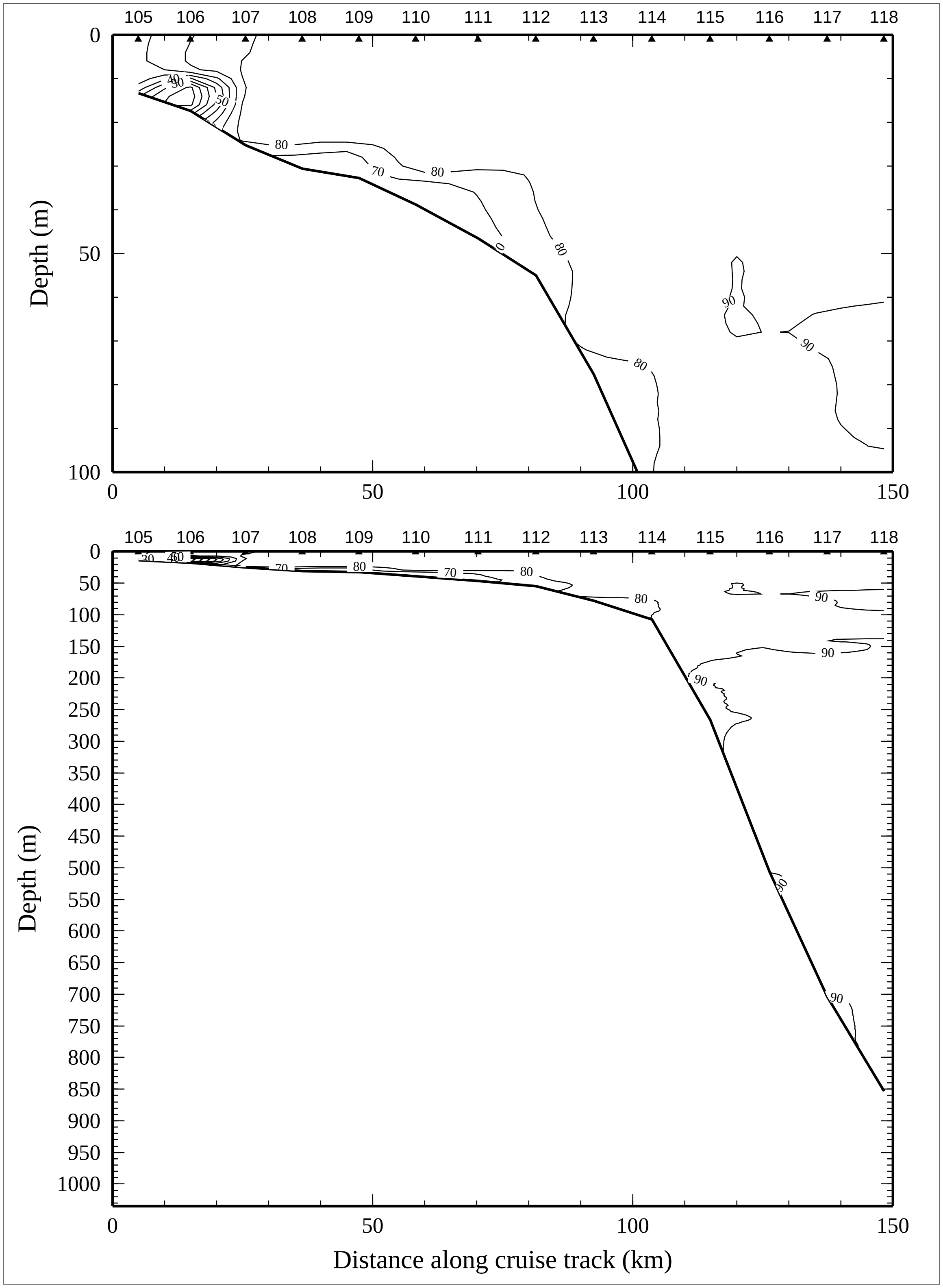

Figure 8.5.4. Percent transmission (660 nm wave length; 25-cm path length) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

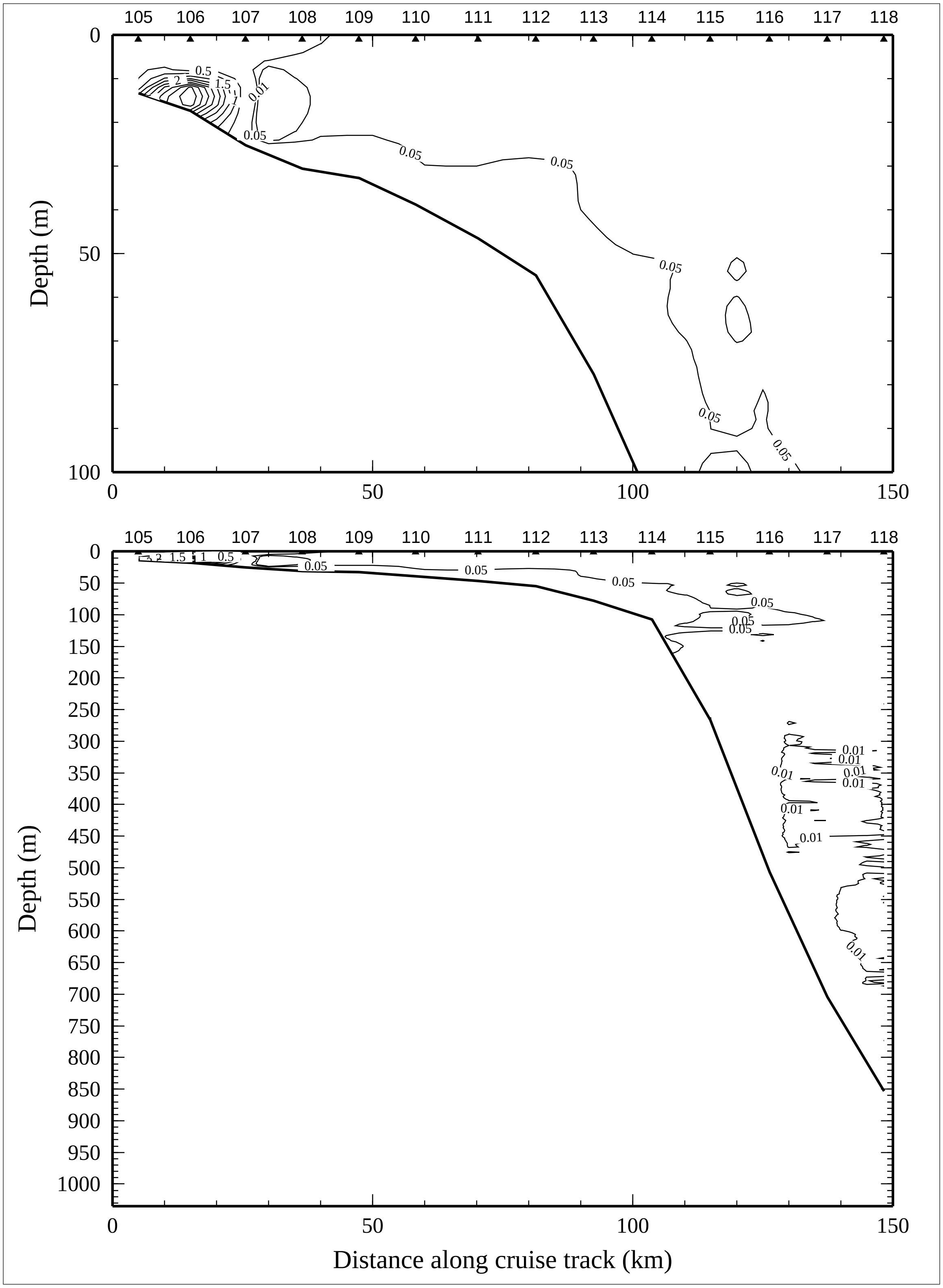

Figure 8.5.5. Optical backscatterance (voltage) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

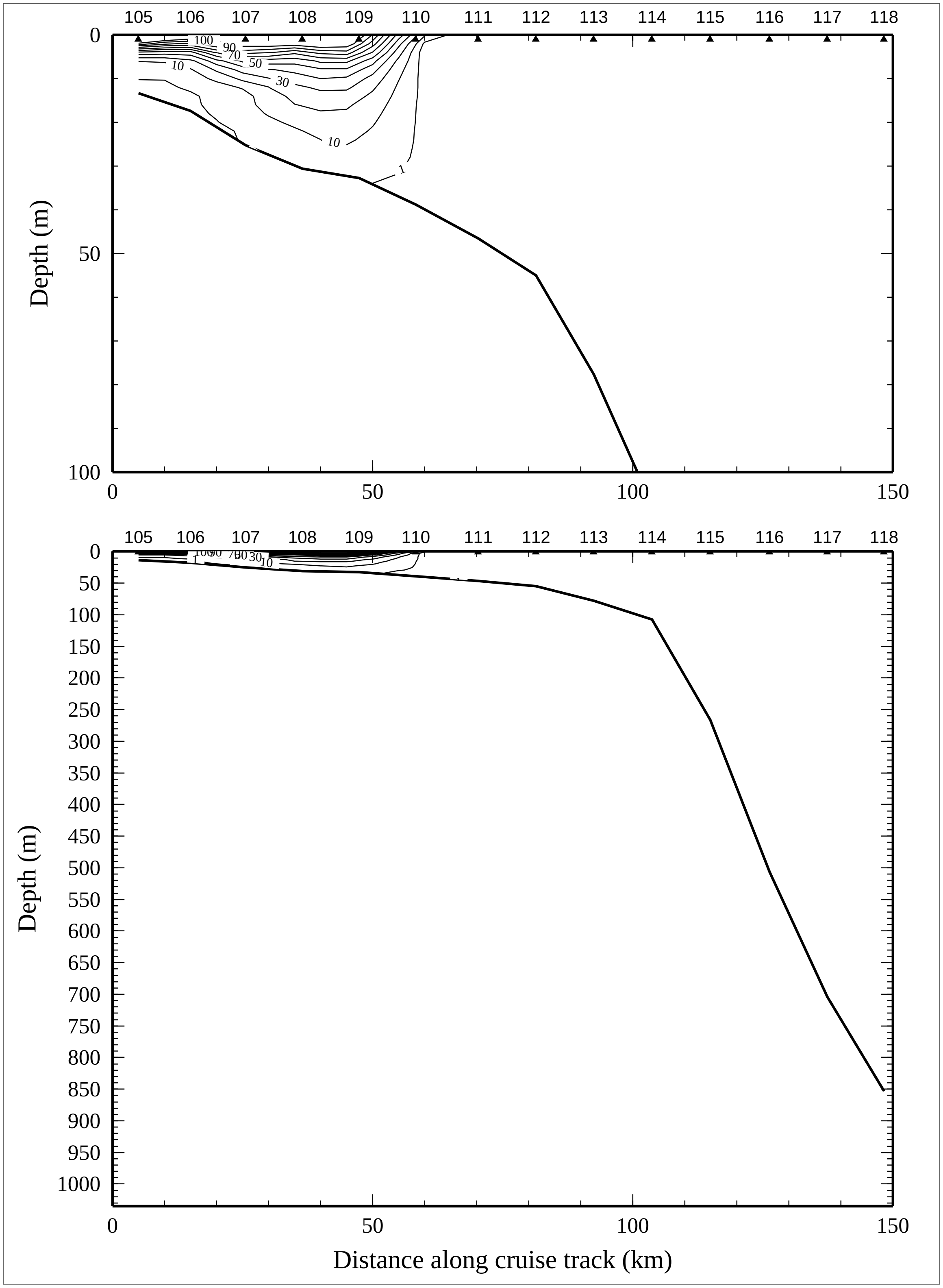

Figure 8.5.6. Downwelling irradiance as percent of surface irradiance on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

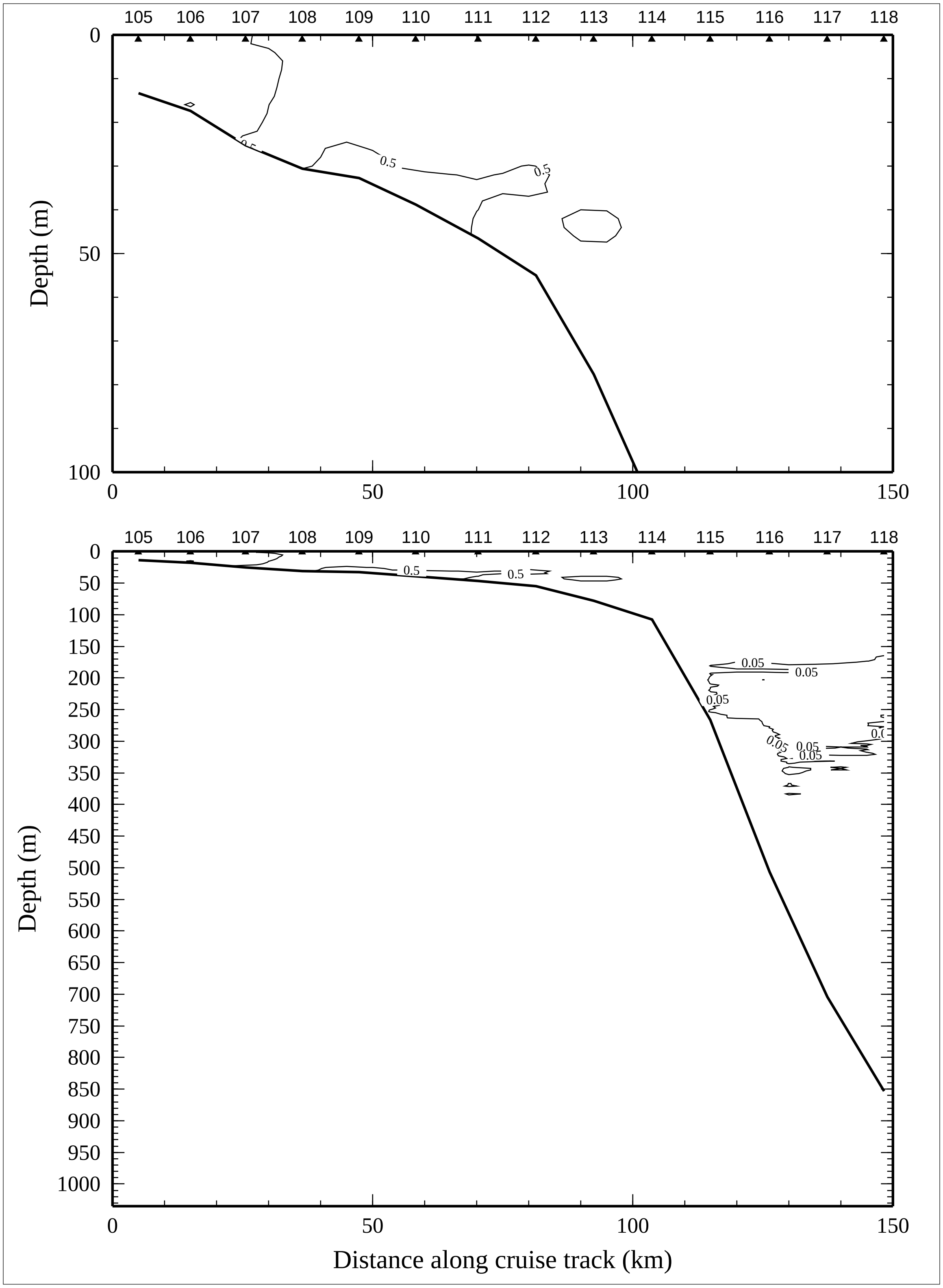

Figure 8.5.7. Relative fluorescence on line 5 of LATEX A survey H08,
23 April - 7 May 1994.

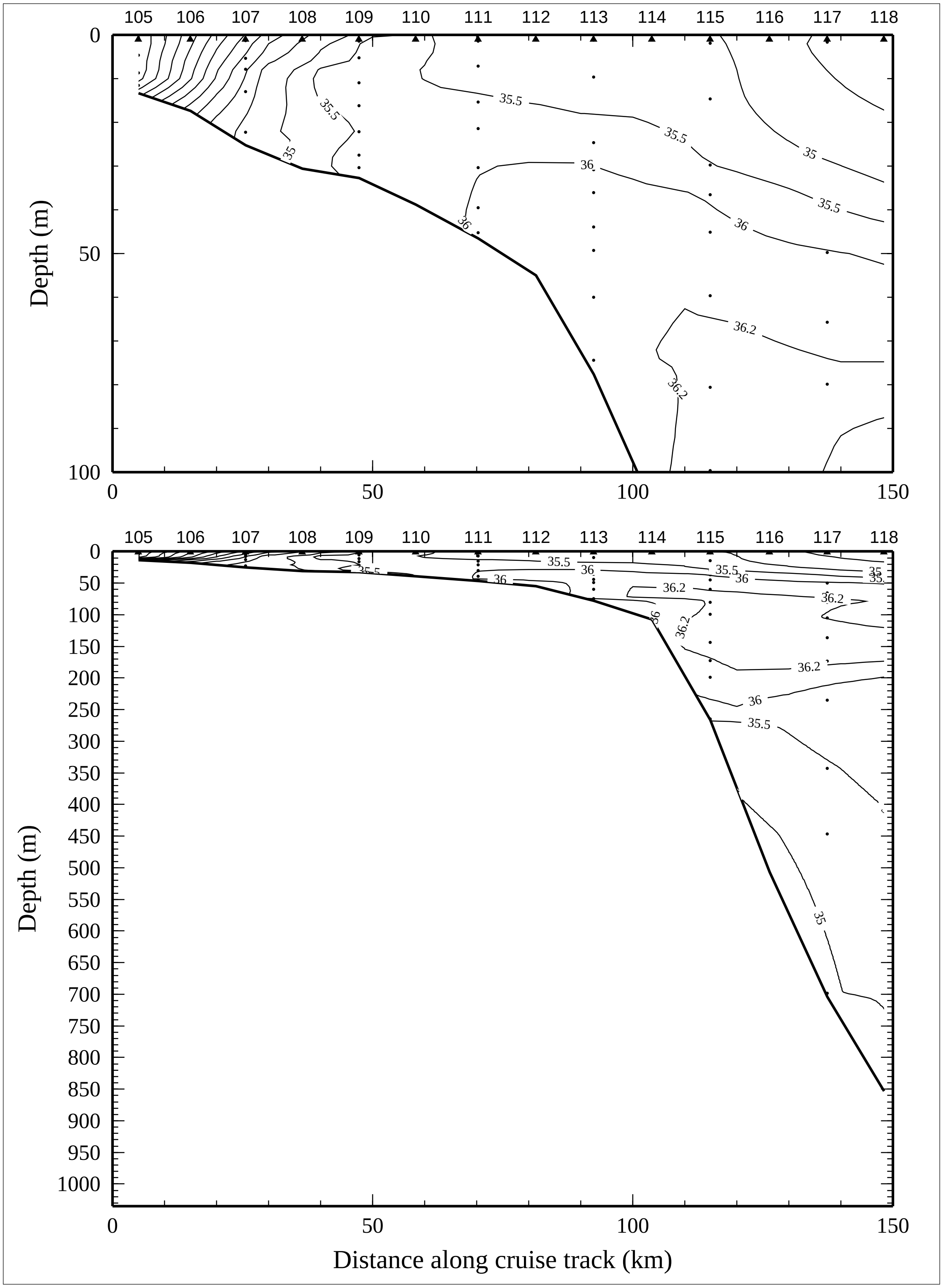

Figure 8.5.8. Bottle salinity on line 5 of LATEX A survey H08,
23 April - 7 May 1994.

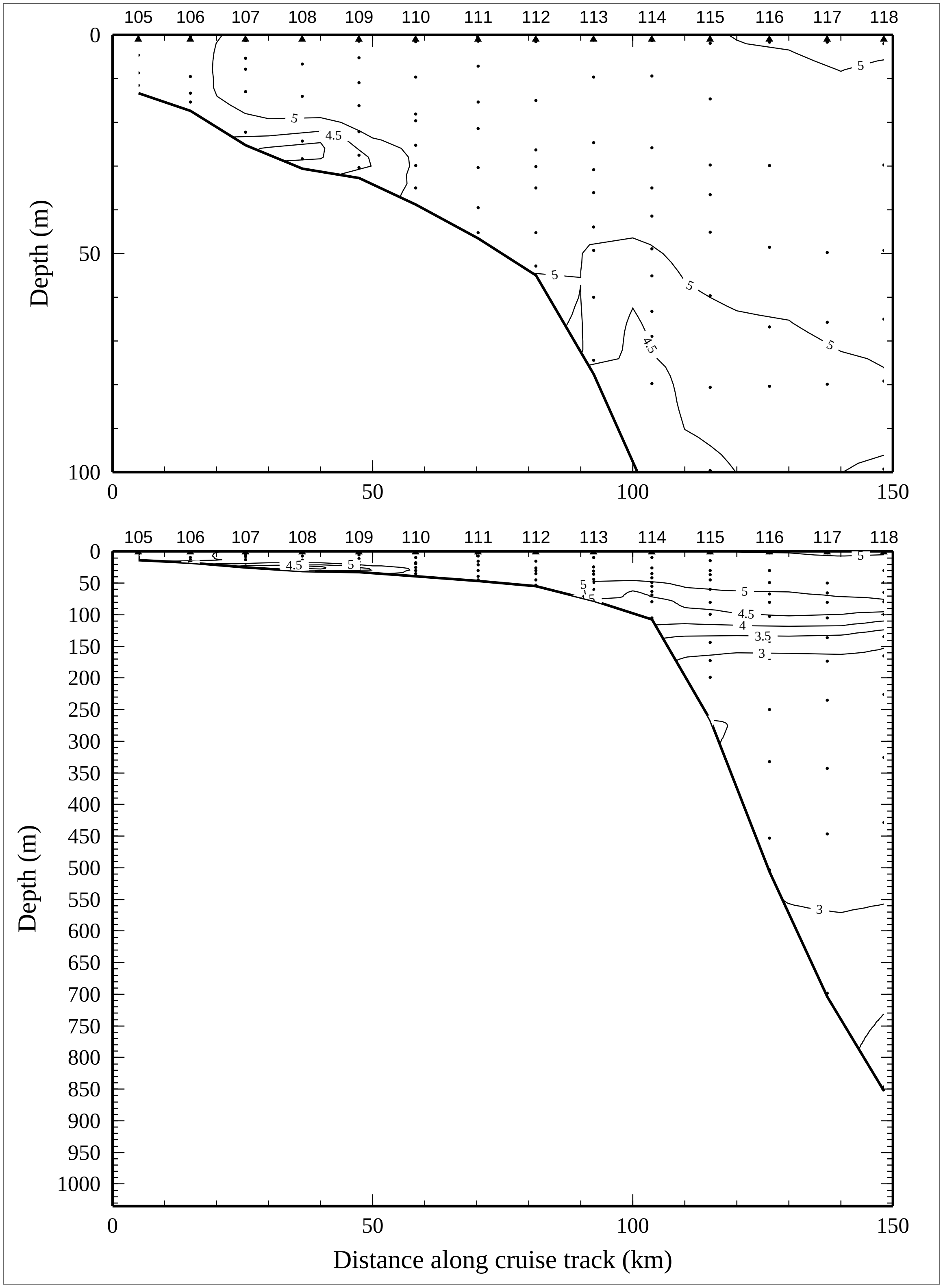

Figure 8.5.9. Dissolved oxygen (ml·l^{-1}) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

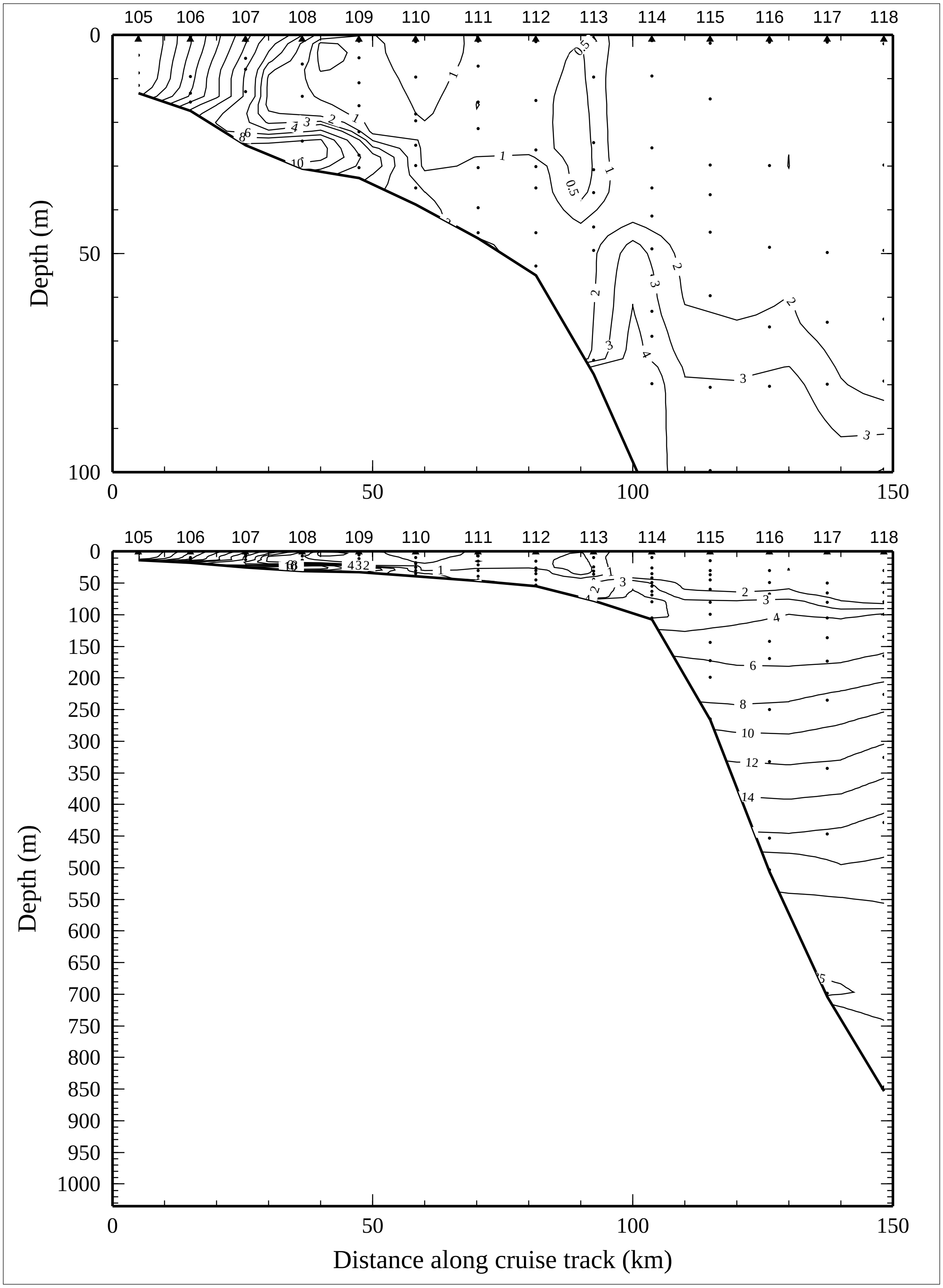

Figure 8.5.10. Silicate (μmol·l^{-1}) on line 5 of LATEX A survey H08,
23 April - 7 May 1994.

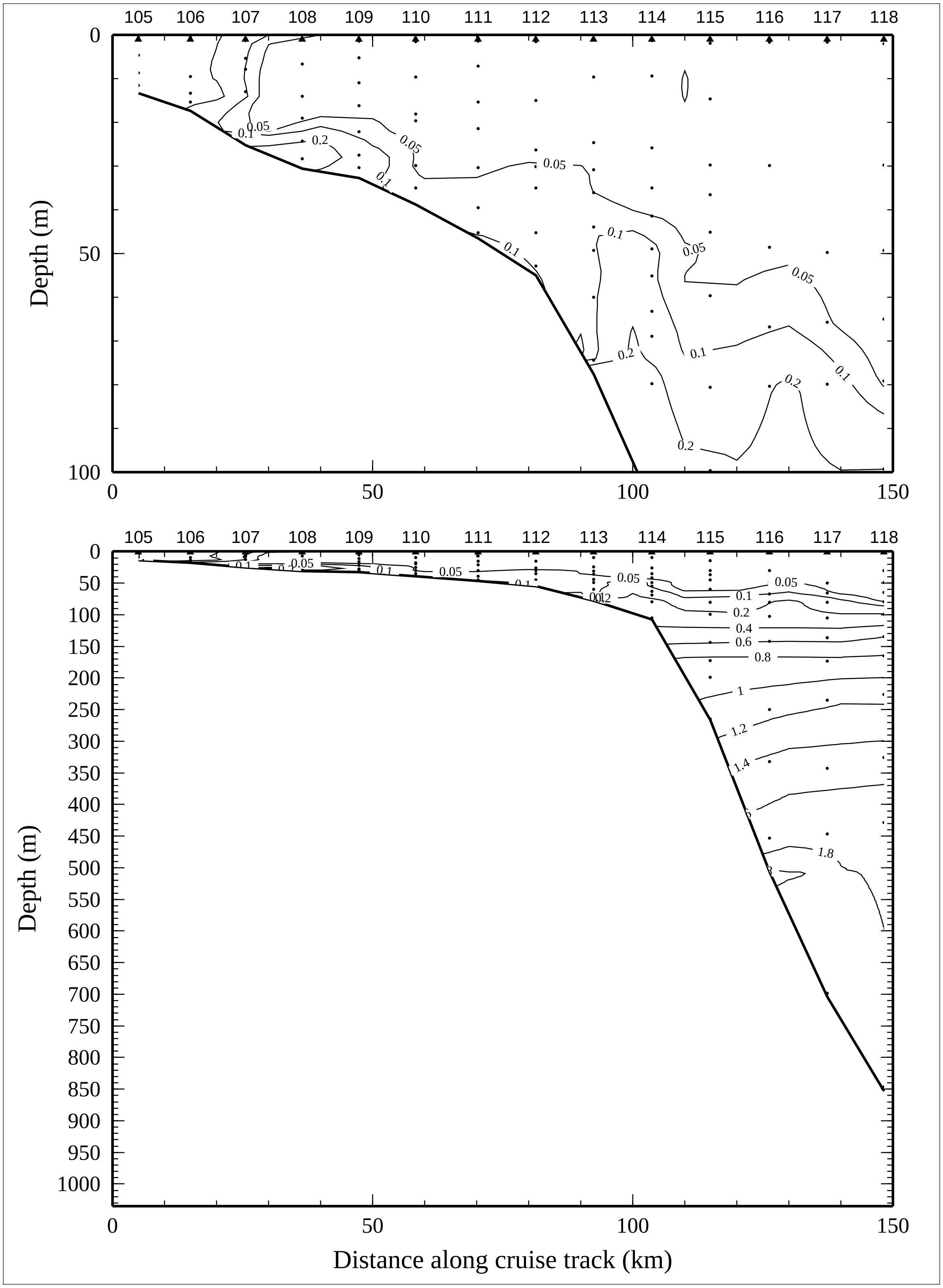

Figure 8.5.11. Phosphate (μmol·l^{-1}) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

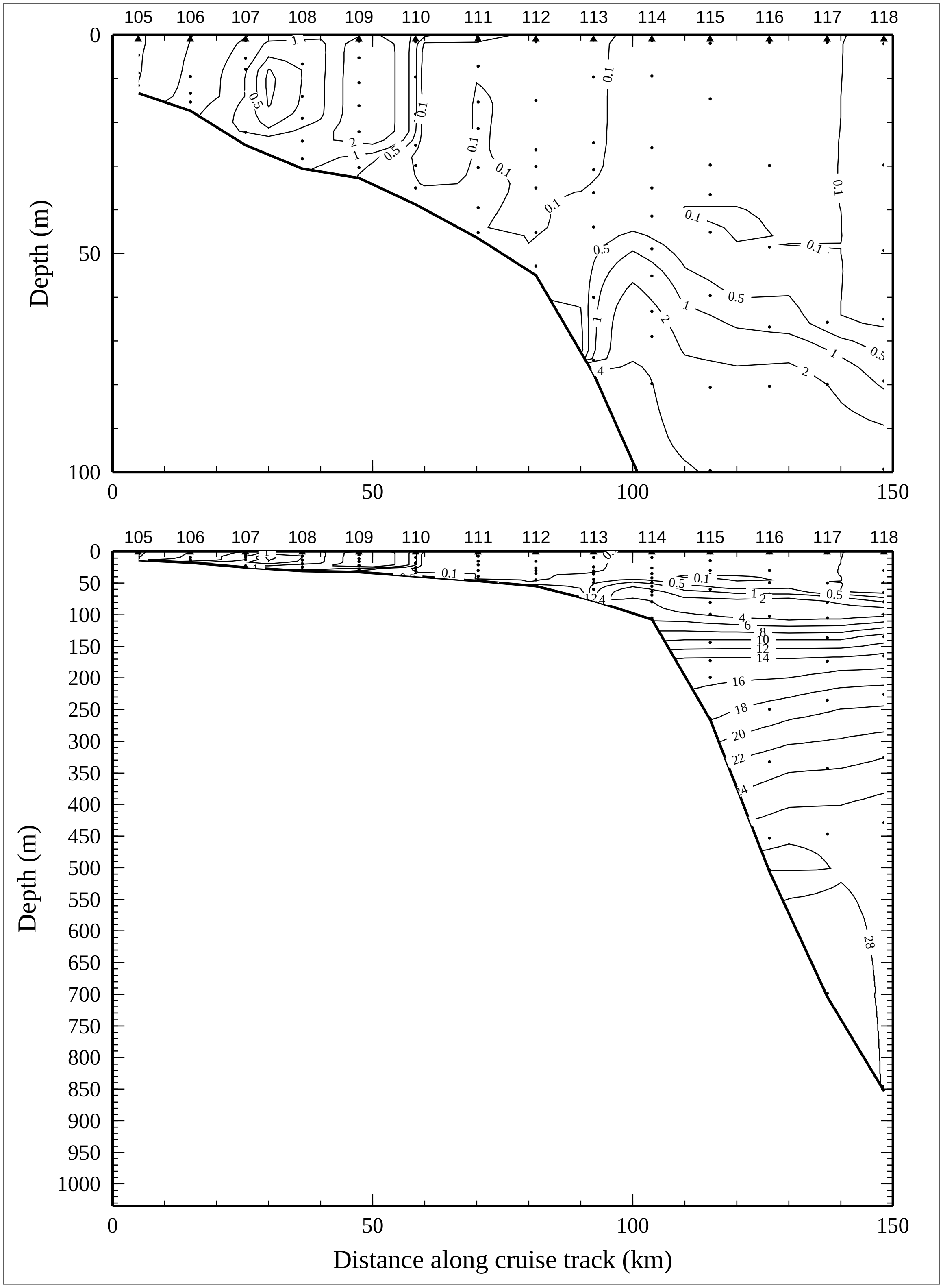

Figure 8.5.12. Nitrate (μmol·l⁻¹) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

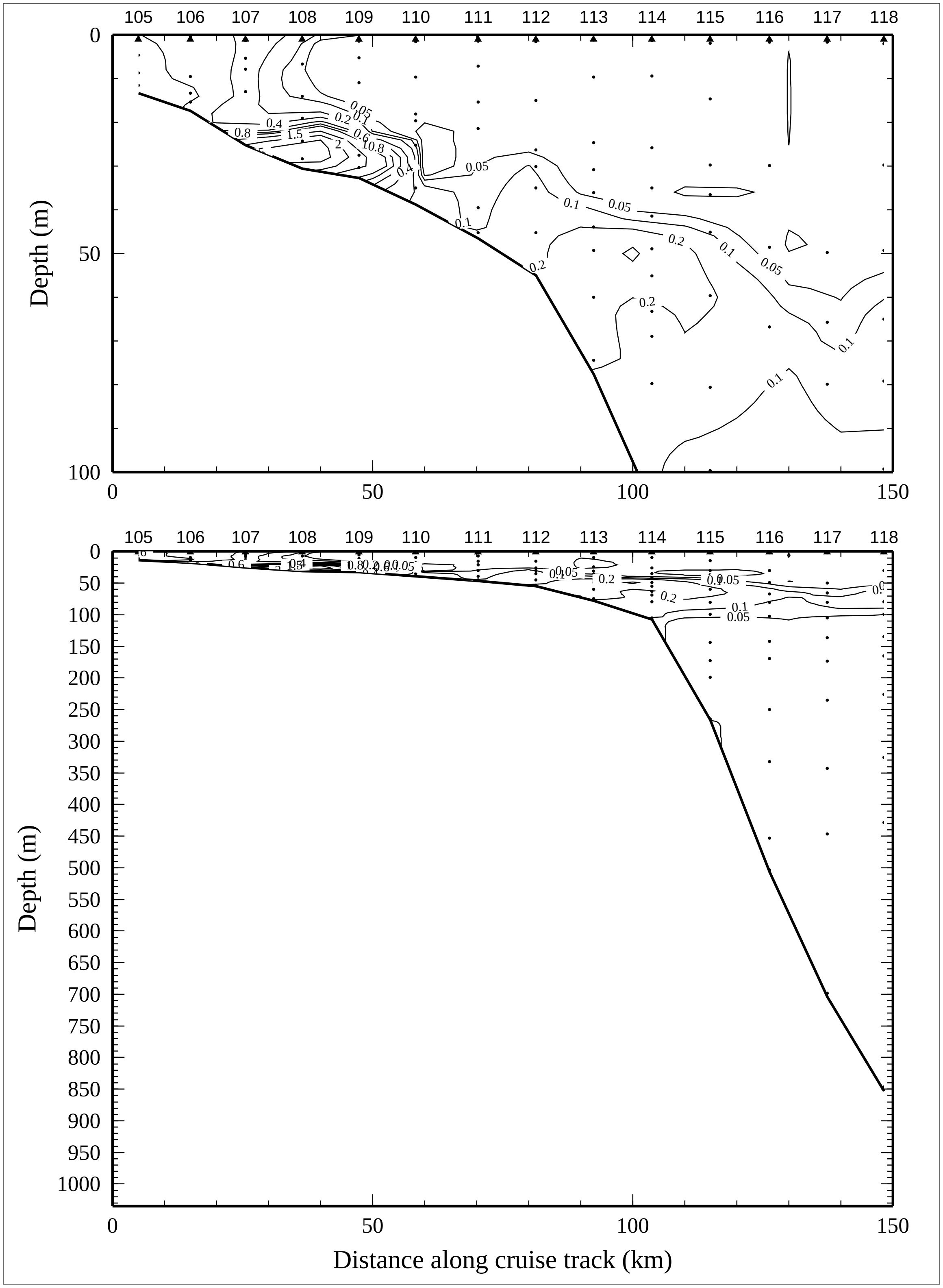

Figure 8.5.13. Nitrite (μmol·l-1) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

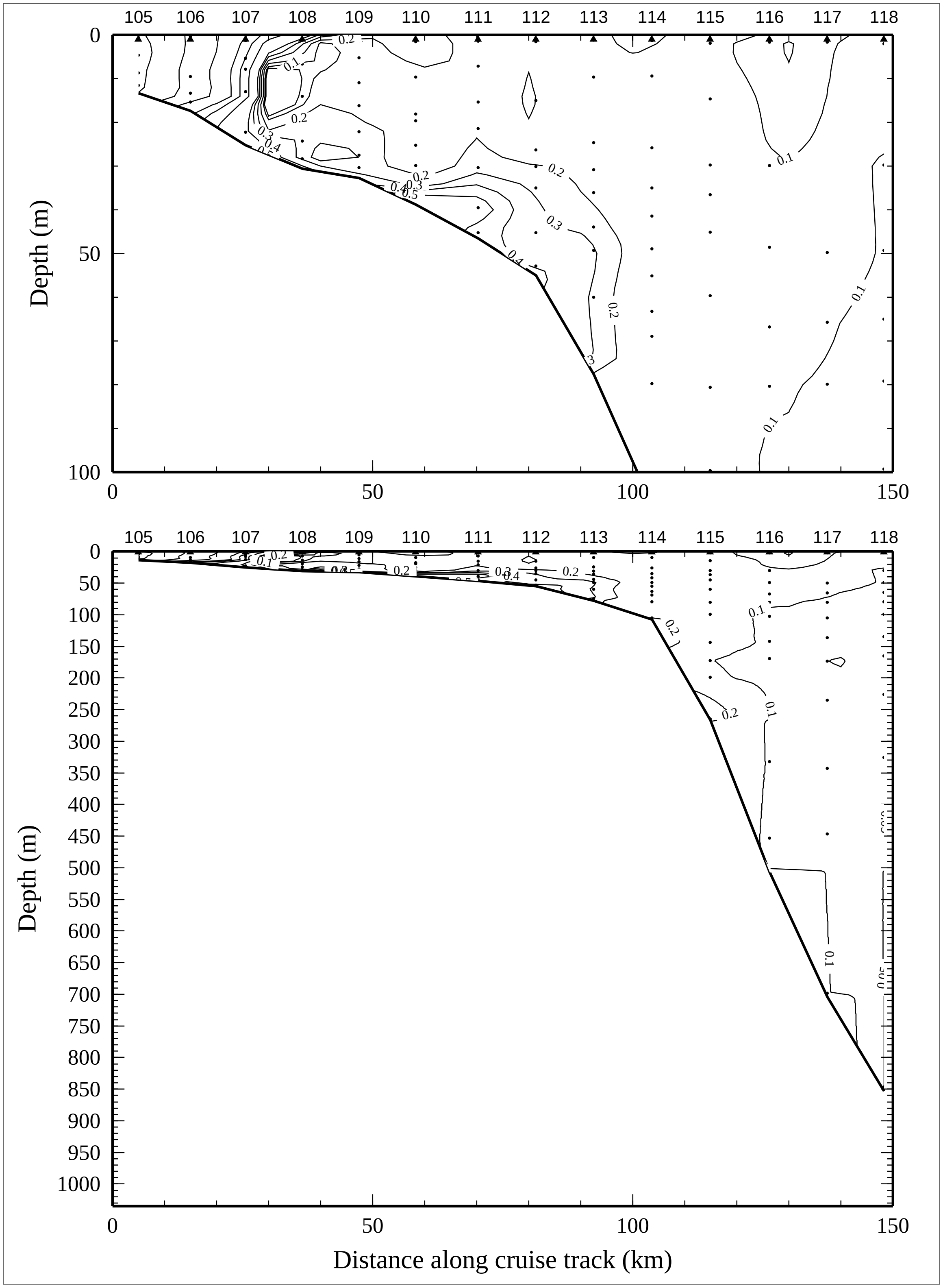

Figure 8.5.14. Ammonium (µmol·l^{-1}) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

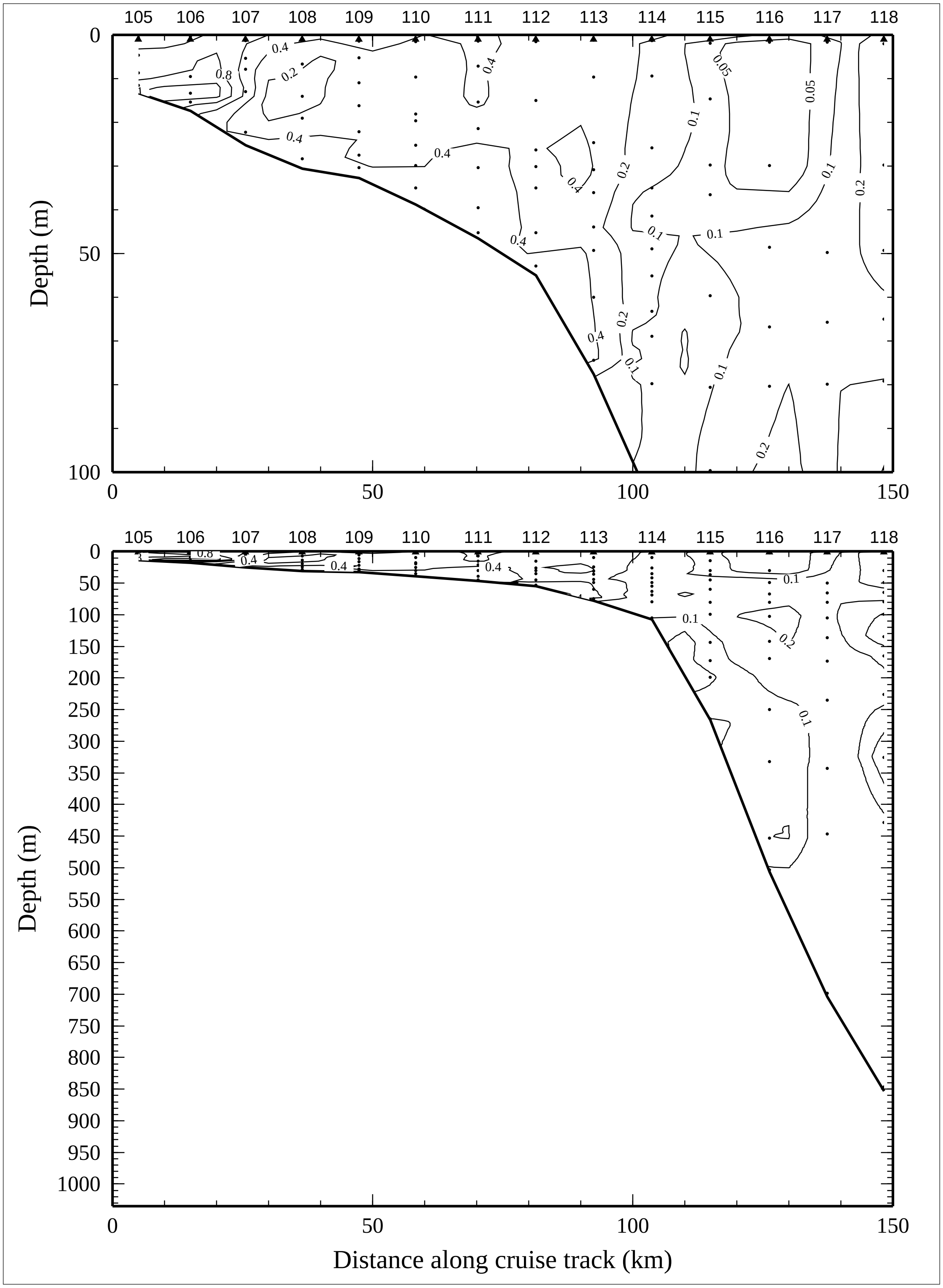

Figure 8.5.15. Urea ($\mu mol \cdot l^{-1}$) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

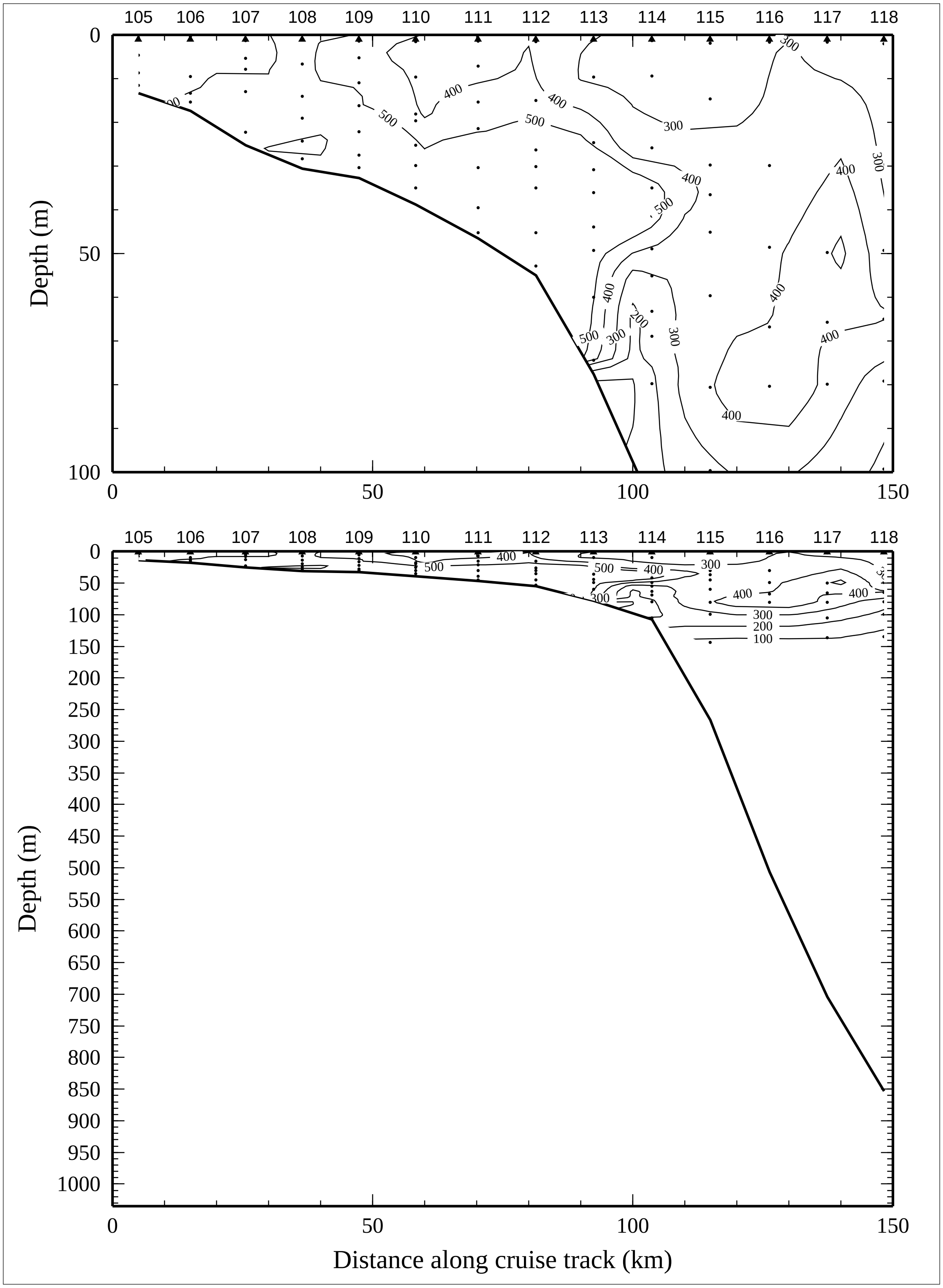

Figure 8.5.16. Chlorophyll a (ng·l-1) on line 5 of LATEX A survey H08, 23 April - 7 May 1994.

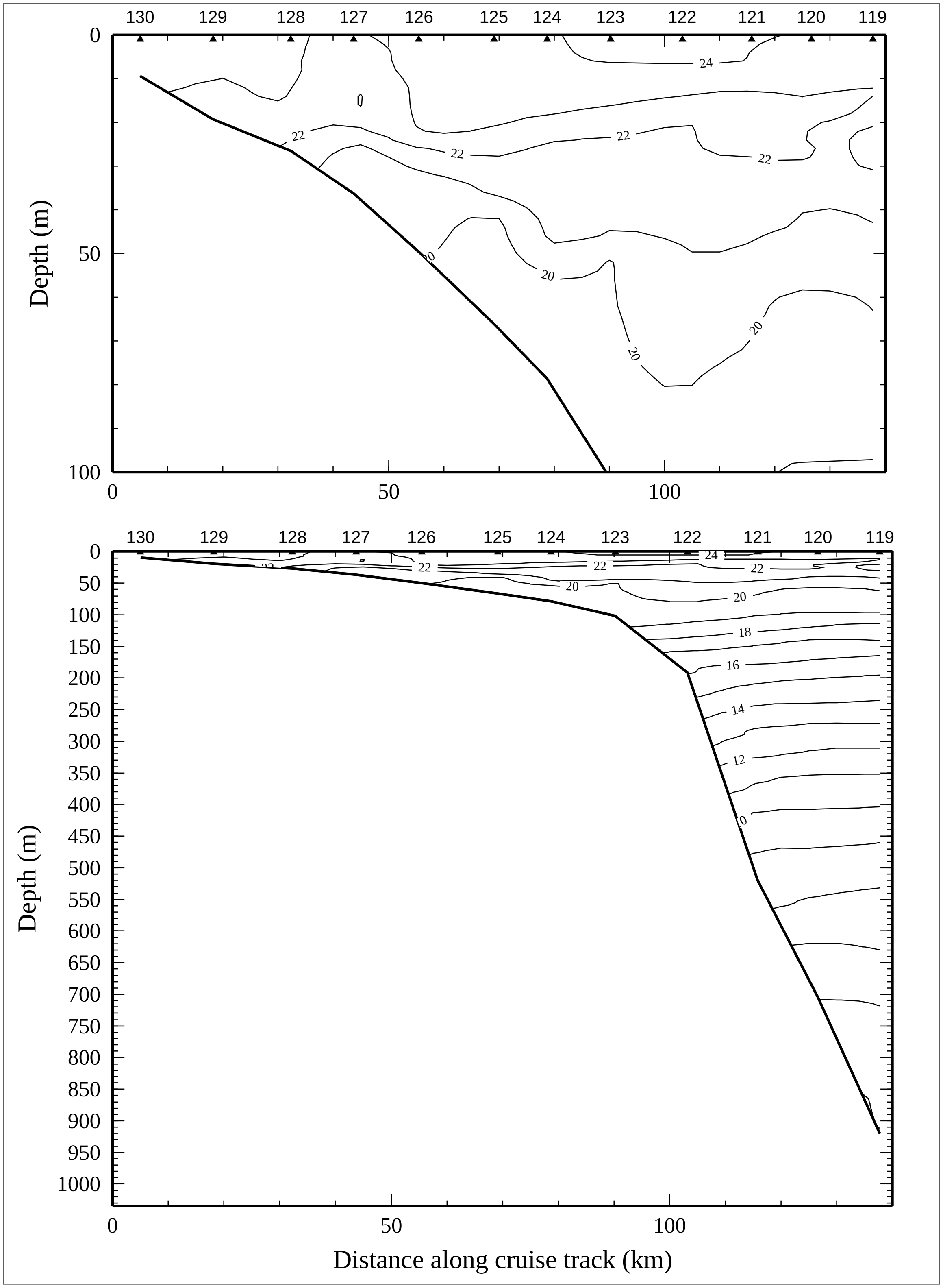

Figure 8.6.1. Potential temperature (˚C) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

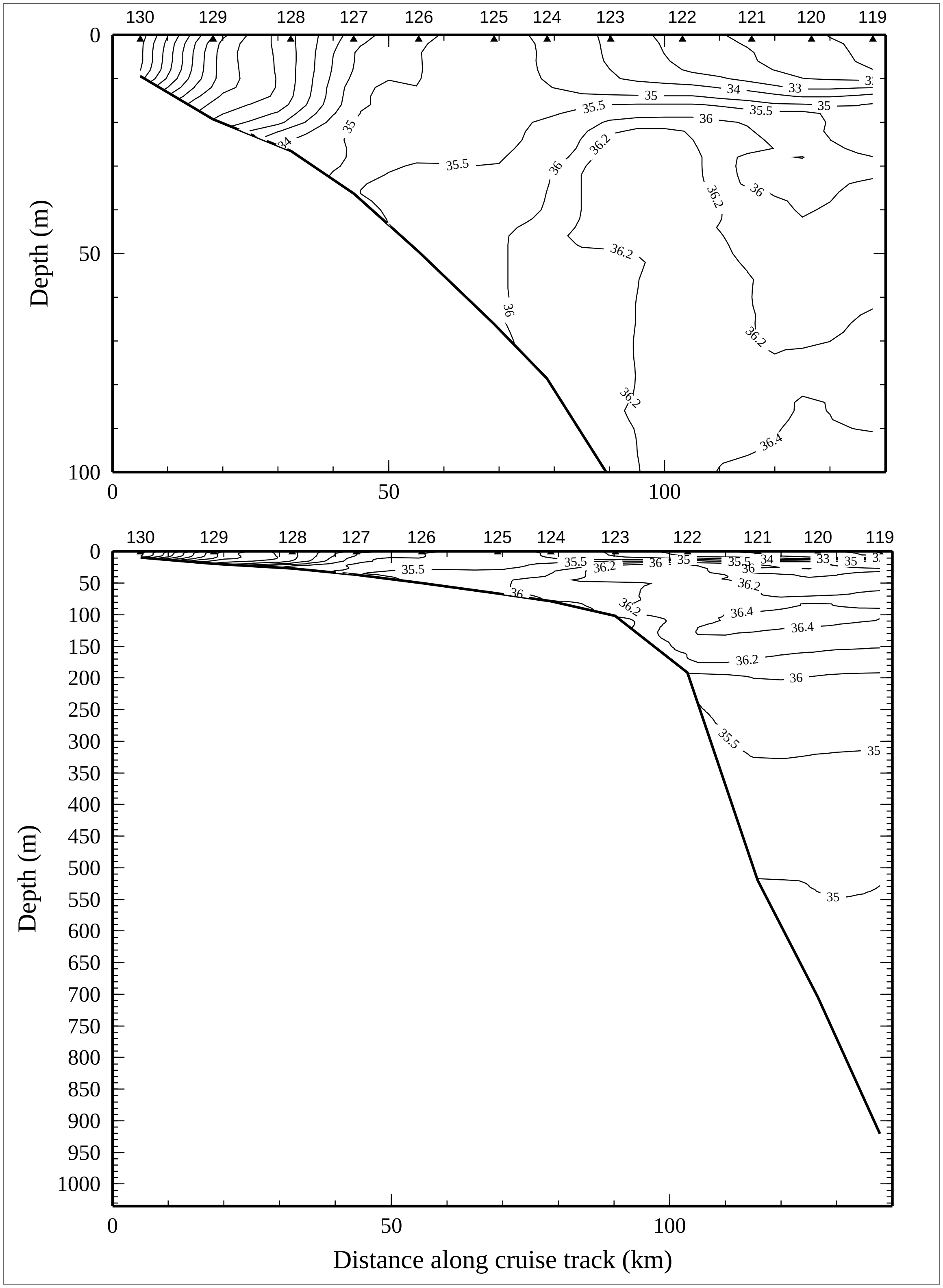

Figure 8.6.2. Salinity, derived from CTD data, on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

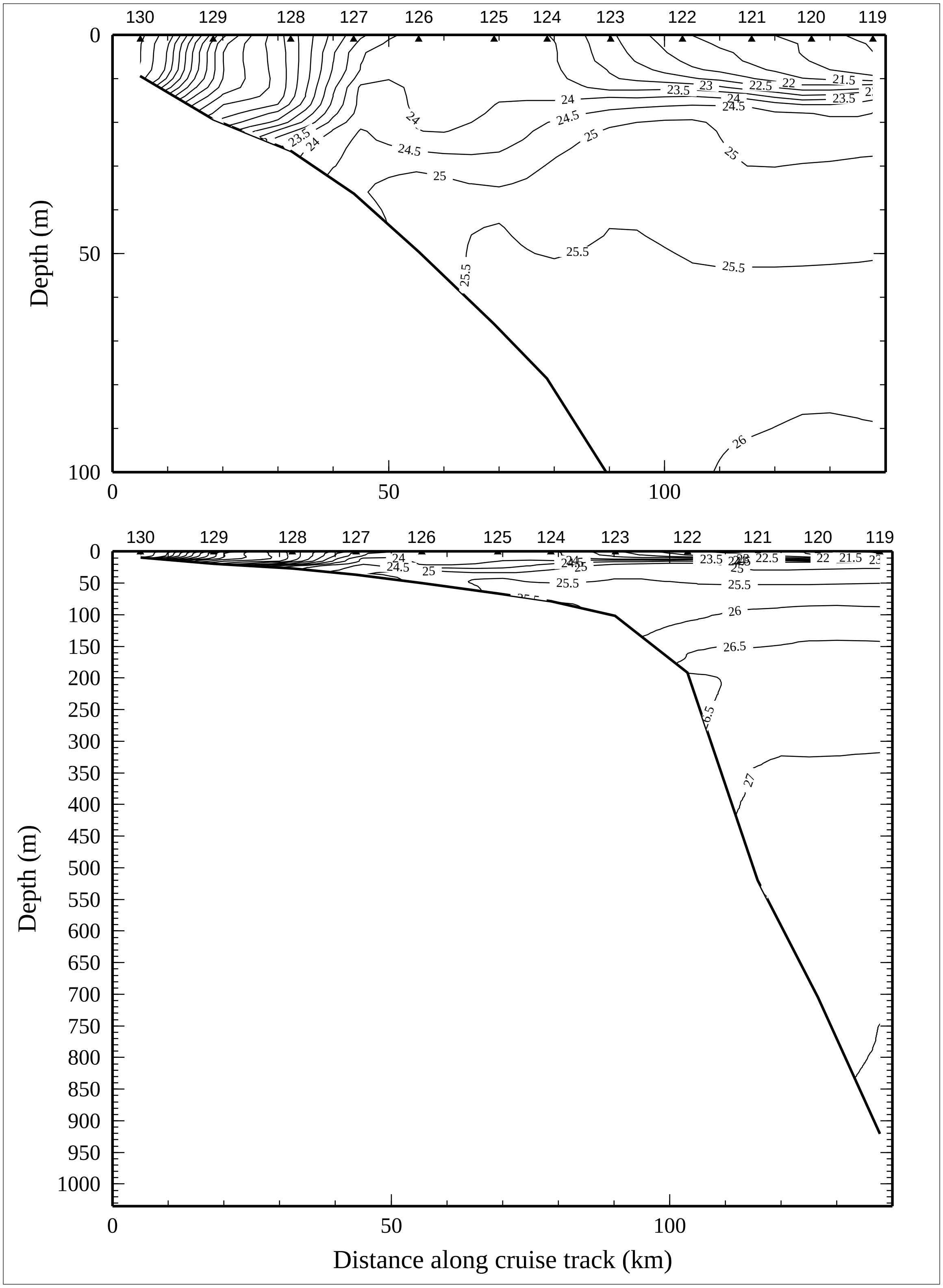

Figure 8.6.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

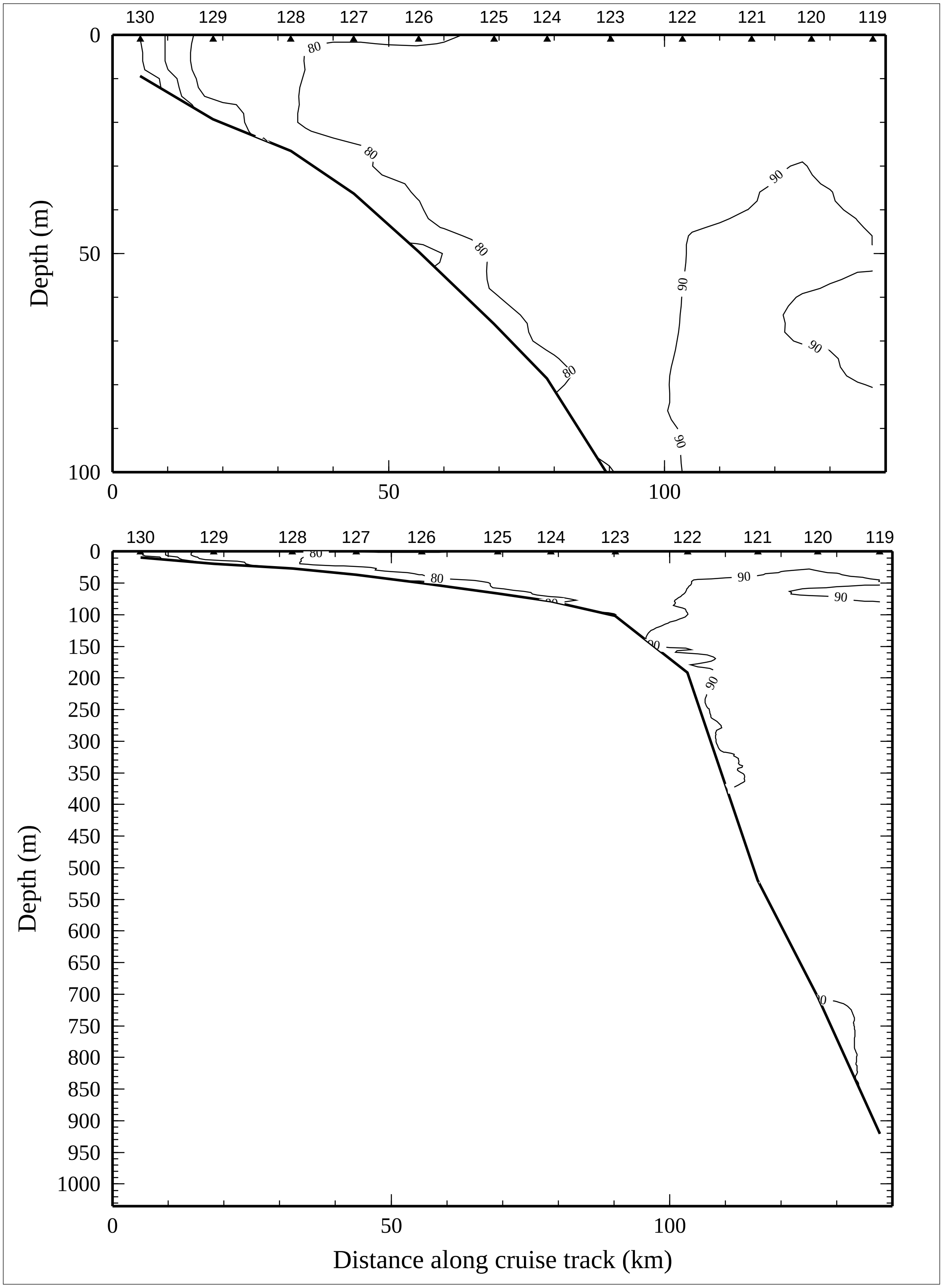

Figure 8.6.4. Percent transmission (660 nm wave length; 25-cm path length) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

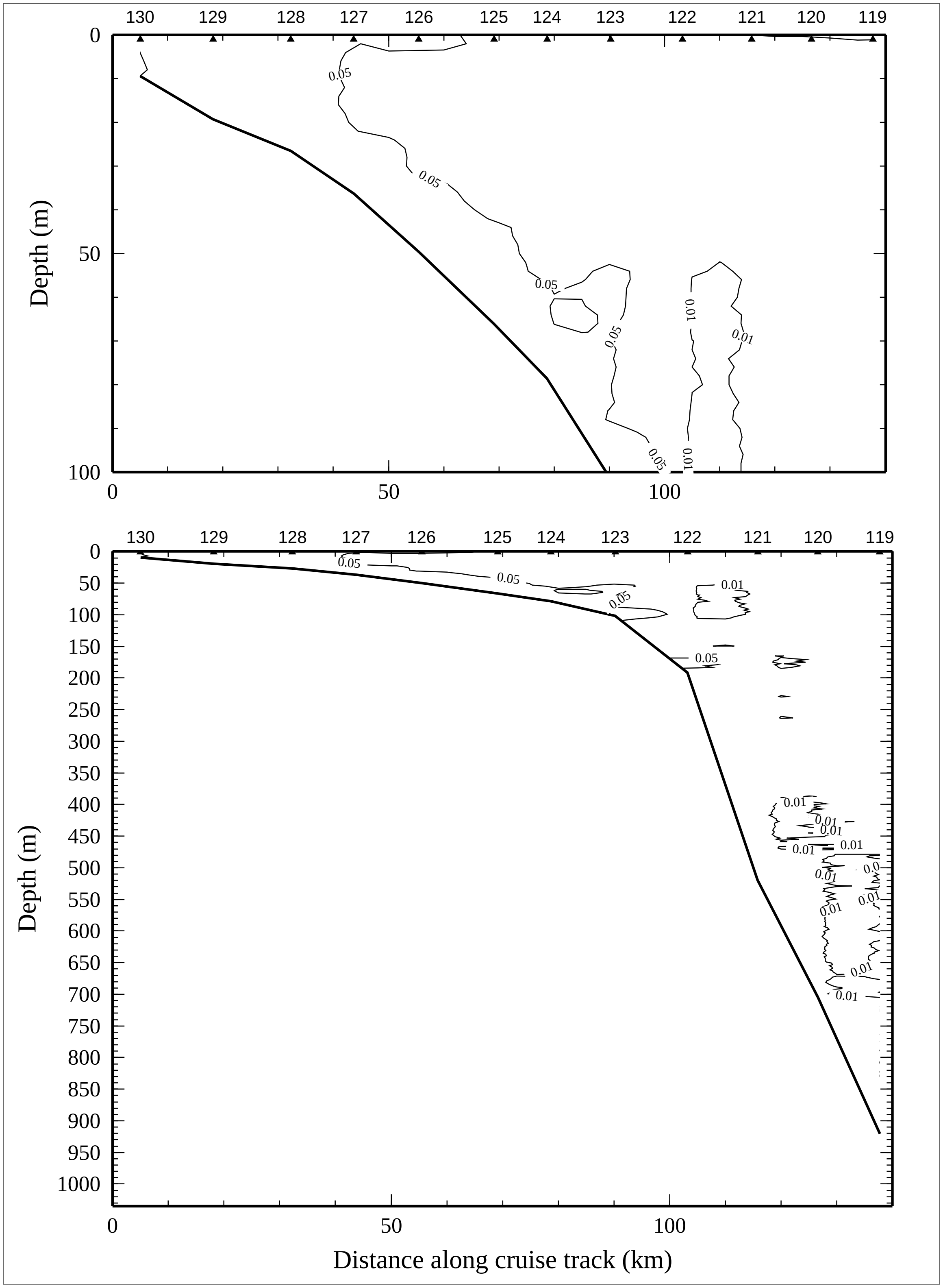

Figure 8.6.5. Optical backscatterance (voltage) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

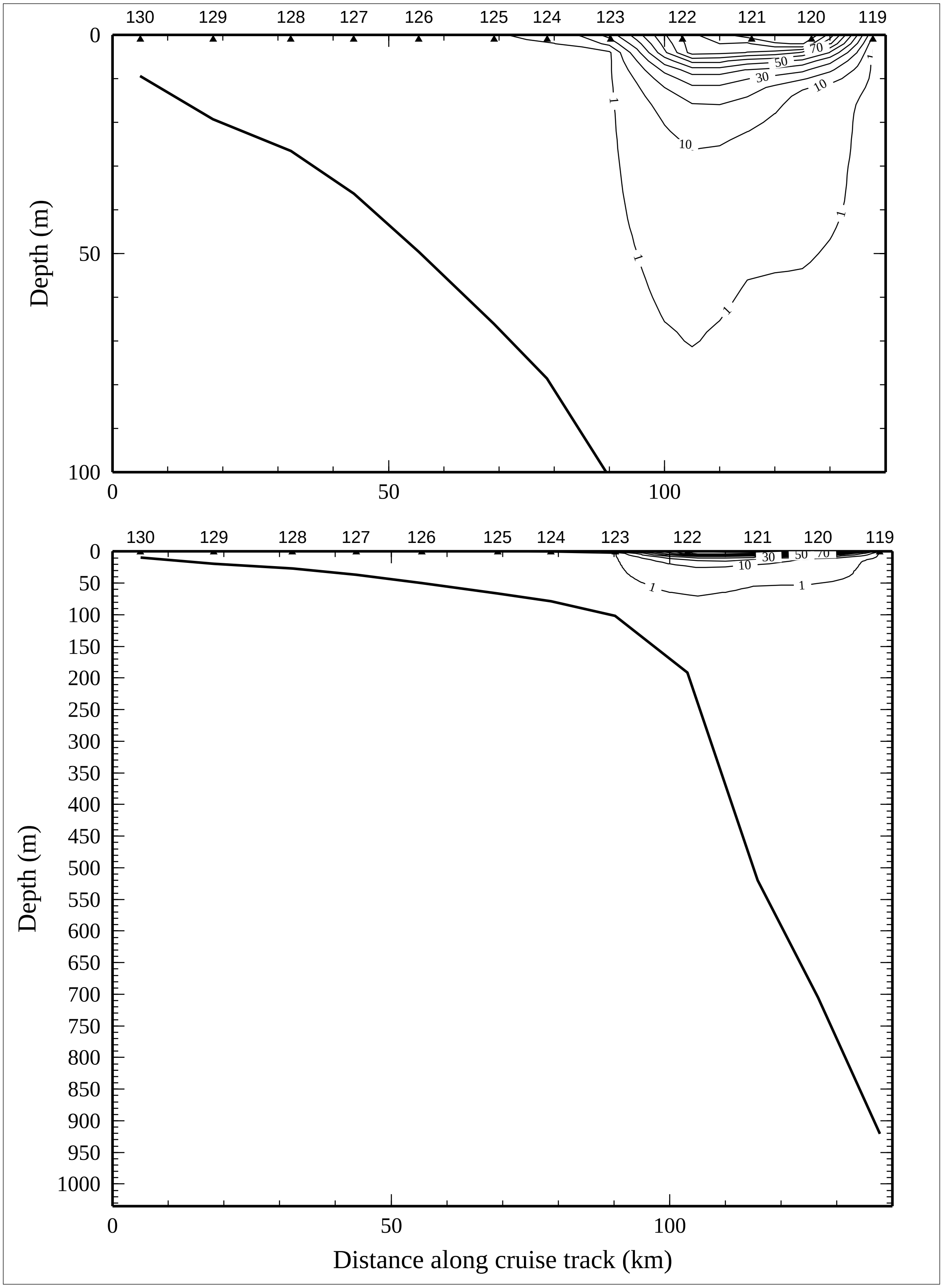

Figure 8.6.6. Downwelling irradiance as percent of surface irradiance on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

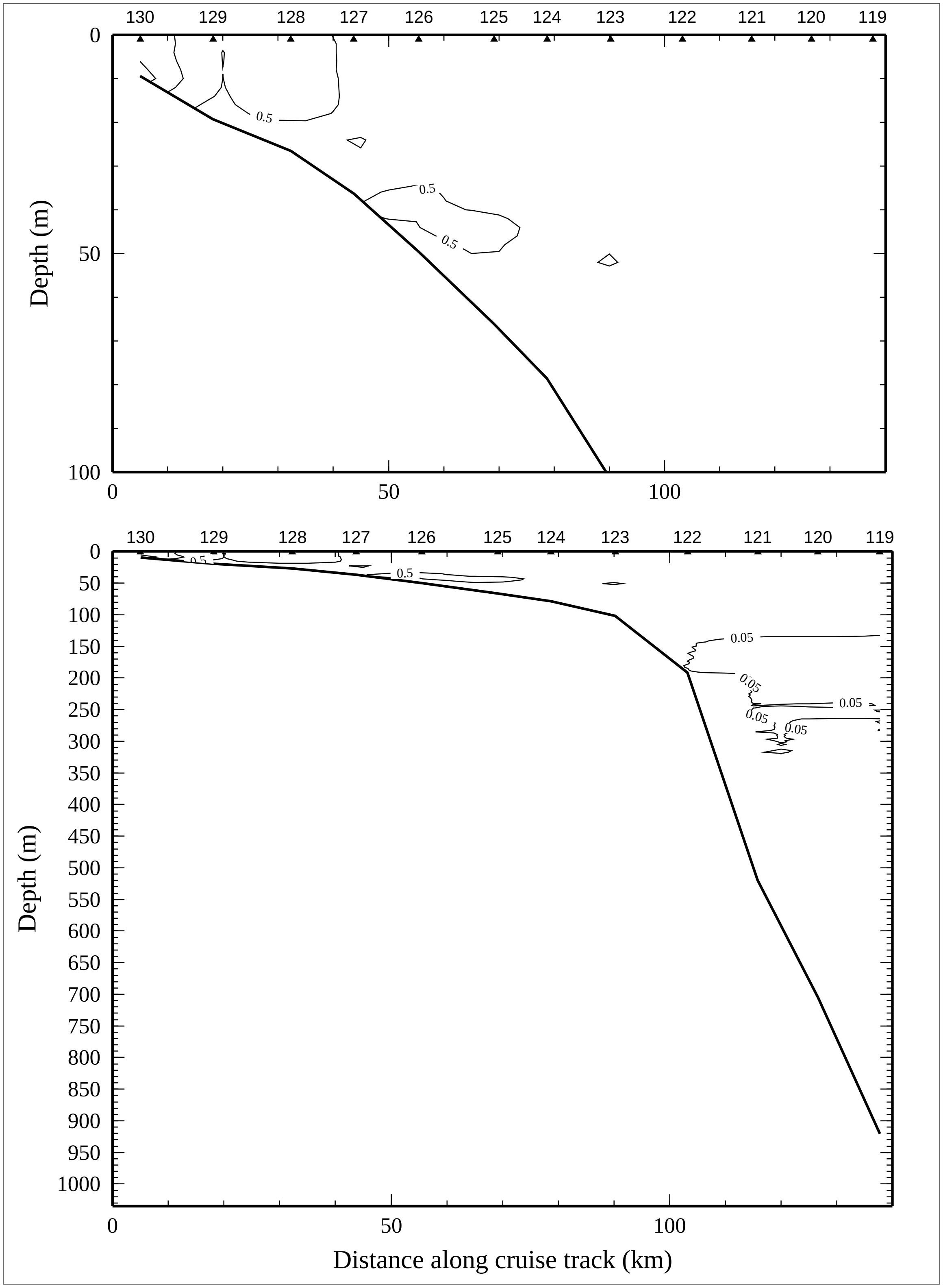

Figure 8.6.7. Relative fluorescence on line 6 of LATEX A survey H08,
23 April - 7 May 1994.

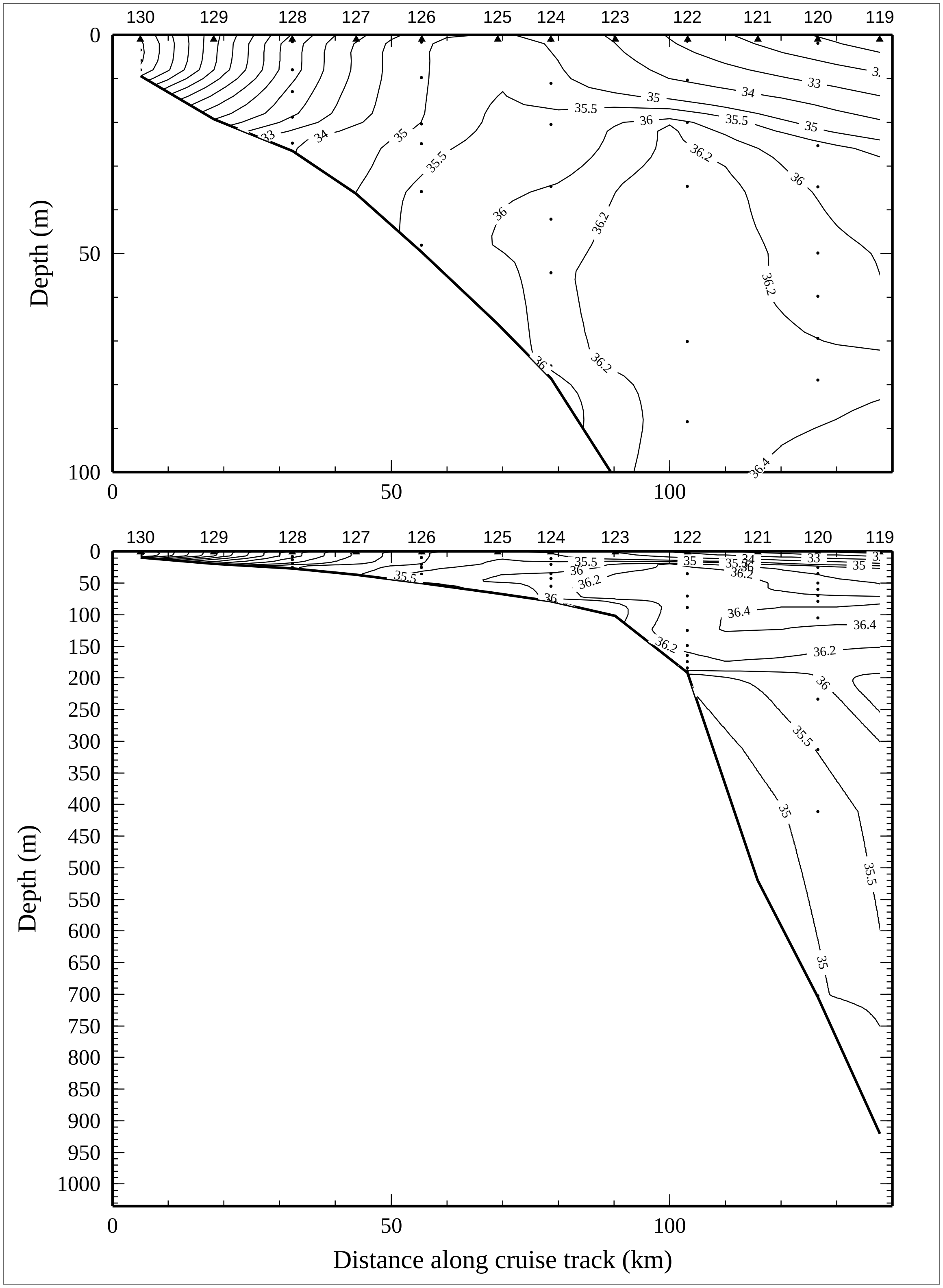

Figure 8.6.8. Bottle salinity on line 6 of LATEX A survey H08,
23 April - 7 May 1994.

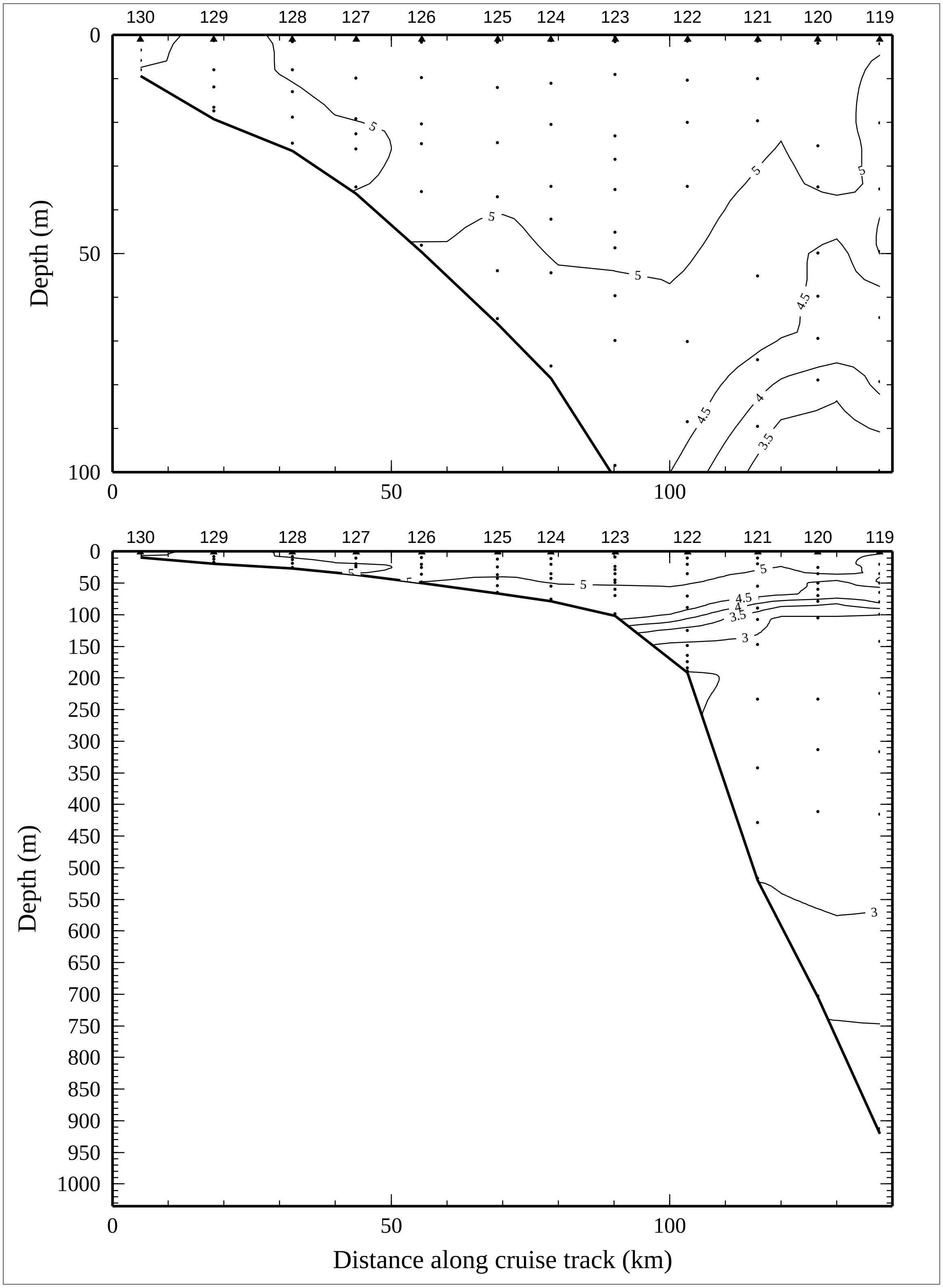

Figure 8.6.9. Dissolved oxygen (ml·l^{-1}) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

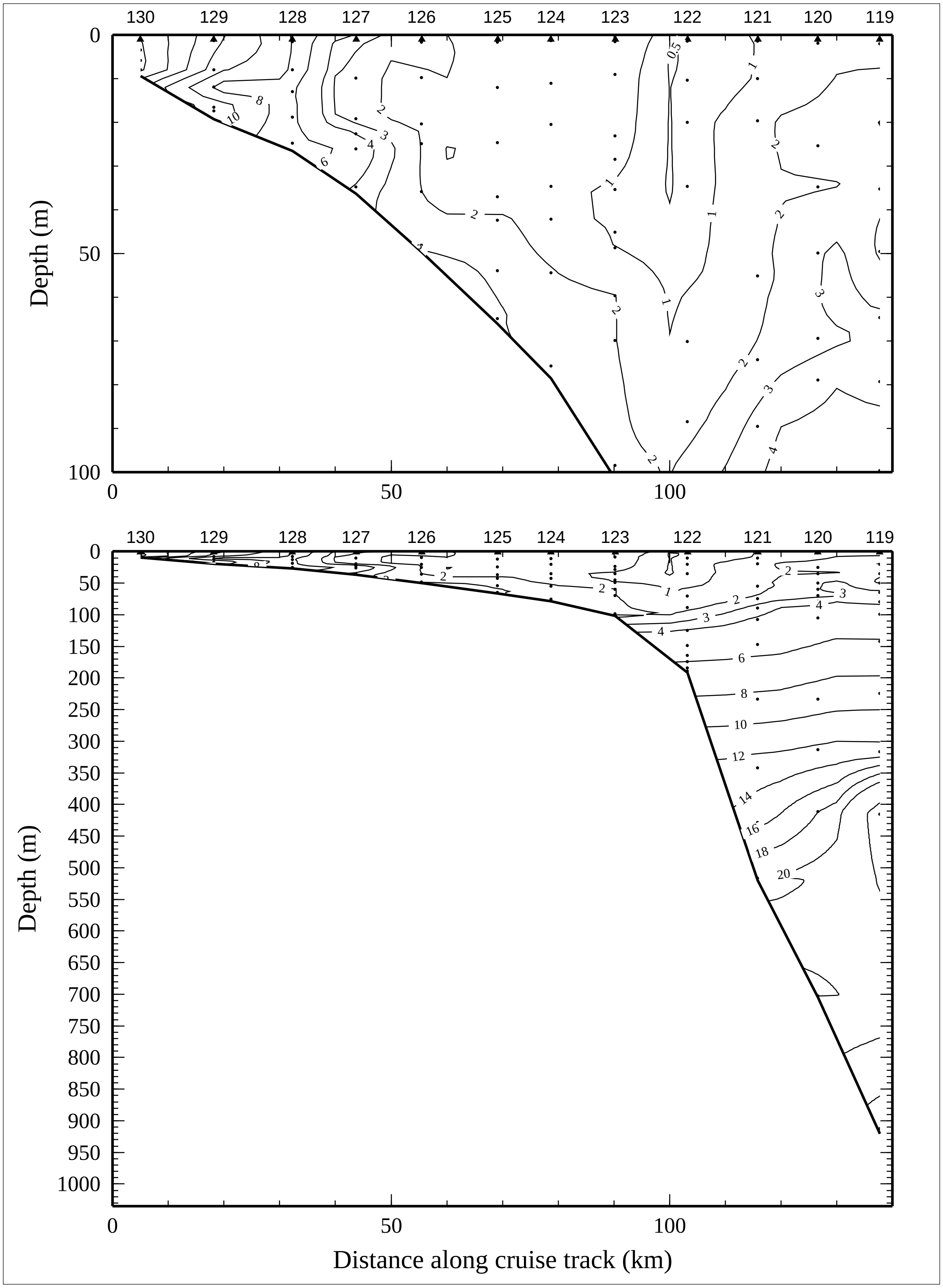

Figure 8.6.10. Silicate (μmol·l-1) on line 6 of LATEX A survey H08,
23 April - 7 May 1994.

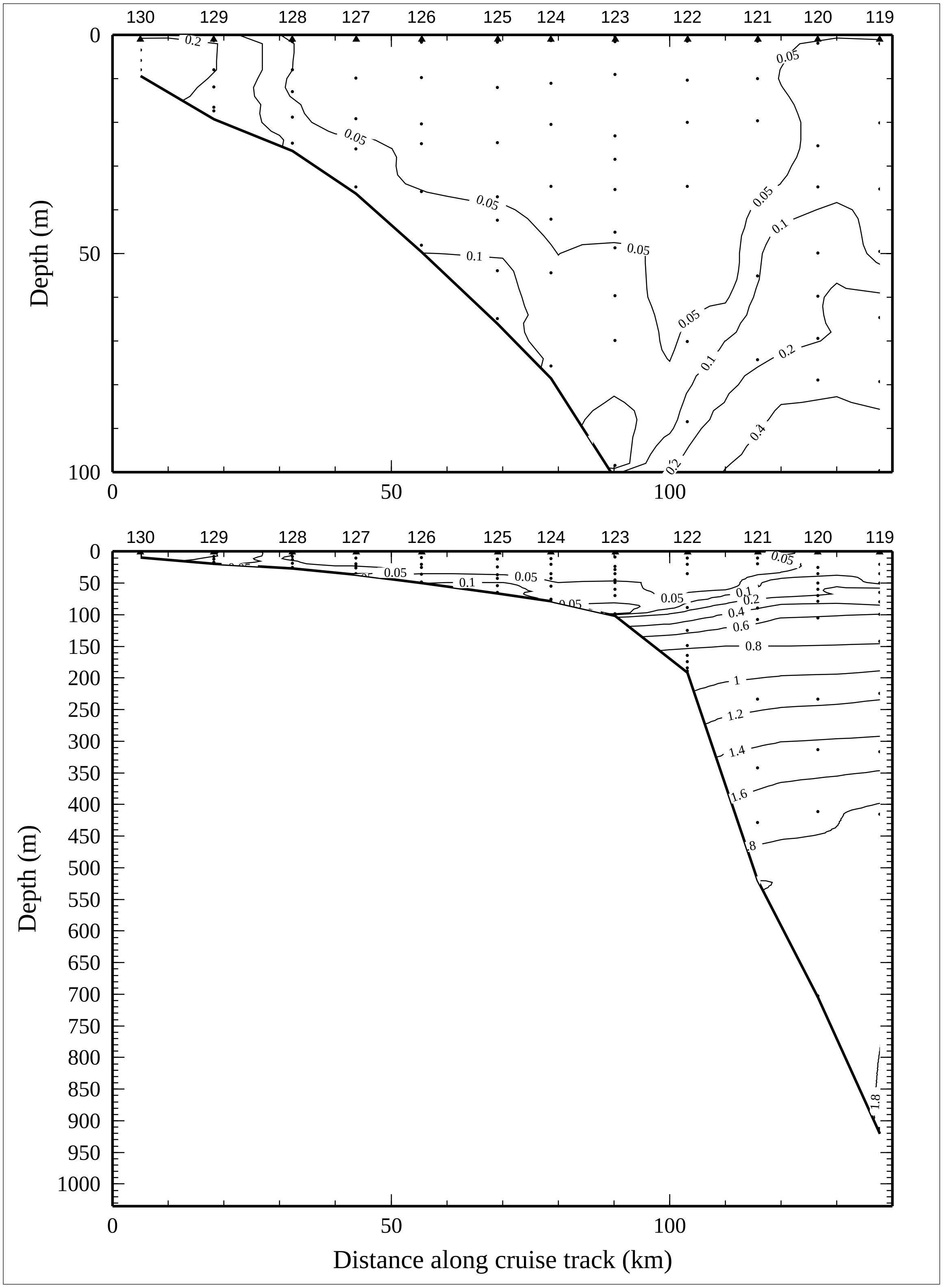

Figure 8.6.11. Phosphate (μmol·l-1) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

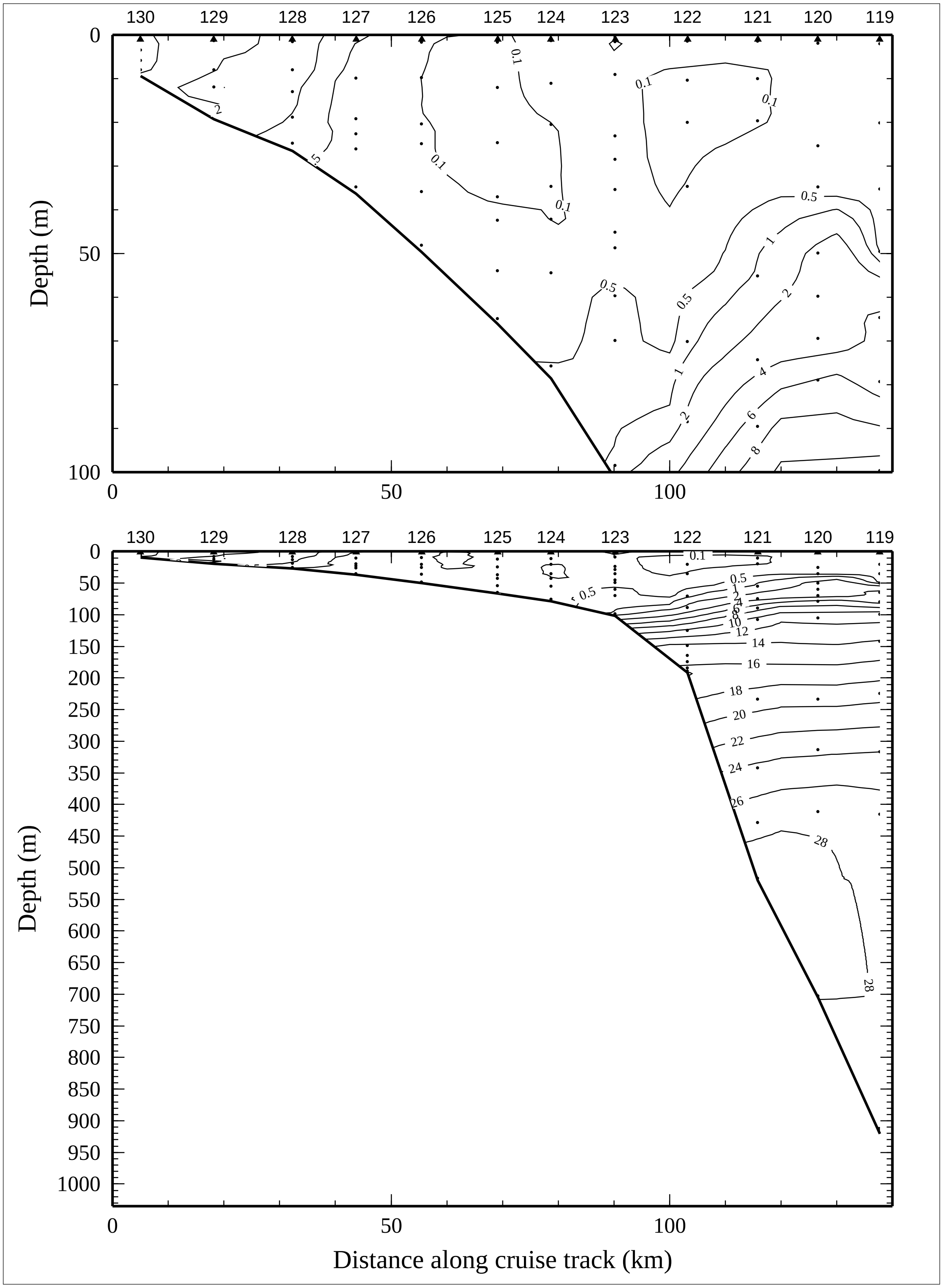

Figure 8.6.12. Nitrate (μmol·l-1) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

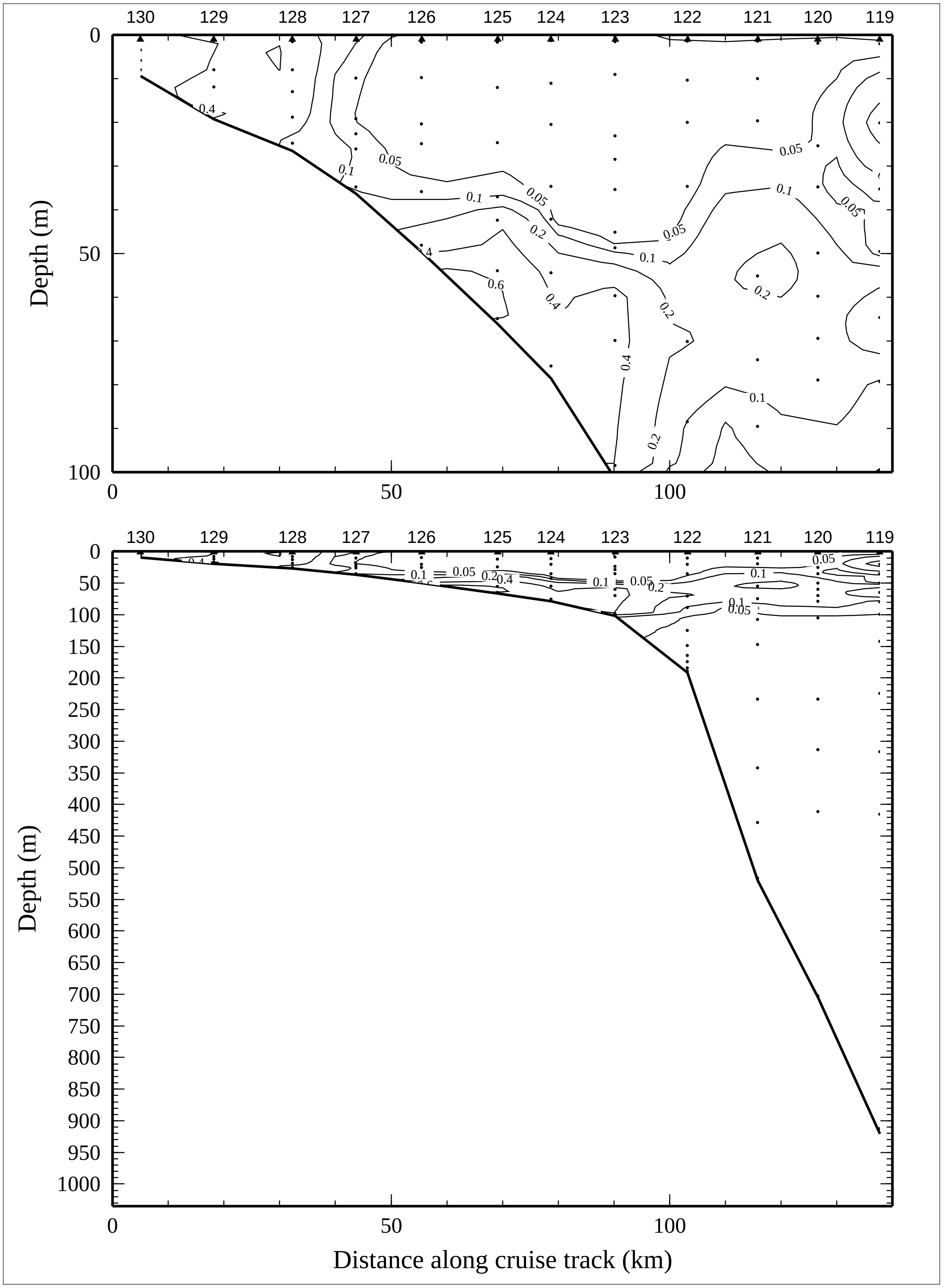

Figure 8.6.13. Nitrite (μmol·l[-1]) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

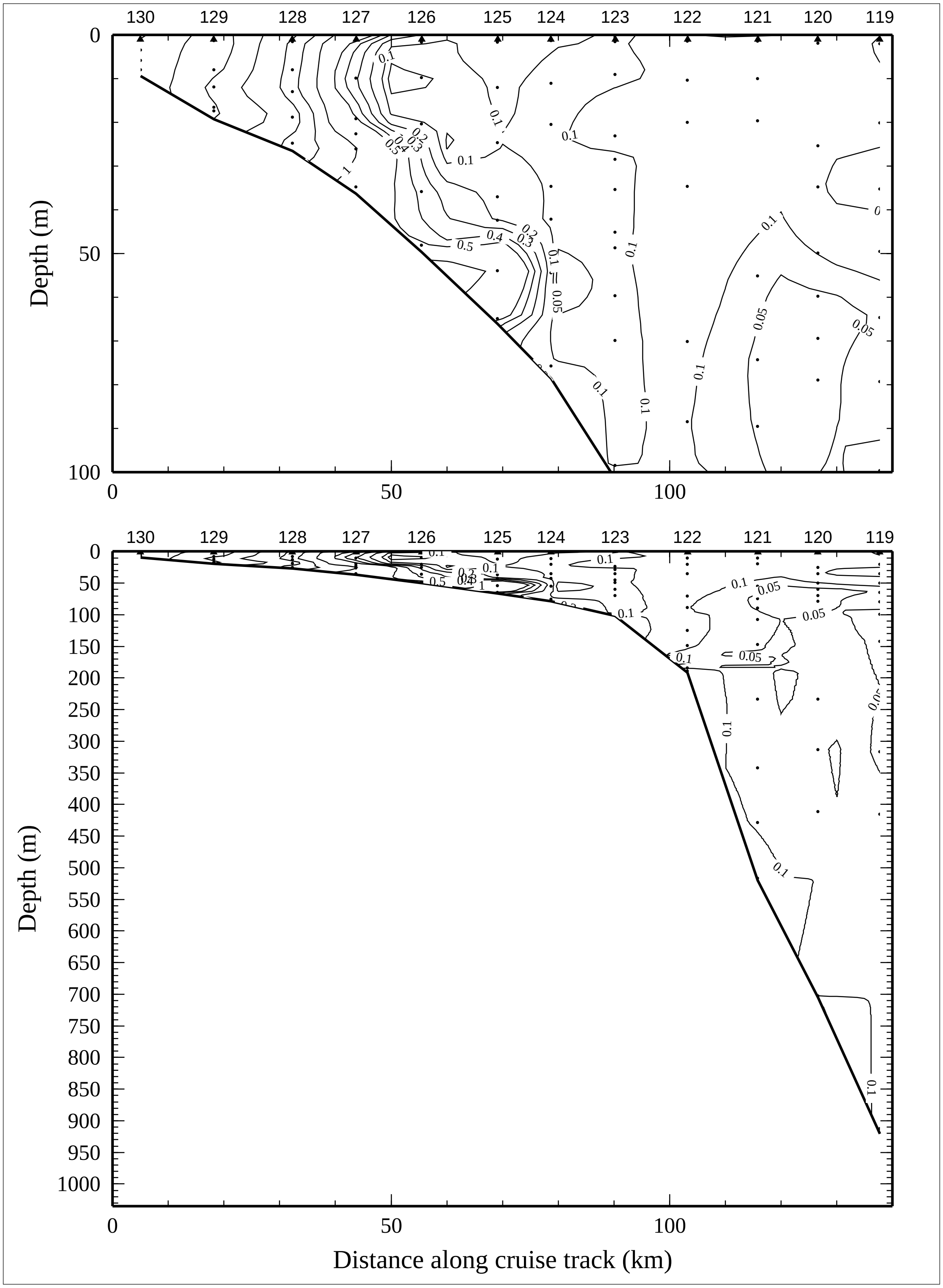

Figure 8.6.14. Ammonium (µmol·l^{-1}) on line 6 of LATEX A survey H08,
23 April - 7 May 1994.

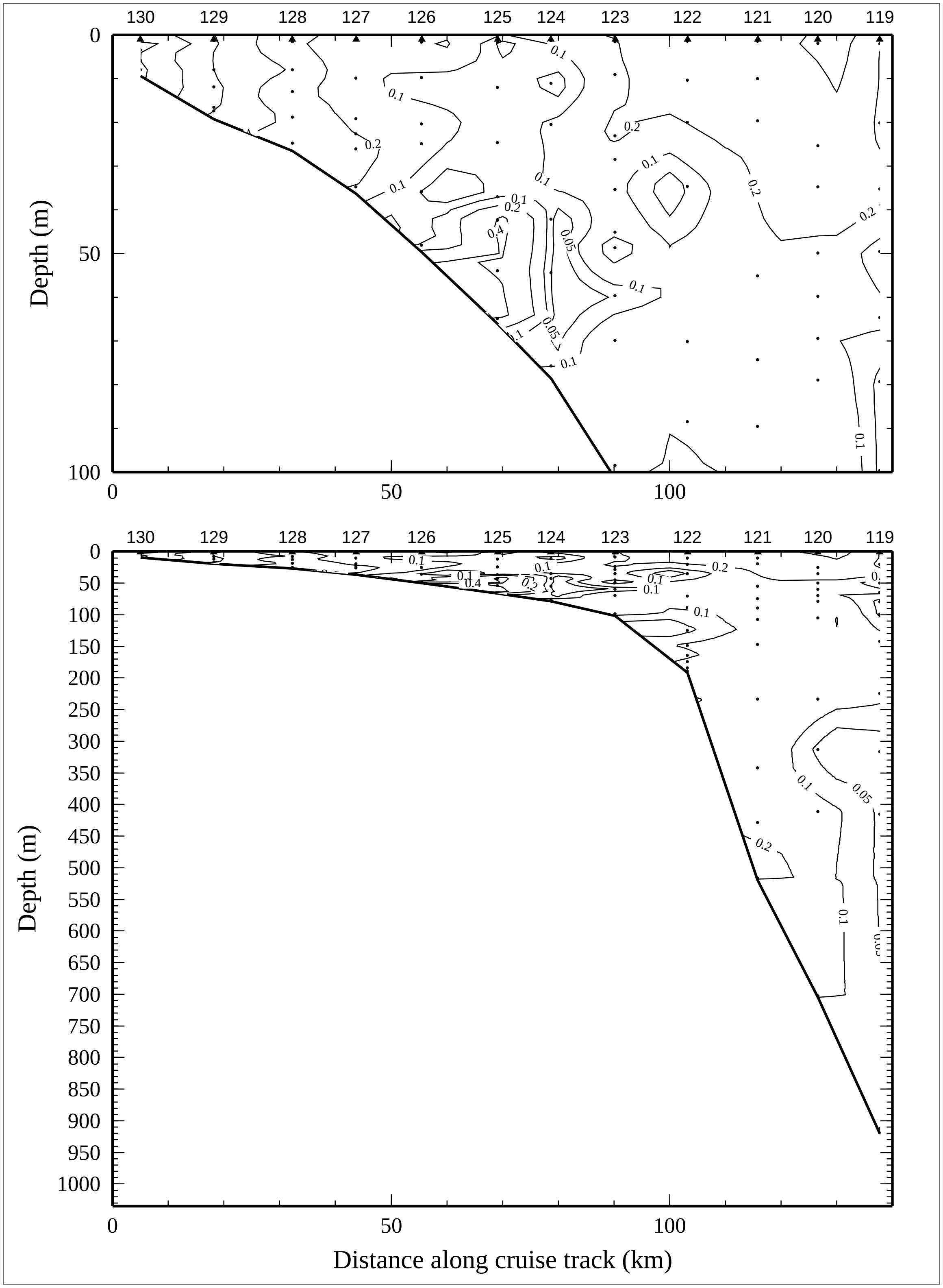

Figure 8.6.15. Urea (µmol·l-1) on line 6 of LATEX A survey H08, 23 April - 7 May 1994.

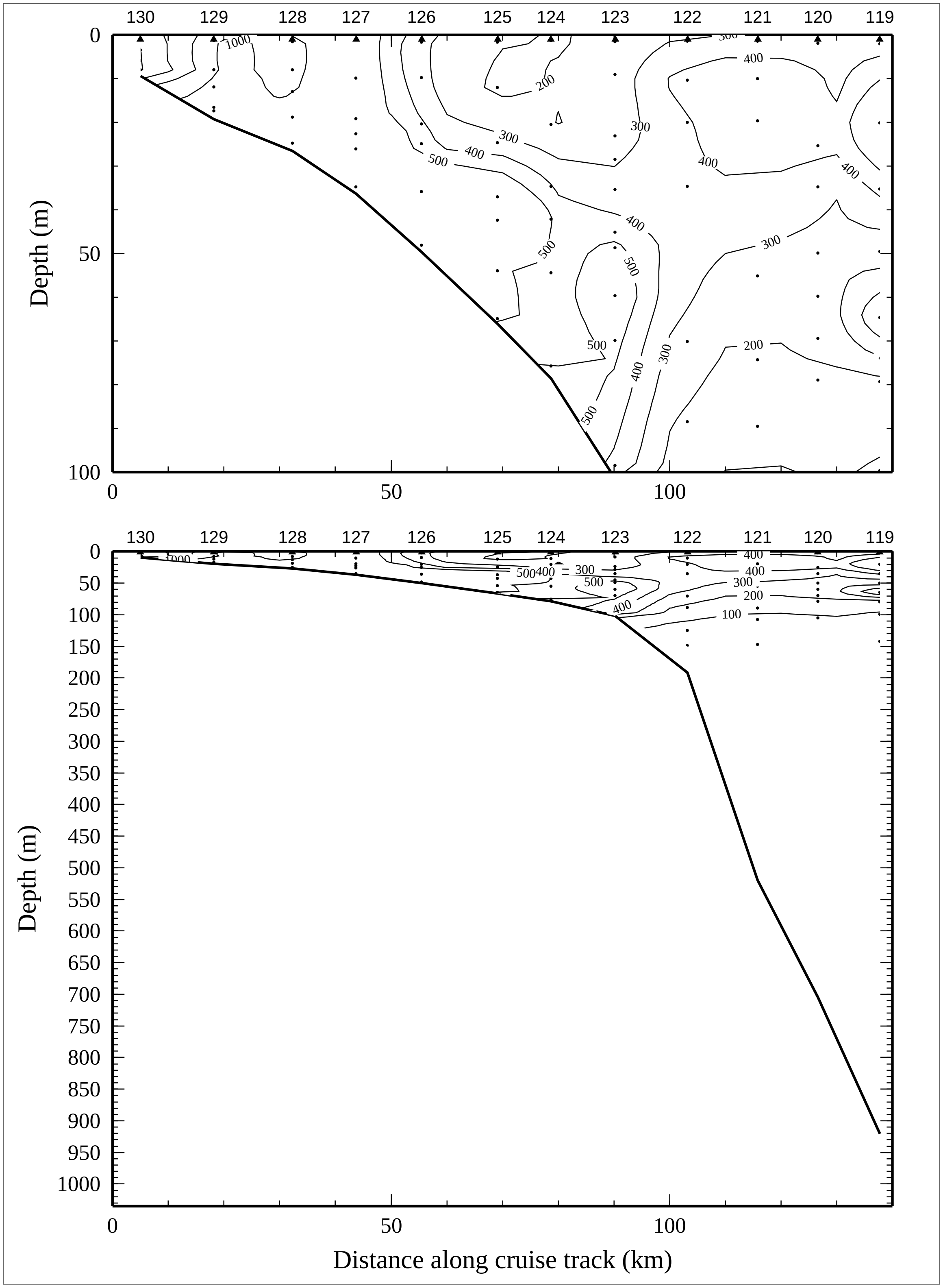

Figure 8.6.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 6 of LATEX A survey H08,
23 April - 7 May 1994.

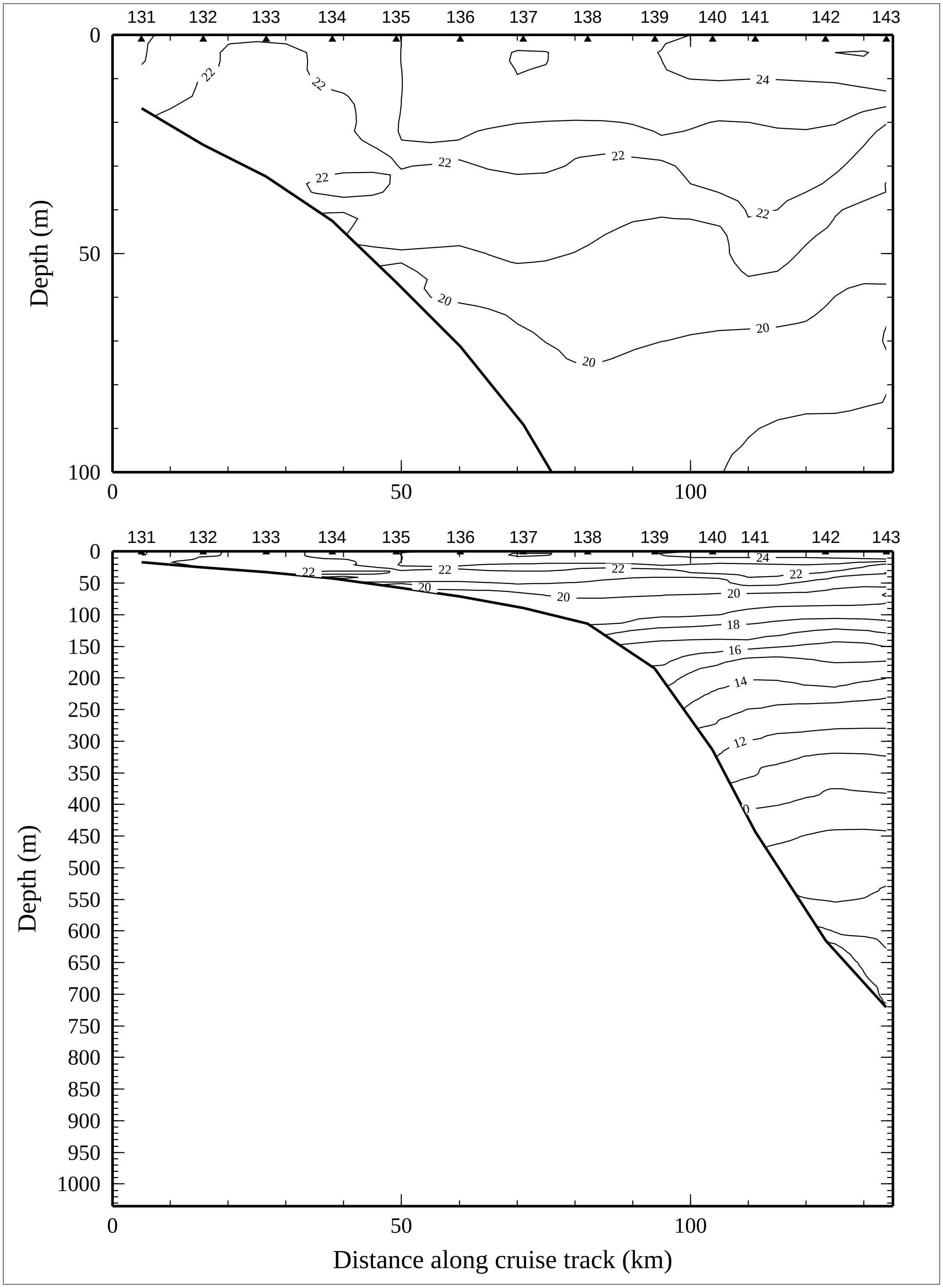

Figure 8.7.1. Potential temperature (˚C) on line 7 of LATEX A survey H08,
23 April - 7 May 1994.

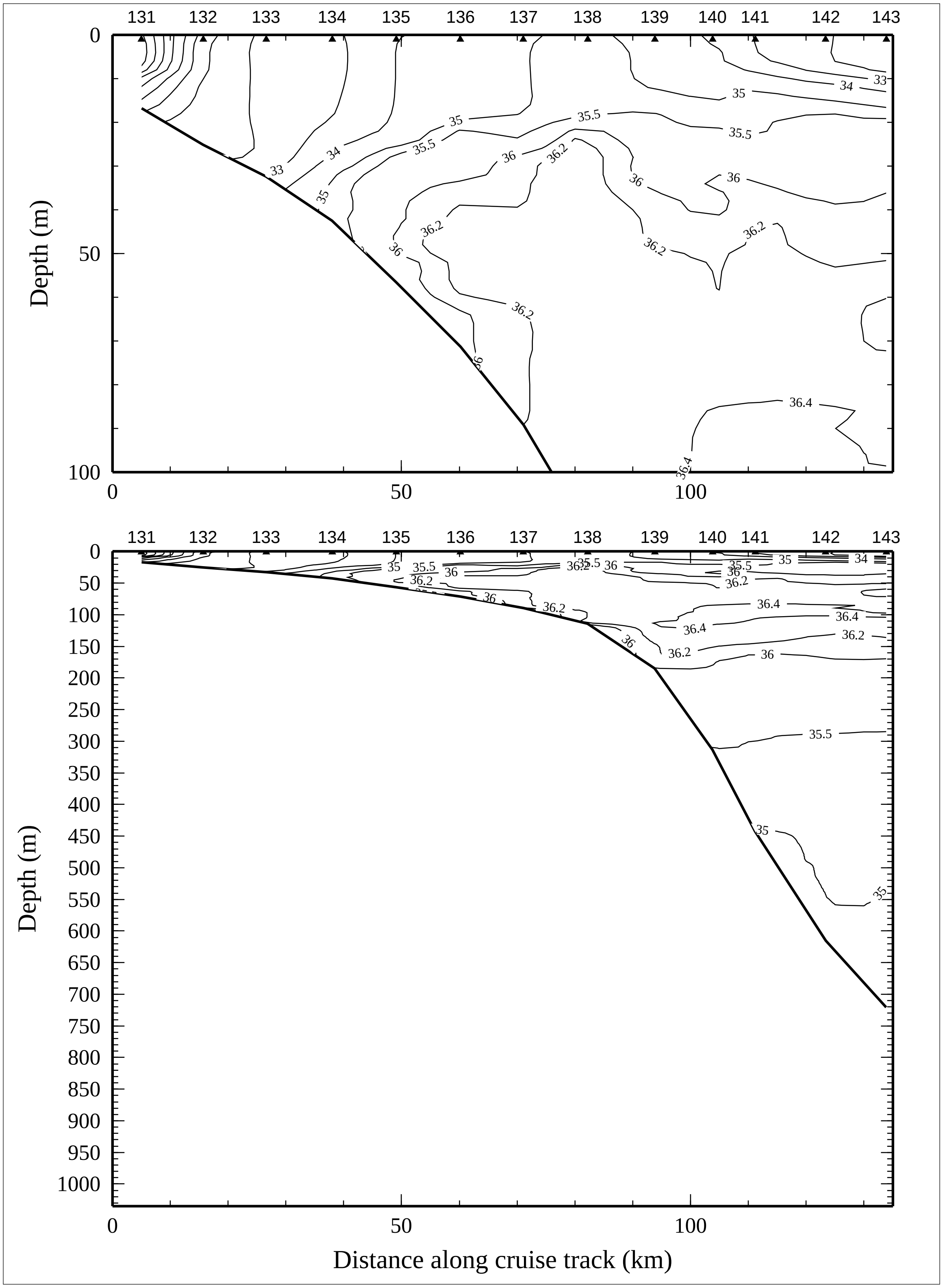

Figure 8.7.2. Salinity, derived from CTD data, on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

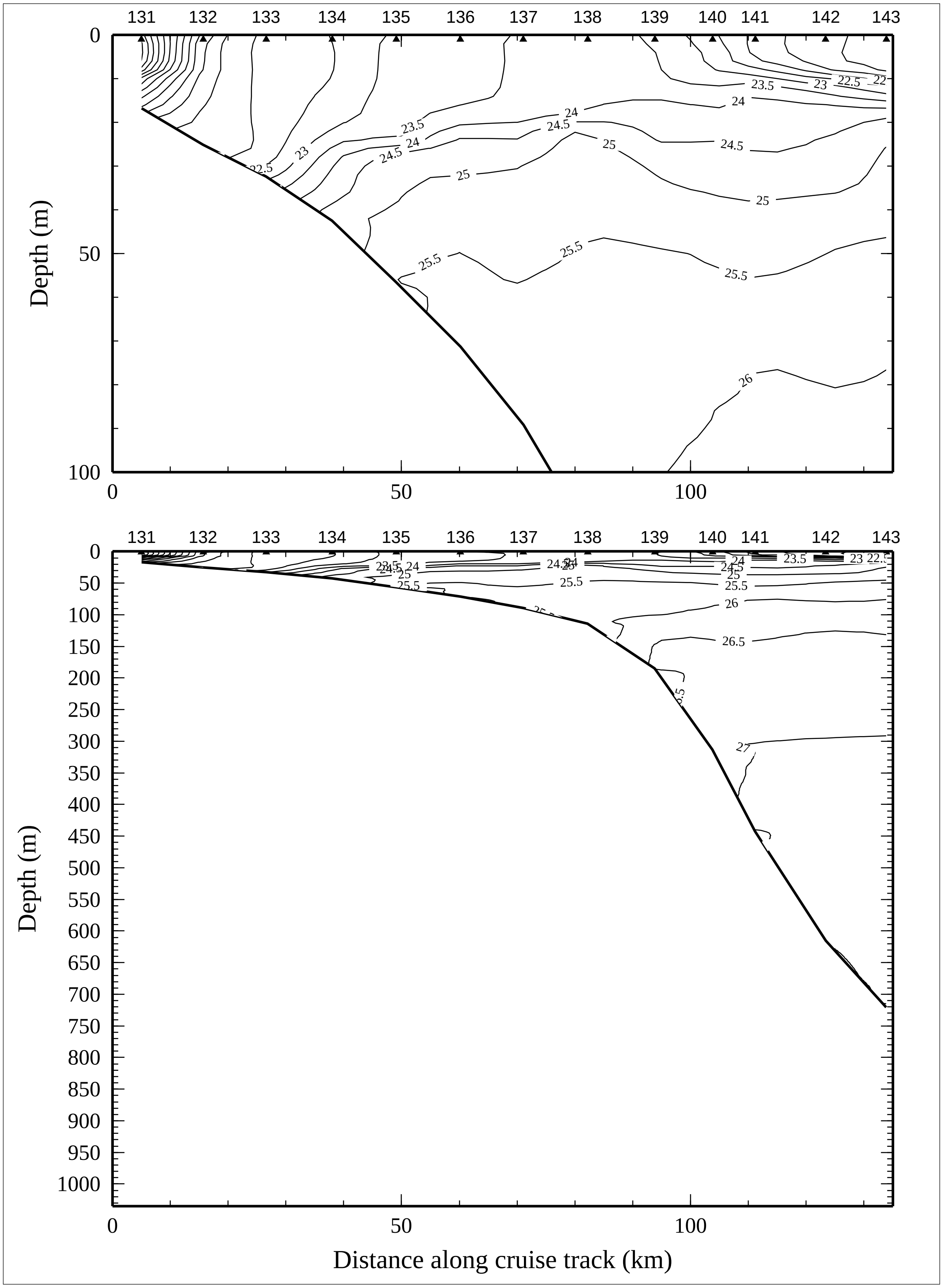

Figure 8.7.3. Density anomaly (σ_θ in kg·m^{-3}) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

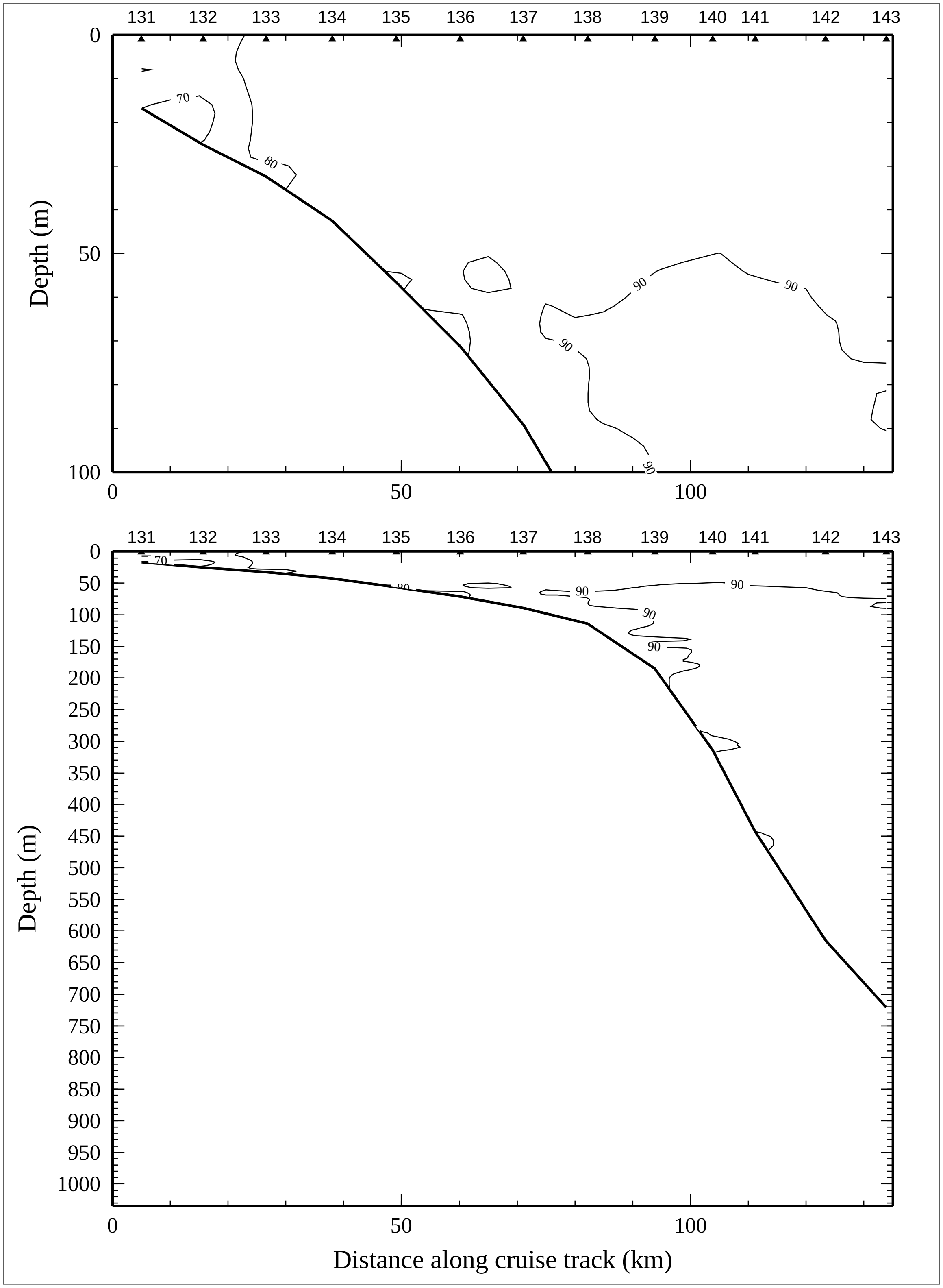

Figure 8.7.4. Percent transmission (660 nm wave length; 25-cm path length) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

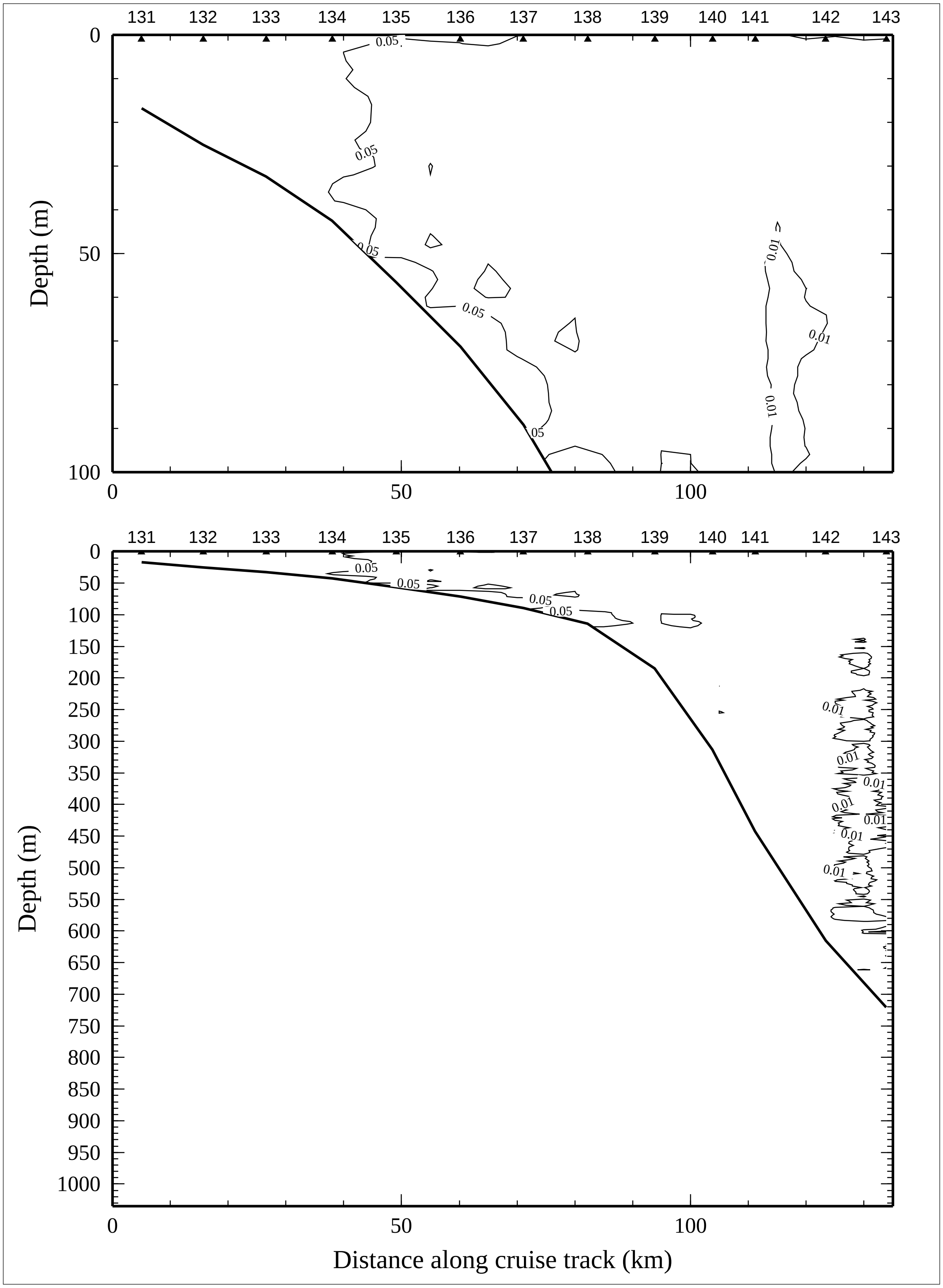

Figure 8.7.5. Optical backscatterance (voltage) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

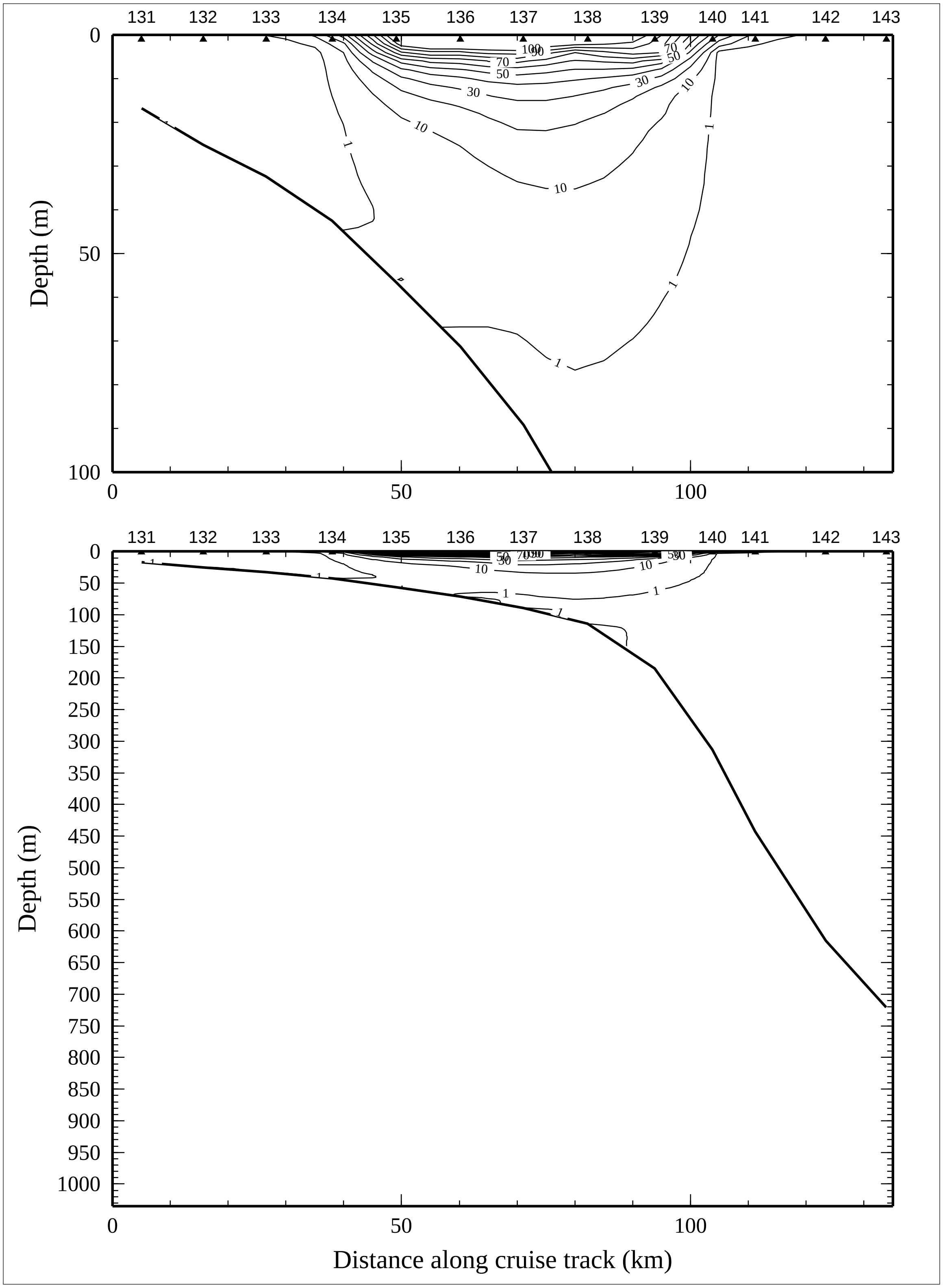

Figure 8.7.6. Downwelling irradiance as percent of surface irradiance on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

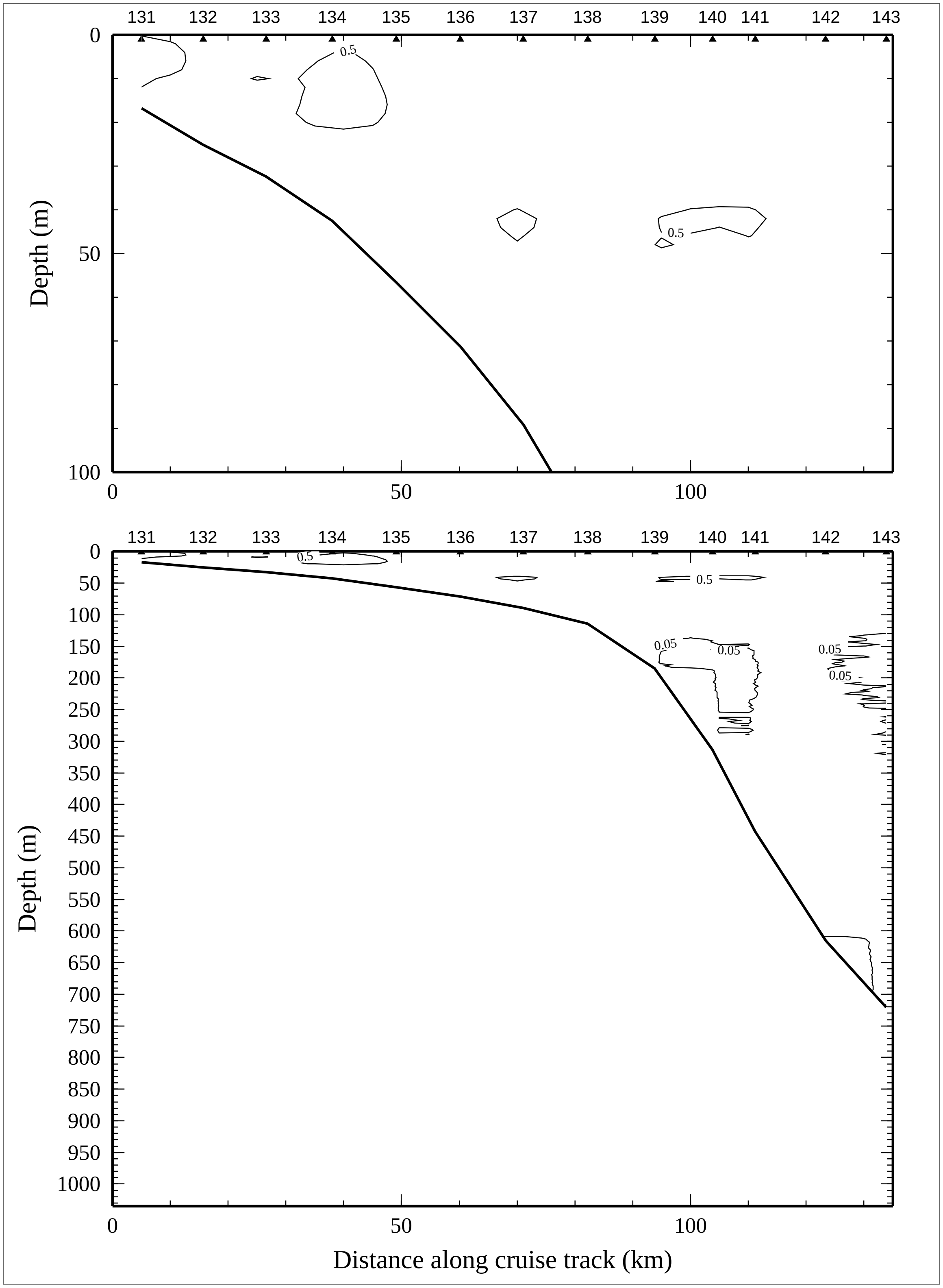

Figure 8.7.7. Relative fluorescence on line 7 of LATEX A survey H08,
23 April - 7 May 1994.

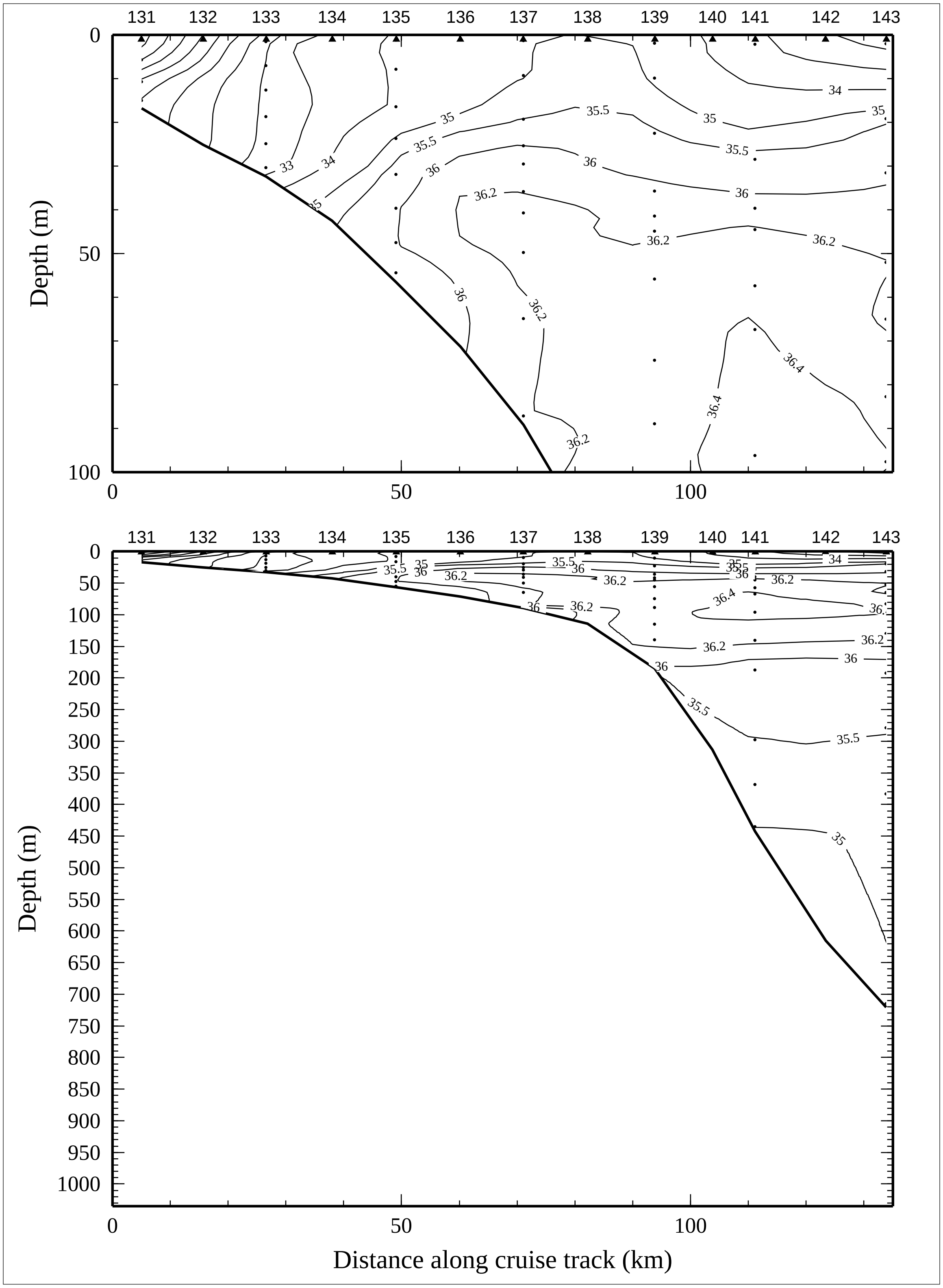

Figure 8.7.8. Bottle salinity on line 7 of LATEX A survey H08,
23 April - 7 May 1994.

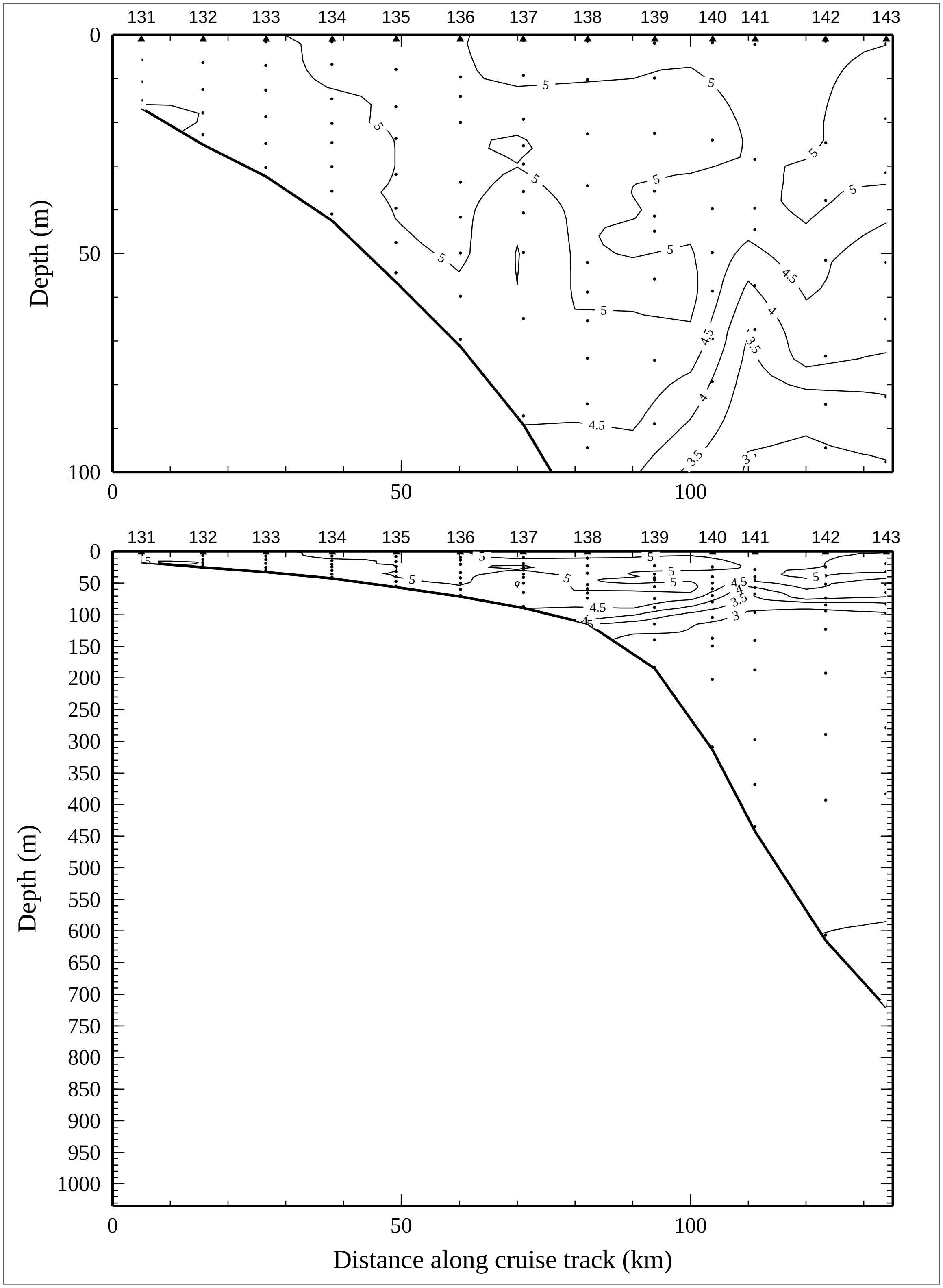

Figure 8.7.9. Dissolved oxygen (ml·l-1) on line 7 of LATEX A survey H08,
23 April - 7 May 1994.

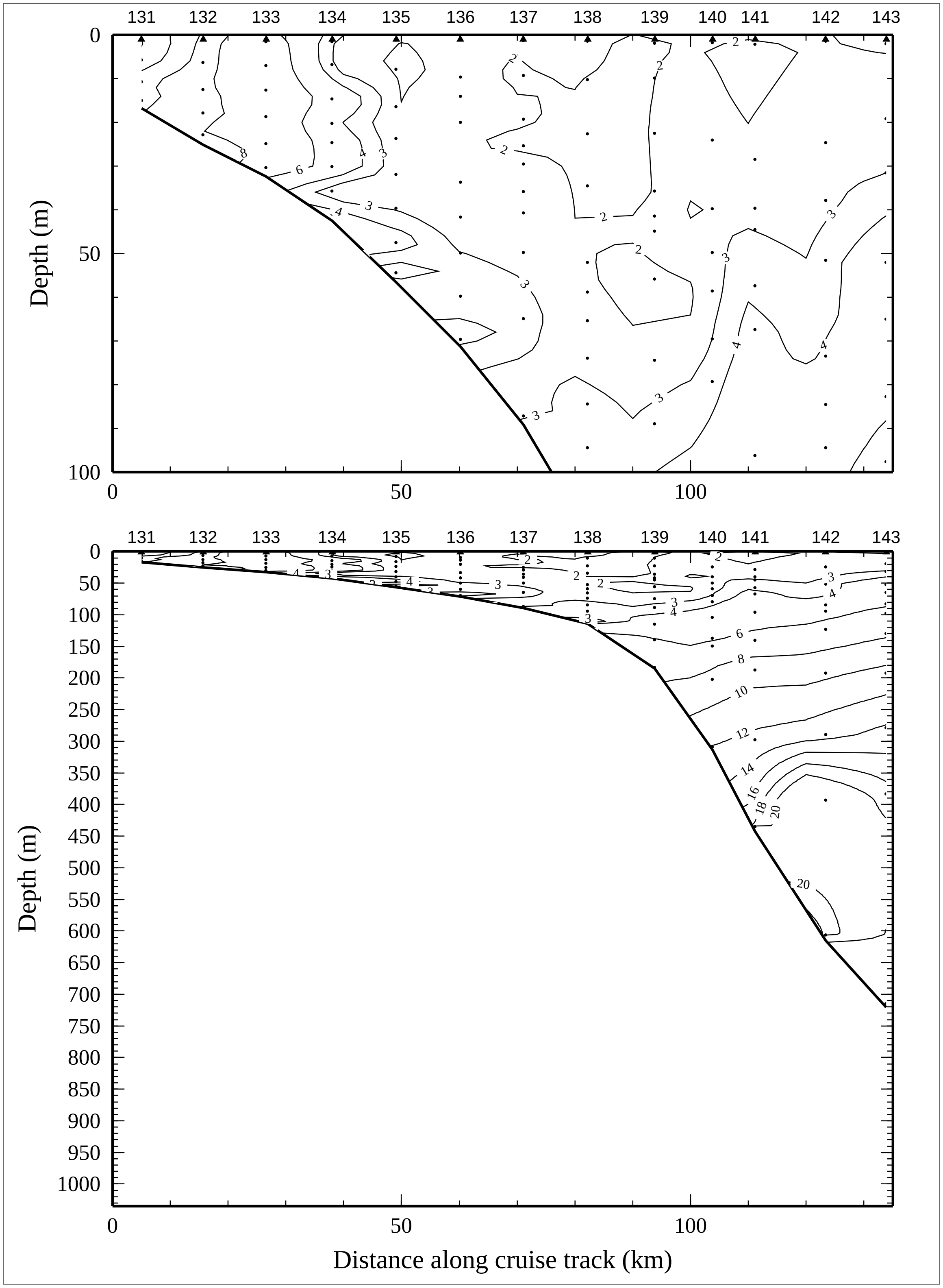

Figure 8.7.10. Silicate (μmol·l-1) on line 7 of LATEX A survey H08,
23 April - 7 May 1994.

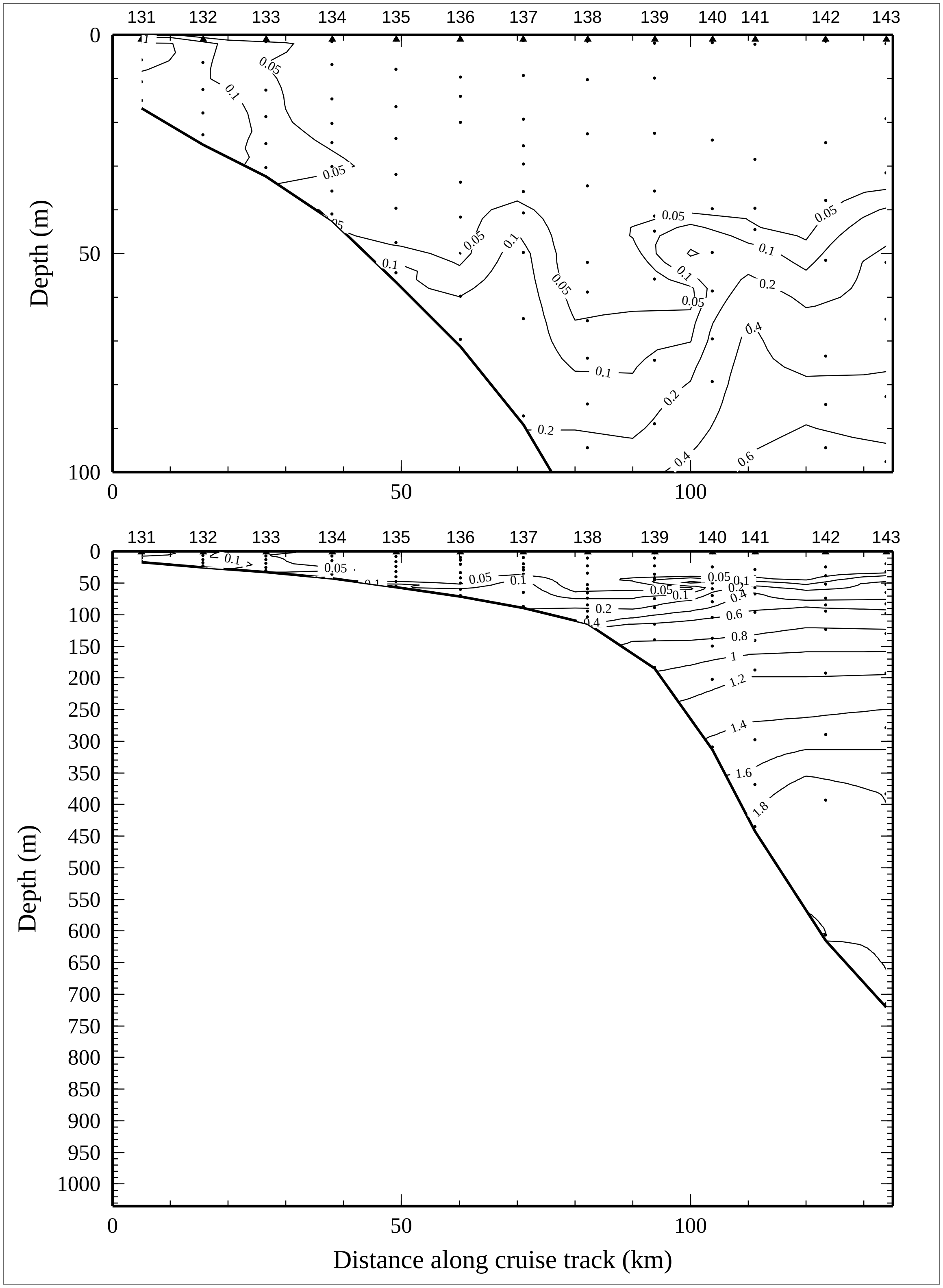

Figure 8.7.11. Phosphate (µmol·l^{-1}) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

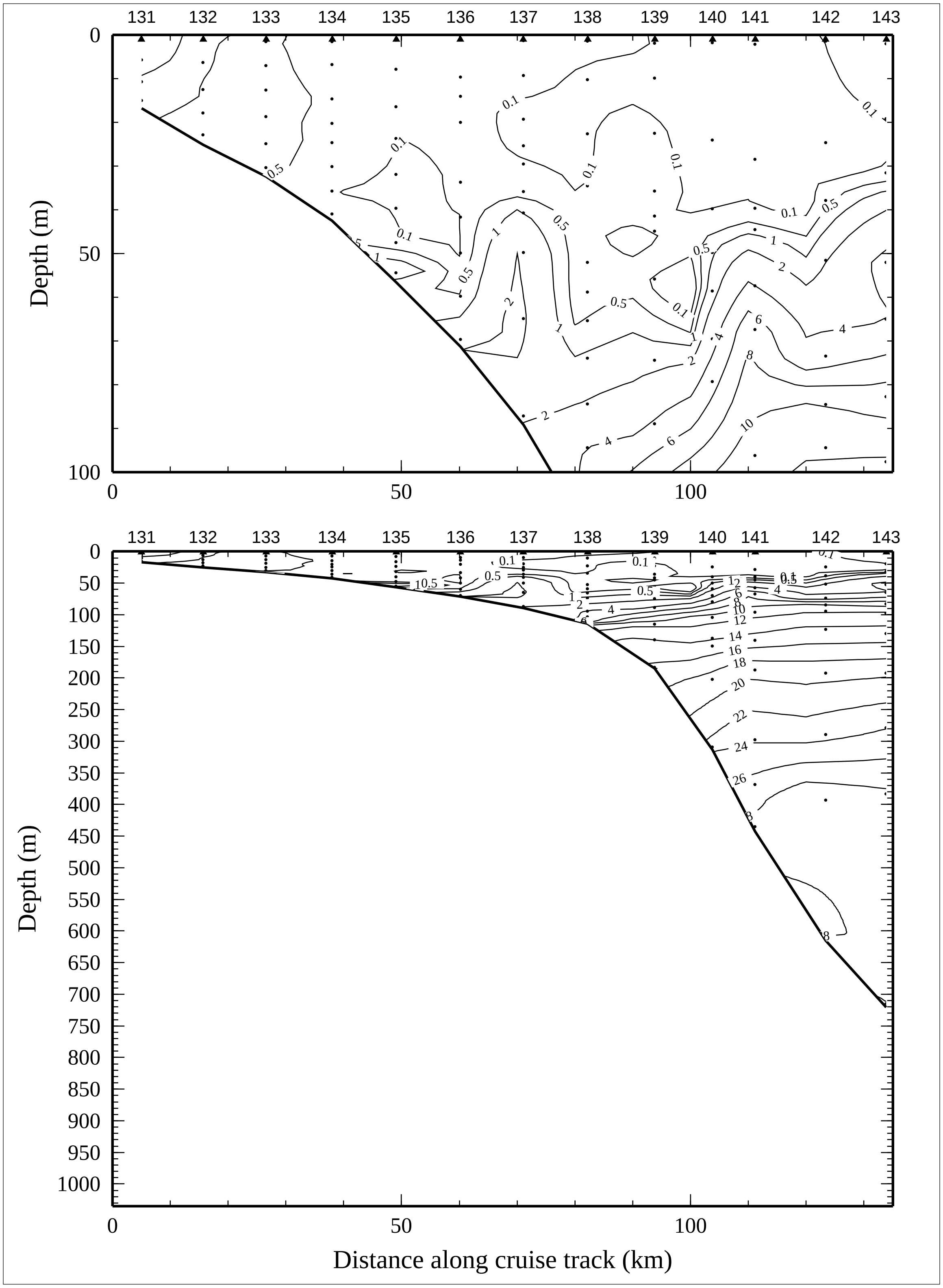

Figure 8.7.12. Nitrate (μmol·l^{-1}) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

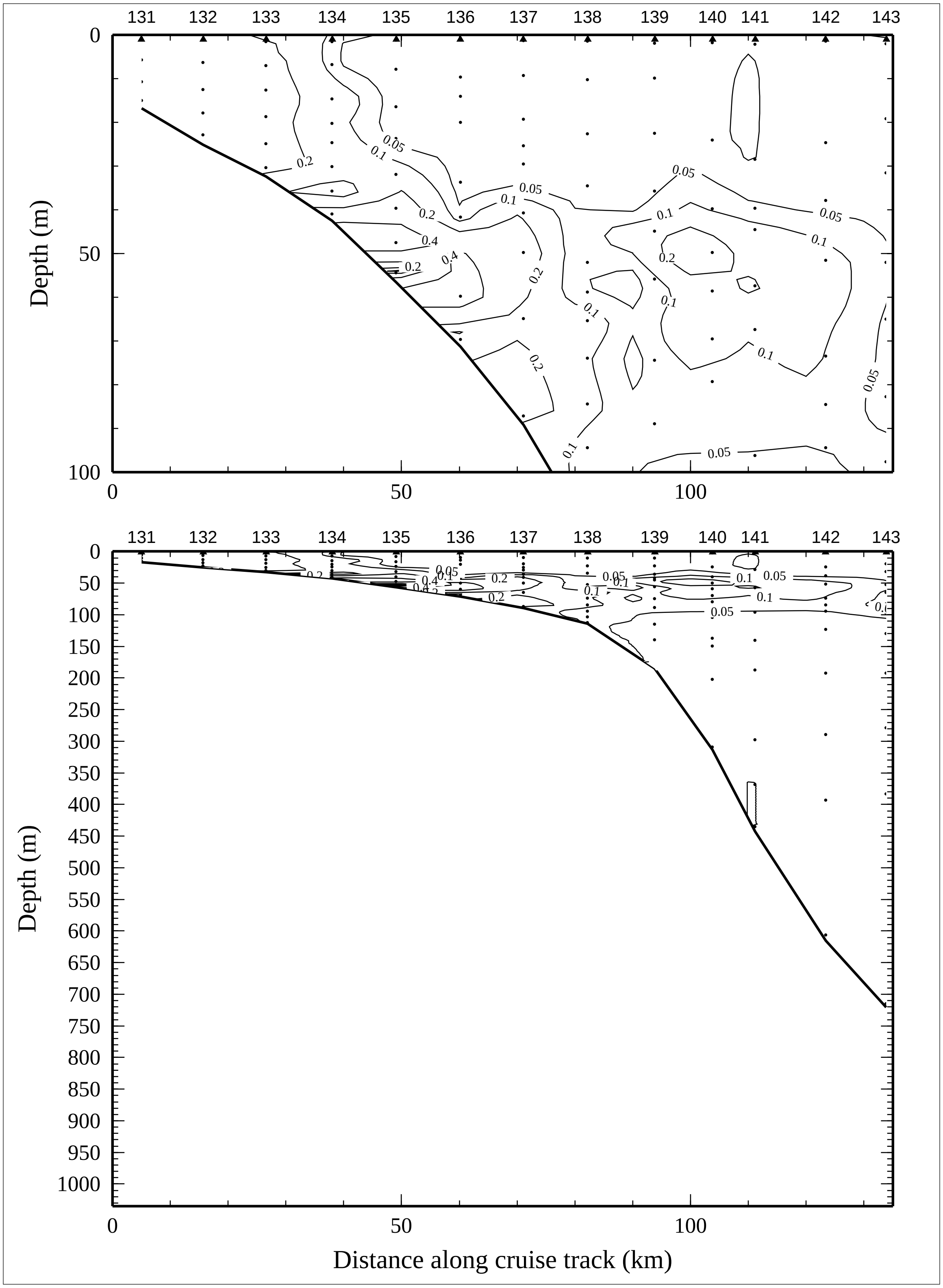

Figure 8.7.13. Nitrite (μmol·l-1) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

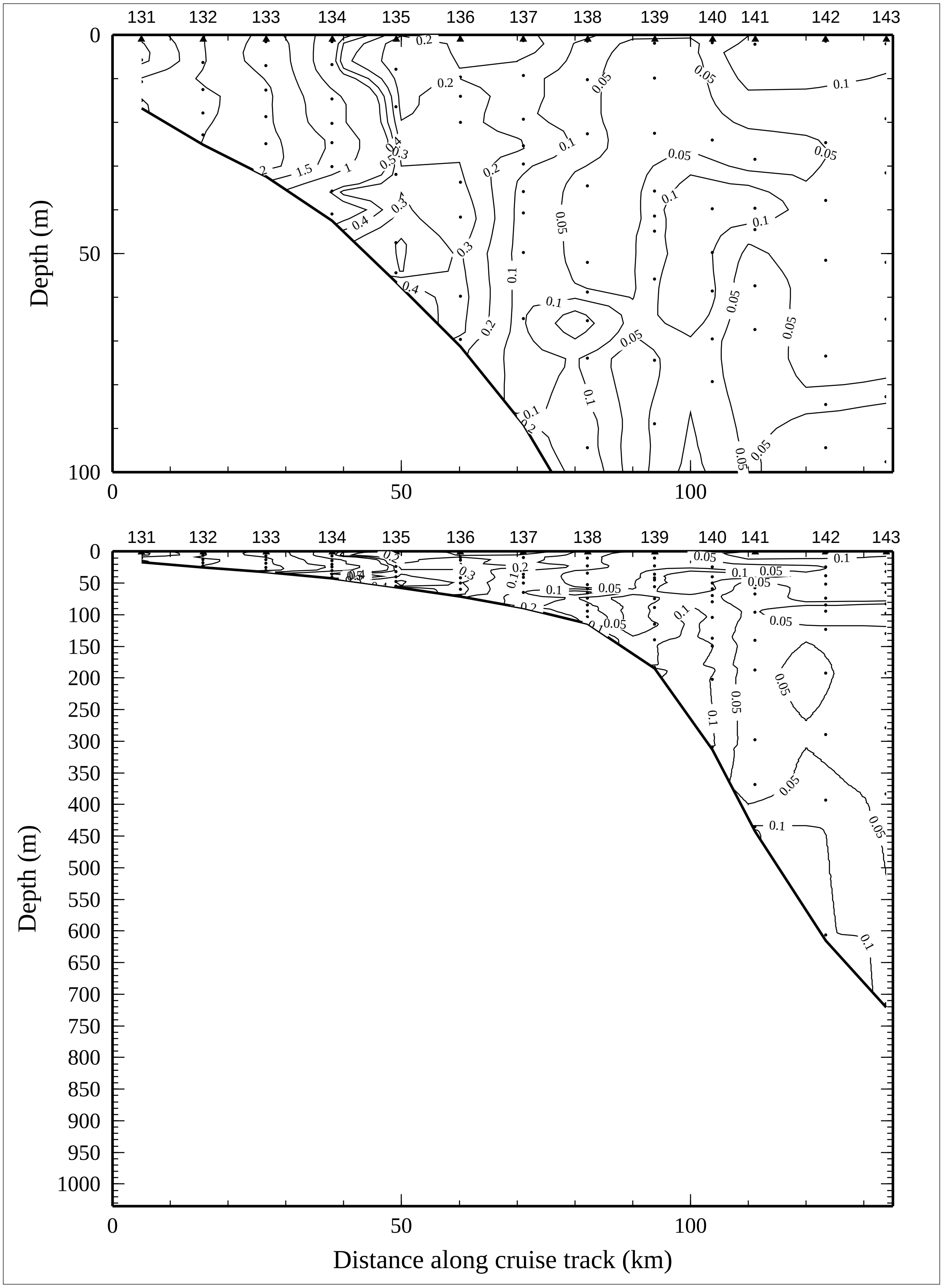

Figure 8.7.14. Ammonium (μmol·l⁻¹) on line 7 of LATEX A survey H08,
23 April - 7 May 1994.

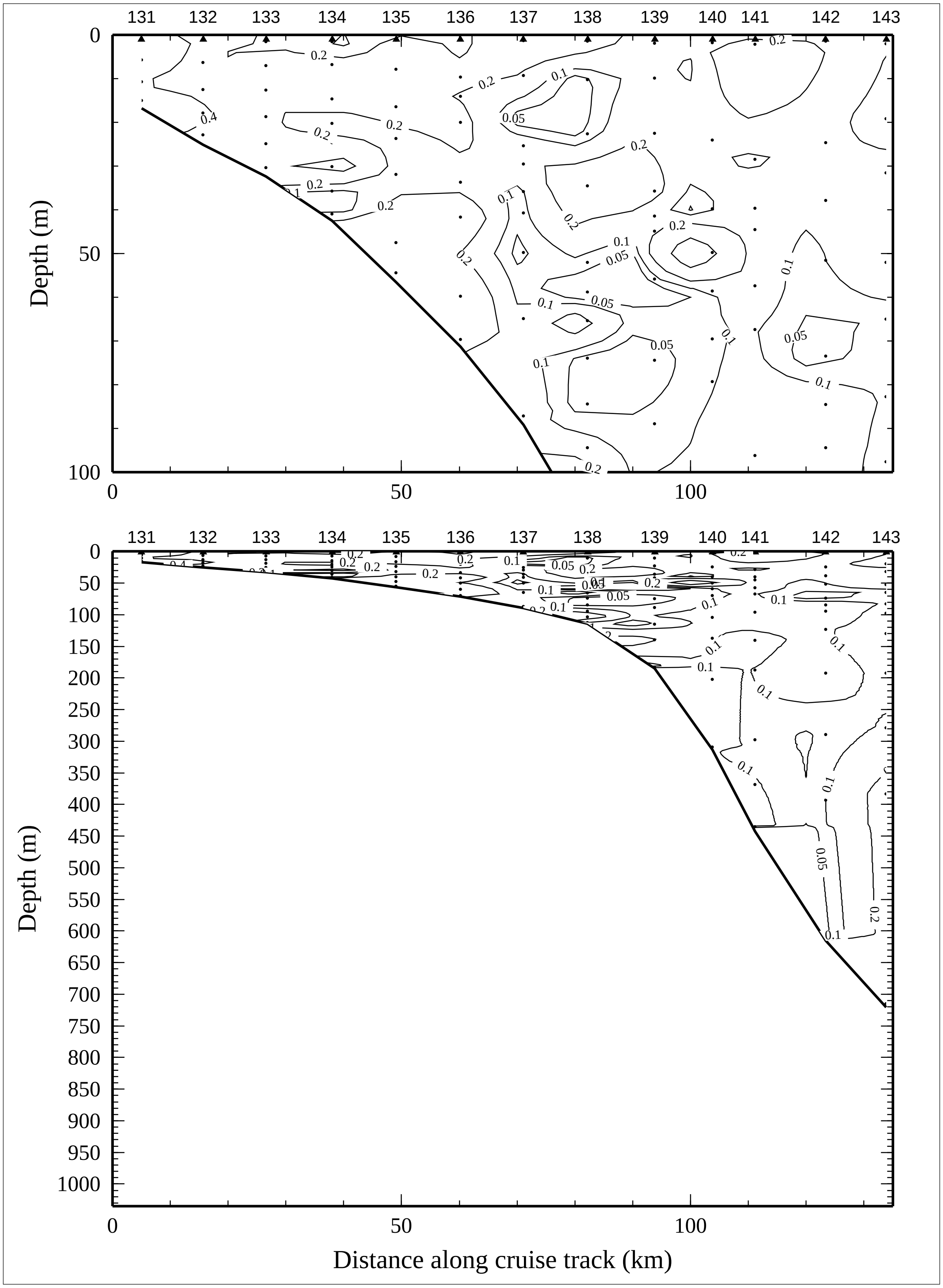

Figure 8.7.15. Urea (μmol·l^{-1}) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

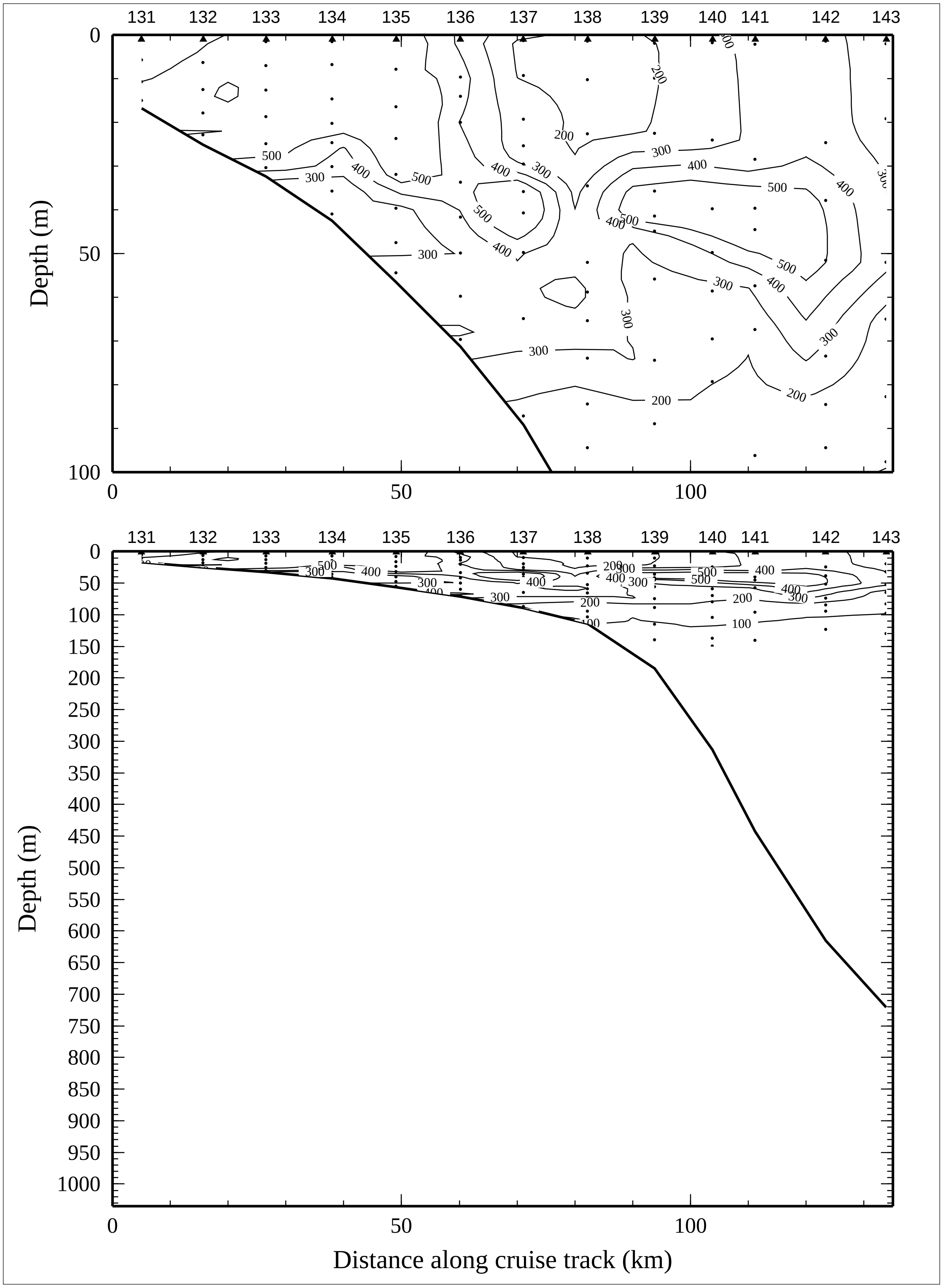

Figure 8.7.16. Chlorophyll a (ng·l^{-1}) on line 7 of LATEX A survey H08, 23 April - 7 May 1994.

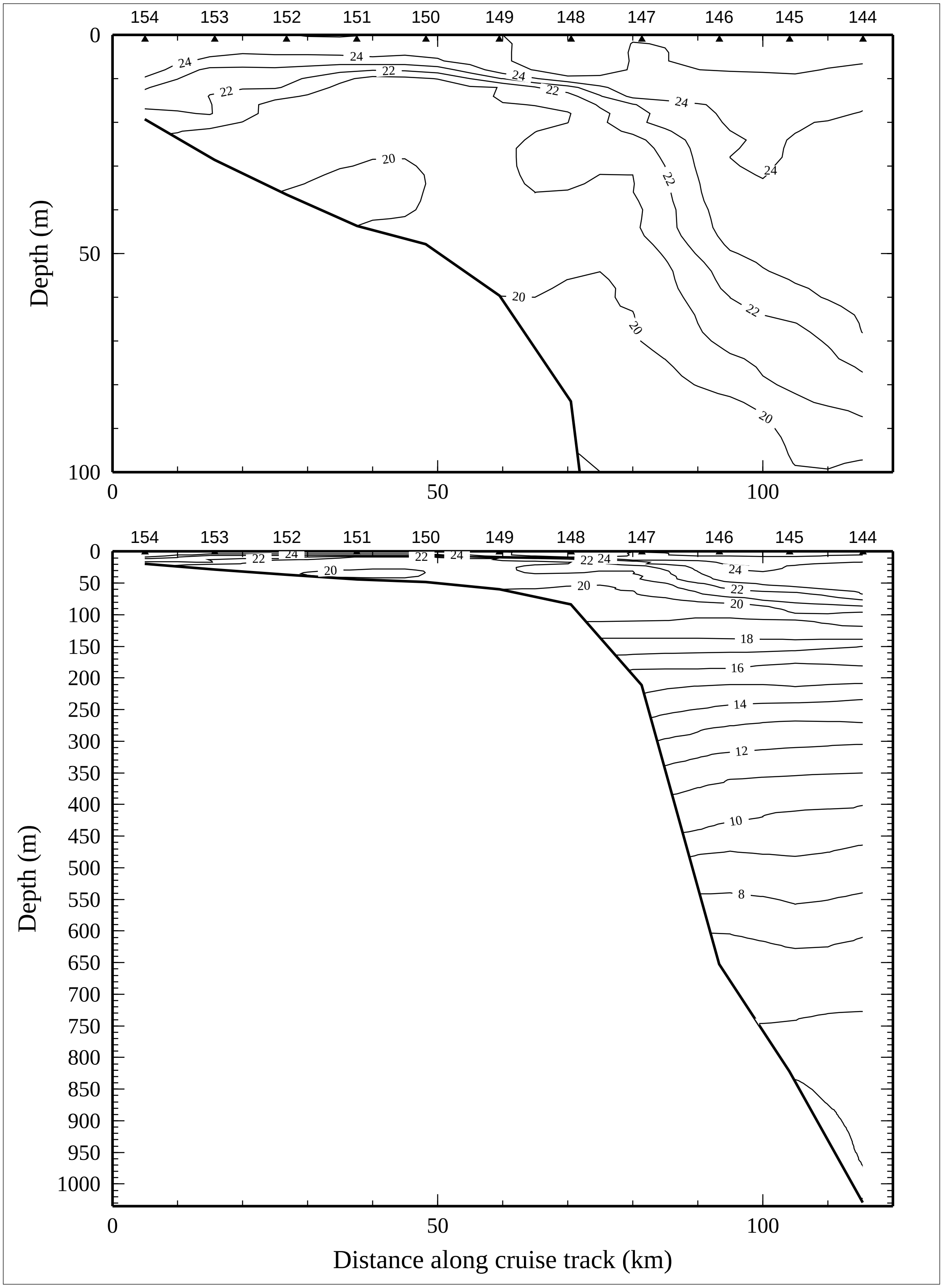

Figure 8.8.1. Potential temperature (˚C) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

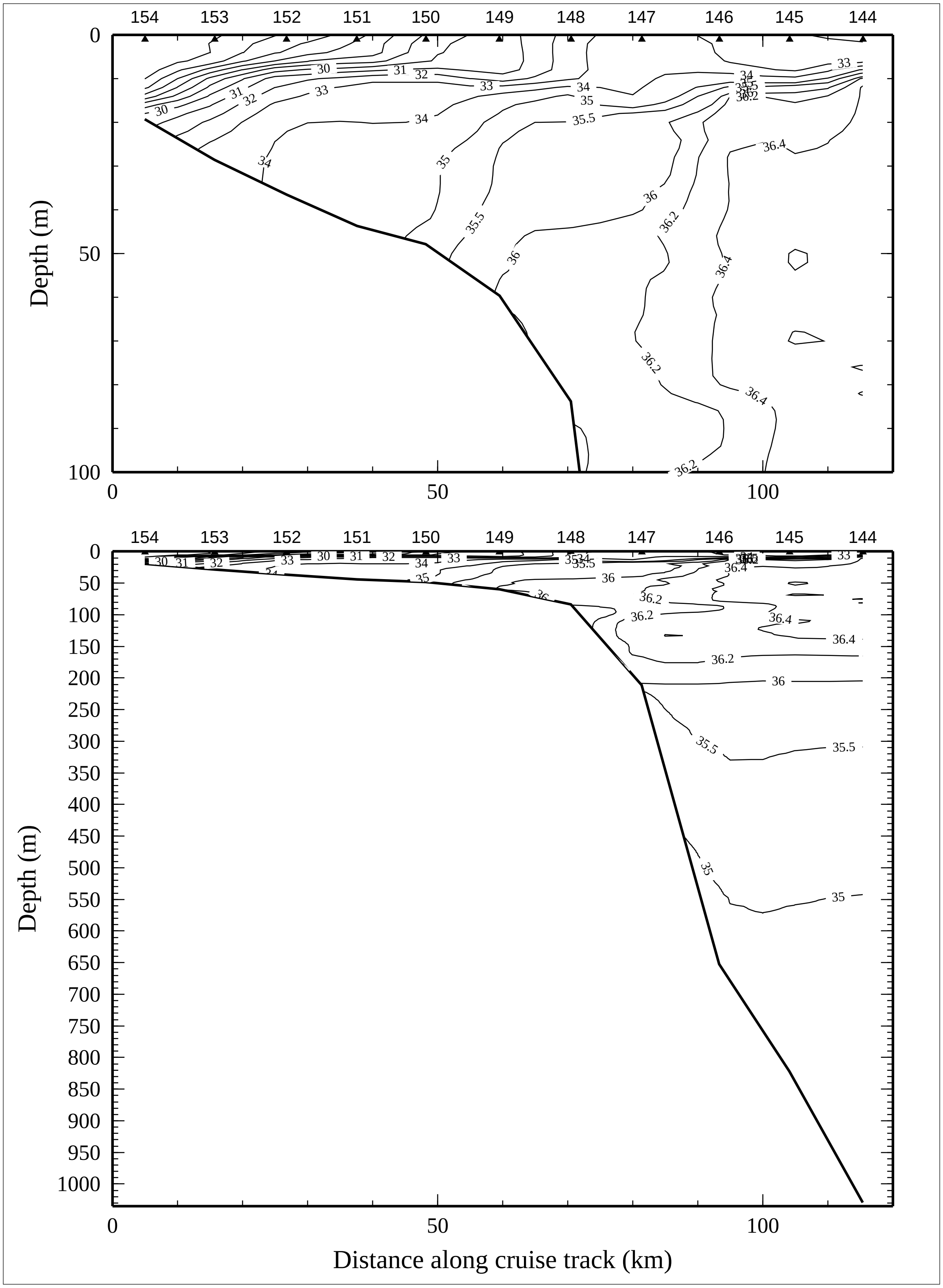

Figure 8.8.2. Salinity, derived from CTD data, on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

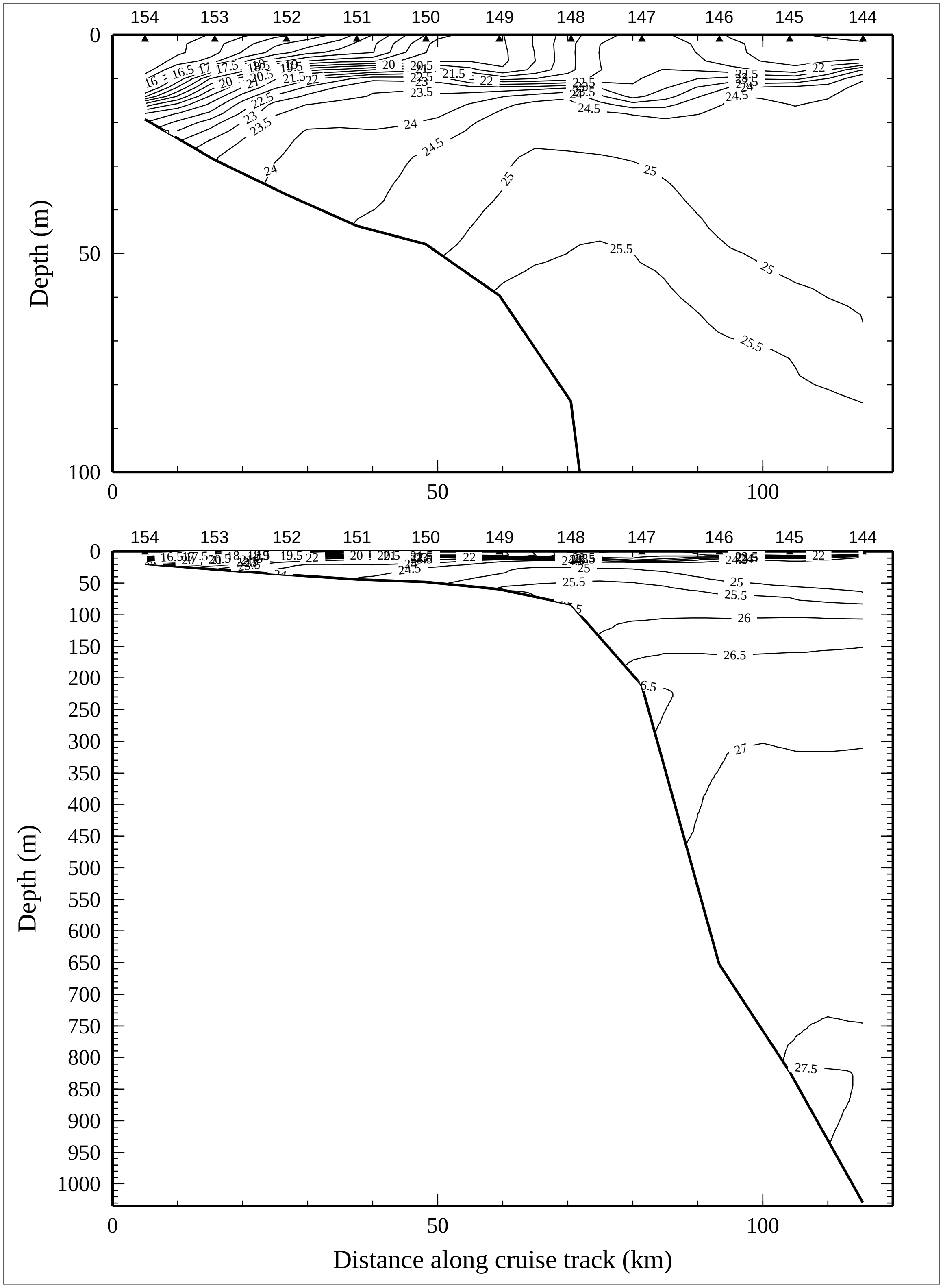

Figure 8.8.3. Density anomaly (σ_θ in kg·m^{-3}) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

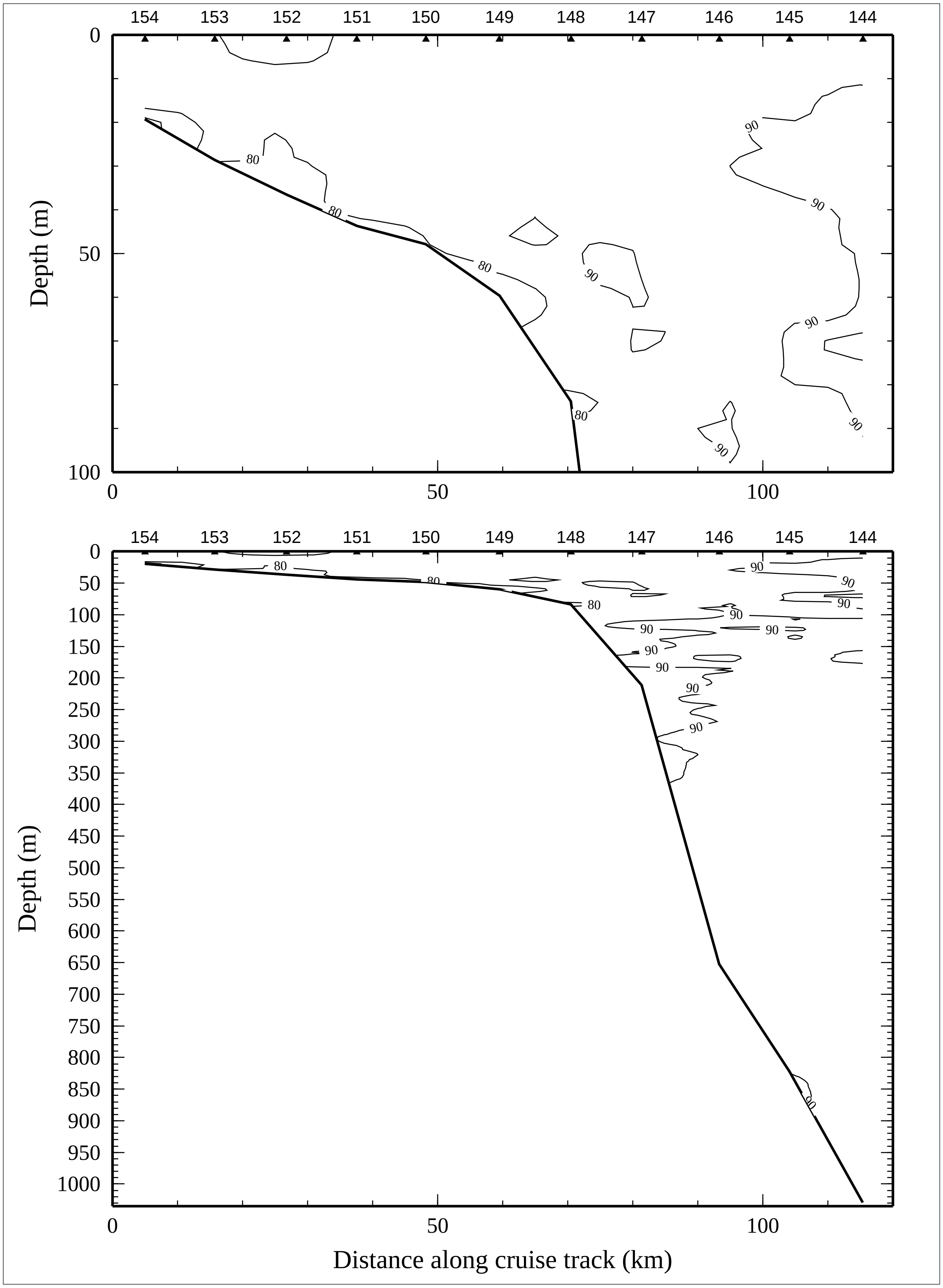

Figure 8.8.4. Percent transmission (660 nm wave length; 25-cm path length) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

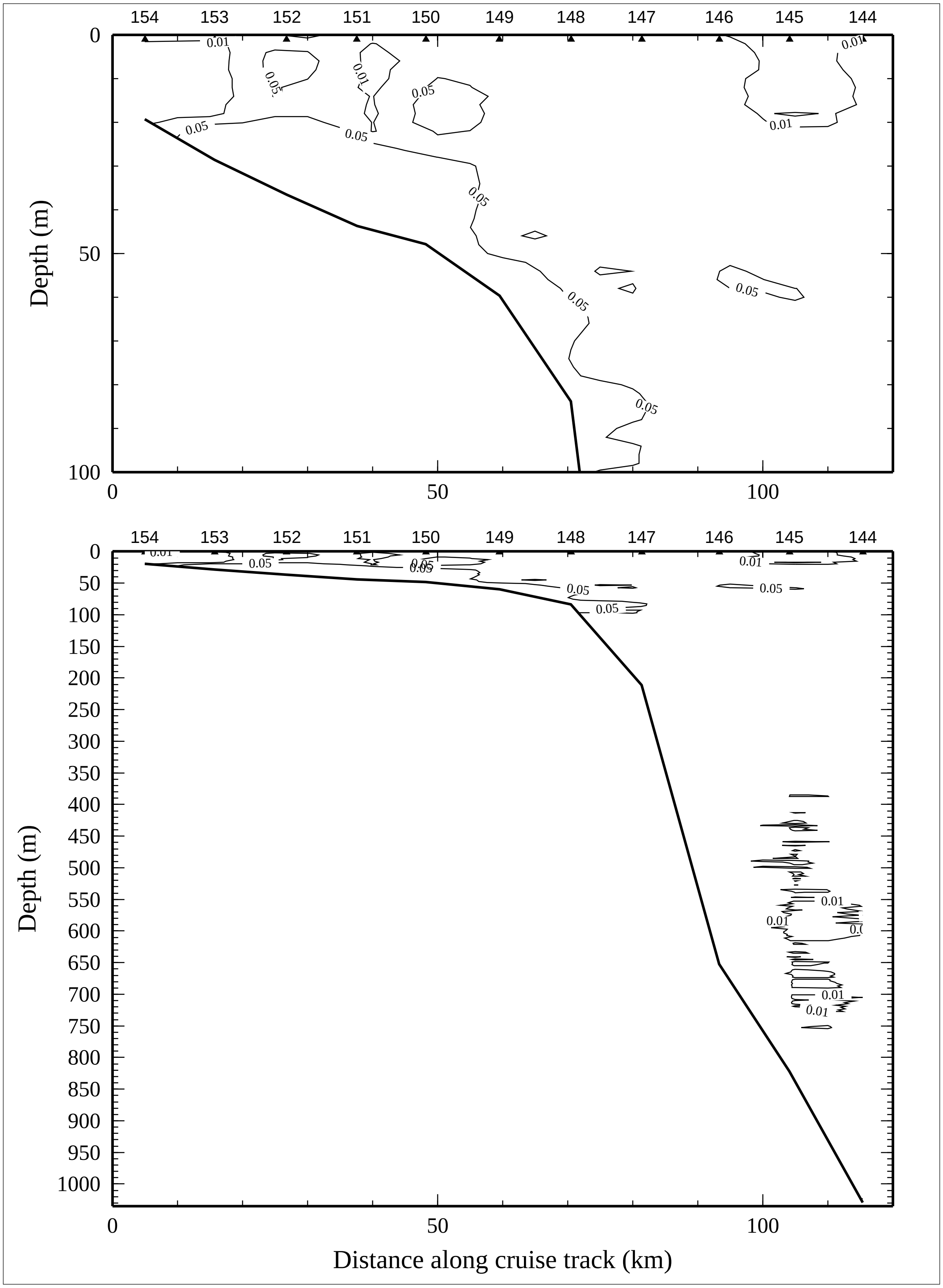

Figure 8.8.5. Optical backscatterance (voltage) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

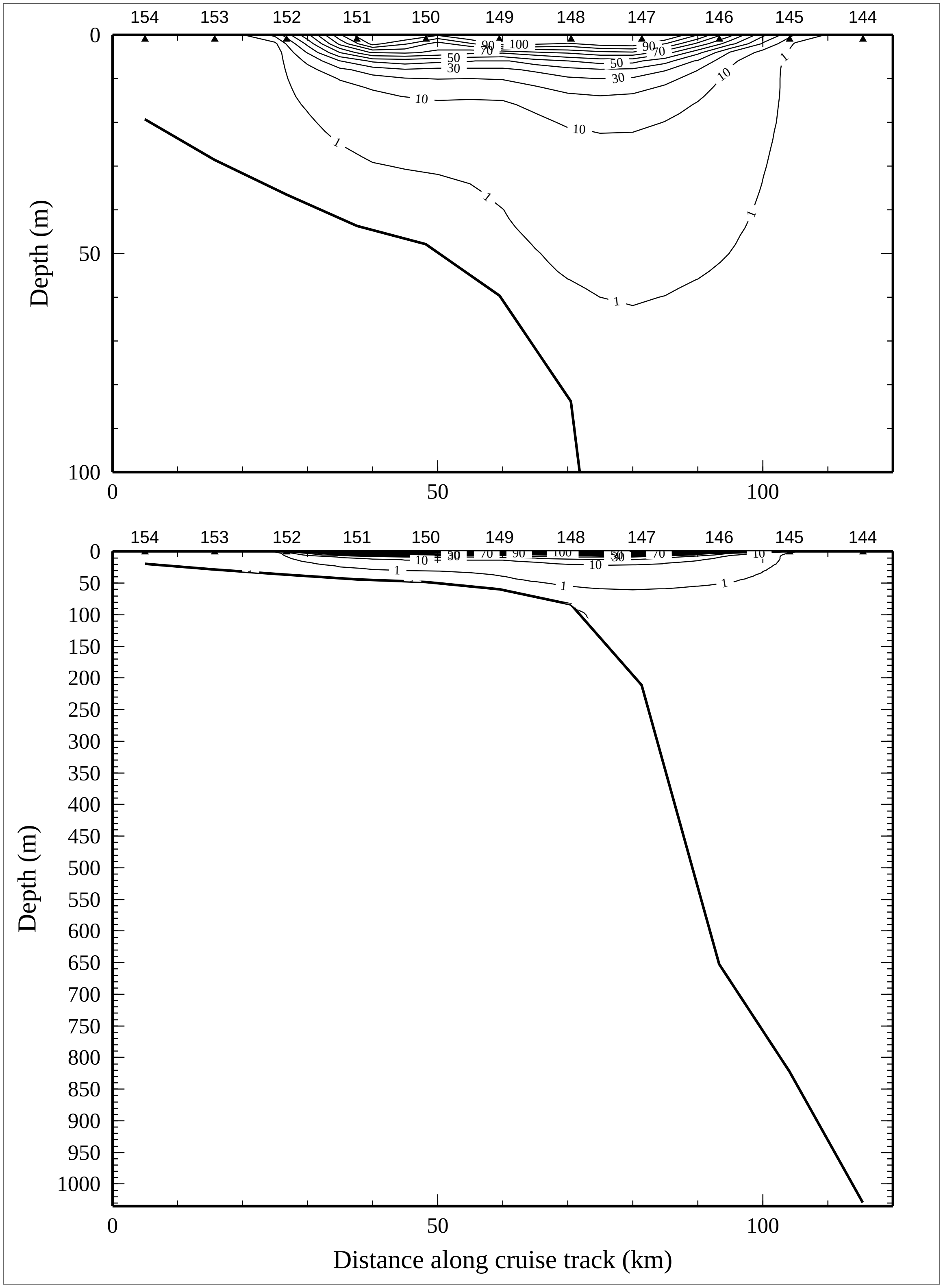

Figure 8.8.6. Downwelling irradiance as percent of surface irradiance on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

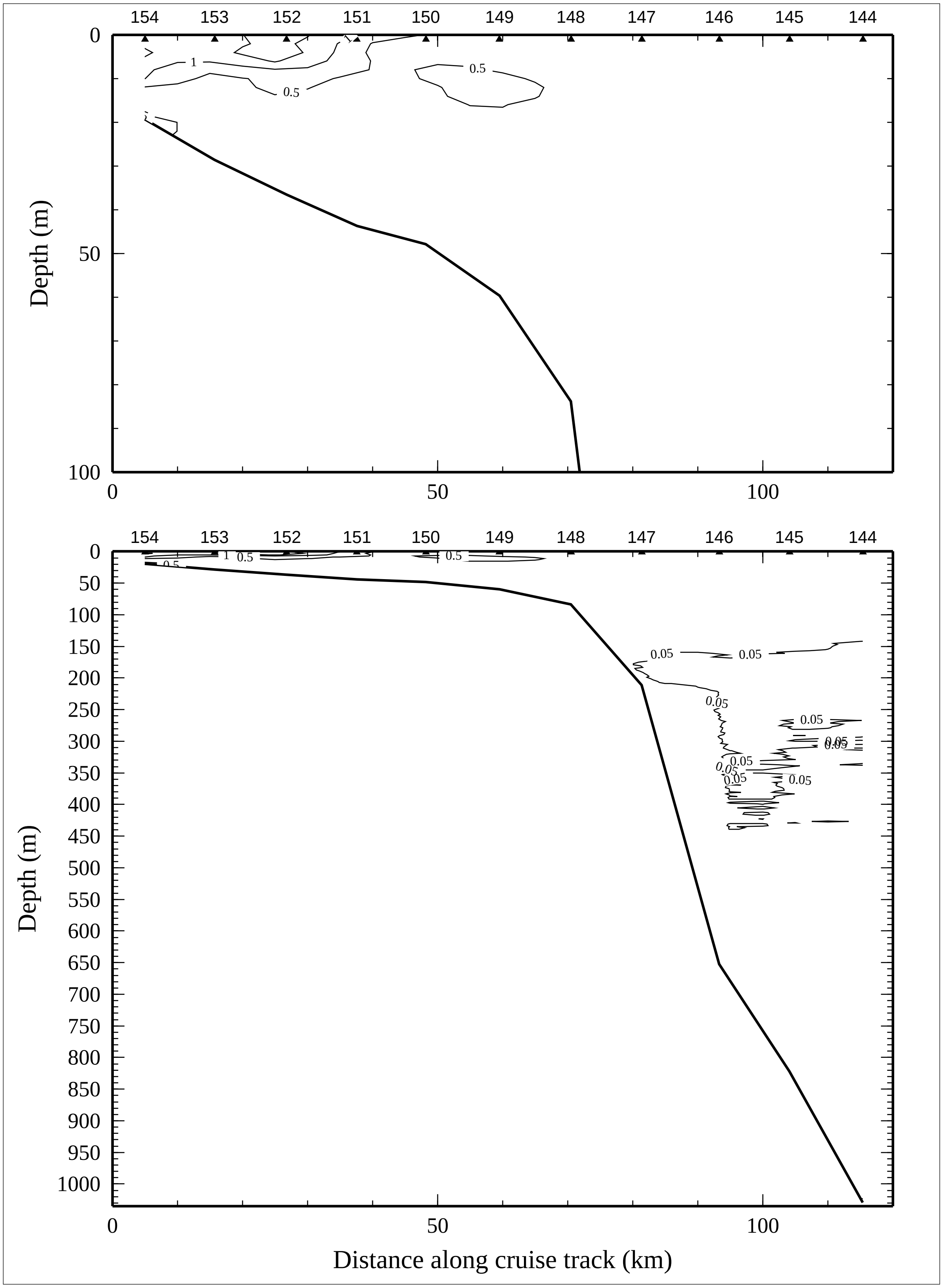

Figure 8.8.7. Relative fluorescence on line 8 of LATEX A survey H08,
23 April - 7 May 1994.

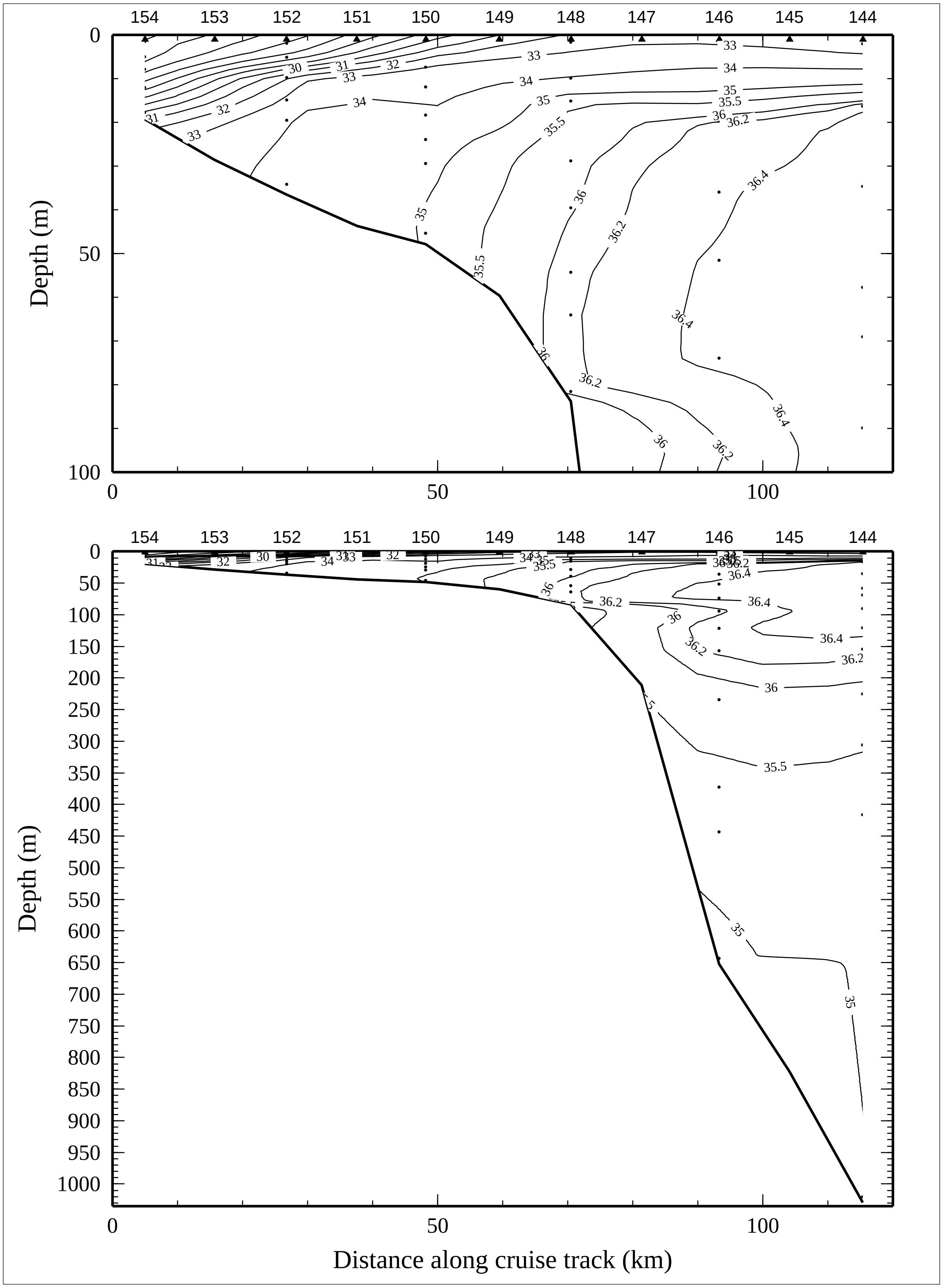

Figure 8.8.8. Bottle salinity on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

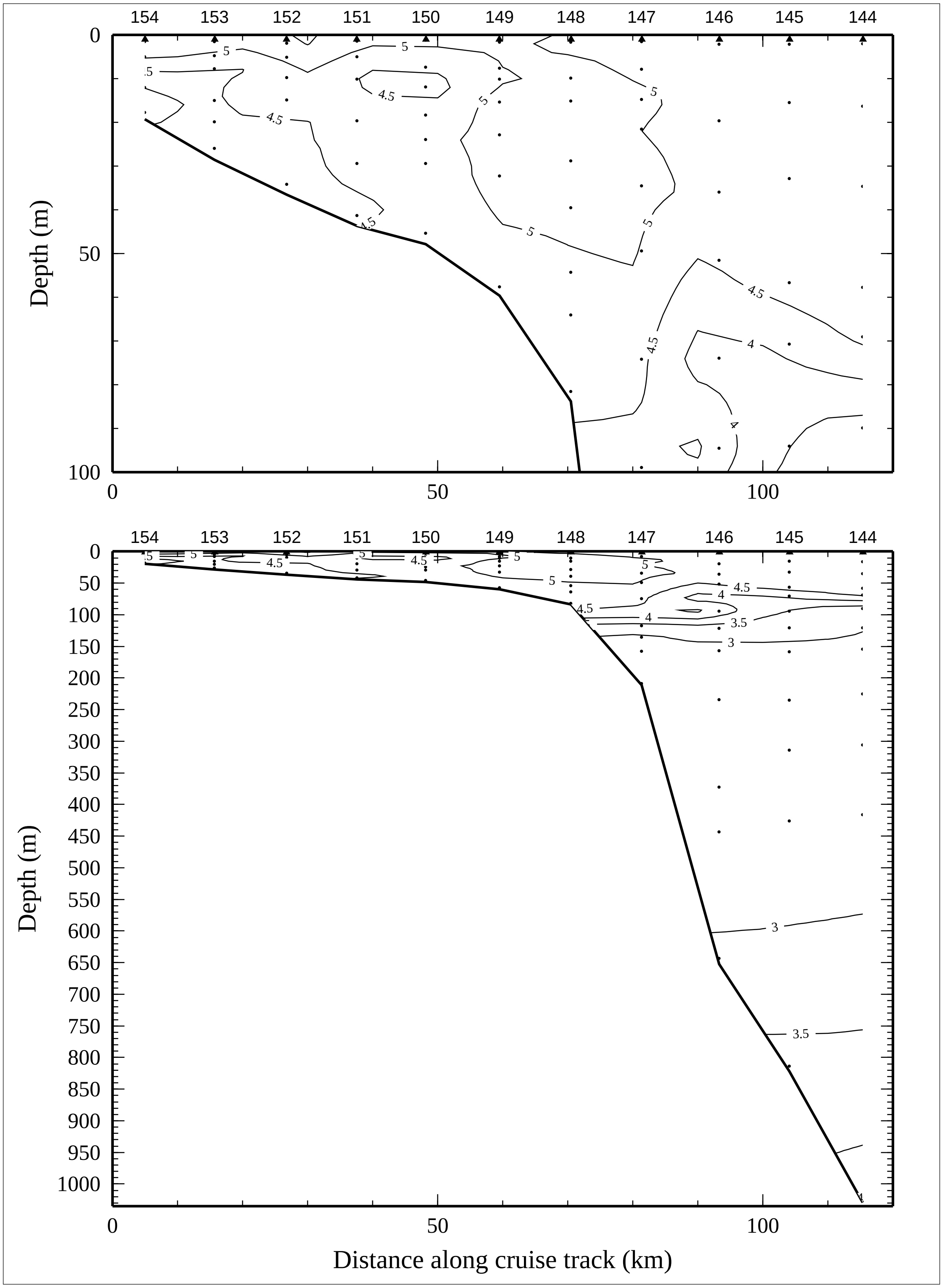

Figure 8.8.9. Dissolved oxygen (ml·l^{-1}) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

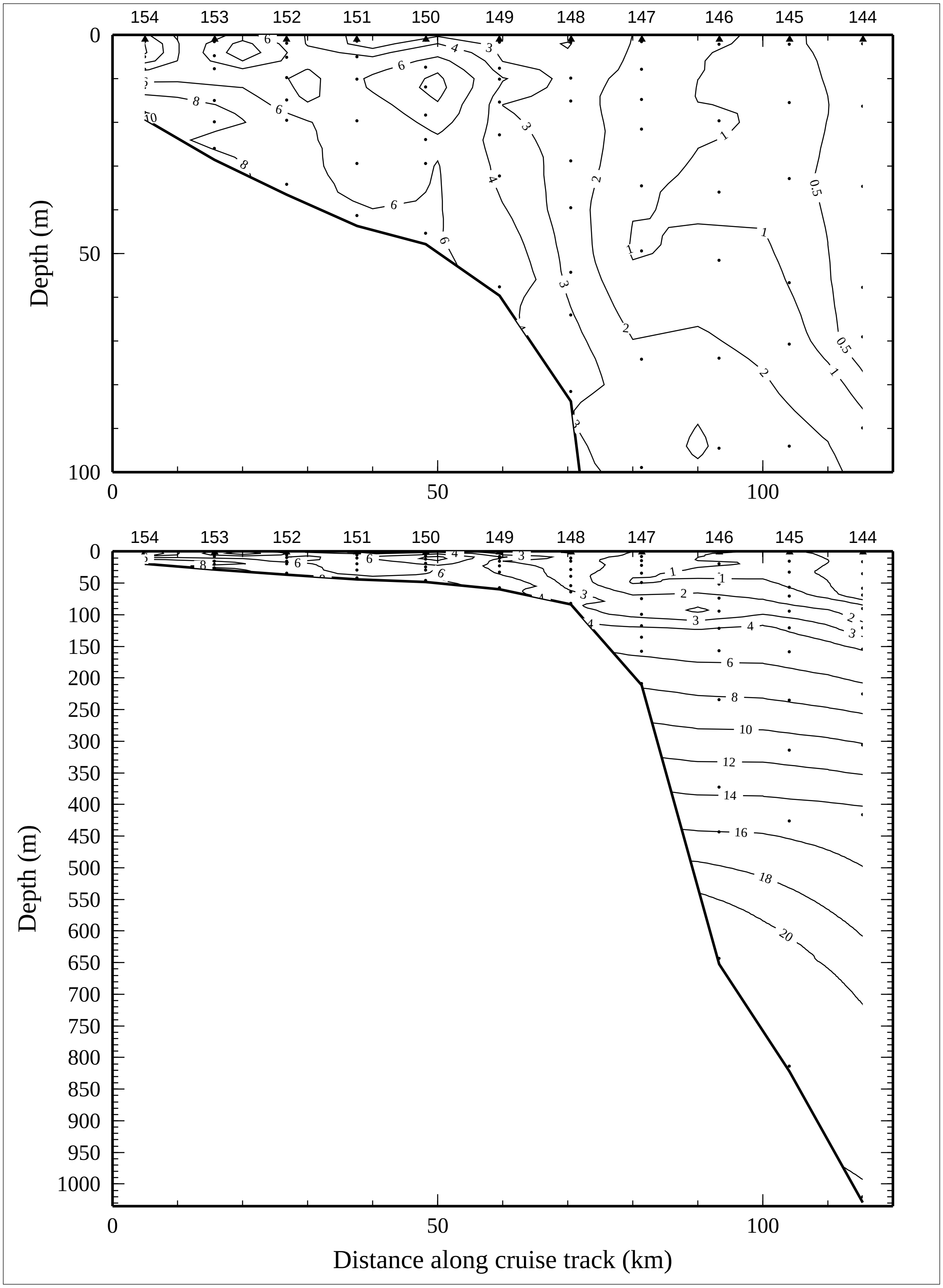

Figure 8.8.10. Silicate (μmol·l-1) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

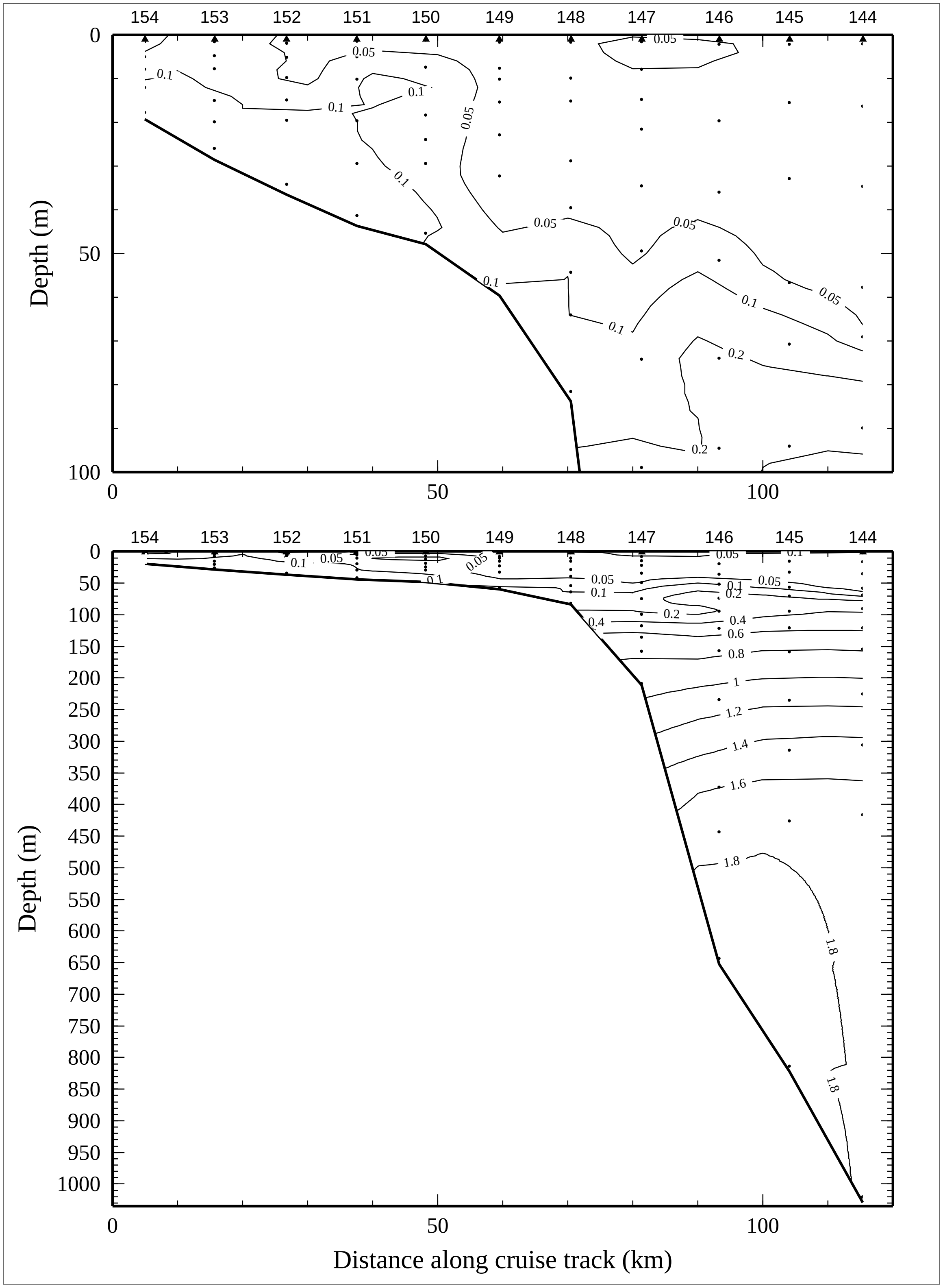

Figure 8.8.11. Phosphate (μmol·l^{-1}) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

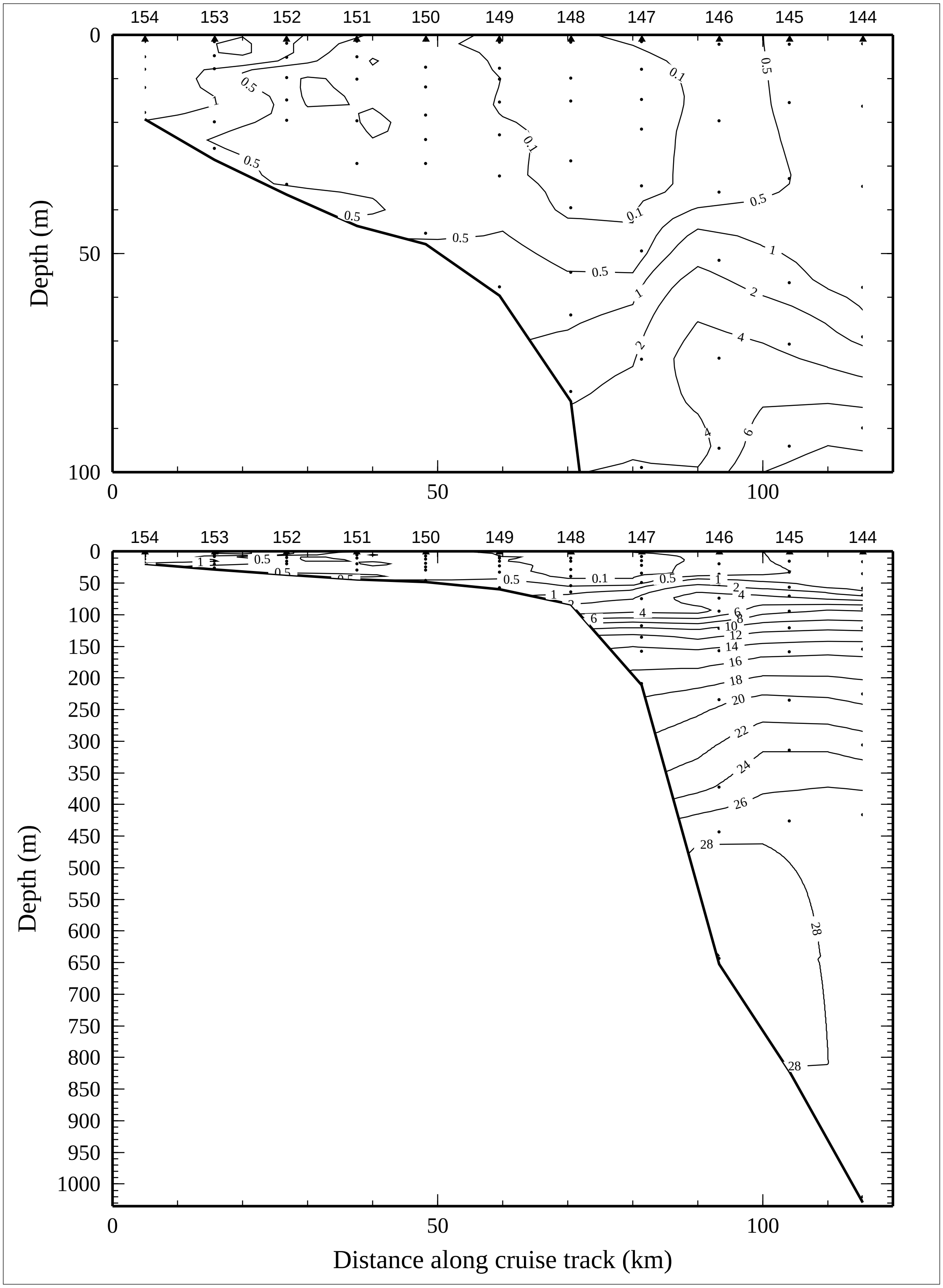

Figure 8.8.12. Nitrate (µmol·l^{-1}) on line 8 of LATEX A survey H08,
23 April - 7 May 1994.

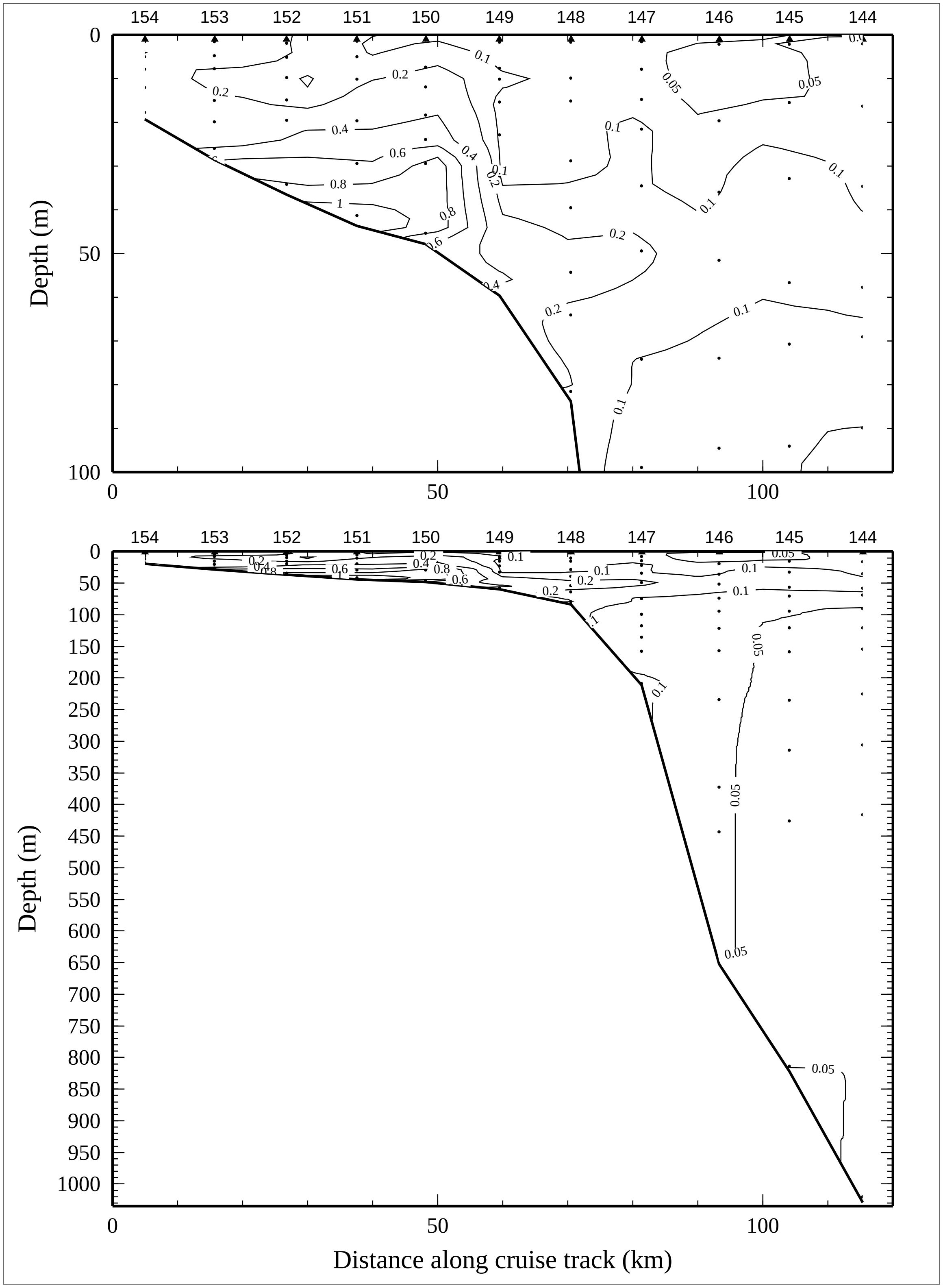

Figure 8.8.13. Nitrite (μmol·l[-1]) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

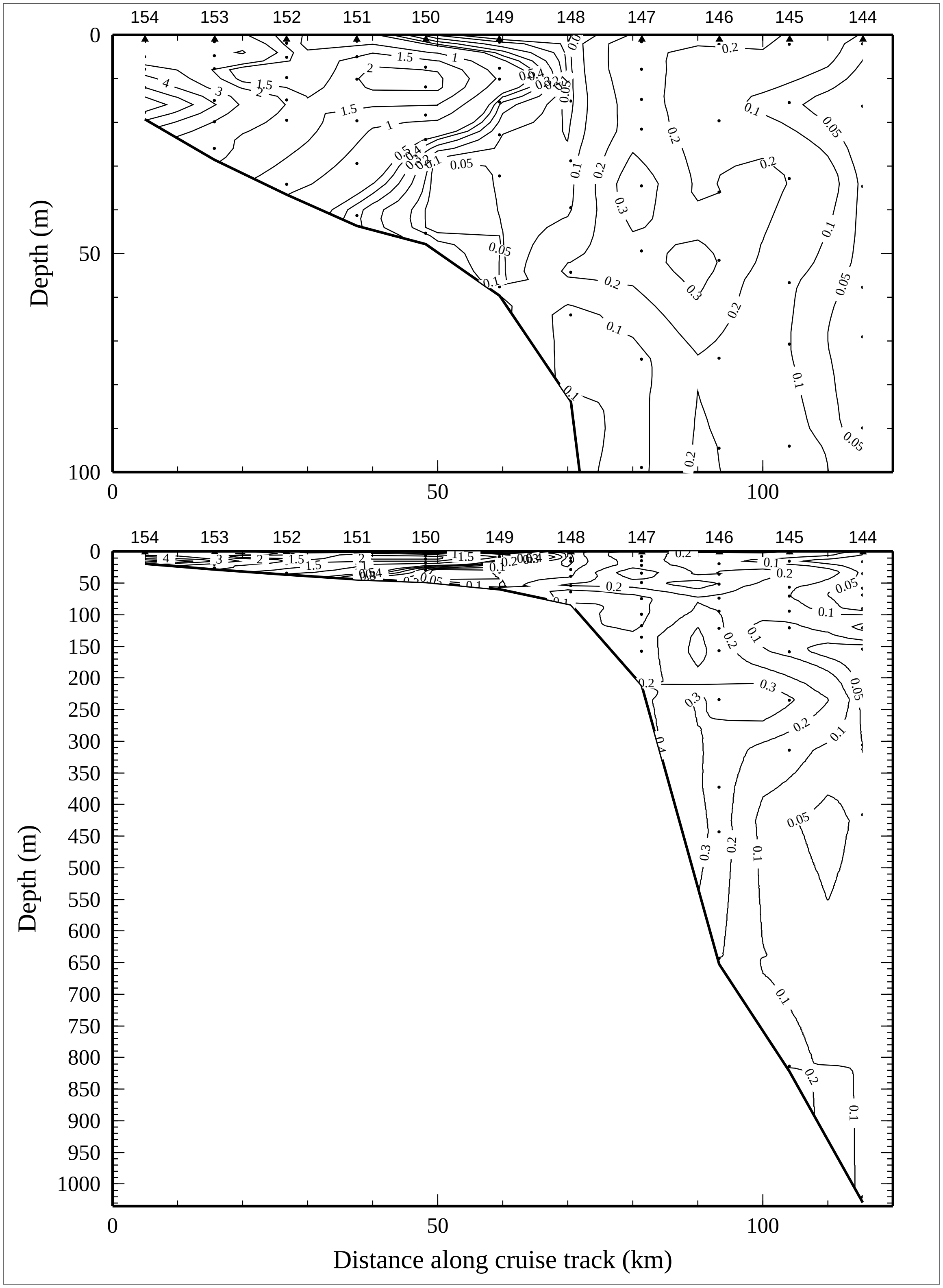

Figure 8.8.14. Ammonium (μmol·l⁻¹) on line 8 of LATEX A survey H08,
23 April - 7 May 1994.

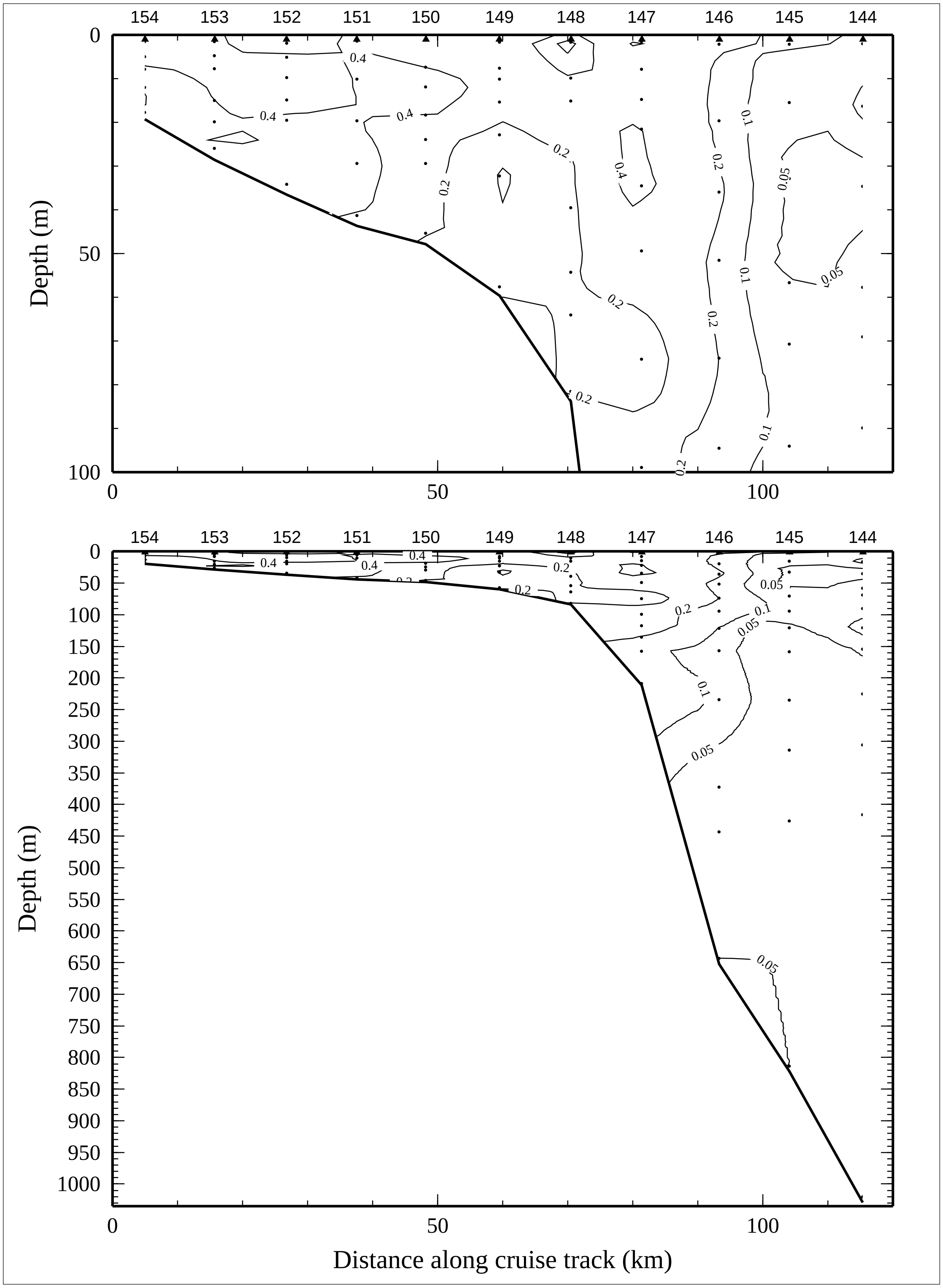

Figure 8.8.15. Urea (μmol·l-1) on line 8 of LATEX A survey H08,
23 April - 7 May 1994.

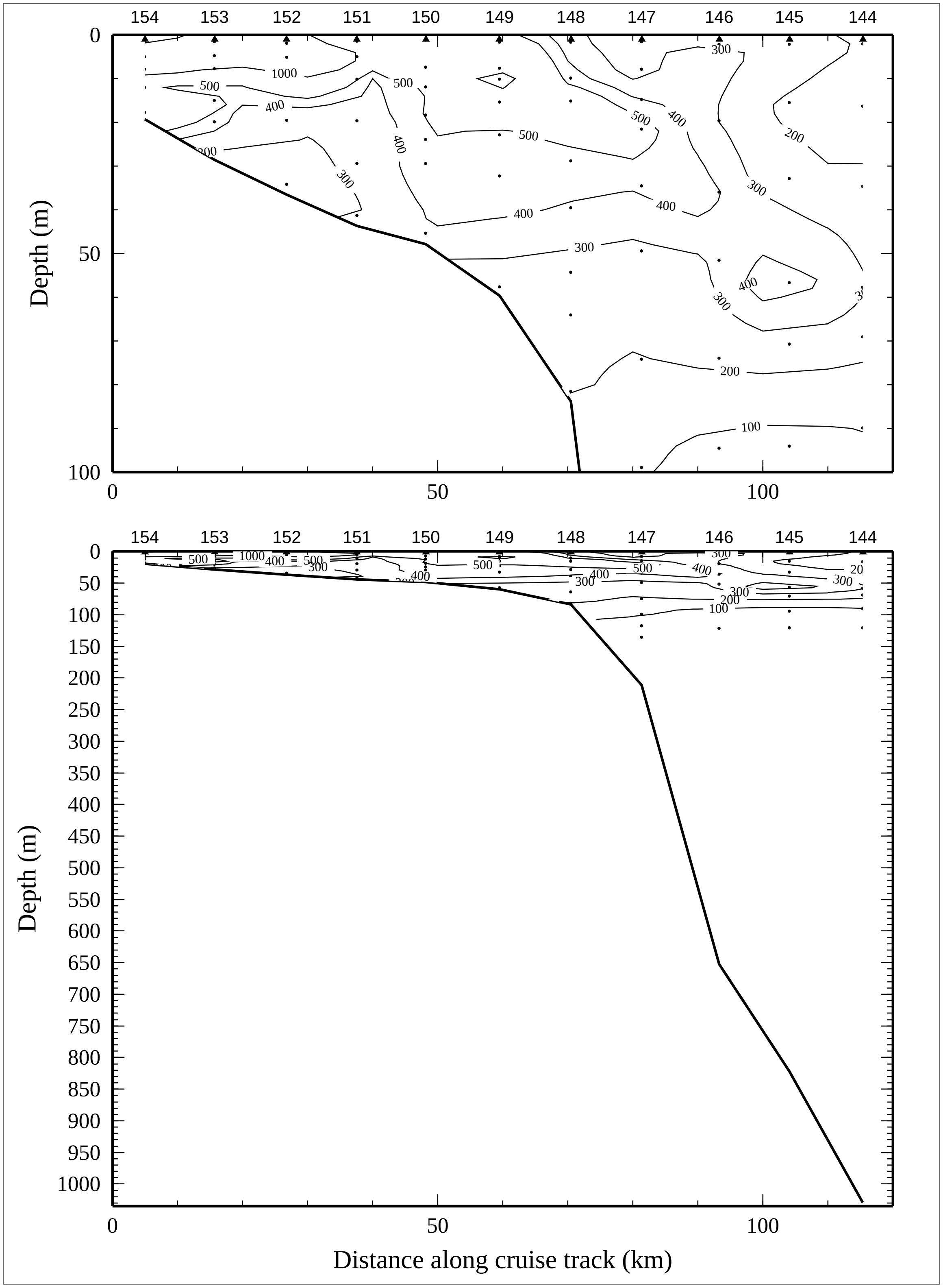

Figure 8.8.16. Chlorophyll a (ng·l-1) on line 8 of LATEX A survey H08, 23 April - 7 May 1994.

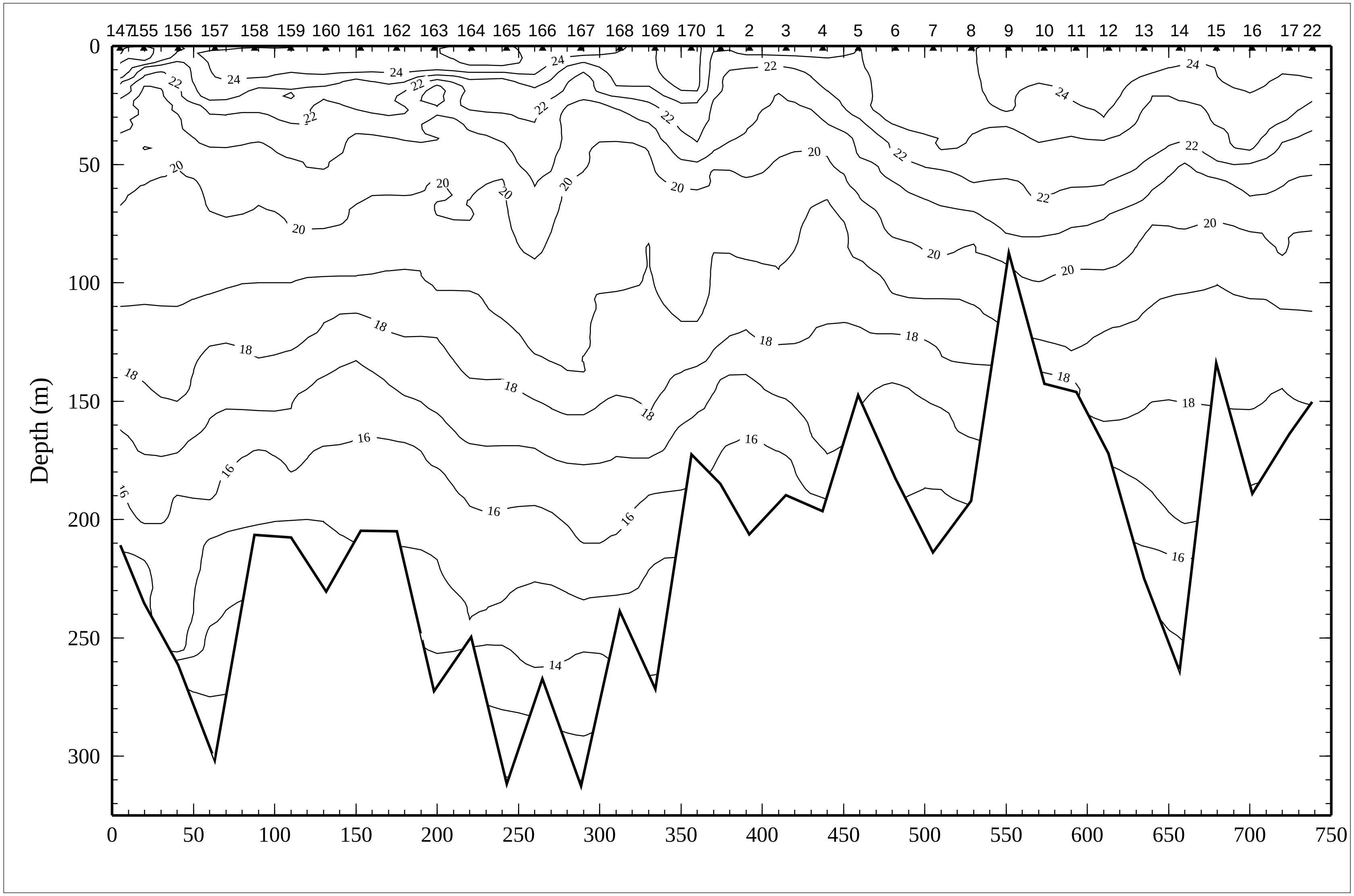

Figure 8.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

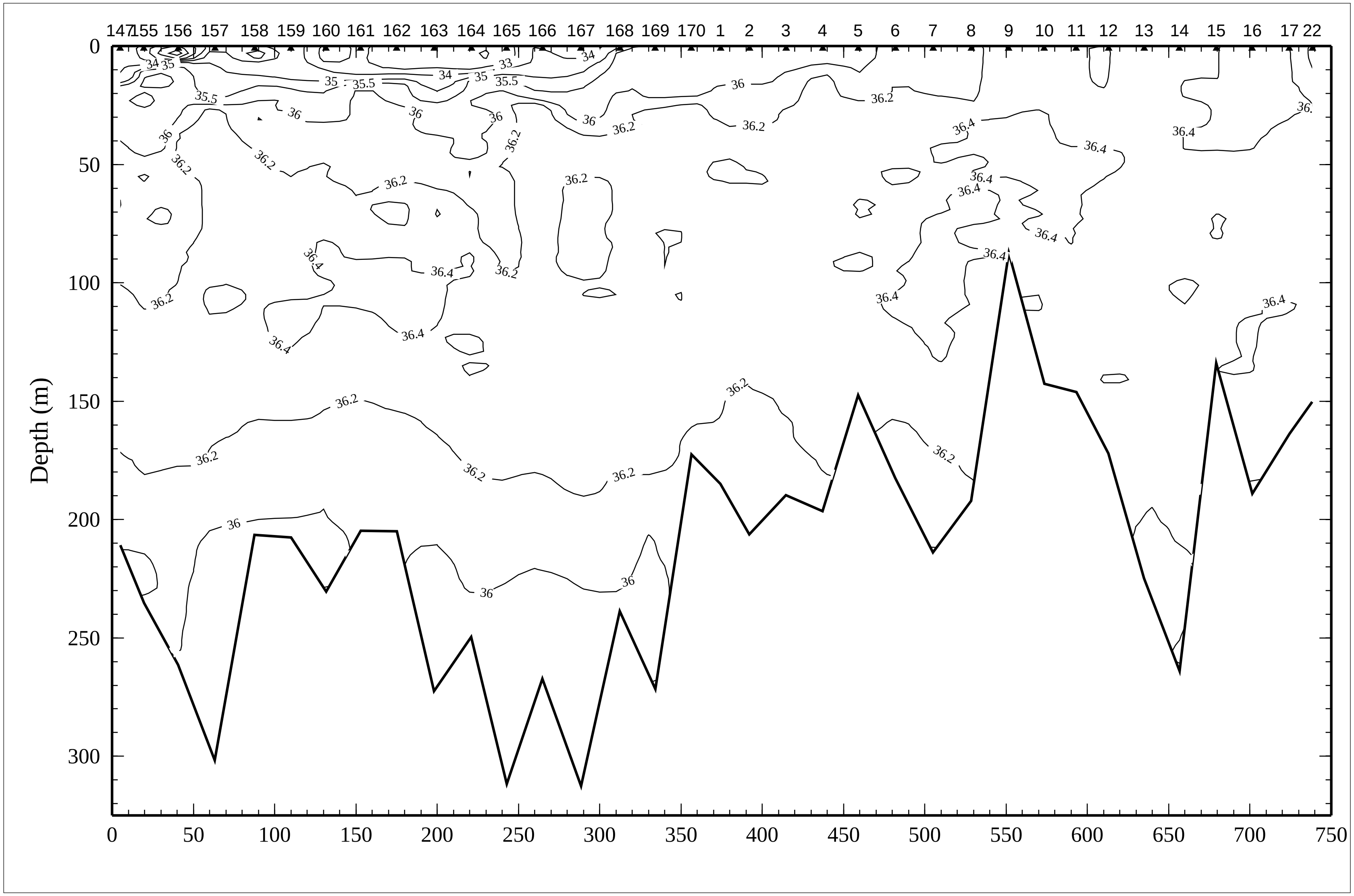

Figure 8.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

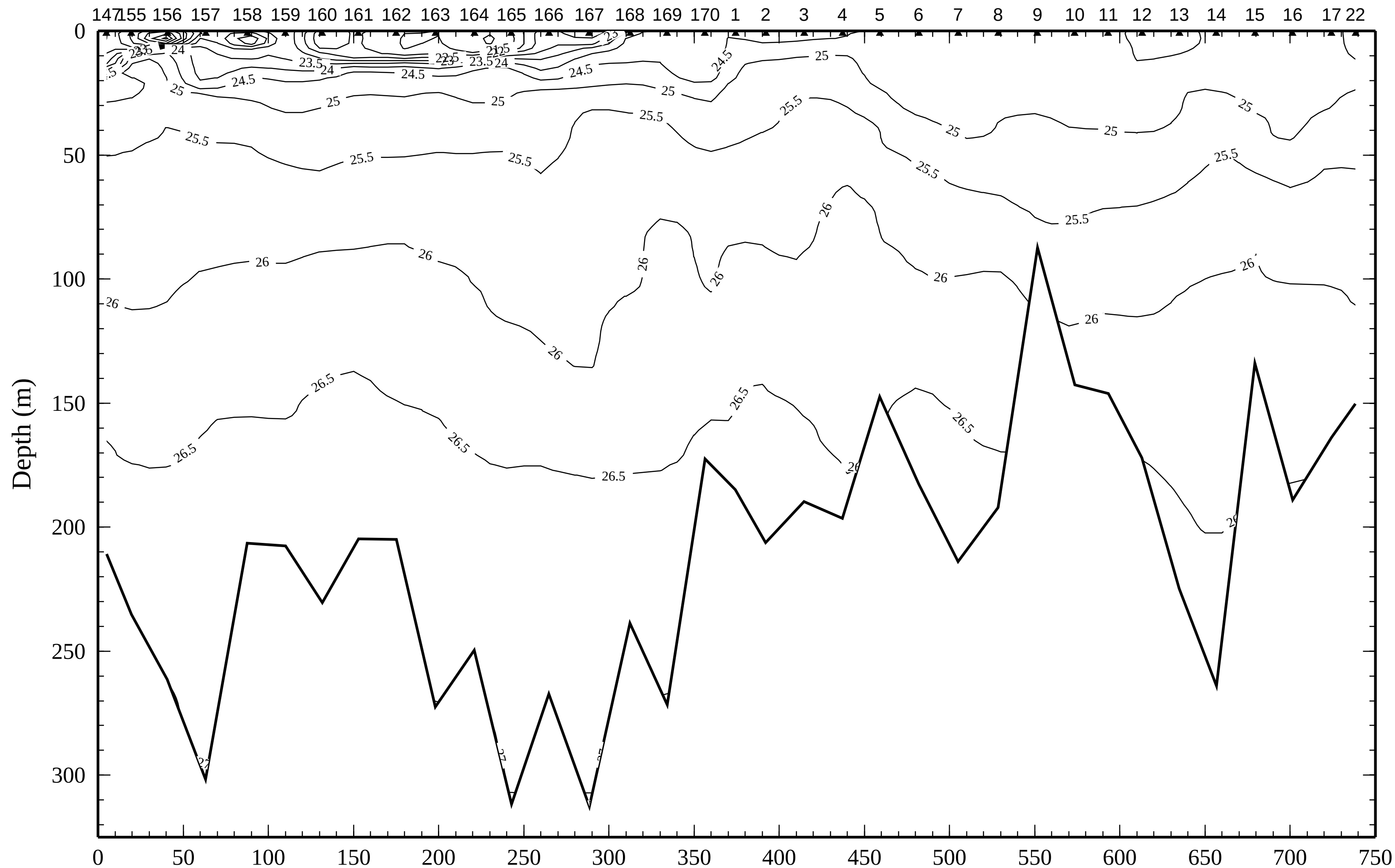

Figure 8.9.3. Density anomaly (σ_θ in kg·m^{-3}) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

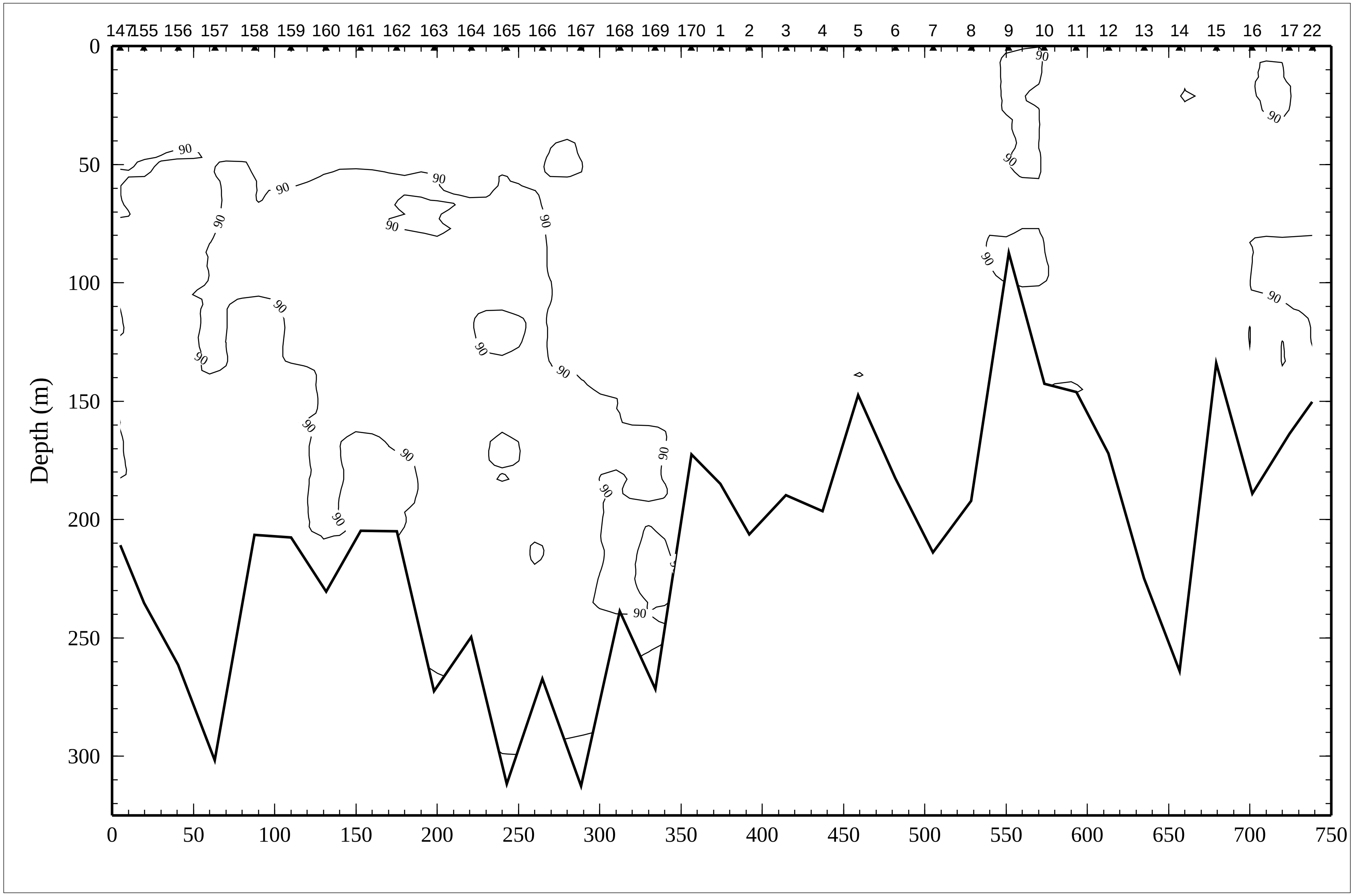

Figure 8.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

H142

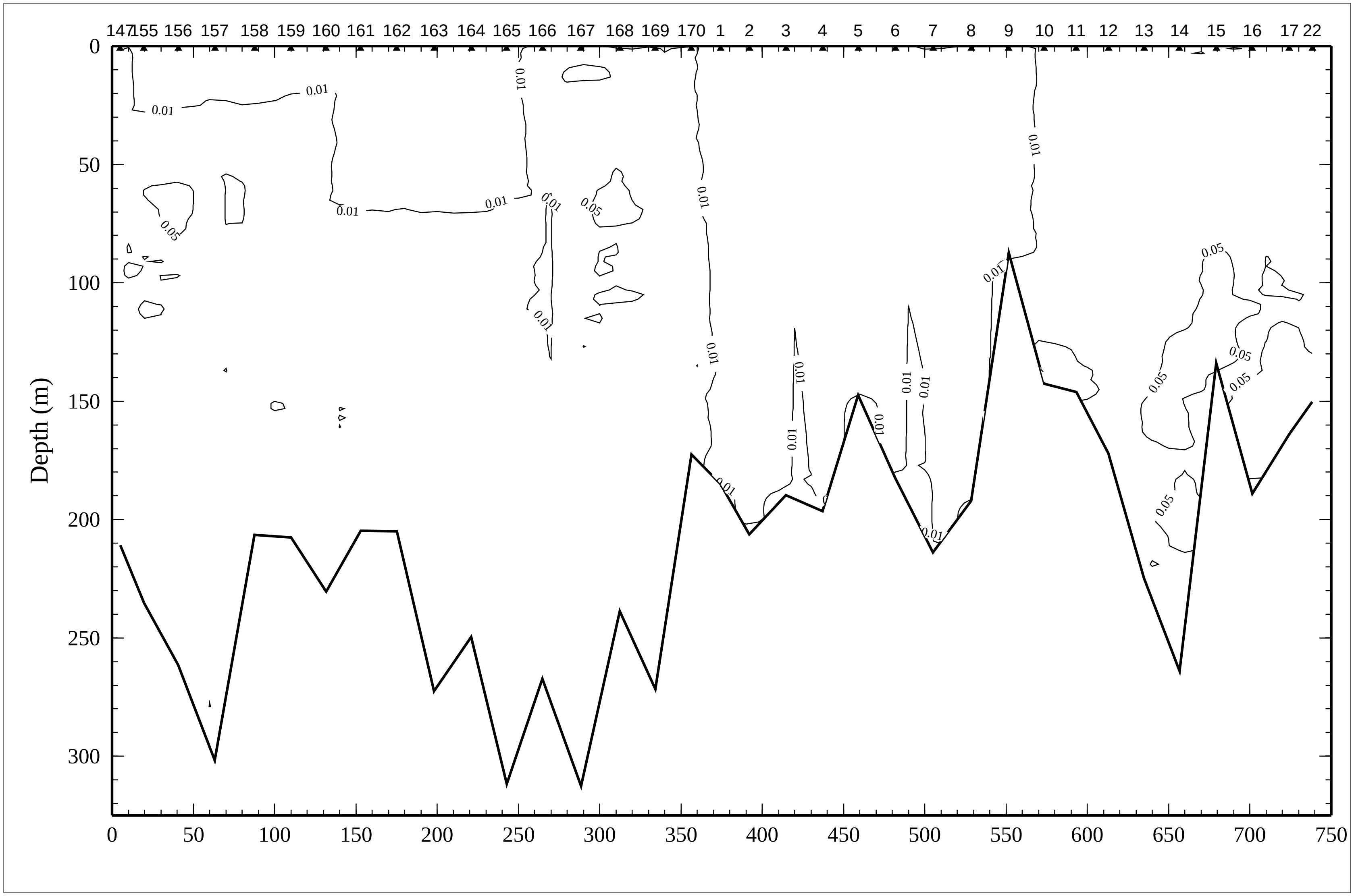

Figure 8.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

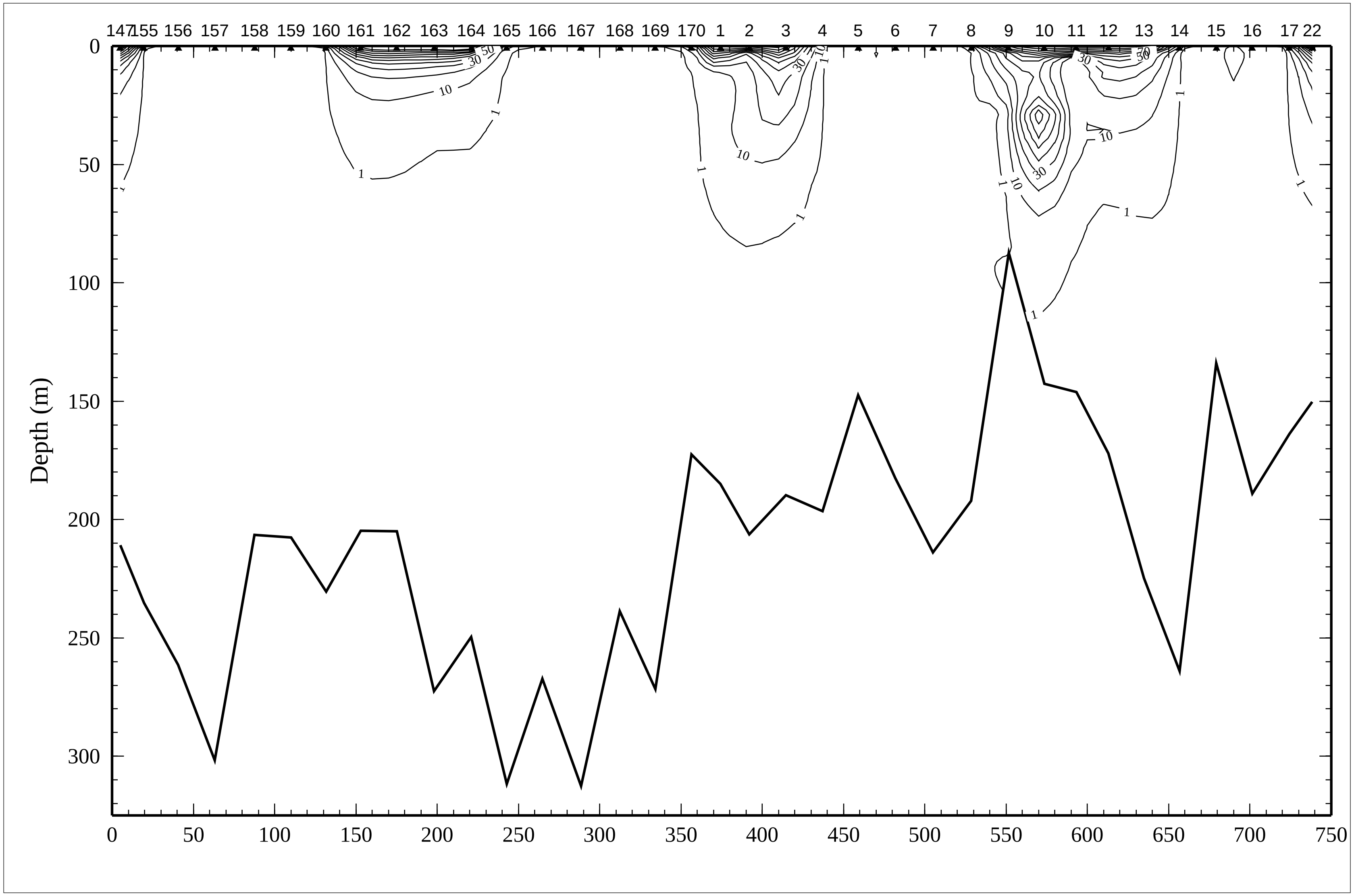

Figure 8.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

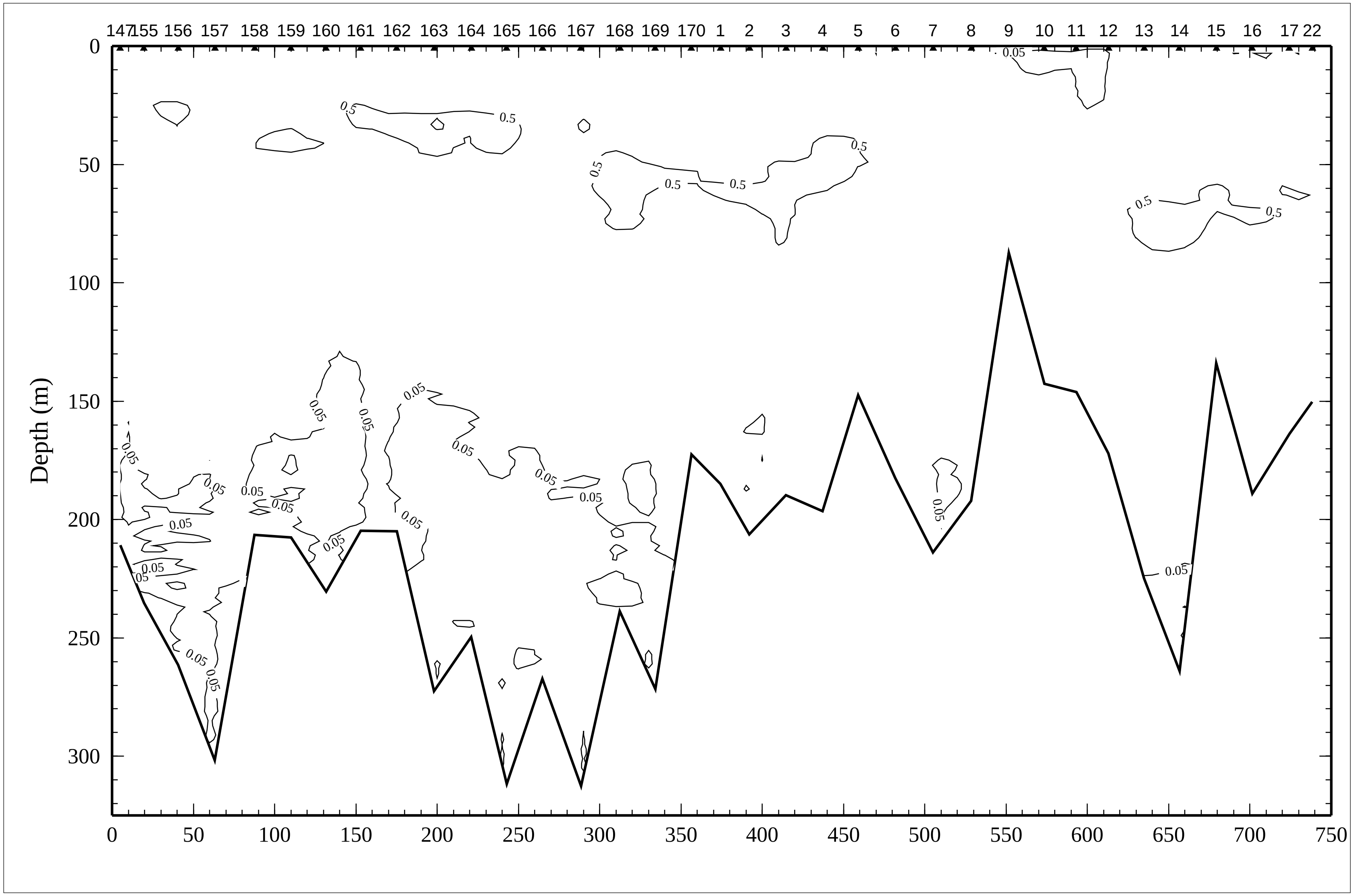

Figure 8.9.7. Relative fluorescence on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

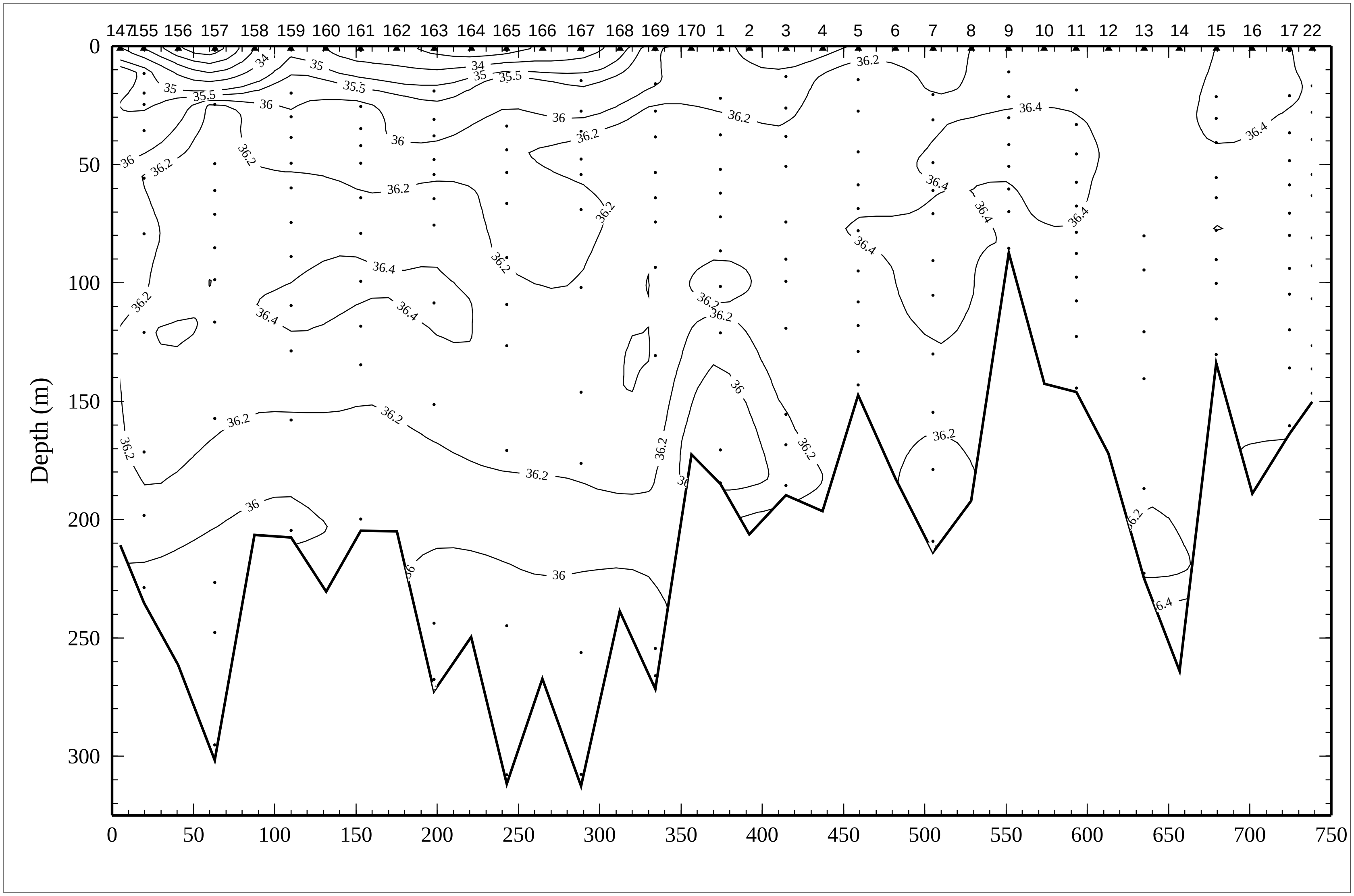

Figure 8.9.8. Bottle salinity on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

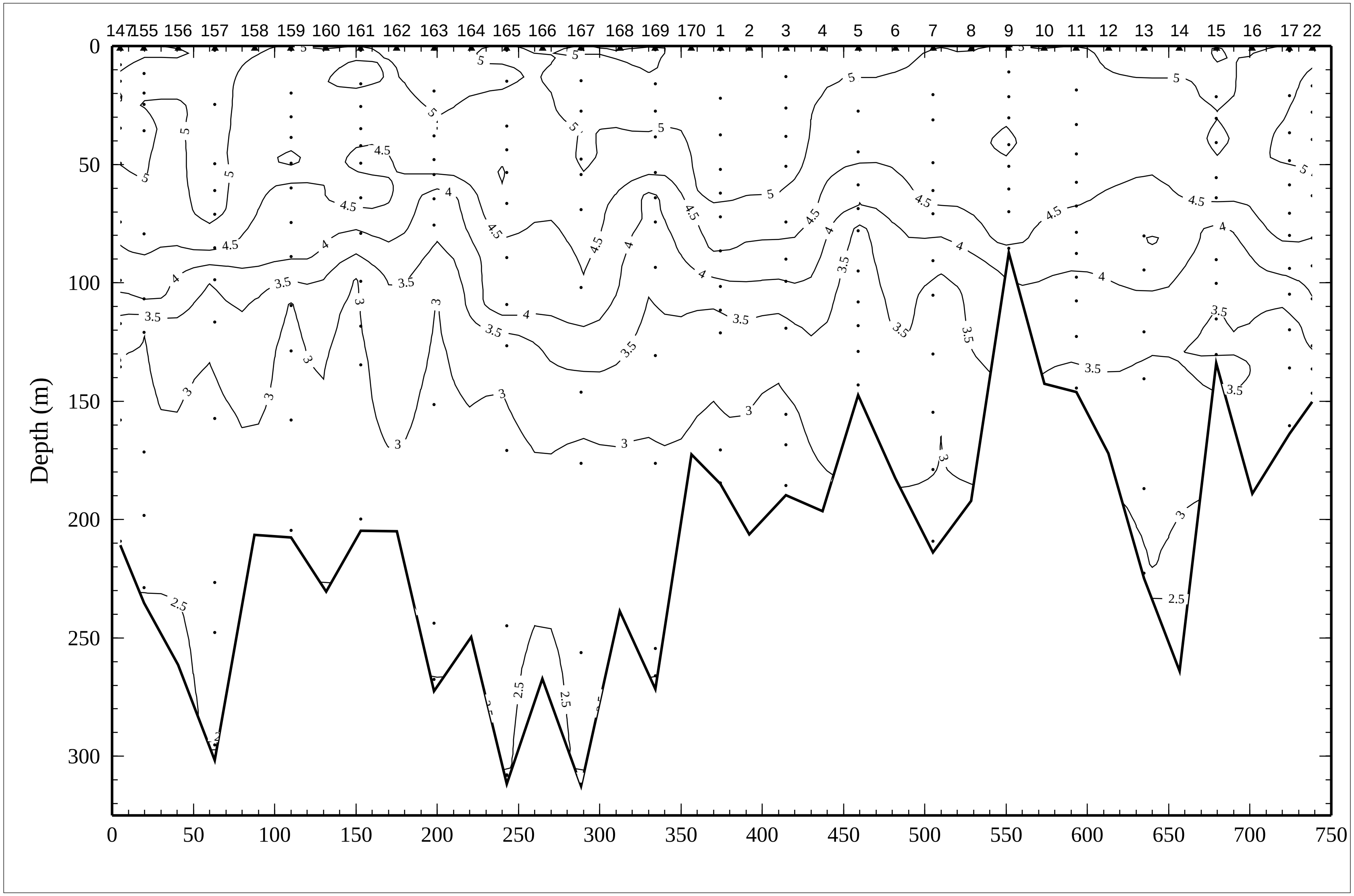

Figure 8.9.9. Dissolved oxygen (ml·l-1) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

H147

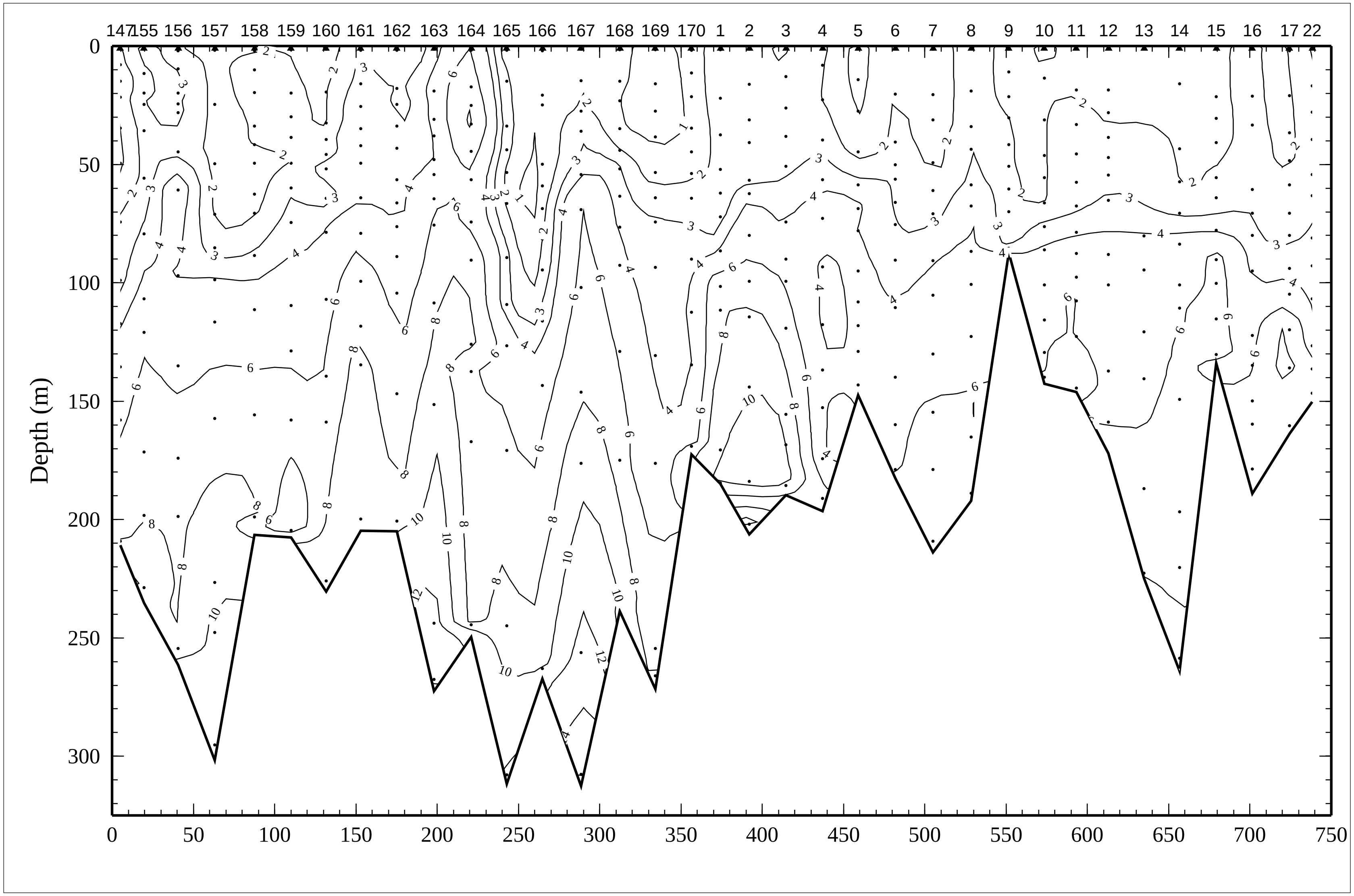

Figure 8.9.10. Silicate ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

H148

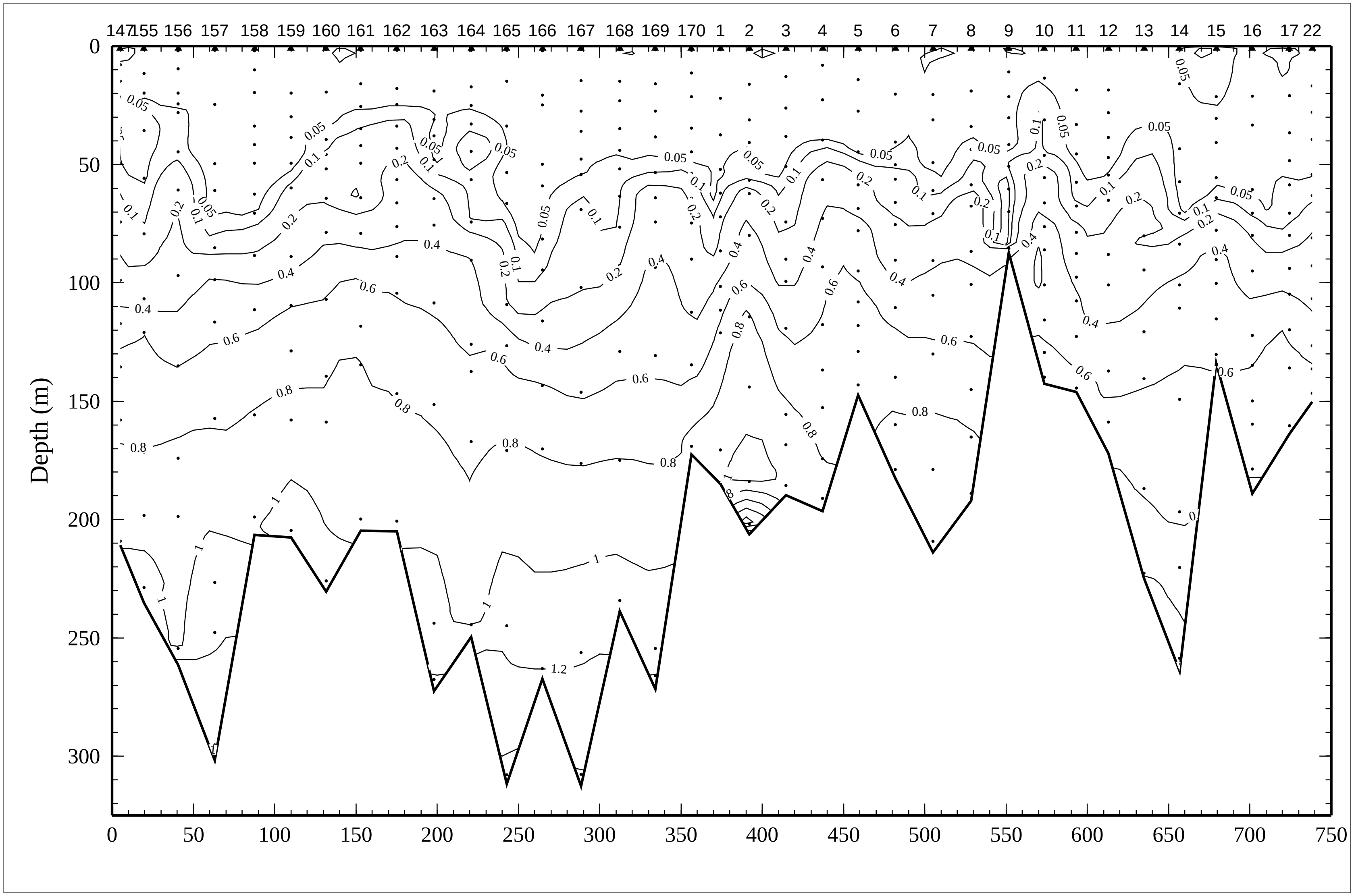

Figure 8.9.11. Phosphate (μmol·l^{-1}) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

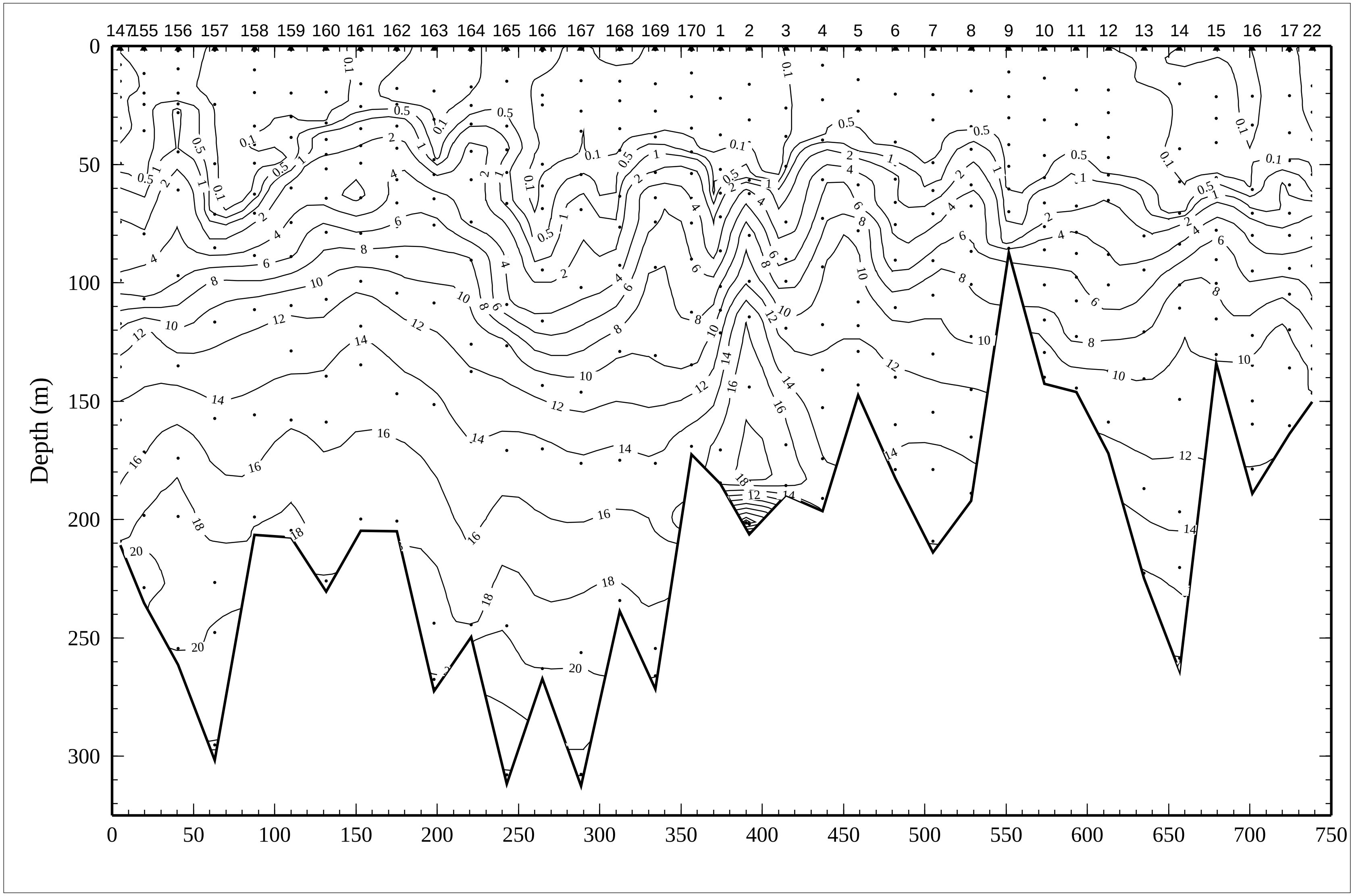

Figure 8.9.12. Nitrate (μmol·l^{-1}) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

H150

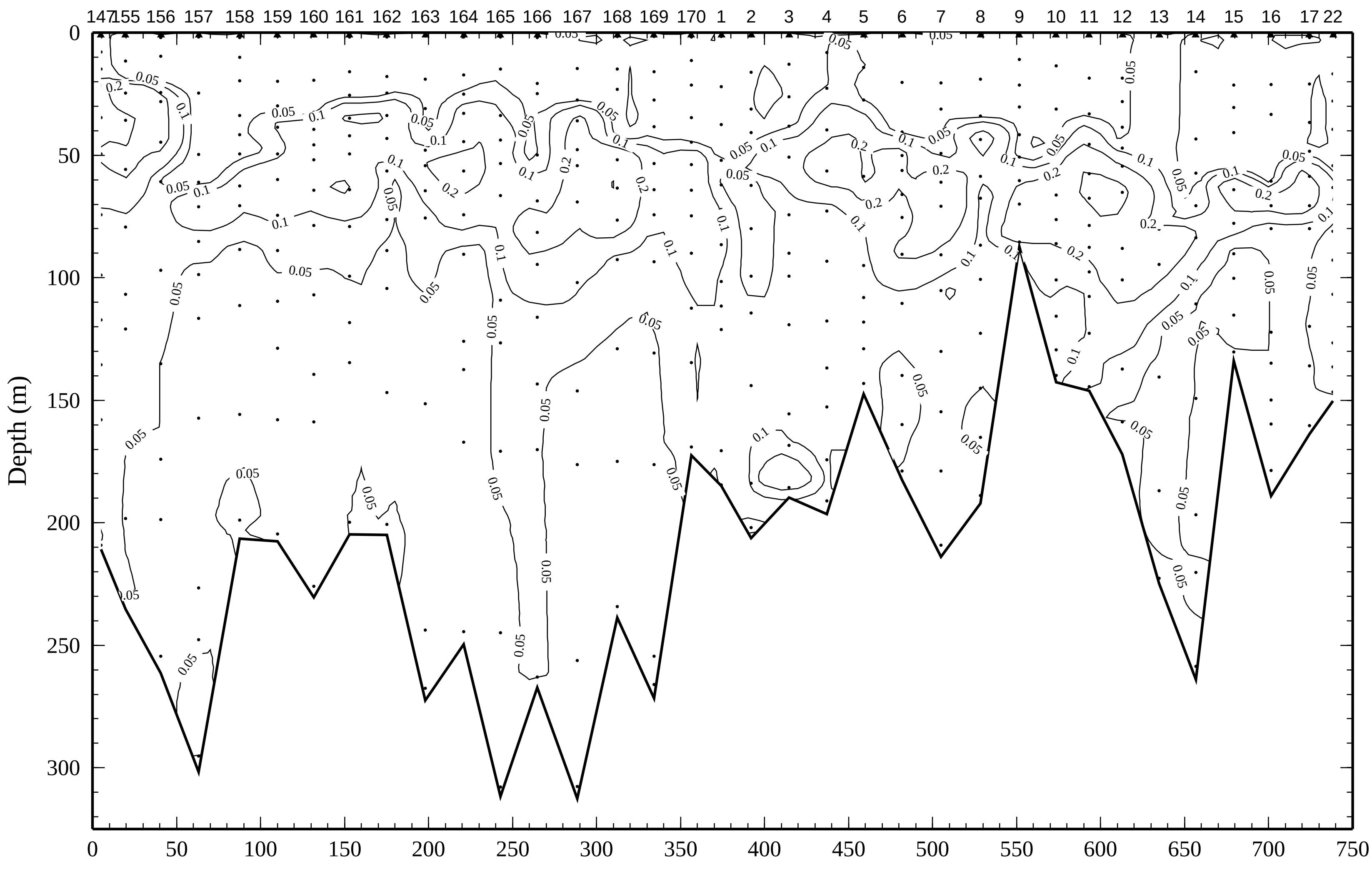

Figure 8.9.13. Nitrite (µmol·l^{-1}) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

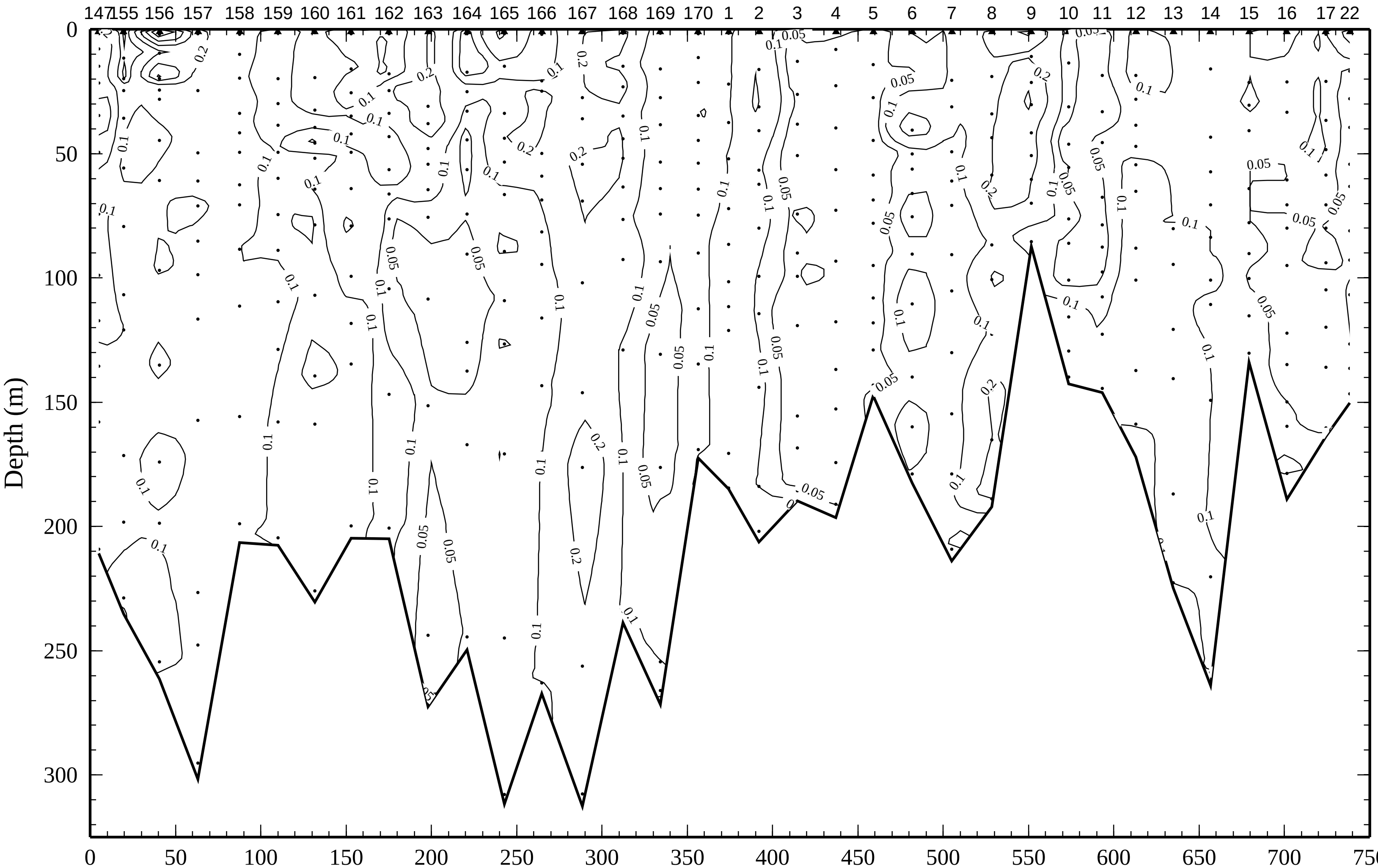

Figure 8.9.14. Ammonium (μmol·l[-1]) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

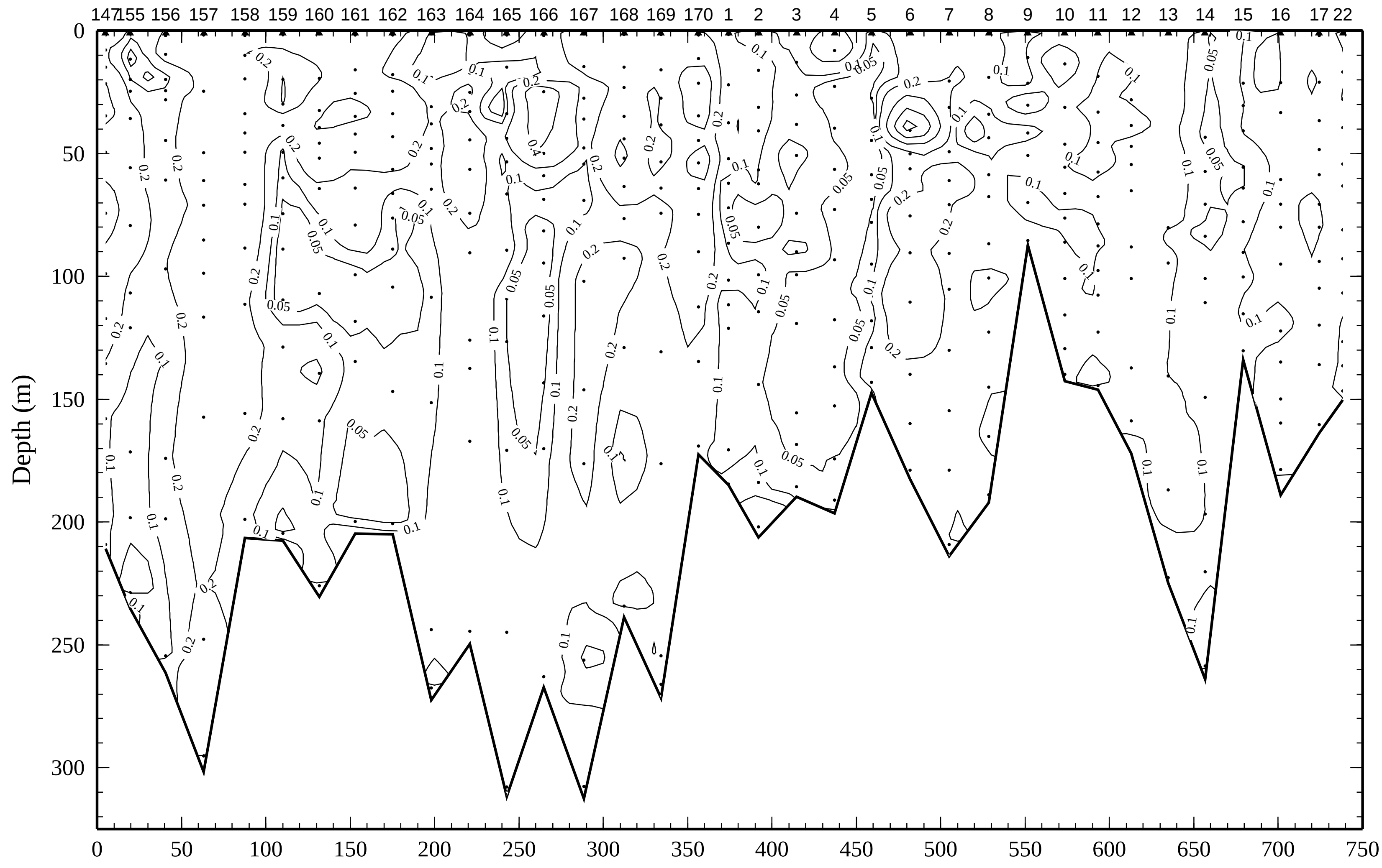

Figure 8.9.15. Urea (µmol·l⁻¹) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

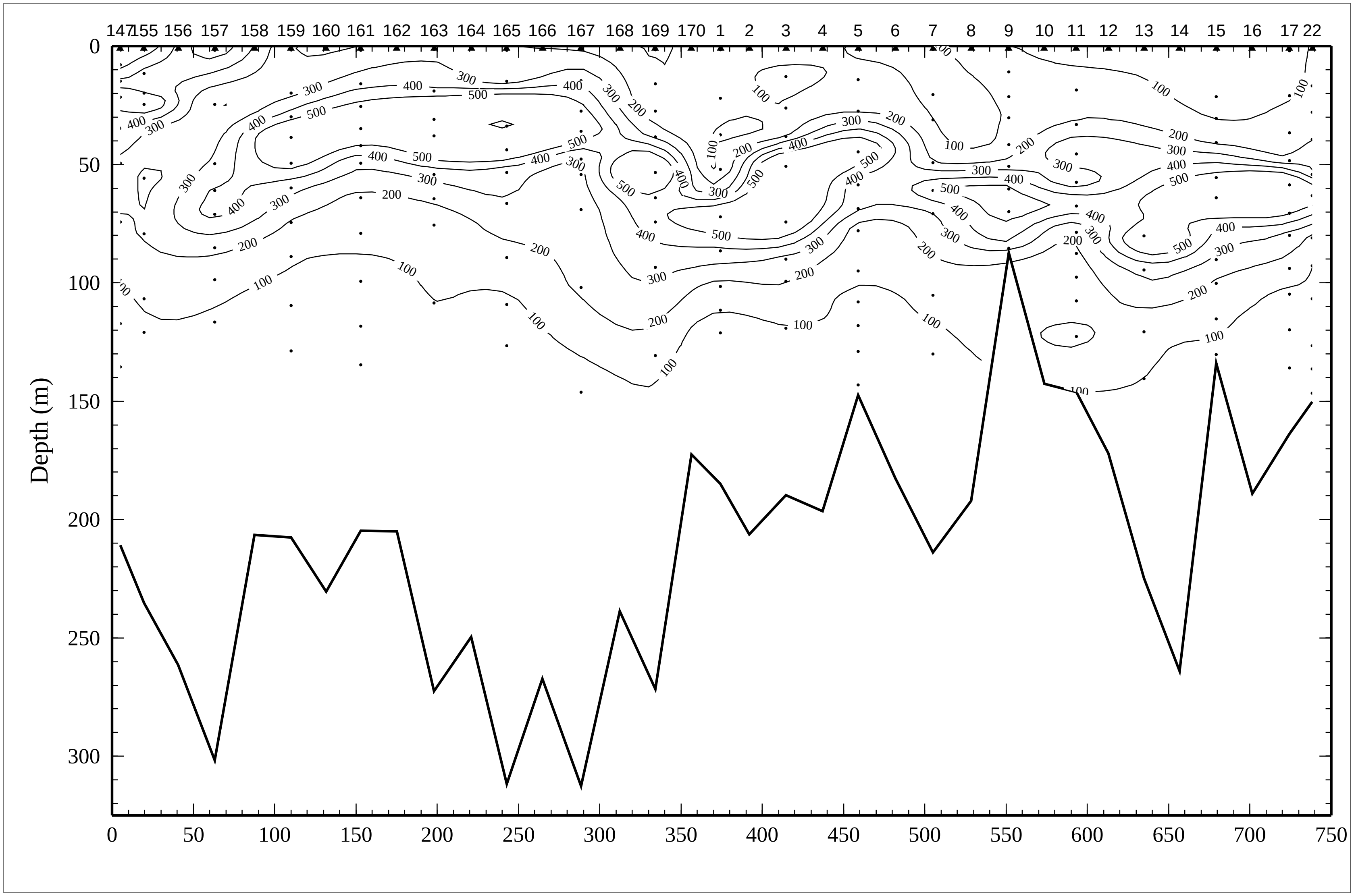

Figure 8.9.16. Chlorophyll a (ng·l^{-1}) on line 9 of LATEX A survey H08, 23 April - 7 May 1994.

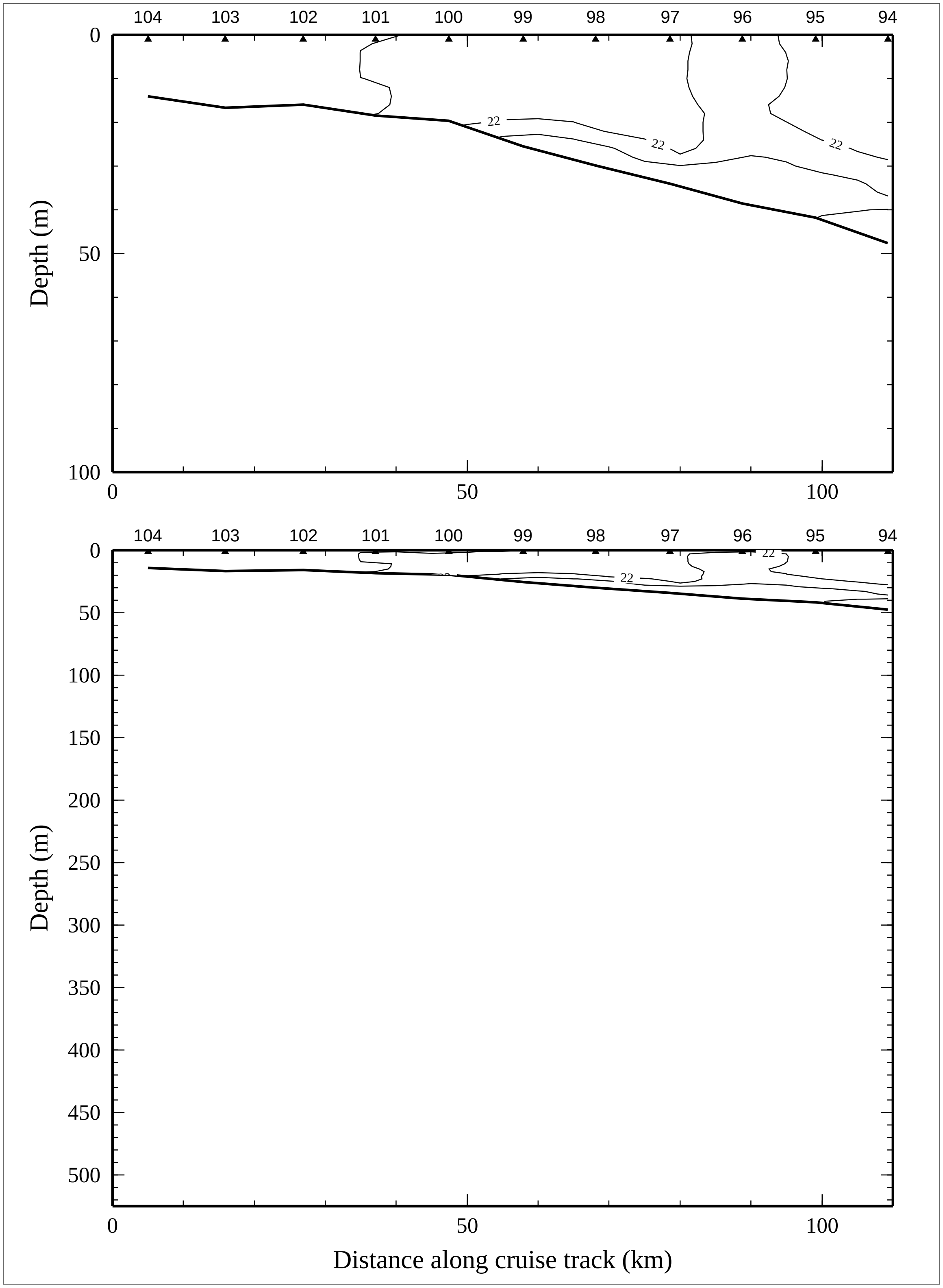

Figure 8.11.1. Potential temperature (˚C) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

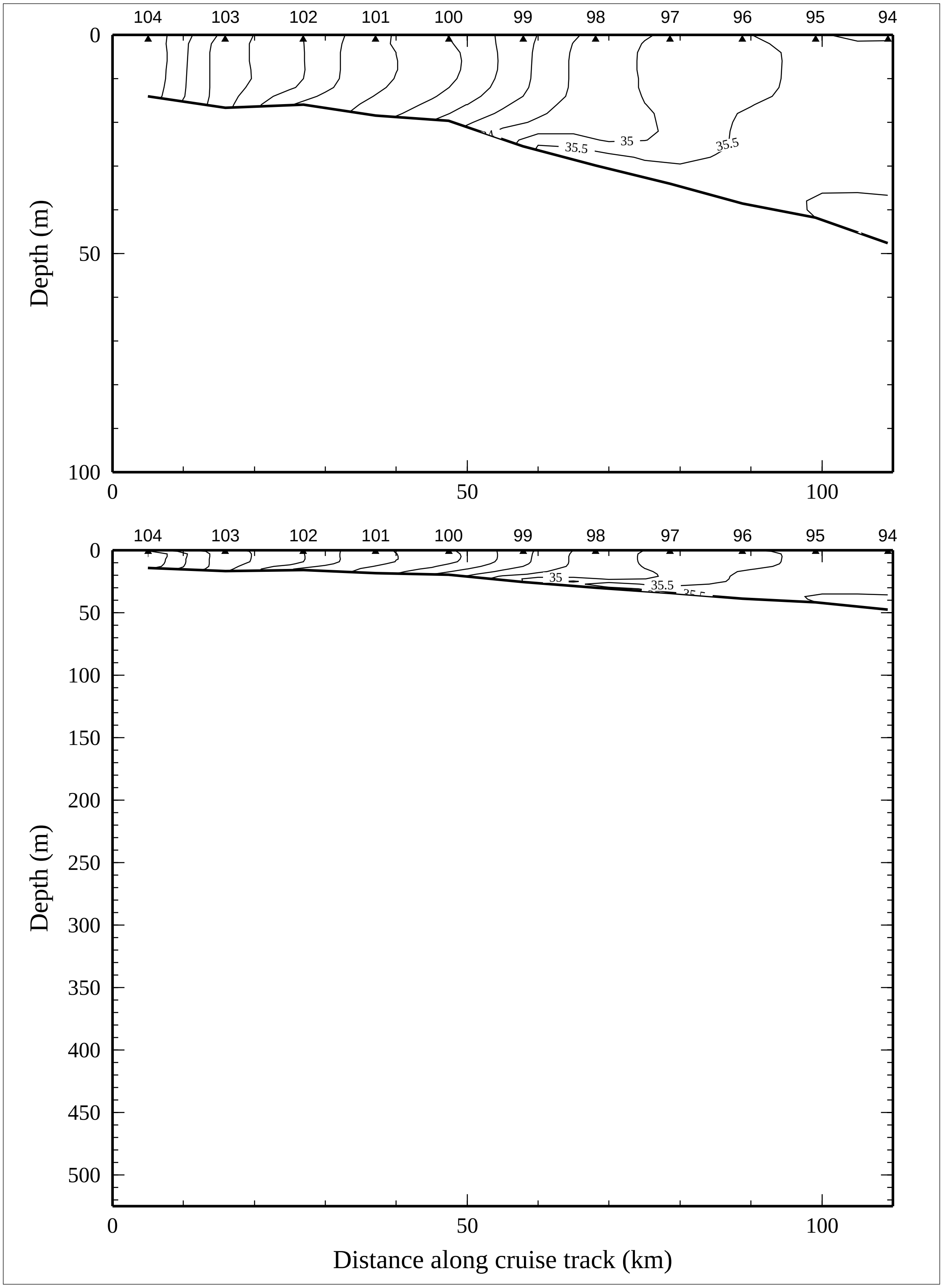

Figure 8.11.2. Salinity, derived from CTD data, on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

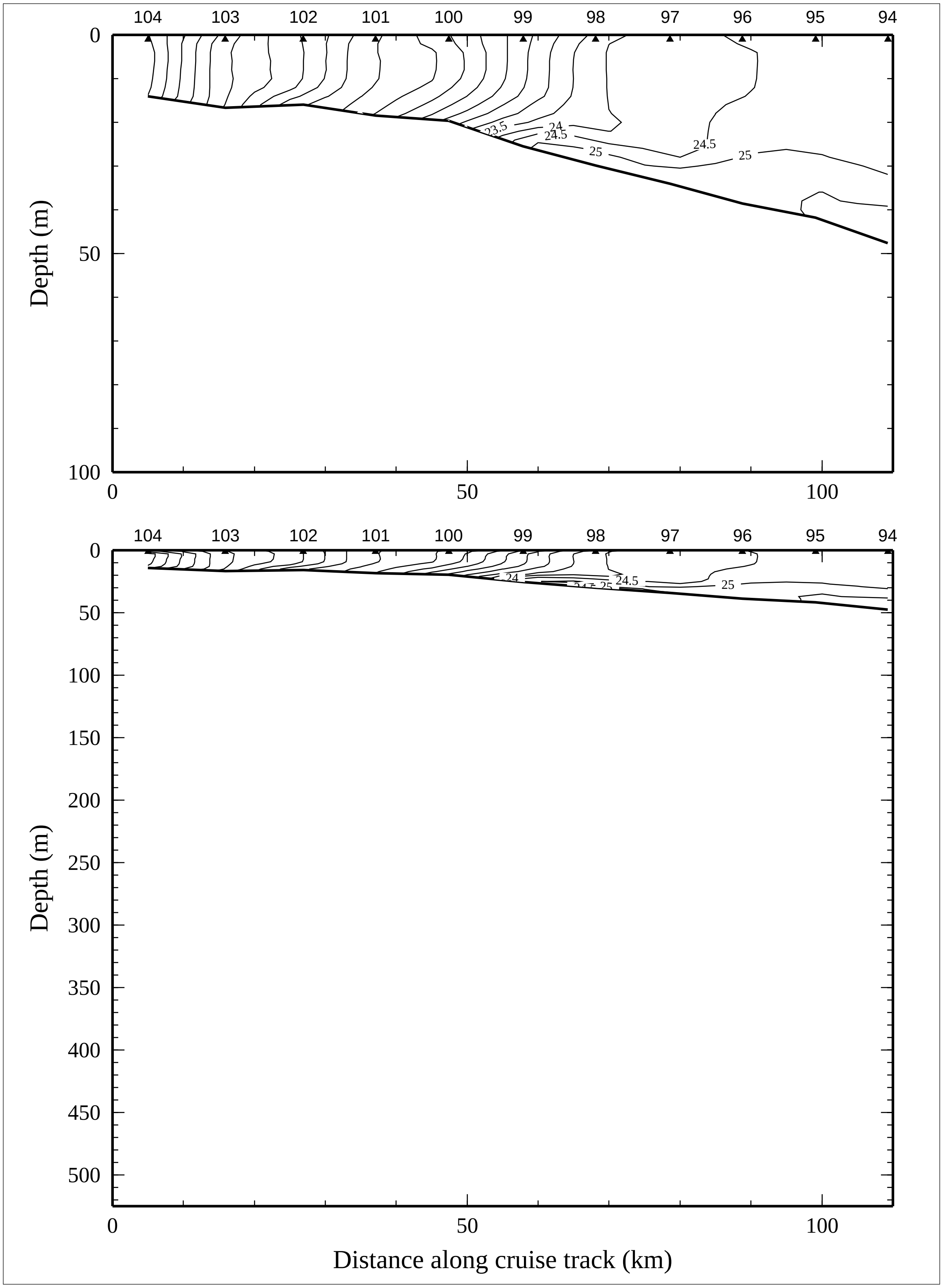

Figure 8.11.3. Density anomaly (σ_θ in kg·m^{-3}) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

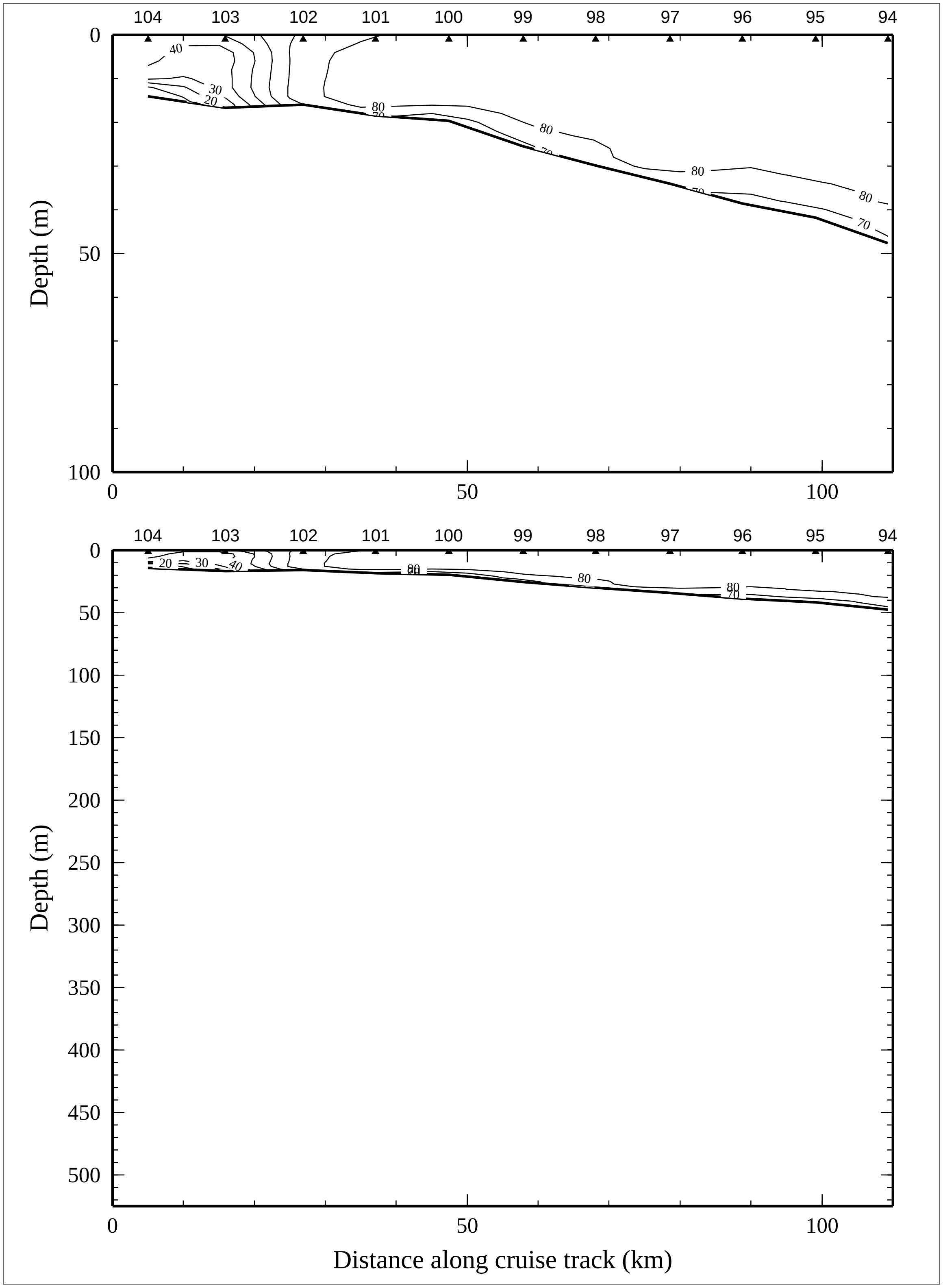

Figure 8.11.4. Percent transmission (660 nm wave length; 25-cm path length) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

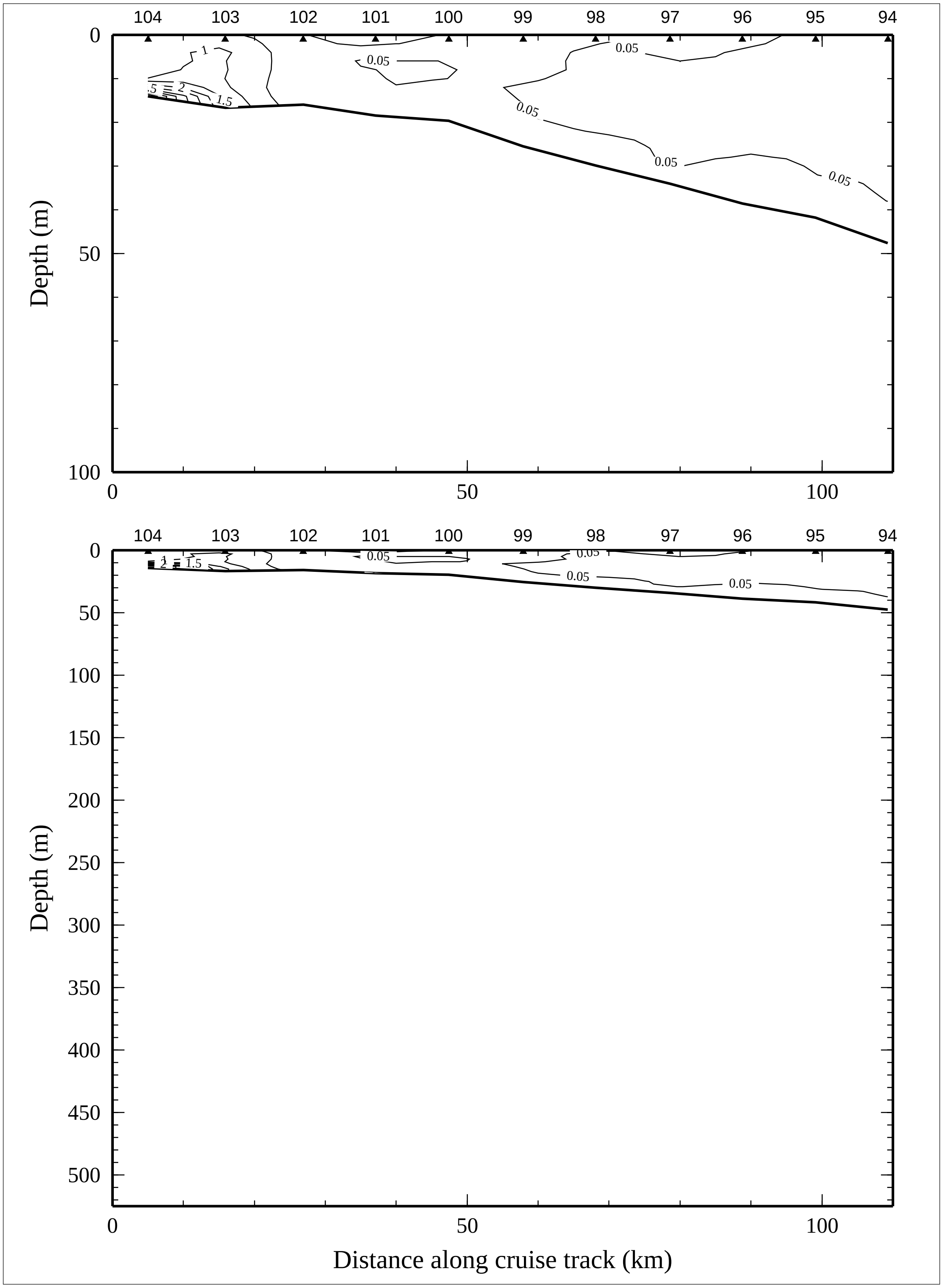

Figure 8.11.5. Optical backscatterance (voltage) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

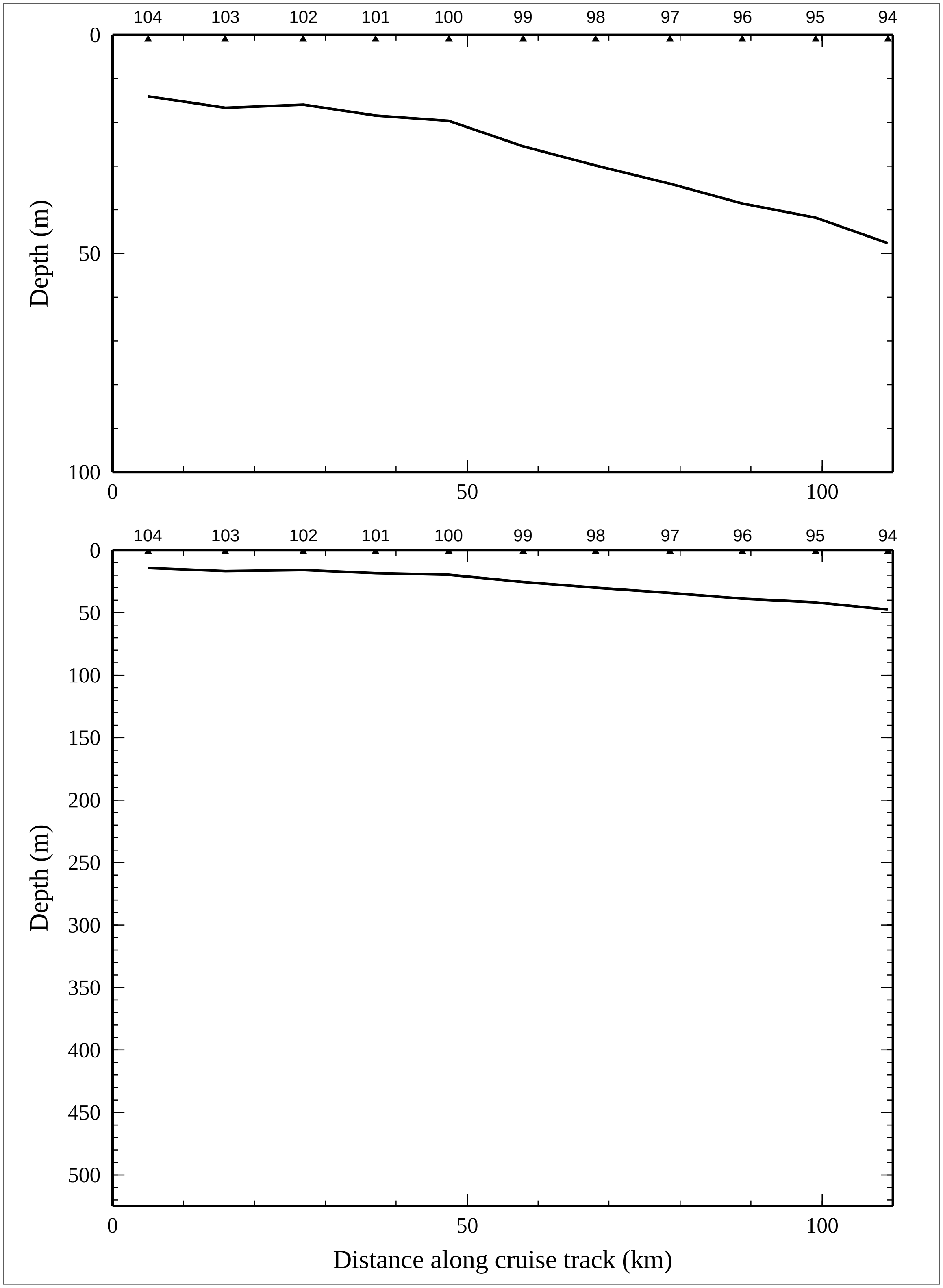

Figure 8.11.6. Downwelling irradiance as percent of surface irradiance on line 11 of LATEX A survey H08, 23 April - 7 May 1994. Night stations.

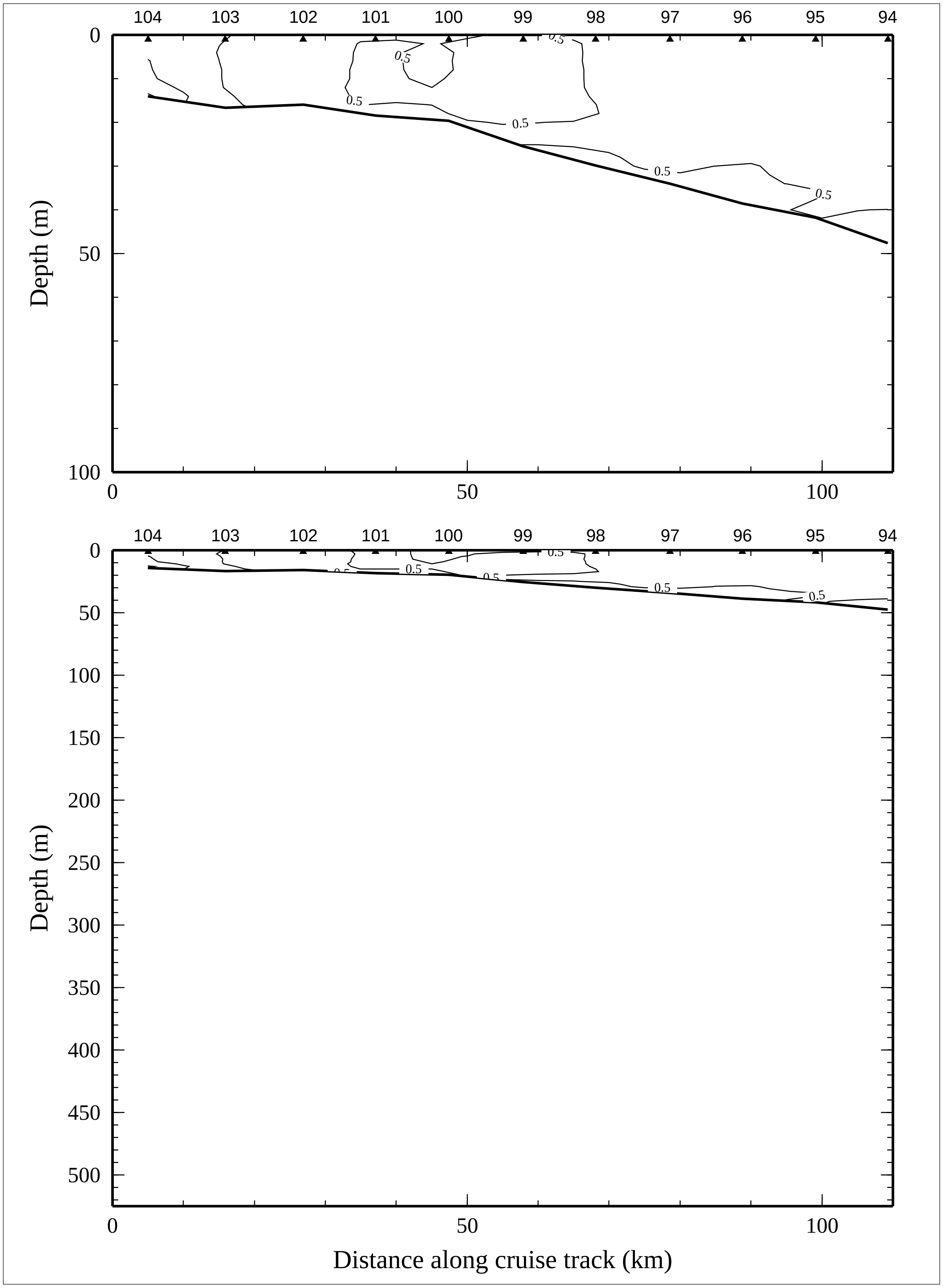

Figure 8.11.7. Relative fluorescence on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

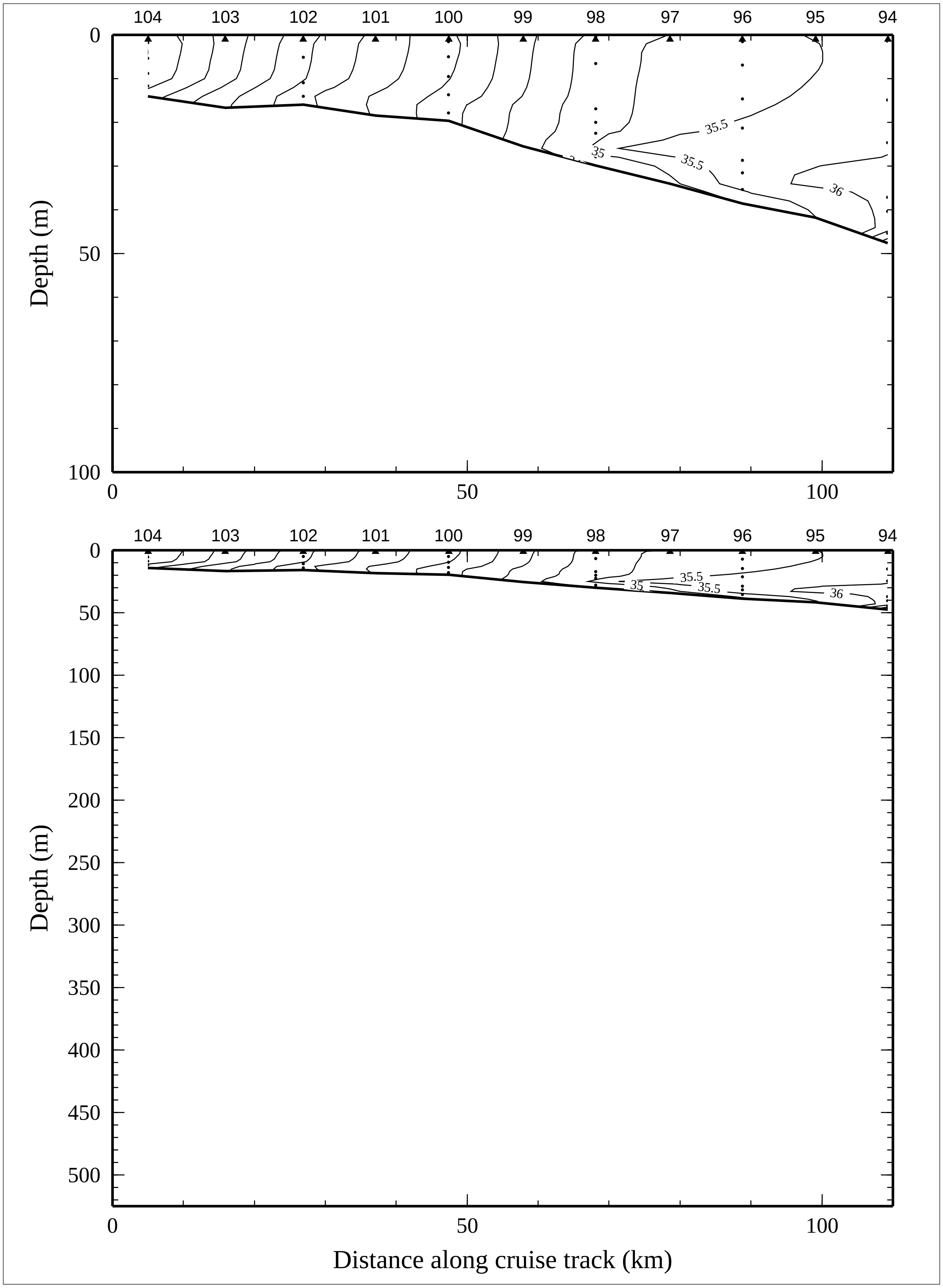

Figure 8.11.8. Bottle salinity on line 11 of LATEX A survey H08,
23 April - 7 May 1994.

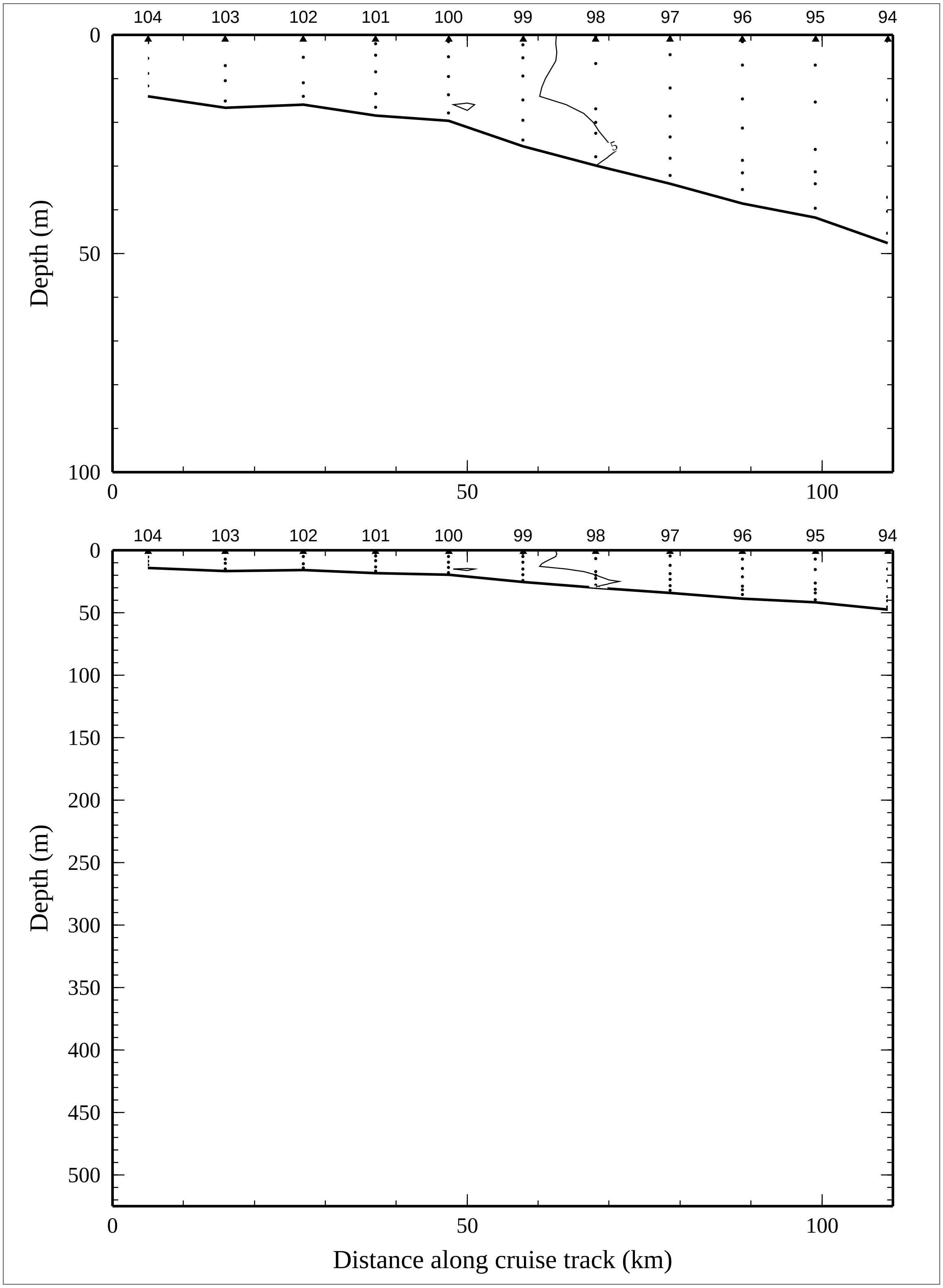

Figure 8.11.9. Dissolved oxygen (ml·l^{-1}) on line 11 of LATEX A survey H08,
23 April - 7 May 1994.

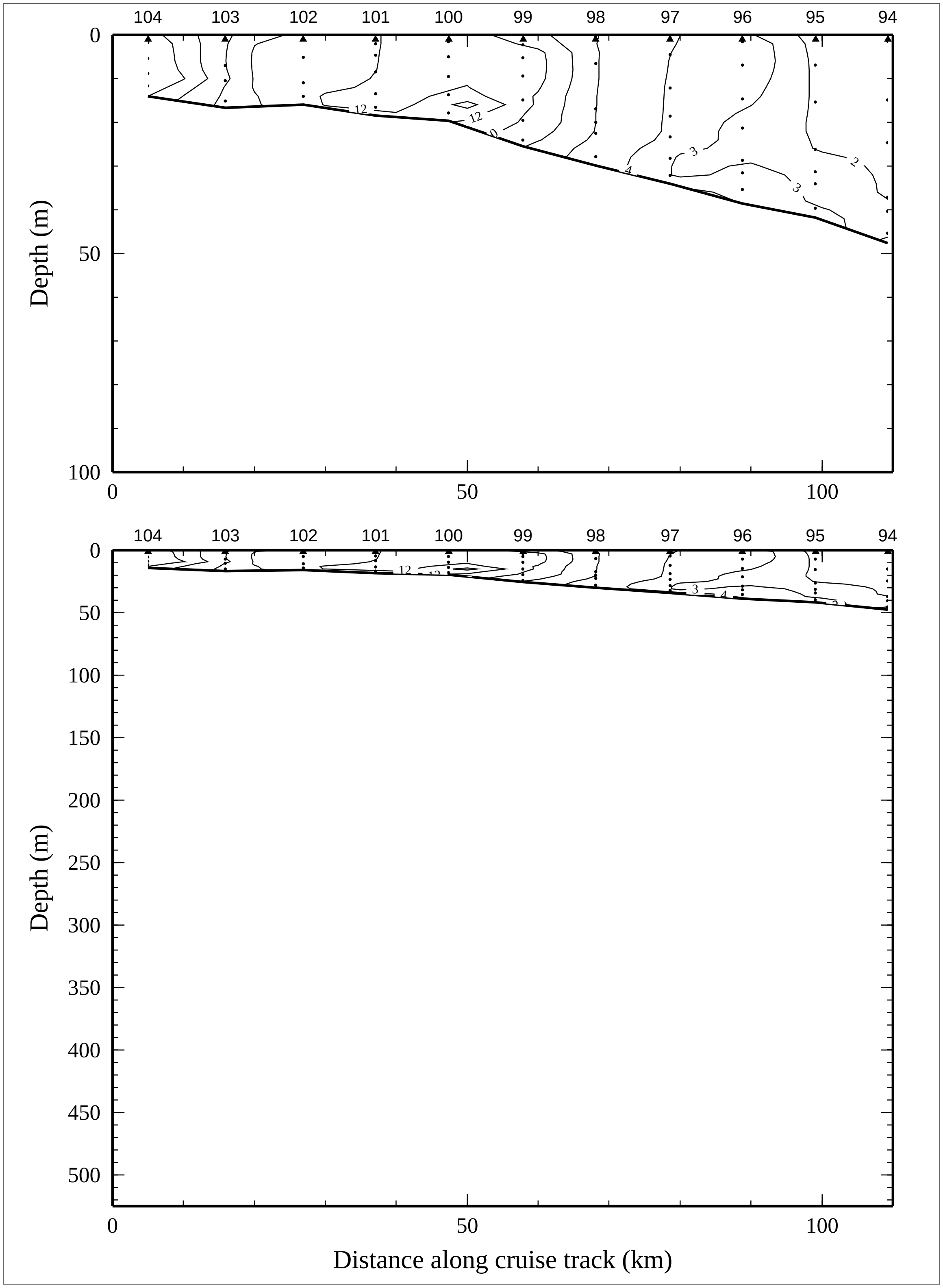

Figure 8.11.10. Silicate (μmol·l-1) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

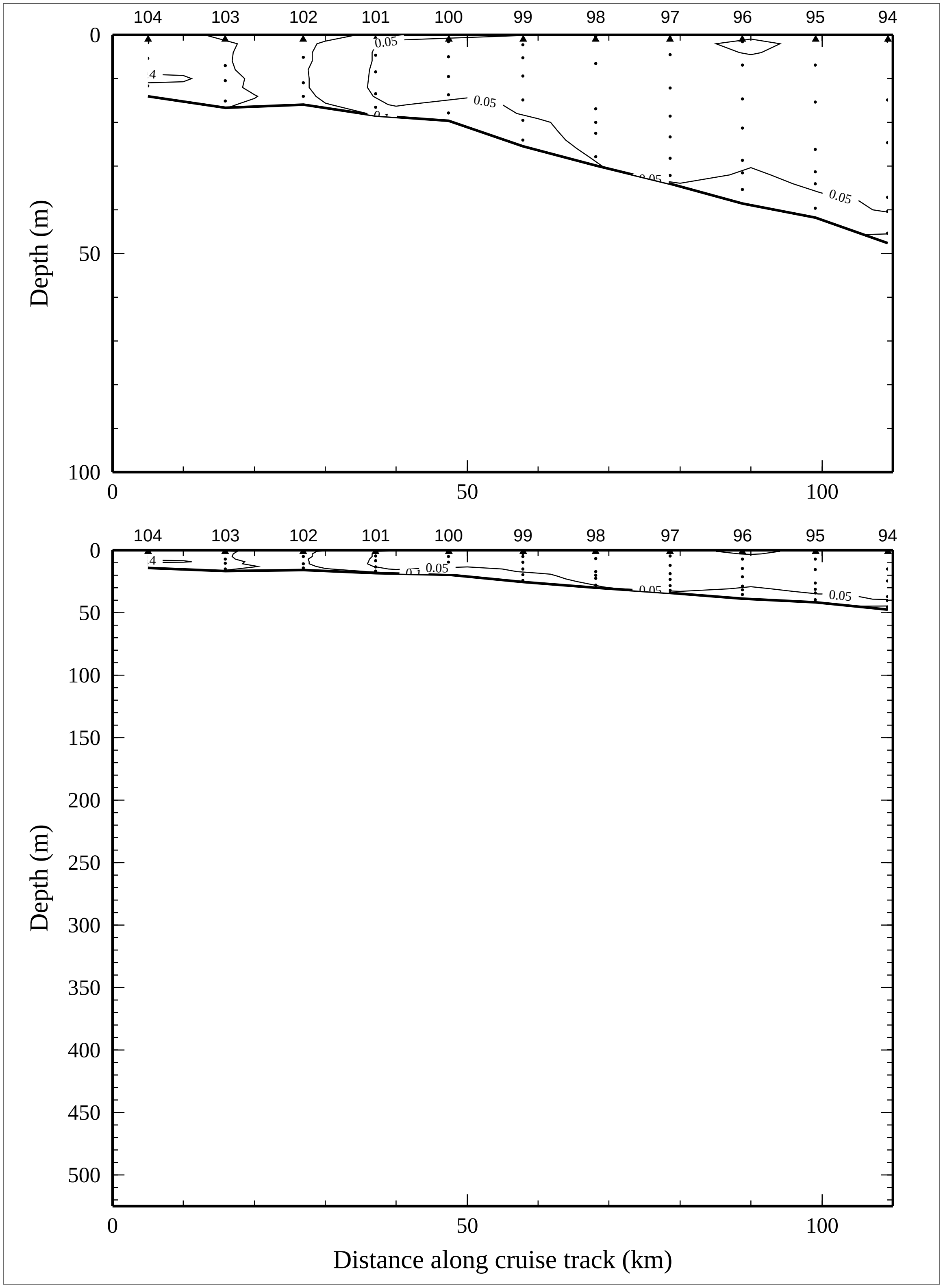

Figure 8.11.11. Phosphate (μmol·l-1) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

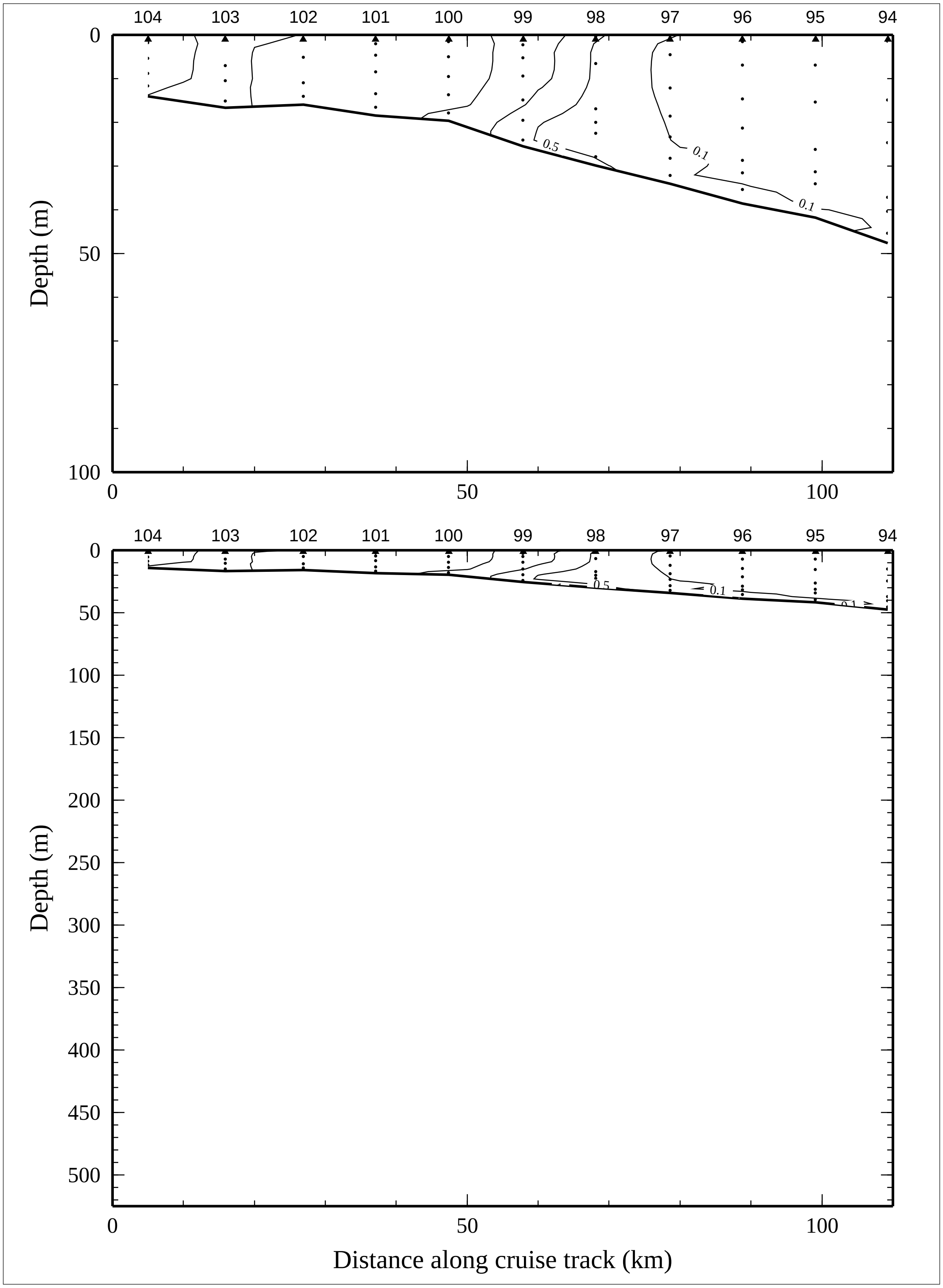

Figure 8.11.12. Nitrate (µmol·l⁻¹) on line 11 of LATEX A survey H08,
23 April - 7 May 1994.

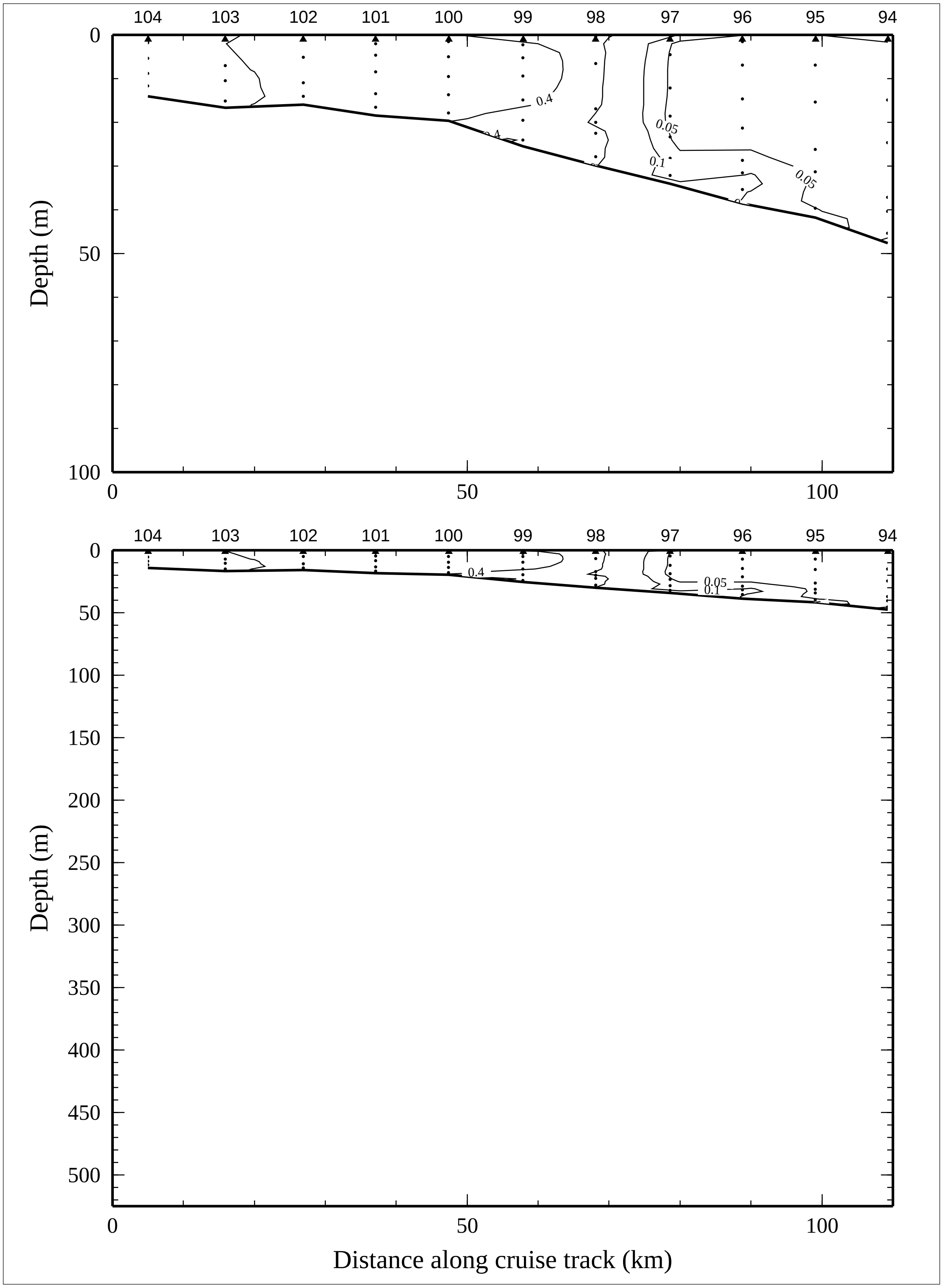

Figure 8.11.13. Nitrite (µmol·l^{-1}) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

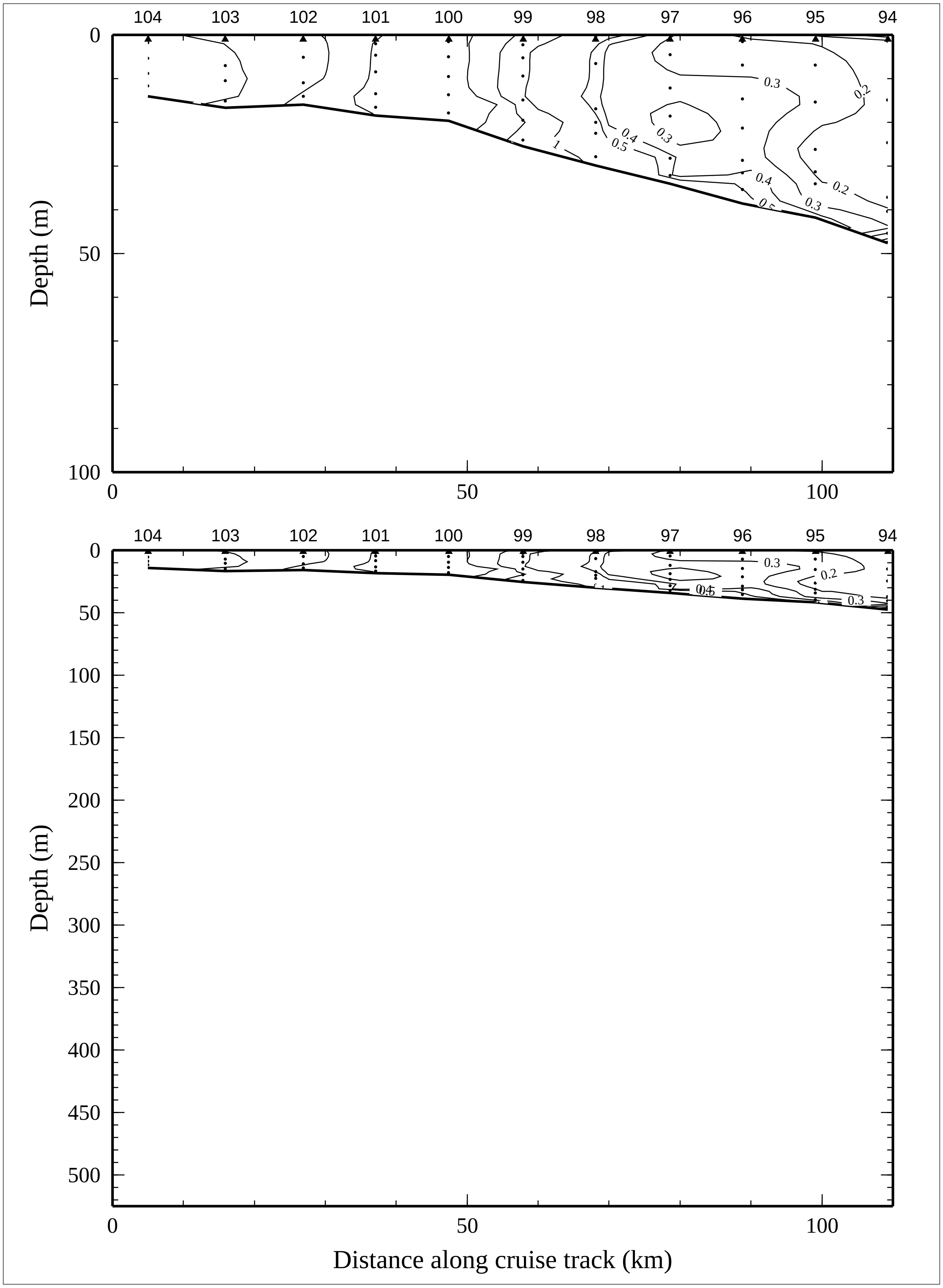

Figure 8.11.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 11 of LATEX A survey H08, 23 April - 7 May 1994.

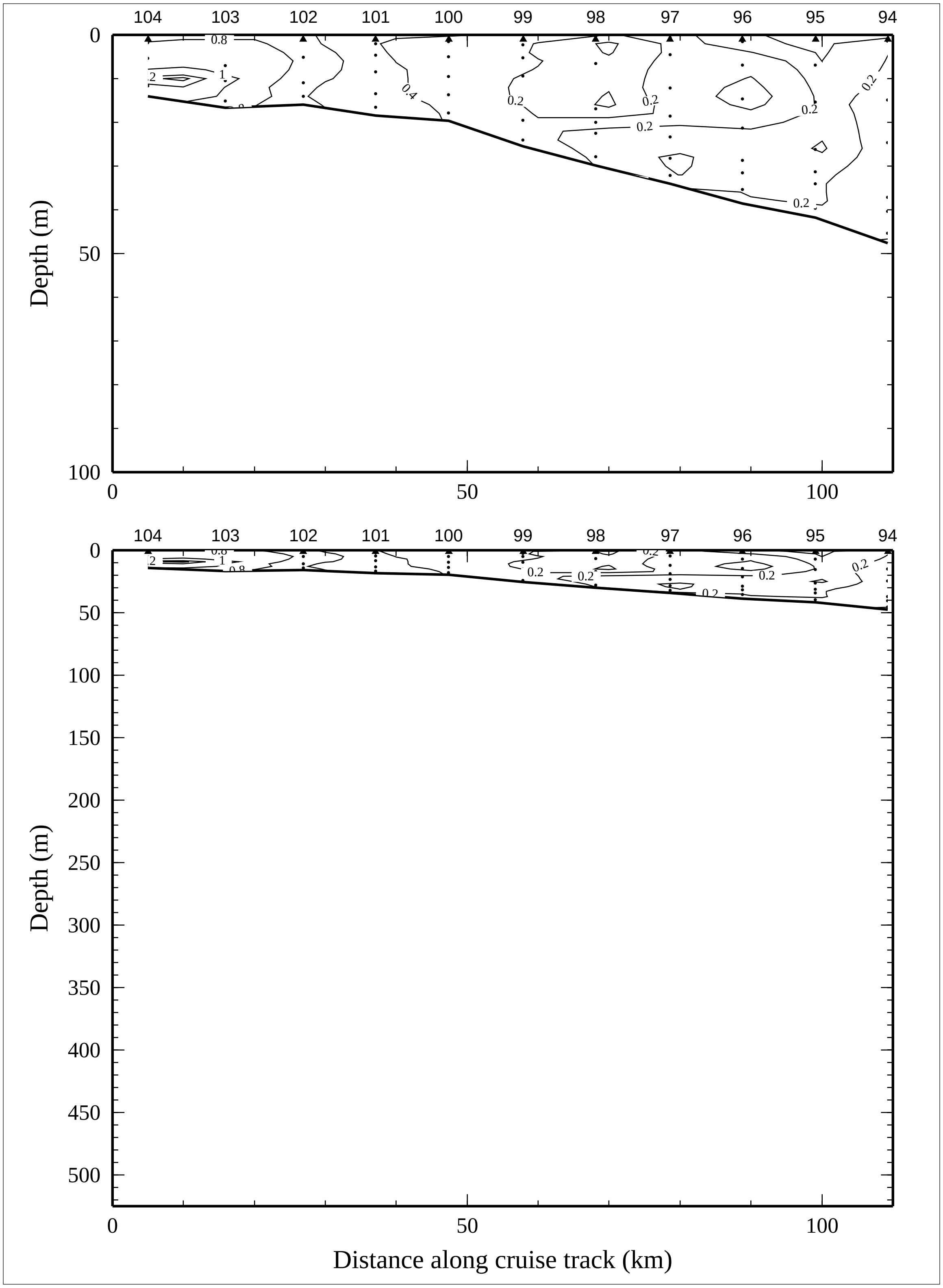

Figure 8.11.15. Urea ($\mu mol \cdot l^{-1}$) on line 11 of LATEX A survey H08,
23 April - 7 May 1994.

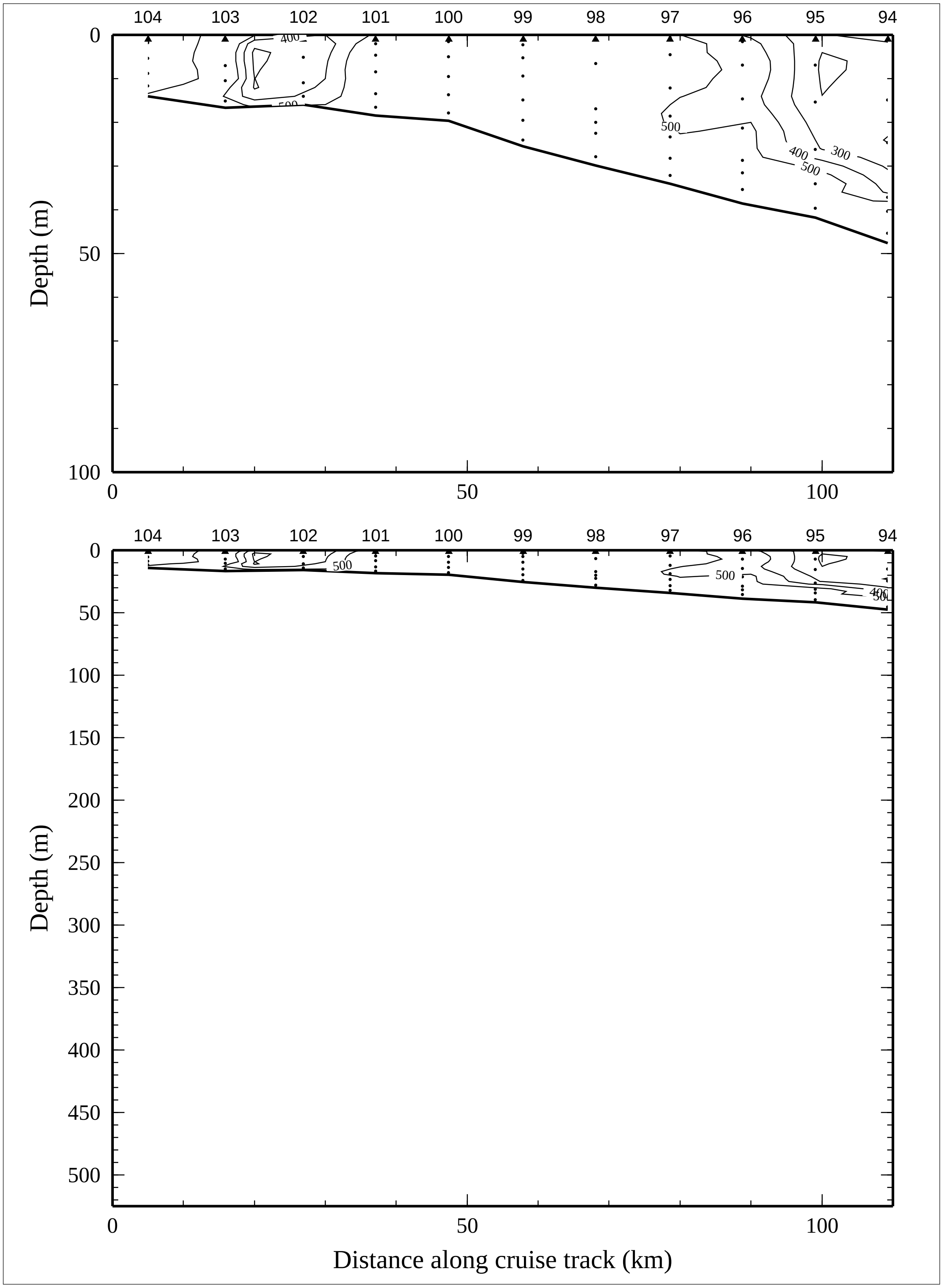

Figure 8.11.16. Chlorophyll a (ng·l^{-1}) on line 11 of LATEX A survey H08,
23 April - 7 May 1994.

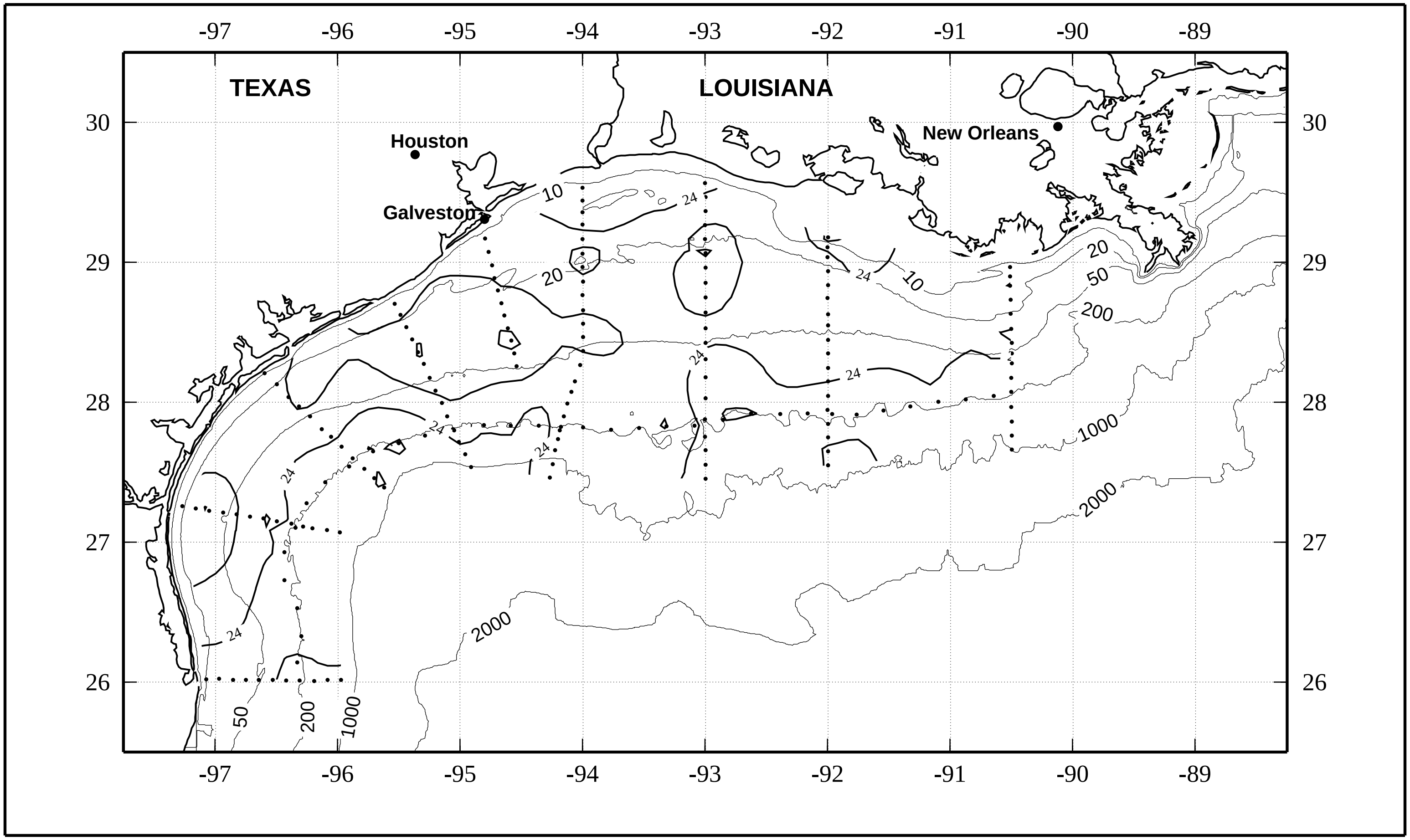

Figure 8.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

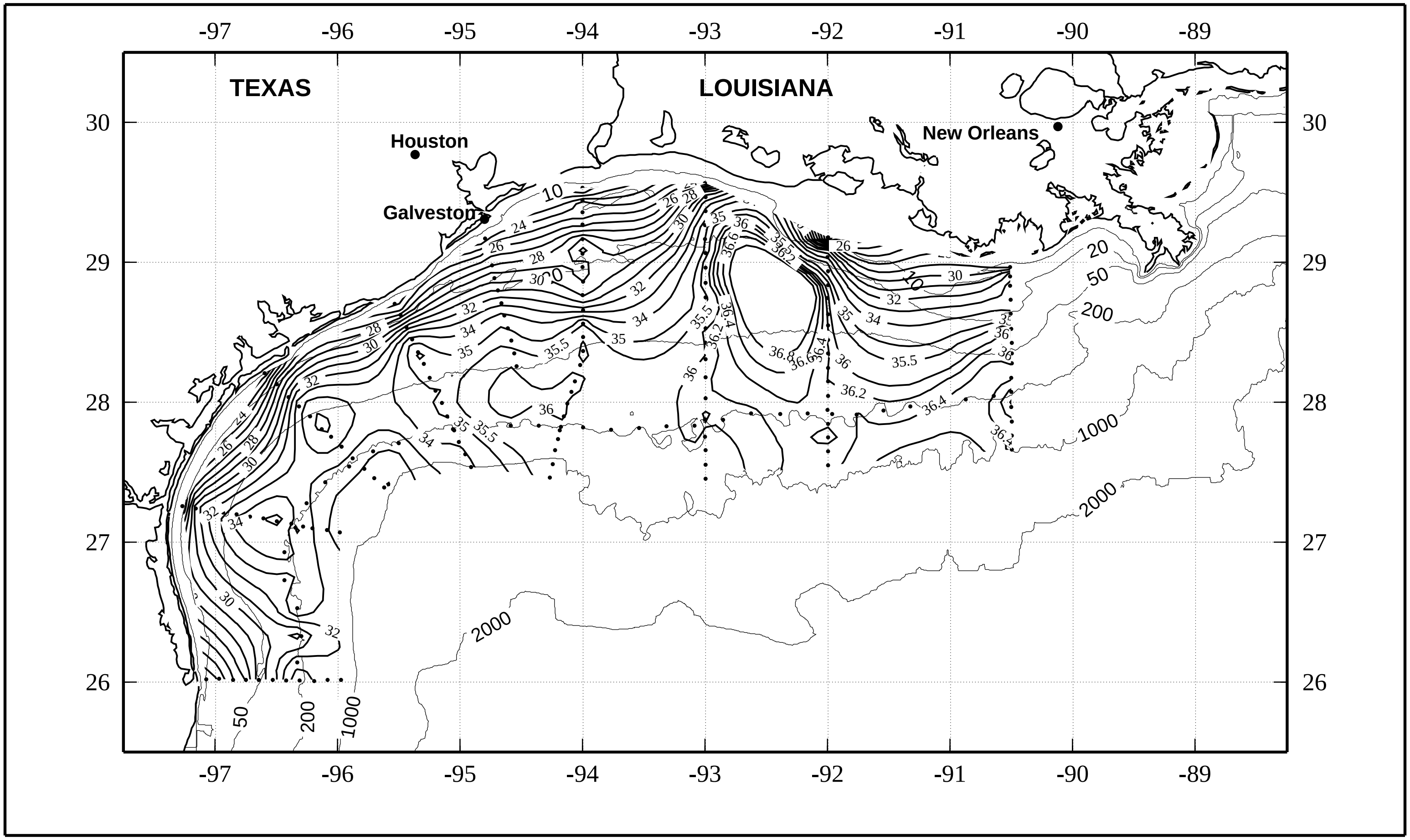

Figure 8.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

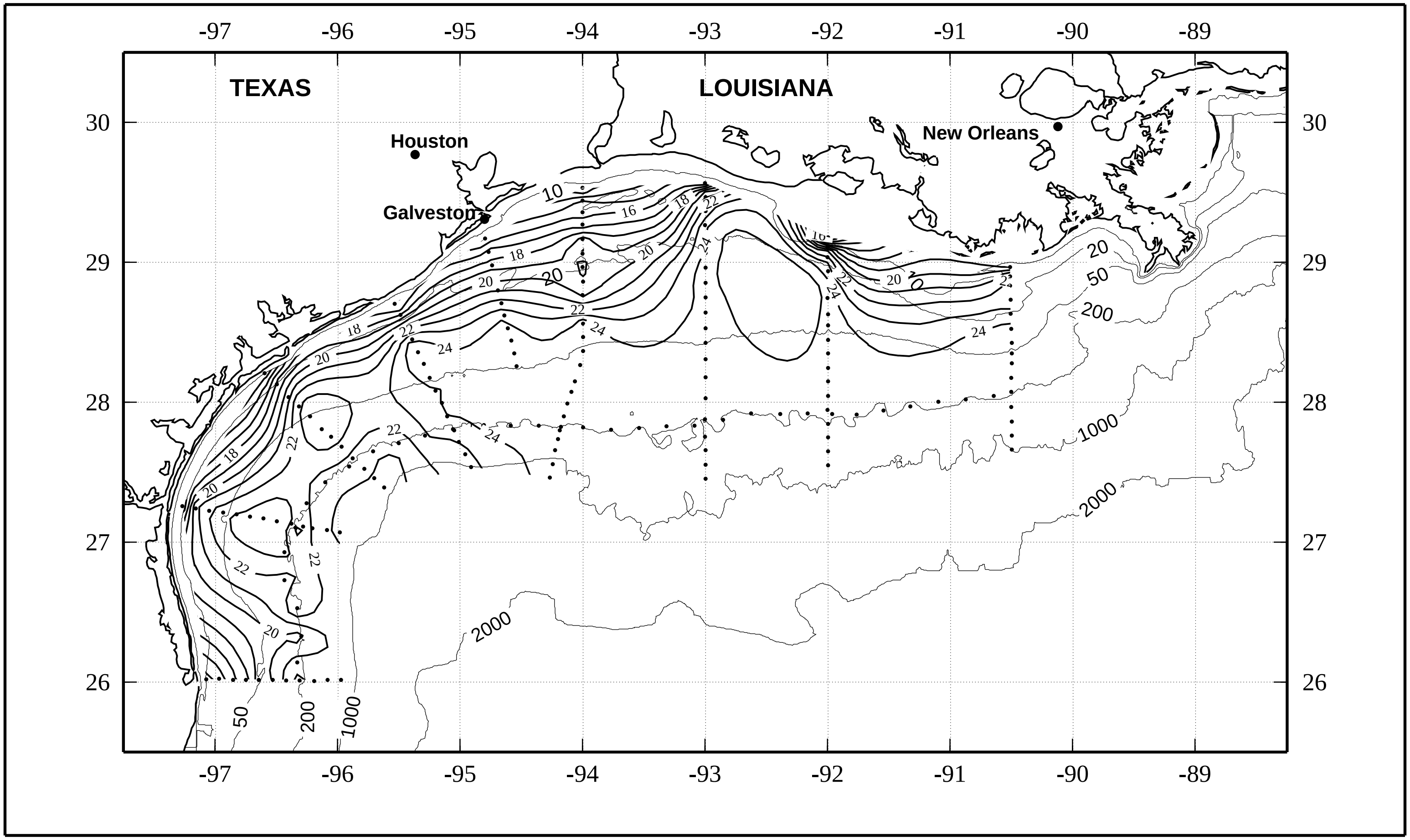

Figure 8.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

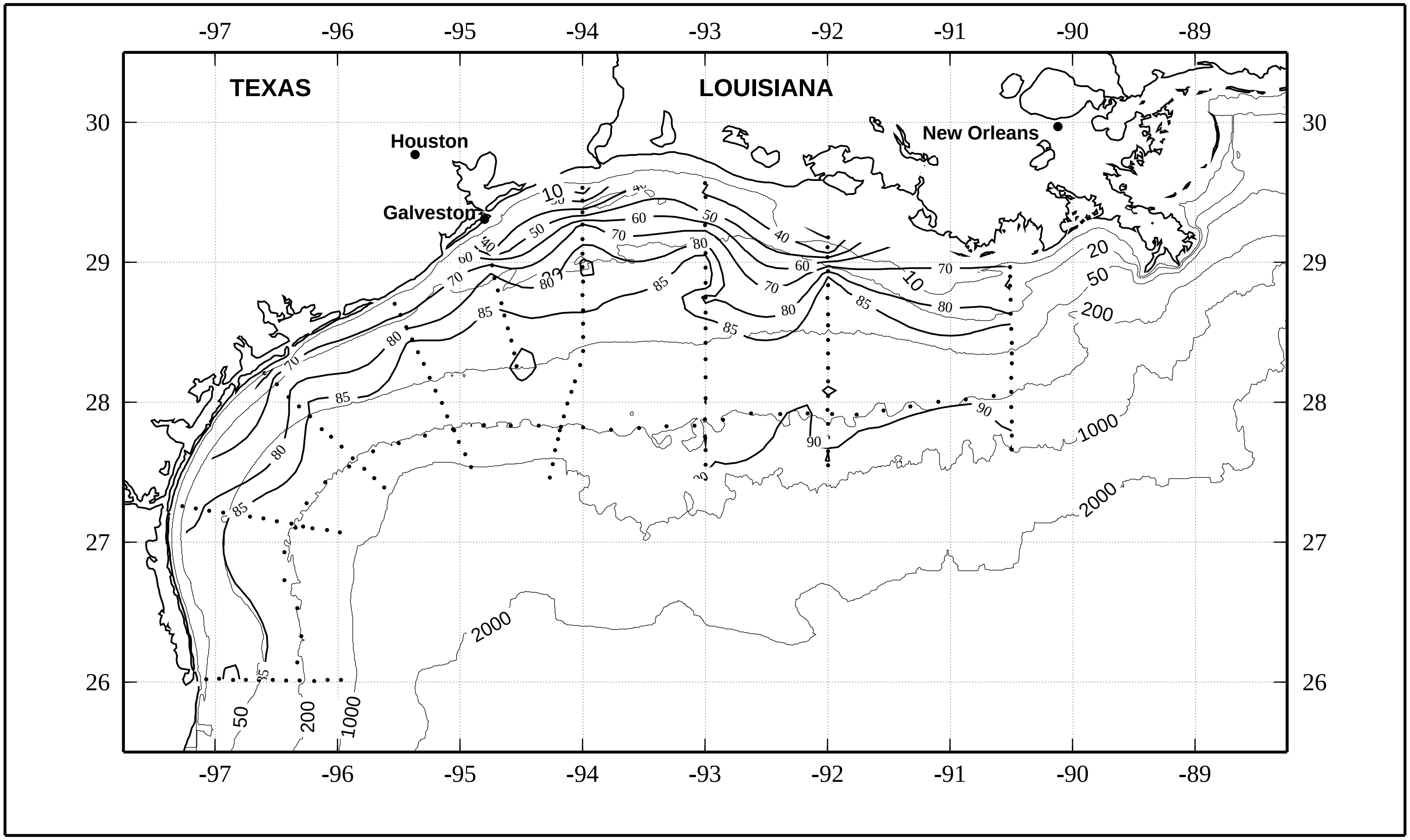

Figure 8.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

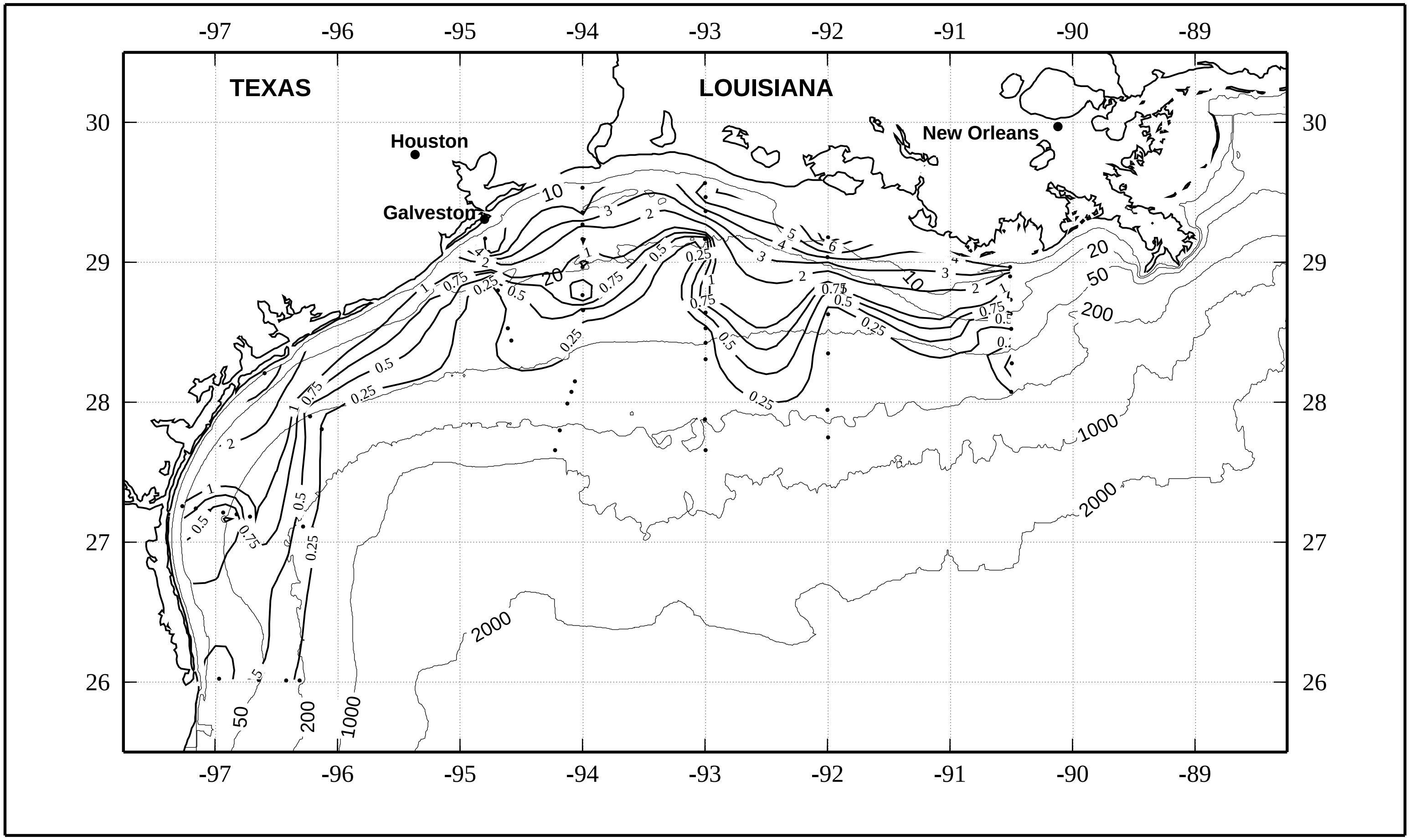

Figure 8.12.5. Suspended particulate material ($mg \cdot l^{-1}$) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

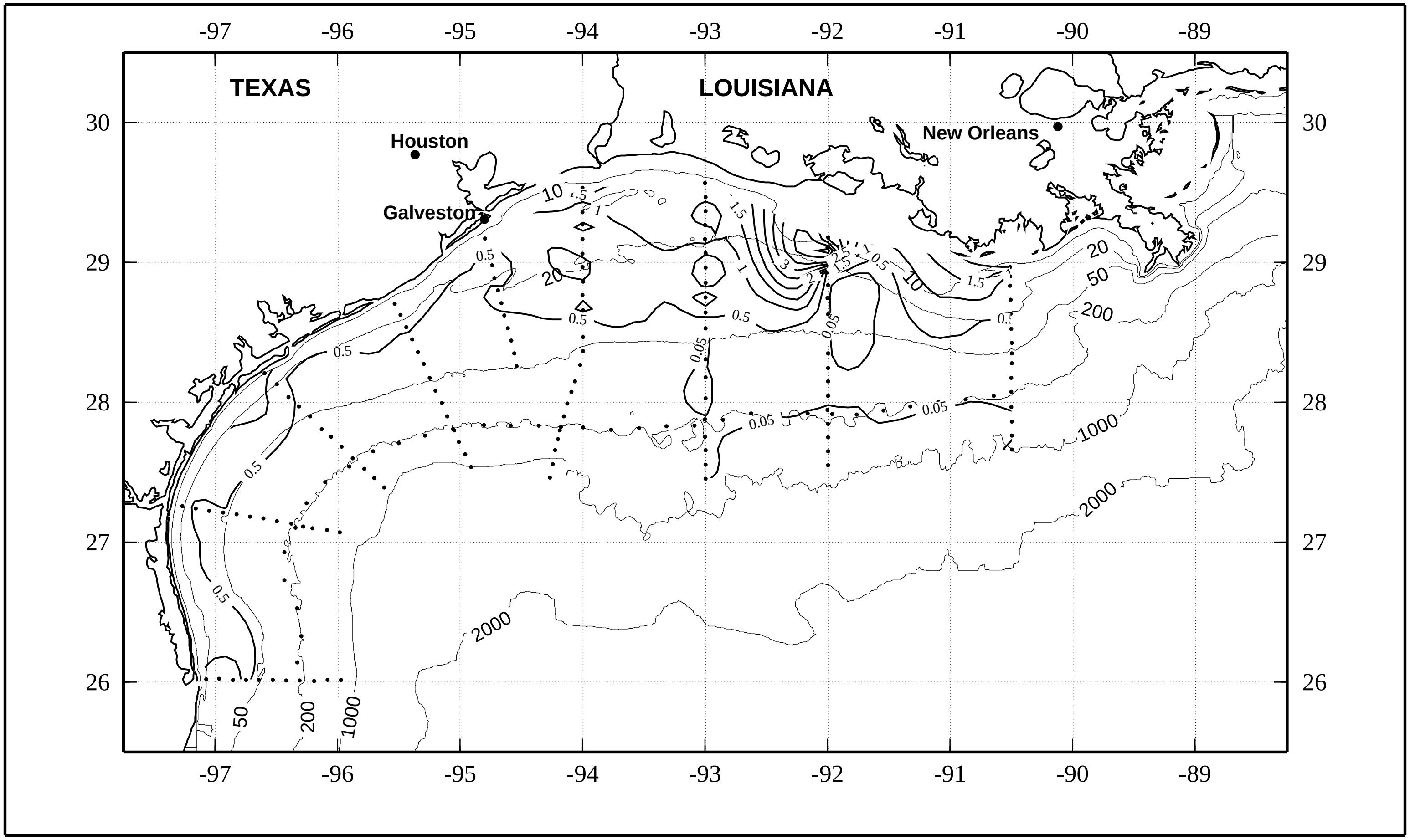

Figure 8.12.7. Relative fluorescence at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

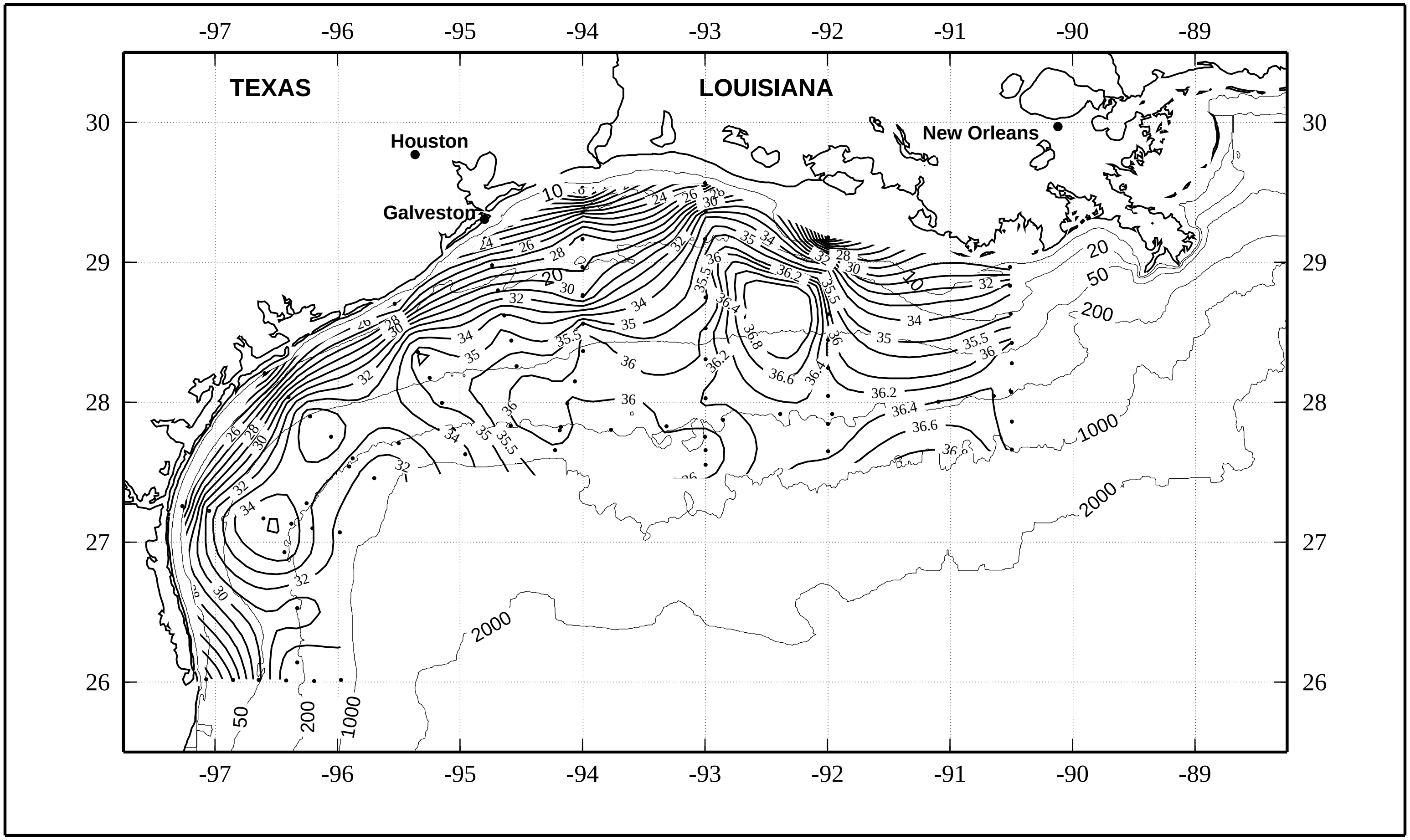

Figure 8.12.8. Bottle salinity at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

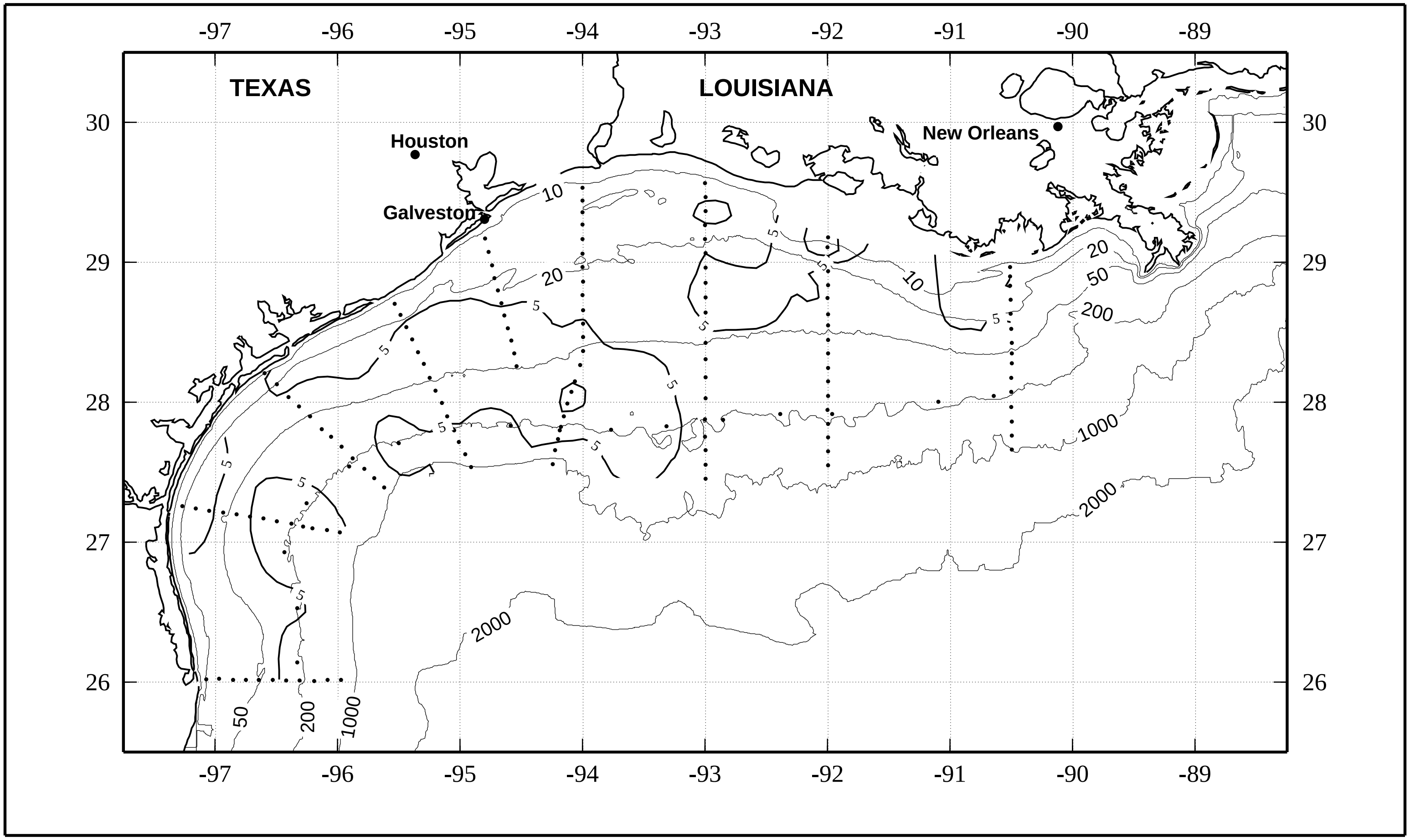

Figure 8.12.9. Dissolved oxygen (ml·l^{-1}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

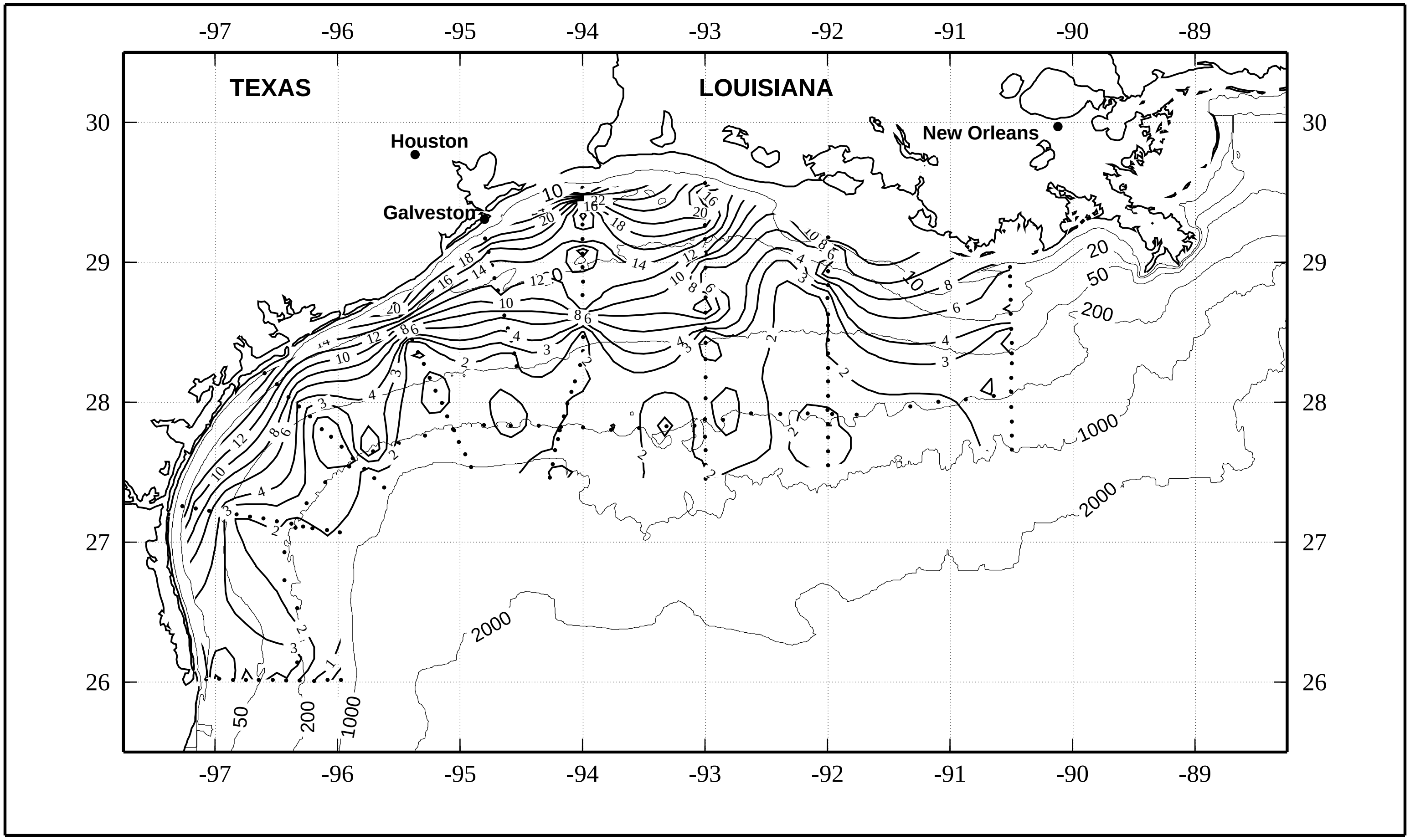

Figure 8.12.10. Silicate (μmol·l^{-1}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

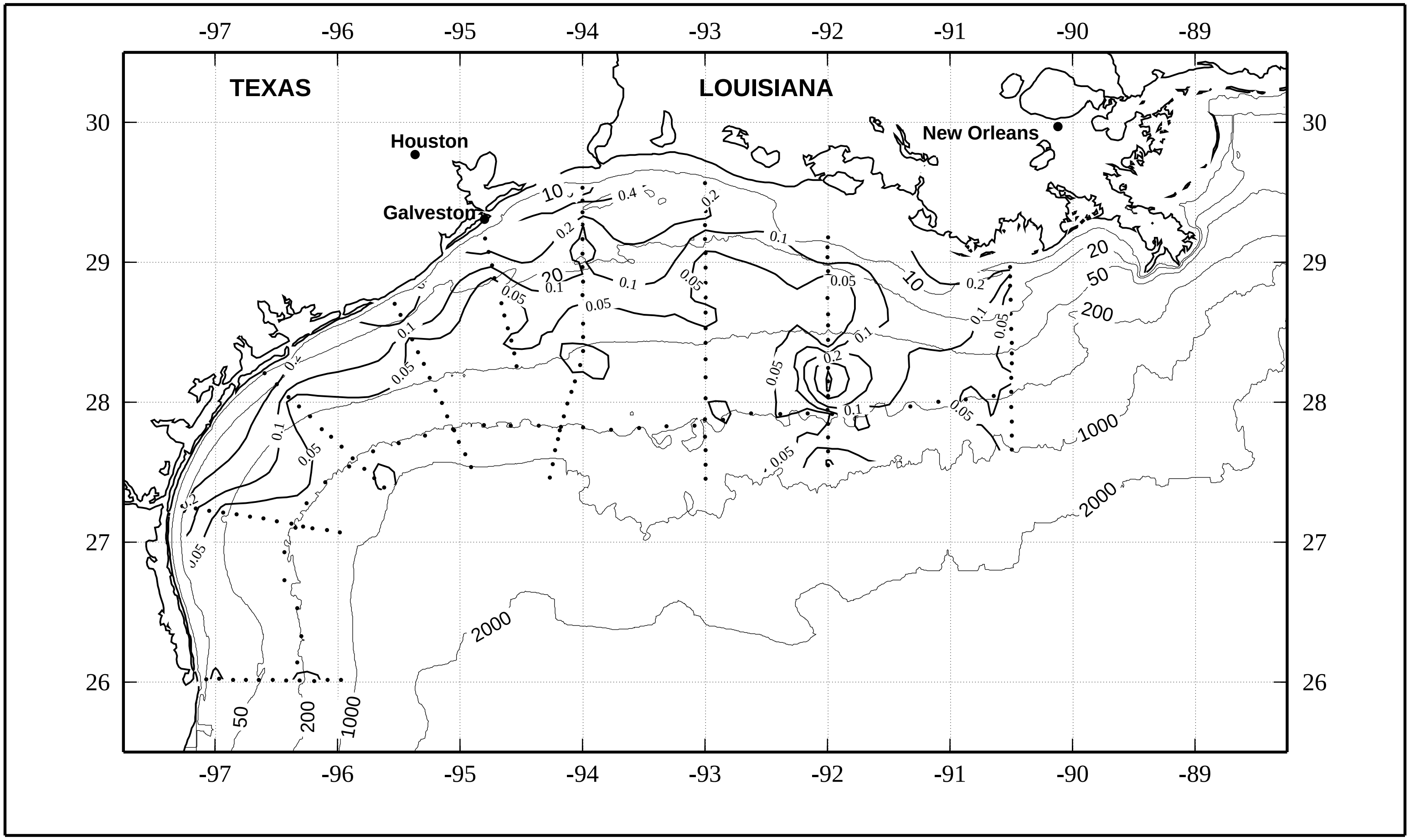

Figure 8.12.11. Phosphate (μmol·l^{-1}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

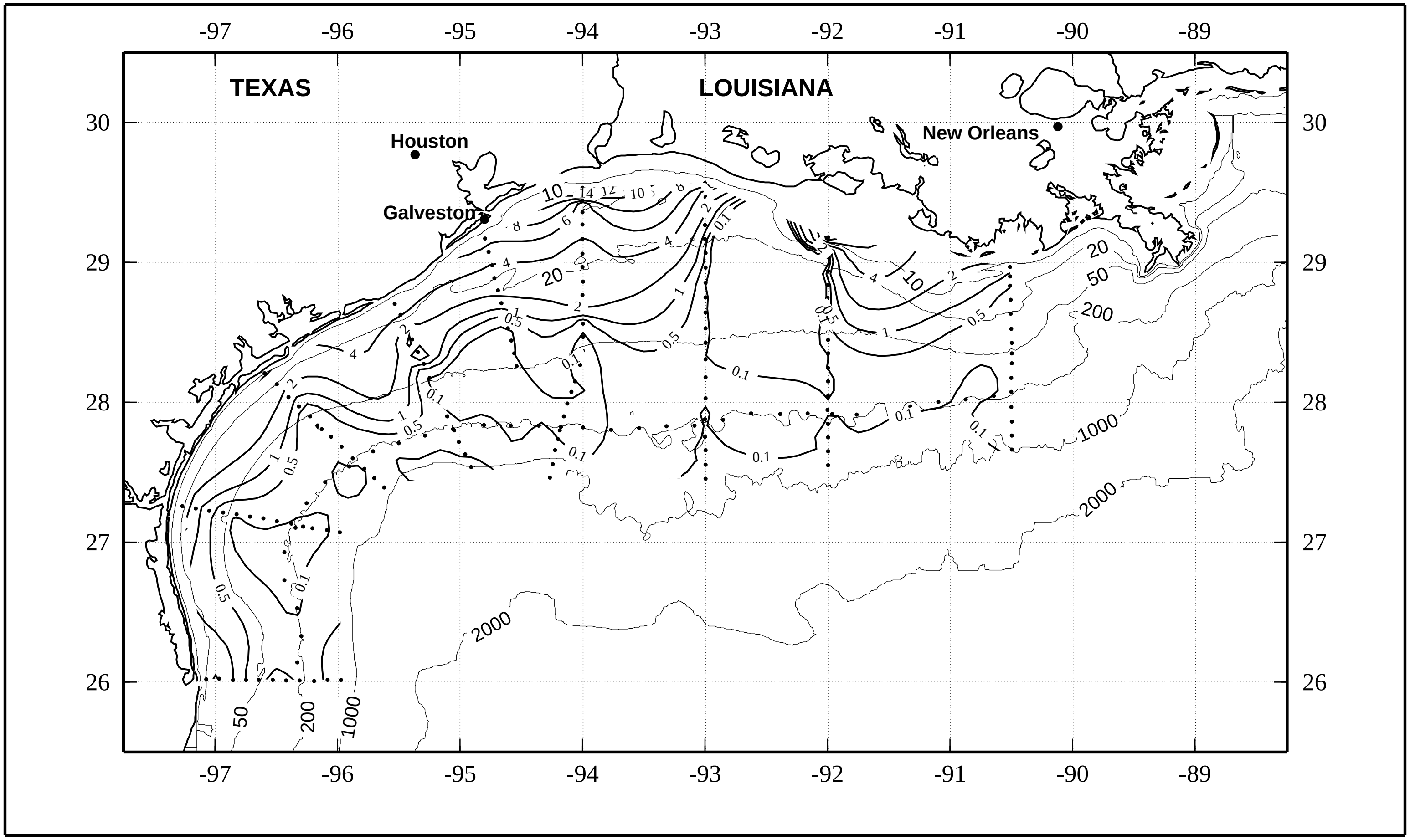

Figure 8.12.12. Nitrate (μmol·l^{-1}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

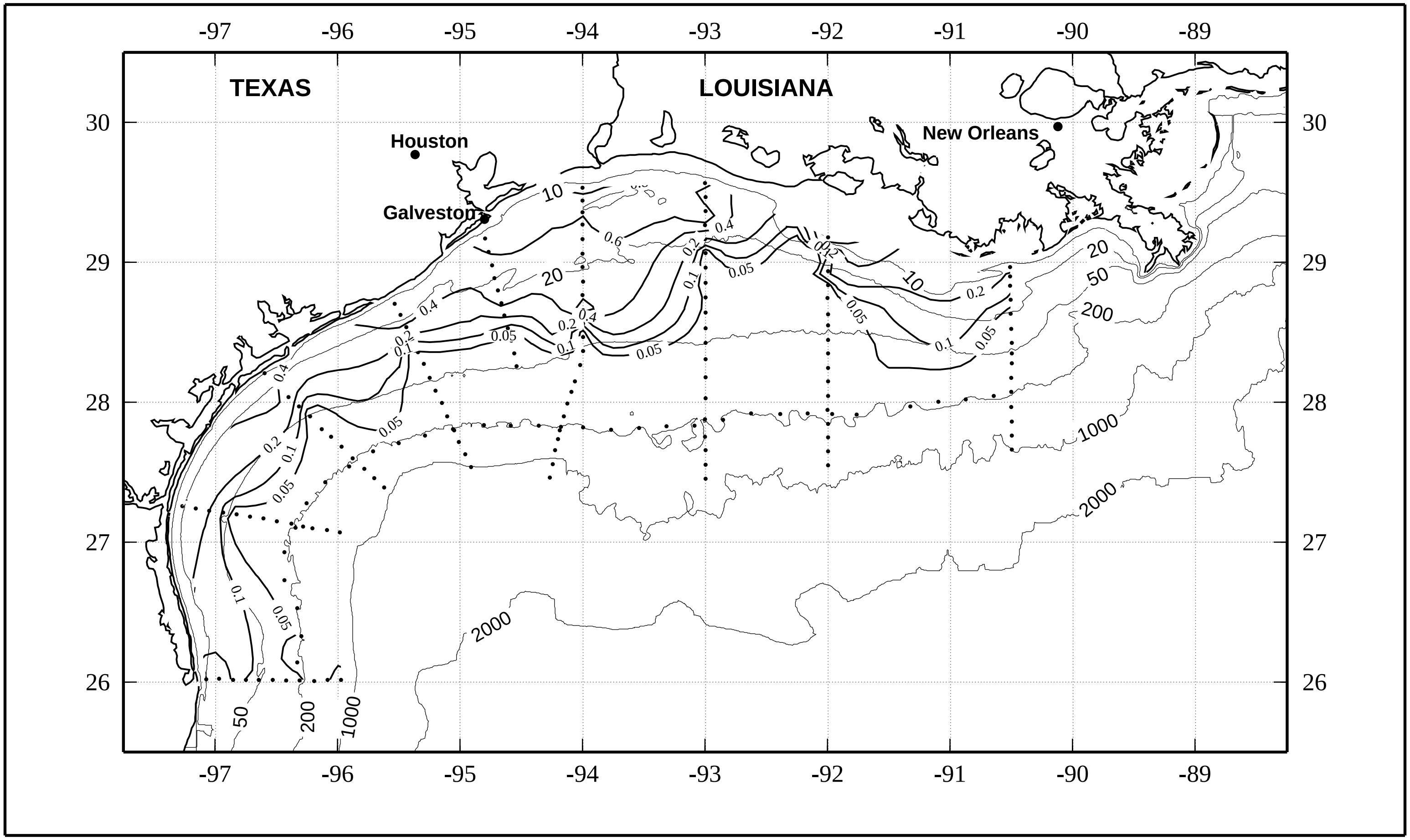

Figure 8.12.13. Nitrite (μmol·l^{-1}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

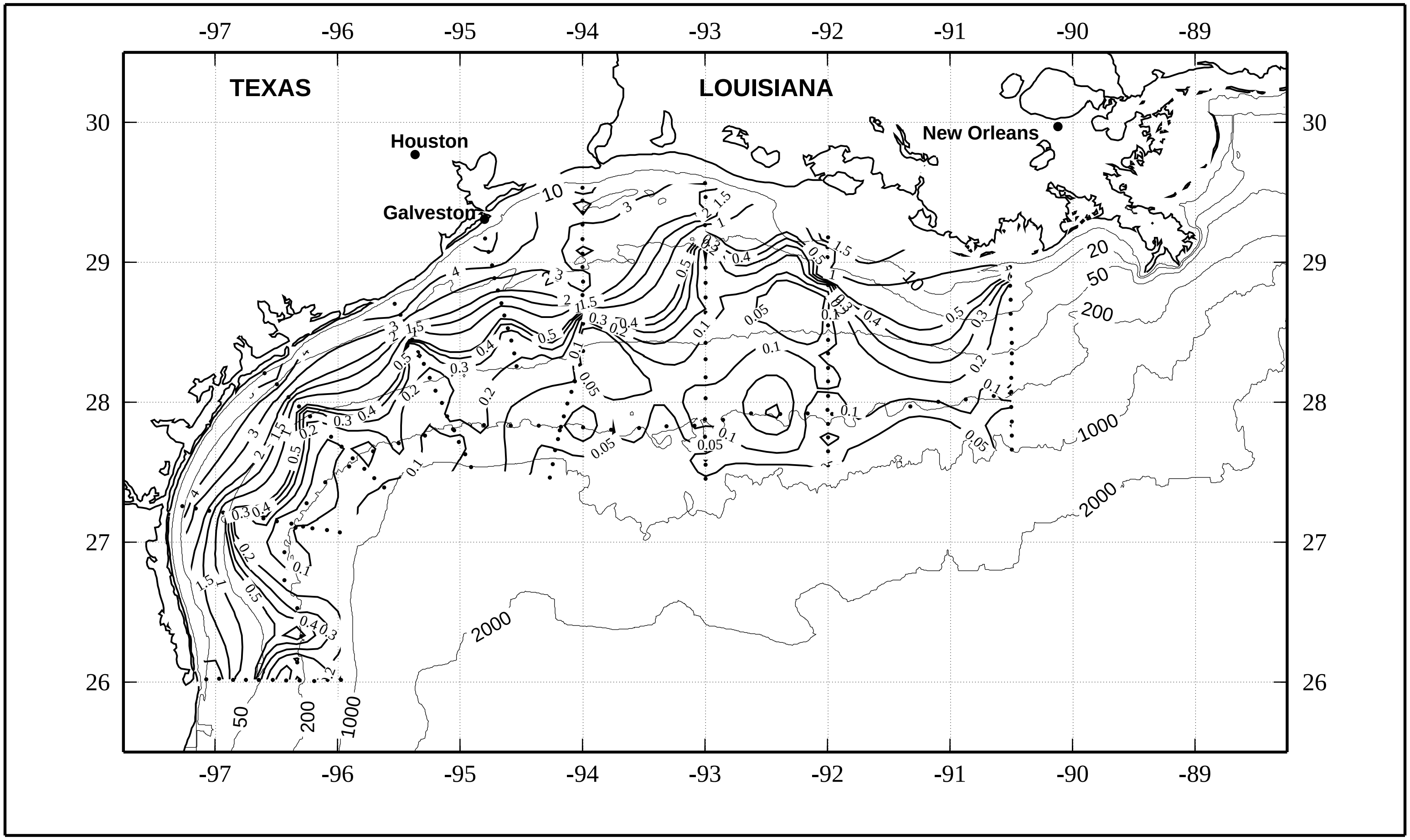

Figure 8.12.14. Ammonium (μmol·l^{-1}) at 3 m on LATEX A survey H08, 23 April - 7 May 1994.

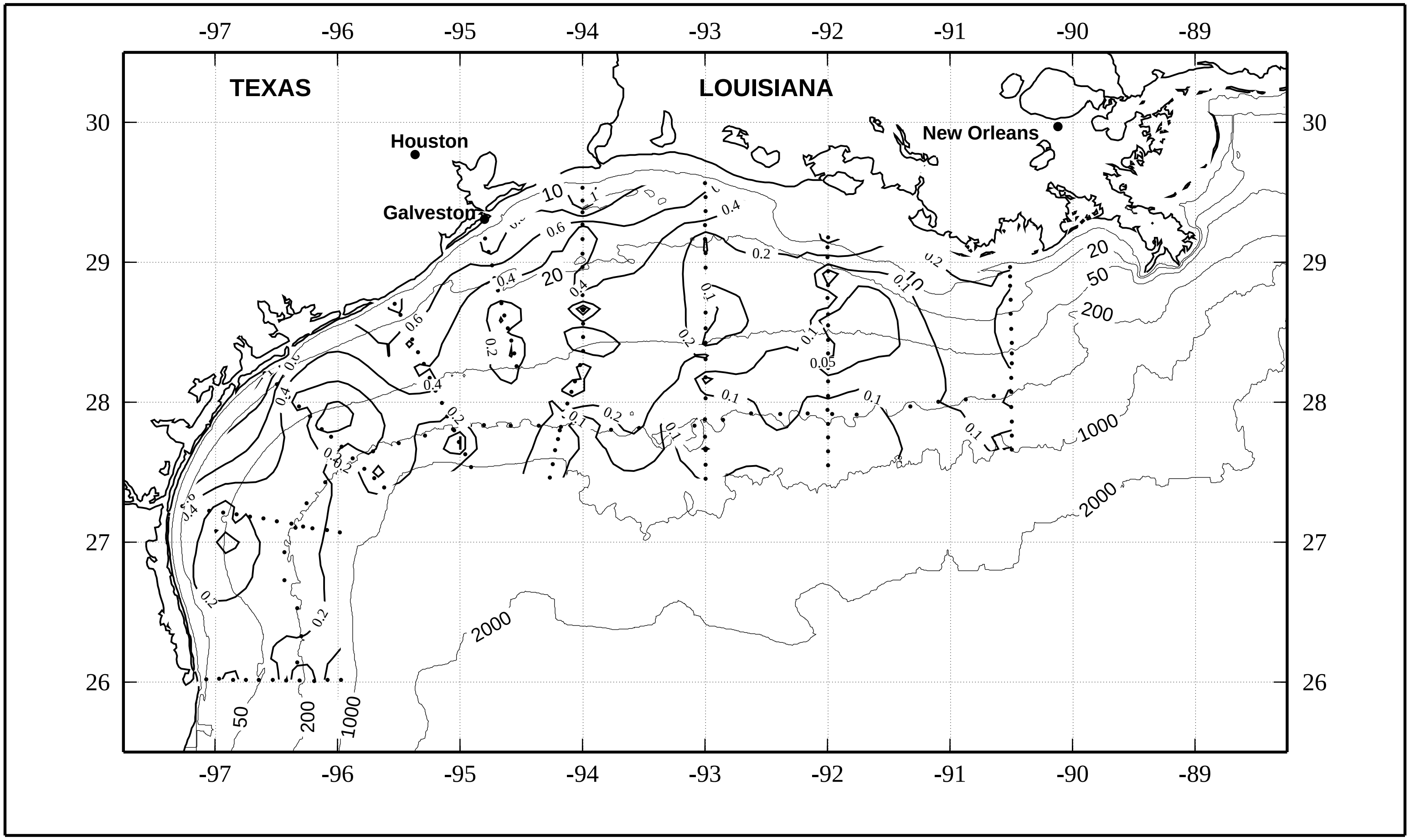

Figure 8.12.15. Urea (μmol·l^{-1}) on LATEX A survey H08, 23 April - 7 May 1994.

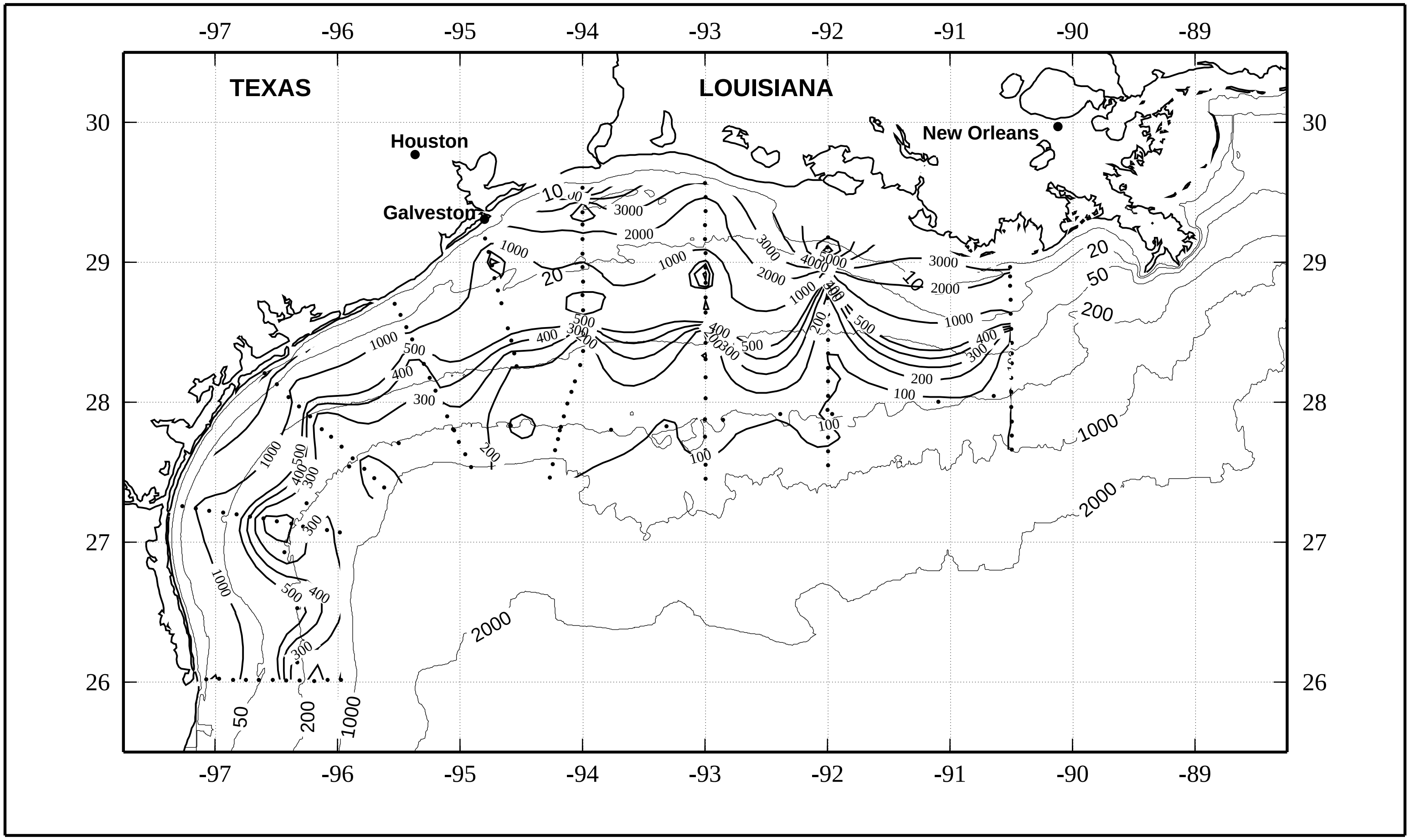

Figure 8.12.16. Chlorophyll a ($ng \cdot l^{-1}$) at maximum on LATEX A survey H08, 23 April - 7 May 1994.

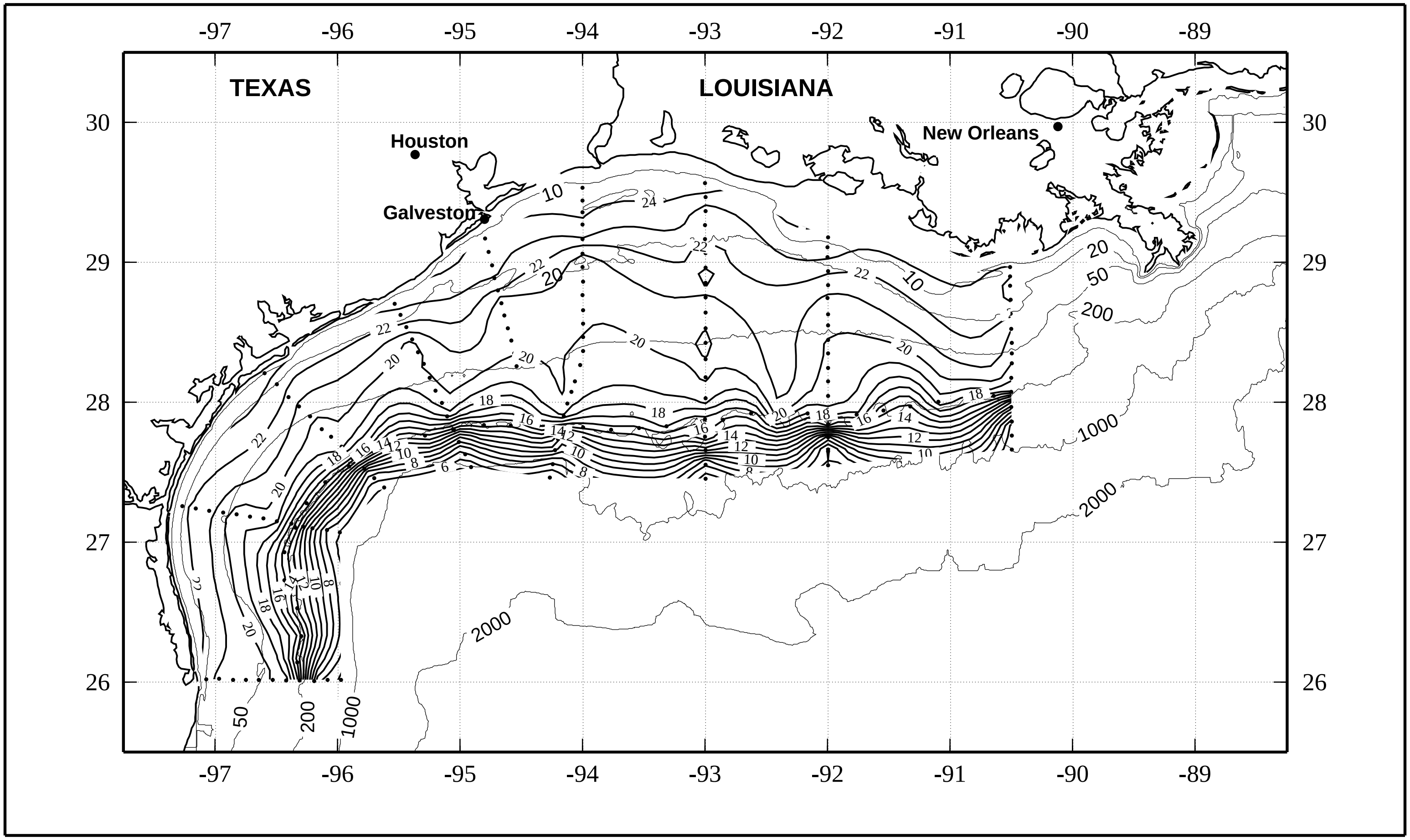

Figure 8.13.1. Potential temperature (˚C) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

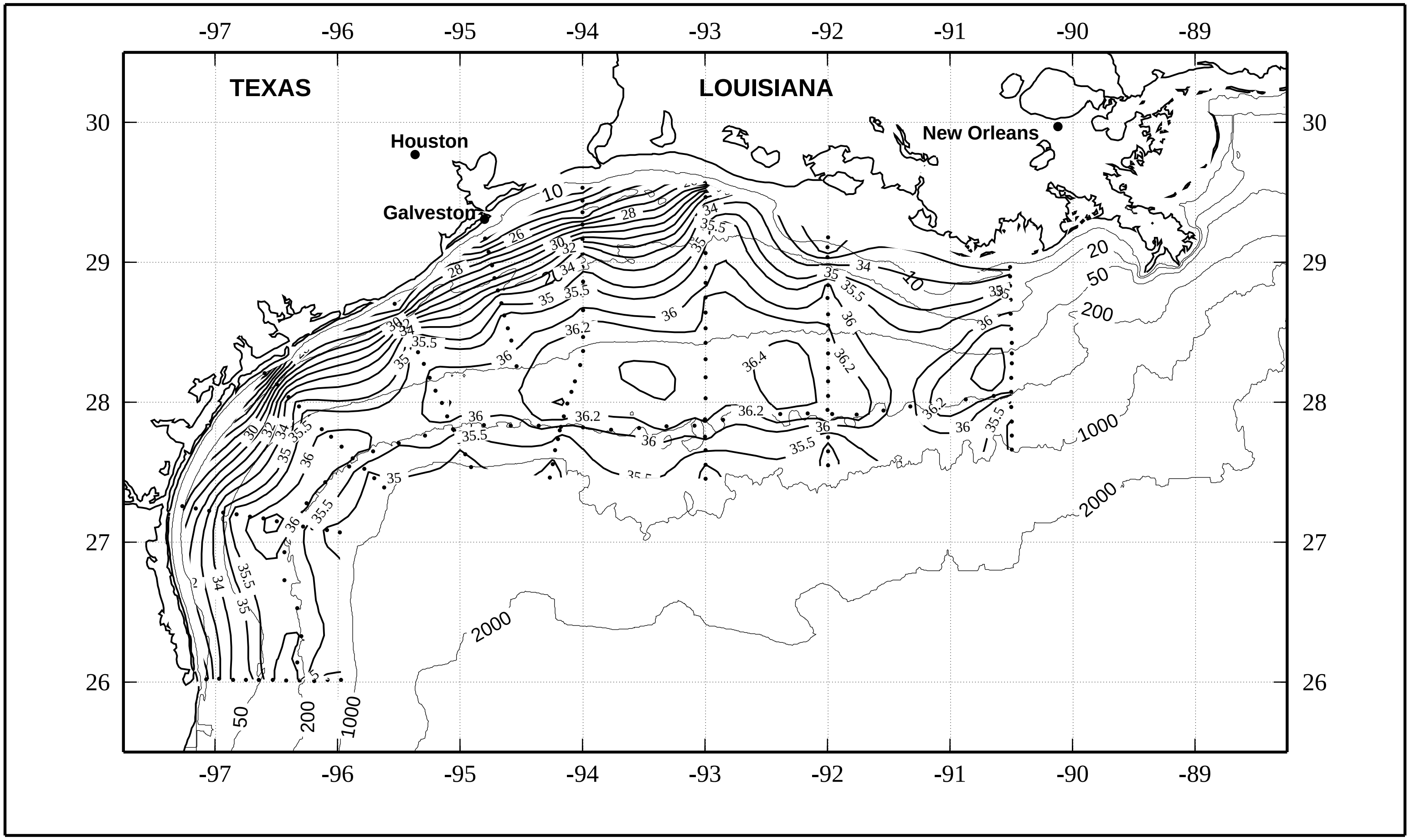

Figure 8.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H08, 23 April - 7 May 1994.

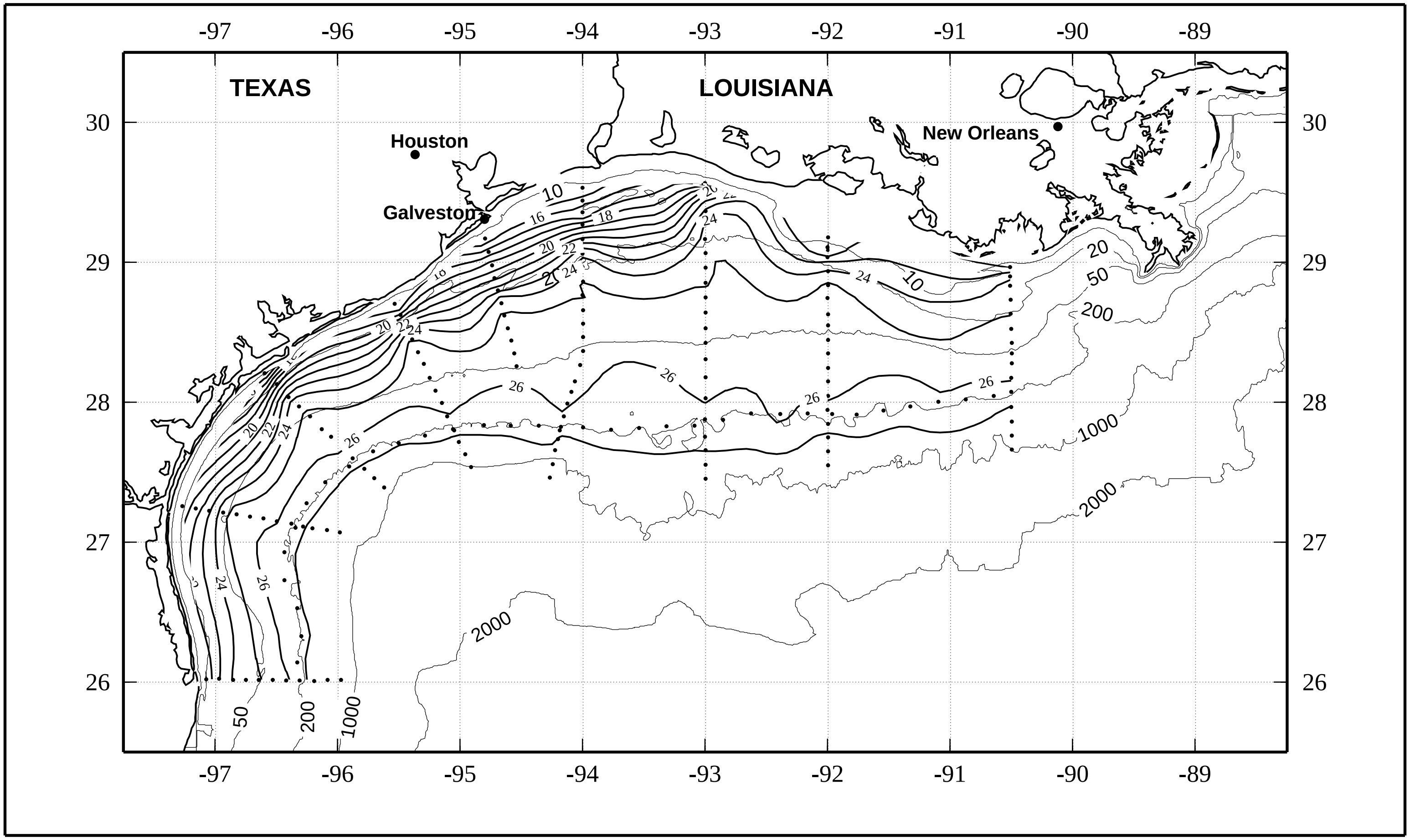

Figure 8.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

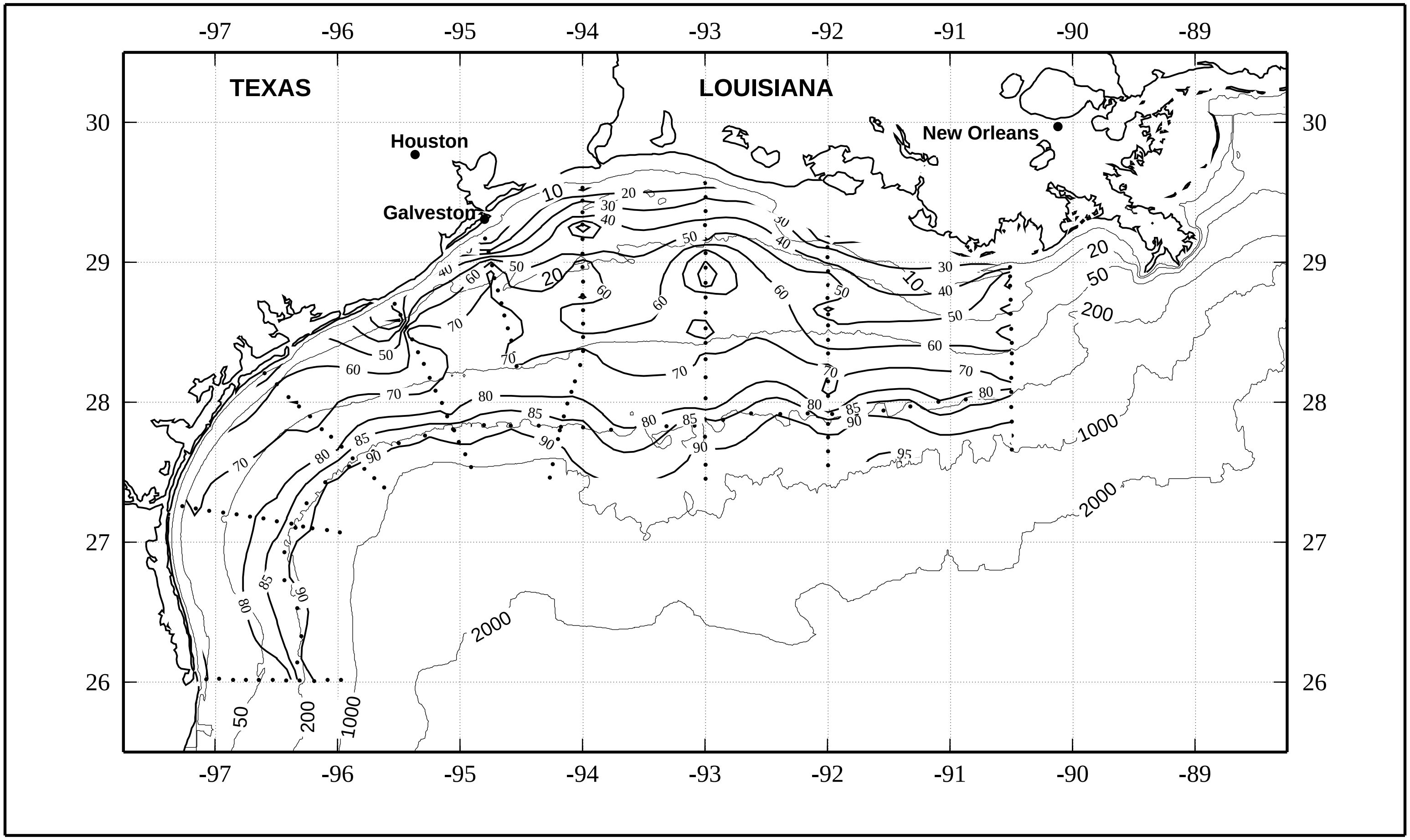

Figure 8.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

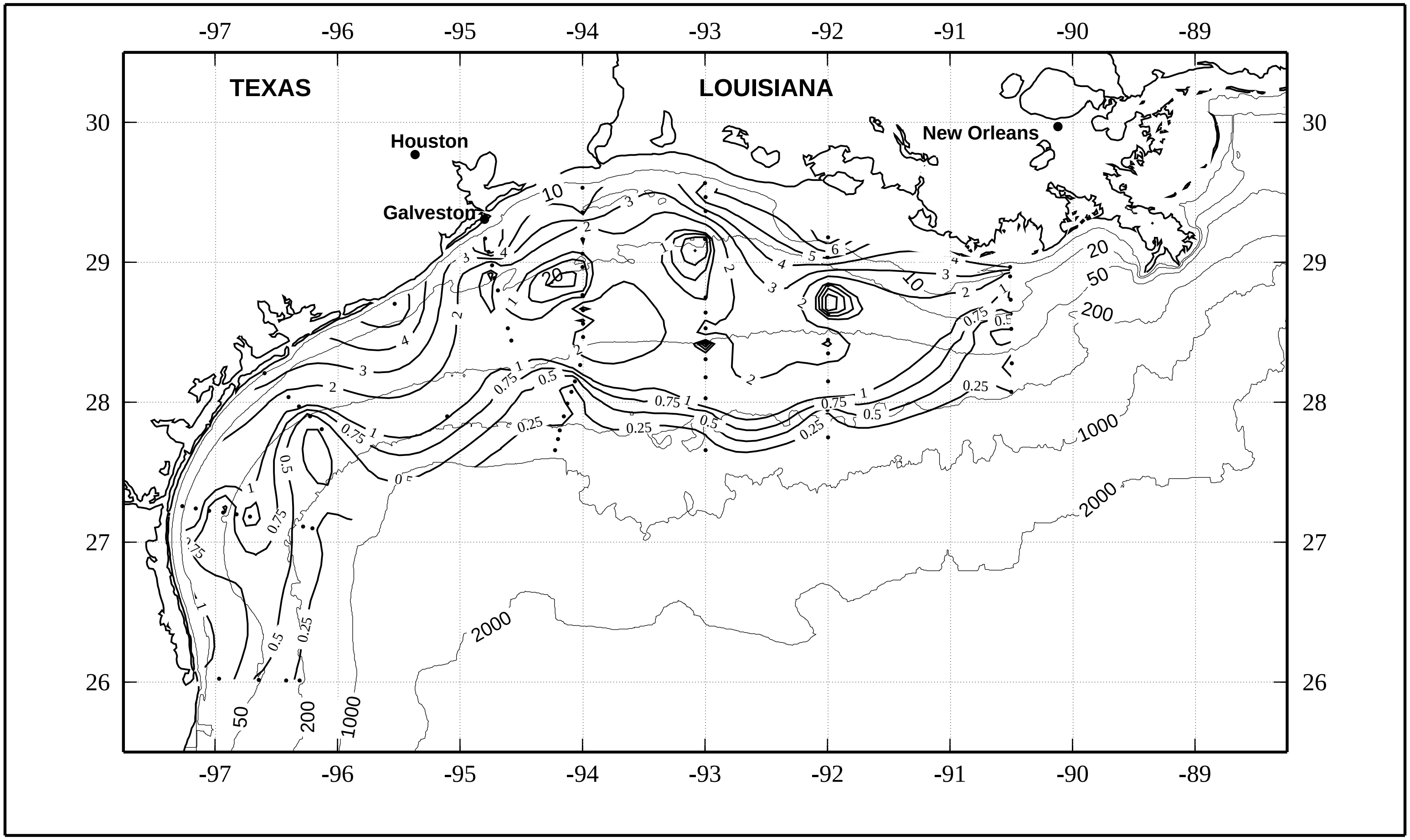

Figure 8.13.5. Suspended particulate material (mg·l^{-1}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

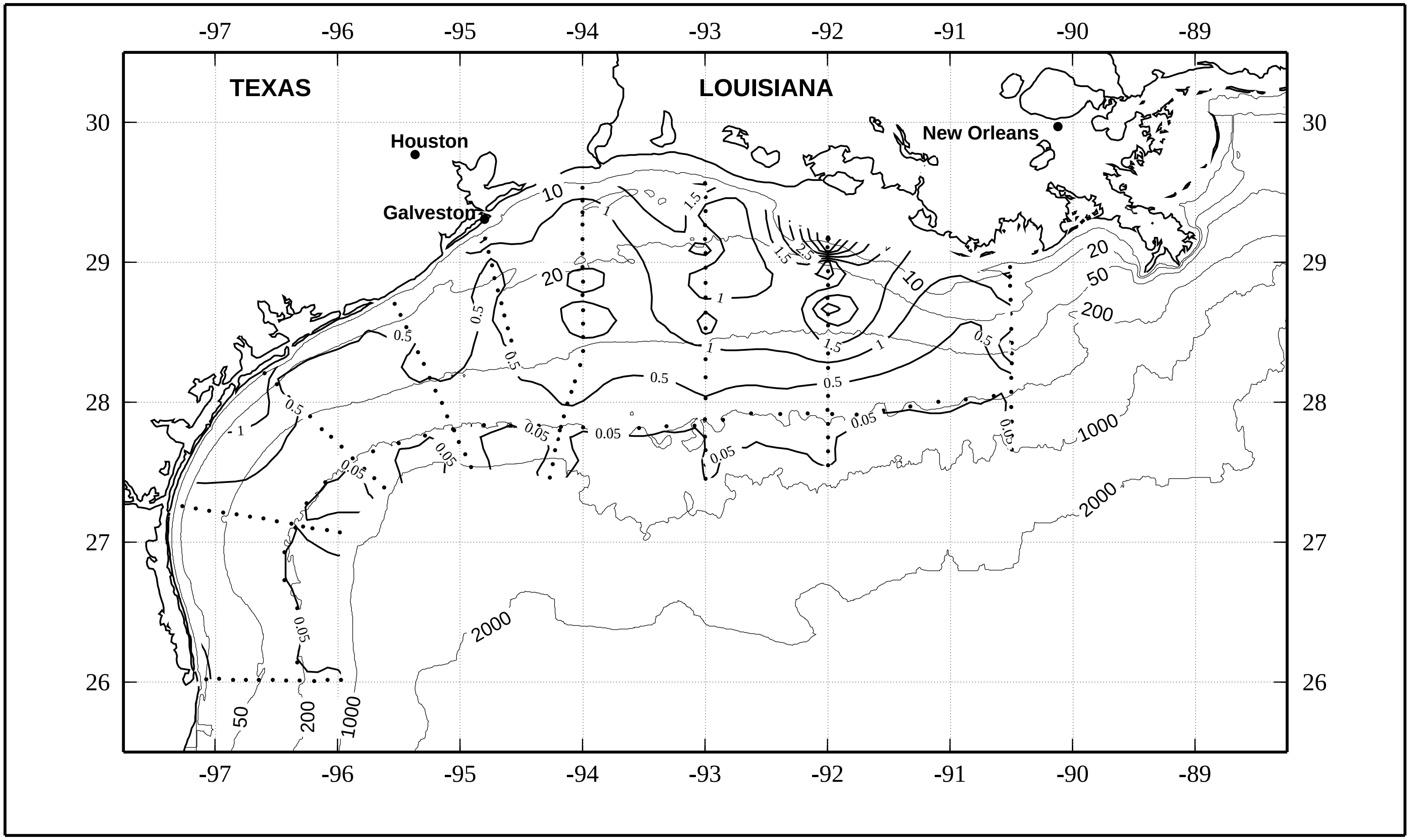

Figure 8.13.7. Relative fluorescence near bottom on LATEX A survey H08, 23 April - 7 May 1994.

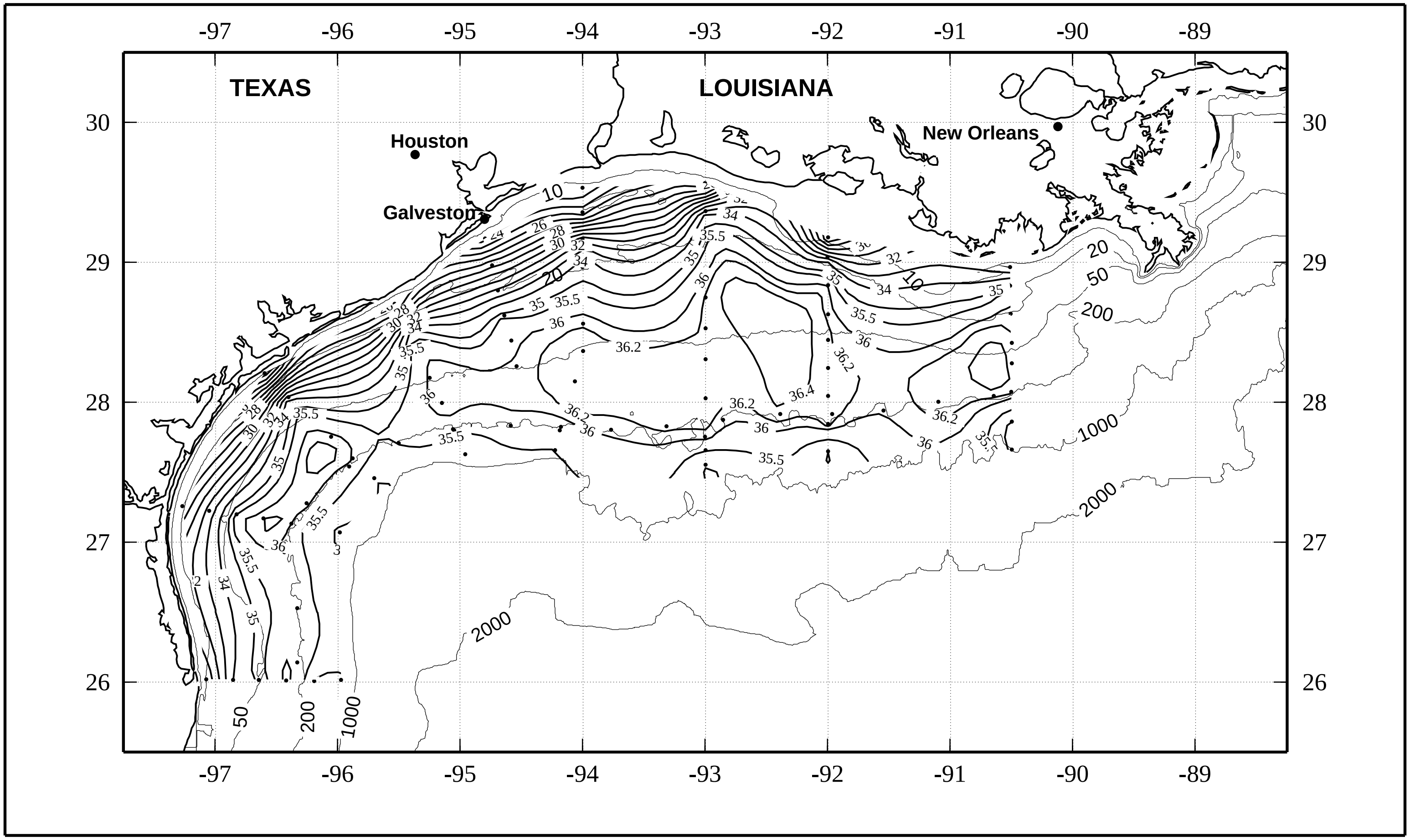

Figure 8.13.8. Bottle salinity near bottom on LATEX A survey H08, 23 April - 7 May 1994.

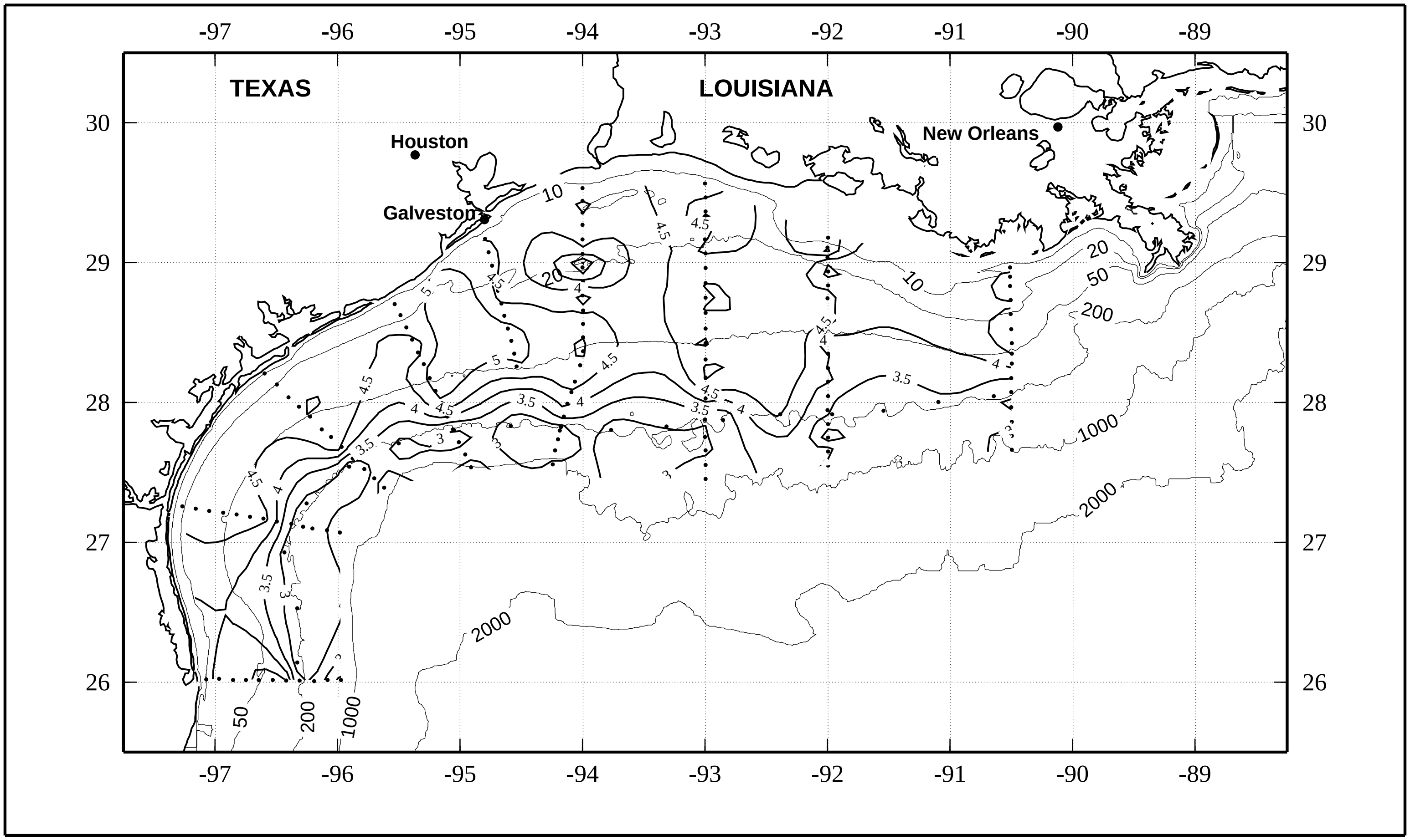

Figure 8.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

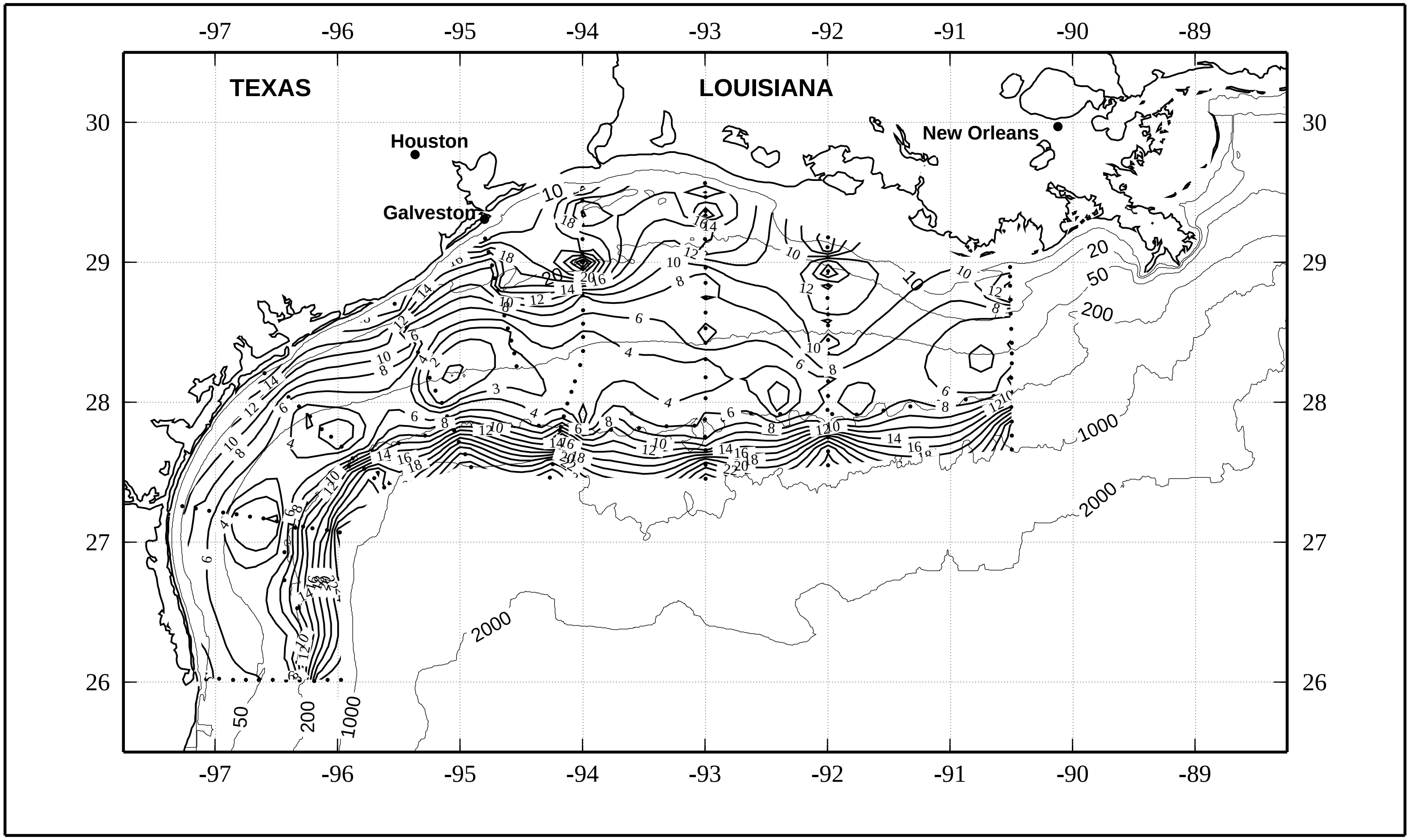

Figure 8.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

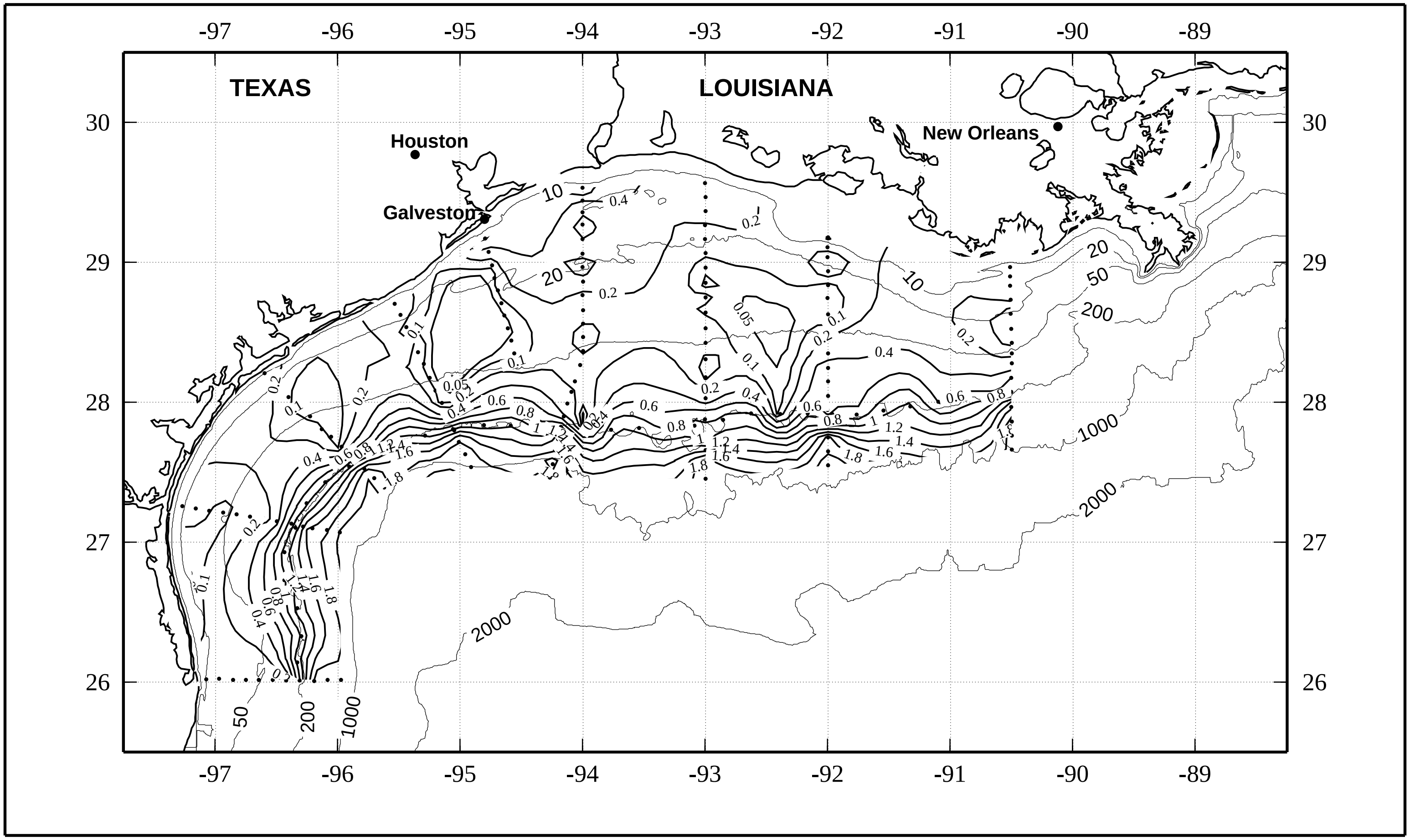

Figure 8.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

H195

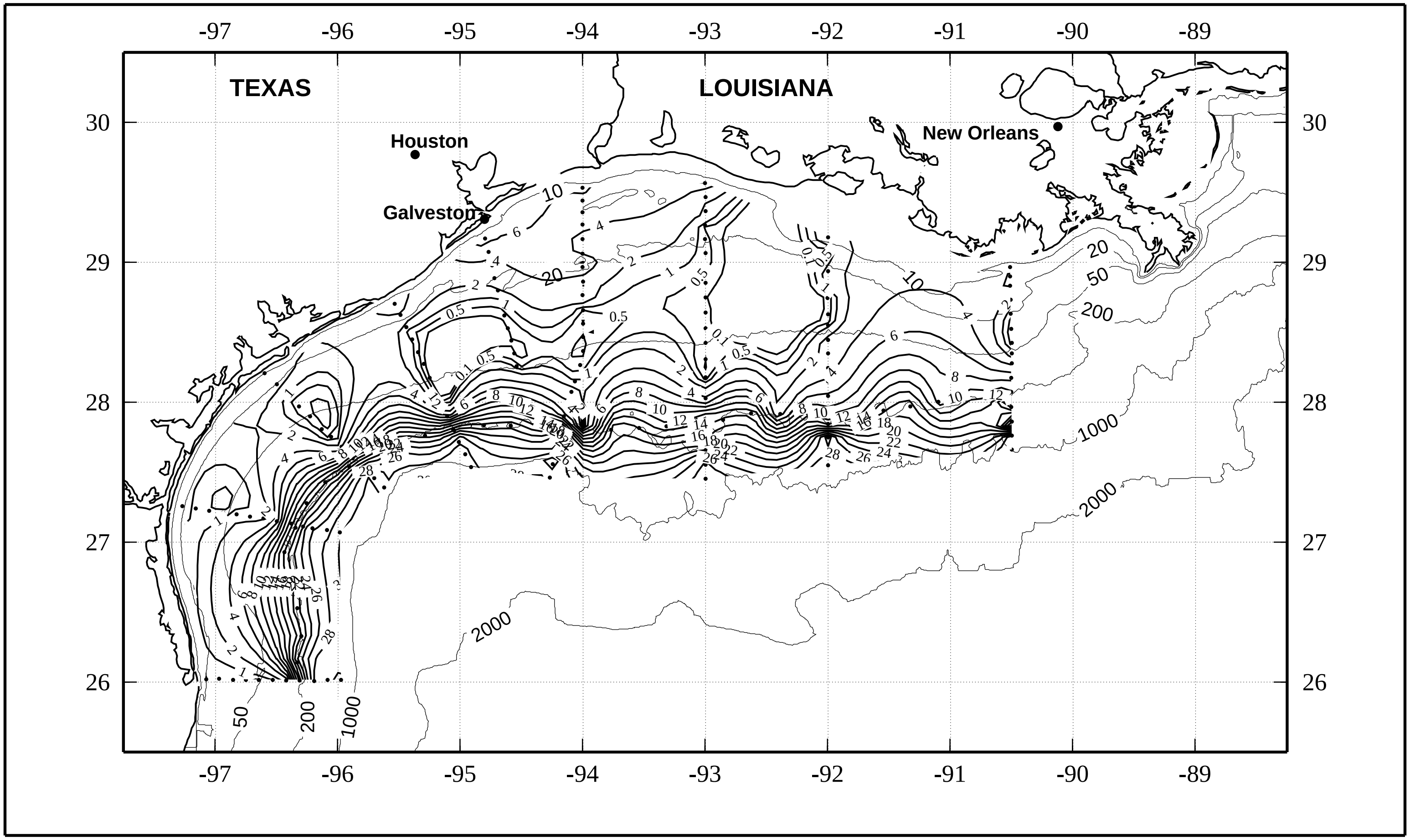

Figure 8.13.12. Nitrate ($\mu mol \cdot l^{-1}$) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

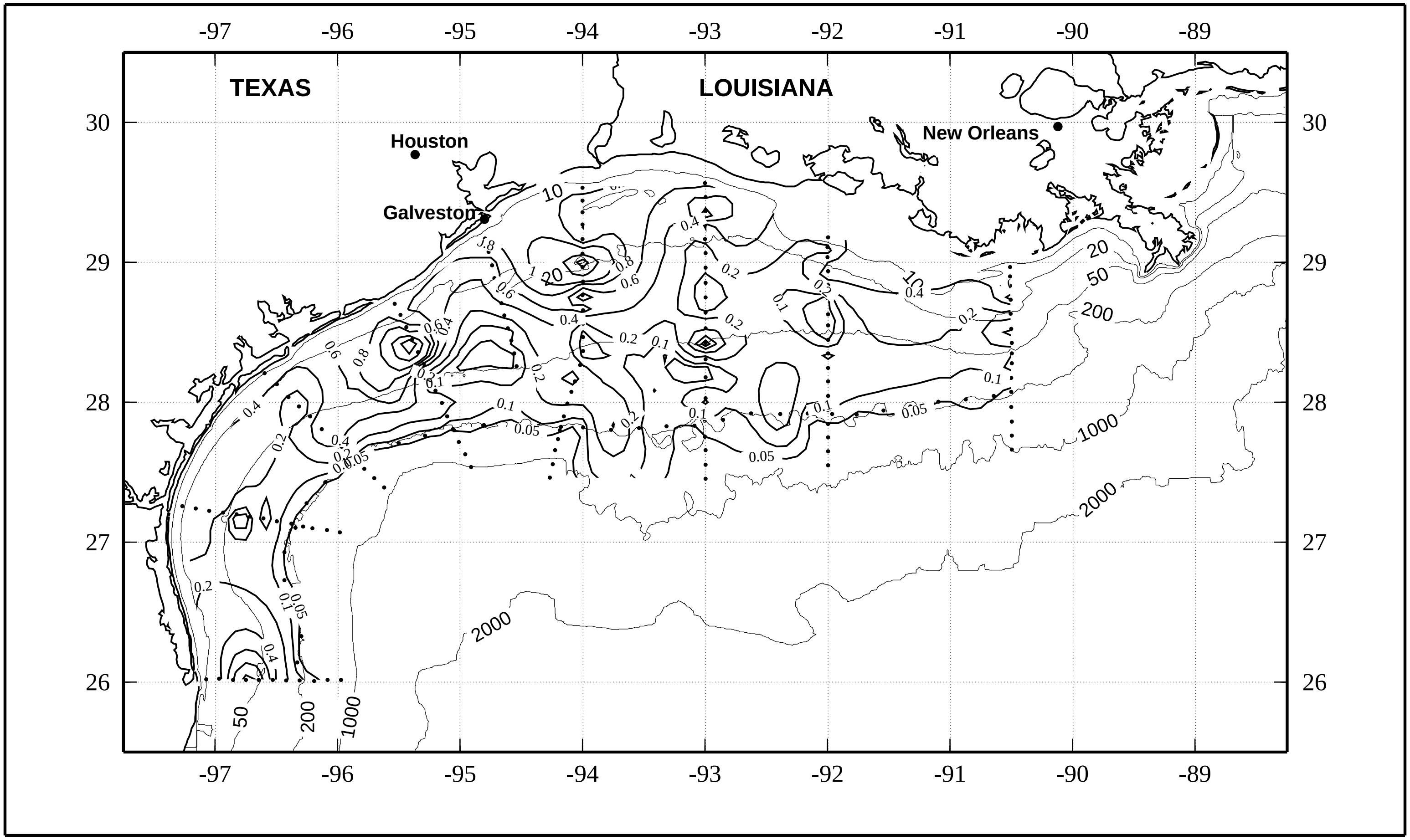

Figure 8.13.13. Nitrite (µmol·l^{-1}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

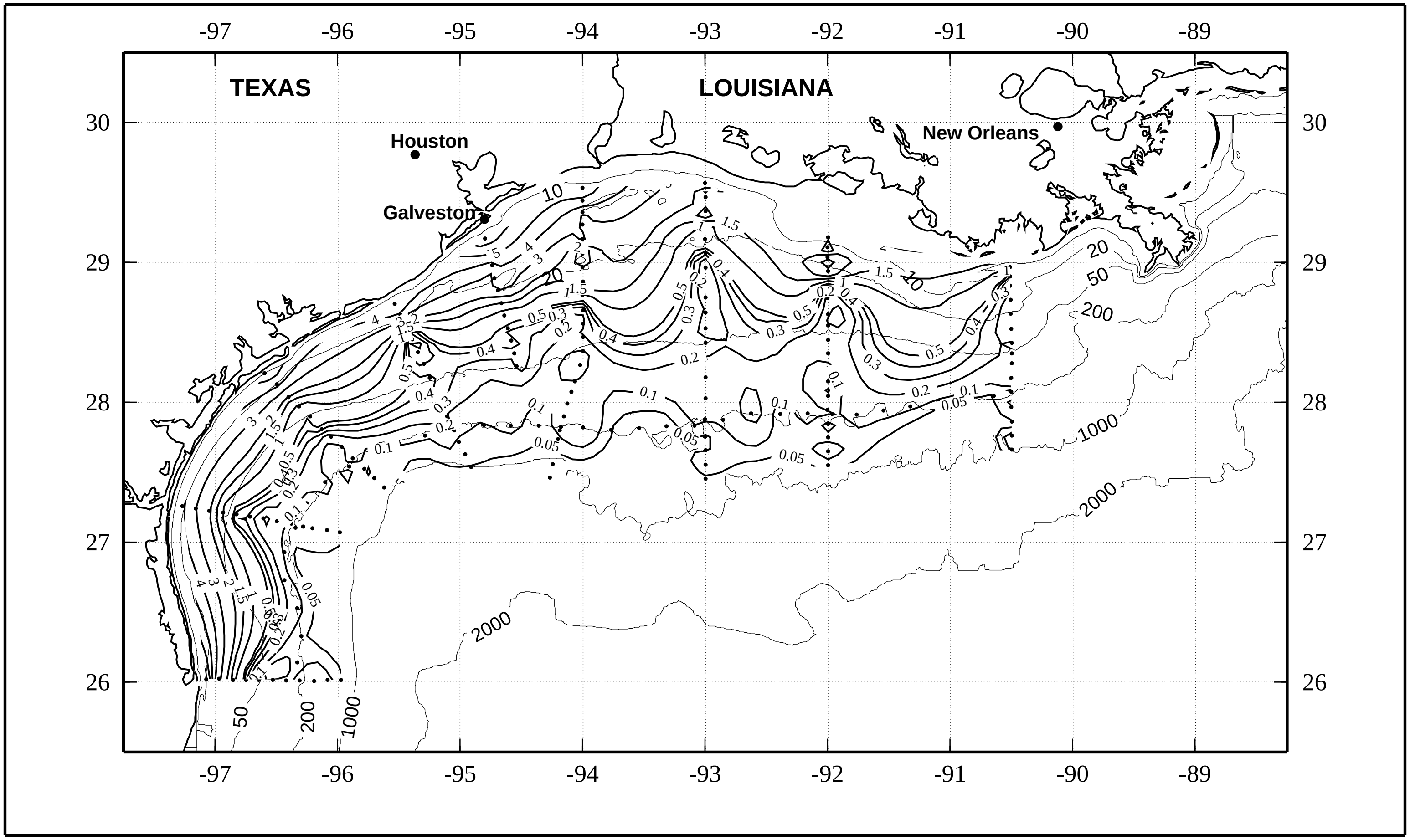

Figure 8.13.14. Ammonium (µmol·l^{-1}) near bottom on LATEX A survey H08, 23 April - 7 May 1994.

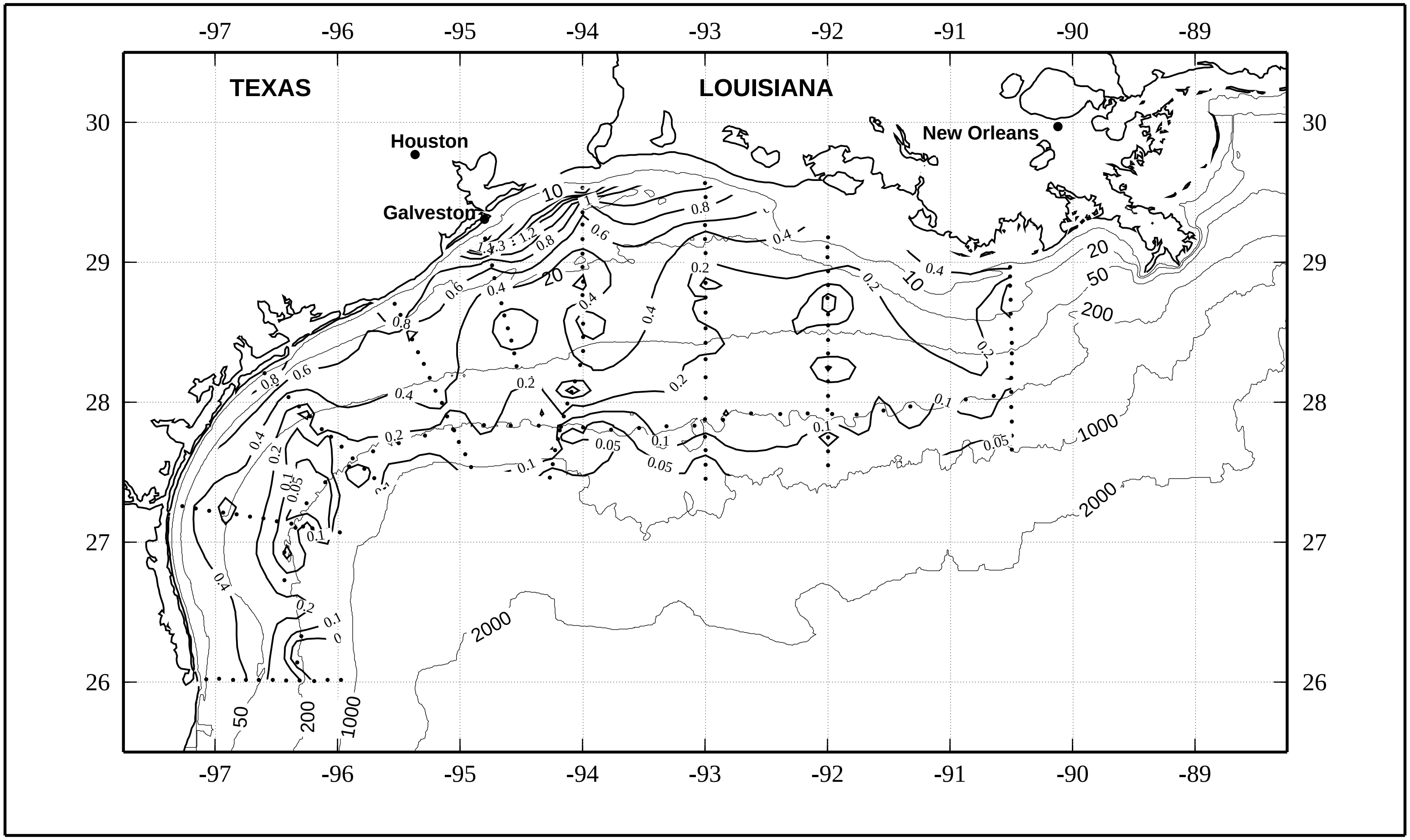

Figure 8.13.15. Urea (μmol·l⁻¹) on LATEX A survey H08, 23 April - 7 May 1994.

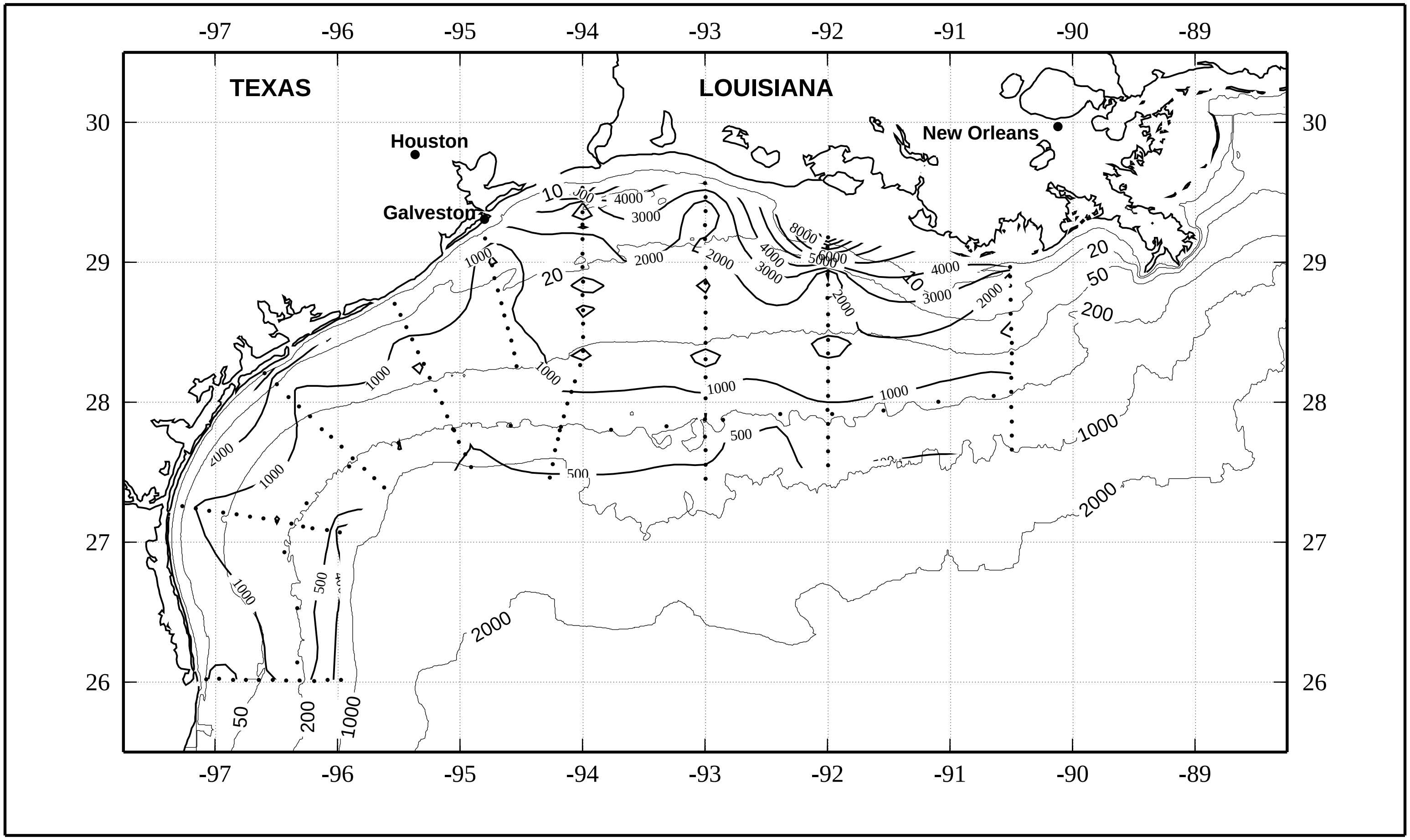

Figure 8.13.16. Chlorophyll a (ng·l^{-1}) at the chlorophyll maximum on LATEX A survey H08, 23 April - 7 May 1994.

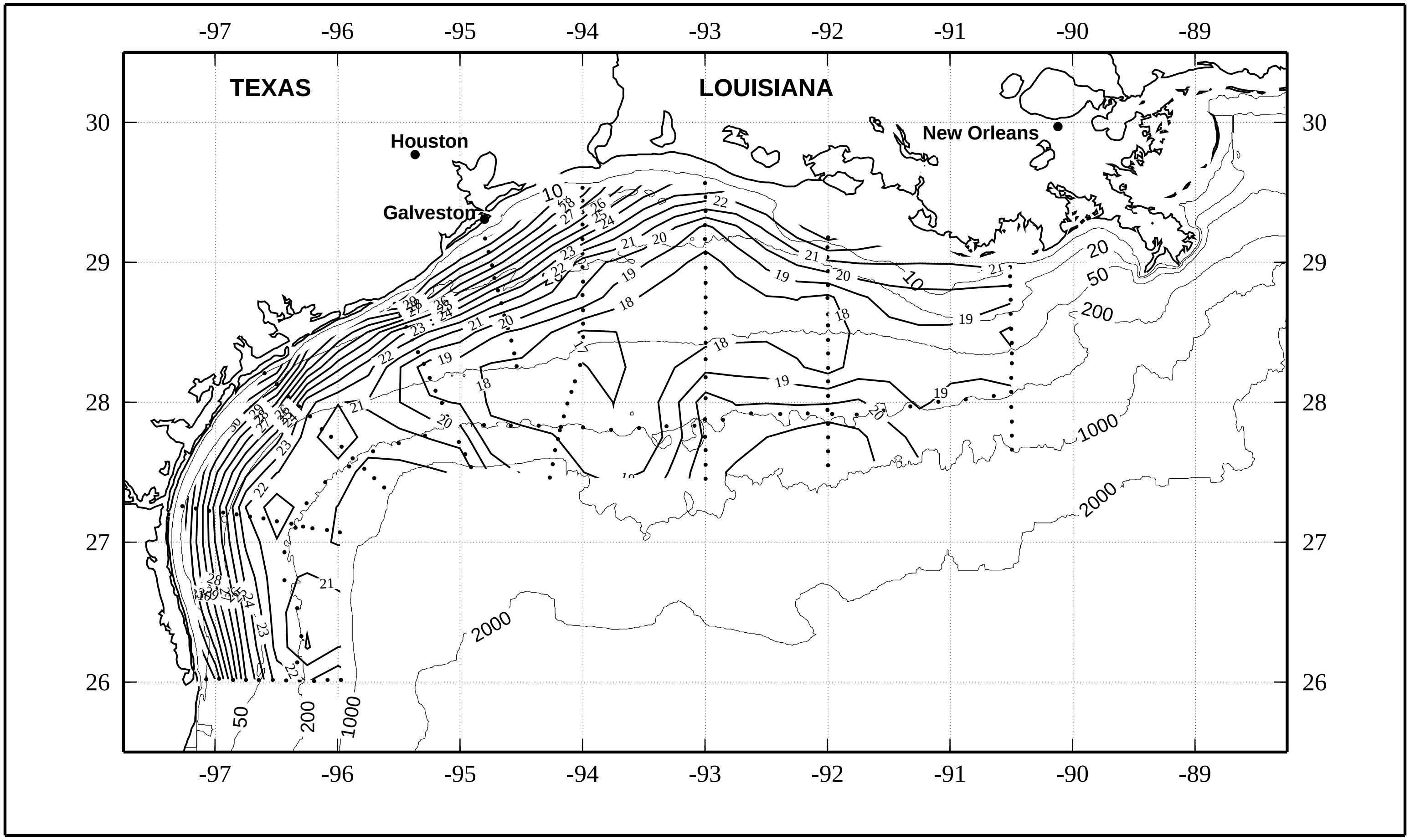

Figure 8.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H08, 23 April - 7 May 1994.

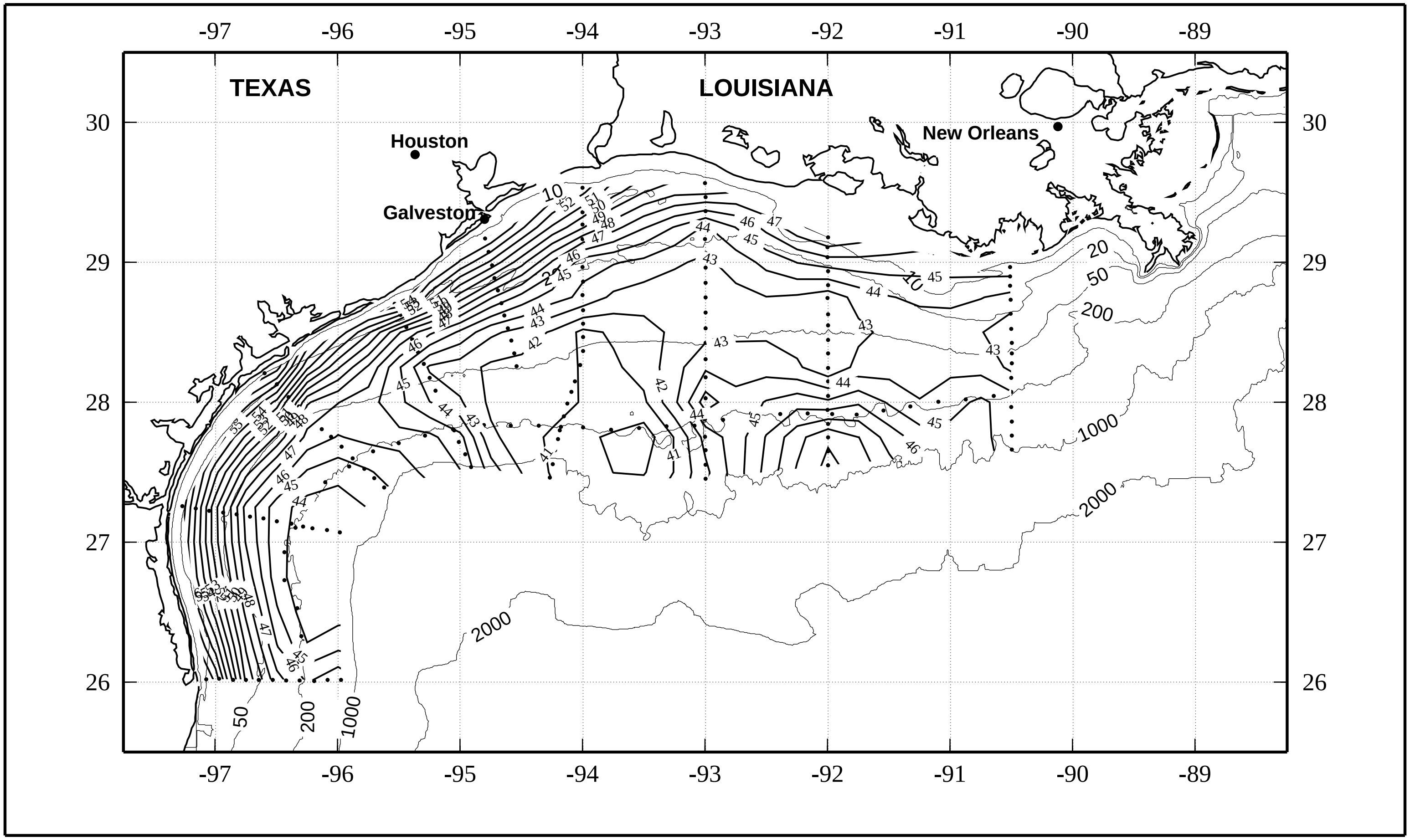

Figure 8.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H08, 23 April - 7 May 1994.

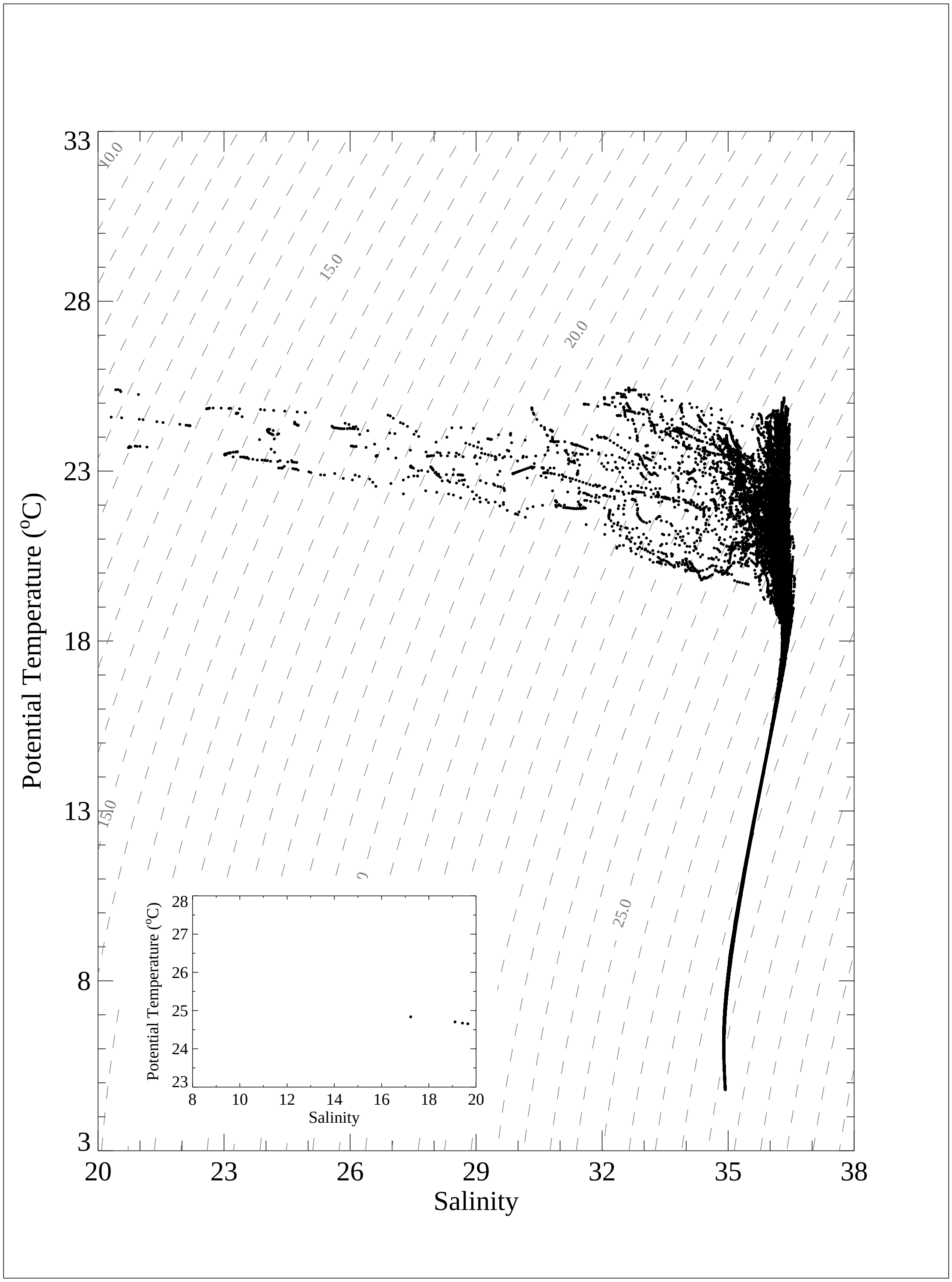

Figure 8.16. Composite potential temperature-salinity diagram for stations from cruise H08, 23 April - 7 May 1994. Inset shows points with salinity less than 20.

LATEX A Hydrographic Survey Data Report

APPENDIX I: Cruise H09
July/August 1994

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Hydrographic Survey H09

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H09, which was conducted 26 July - 7 August 1994 aboard the *R/V J. W. Powell*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 9.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 9.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 9.12.6 or 9.13.6.

Table 9.1. Definitions for "x.y.z" figure numbering scheme for cruise H09.

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cruise number (x):
9 = hydrographic survey H09

plot type (y):
0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = none for H09
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 9.1. Definitions for "x.y.z" figure numbering scheme for cruise H09. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

Chlorophyll *a* and phaeopigments were determined for each pigment station, using a Turner fluorometer. Only chlorophyll *a* is shown in the plots.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 9.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H09. Figure 9.0 shows the location map for the stations.

Following Figure 9.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m

increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

Smith, W. H. F., and P. Wessel. 1990. Gridding with continuous curvature splines in tension. *Geophysics,* 55:293-305.

Wessel, P., and W. H. F. Smith. 1991. Free software helps map and display data. *EOS Trans. Amer. Geophys. U.* 72: 441, 445-446.

Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 9.2. Station times and positions for LATEX A cruise H09.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	27-JUL-1994	1342	27°49.65'	94°10.84'	168.0	12
2	27-JUL-1994	1527	27°49.24'	94°00.02'	192.5	12
3	27-JUL-1994	1802	27°48.28'	93°46.27'	192.1	12
4	27-JUL-1994	1953	27°48.98'	93°32.54'	202.0	12
5	27-JUL-1994	2137	27°49.83'	93°19.13'	151.5	12
6	27-JUL-1994	2311	27°50.07'	93°05.27'	173.0	12
7	28-JUL-1994	0106	27°52.49'	92°51.38'	222.0	12
8	28-JUL-1994	0418	27°55.13'	92°37.46'	195.2	12
9	28-JUL-1994	0609	27°55.14'	92°23.42'	82.9	9
10	28-JUL-1994	0752	27°55.14'	92°09.95'	147.2	12
11	28-JUL-1994	1024	27°54.94'	91°57.91'	151.0	12
12	28-JUL-1994	1159	27°54.77'	91°45.88'	170.9	12
13	28-JUL-1994	1338	27°56.61'	91°32.70'	226.8	12
14	28-JUL-1994	1507	27°58.14'	91°19.48'	269.7	12
15	28-JUL-1994	1640	28°00.39'	91°05.83'	137.9	12
16	28-JUL-1994	1812	28°01.37'	90°52.40'	200.0	12
17	28-JUL-1994	2005	28°02.71'	90°38.59'	169.1	12
18	28-JUL-1994	2247	27°39.71'	90°30.00'	913.8	12
19	29-JUL-1994	0045	27°45.71'	90°30.01'	822.0	12
20	29-JUL-1994	0208	27°51.71'	90°30.00'	657.1	12
21	29-JUL-1994	0507	27°57.97'	90°30.16'	438.7	12
22	29-JUL-1994	0623	28°04.66'	90°30.22'	148.5	12
23	29-JUL-1994	0728	28°10.46'	90°30.31'	93.3	11
24	29-JUL-1994	0826	28°16.81'	90°30.00'	62.2	10
25	29-JUL-1994	0911	28°21.00'	90°29.96'	50.0	7
26	29-JUL-1994	0956	28°25.41'	90°29.98'	44.4	7
27	29-JUL-1994	1050	28°31.62'	90°30.18'	35.1	6
28	29-JUL-1994	1142	28°37.94'	90°30.31'	20.8	5
29	29-JUL-1994	1232	28°43.94'	90°30.35'	17.9	5
30	29-JUL-1994	1321	28°49.99'	90°30.56'	18.7	5
31	29-JUL-1994	1357	28°54.00'	90°30.61'	15.8	4
32	29-JUL-1994	1521	28°58.11'	90°30.60'	11.5	4
33	30-JUL-1994	0040	29°10.87'	91°59.99'	6.9	4
34	30-JUL-1994	0137	29°06.60'	92°00.06'	12.0	5
35	30-JUL-1994	0226	29°02.29'	92°00.09'	16.2	5
36	30-JUL-1994	0338	28°56.22'	91°59.99'	21.8	5
37	30-JUL-1994	0436	28°50.26'	92°00.00'	27.0	6
38	30-JUL-1994	0532	28°44.70'	92°00.08'	32.1	6
39	30-JUL-1994	0644	28°37.72'	91°59.88'	40.1	6
40	30-JUL-1994	0731	28°33.00'	91°59.85'	44.7	6
41	30-JUL-1994	0827	28°26.77'	91°59.86'	55.5	7
42	30-JUL-1994	0924	28°21.13'	91°59.83'	61.0	7
43	30-JUL-1994	1027	28°14.68'	91°59.90'	69.2	7
44	30-JUL-1994	1152	28°08.94'	91°59.92'	83.1	11

Table 9.2. Station times and positions for LATEX A cruise H09 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	30-JUL-1994	1325	28°02.71'	91°59.97'	105.4	12
46	30-JUL-1994	1427	27°56.79'	92°00.08'	100.9	11
47	30-JUL-1994	1529	27°50.68'	91°59.97'	200.1	12
48	30-JUL-1994	1702	27°45.30'	92°00.01'	485.8	12
49	30-JUL-1994	1902	27°38.93'	91°59.96'	842.3	12
50	30-JUL-1994	2030	27°32.94'	91°59.96'	726.1	12
51	31-JUL-1994	0305	27°27.41'	92°59.94'	942.6	12
52	31-JUL-1994	0456	27°33.41'	92°59.94'	650.2	12
53	31-JUL-1994	0627	27°39.41'	92°59.91'	309.1	12
54	31-JUL-1994	0932	27°45.28'	93°00.14'	204.6	11
55	31-JUL-1994	1050	27°52.86'	93°00.12'	190.7	11
56	31-JUL-1994	1230	28°01.82'	92°59.84'	92.1	10
57	31-JUL-1994	1337	28°10.85'	92°59.92'	72.1	10
58	31-JUL-1994	1447	28°18.53'	92°59.98'	53.3	8
59	31-JUL-1994	1606	28°25.37'	92°59.93'	49.6	8
60	31-JUL-1994	1733	28°31.87'	92°59.98'	43.5	7
61	31-JUL-1994	1859	28°38.41'	92°59.91'	34.4	7
62	31-JUL-1994	1958	28°44.93'	92°59.93'	29.3	6
63	31-JUL-1994	2059	28°51.42'	92°59.98'	25.5	5
64	31-JUL-1994	2158	28°57.80'	92°59.99'	21.8	5
65	31-JUL-1994	2247	29°03.98'	92°59.97'	22.2	5
66	31-JUL-1994	2334	29°10.03'	93°00.06'	18.5	5
67	01-AUG-1994	0020	29°15.91'	93°00.02'	16.8	5
68	01-AUG-1994	0122	29°22.00'	92°59.97'	14.5	4
69	01-AUG-1994	0236	29°27.93'	92°59.95'	12.9	4
70	01-AUG-1994	0328	29°34.05'	93°00.01'	11.3	4
71	01-AUG-1994	0957	29°32.03'	94°00.14'	10.3	4
72	01-AUG-1994	1054	29°26.65'	94°00.12'	11.6	4
73	01-AUG-1994	1138	29°21.60'	94°00.13'	10.6	4
74	01-AUG-1994	1220	29°16.21'	94°00.09'	13.1	5
75	01-AUG-1994	1307	29°09.98'	94°00.06'	17.1	5
76	01-AUG-1994	1402	29°03.77'	94°00.13'	19.0	5
77	01-AUG-1994	1452	28°57.92'	94°00.14'	17.4	5
78	01-AUG-1994	1624	28°51.89'	93°59.96'	25.0	6
79	01-AUG-1994	1720	28°46.01'	94°00.09'	24.3	6
80	01-AUG-1994	1823	28°39.65'	93°59.94'	29.4	6
81	01-AUG-1994	1929	28°33.83'	93°59.96'	35.9	7
82	01-AUG-1994	2031	28°27.95'	93°59.99'	43.0	6
83	01-AUG-1994	2143	28°21.94'	93°59.99'	51.5	7
84	01-AUG-1994	2309	28°16.02'	94°01.29'	57.4	9
85	02-AUG-1994	0021	28°08.98'	94°03.76'	64.1	8
86	02-AUG-1994	0117	28°04.65'	94°05.53'	69.8	8
87	02-AUG-1994	0223	27°59.55'	94°07.50'	80.9	9
88	02-AUG-1994	0332	27°54.15'	94°09.31'	96.3	10

Table 9.2. Station times and positions for LATEX A cruise H09 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	02-AUG-1994	0505	27°47.98'	94°11.43'	269.0	12
90	02-AUG-1994	0625	27°44.24'	94°12.20'	450.0	12
91	02-AUG-1994	0758	27°39.61'	94°13.46'	439.3	12
92	02-AUG-1994	1014	27°33.61'	94°14.64'	650.7	12
93	02-AUG-1994	1222	27°27.72'	94°16.21'	963.3	12
94	02-AUG-1994	1919	28°15.58'	94°32.41'	47.4	6
95	02-AUG-1994	2019	28°20.99'	94°33.58'	41.8	7
96	02-AUG-1994	2156	28°26.40'	94°35.15'	38.3	7
97	02-AUG-1994	2248	28°31.77'	94°36.59'	33.2	7
98	02-AUG-1994	2341	28°37.19'	94°38.42'	29.8	7
99	03-AUG-1994	0033	28°42.58'	94°39.90'	25.8	6
100	03-AUG-1994	0125	28°48.01'	94°41.43'	19.9	5
101	03-AUG-1994	0217	28°53.40'	94°43.21'	18.8	5
102	03-AUG-1994	0329	28°58.78'	94°44.42'	15.3	4
103	03-AUG-1994	0424	29°04.50'	94°46.23'	17.5	4
104	03-AUG-1994	0526	29°10.17'	94°47.98'	13.6	4
105	03-AUG-1994	1020	28°42.22'	95°32.22'	13.6	4
106	03-AUG-1994	1112	28°37.46'	95°29.30'	17.9	4
107	03-AUG-1994	1158	28°32.38'	95°26.33'	24.7	5
108	03-AUG-1994	1249	28°27.00'	95°23.47'	30.3	6
109	03-AUG-1994	1339	28°21.63'	95°20.86'	32.6	8
110	03-AUG-1994	1443	28°16.34'	95°17.84'	38.6	7
111	03-AUG-1994	1536	28°10.49'	95°15.01'	47.3	6
112	03-AUG-1994	1633	28°05.03'	95°12.11'	56.4	7
113	03-AUG-1994	1729	27°59.64'	95°09.10'	77.9	9
114	03-AUG-1994	1835	27°54.09'	95°06.42'	107.9	11
115	03-AUG-1994	1948	27°48.55'	95°03.60'	256.7	12
116	03-AUG-1994	2113	27°43.02'	95°00.69'	493.5	12
117	03-AUG-1994	2241	27°37.67'	94°57.59'	692.6	12
118	04-AUG-1994	0010	27°32.41'	94°54.85'	846.5	12
119	04-AUG-1994	0516	27°23.40'	95°37.33'	923.0	12
120	04-AUG-1994	0654	27°27.61'	95°42.12'	707.5	12
121	04-AUG-1994	0821	27°31.50'	95°47.11'	517.2	12
122	04-AUG-1994	0942	27°36.13'	95°52.69'	189.4	12
123	04-AUG-1994	1047	27°41.09'	95°58.18'	101.4	10
124	04-AUG-1994	1146	27°45.29'	96°03.30'	79.8	7
125	04-AUG-1994	1235	27°48.60'	96°07.84'	66.8	7
126	04-AUG-1994	1339	27°53.98'	96°13.51'	49.8	7
127	04-AUG-1994	1437	27°58.21'	96°18.94'	36.0	6
128	04-AUG-1994	1528	28°02.40'	96°24.05'	26.9	5
129	04-AUG-1994	1627	28°07.83'	96°30.03'	19.1	5
130	04-AUG-1994	1742	28°12.61'	96°36.02'	10.1	4
131	05-AUG-1994	0116	27°15.44'	97°16.05'	17.2	4
132	05-AUG-1994	0216	27°14.42'	97°09.61'	24.3	5

Table 9.2. Station times and positions for LATEX A cruise H09 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
133	05-AUG-1994	0324	27°13.55'	97°03.13'	33.3	7
134	05-AUG-1994	0426	27°12.69'	96°56.23'	42.8	8
135	05-AUG-1994	0529	27°11.93'	96°49.59'	56.5	8
136	05-AUG-1994	0633	27°11.04'	96°42.92'	72.0	8
137	05-AUG-1994	0736	27°10.17'	96°36.38'	89.3	10
138	05-AUG-1994	0848	27°09.09'	96°29.79'	114.2	11
139	05-AUG-1994	0955	27°08.10'	96°22.81'	182.4	12
140	05-AUG-1994	1102	27°06.88'	96°16.97'	308.9	12
141	05-AUG-1994	1204	27°05.99'	96°12.59'	441.6	12
142	05-AUG-1994	1332	27°05.28'	96°05.25'	605.5	12
143	05-AUG-1994	1454	27°04.31'	95°58.92'	694.7	12
144	05-AUG-1994	2245	26°00.96'	95°58.32'	1033.5	12
145	06-AUG-1994	0029	26°00.97'	96°05.14'	835.4	12
146	06-AUG-1994	0200	26°00.61'	96°11.55'	653.1	12
147	06-AUG-1994	0322	26°00.80'	96°18.66'	207.7	12
148	06-AUG-1994	0428	26°00.70'	96°25.26'	84.4	8
149	06-AUG-1994	0527	26°00.96'	96°31.85'	59.8	8
150	06-AUG-1994	0626	26°00.97'	96°38.62'	48.5	7
151	06-AUG-1994	0718	26°00.96'	96°44.97'	44.1	6
152	06-AUG-1994	0815	26°00.99'	96°51.43'	36.7	6
153	06-AUG-1994	0908	26°01.49'	96°58.10'	28.6	6
154	06-AUG-1994	1001	26°01.36'	97°04.54'	19.8	4
155	06-AUG-1994	1420	26°08.61'	96°19.93'	232.6	12
156	06-AUG-1994	1600	26°19.81'	96°17.84'	229.0	12
157	06-AUG-1994	1819	26°31.80'	96°19.94'	272.4	12
158	06-AUG-1994	2015	26°43.78'	96°26.24'	203.2	12
159	06-AUG-1994	2157	26°55.81'	96°26.25'	208.0	12
160	06-AUG-1994	2343	27°06.29'	96°20.72'	227.3	12
161	07-AUG-1994	0119	27°16.78'	96°15.21'	202.9	12
162	07-AUG-1994	0304	27°25.80'	96°06.24'	203.4	12
163	07-AUG-1994	0457	27°32.40'	95°54.46'	274.5	12
164	07-AUG-1994	0643	27°39.01'	95°42.68'	237.5	12
165	07-AUG-1994	0824	27°42.48'	95°30.12'	299.3	12
166	07-AUG-1994	1009	27°45.68'	95°17.20'	253.7	12
167	07-AUG-1994	1157	27°47.91'	95°02.88'	309.6	12
168	07-AUG-1994	1347	27°50.14'	94°48.57'	233.0	12
169	07-AUG-1994	1518	27°50.12'	94°35.30'	274.4	12
170	07-AUG-1994	1652	27°50.06'	94°21.66'	169.5	12
171	04-AUG-1994	2343	27°26.99'	97°12.00'	16.4	5

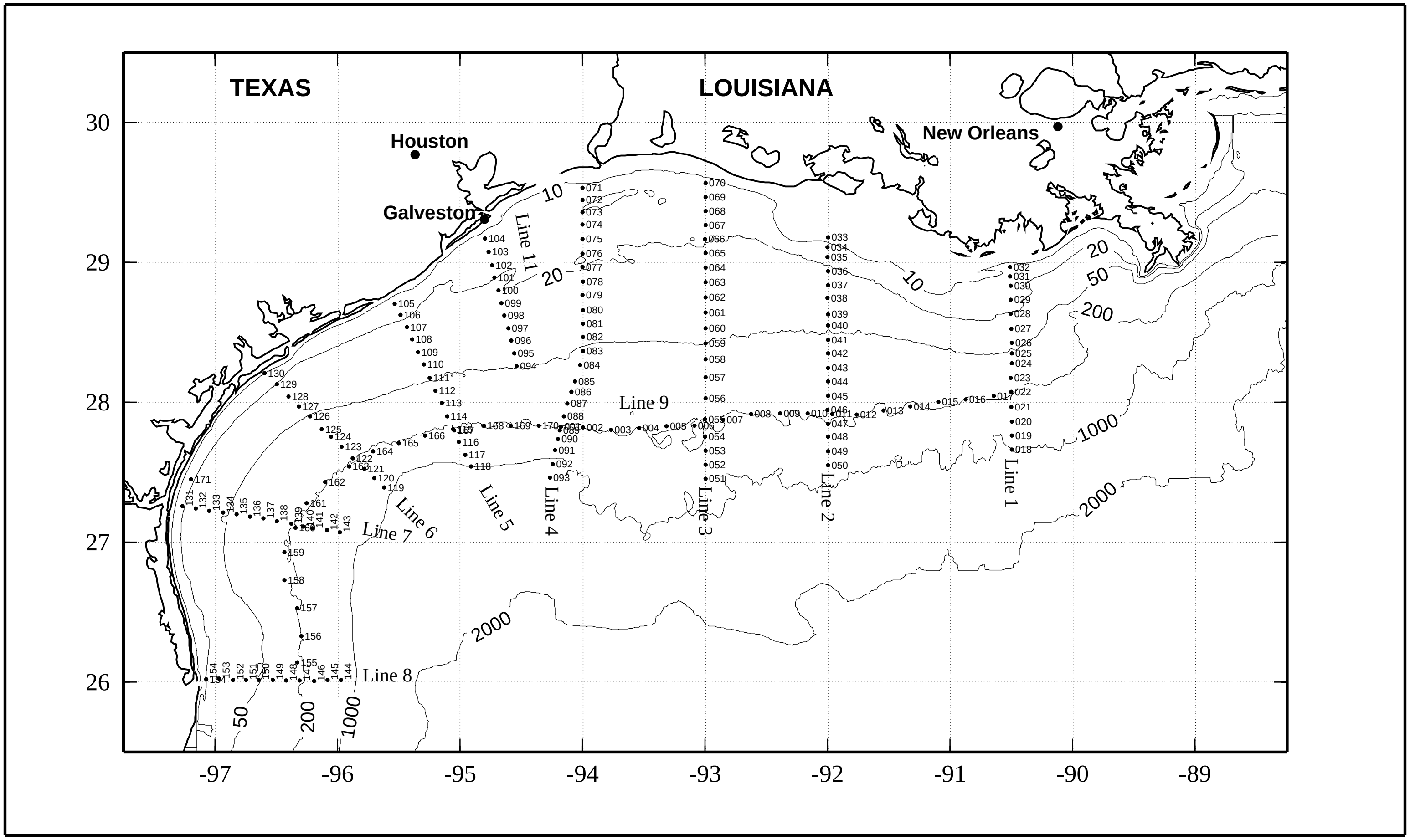

Figure 9.0. Cruise track and station locations for LATEX A Hydrographic Survey H09, 26 July - 7 August 1994.

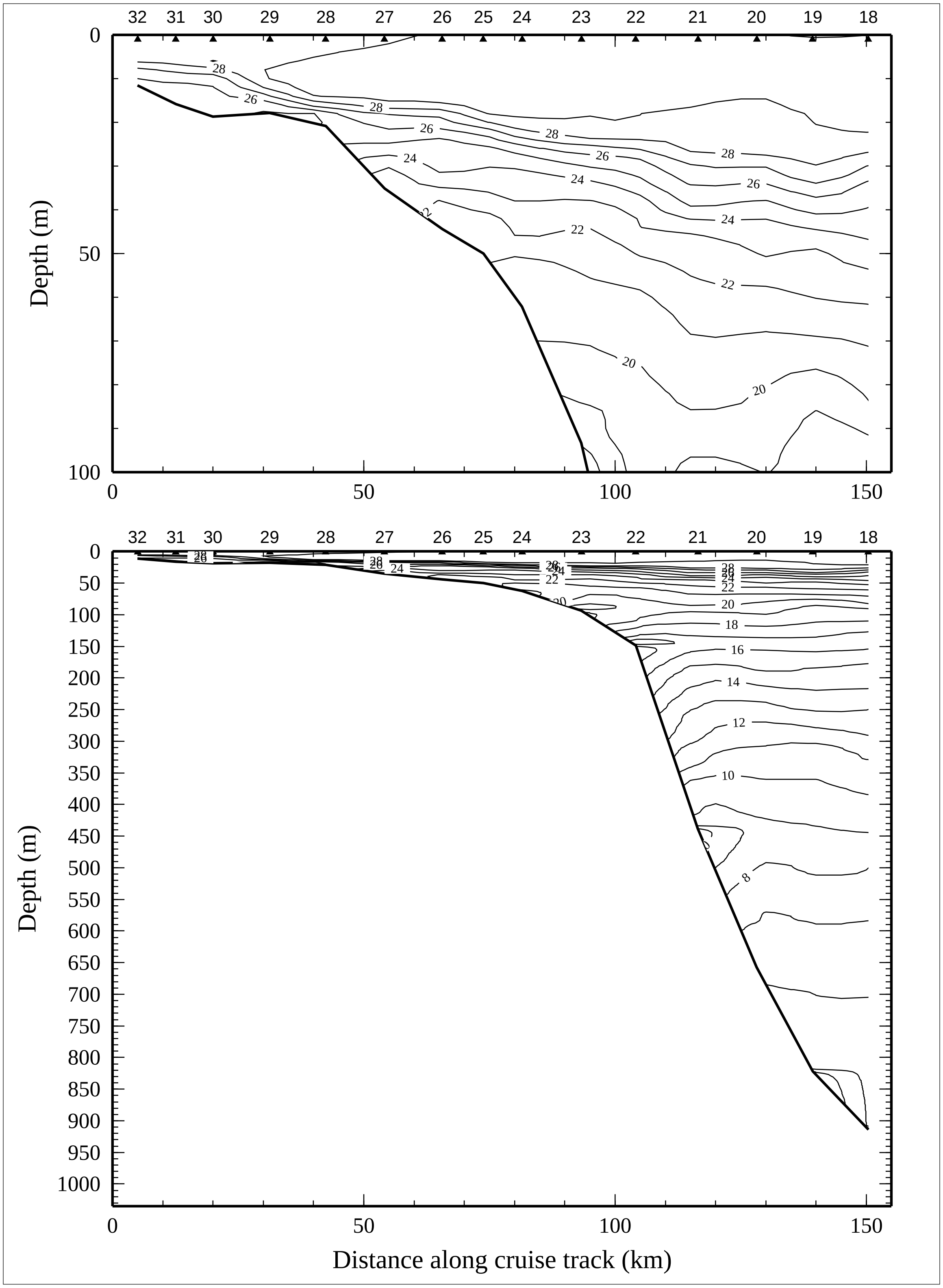

Figure 9.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

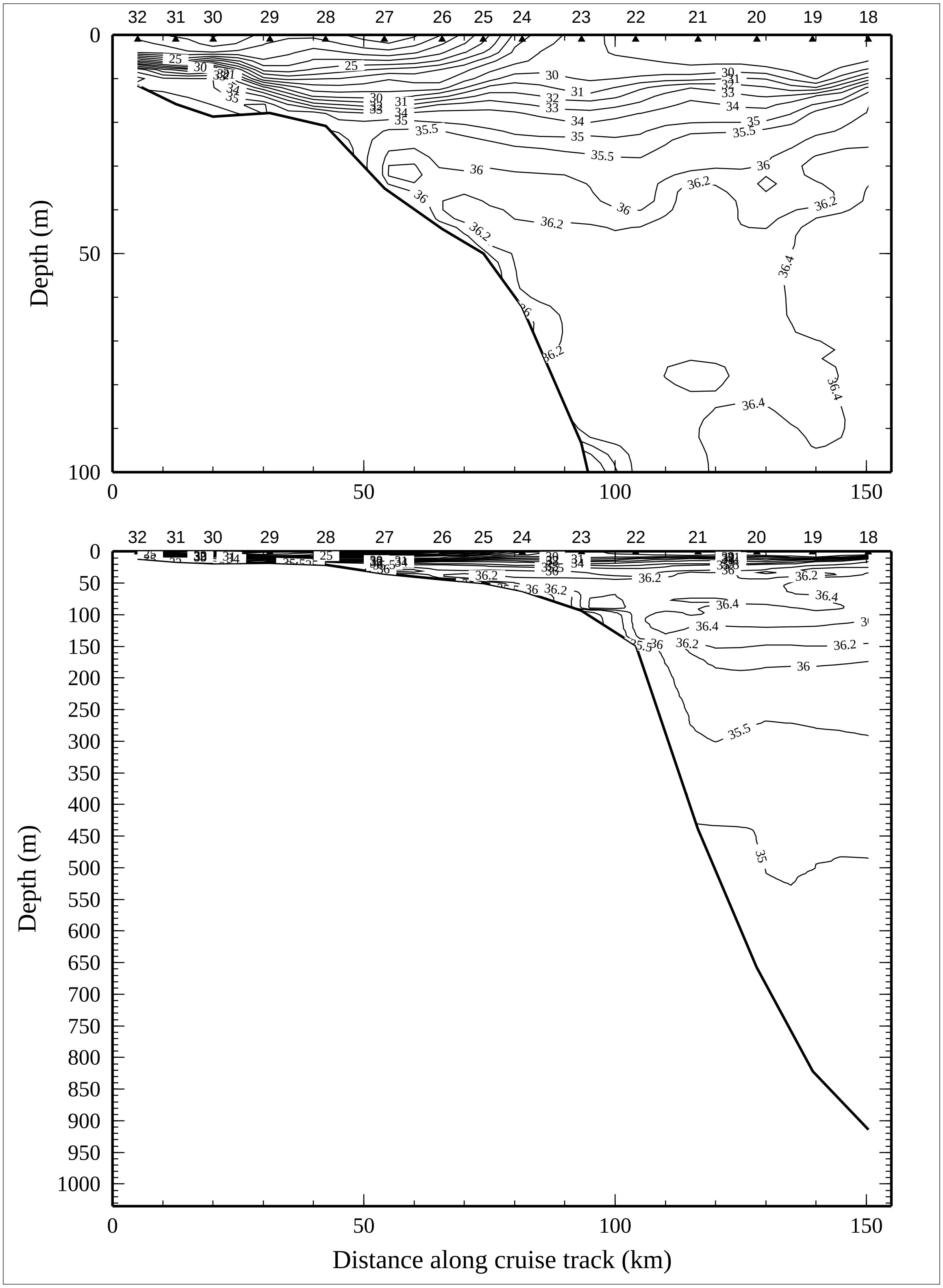

Figure 9.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

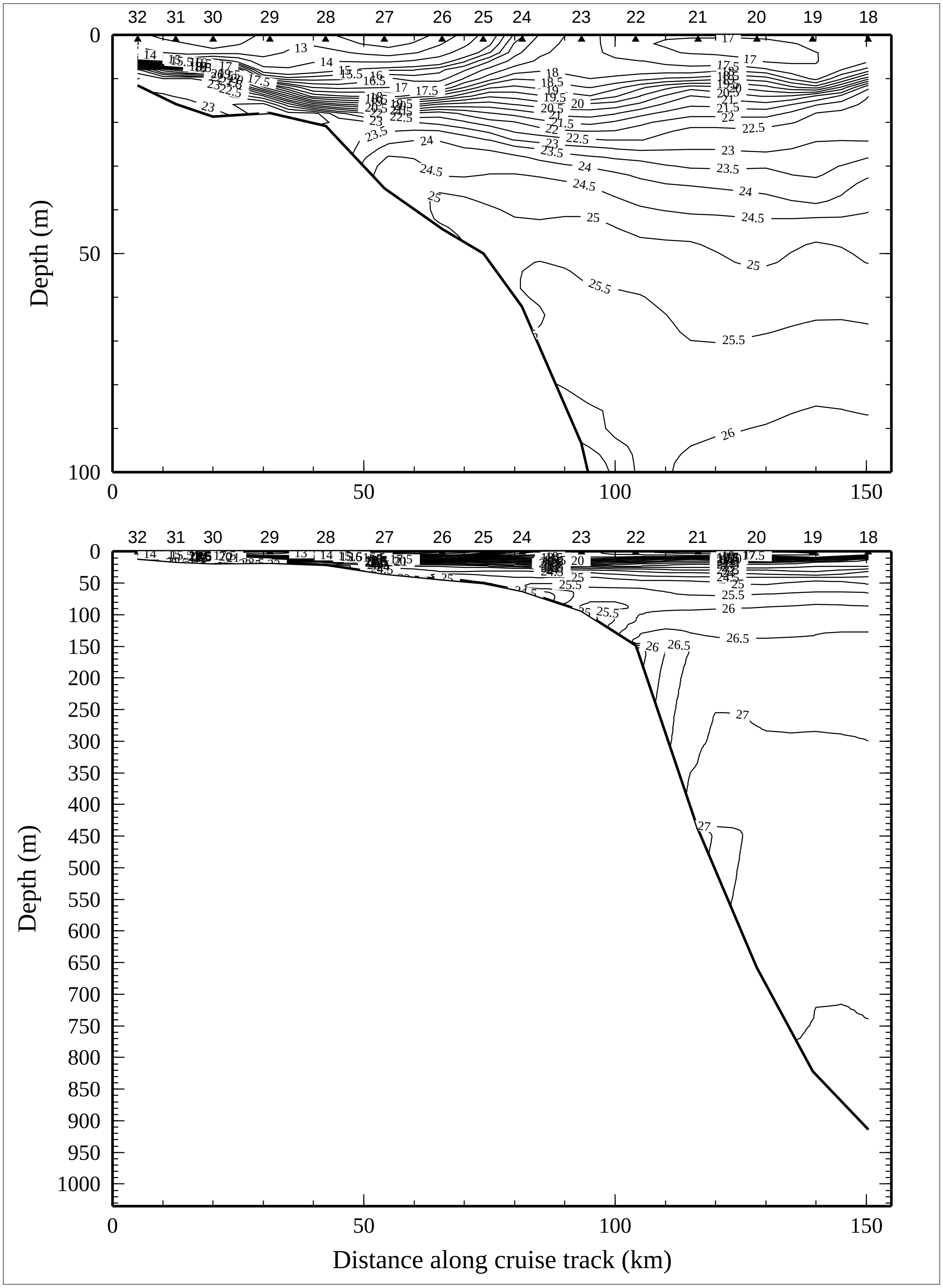

Figure 9.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

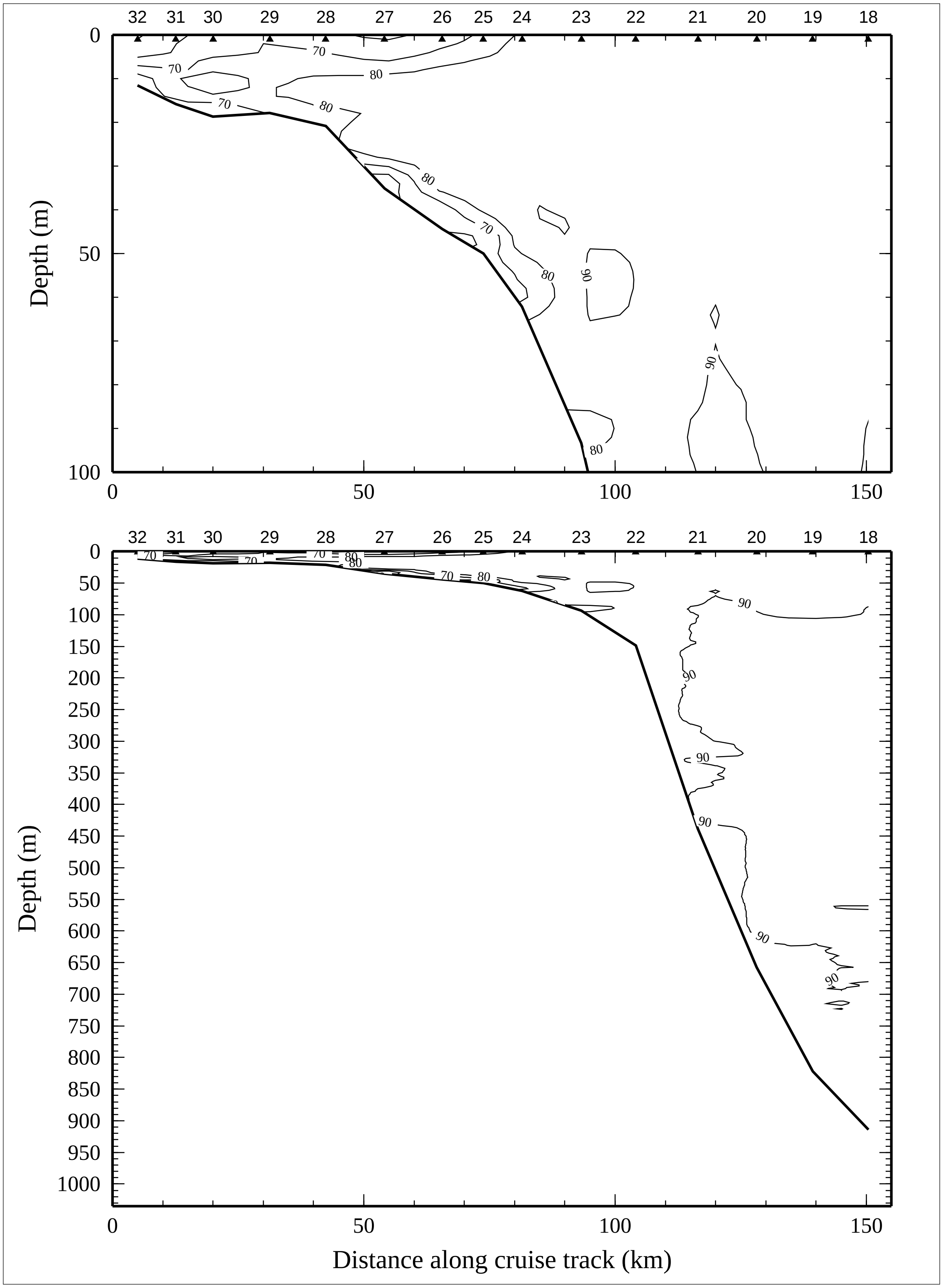

Figure 9.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

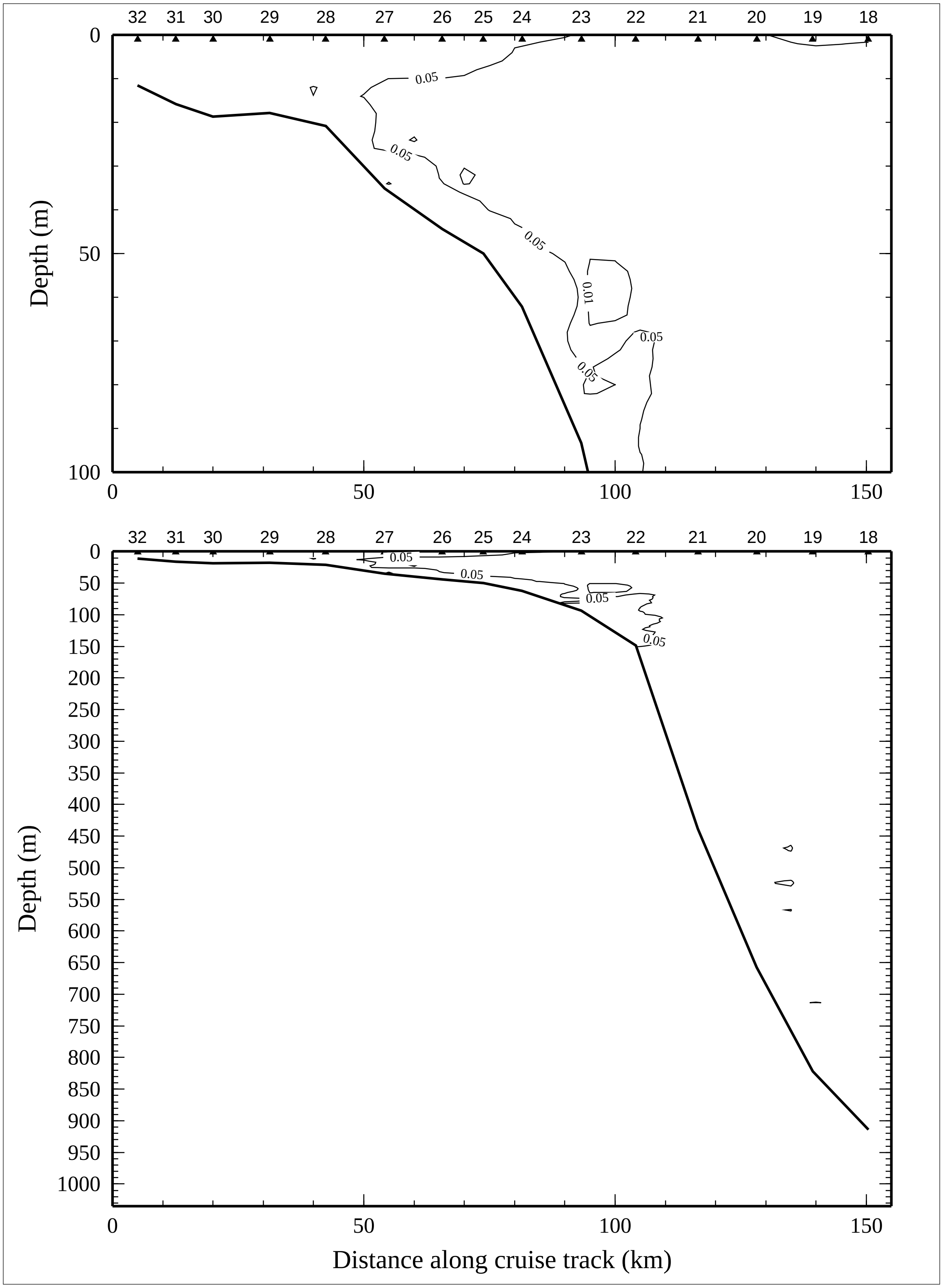

Figure 9.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

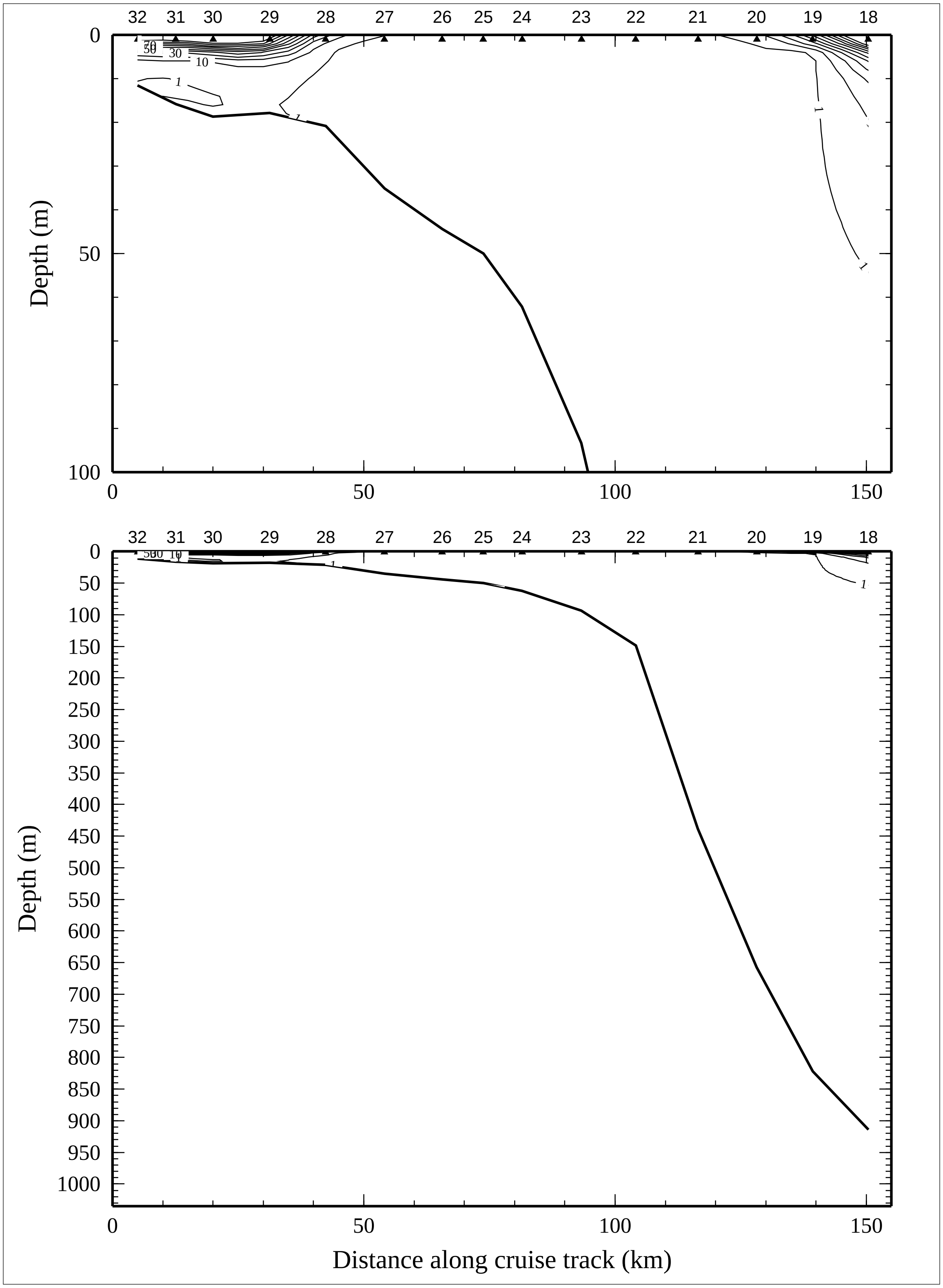

Figure 9.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

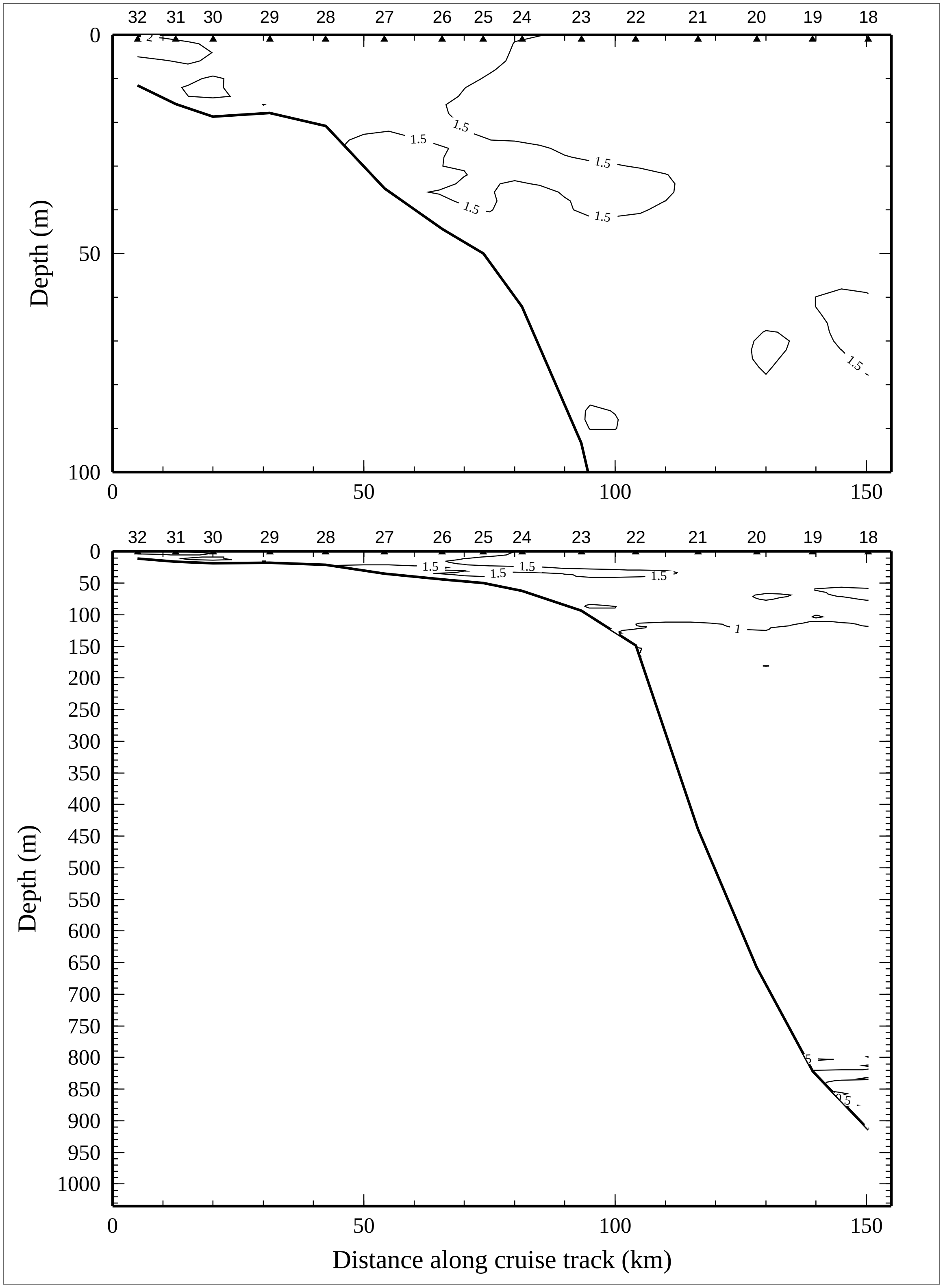

Figure 9.1.7. Relative fluorescence on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

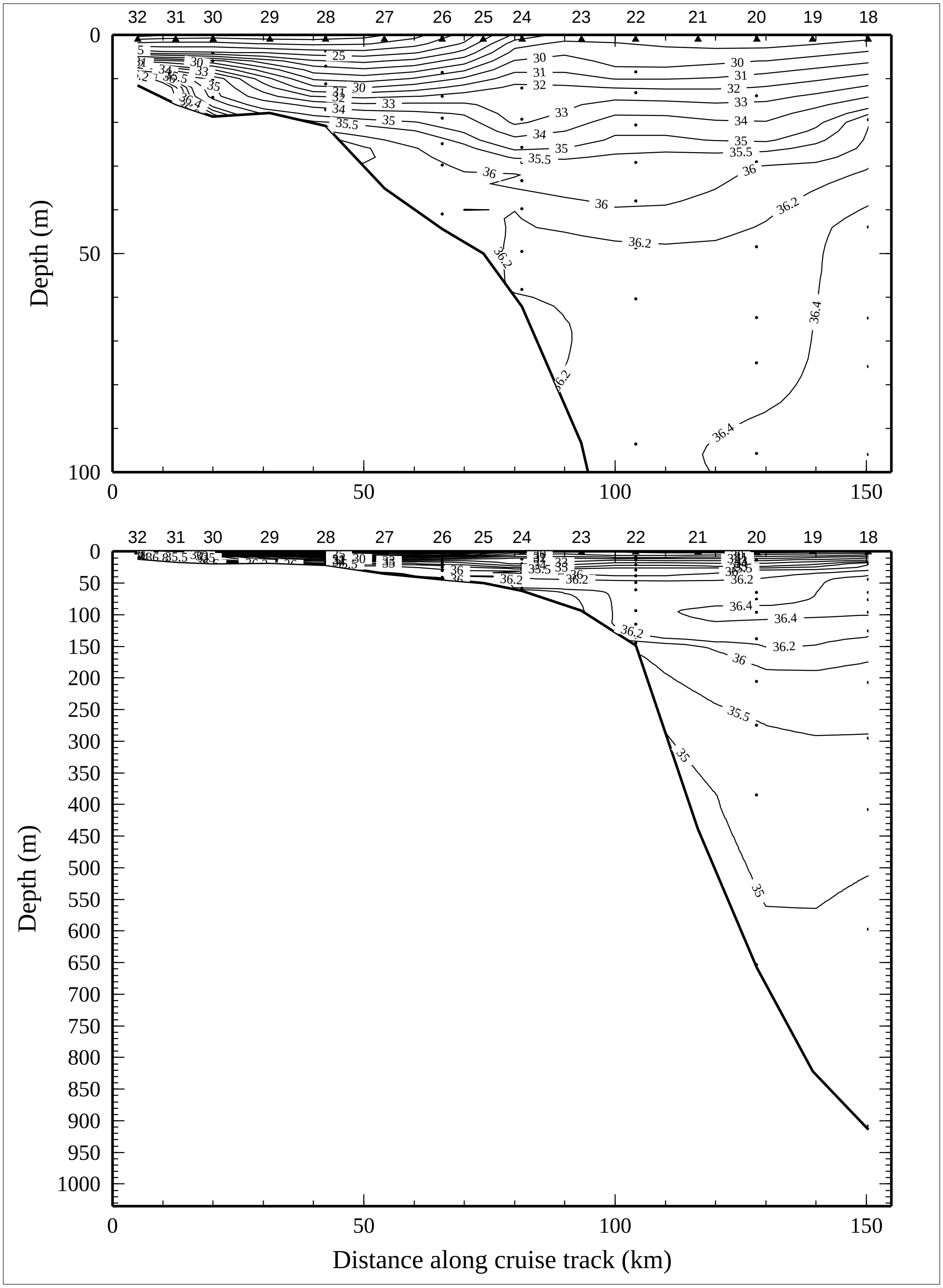

Figure 9.1.8. Bottle salinity on line 1 of LATEX A survey H09,
26 July - 7 August 1994.

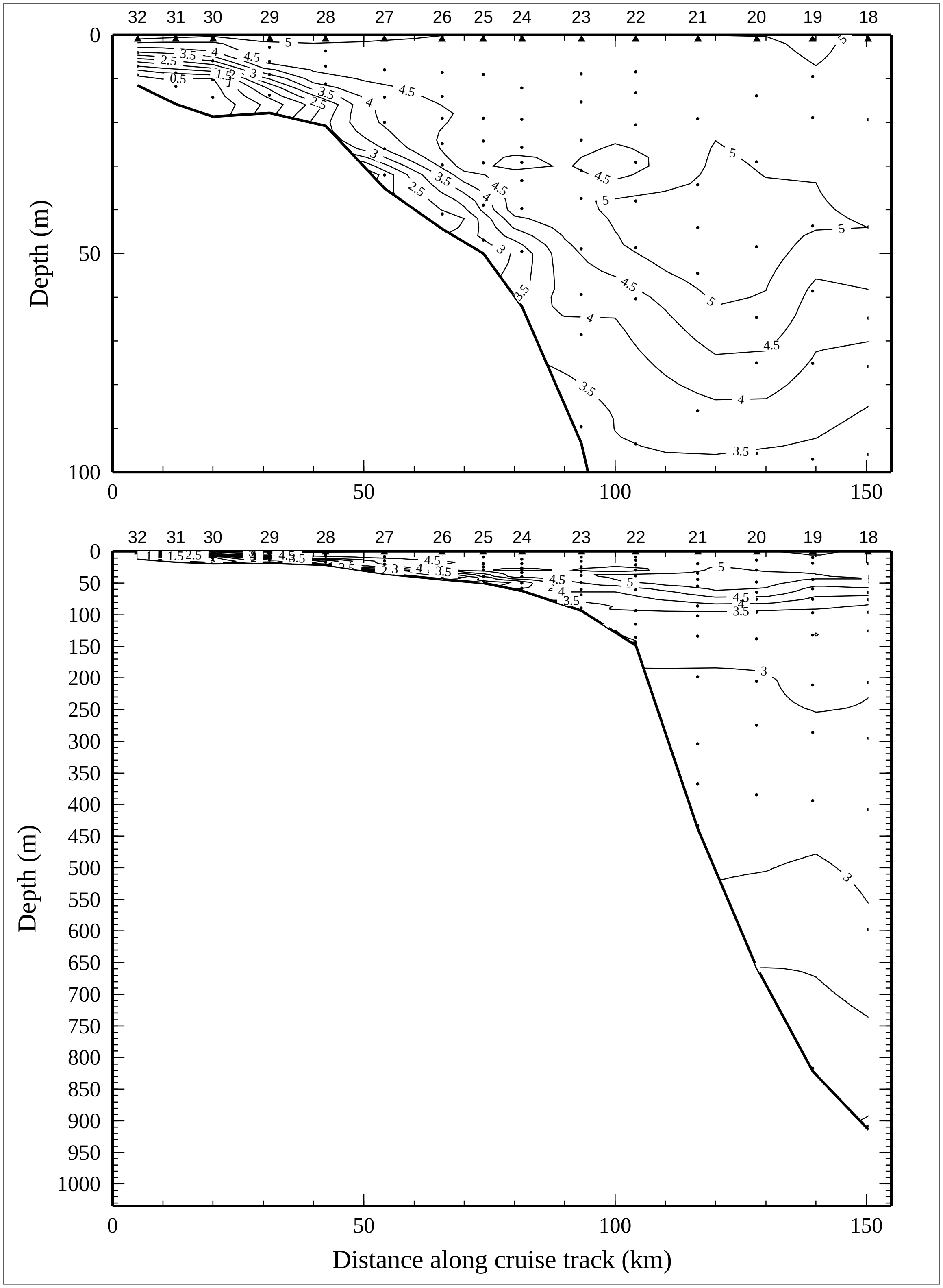

Figure 9.1.9. Dissolved oxygen (ml·l^{-1}) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

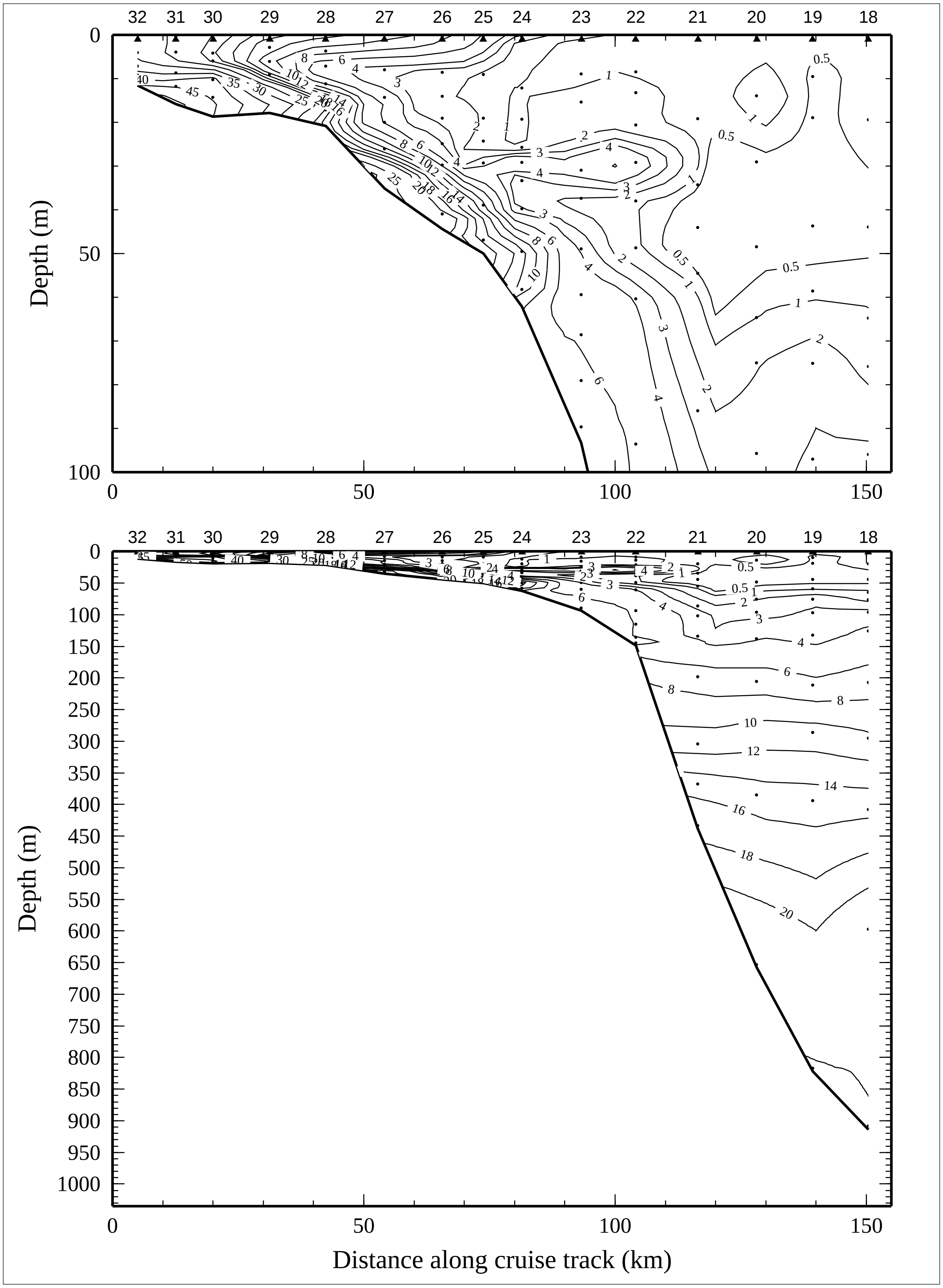

Figure 9.1.10. Silicate (μmol·l^{-1}) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

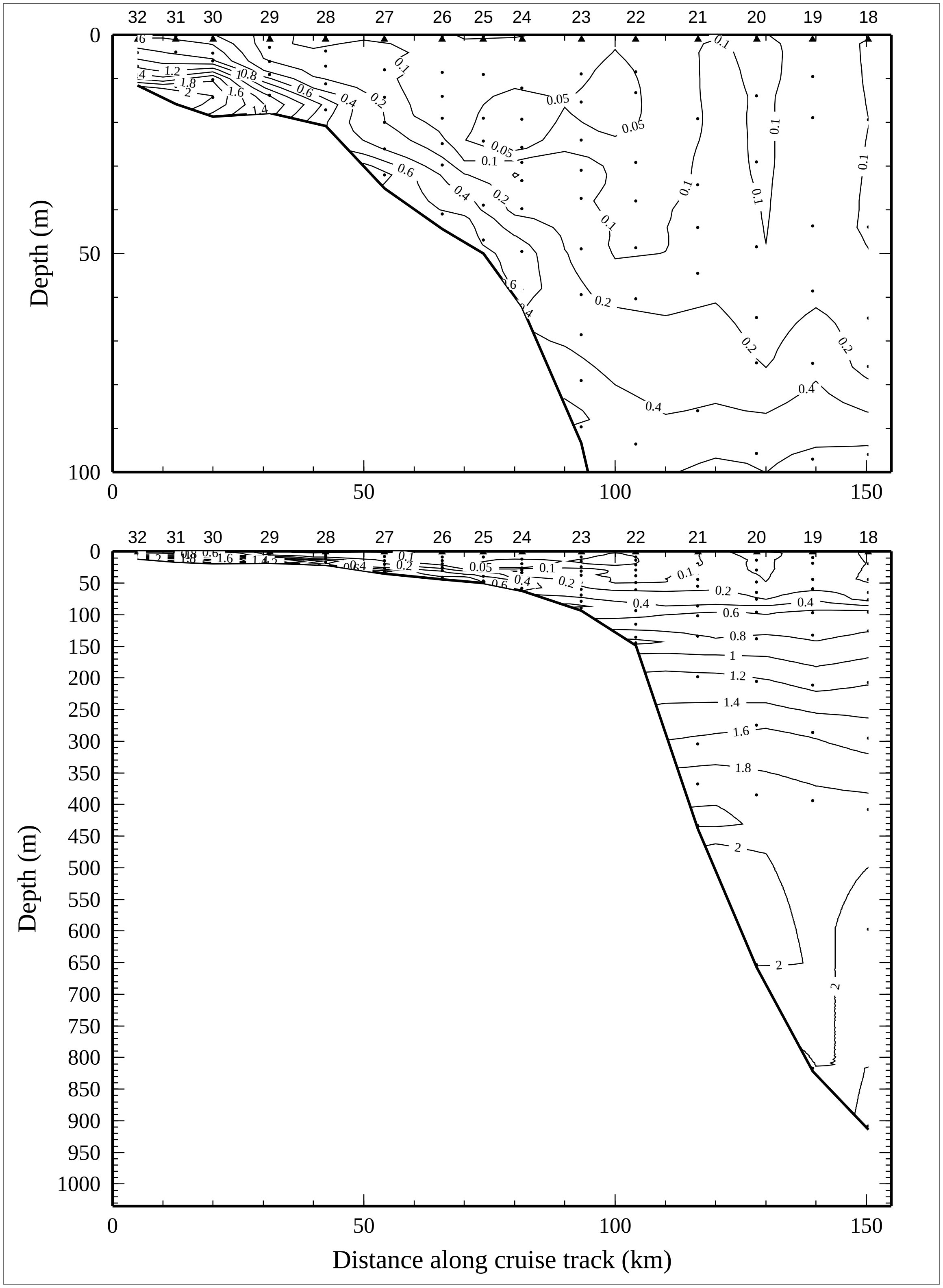

Figure 9.1.11. Phosphate (µmol·l^{-1}) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

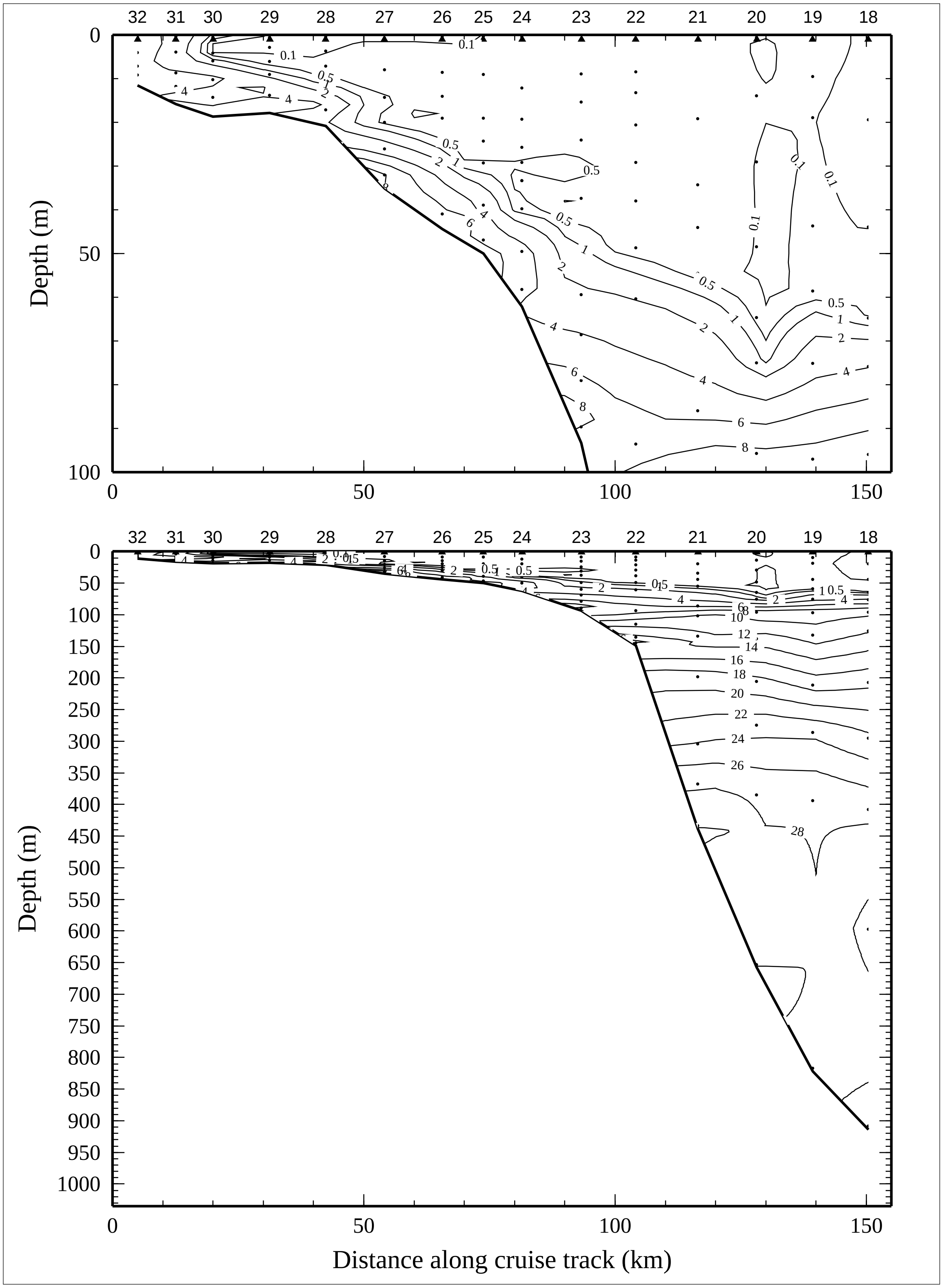

Figure 9.1.12. Nitrate (μmol·l⁻¹) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

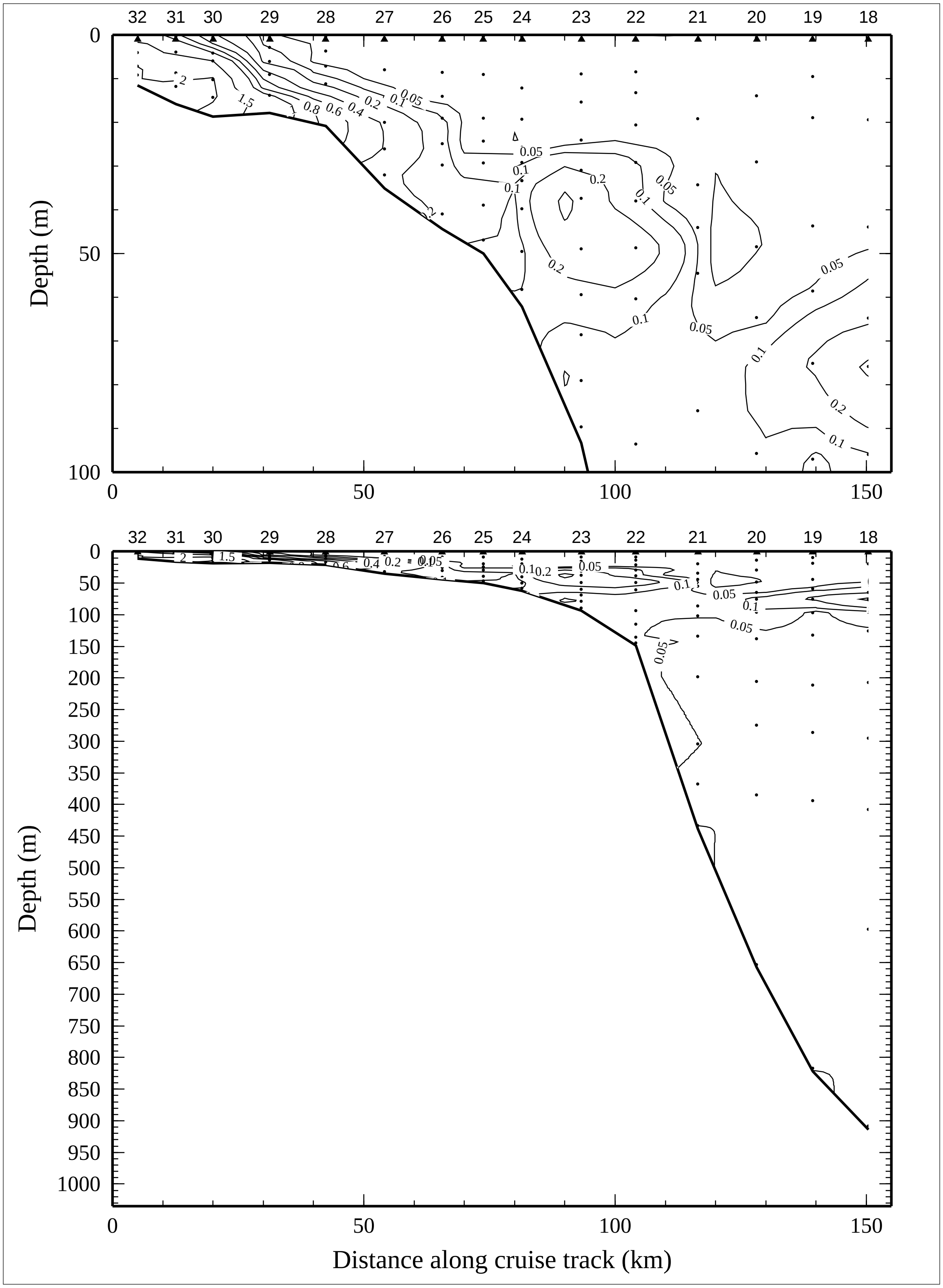

Figure 9.1.13. Nitrite (μmol·l^{-1}) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

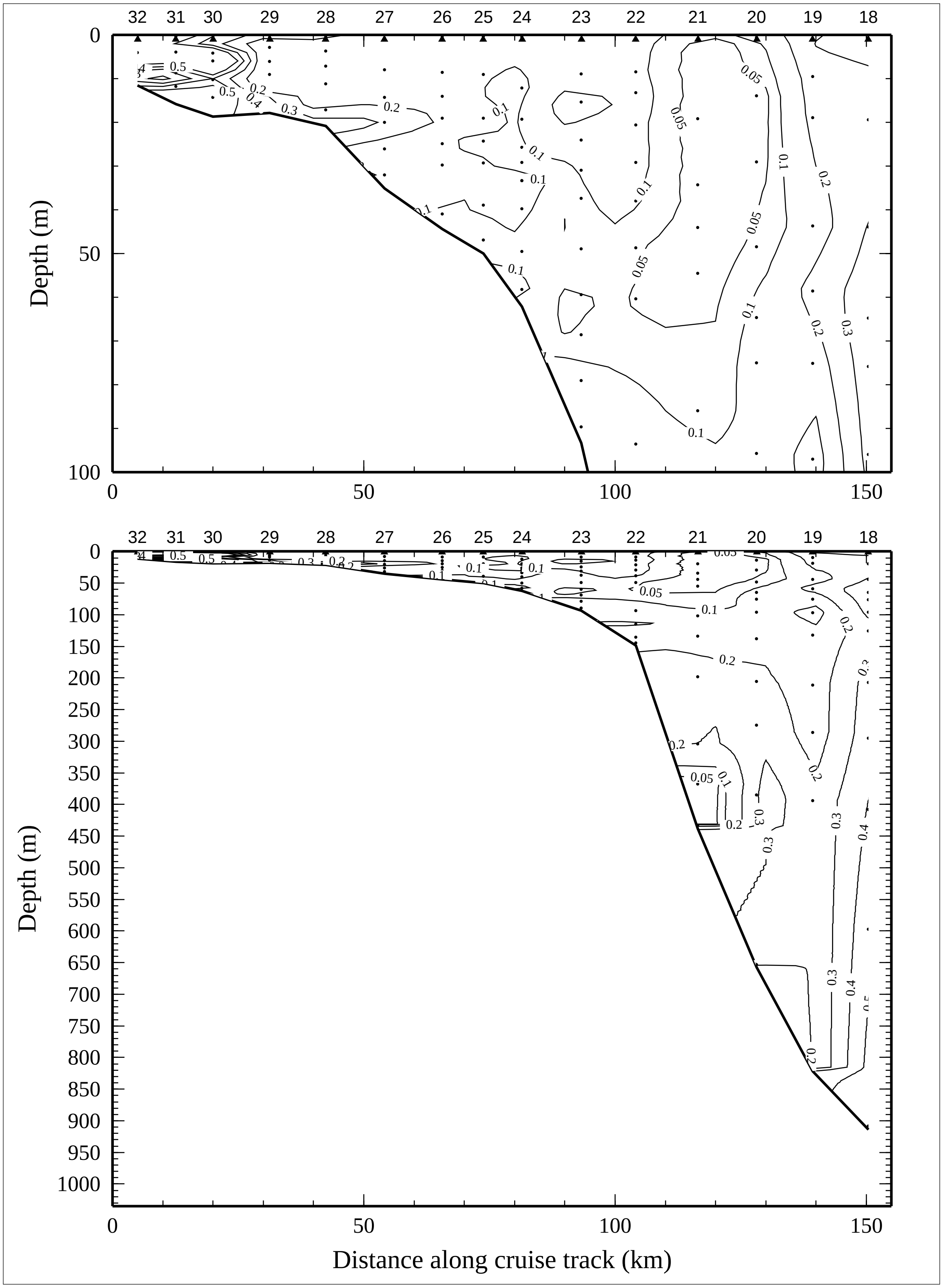

Figure 9.1.14. Ammonium (μmol·l⁻¹) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

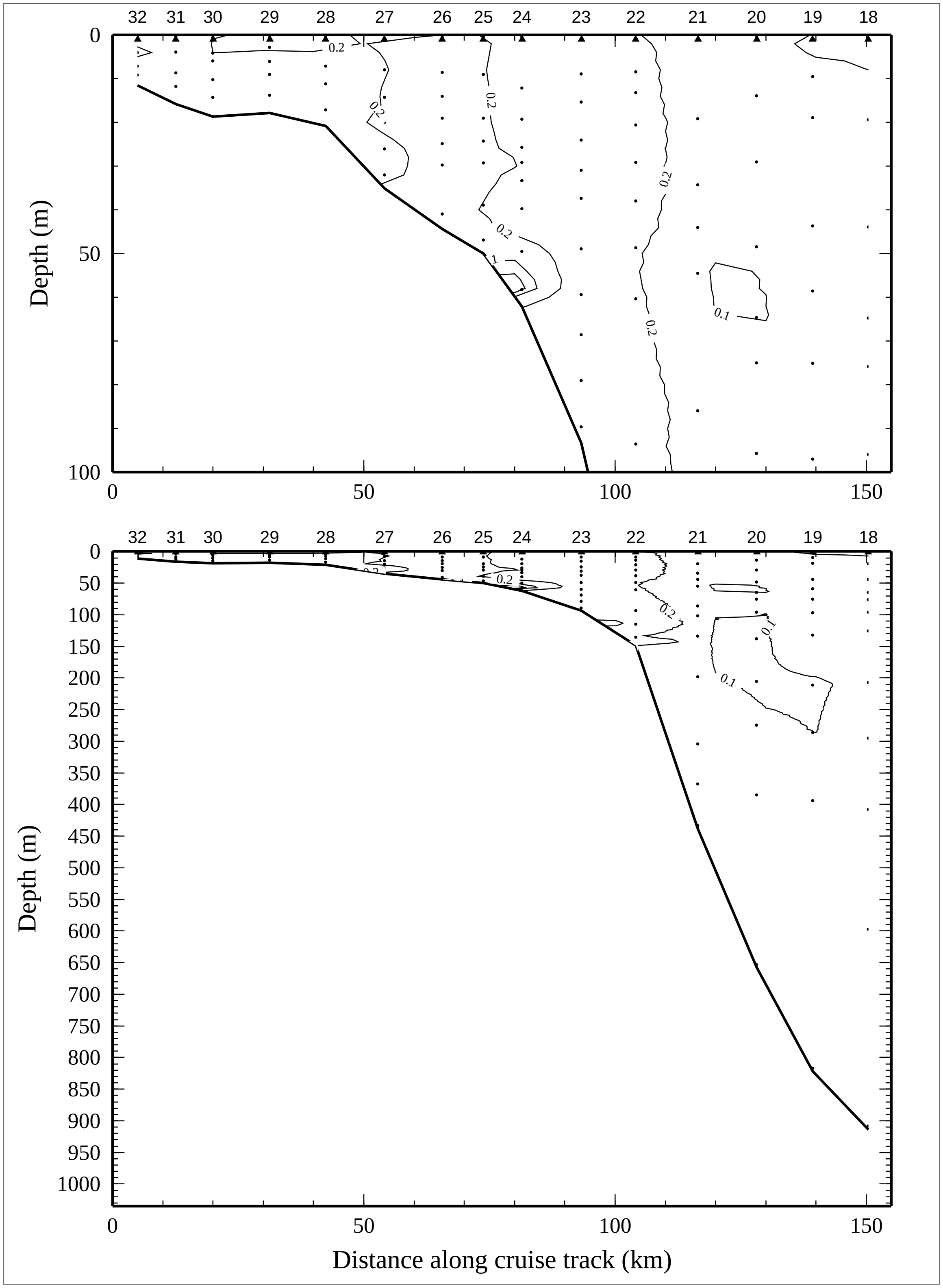

Figure 9.1.15. Urea ($\mu mol \cdot l^{-1}$) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

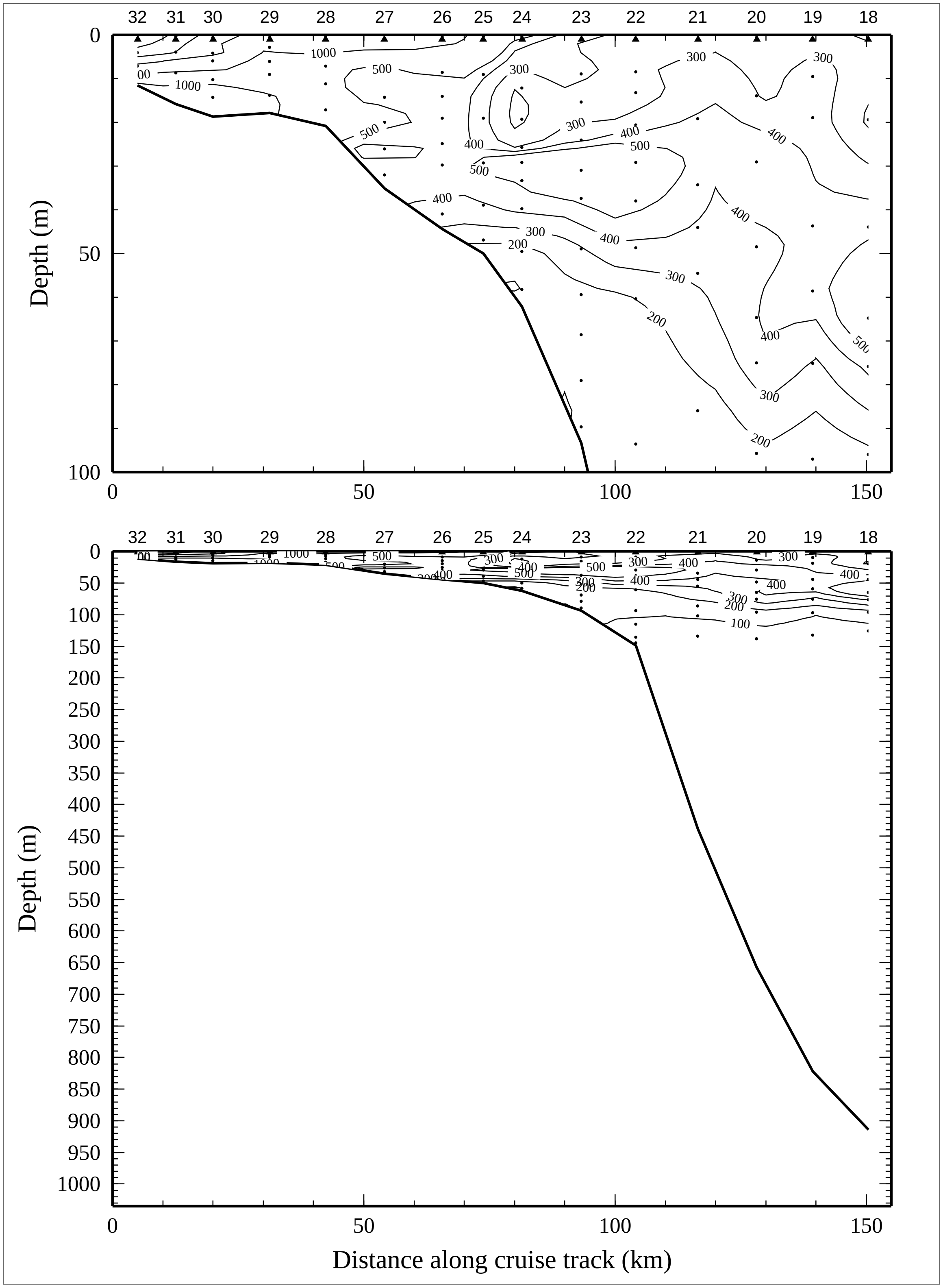

Figure 9.1.16. Chlorophyll a (ng·l^{-1}) on line 1 of LATEX A survey H09, 26 July - 7 August 1994.

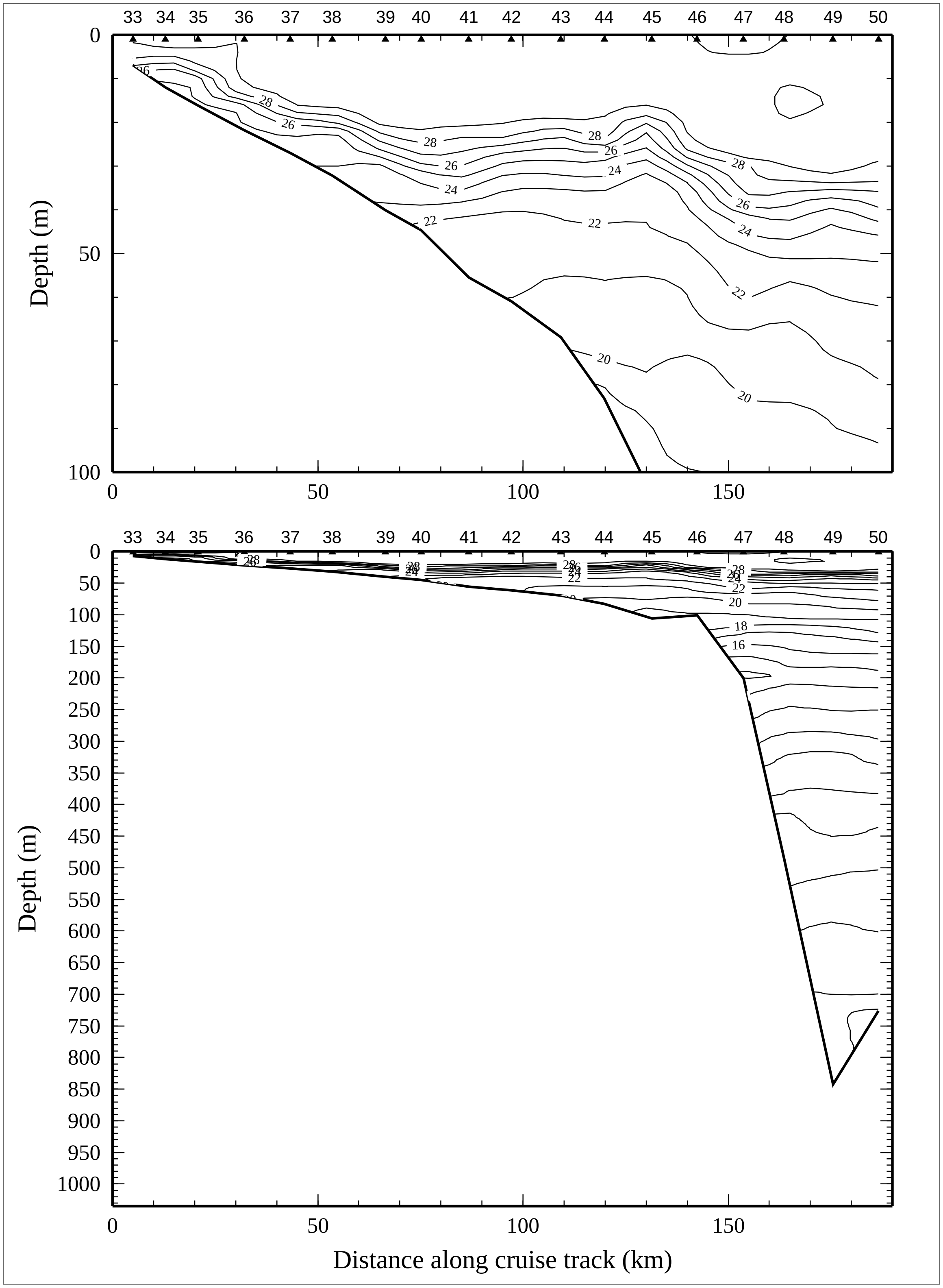

Figure 9.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

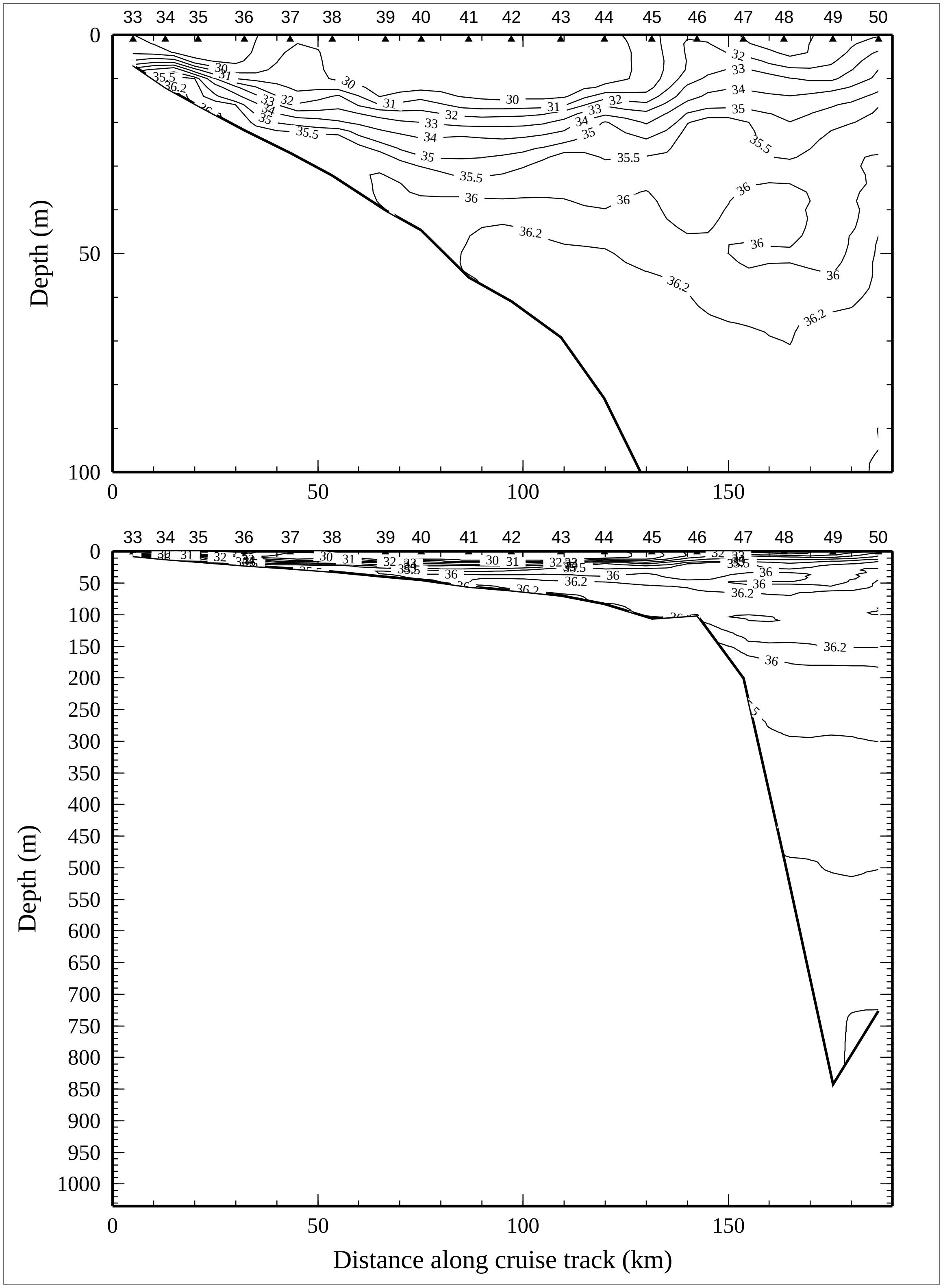

Figure 9.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

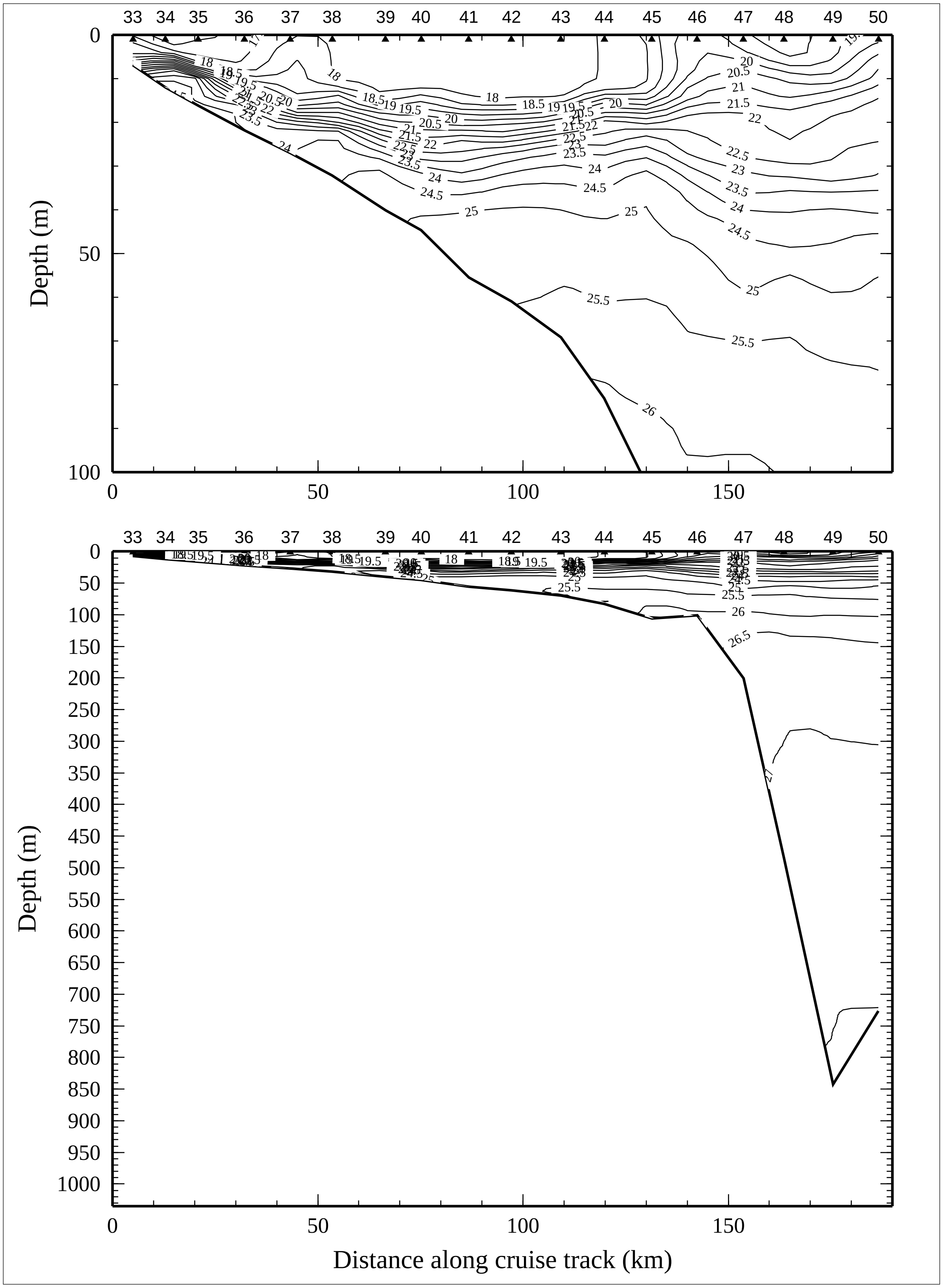

Figure 9.2.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

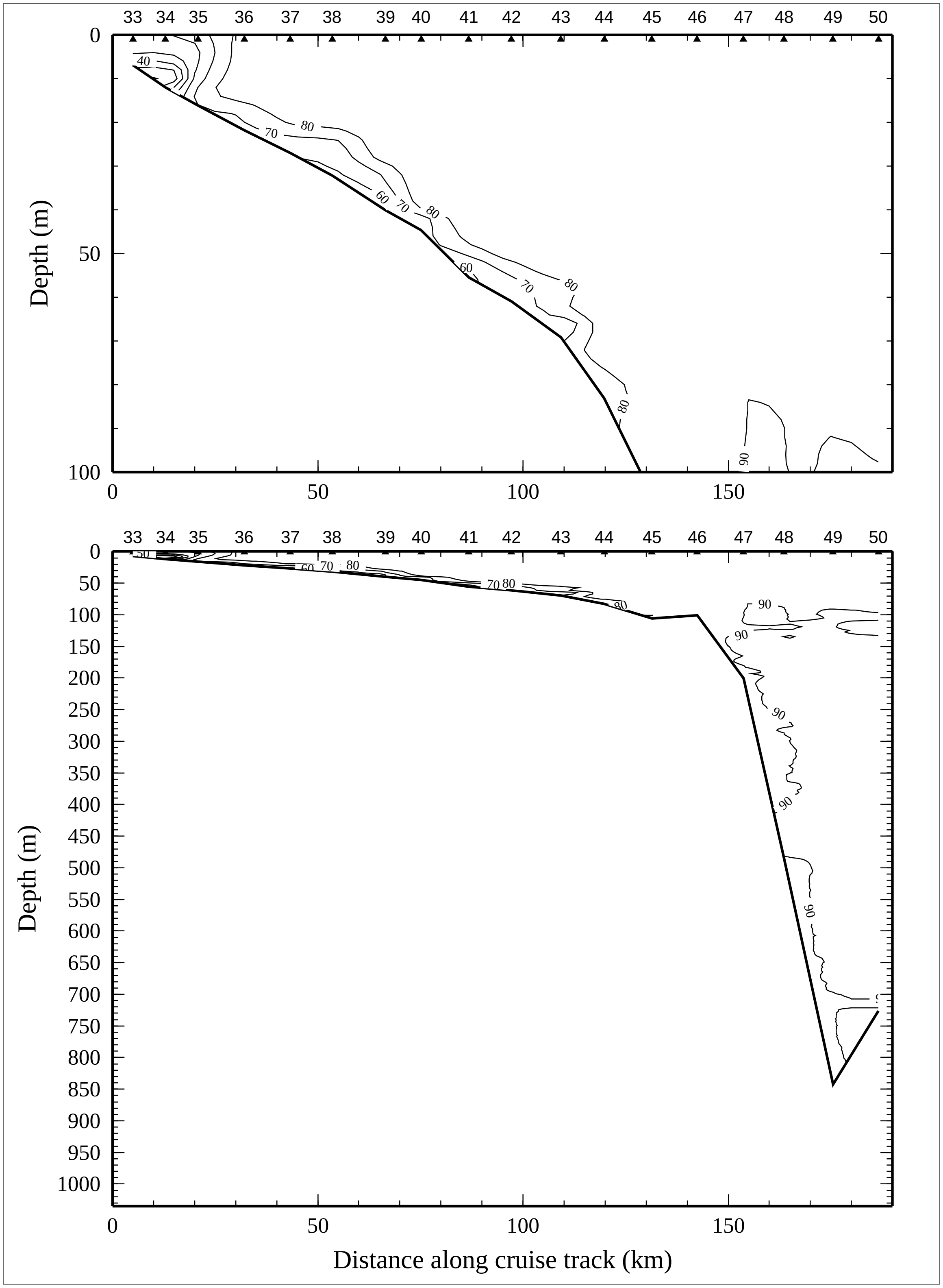

Figure 9.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

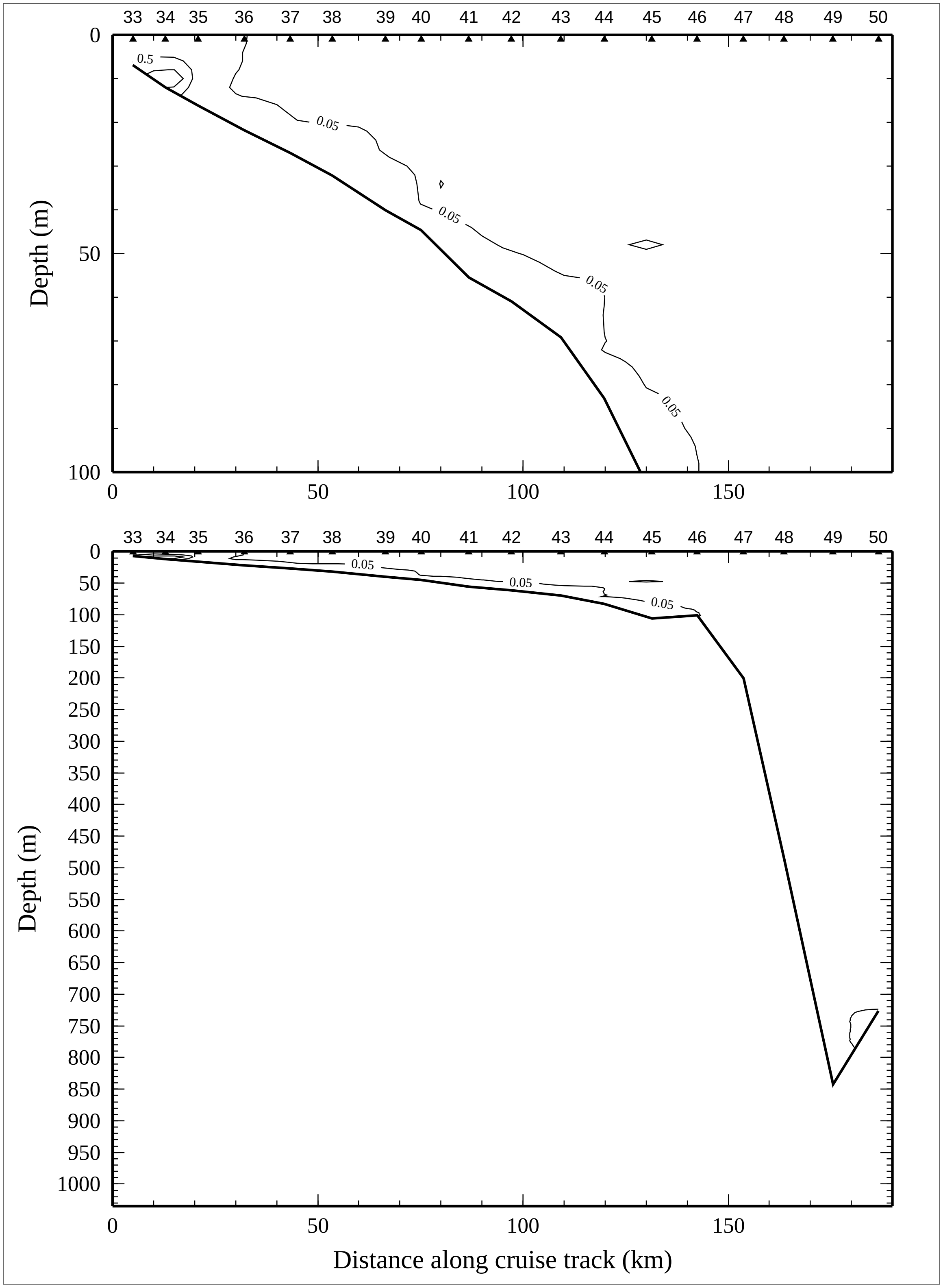

Figure 9.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

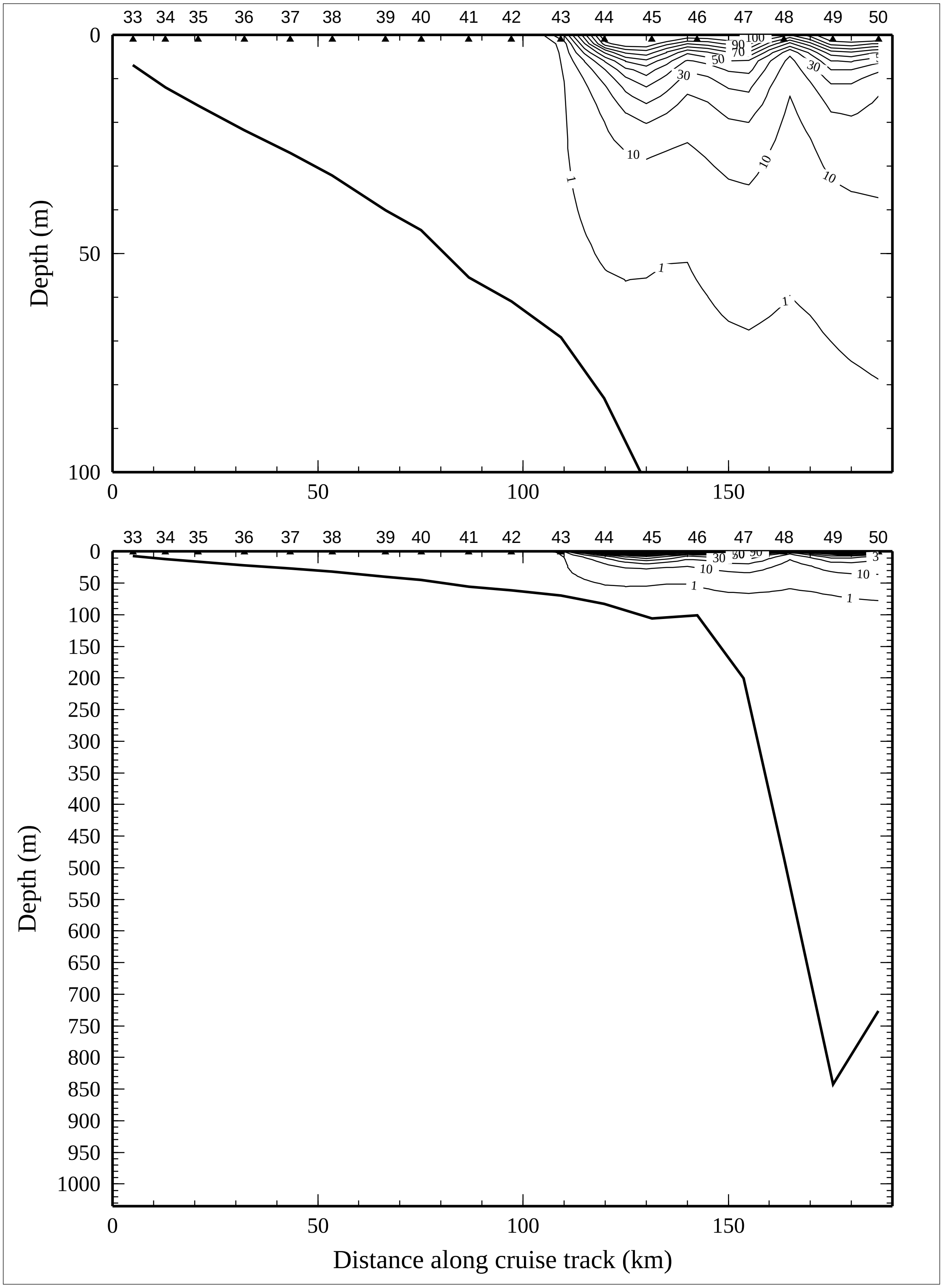

Figure 9.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

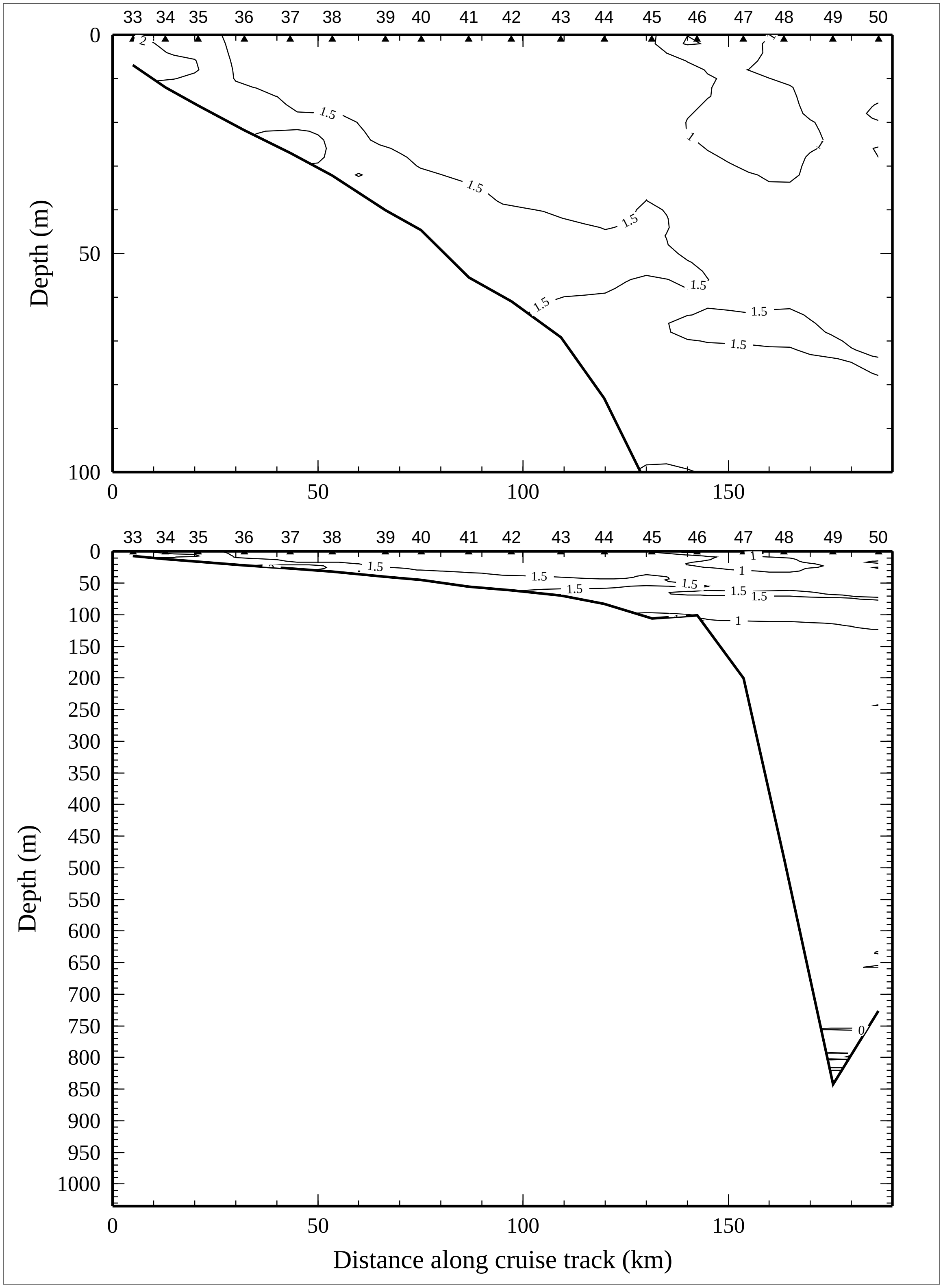

Figure 9.2.7. Relative fluorescence on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

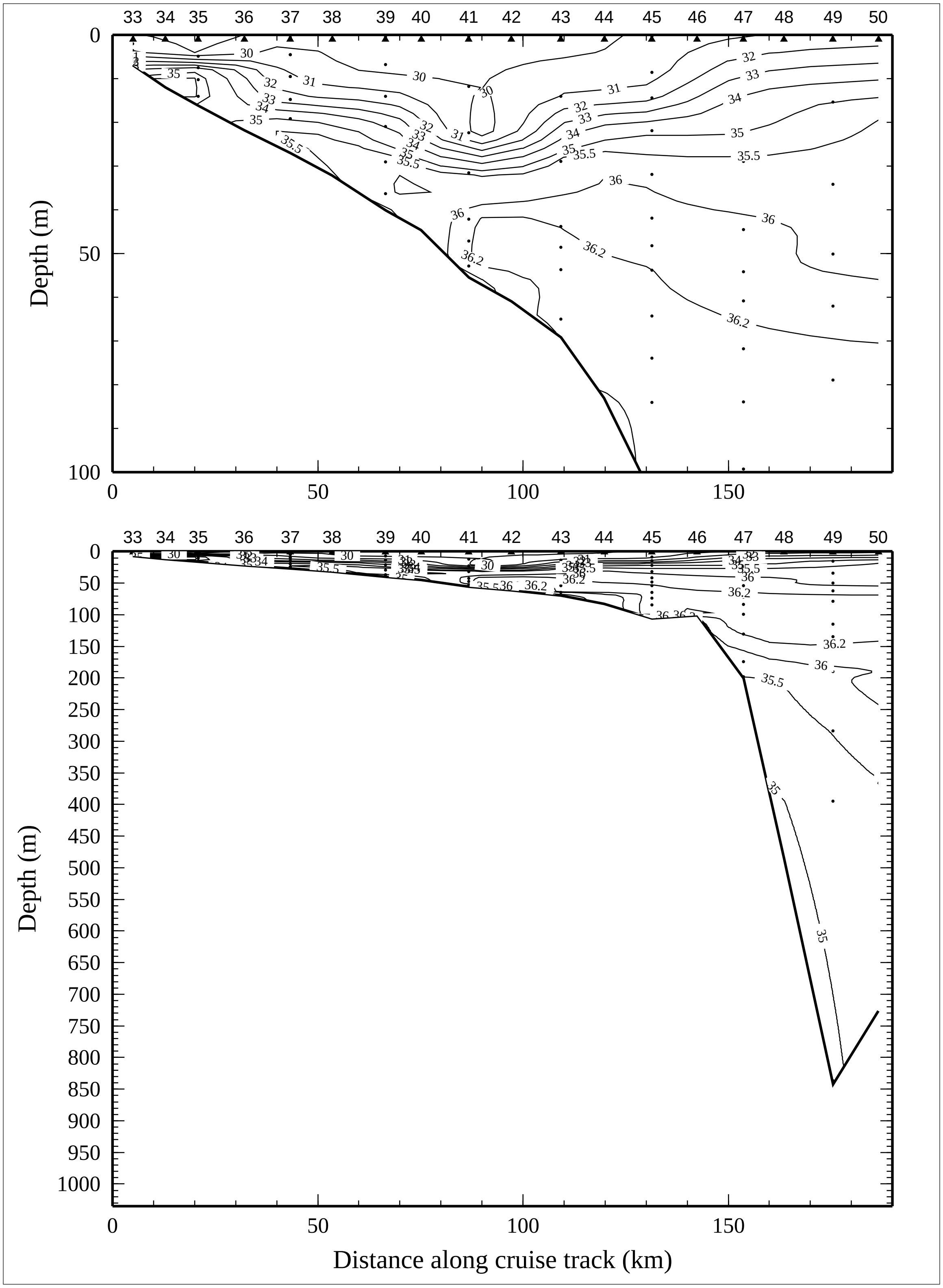

Figure 9.2.8. Bottle salinity on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

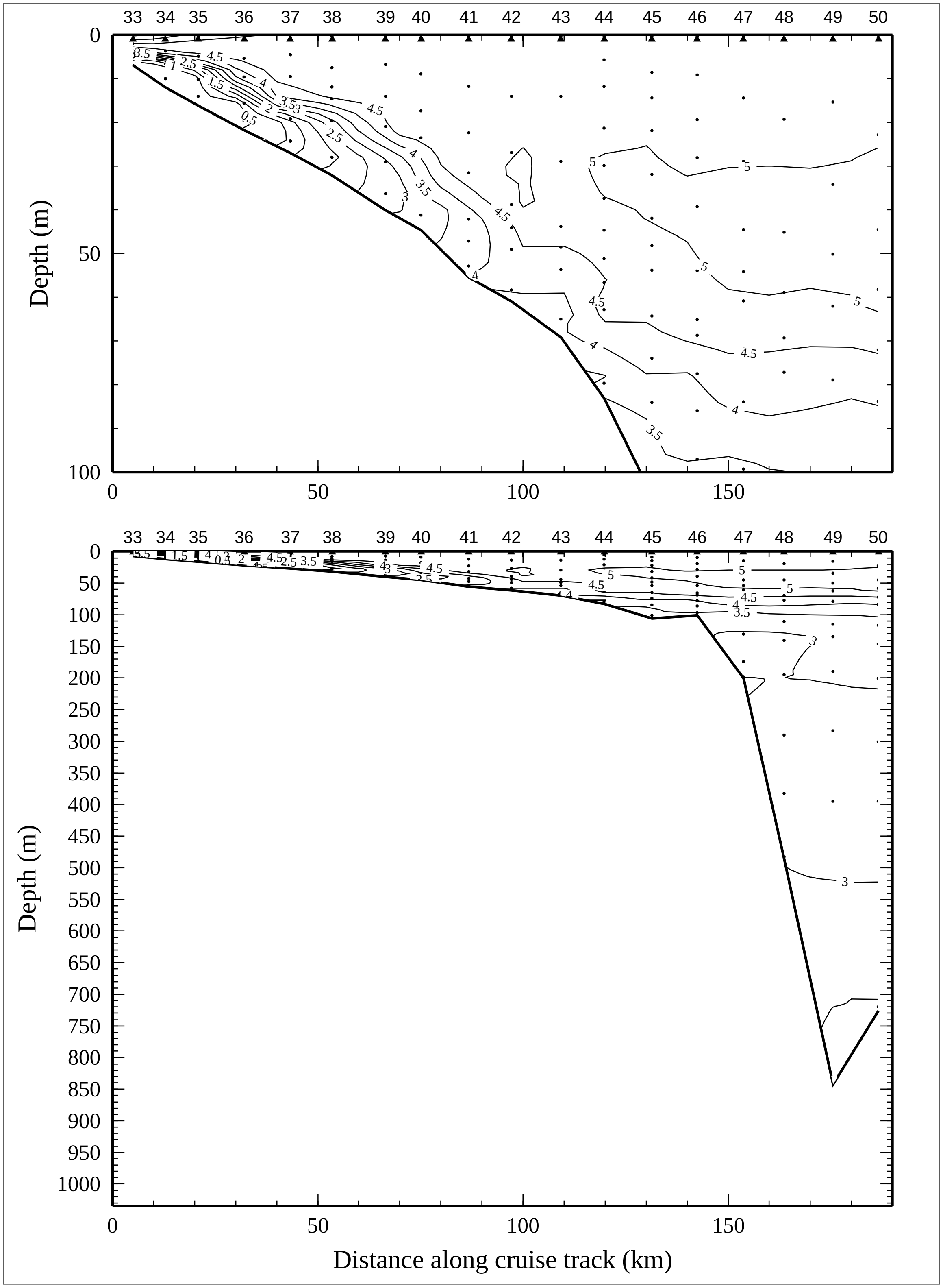

Figure 9.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

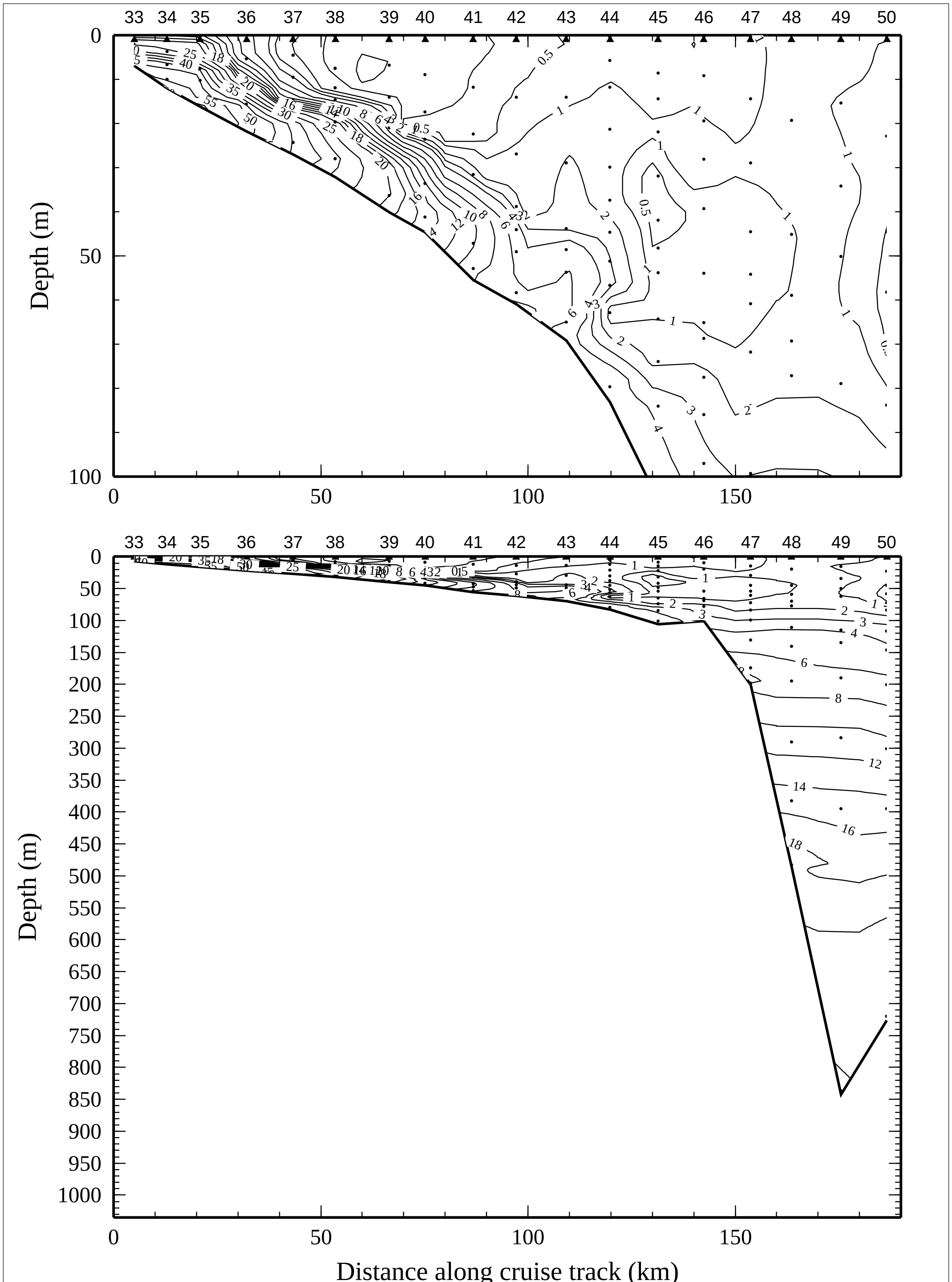

Figure 9.2.10. Silicate (μmol·l⁻¹) on line 2 of LATEX A survey H09,
26 July - 7 August 1994.

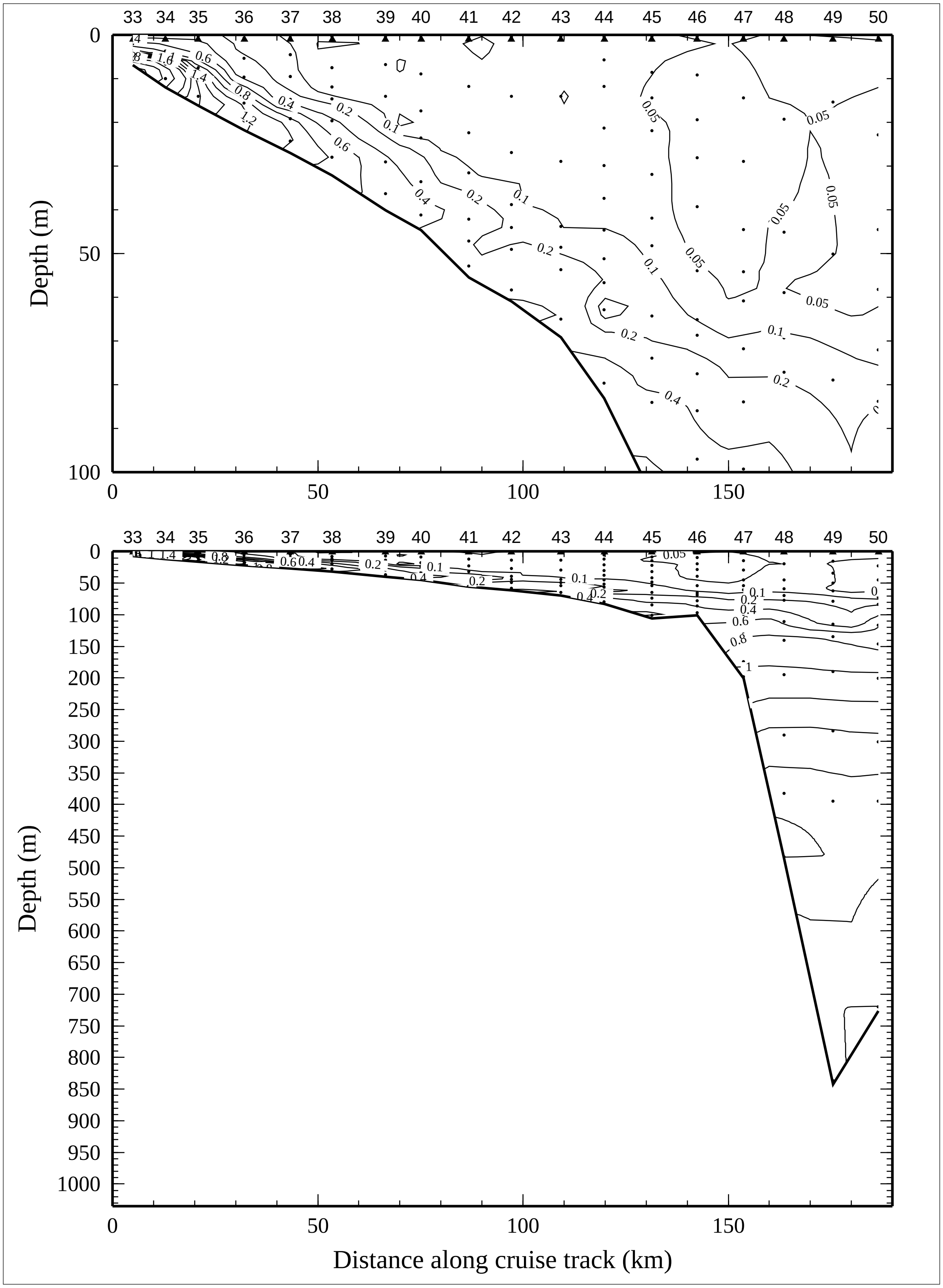

Figure 9.2.11. Phosphate (μmol·l[-1]) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

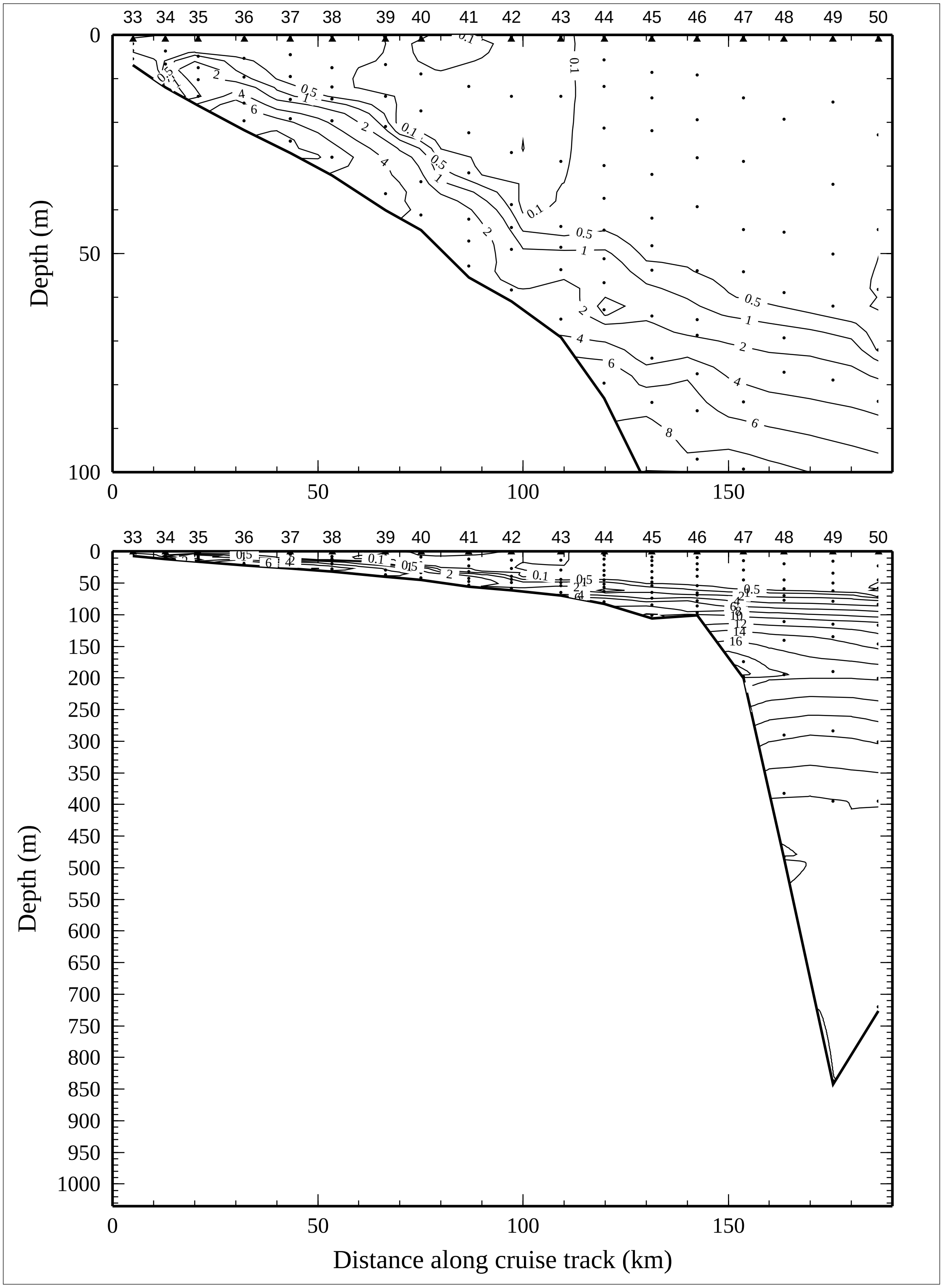

Figure 9.2.12. Nitrate (µmol·l^{-1}) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

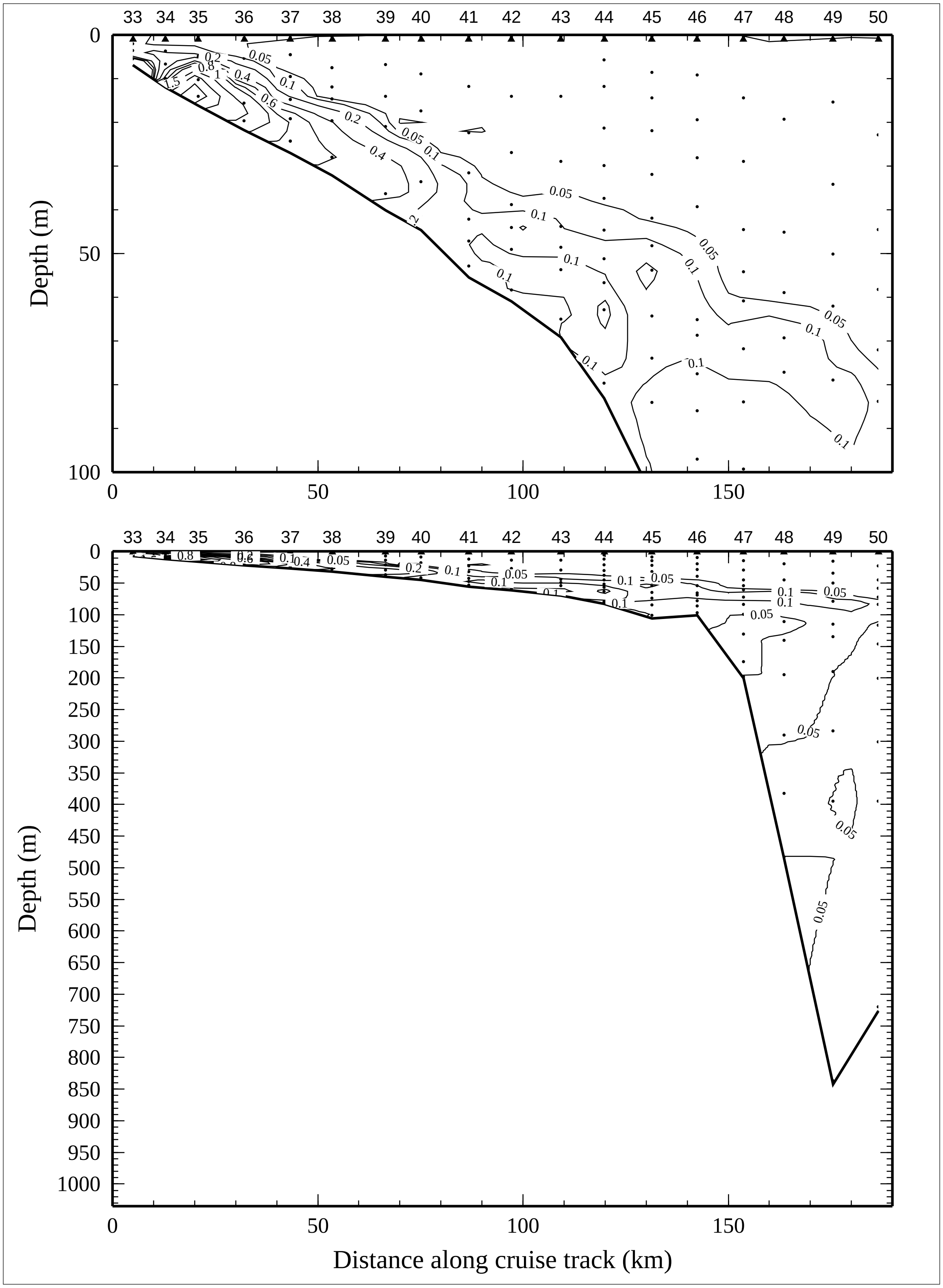

Figure 9.2.13. Nitrite (µmol·l^{-1}) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

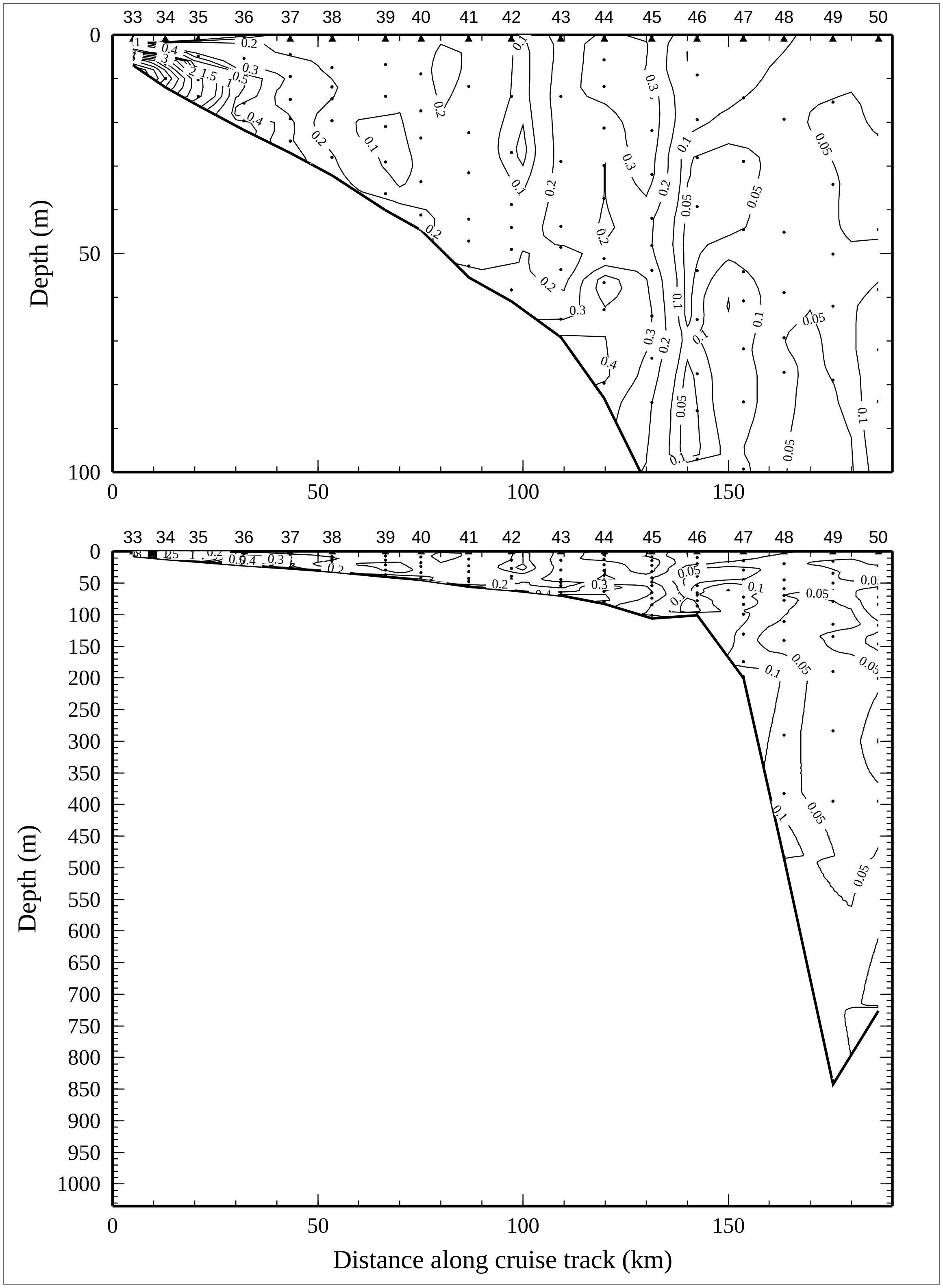

Figure 9.2.14. Ammonium (μmol·l⁻¹) on line 2 of LATEX A survey H09, 26 July - 7 August 1994.

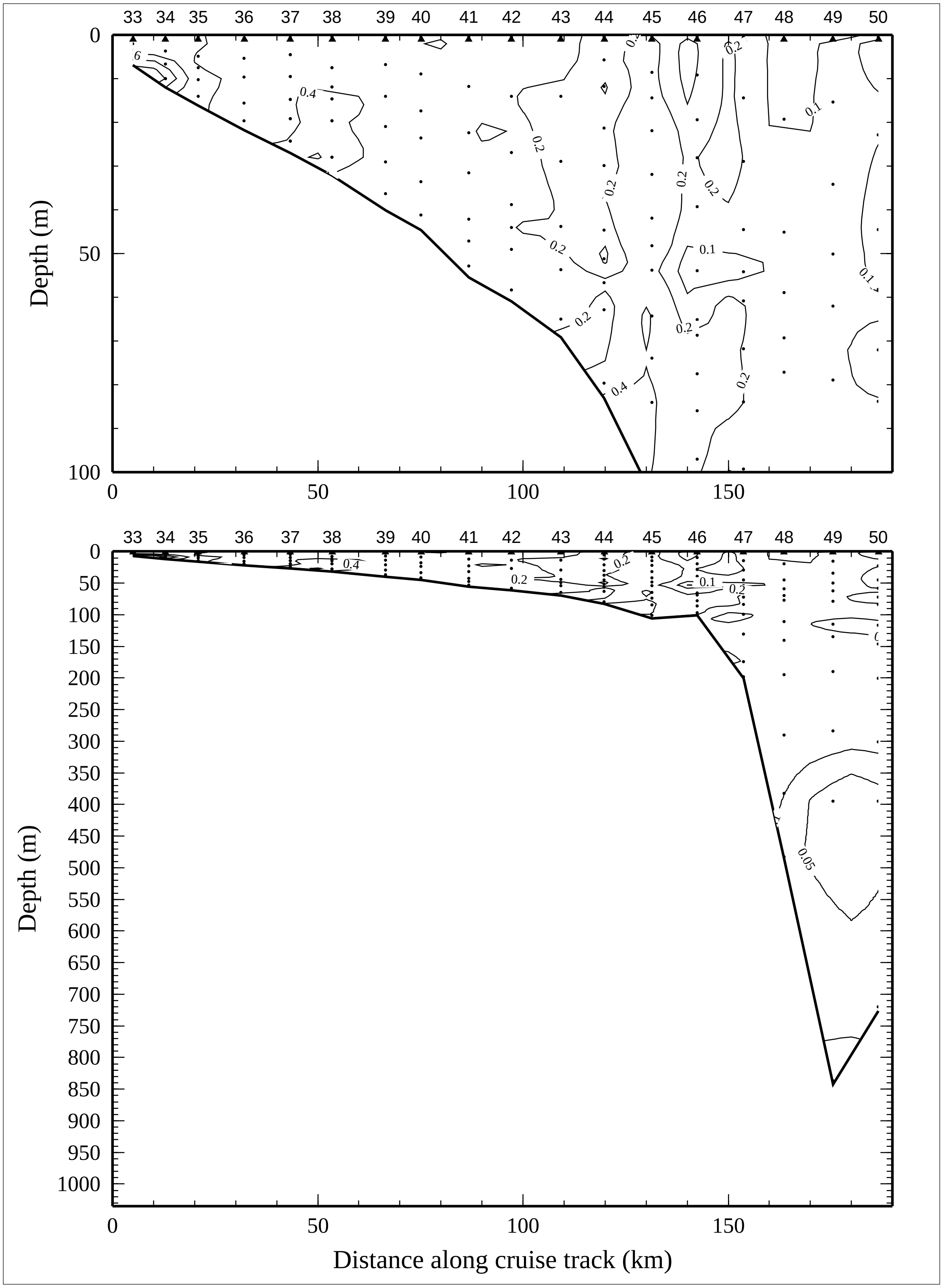

Figure 9.2.15. Urea (μmol·l⁻¹) on line 2 of LATEX A survey H09,
26 July - 7 August 1994.

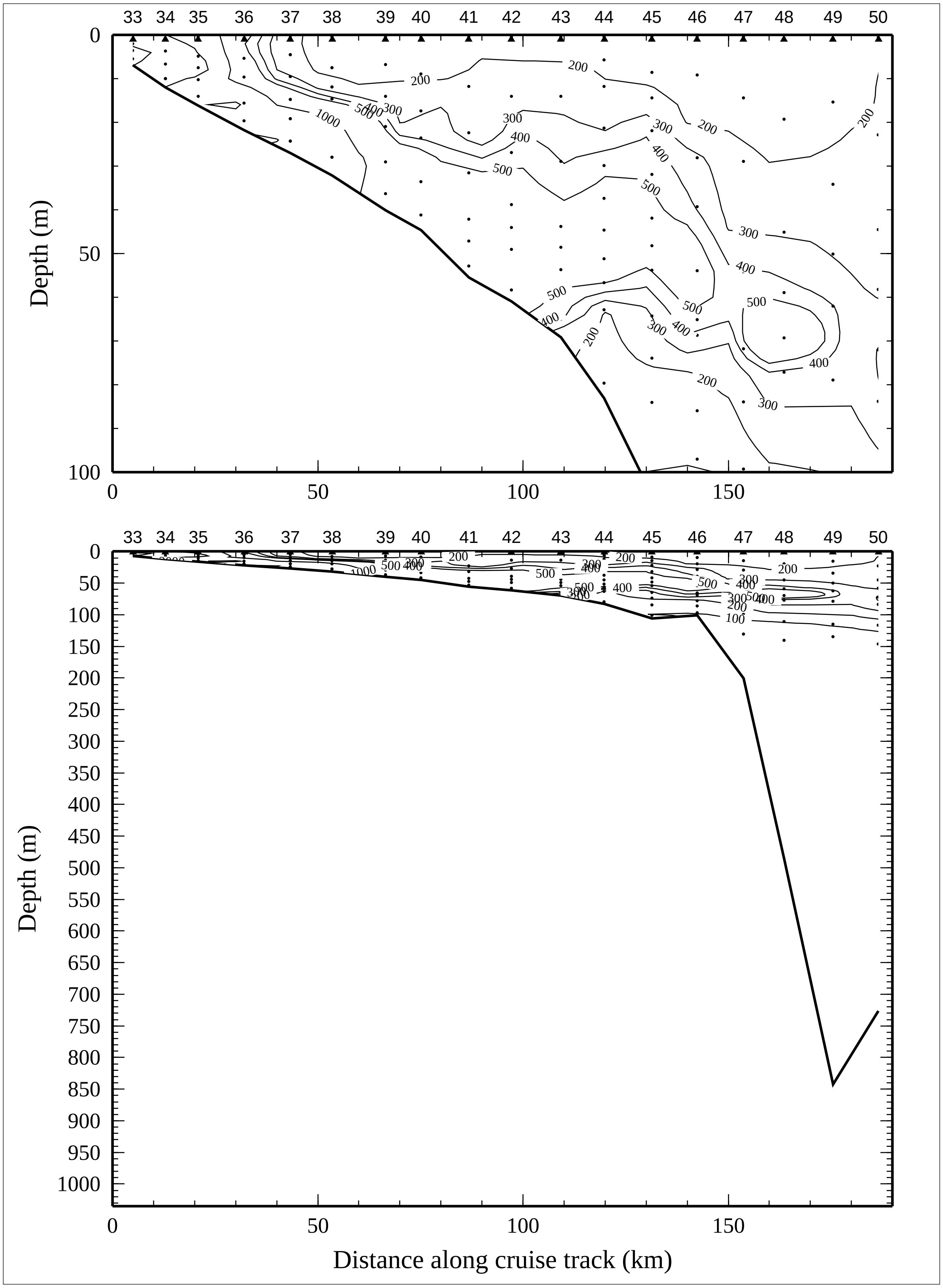

Figure 9.2.16. Chlorophyll a (ng·l-1) on line 2 of LATEX A survey H09,
26 July - 7 August 1994.

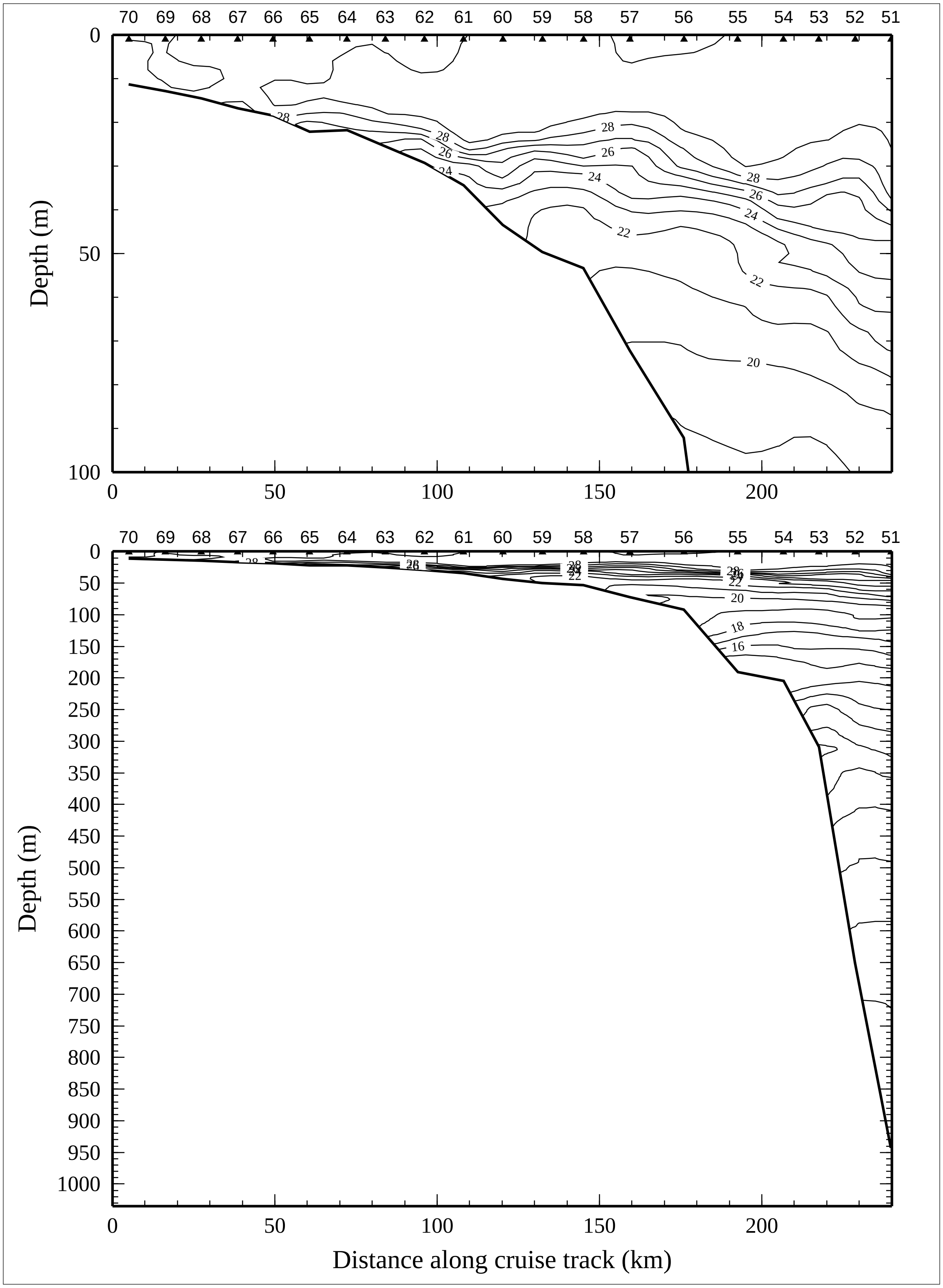

Figure 9.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

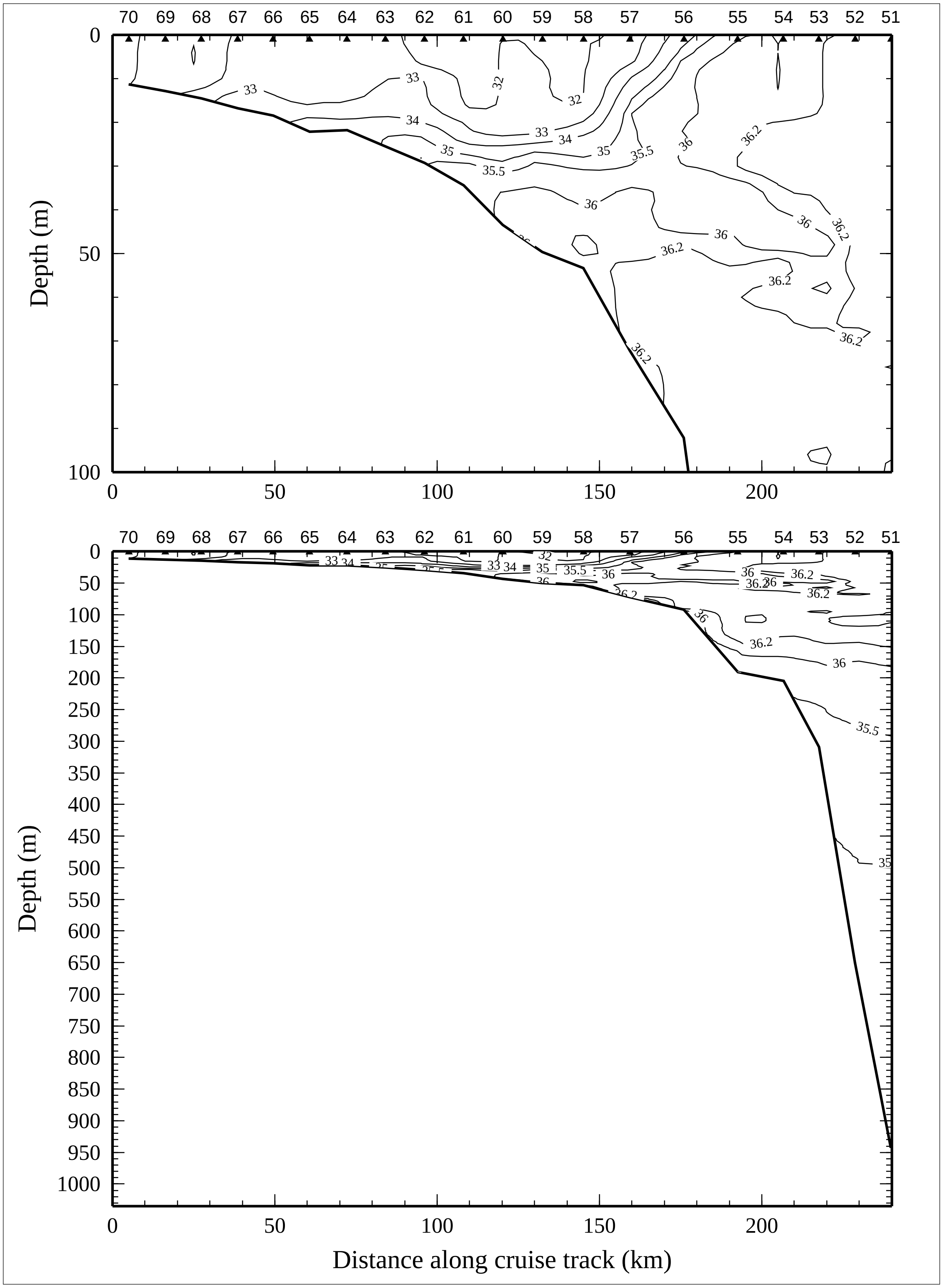

Figure 9.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

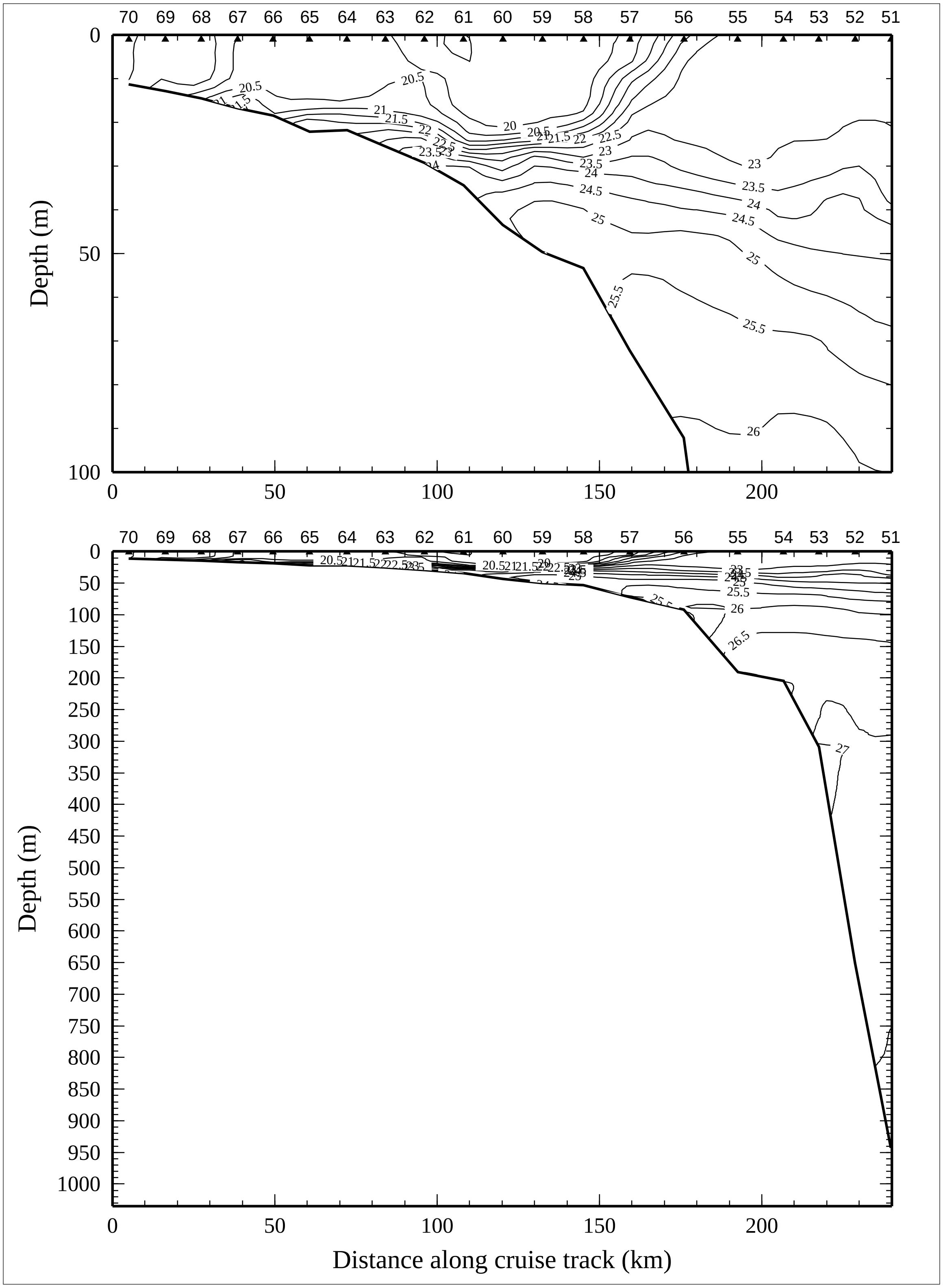

Figure 9.3.3. Density anomaly (σ_θ in kg·m^{-3}) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

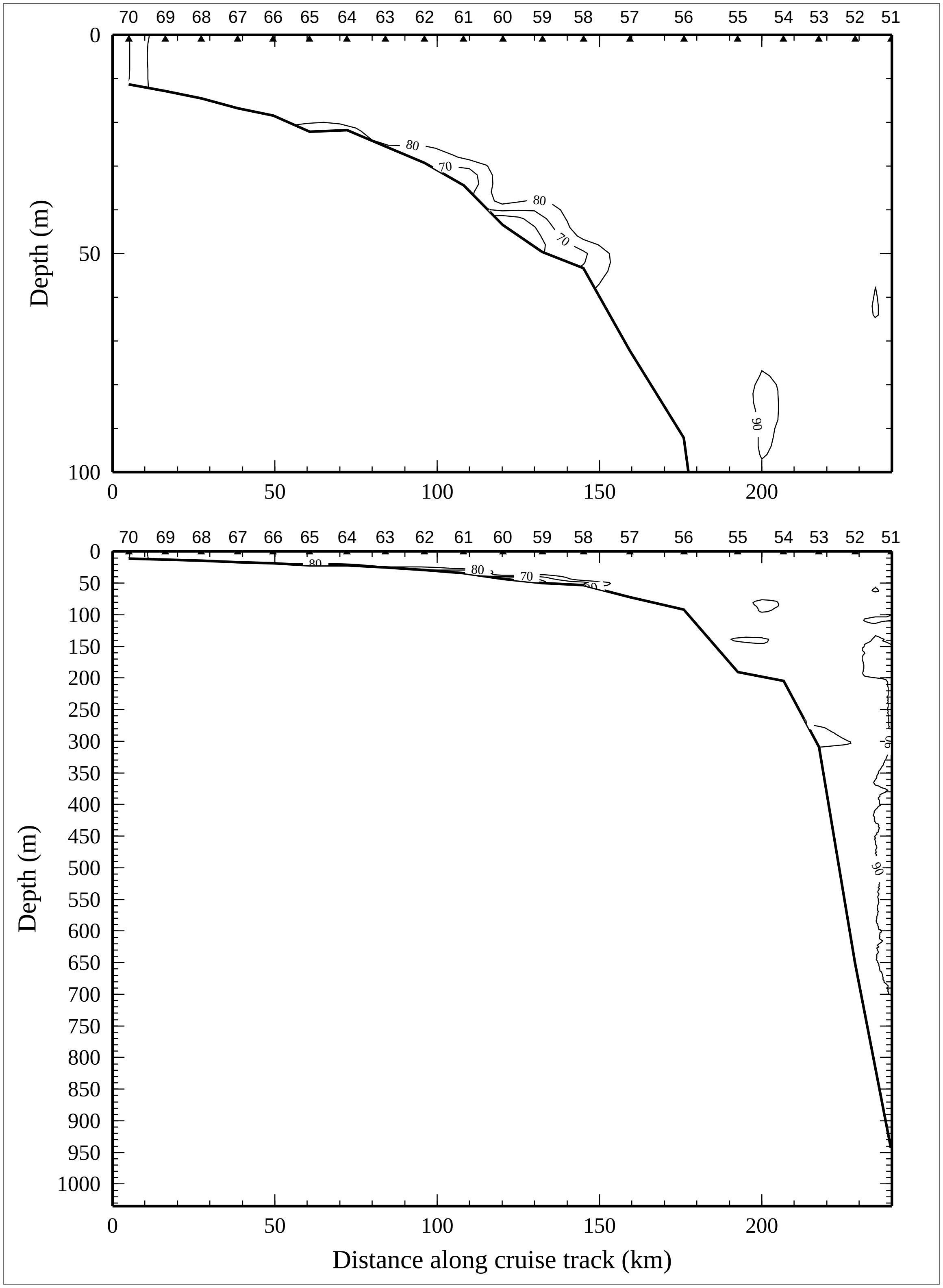

Figure 9.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

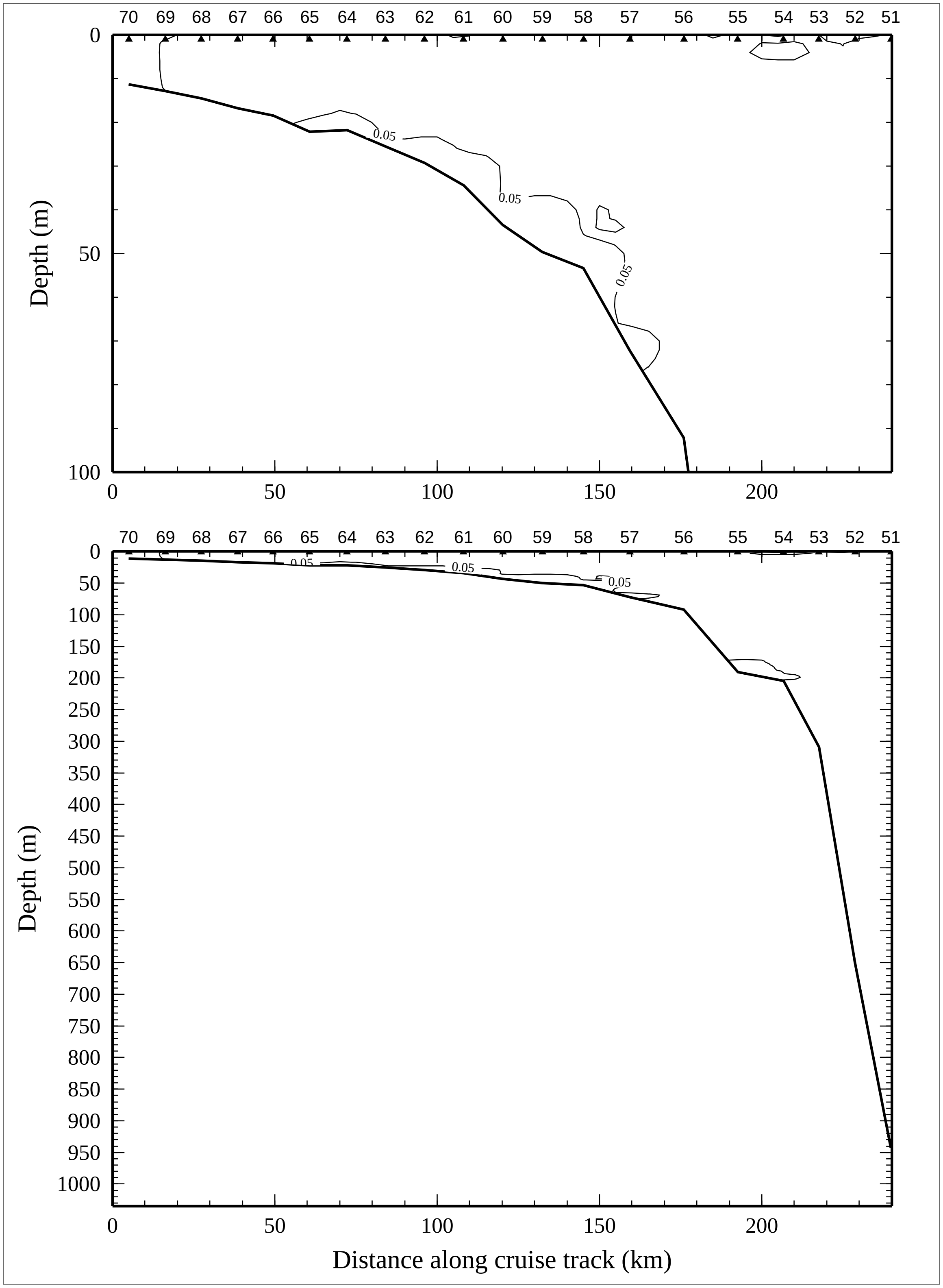

Figure 9.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

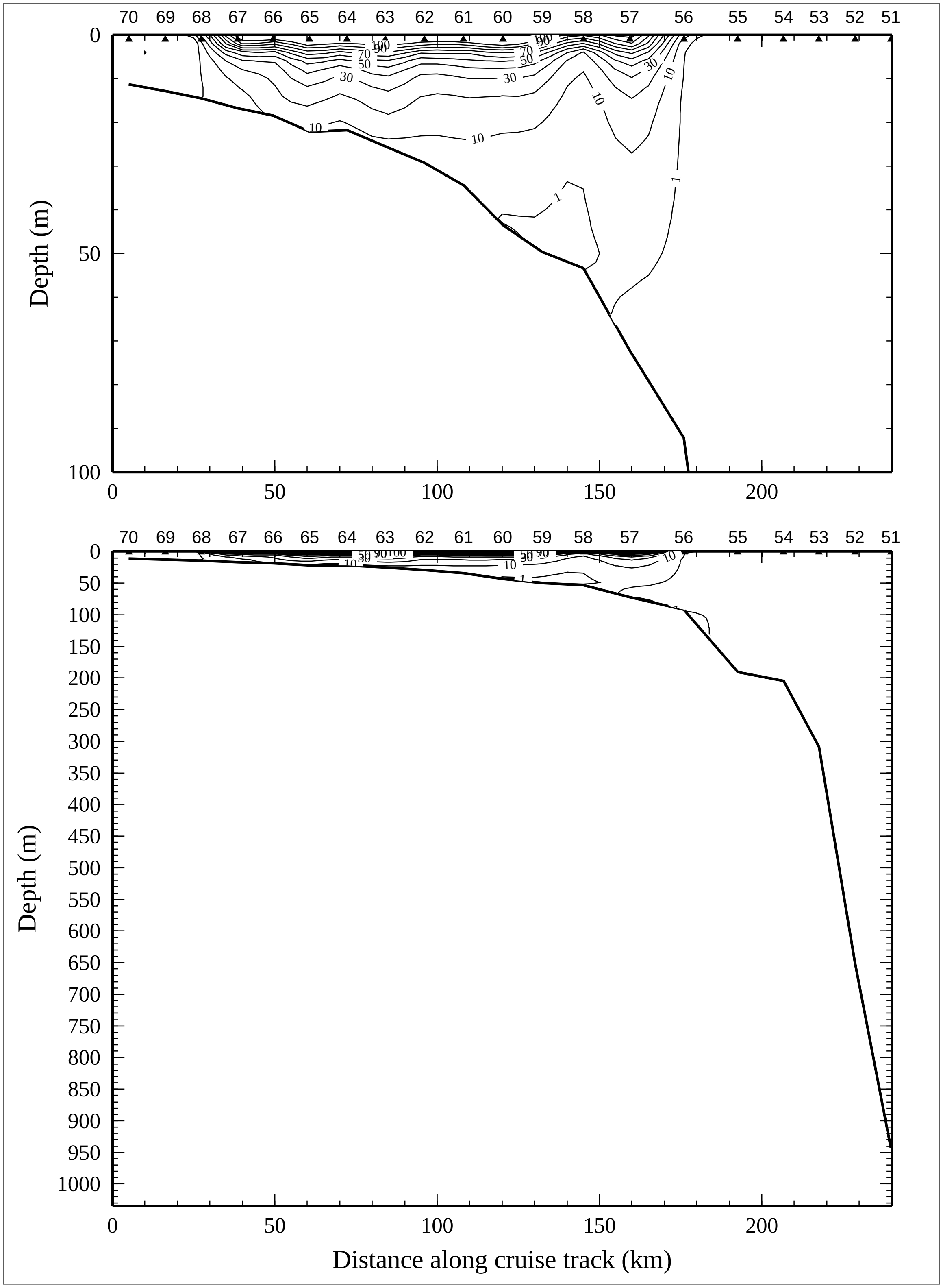

Figure 9.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

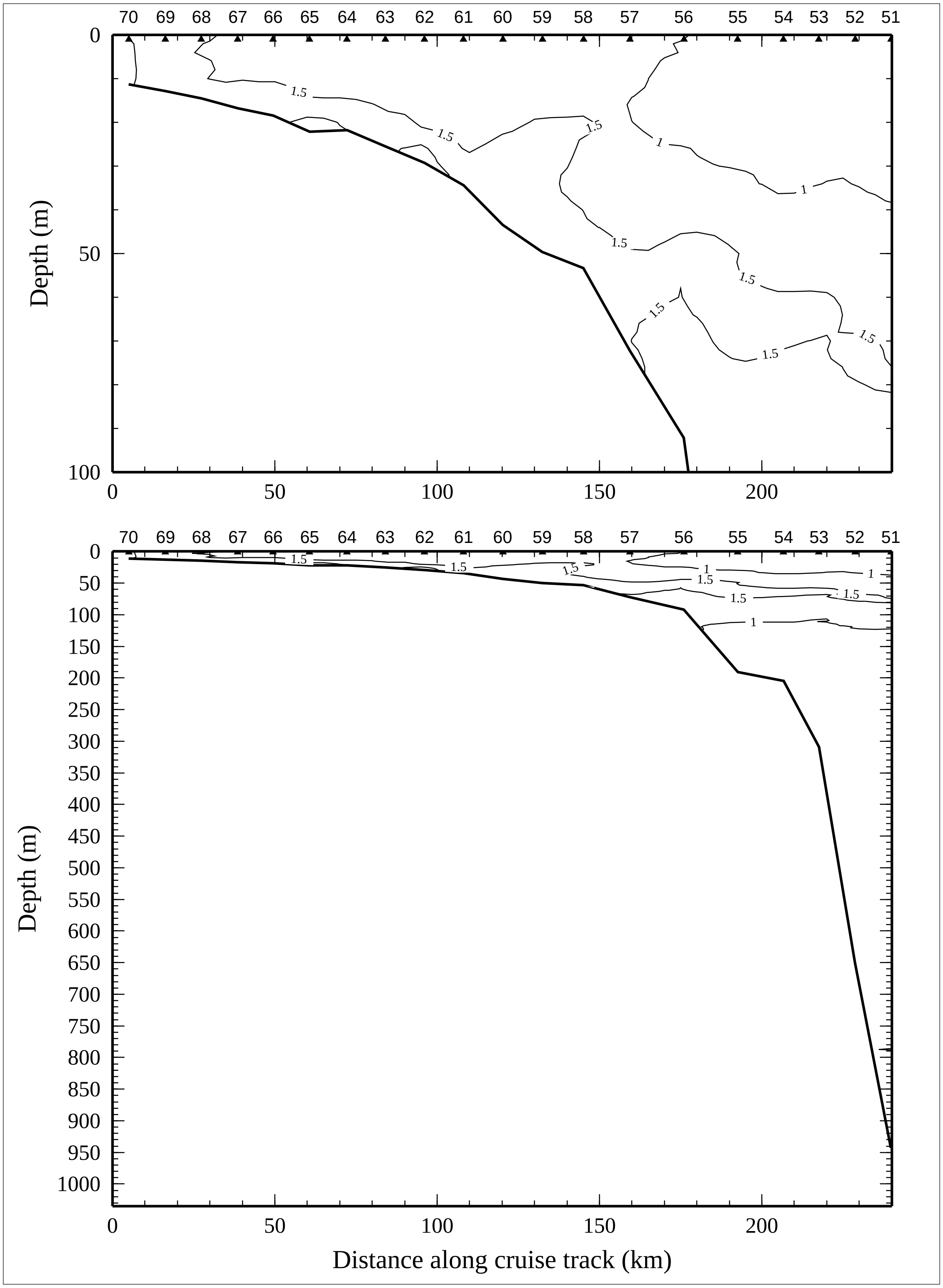

Figure 9.3.7. Relative fluorescence on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

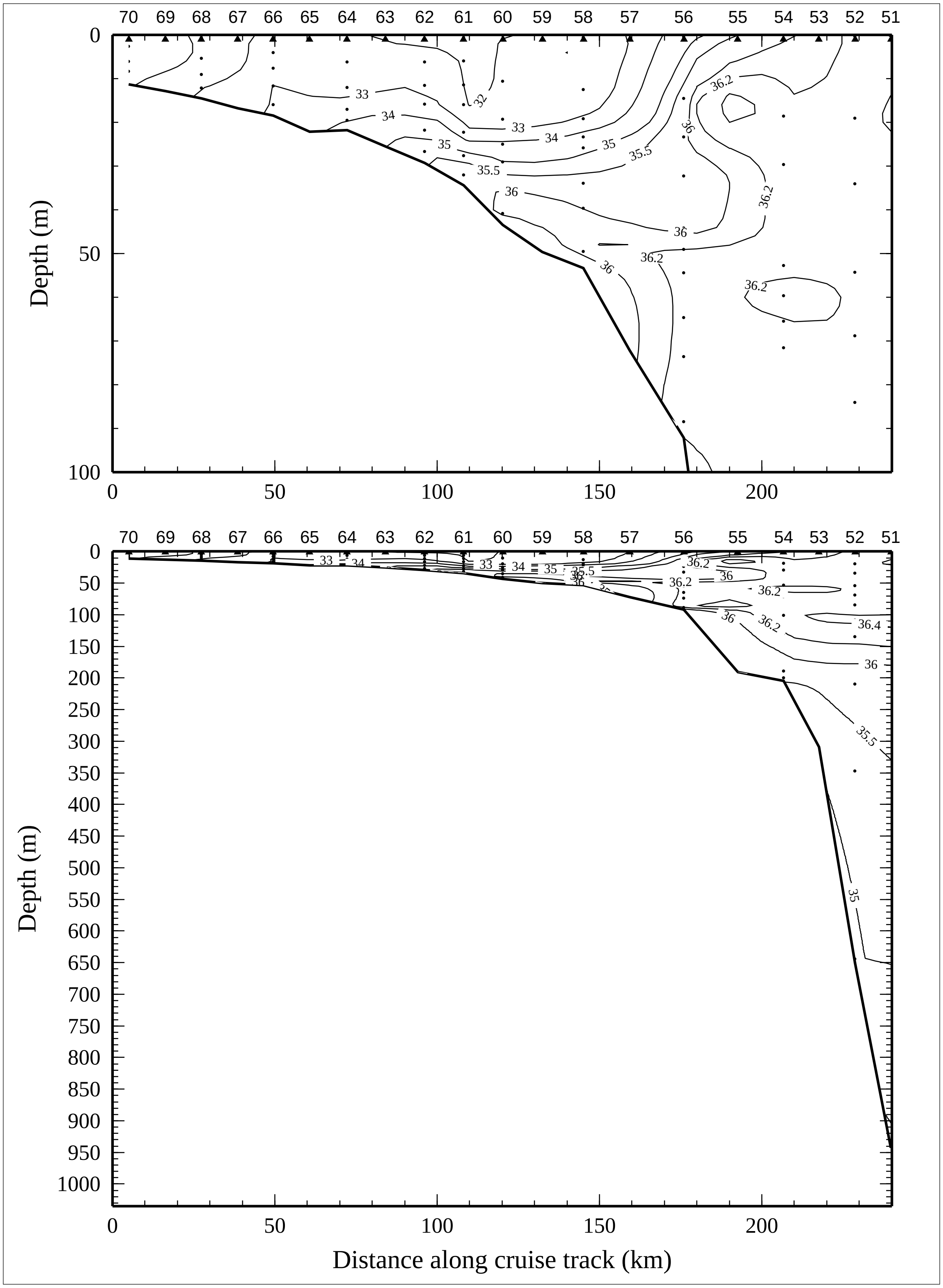

Figure 9.3.8. Bottle salinity on line 3 of LATEX A survey H09,
26 July - 7 August 1994.

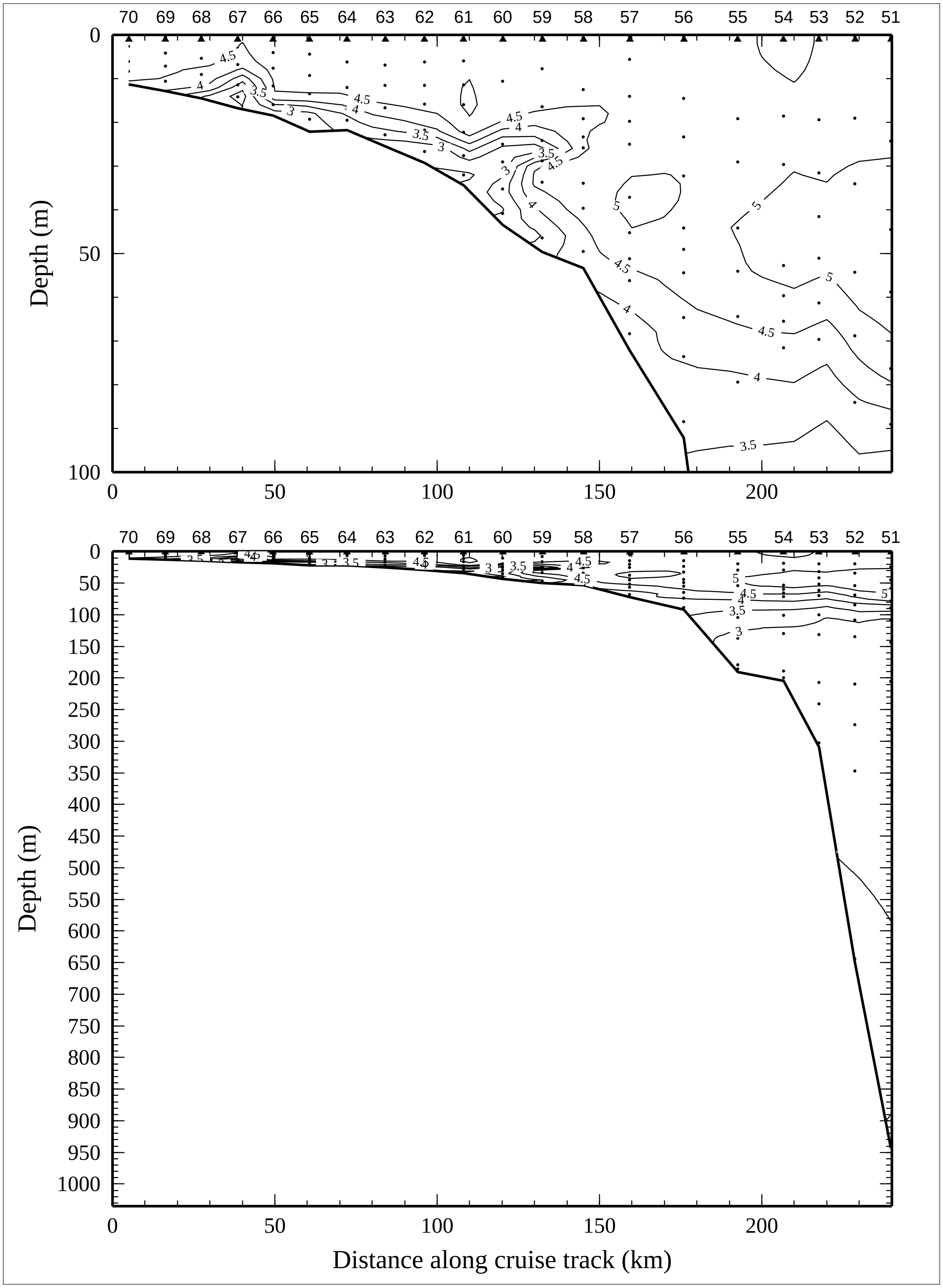

Figure 9.3.9. Dissolved oxygen (ml·l^{-1}) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

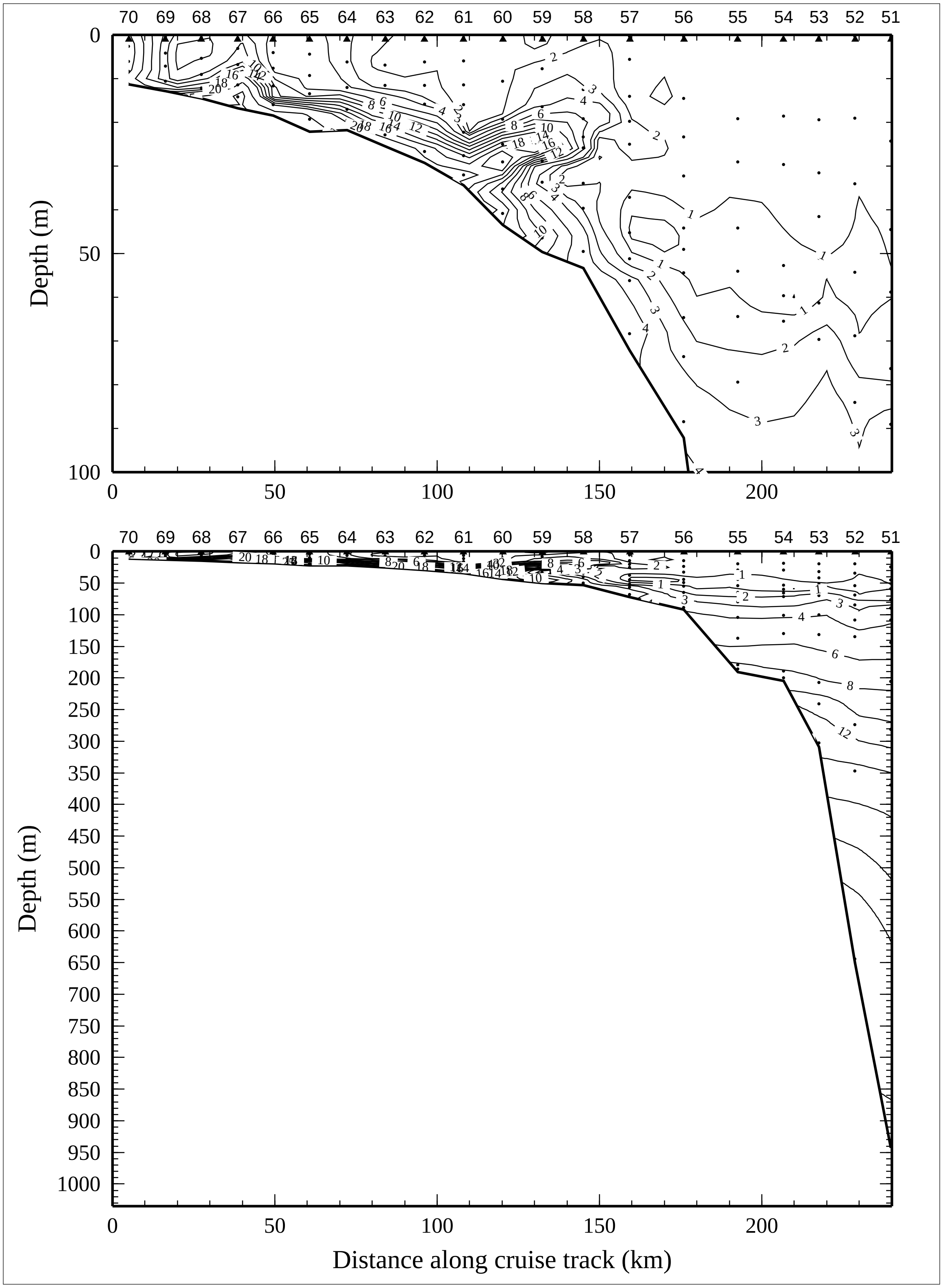

Figure 9.3.10. Silicate (μmol·l^{-1}) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

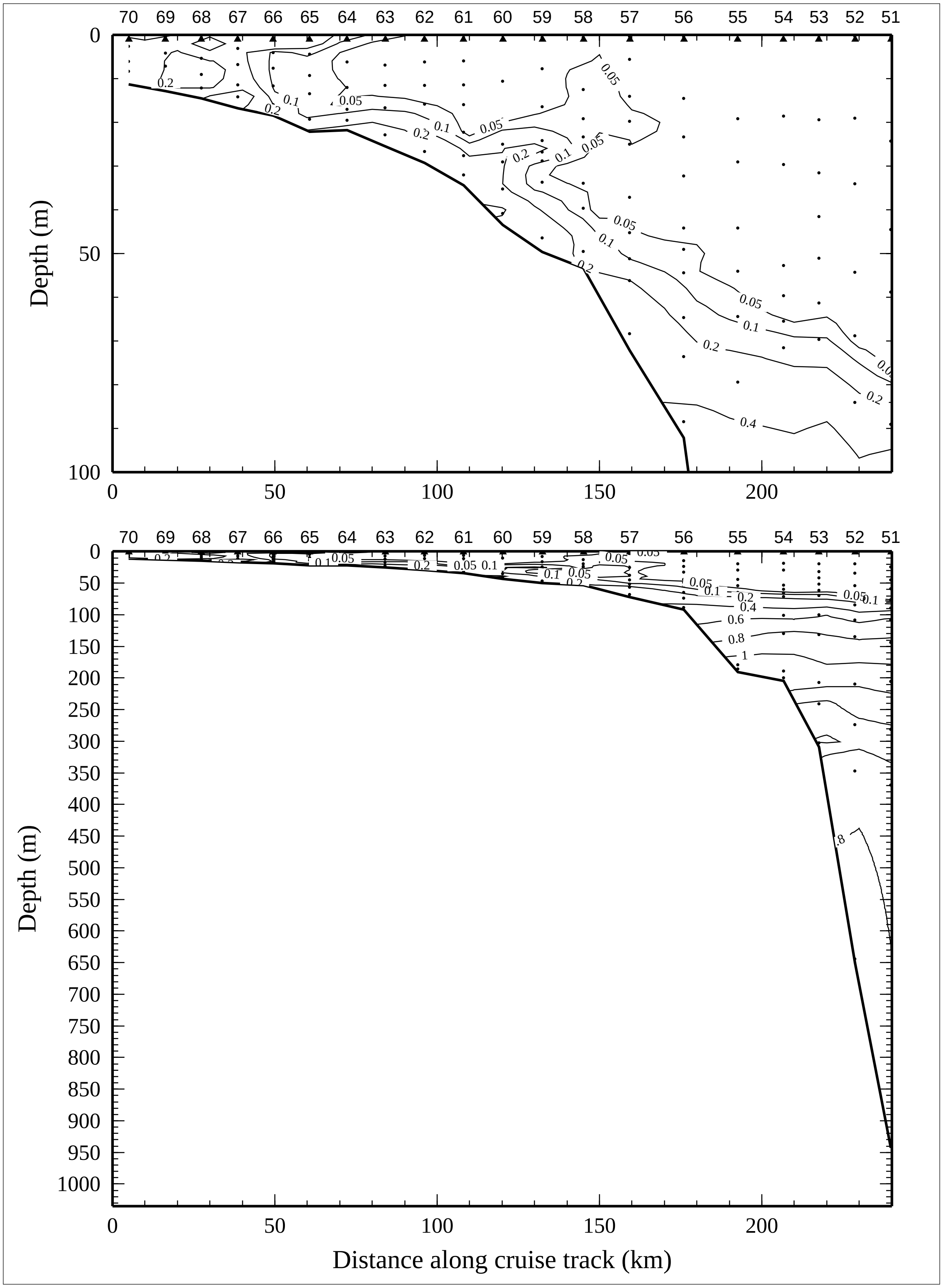

Figure 9.3.11. Phosphate (µmol·l-1) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

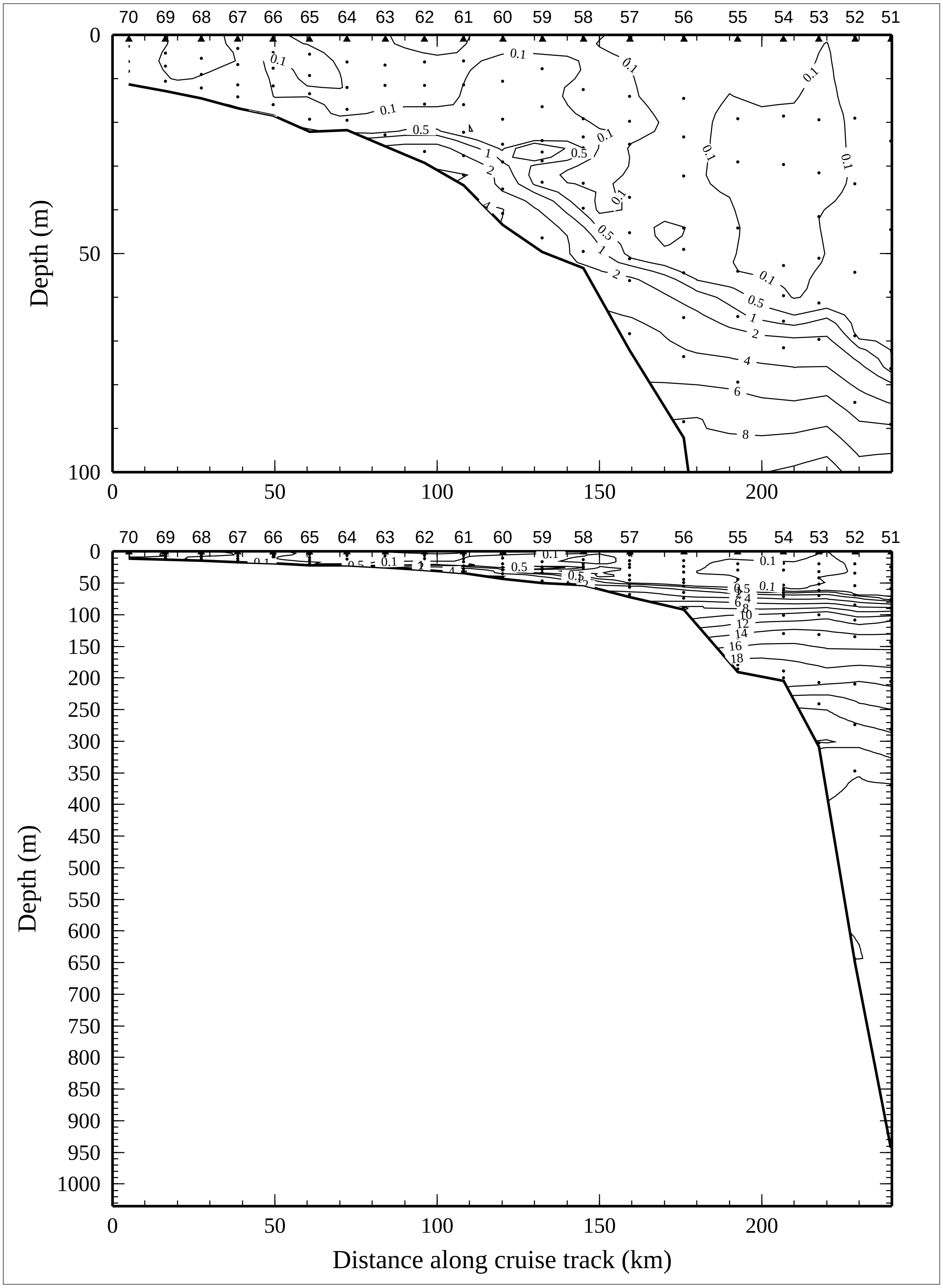

Figure 9.3.12. Nitrate (µmol·l[-1]) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

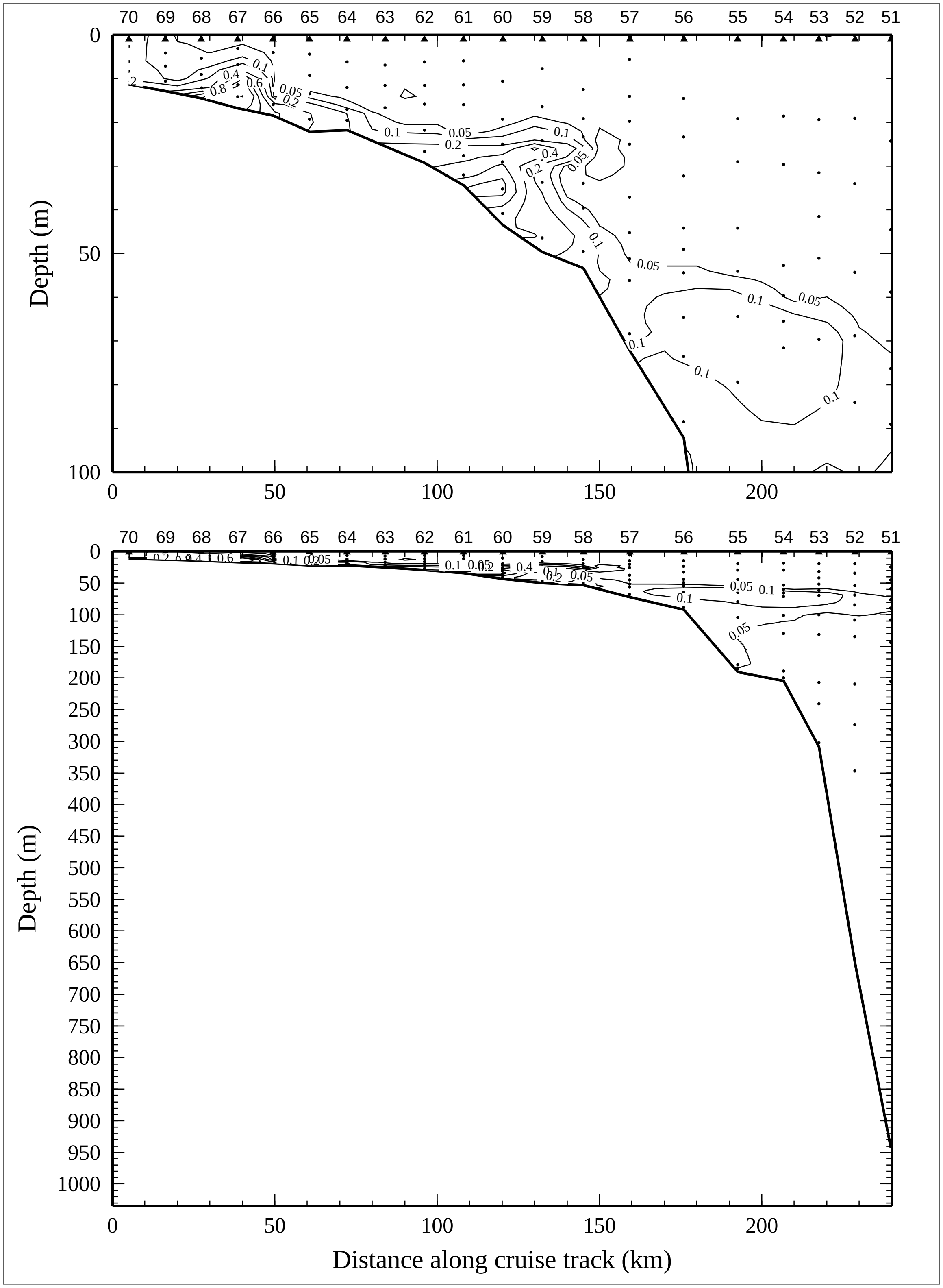

Figure 9.3.13. Nitrite (μmol·l^{-1}) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

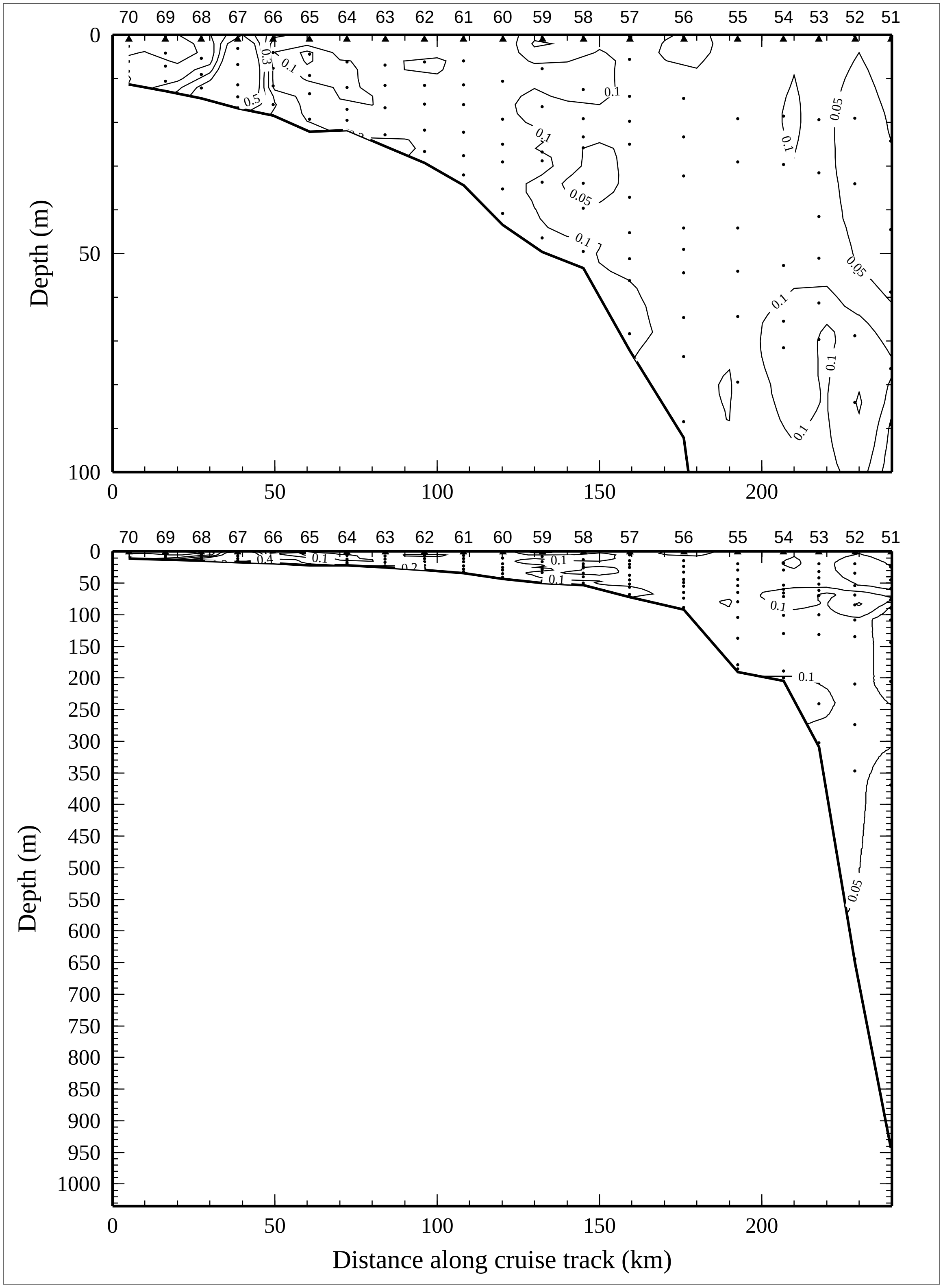

Figure 9.3.14. Ammonium (μmol·l^{-1}) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

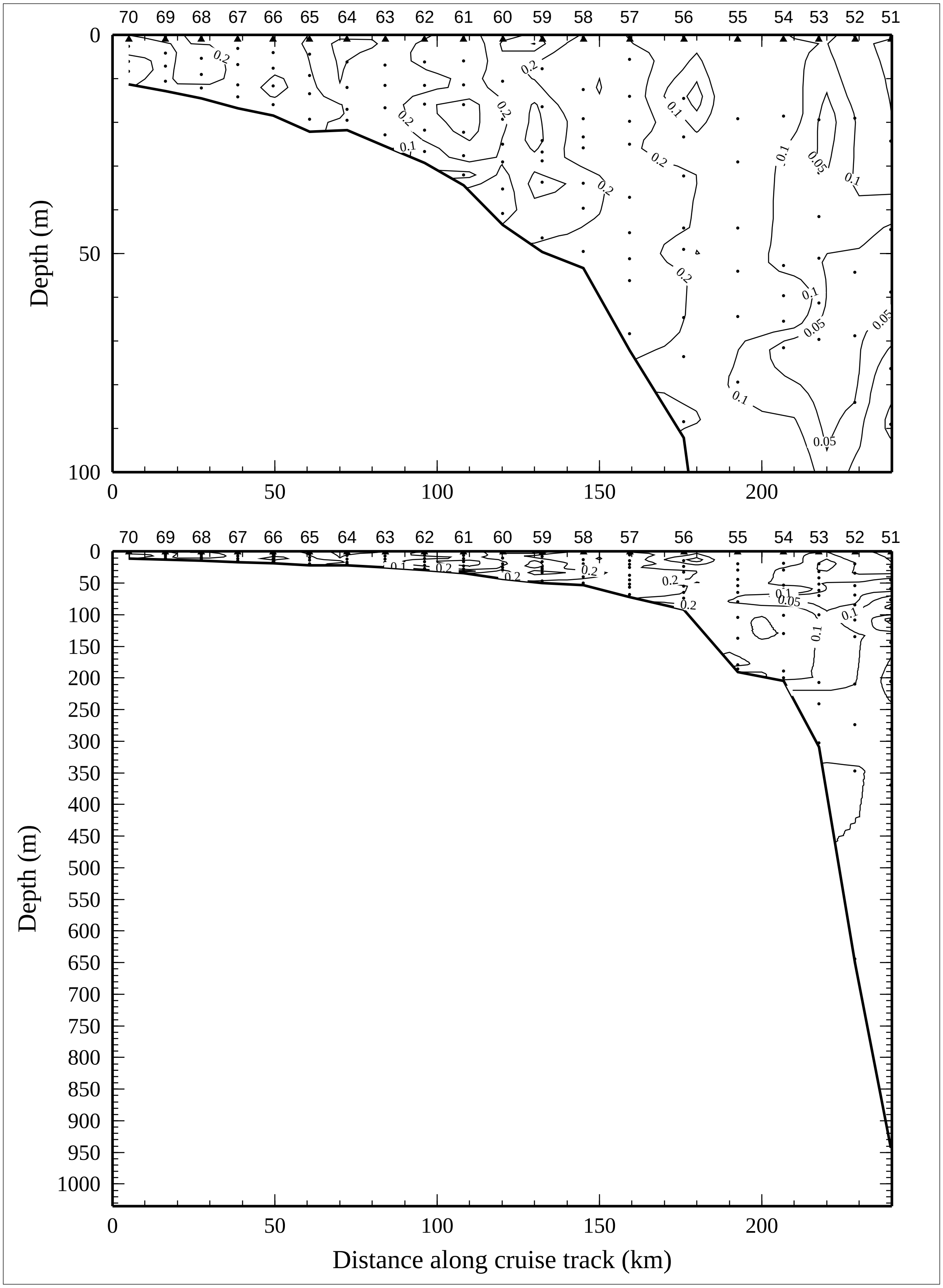

Figure 9.3.15. Urea (μmol·l-1) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

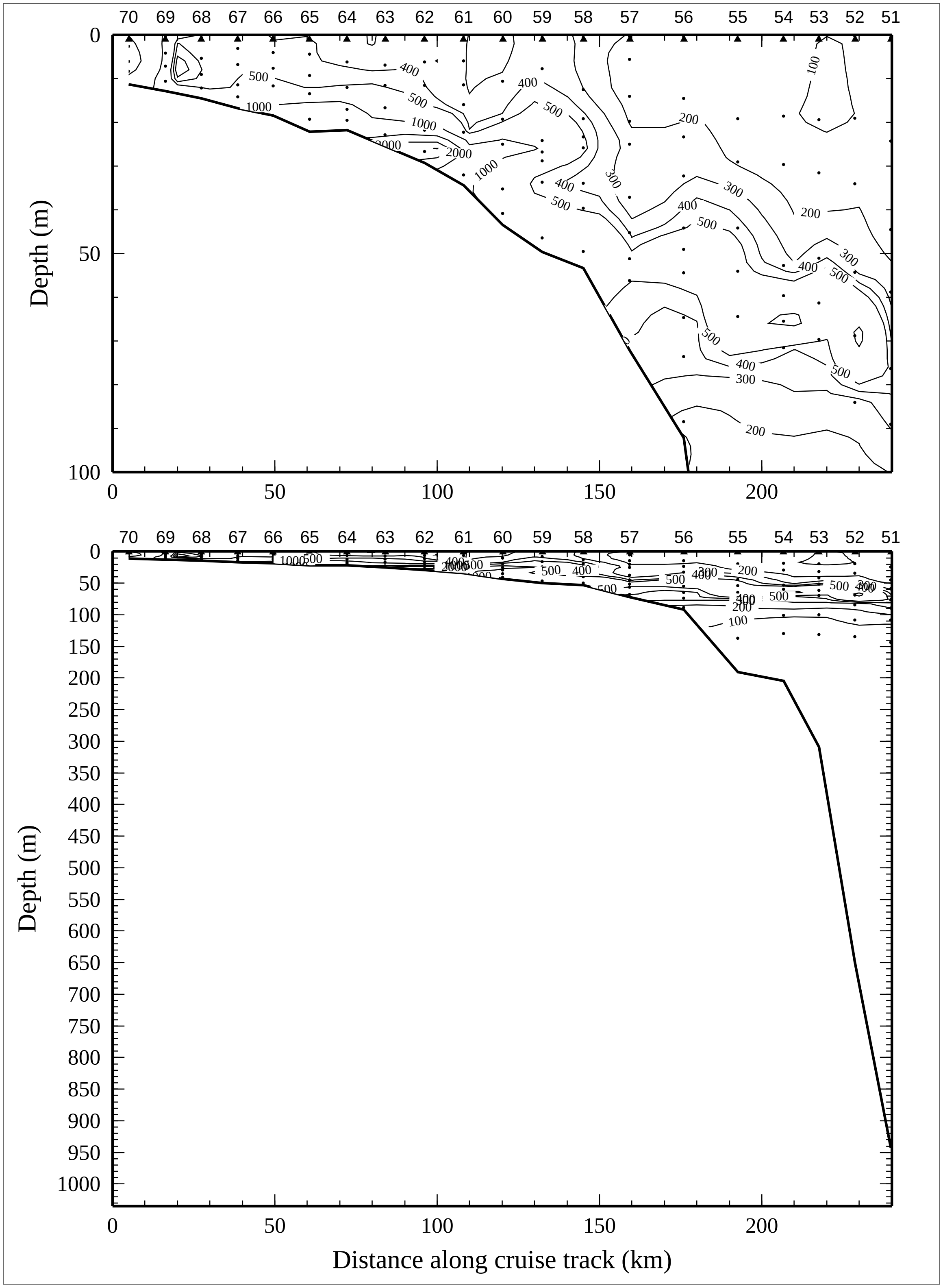

Figure 9.3.16. Chlorophyll a (ng·l[-1]) on line 3 of LATEX A survey H09, 26 July - 7 August 1994.

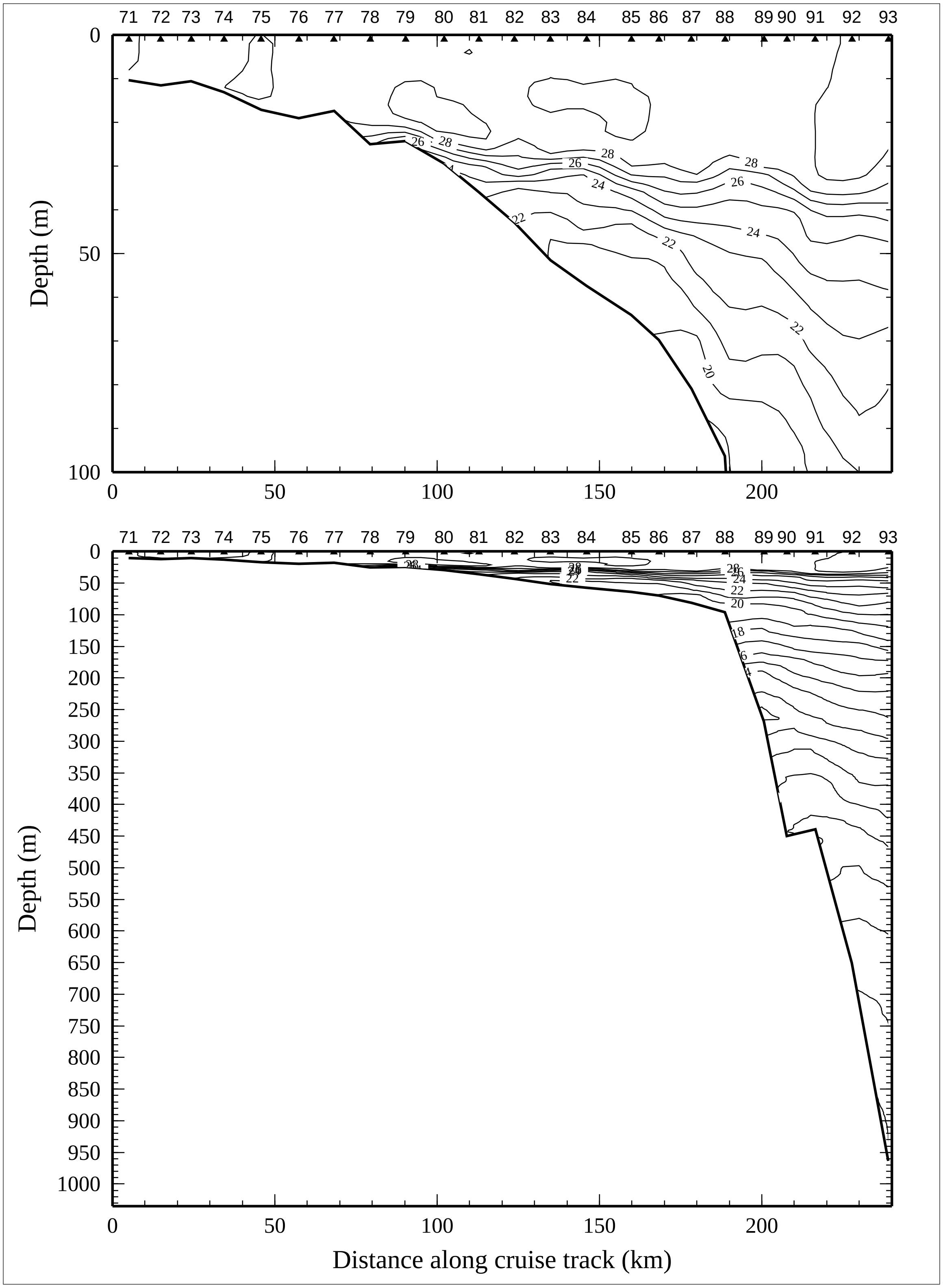

Figure 9.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

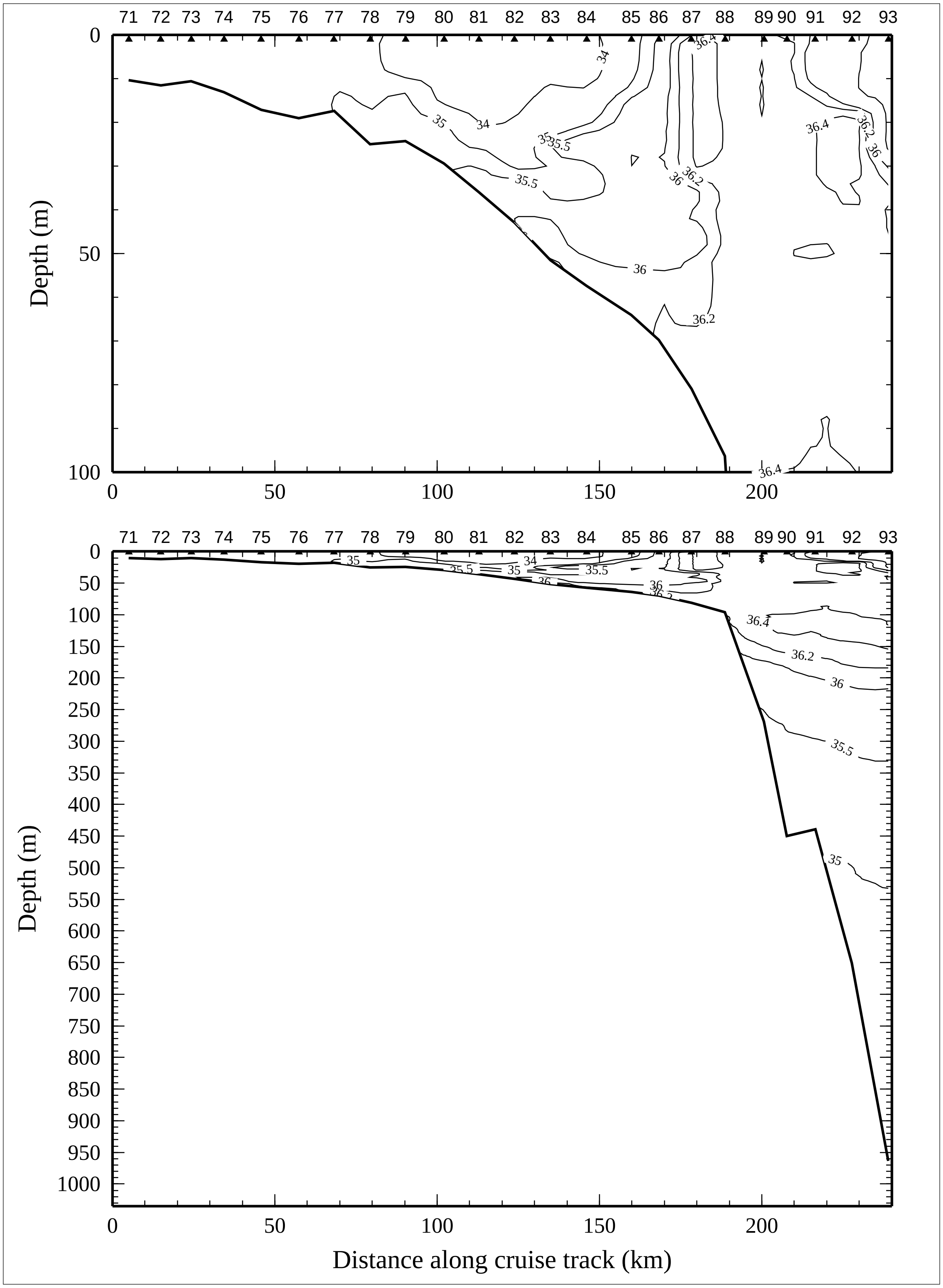

Figure 9.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

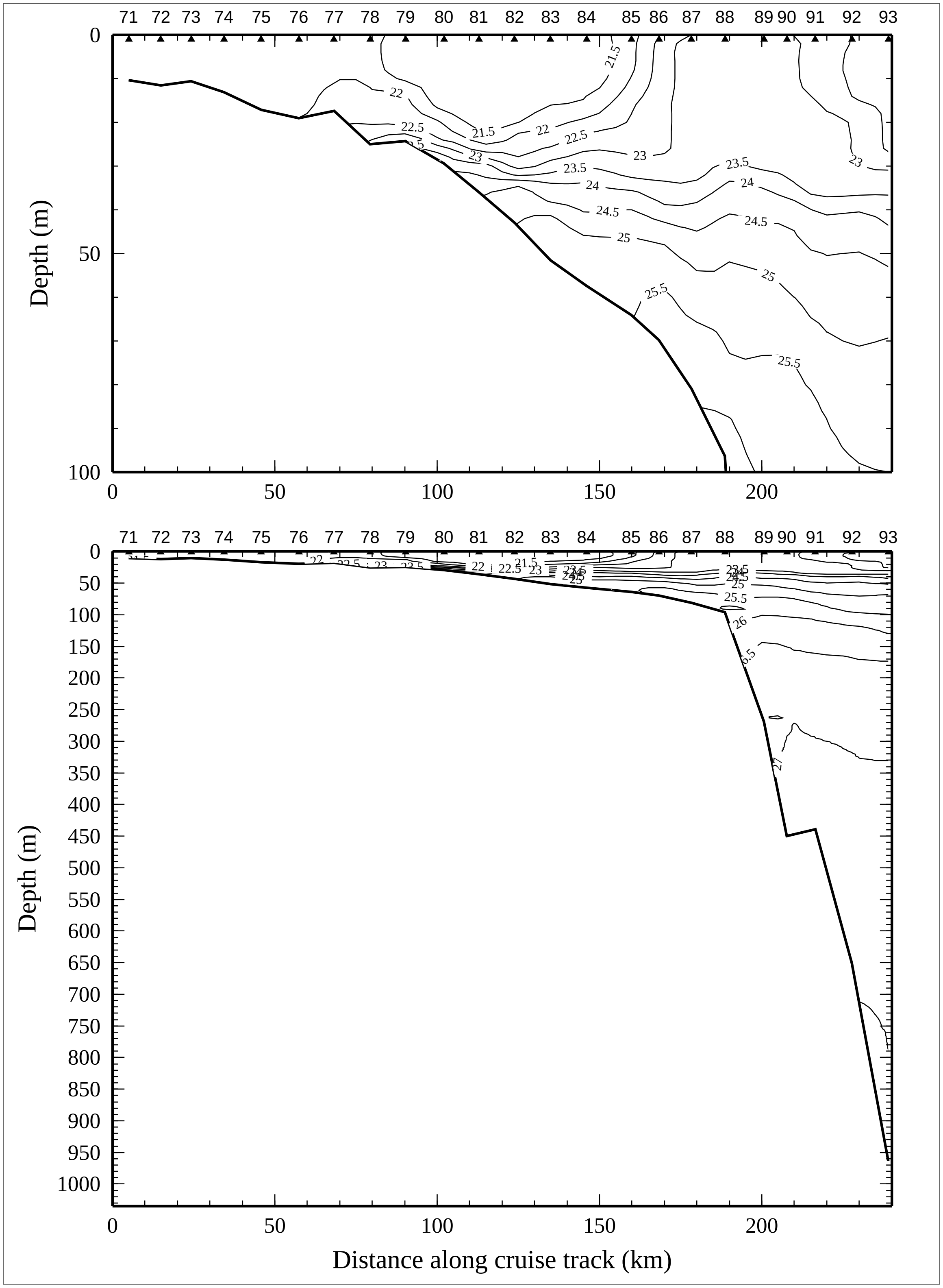

Figure 9.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

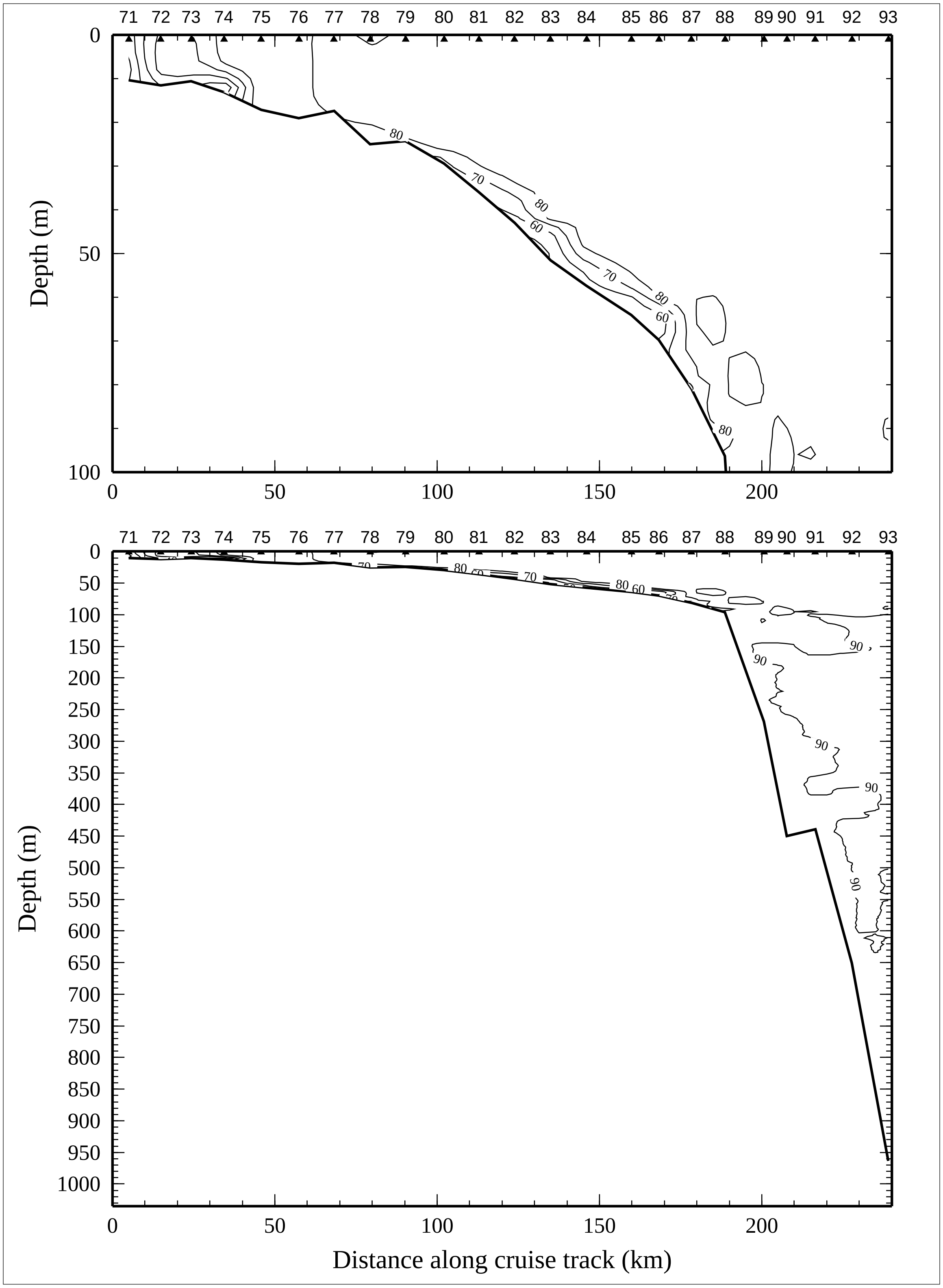

Figure 9.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

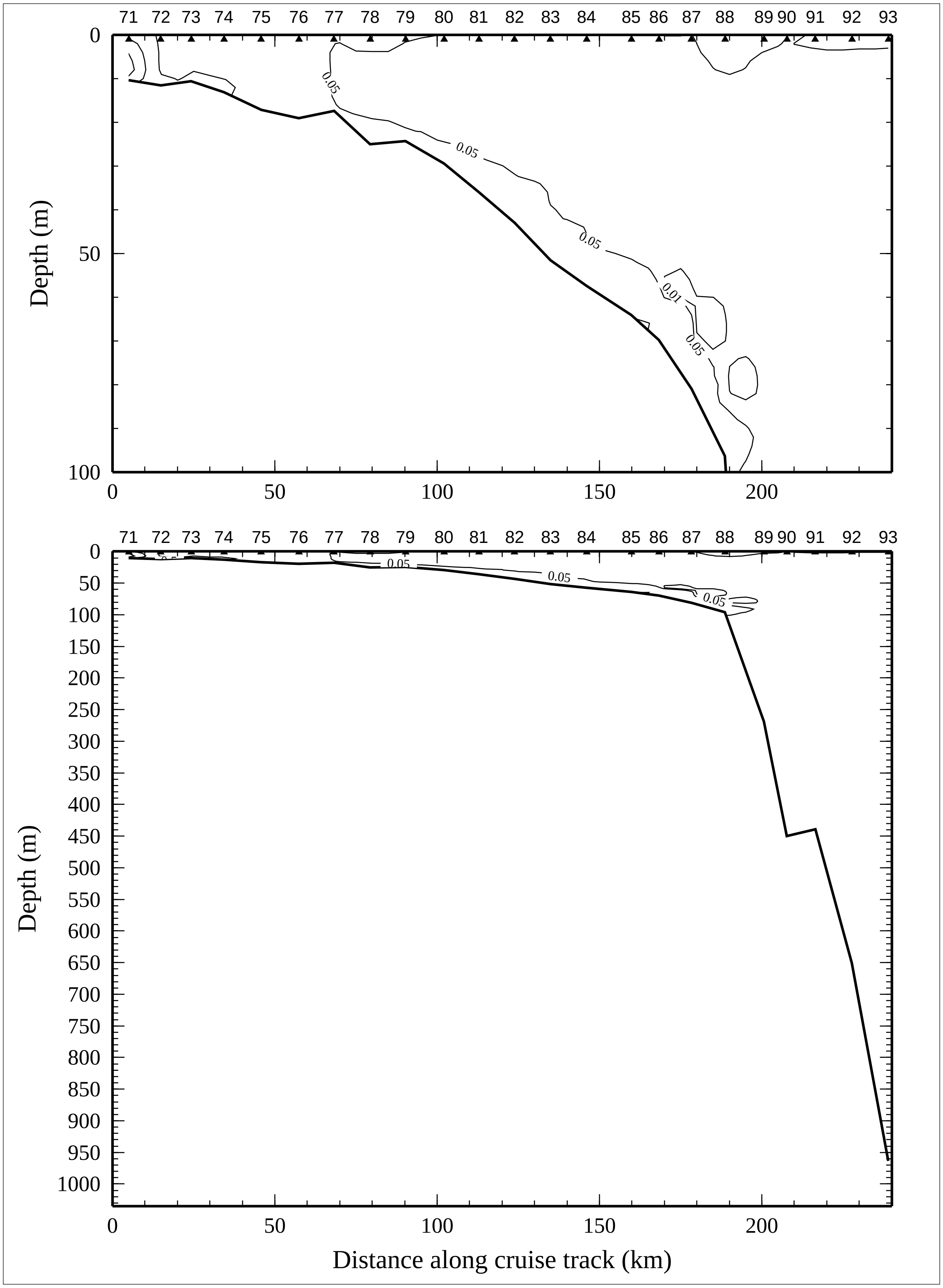

Figure 9.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

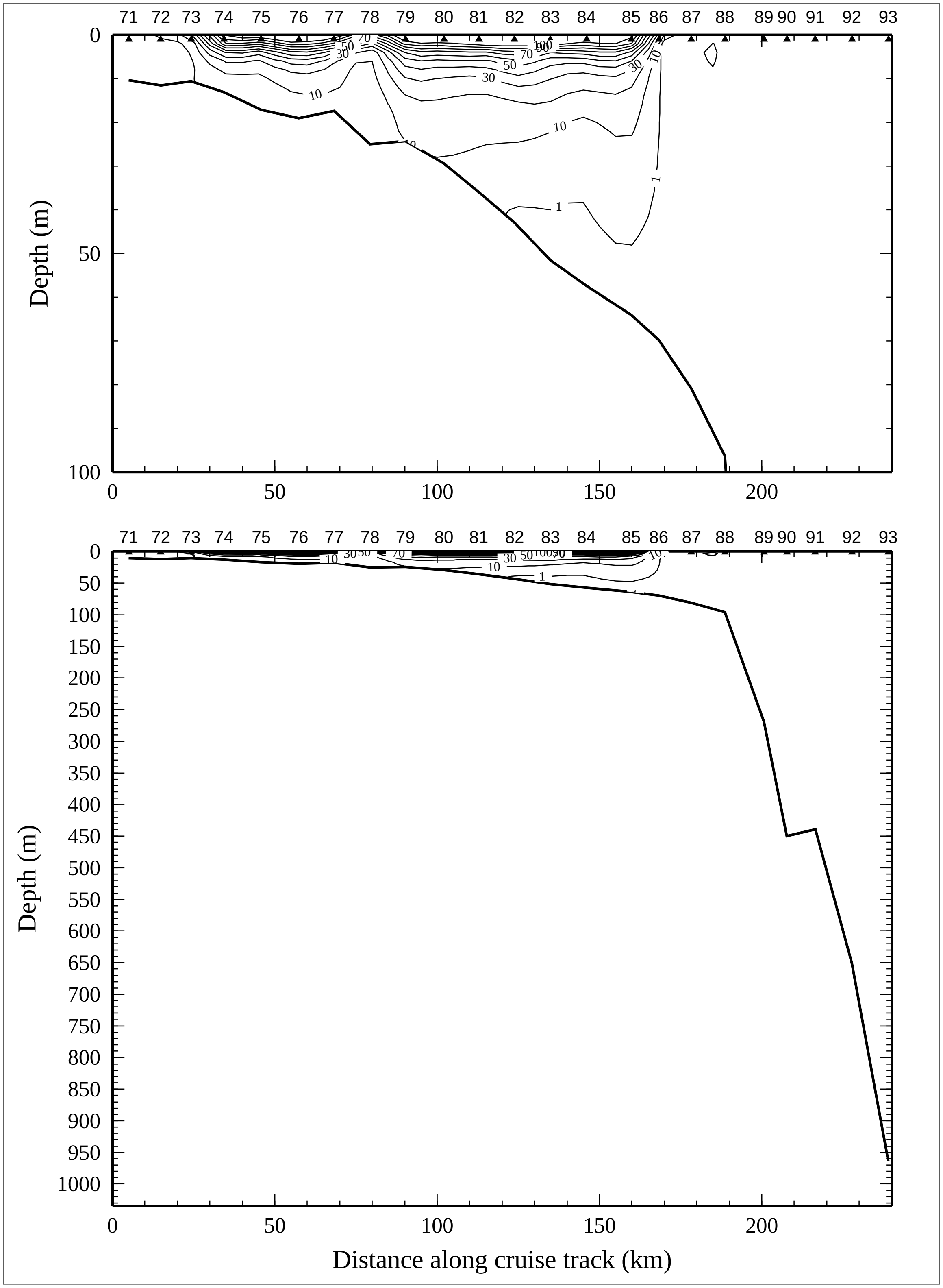

Figure 9.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

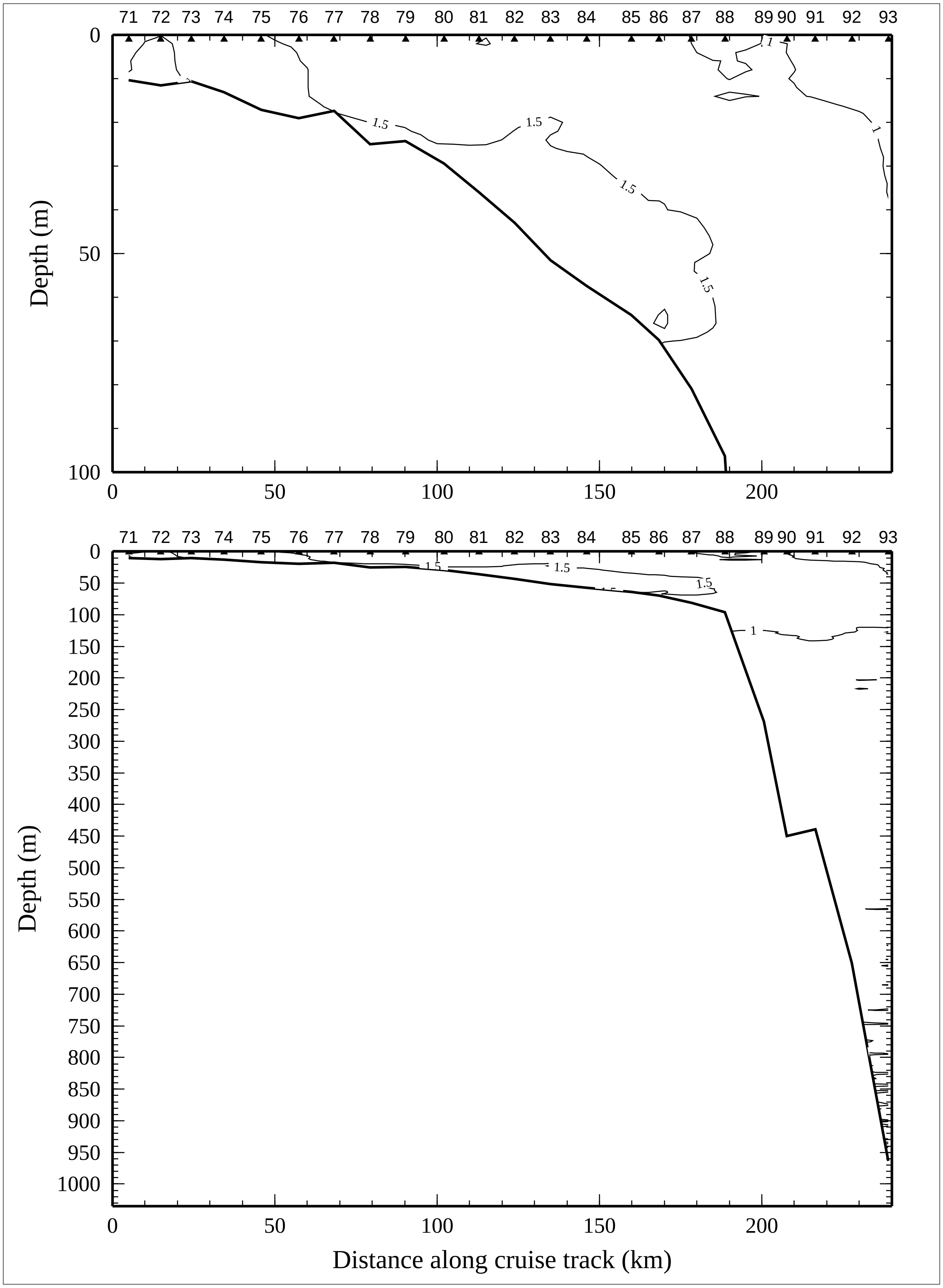

Figure 9.4.7. Relative fluorescence on line 4 of LATEX A survey H09,
26 July - 7 August 1994.

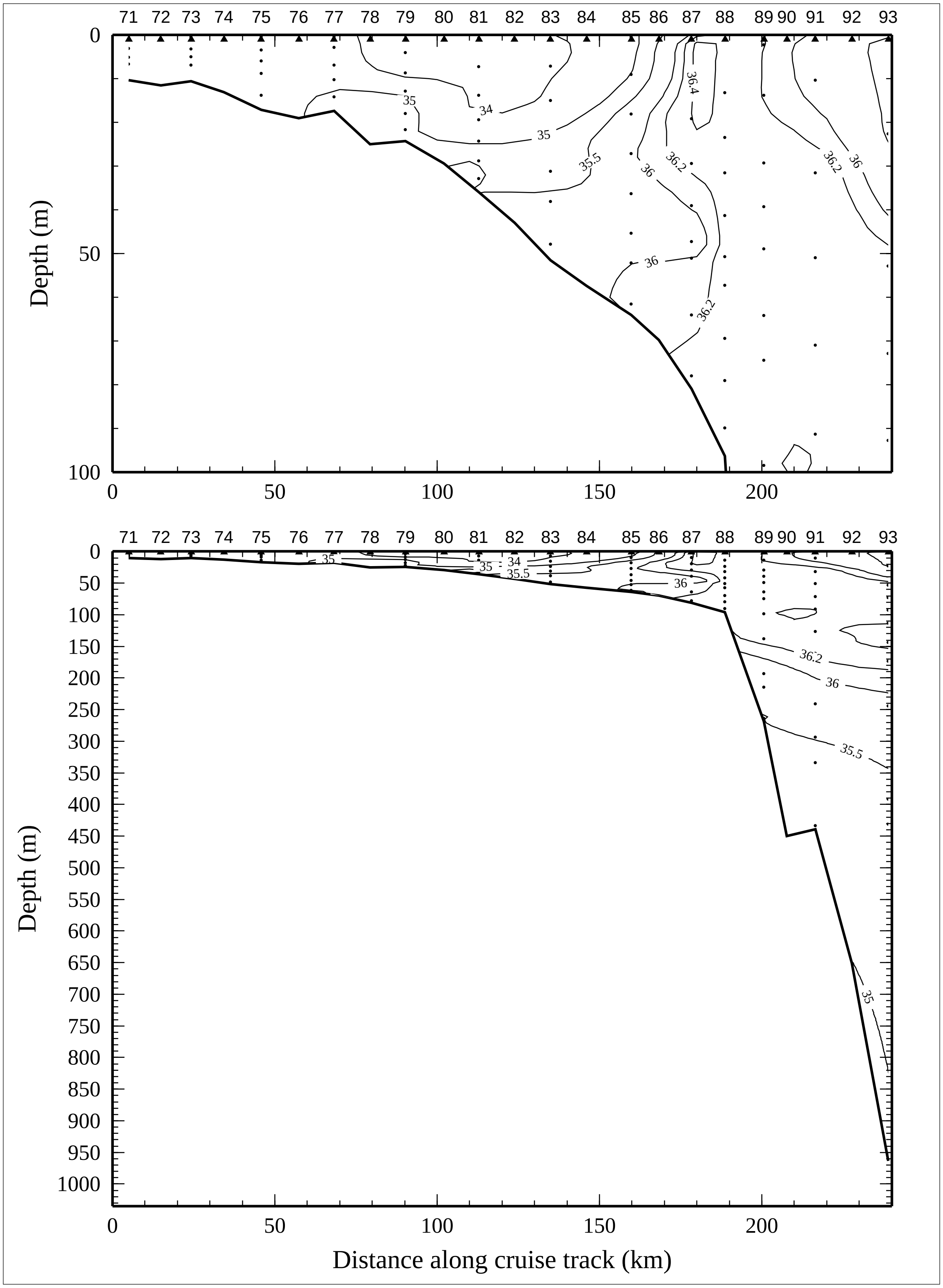

Figure 9.4.8. Bottle salinity on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

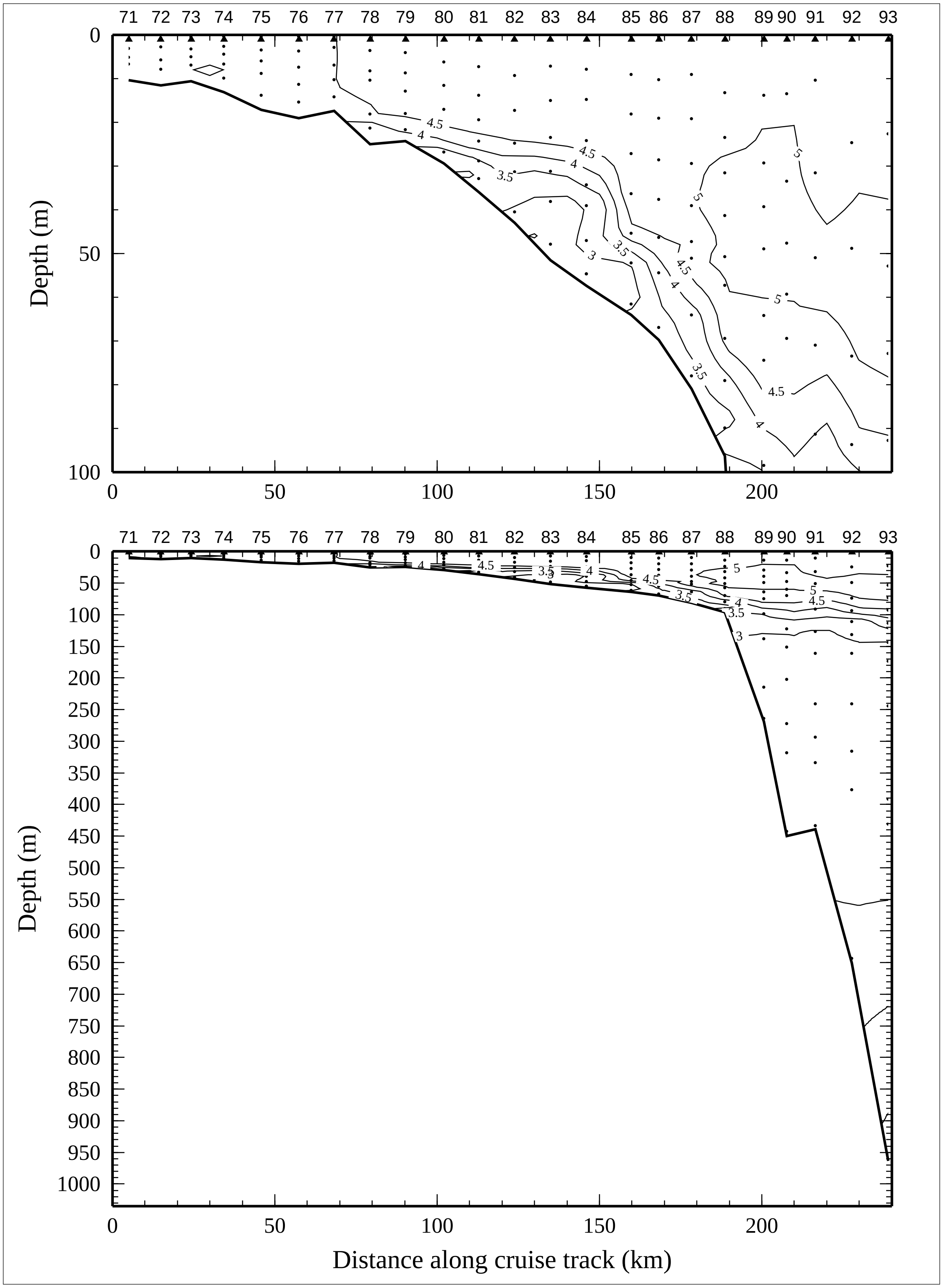

Figure 9.4.9. Dissolved oxygen (ml·l⁻¹) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

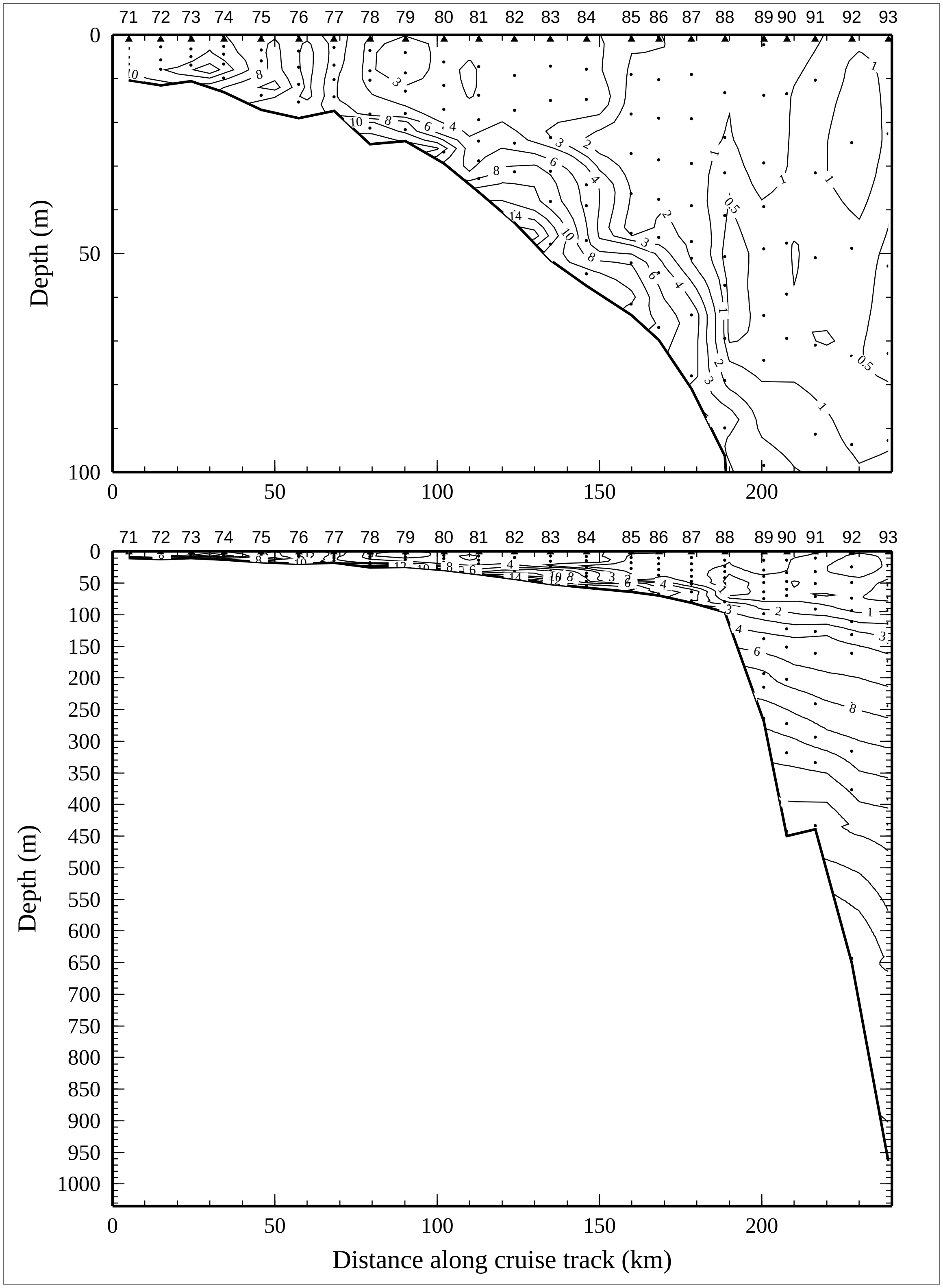

Figure 9.4.10. Silicate (μmol·l^{-1}) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

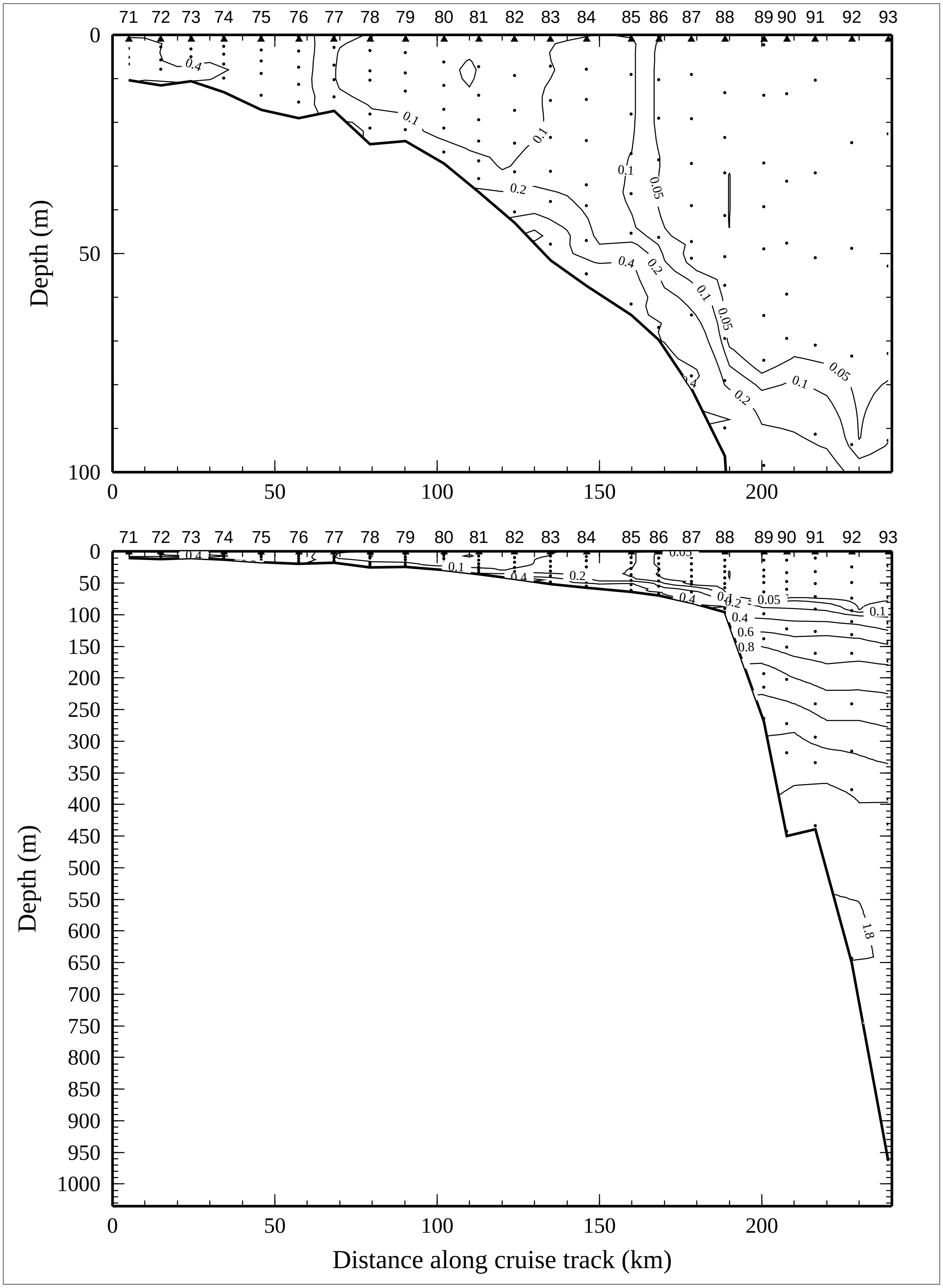

Figure 9.4.11. Phosphate (μmol·l^{-1}) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

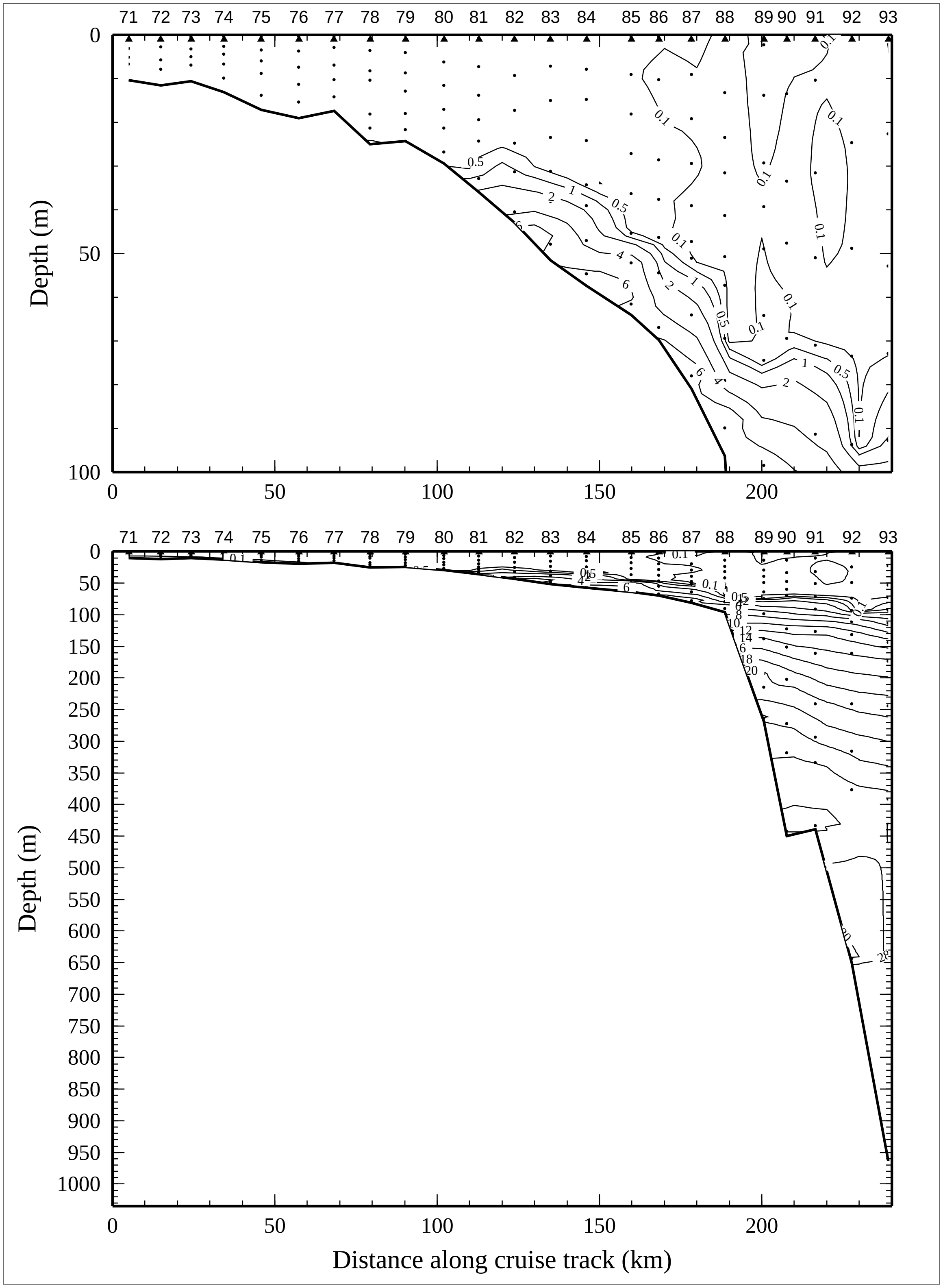

Figure 9.4.12. Nitrate (μmol·l^{-1}) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

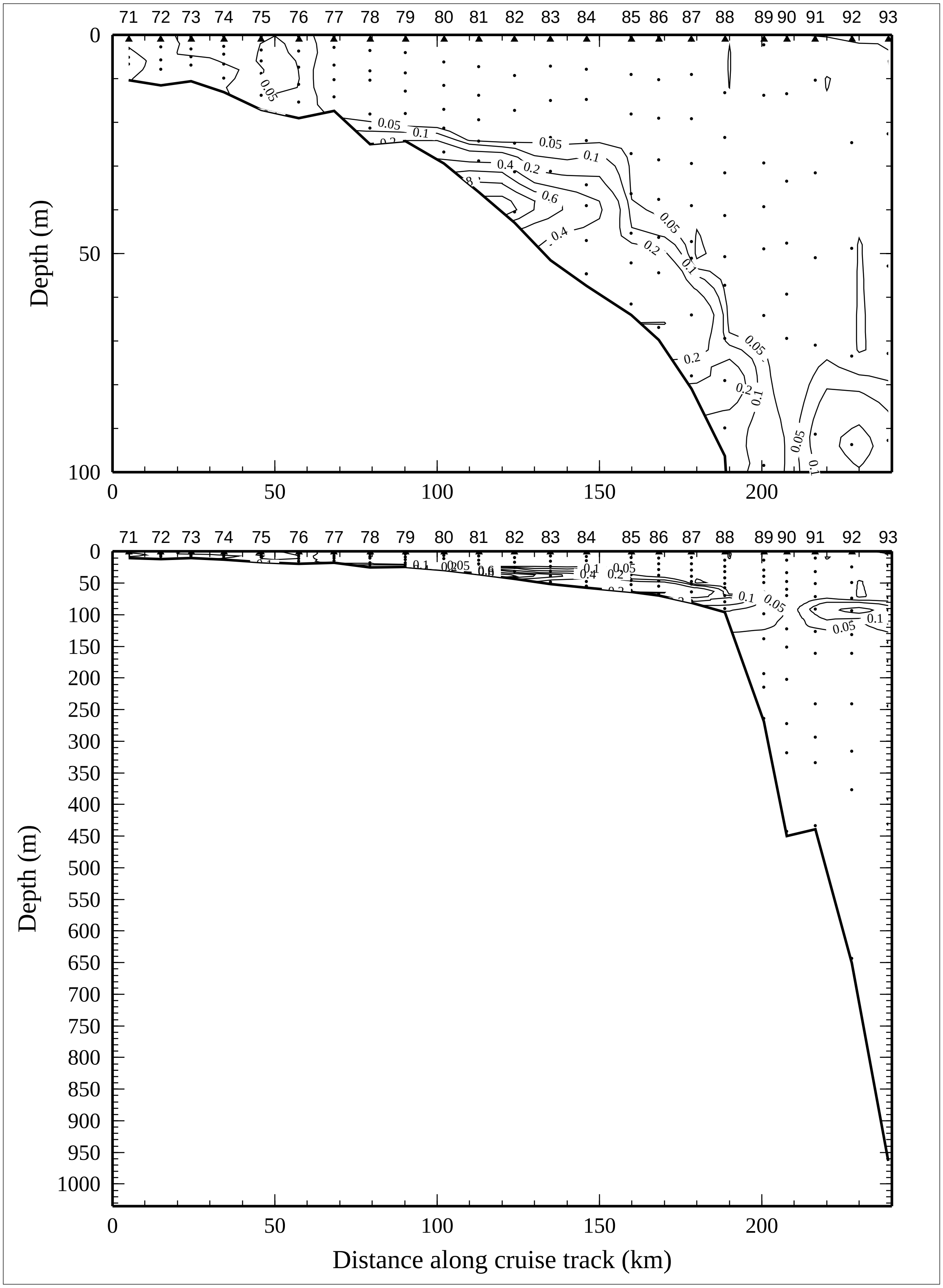

Figure 9.4.13. Nitrite (µmol·l[-1]) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

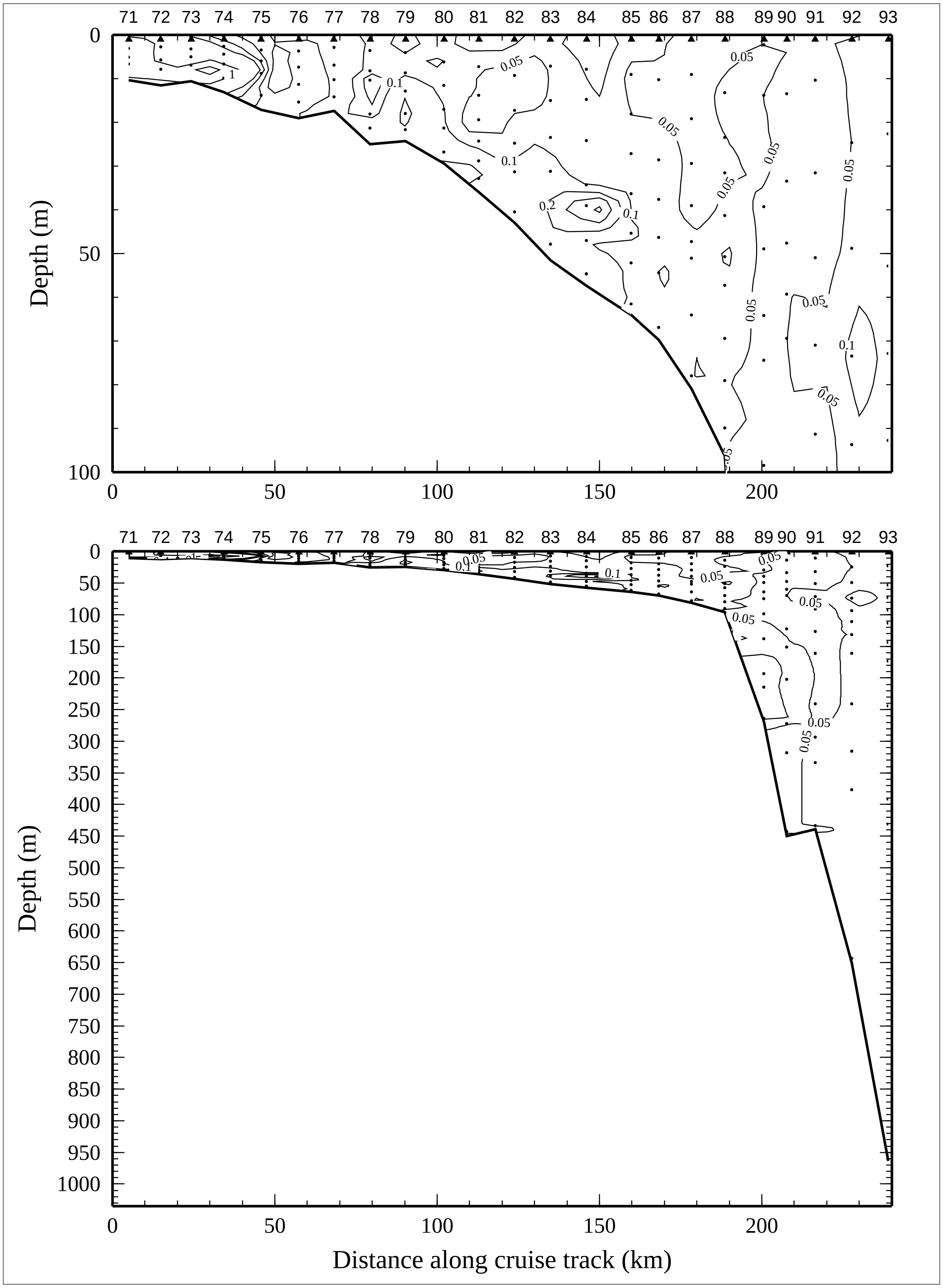

Figure 9.4.14. Ammonium (µmol·l^{-1}) on line 4 of LATEX A survey H09,
26 July - 7 August 1994.

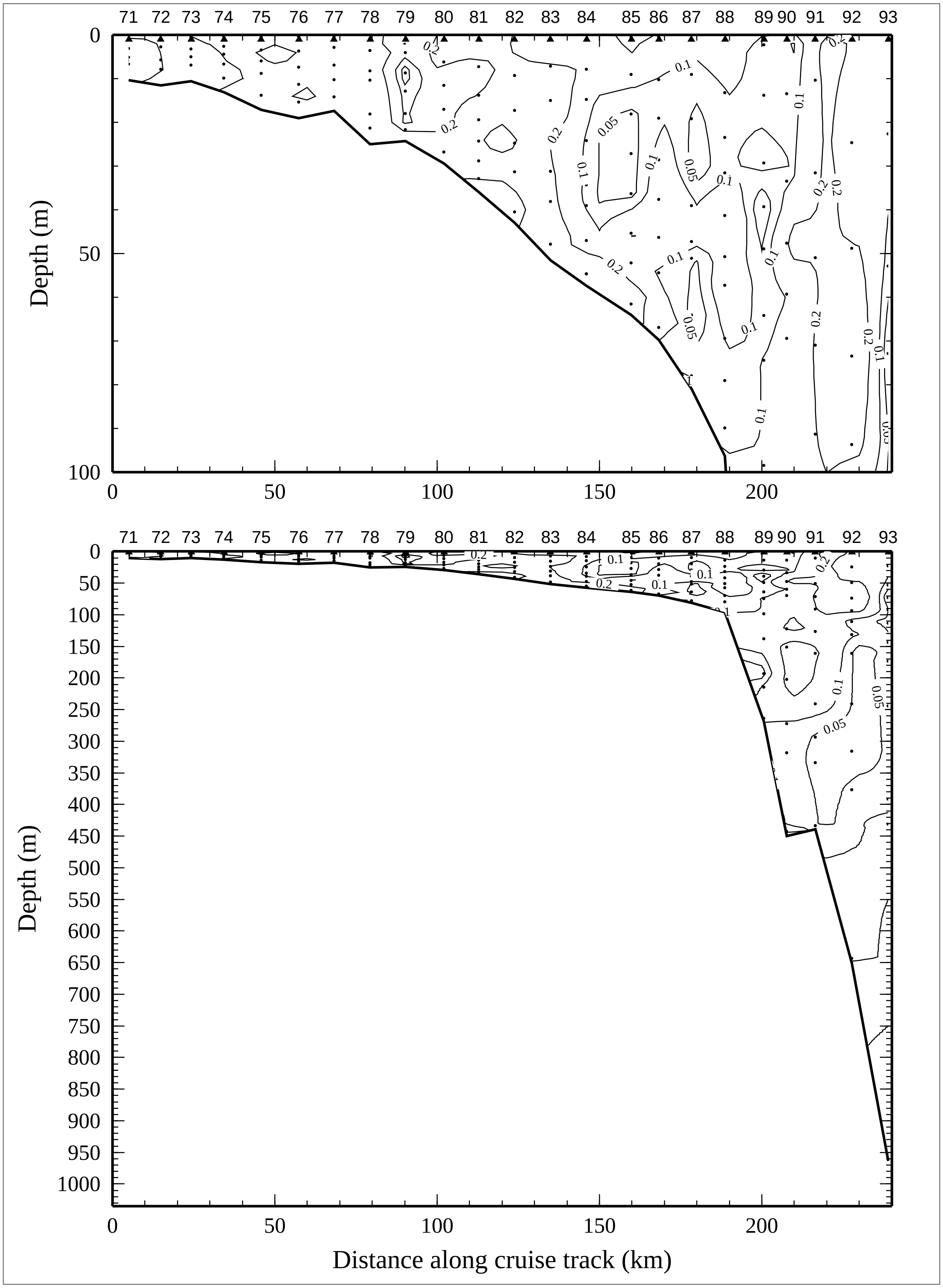

Figure 9.4.15. Urea (μmol·l-1) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

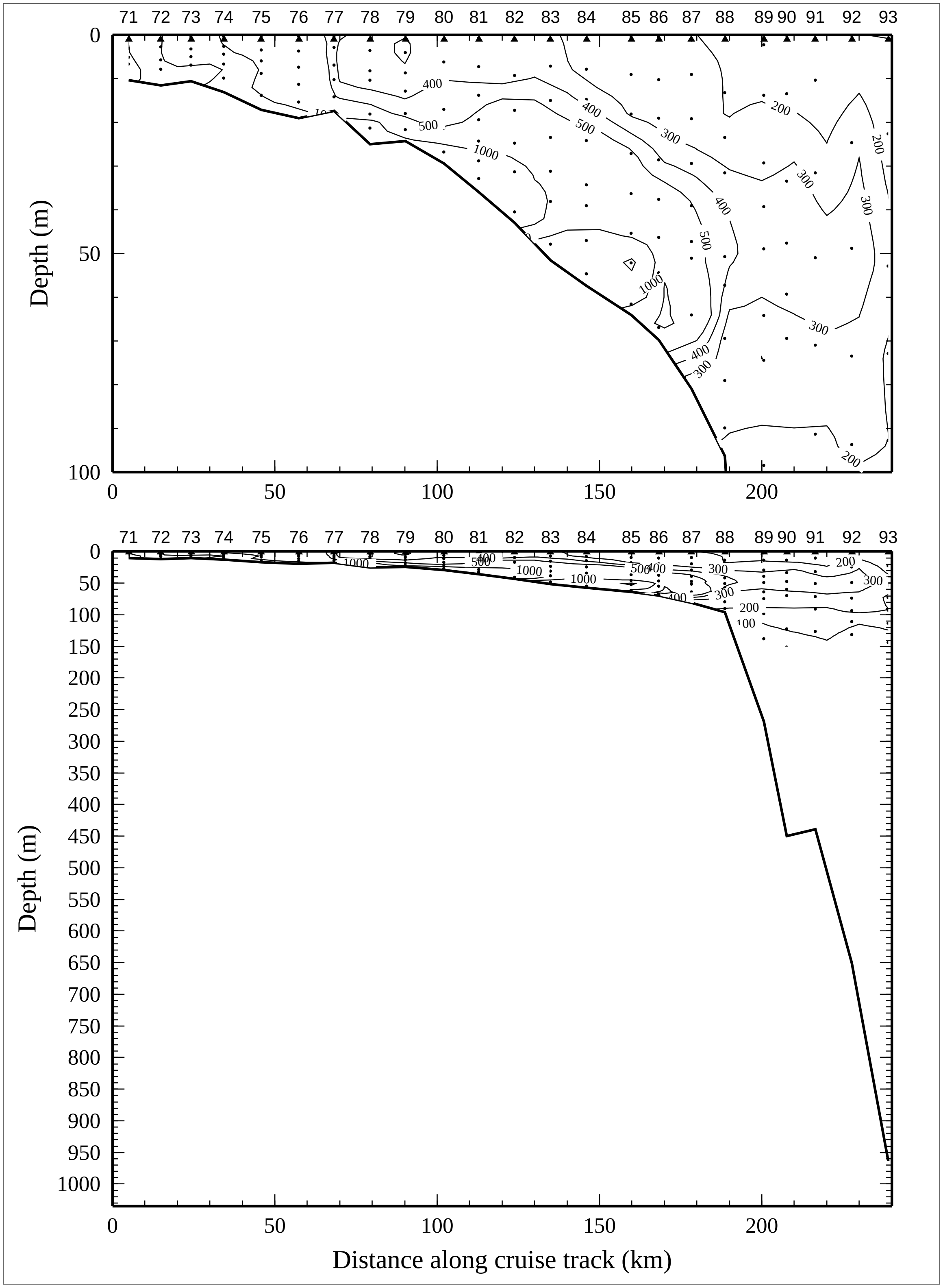

Figure 9.4.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 4 of LATEX A survey H09, 26 July - 7 August 1994.

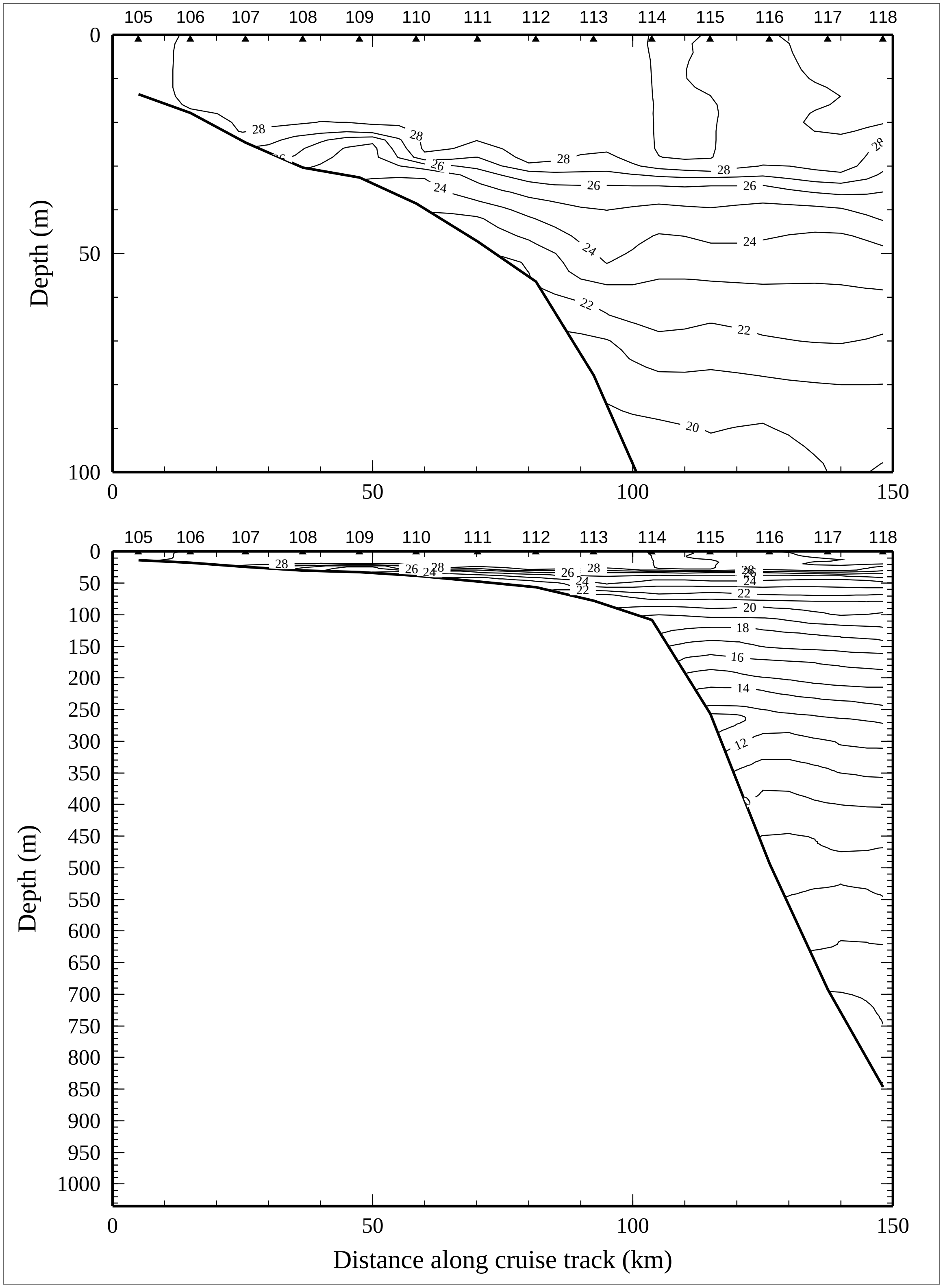

Figure 9.5.1. Potential temperature (˚C) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

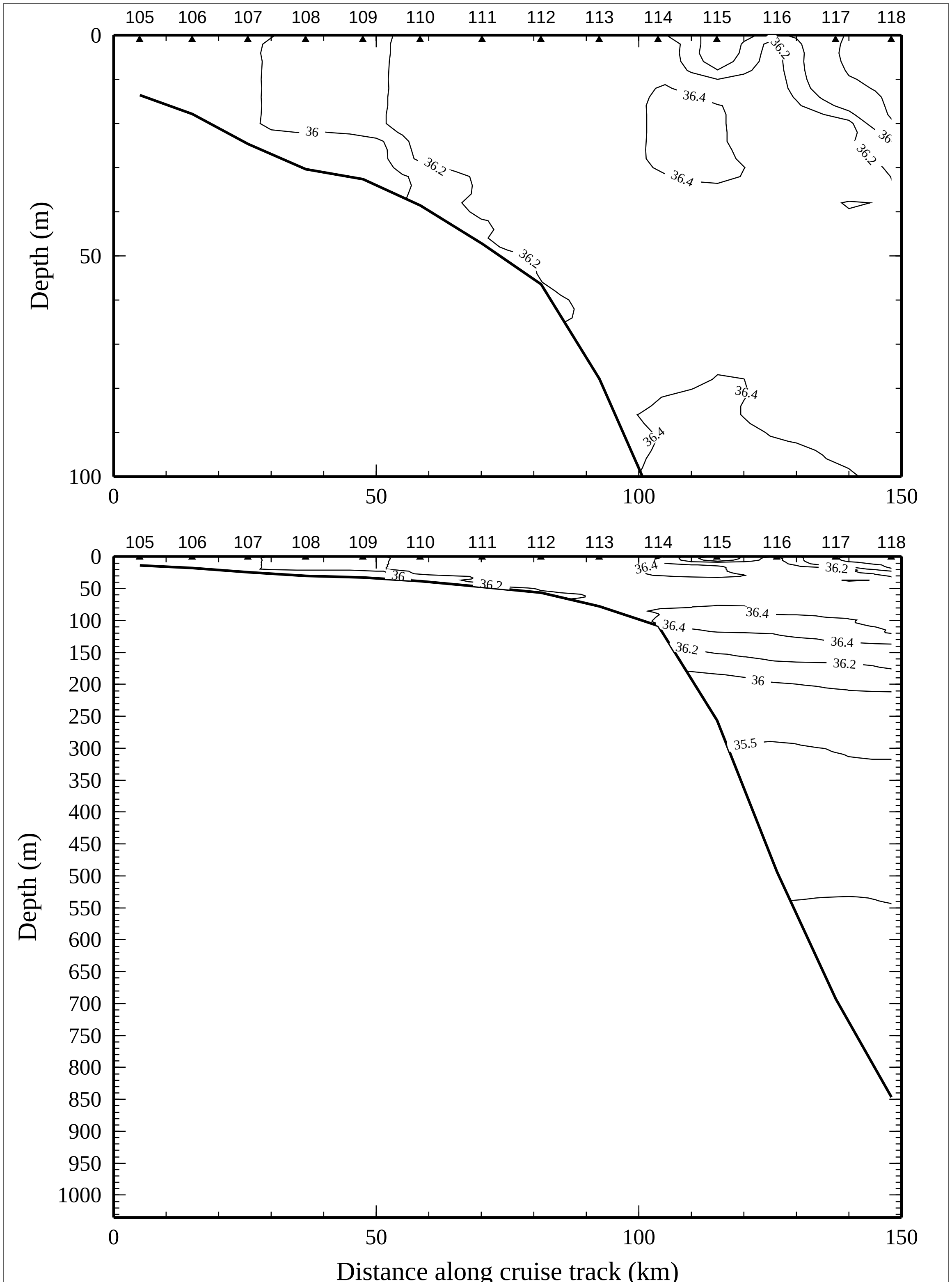

Figure 9.5.2. Salinity, derived from CTD data, on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

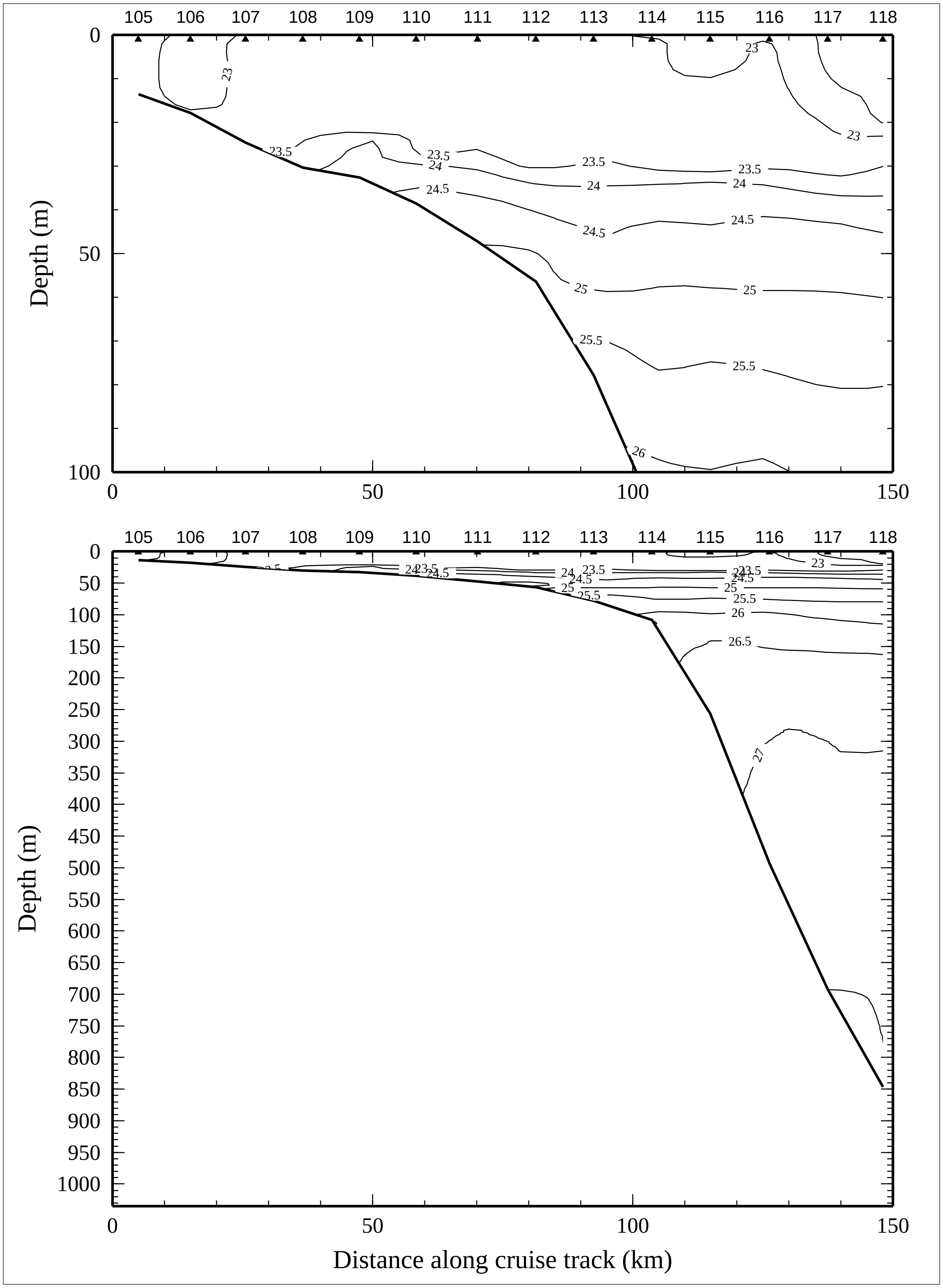

Figure 9.5.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

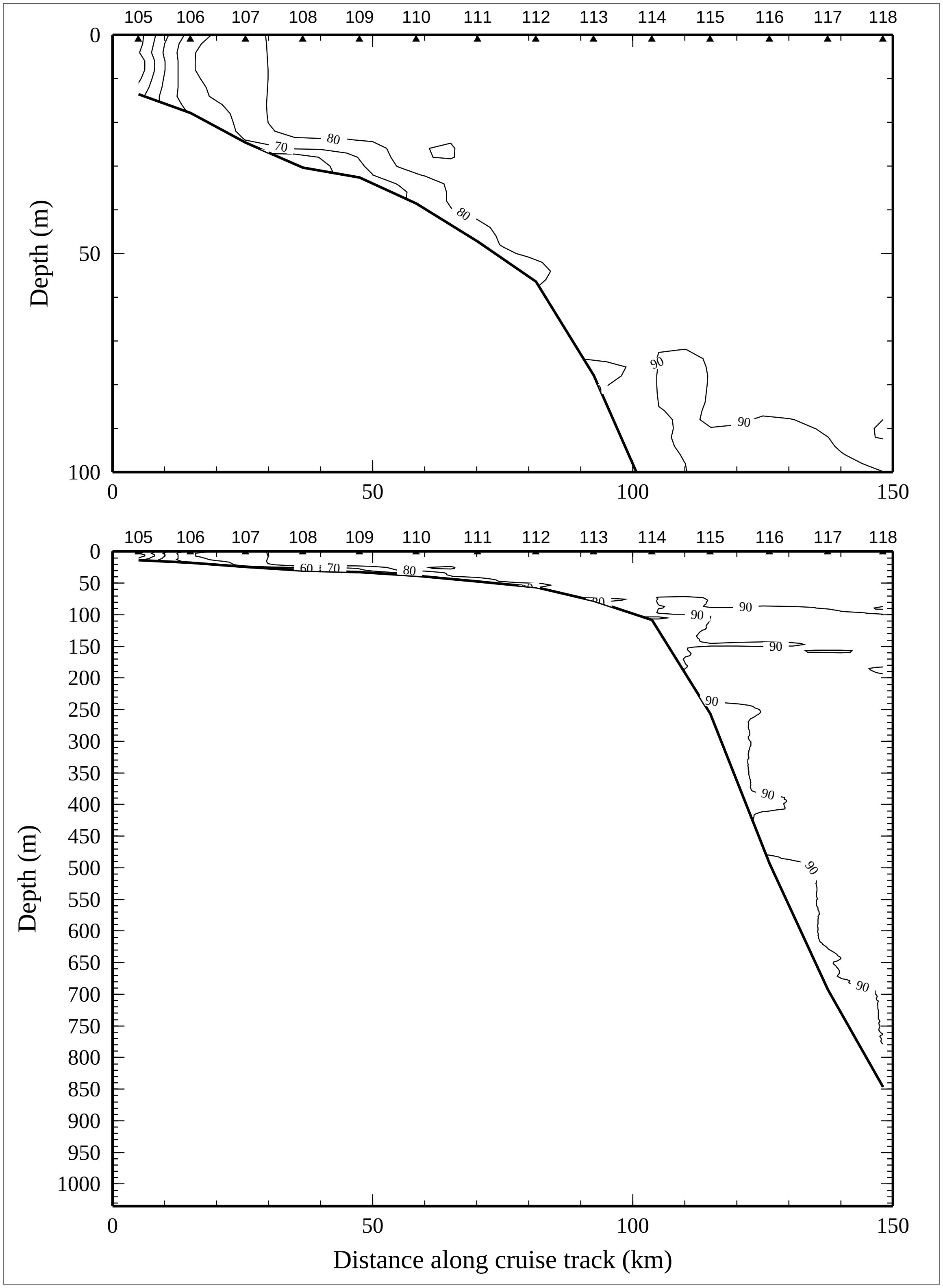

Figure 9.5.4. Percent transmission (660 nm wave length; 25-cm path length) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

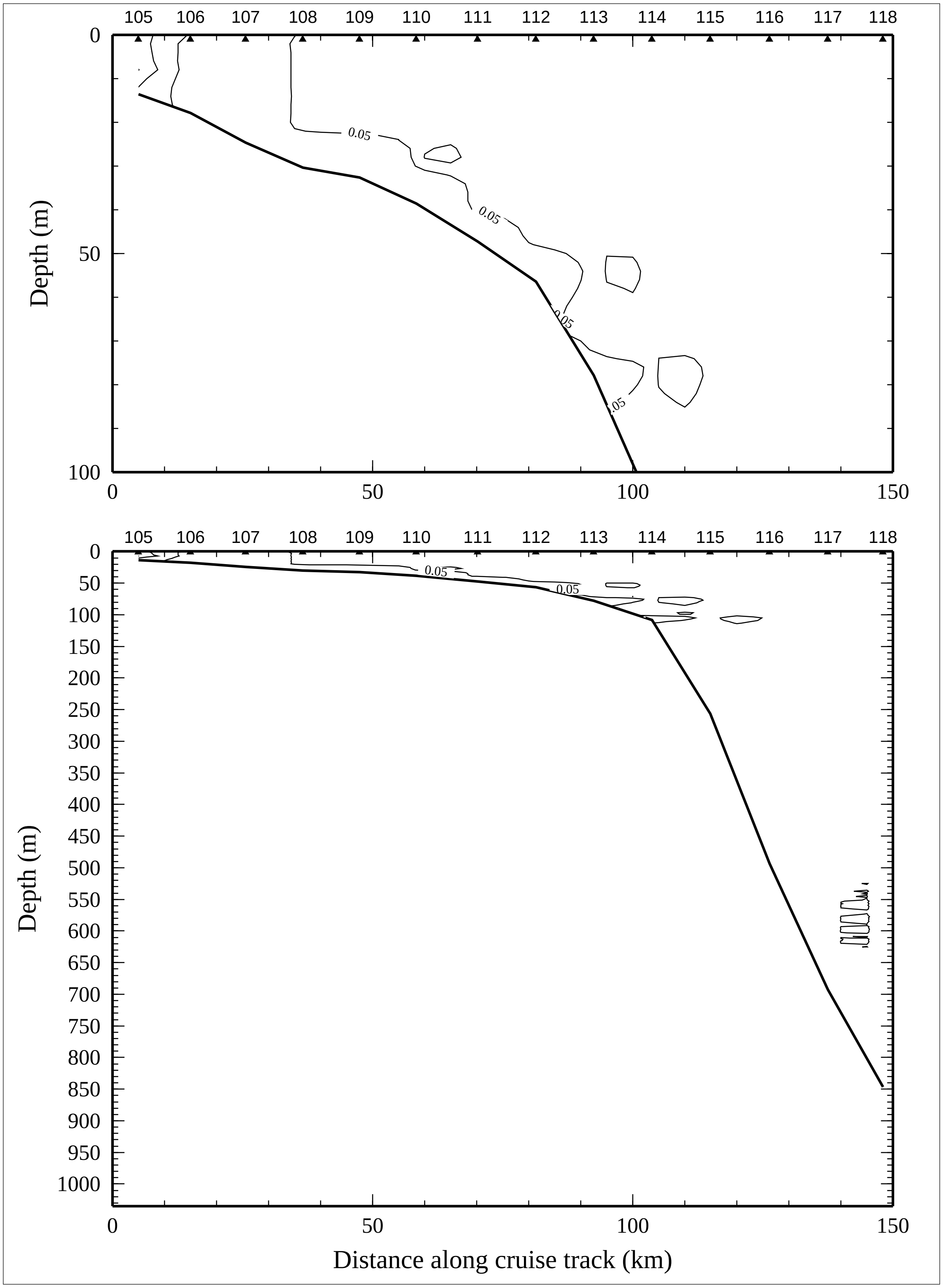

Figure 9.5.5. Optical backscatterance (voltage) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

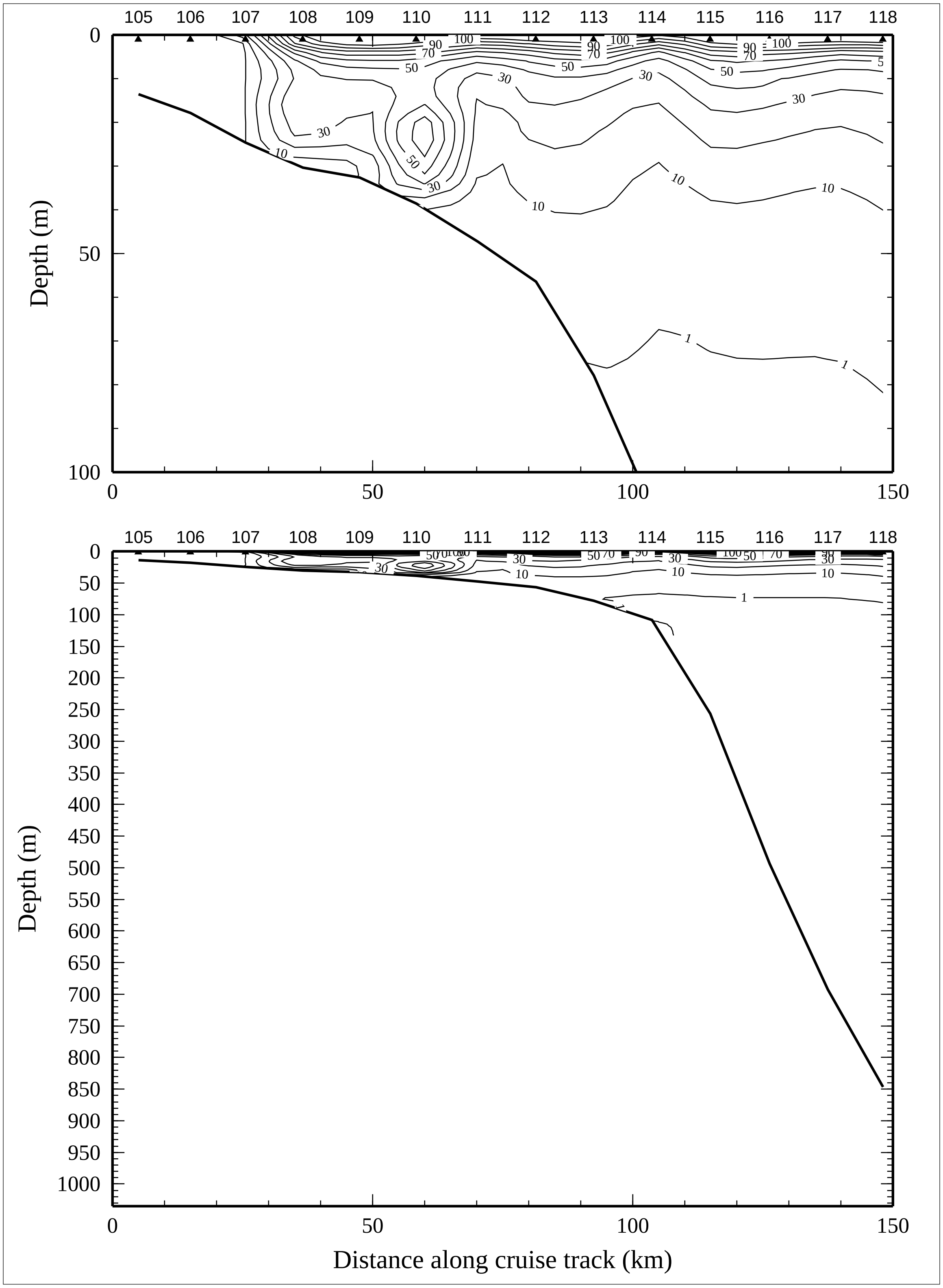

Figure 9.5.6. Downwelling irradiance as percent of surface irradiance on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

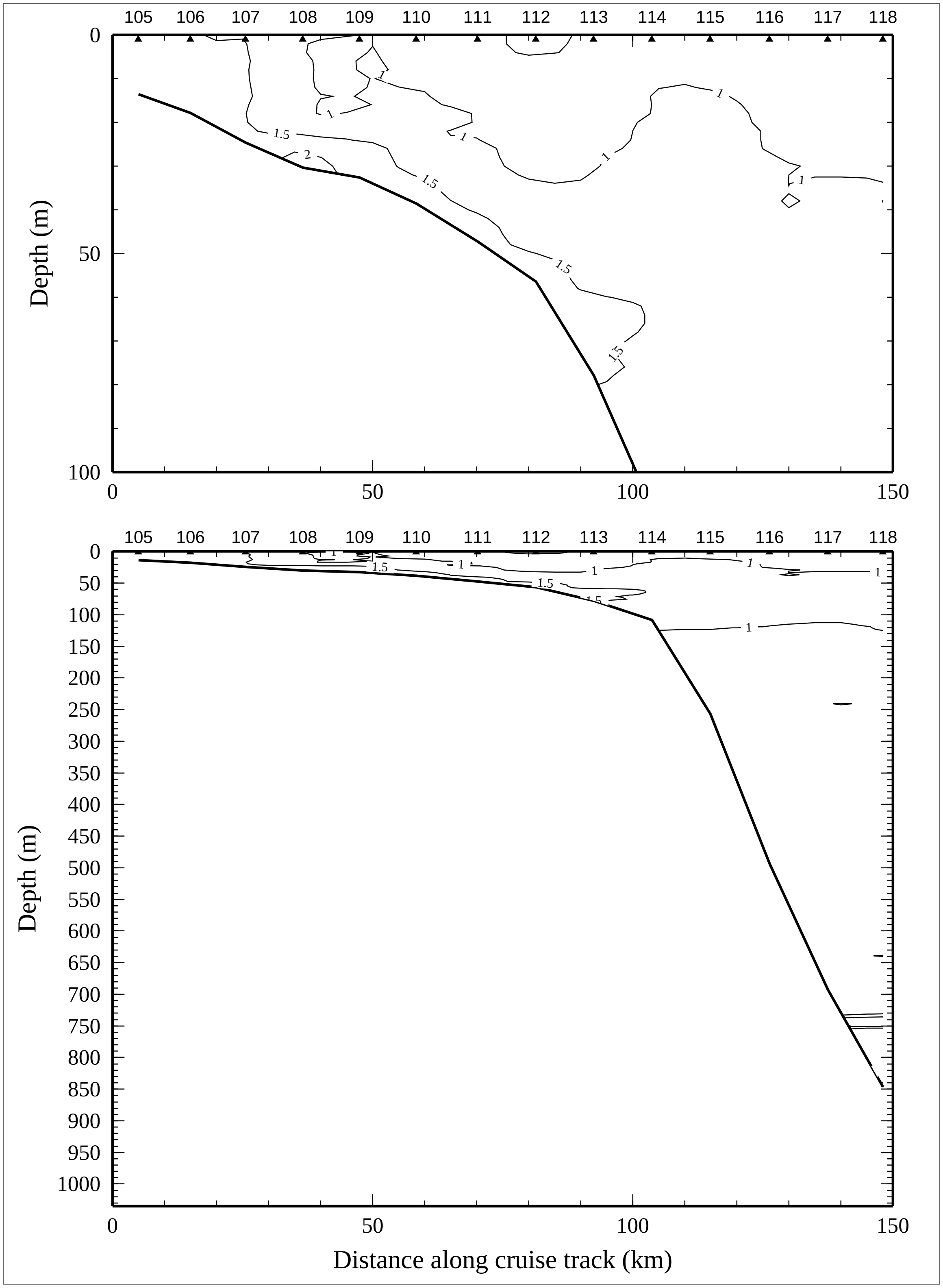

Figure 9.5.7. Relative fluorescence on line 5 of LATEX A survey H09,
26 July - 7 August 1994.

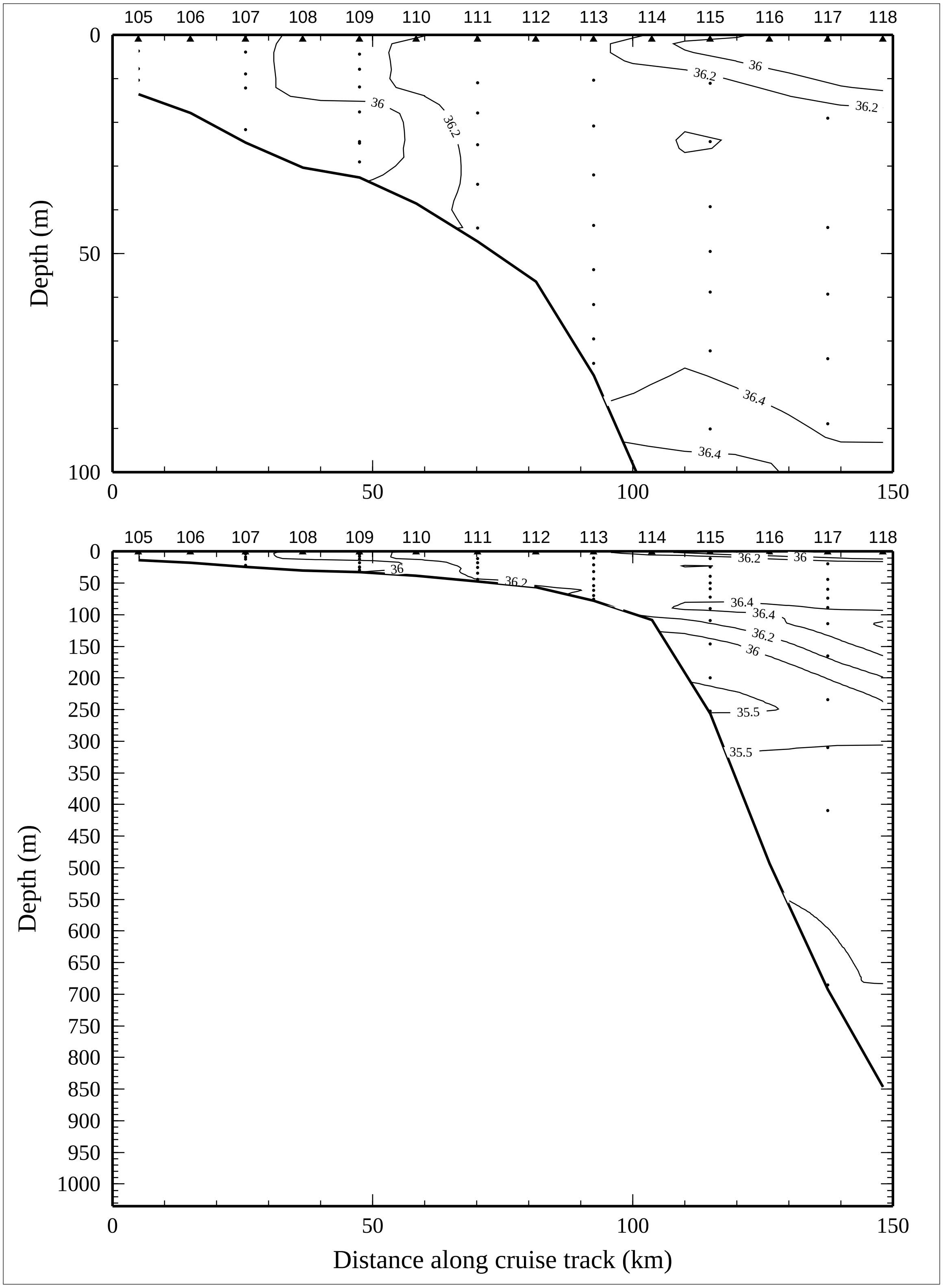

Figure 9.5.8. Bottle salinity on line 5 of LATEX A survey H09,
26 July - 7 August 1994.

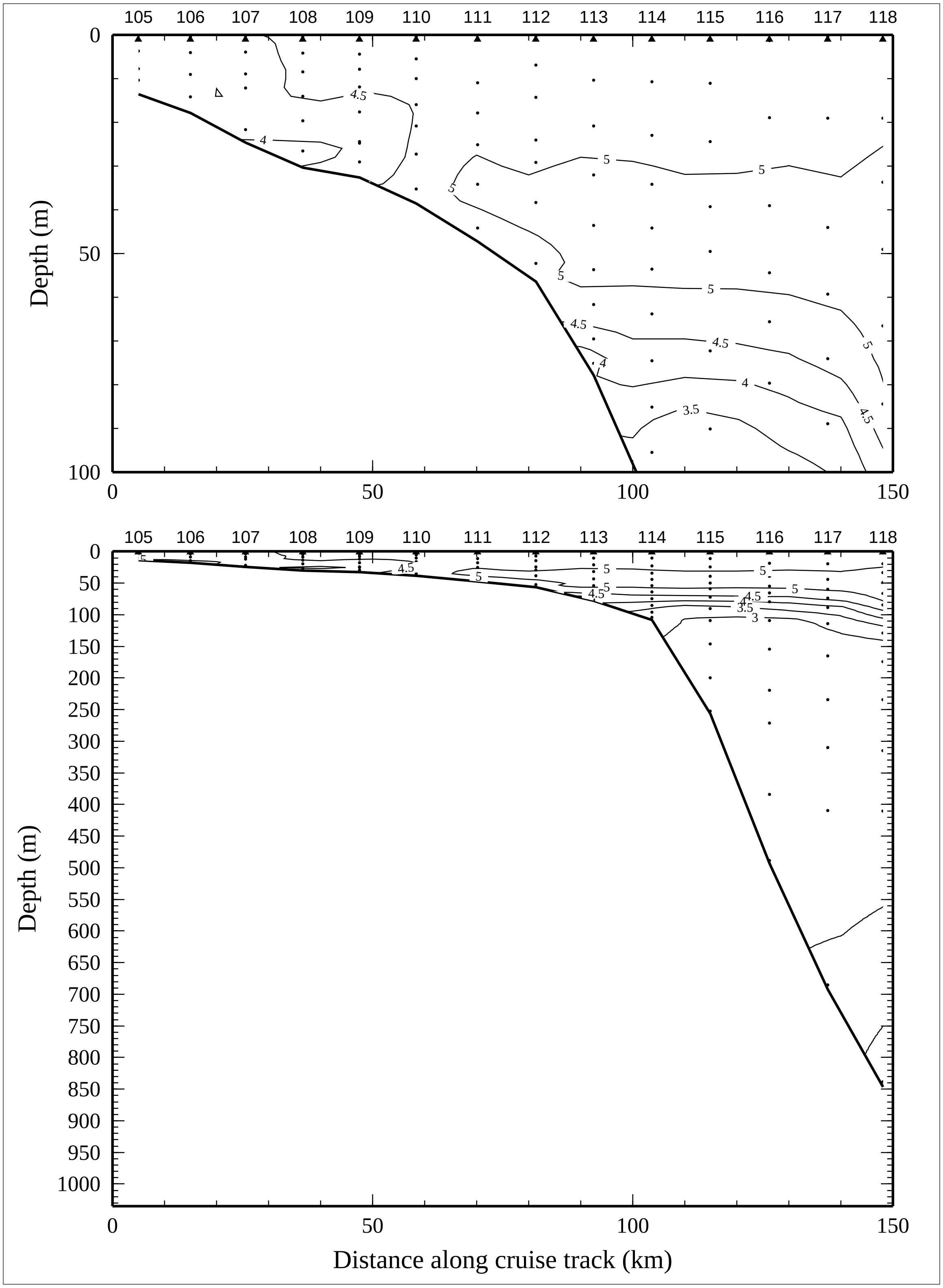

Figure 9.5.9. Dissolved oxygen (ml·l^{-1}) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

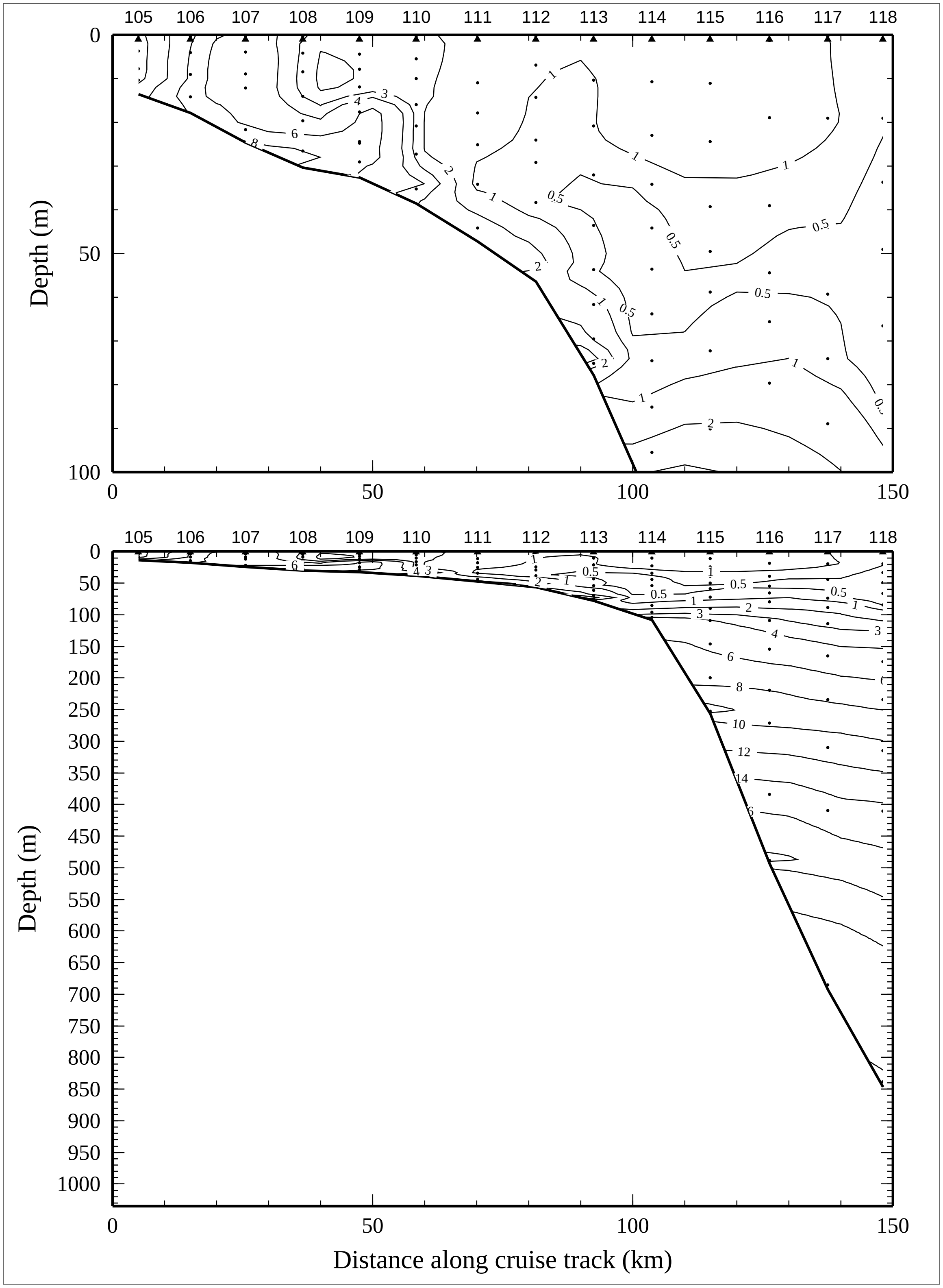

Figure 9.5.10. Silicate ($\mu mol \cdot l^{-1}$) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

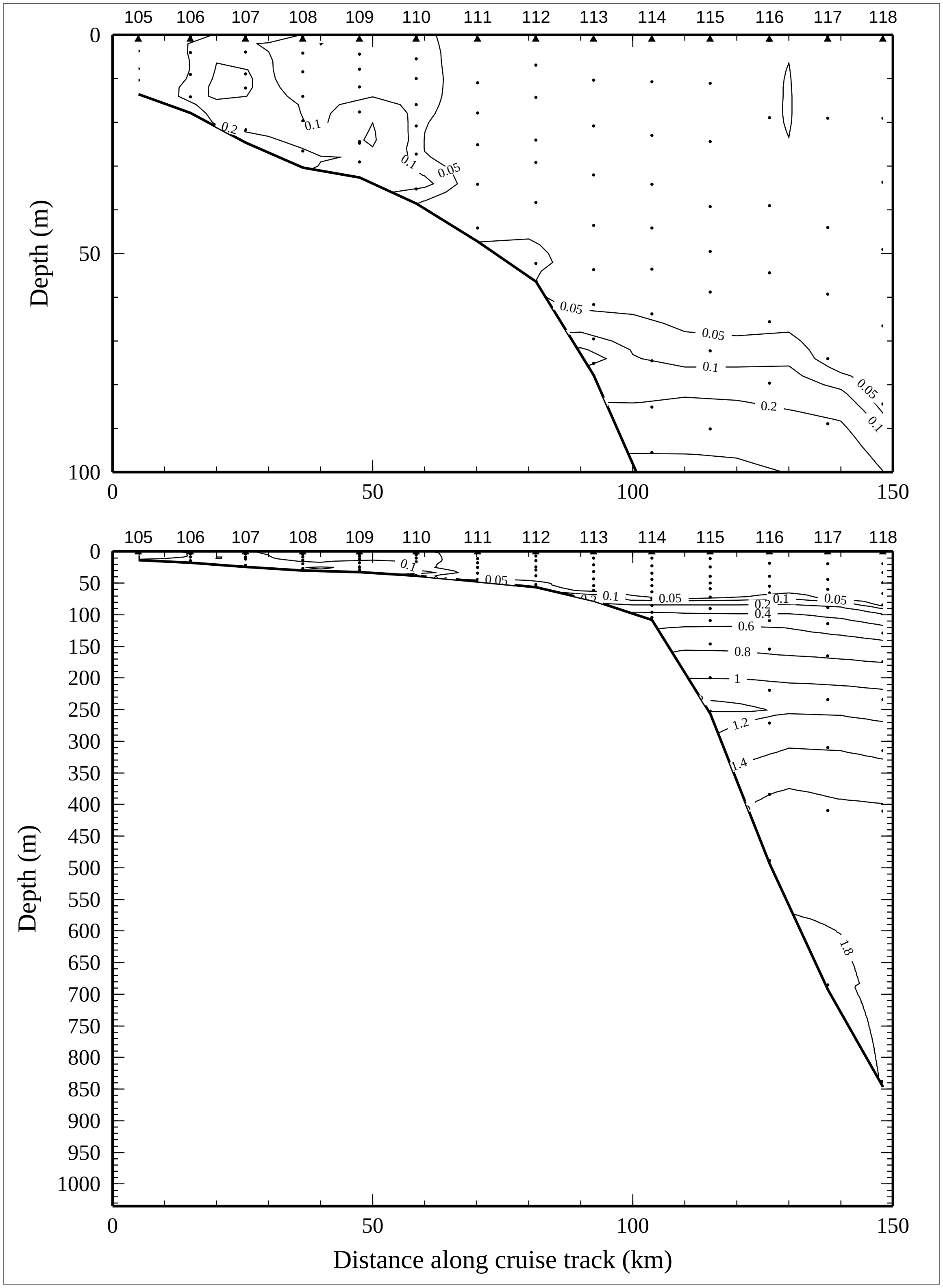

Figure 9.5.11. Phosphate (µmol·l^{-1}) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

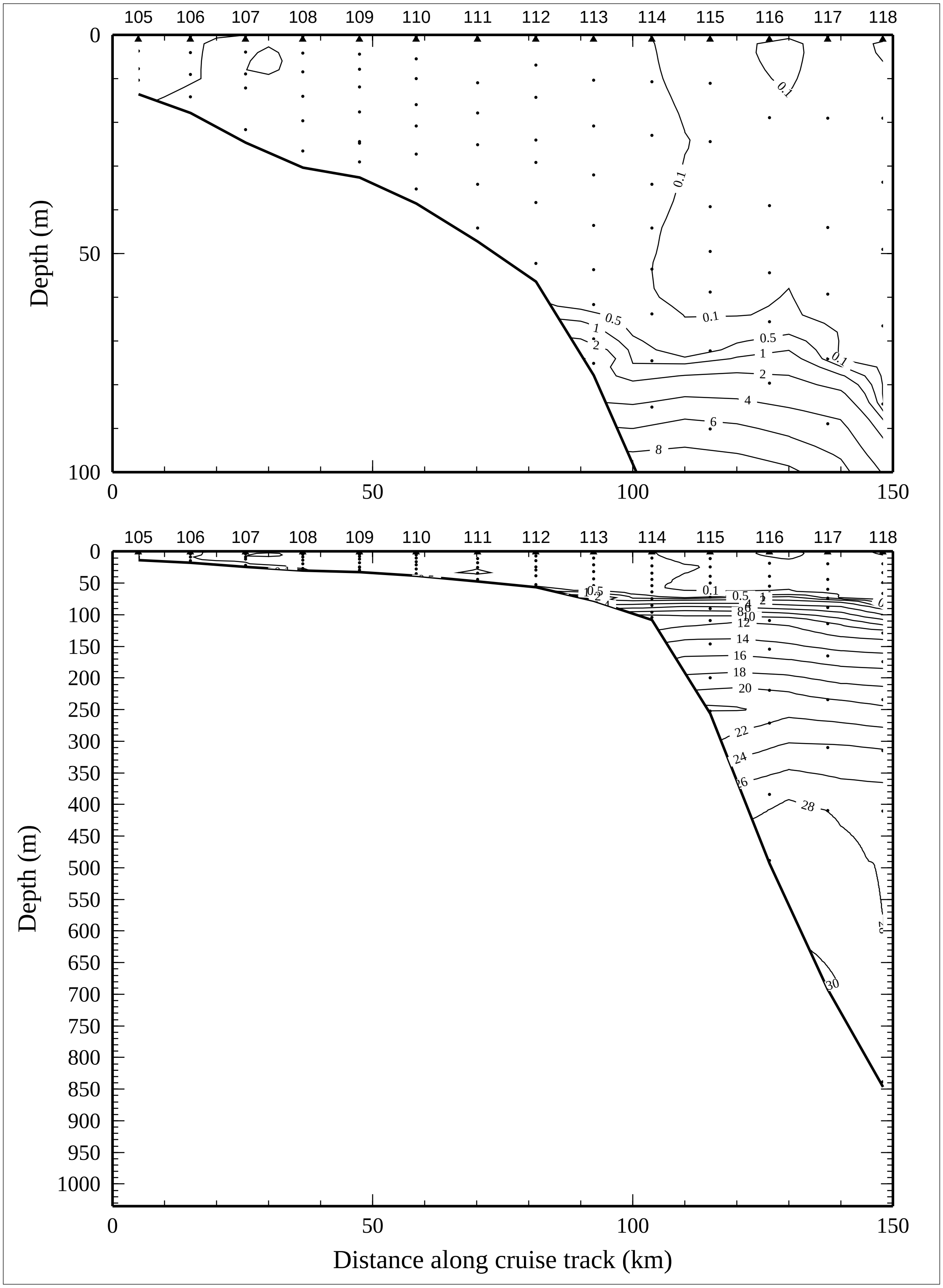

Figure 9.5.12. Nitrate (μmol·l⁻¹) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

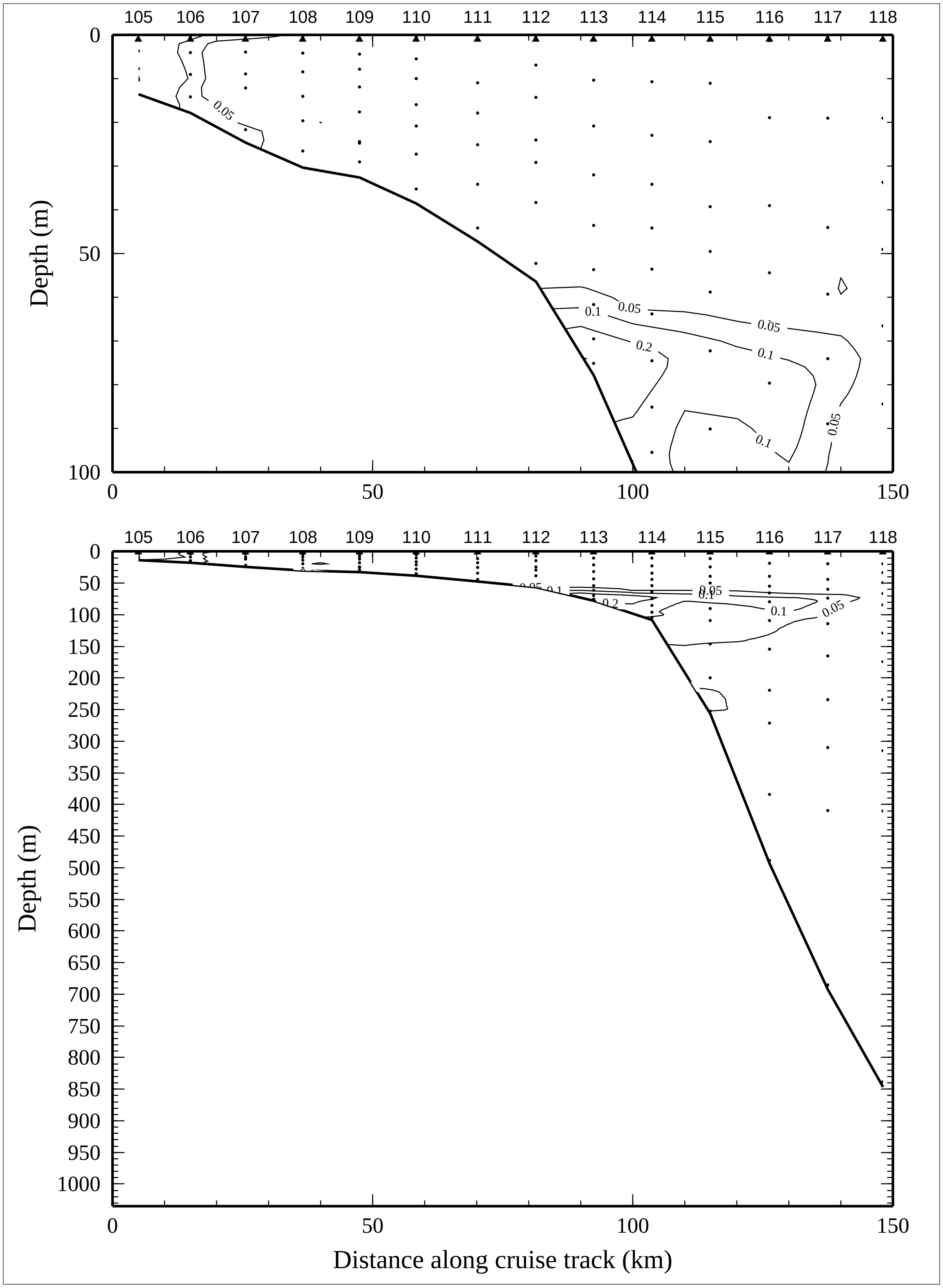

Figure 9.5.13. Nitrite (μmol·l-1) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

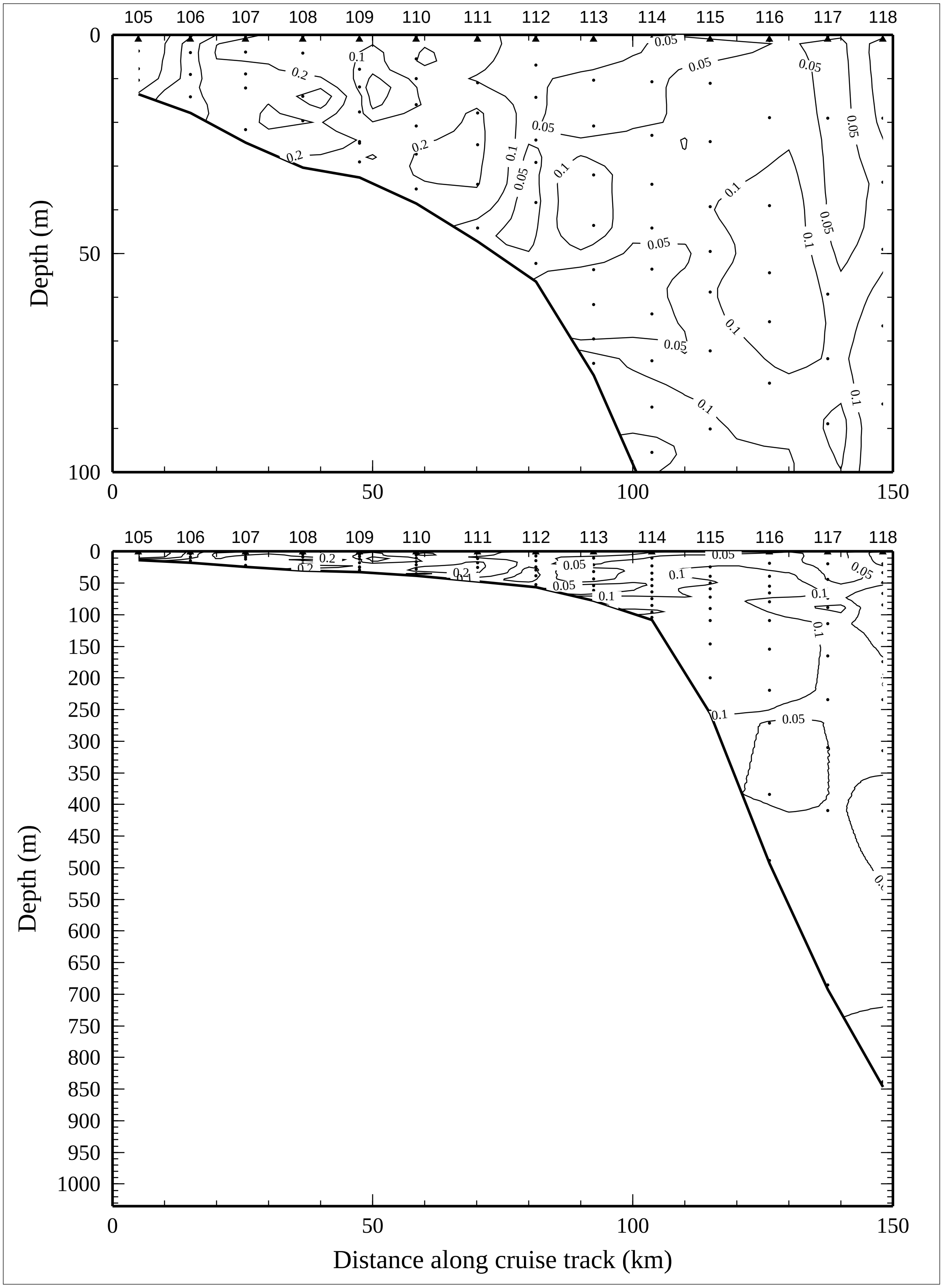

Figure 9.5.14. Ammonium (µmol·l-1) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

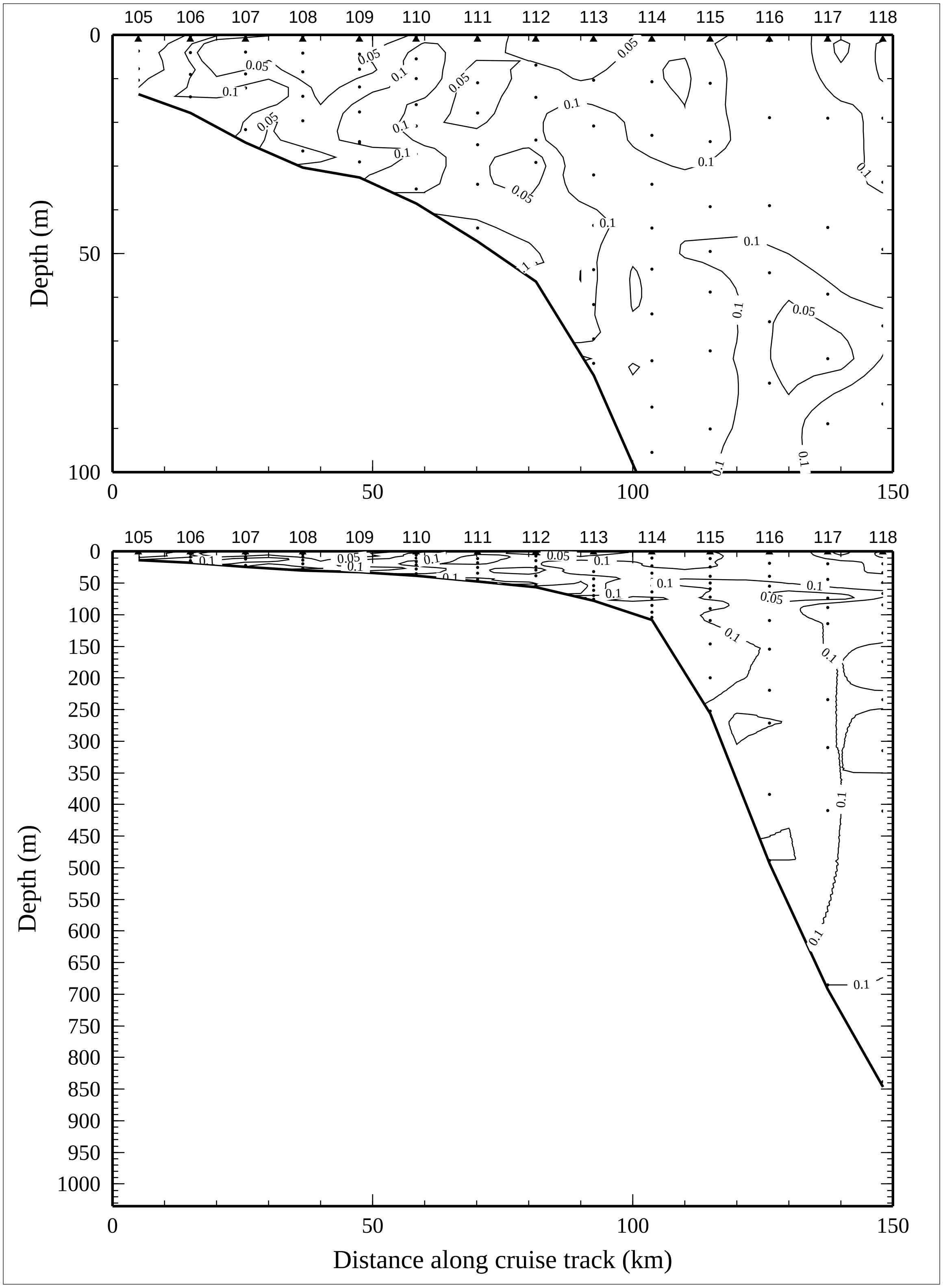

Figure 9.5.15. Urea (µmol·l^{-1}) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

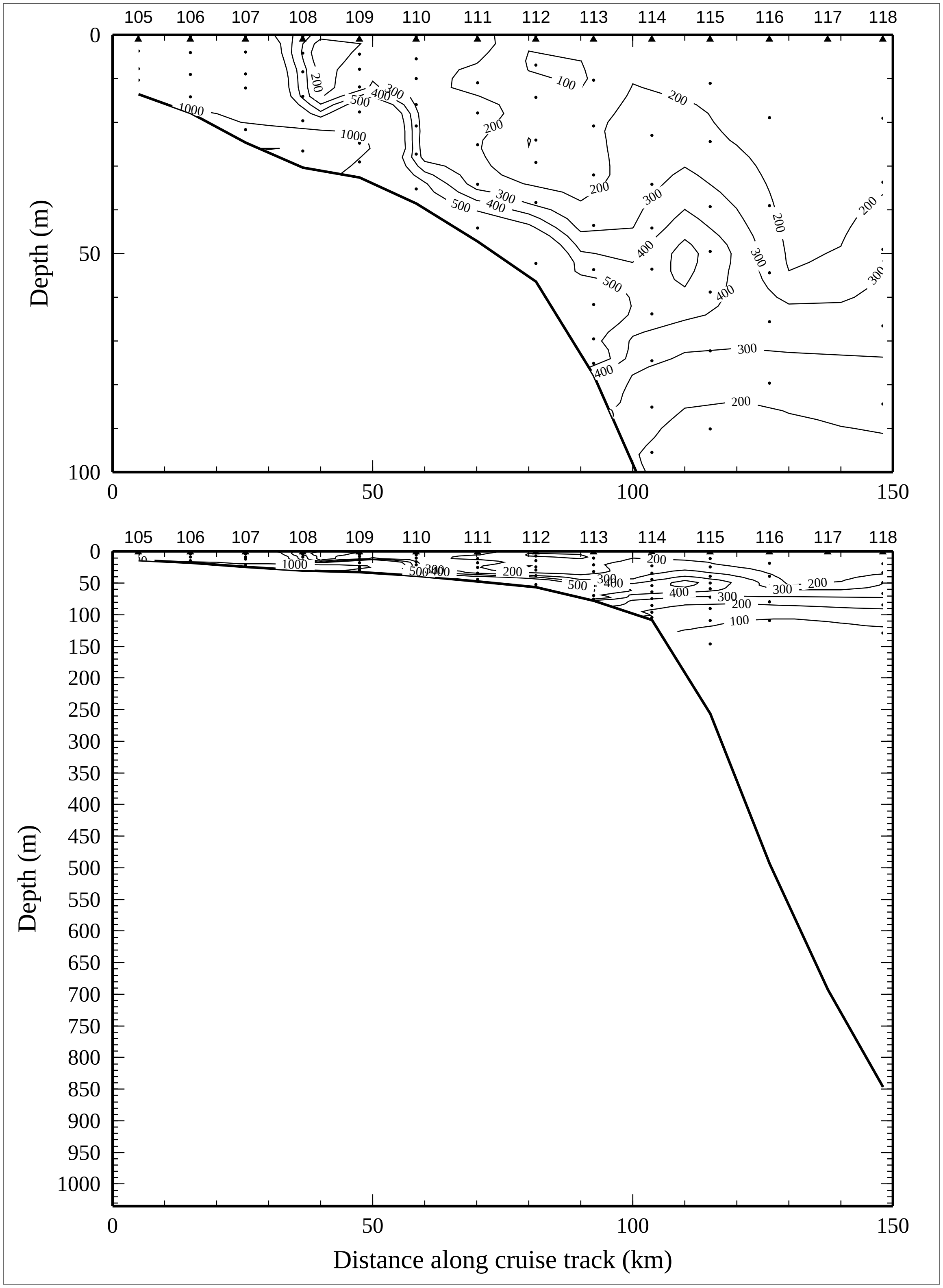

Figure 9.5.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 5 of LATEX A survey H09, 26 July - 7 August 1994.

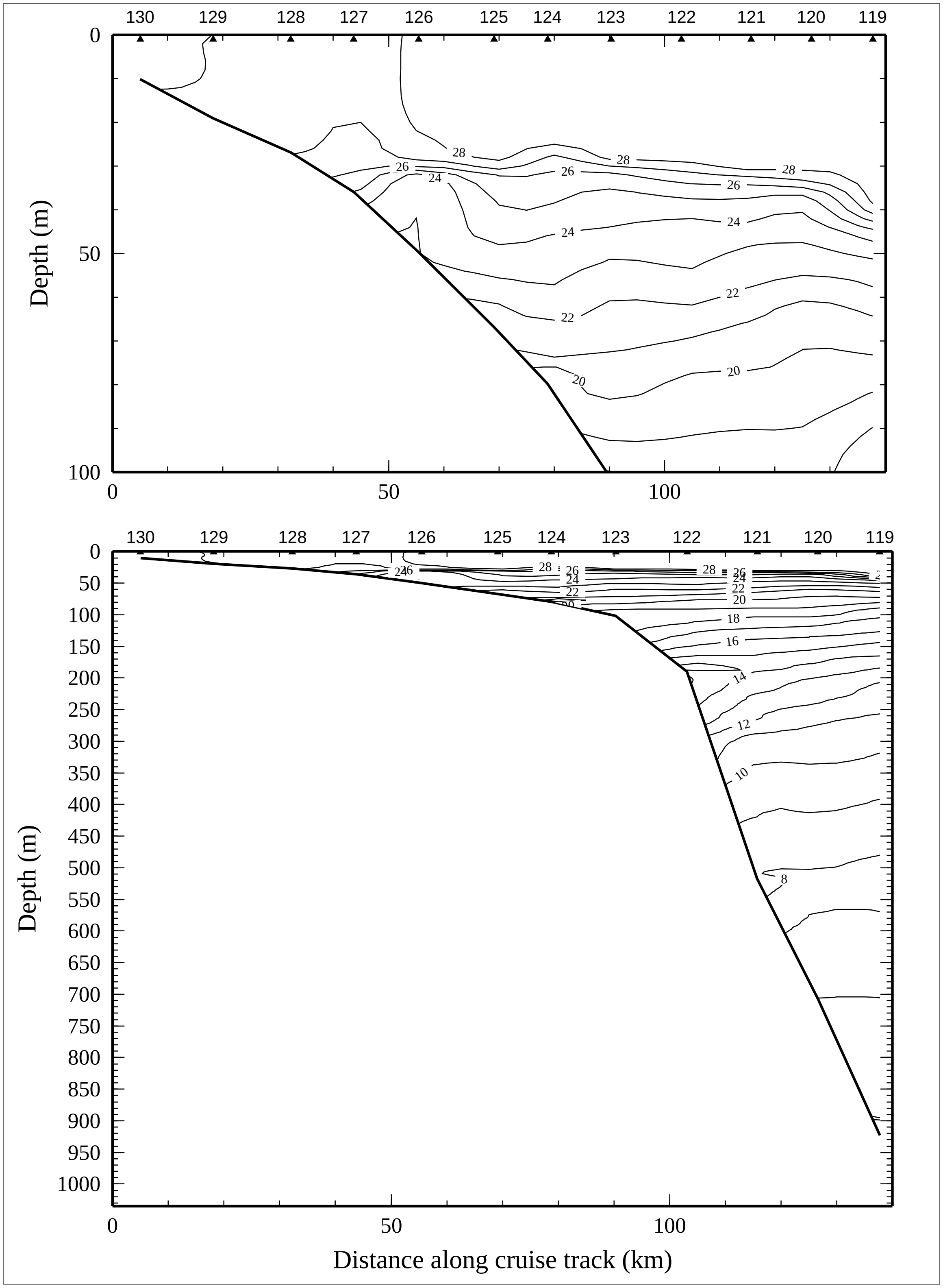

Figure 9.6.1. Potential temperature (˚C) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

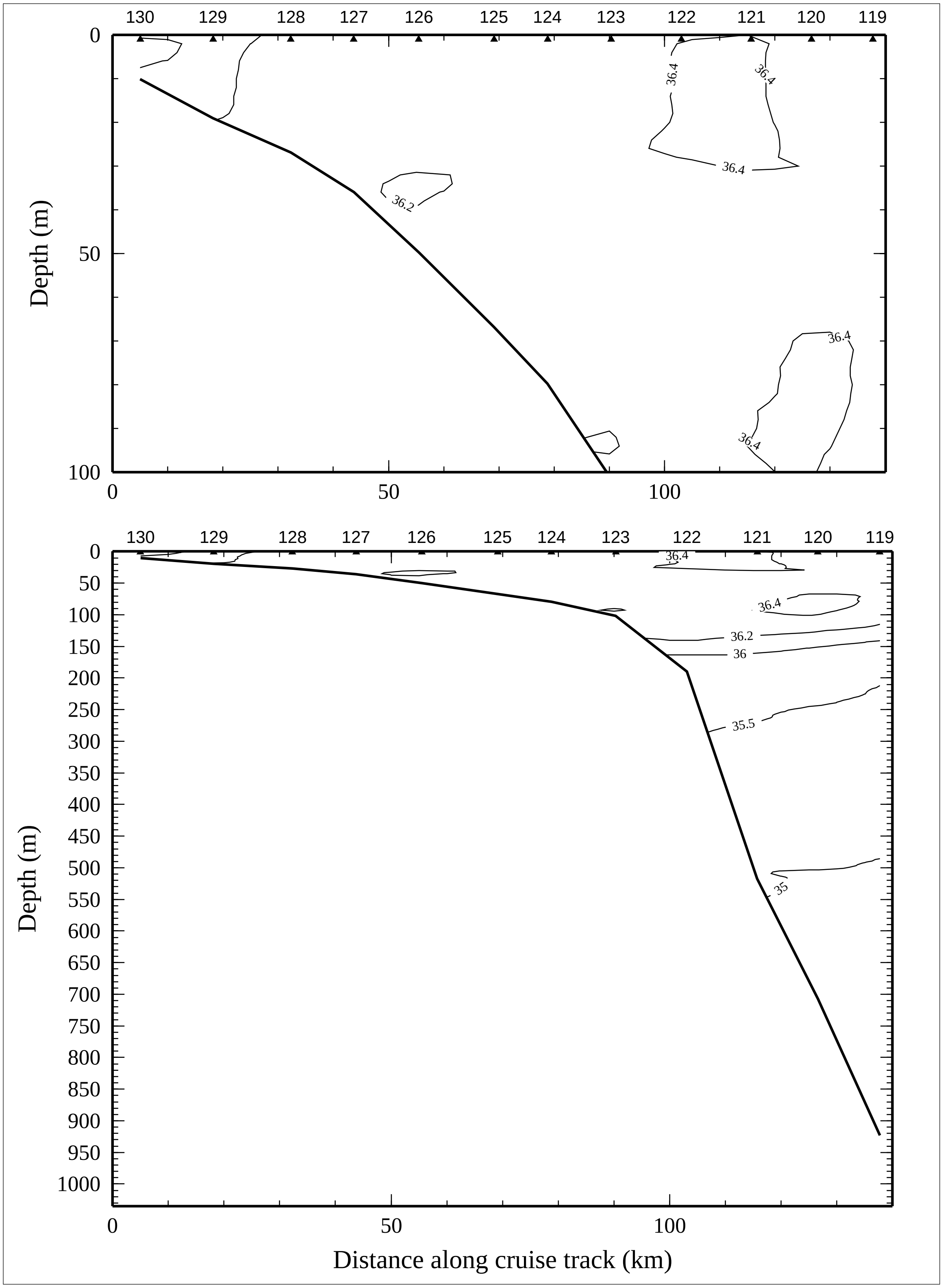

Figure 9.6.2. Salinity, derived from CTD data, on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

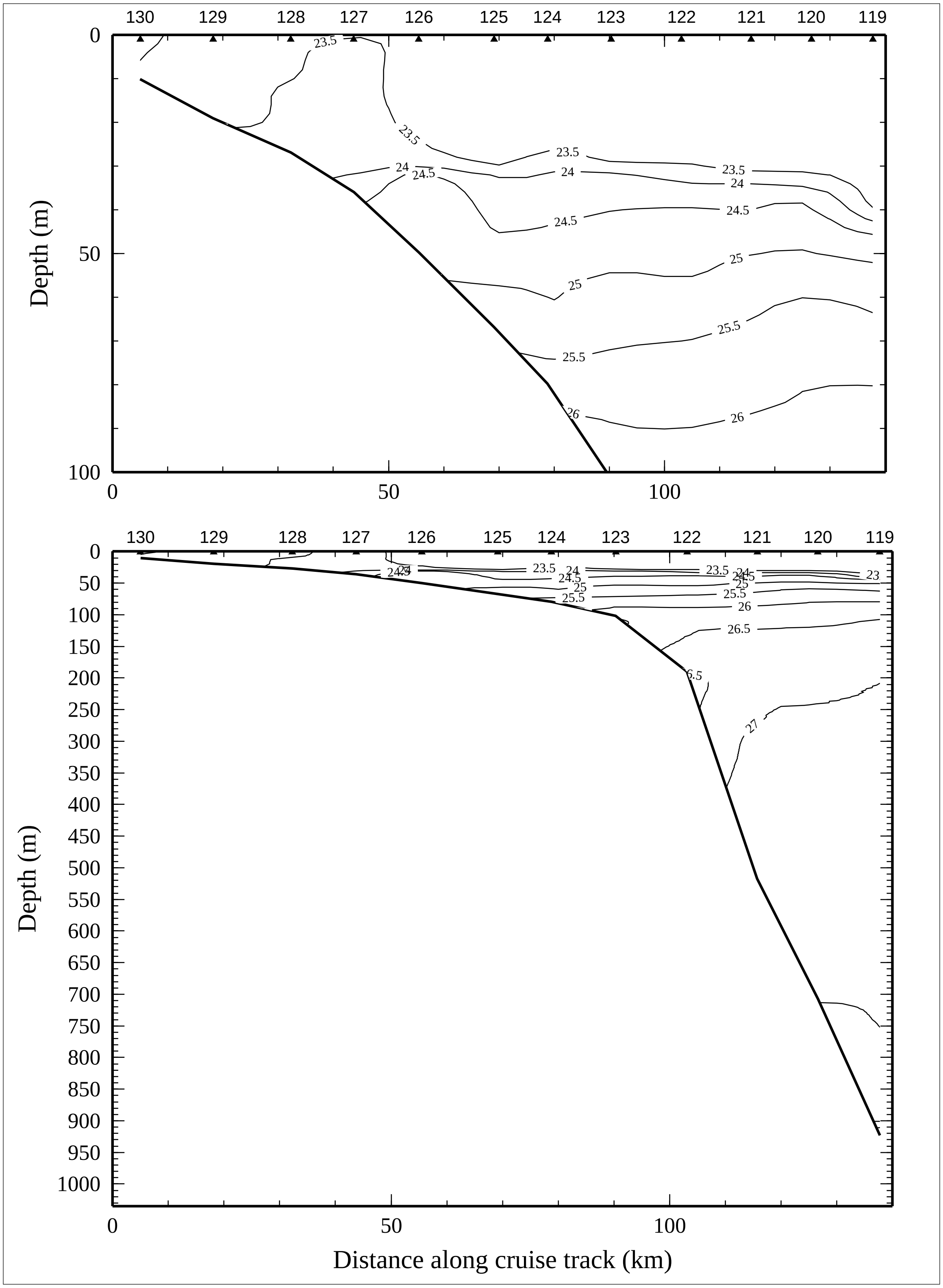

Figure 9.6.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

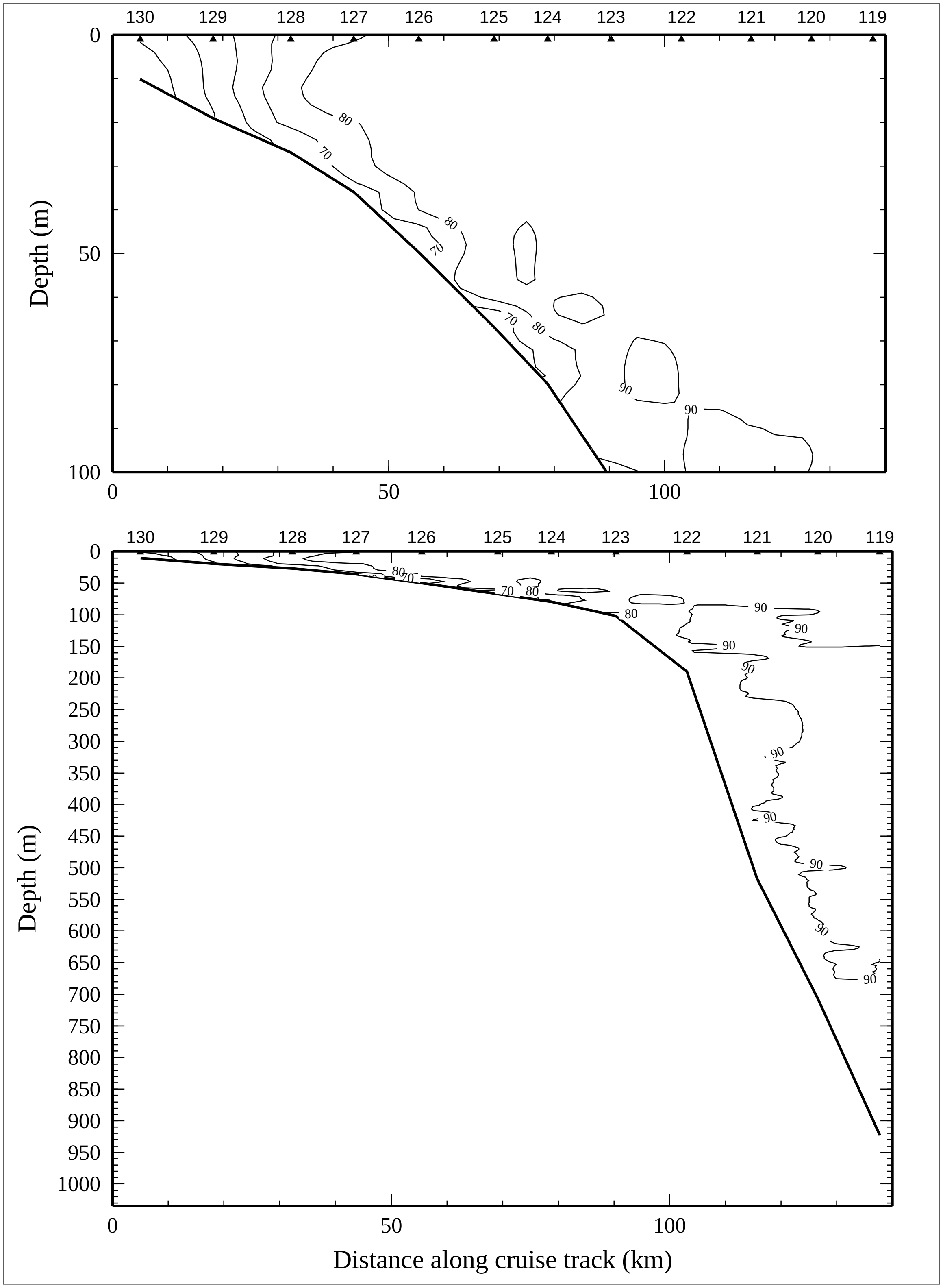

Figure 9.6.4. Percent transmission (660 nm wave length; 25-cm path length) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

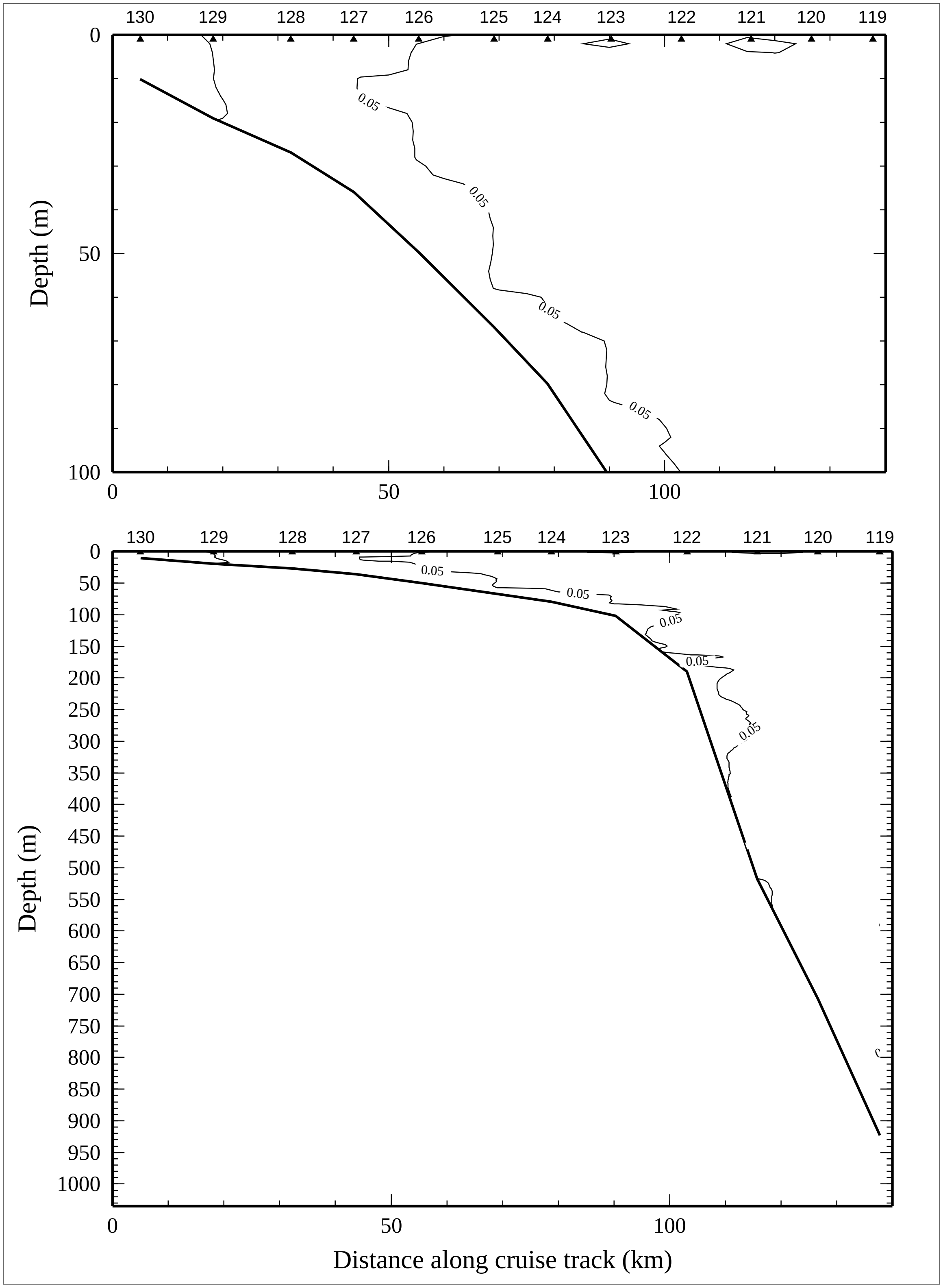

Figure 9.6.5. Optical backscatterance (voltage) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

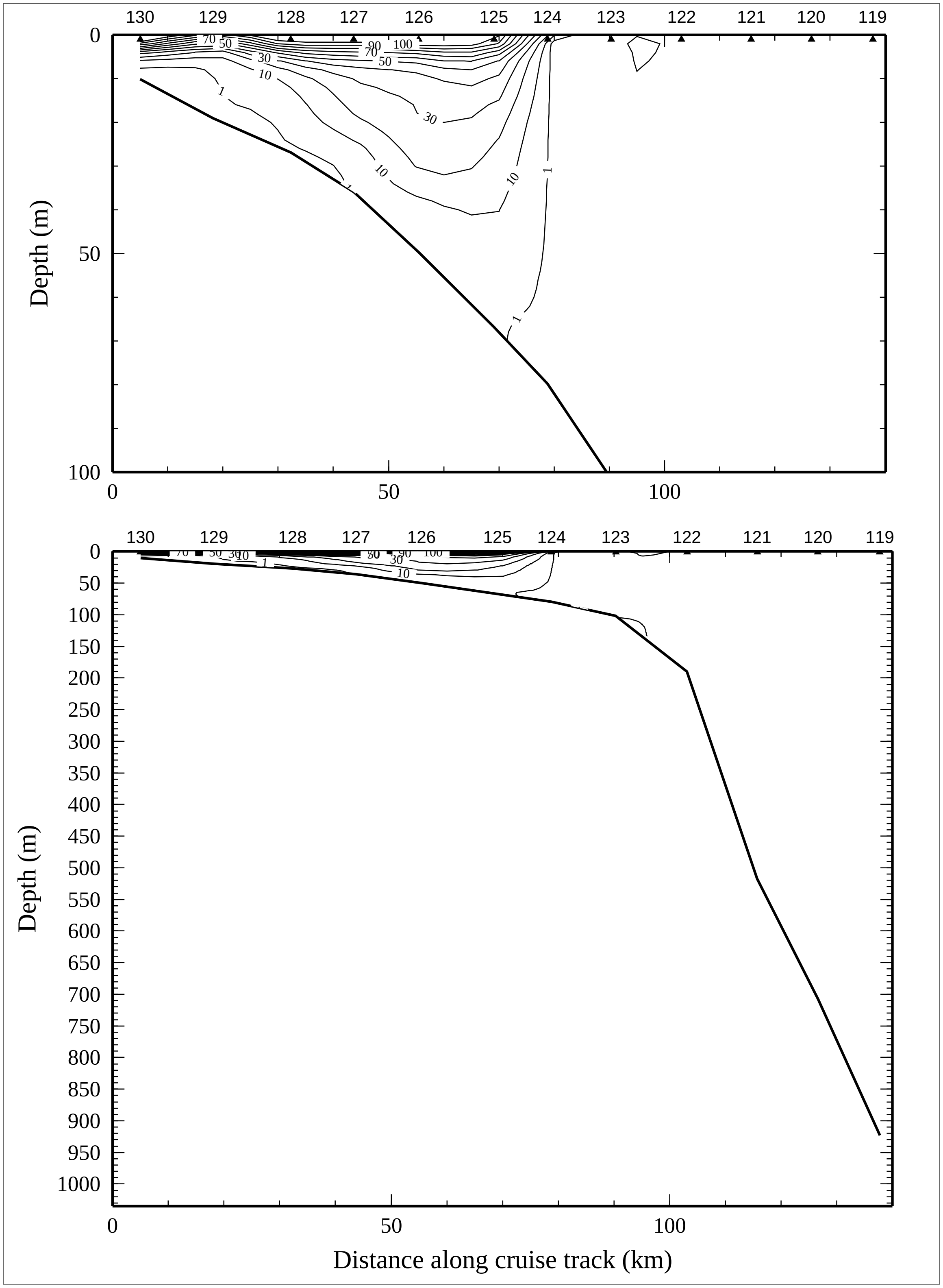

Figure 9.6.6. Downwelling irradiance as percent of surface irradiance on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

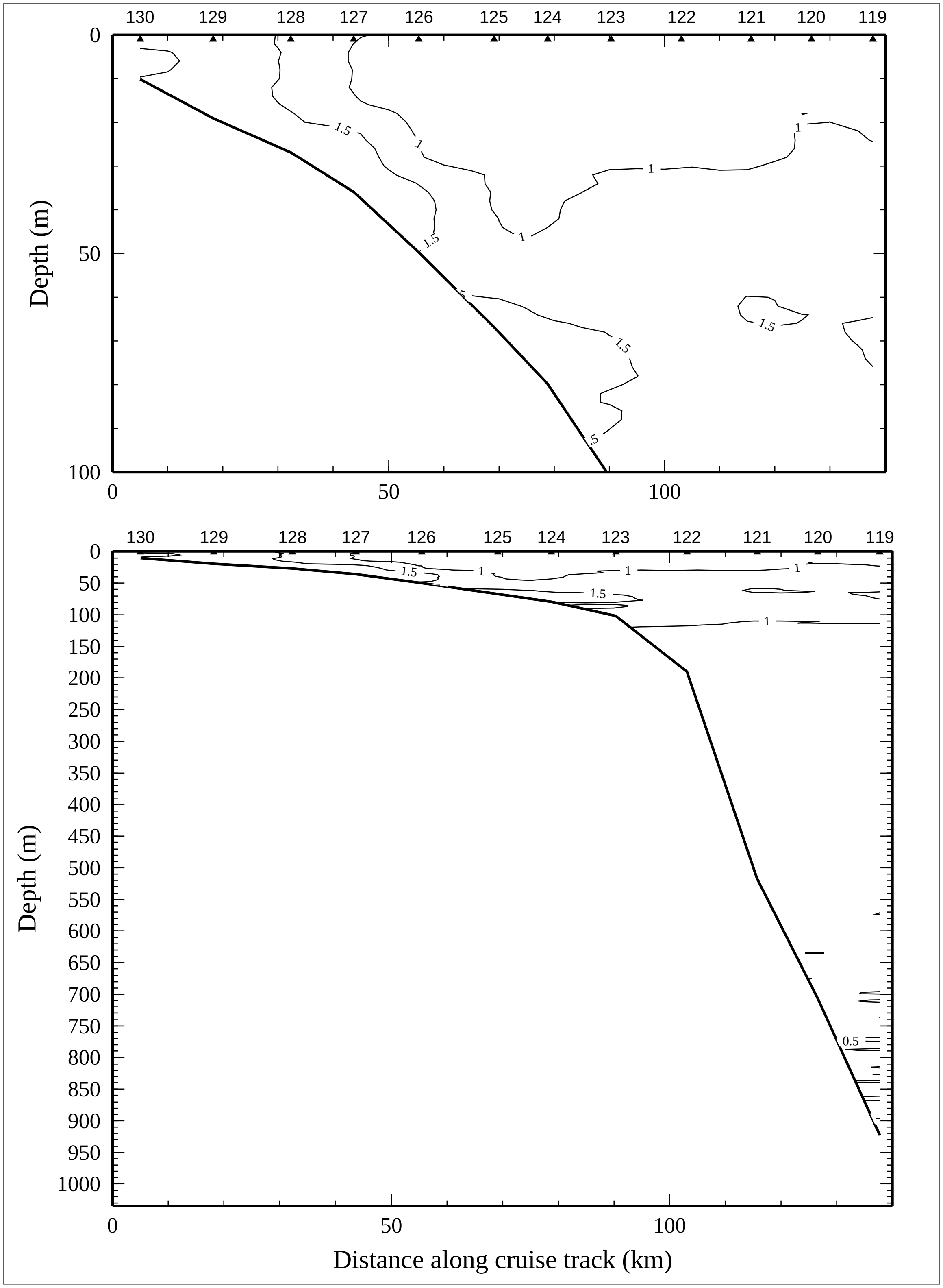

Figure 9.6.7. Relative fluorescence on line 6 of LATEX A survey H09,
26 July - 7 August 1994.

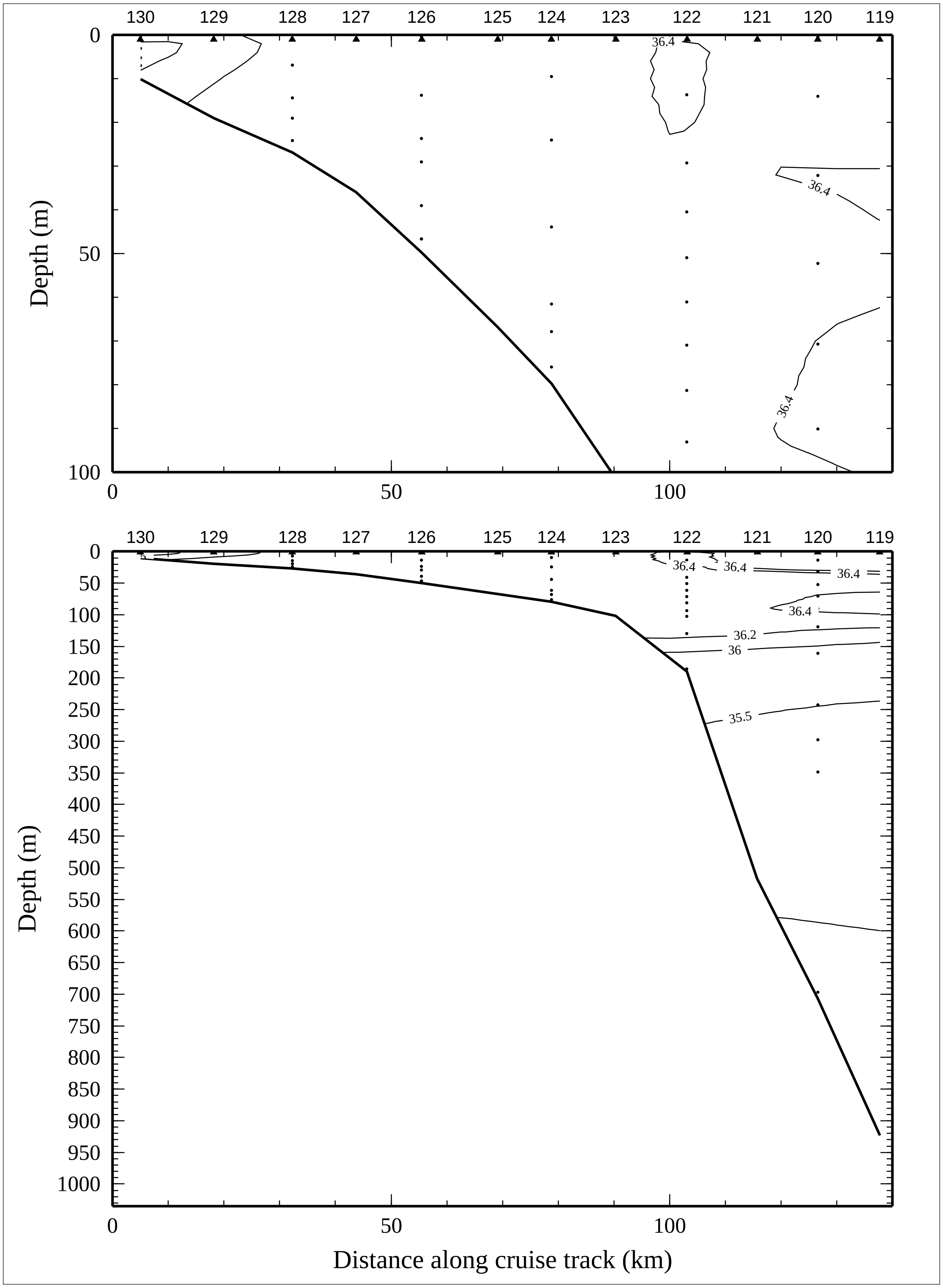

Figure 9.6.8. Bottle salinity on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

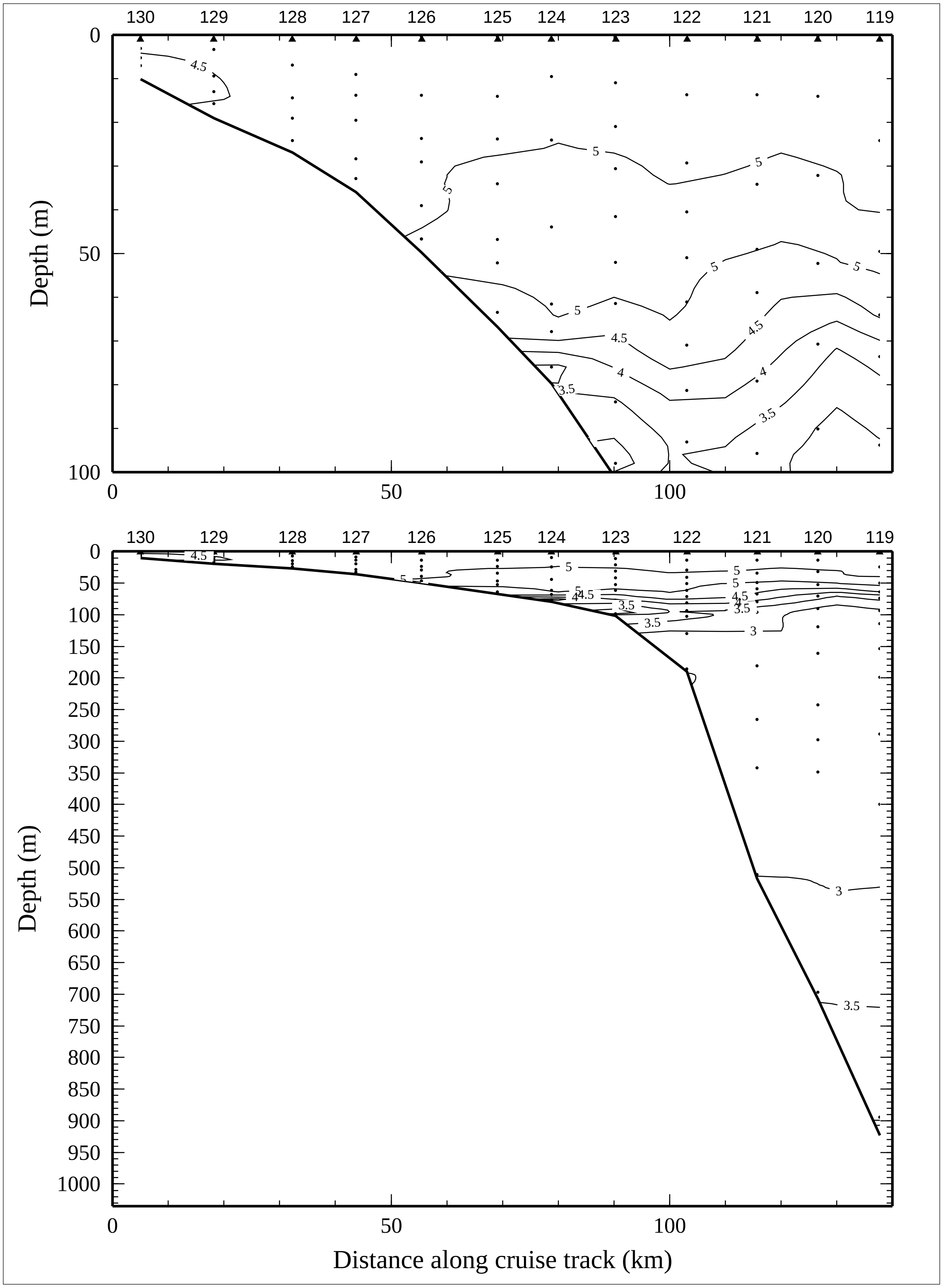

Figure 9.6.9. Dissolved oxygen (ml·l^{-1}) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

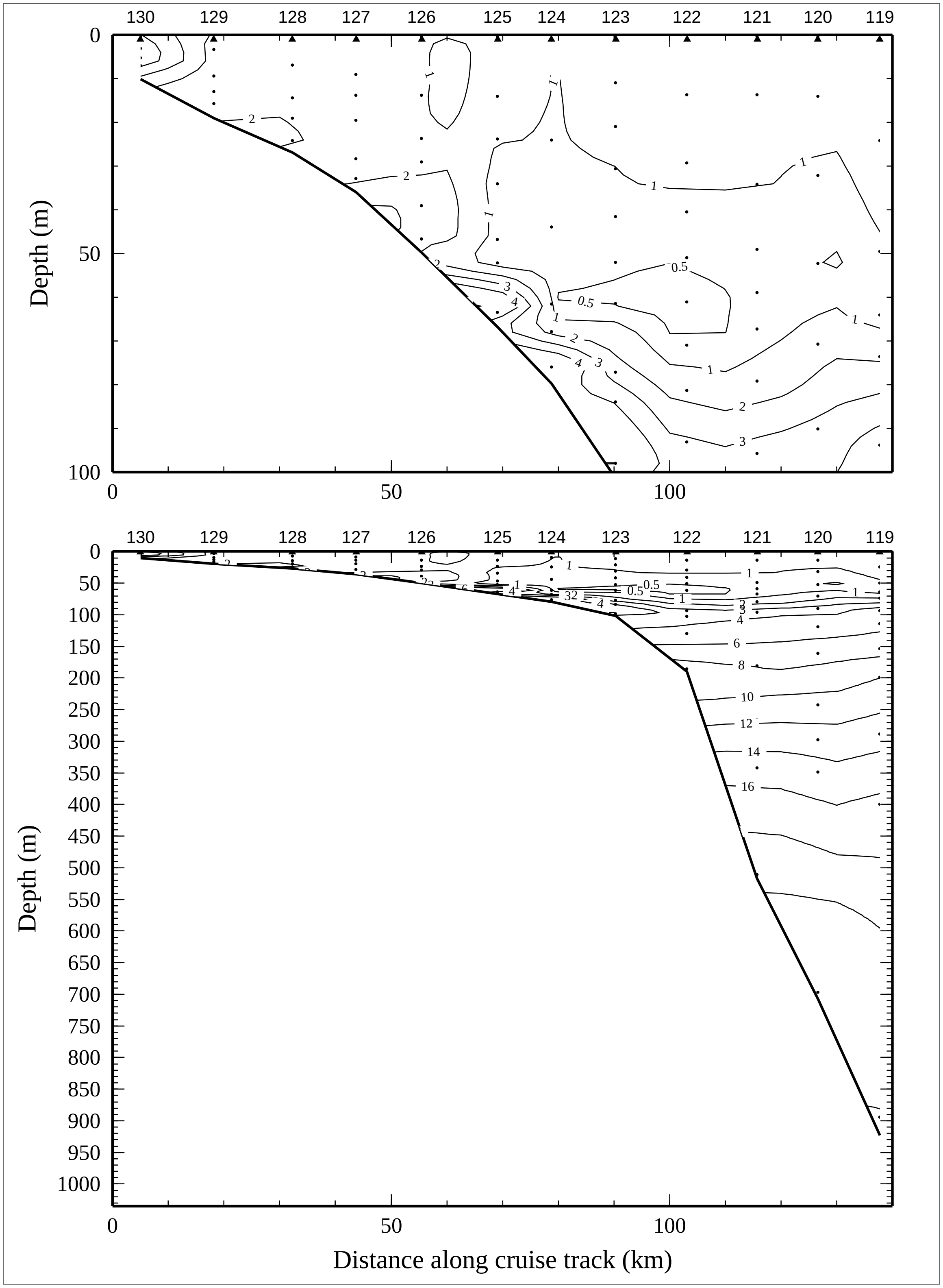

Figure 9.6.10. Silicate (μmol·l^{-1}) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

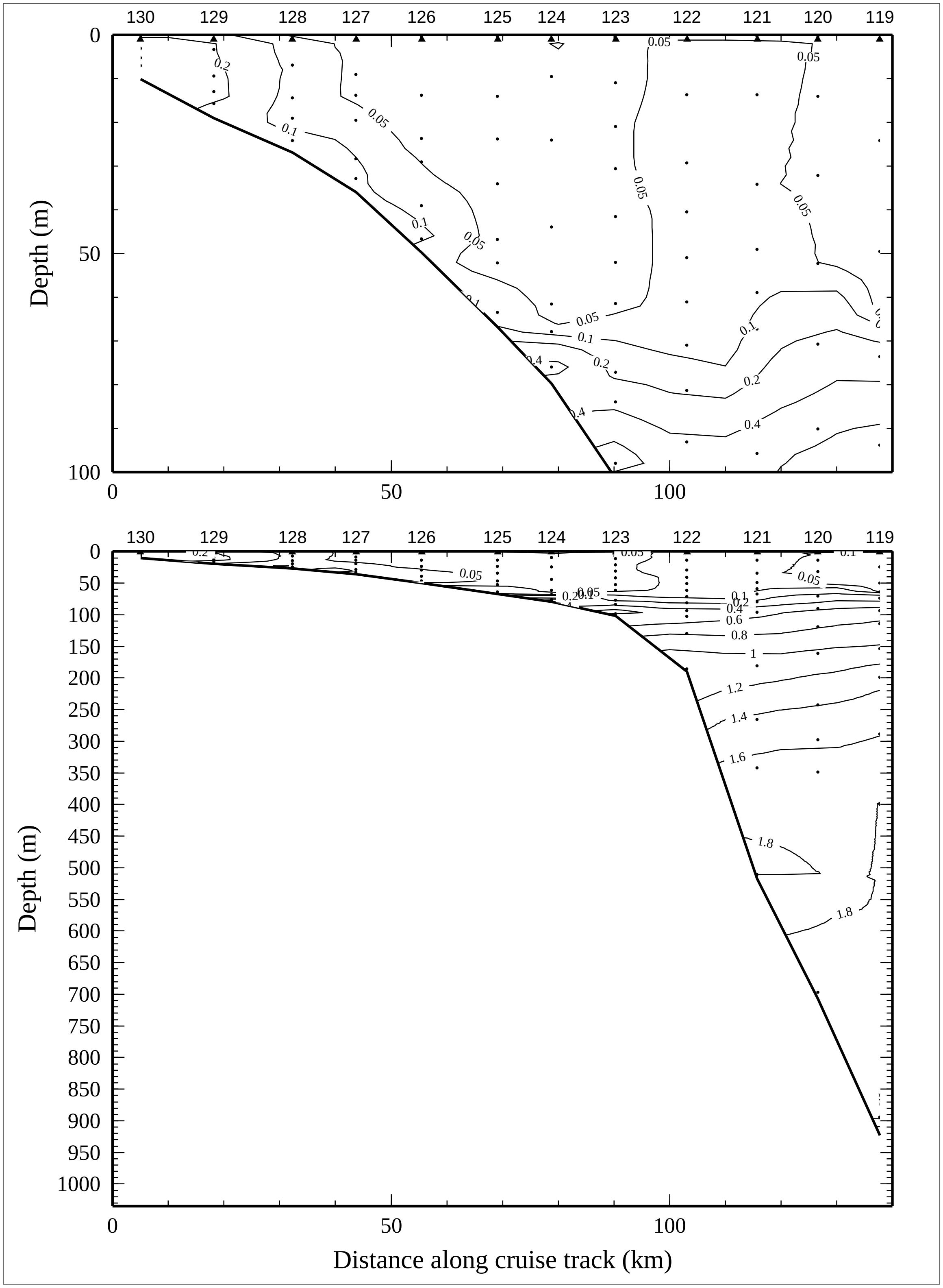

Figure 9.6.11. Phosphate (µmol·l^{-1}) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

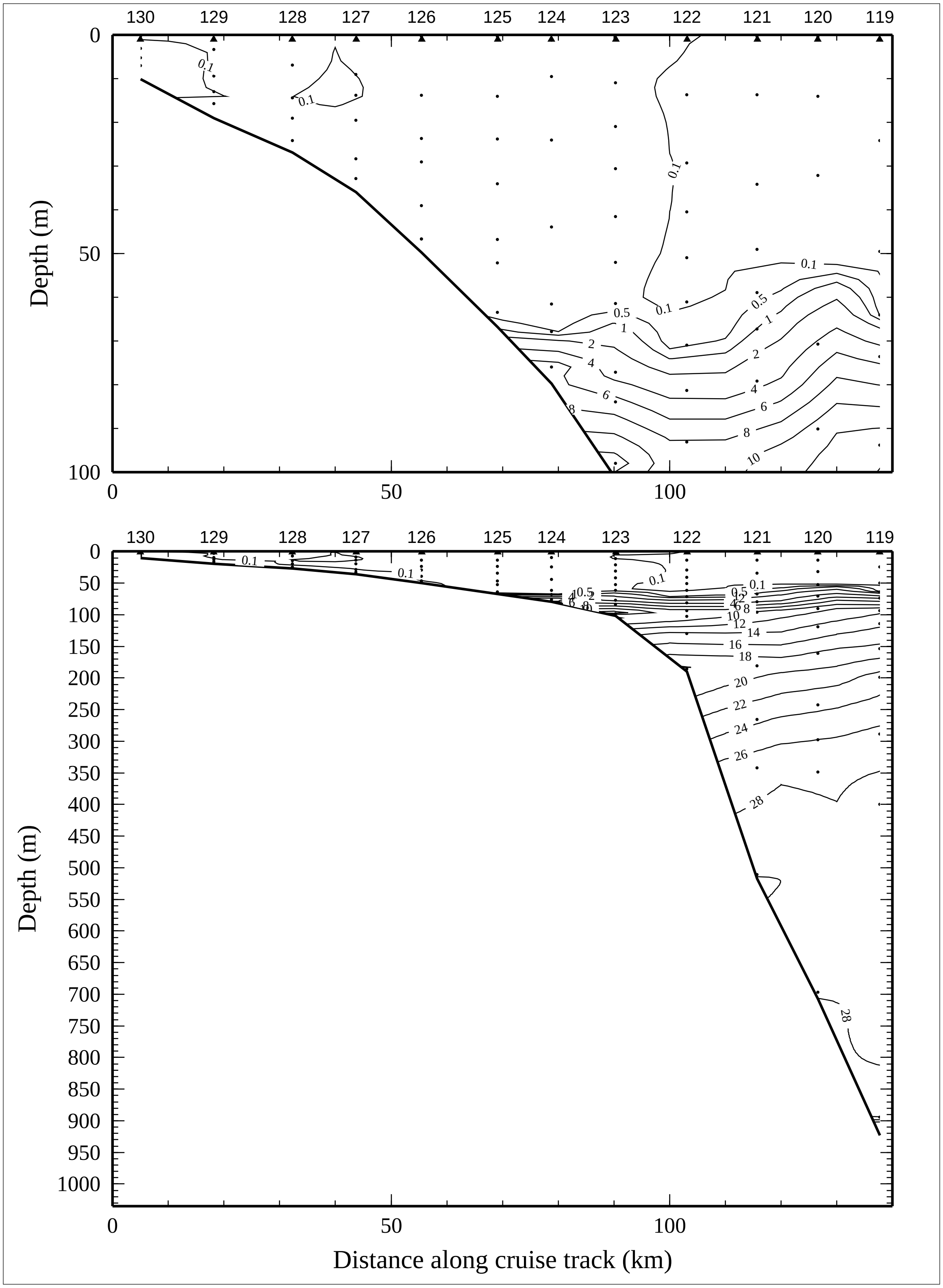

Figure 9.6.12. Nitrate (μmol·l-1) on line 6 of LATEX A survey H09,
26 July - 7 August 1994.

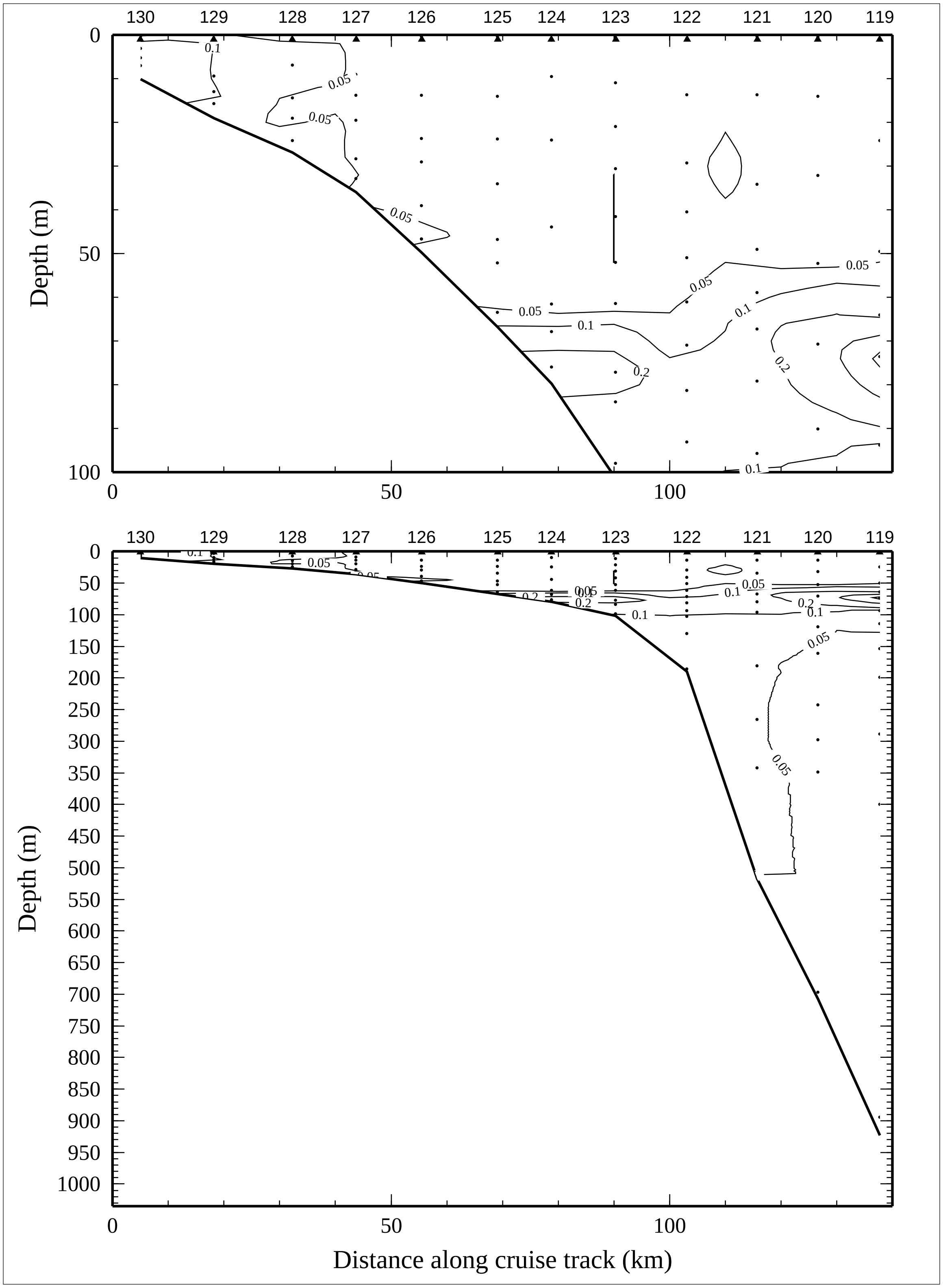

Figure 9.6.13. Nitrite (µmol·l^{-1}) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

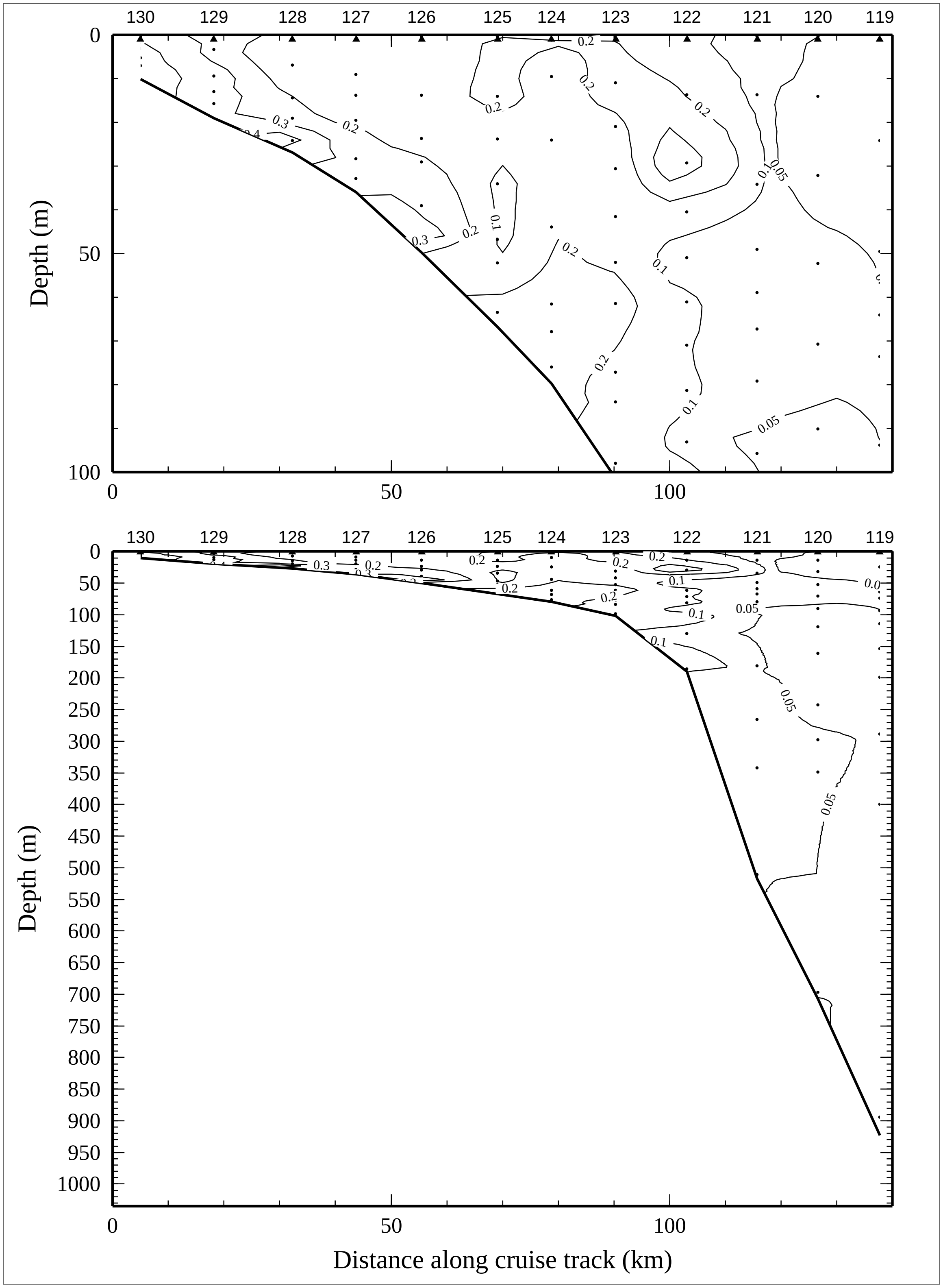

Figure 9.6.14. Ammonium (μmol·l^{-1}) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

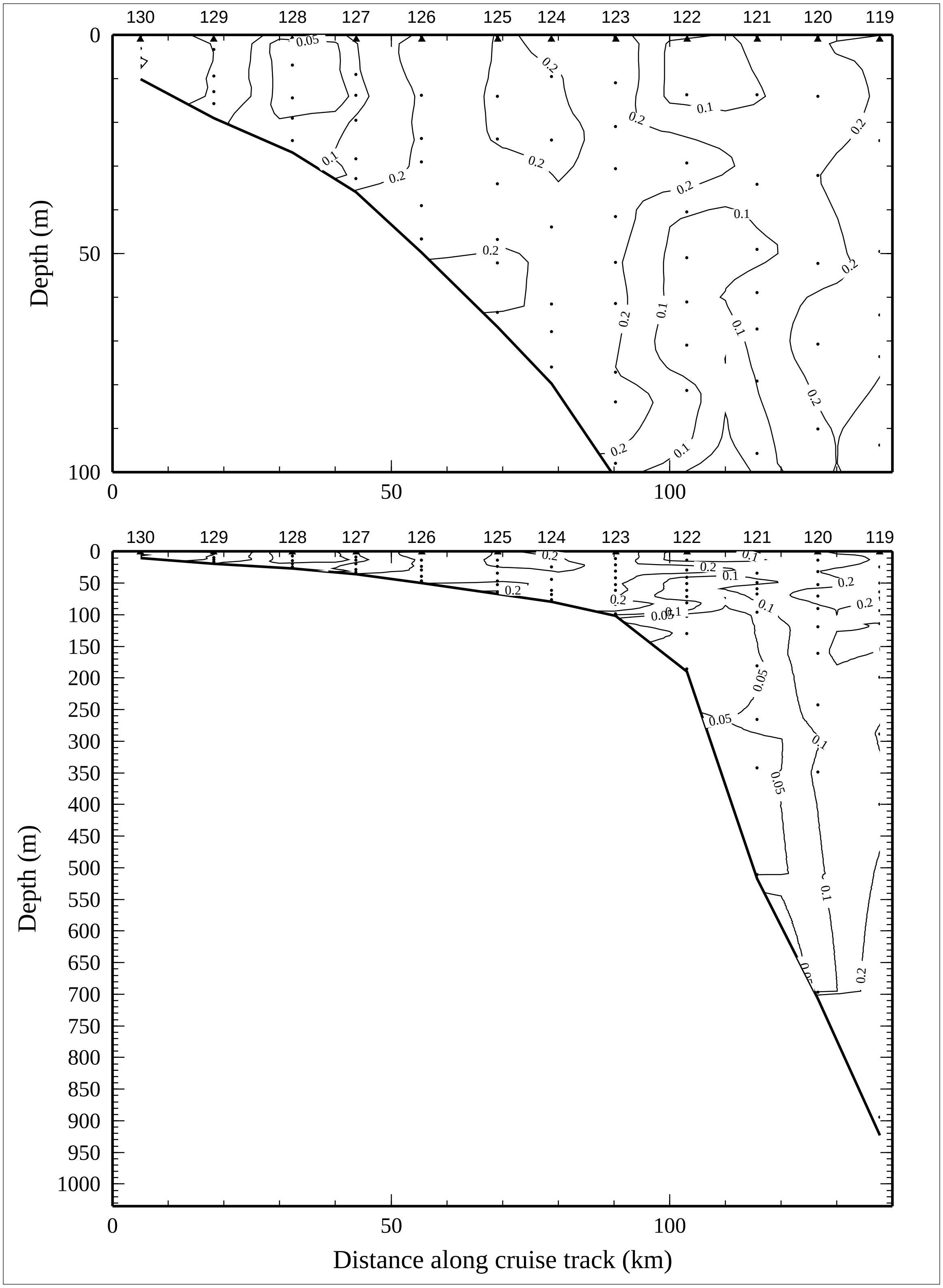

Figure 9.6.15. Urea (µmol·l^{-1}) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

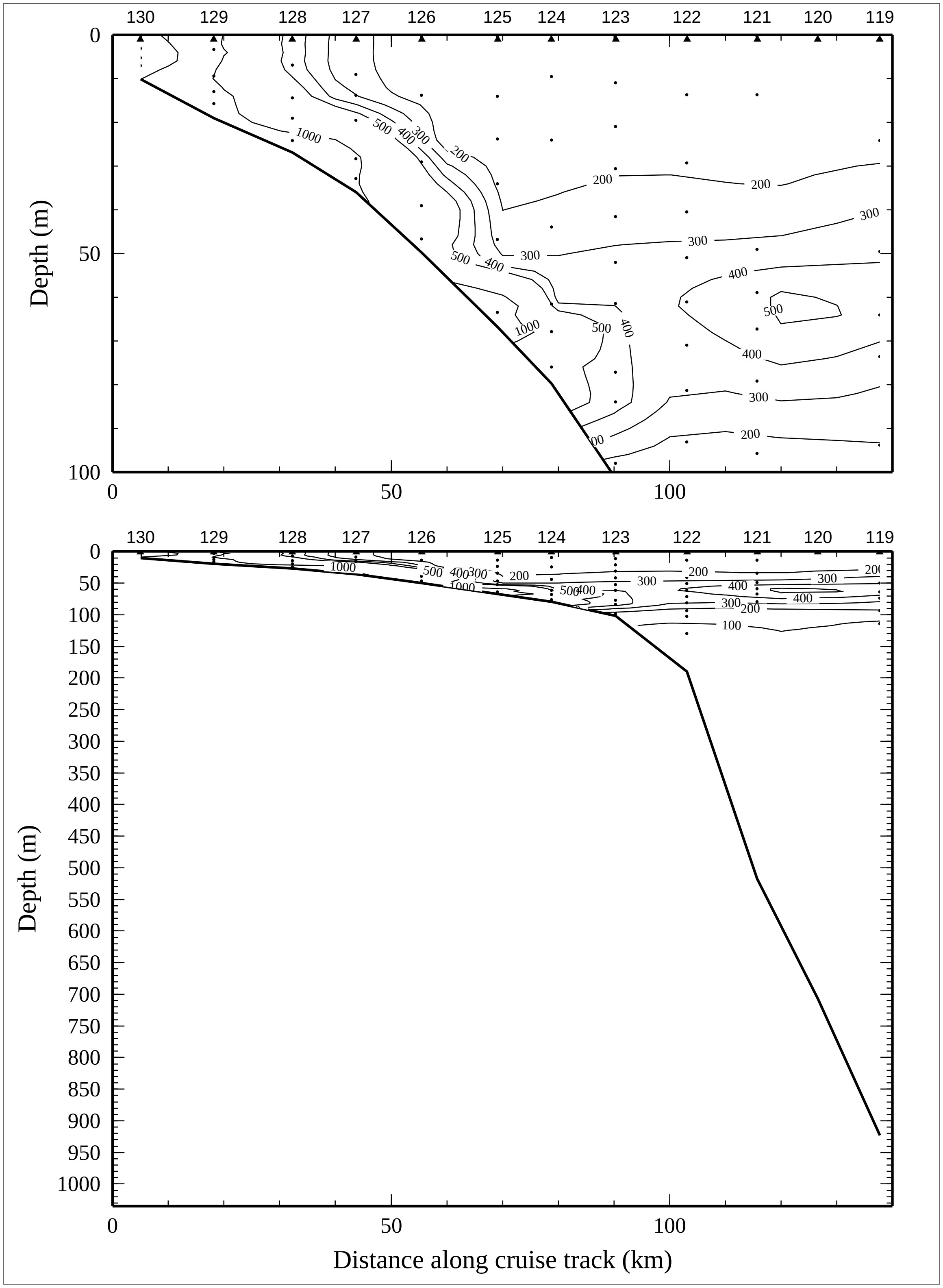

Figure 9.6.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 6 of LATEX A survey H09, 26 July - 7 August 1994.

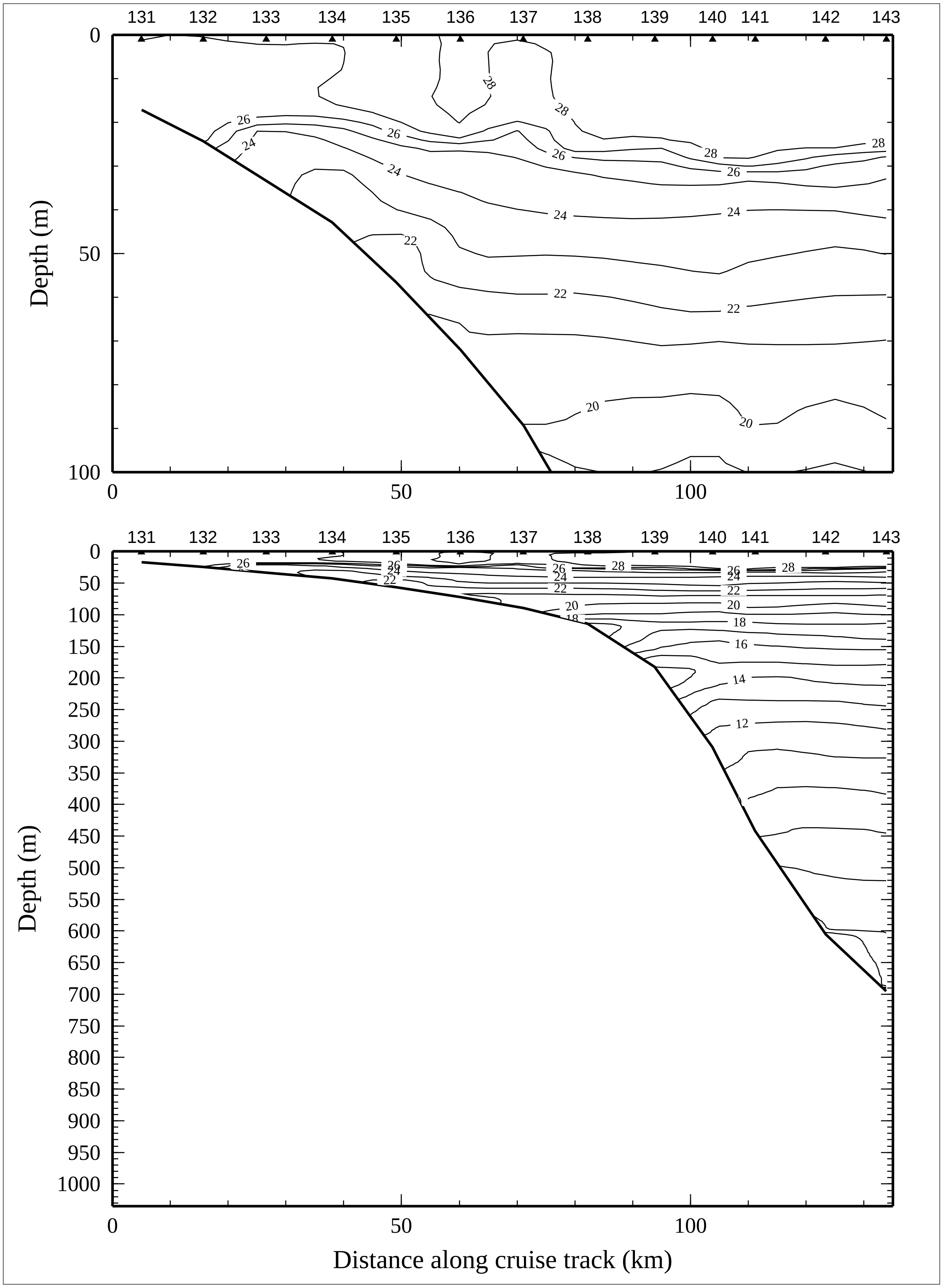

Figure 9.7.1. Potential temperature (˚C) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

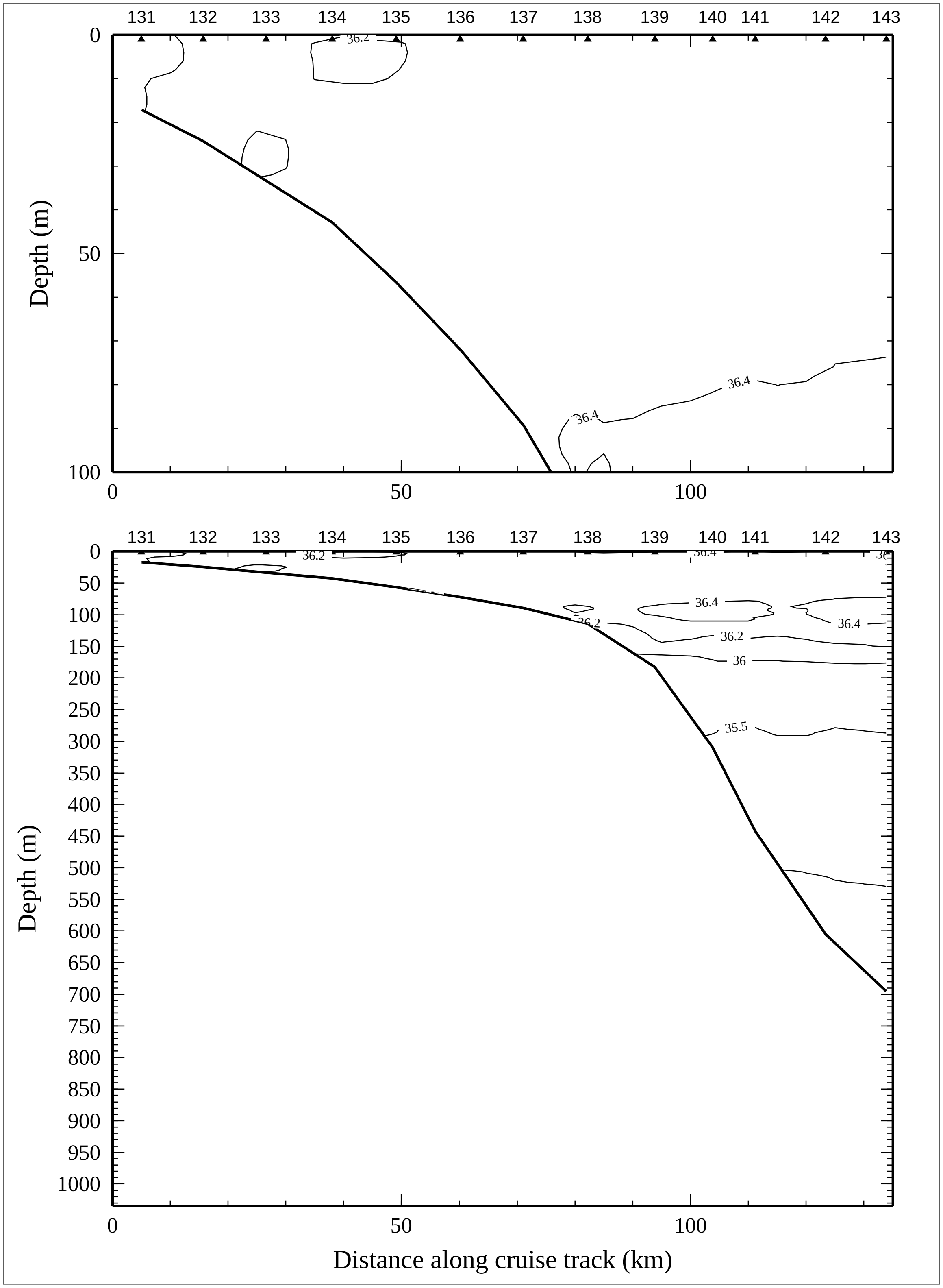

Figure 9.7.2. Salinity, derived from CTD data, on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

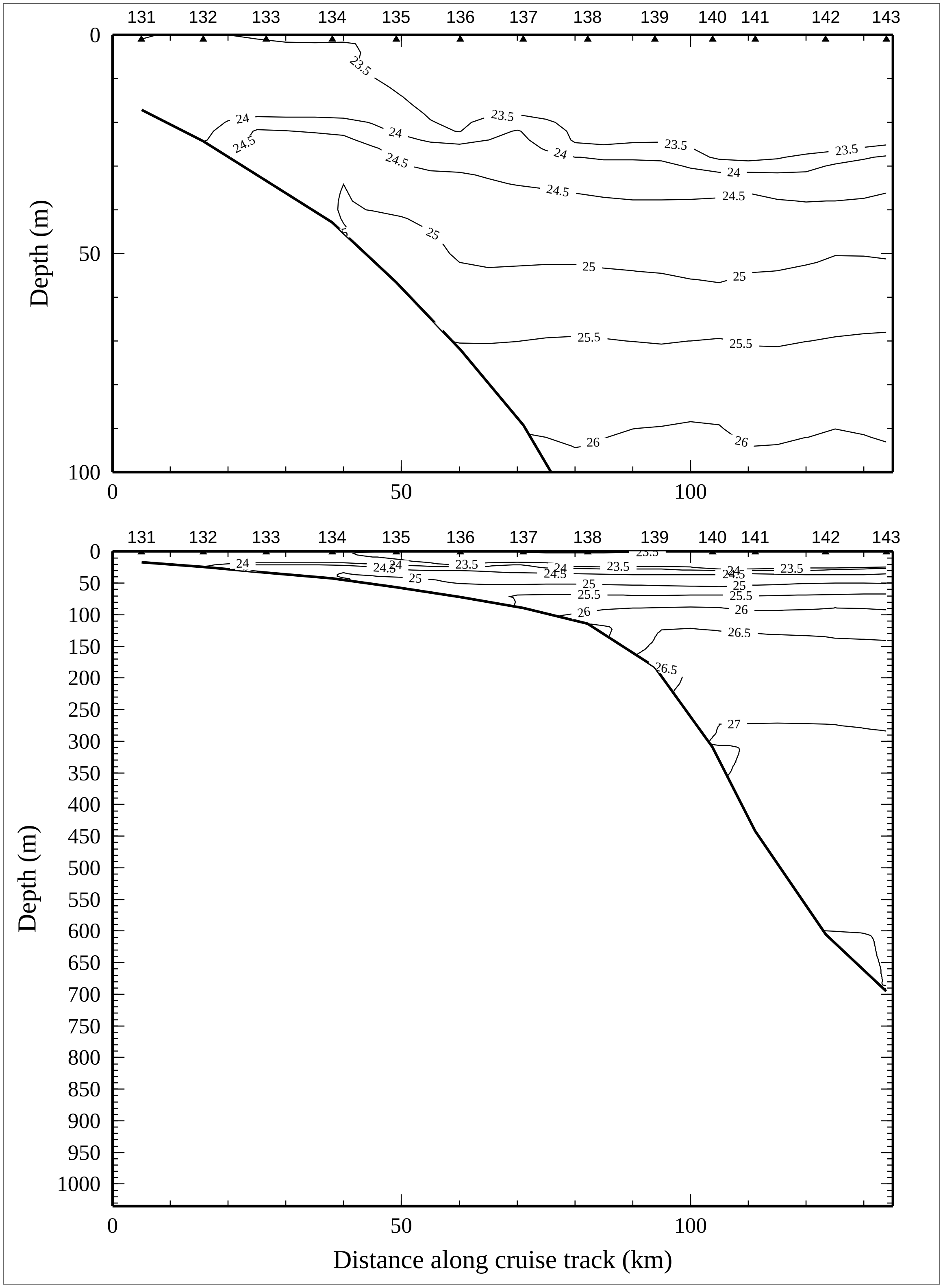

Figure 9.7.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

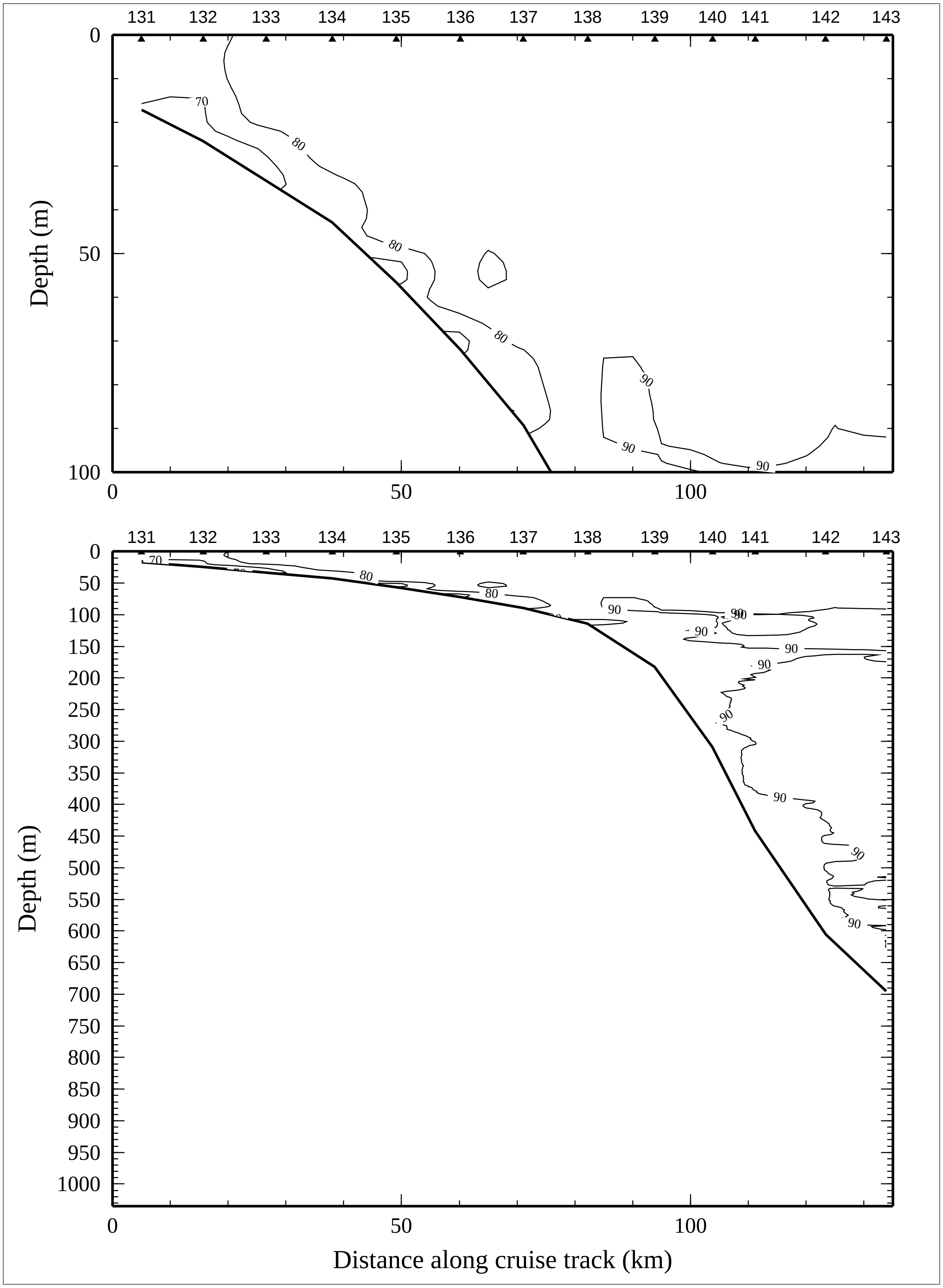

Figure 9.7.4. Percent transmission (660 nm wave length; 25-cm path length) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

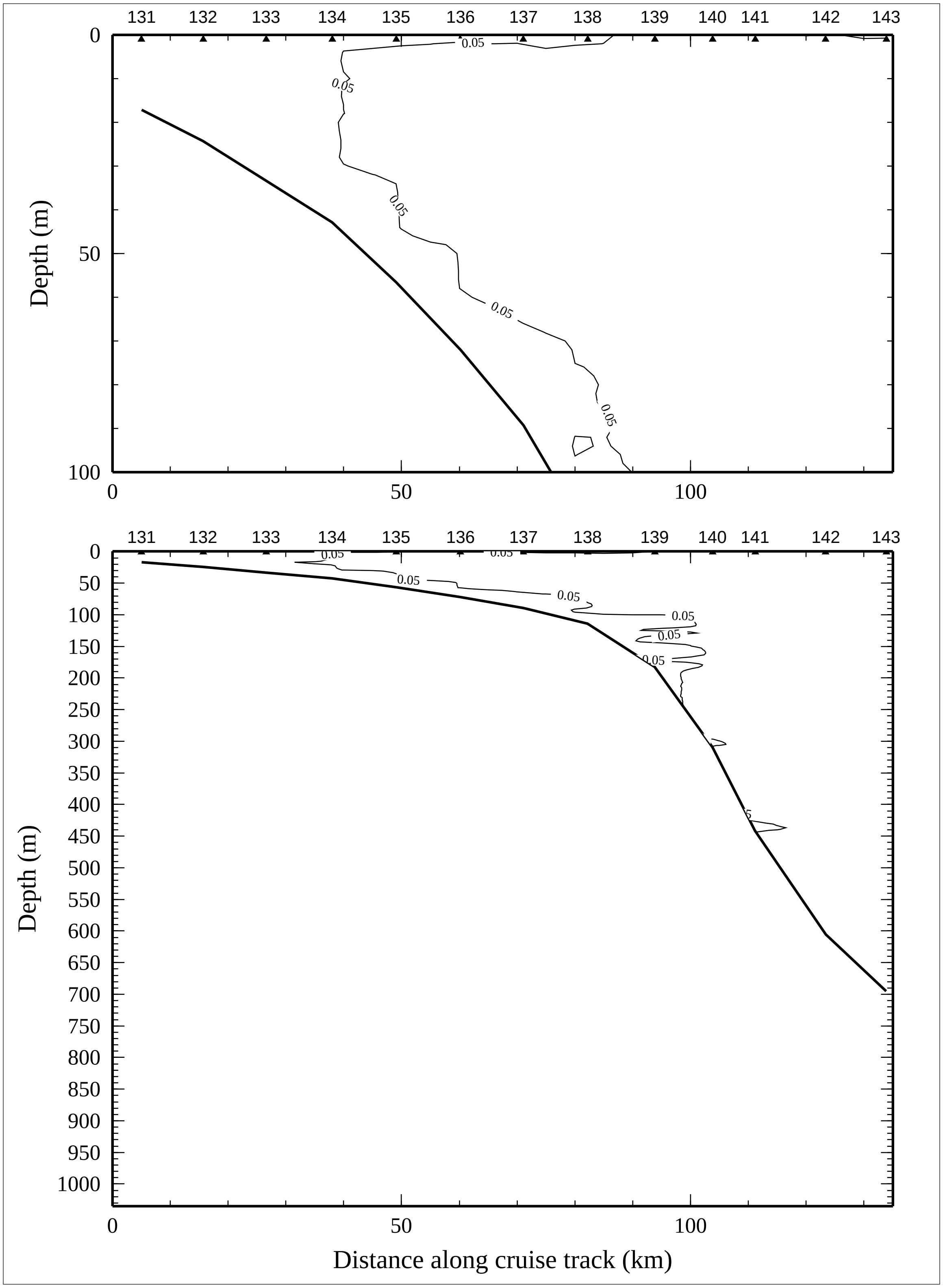

Figure 9.7.5. Optical backscatterance (voltage) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

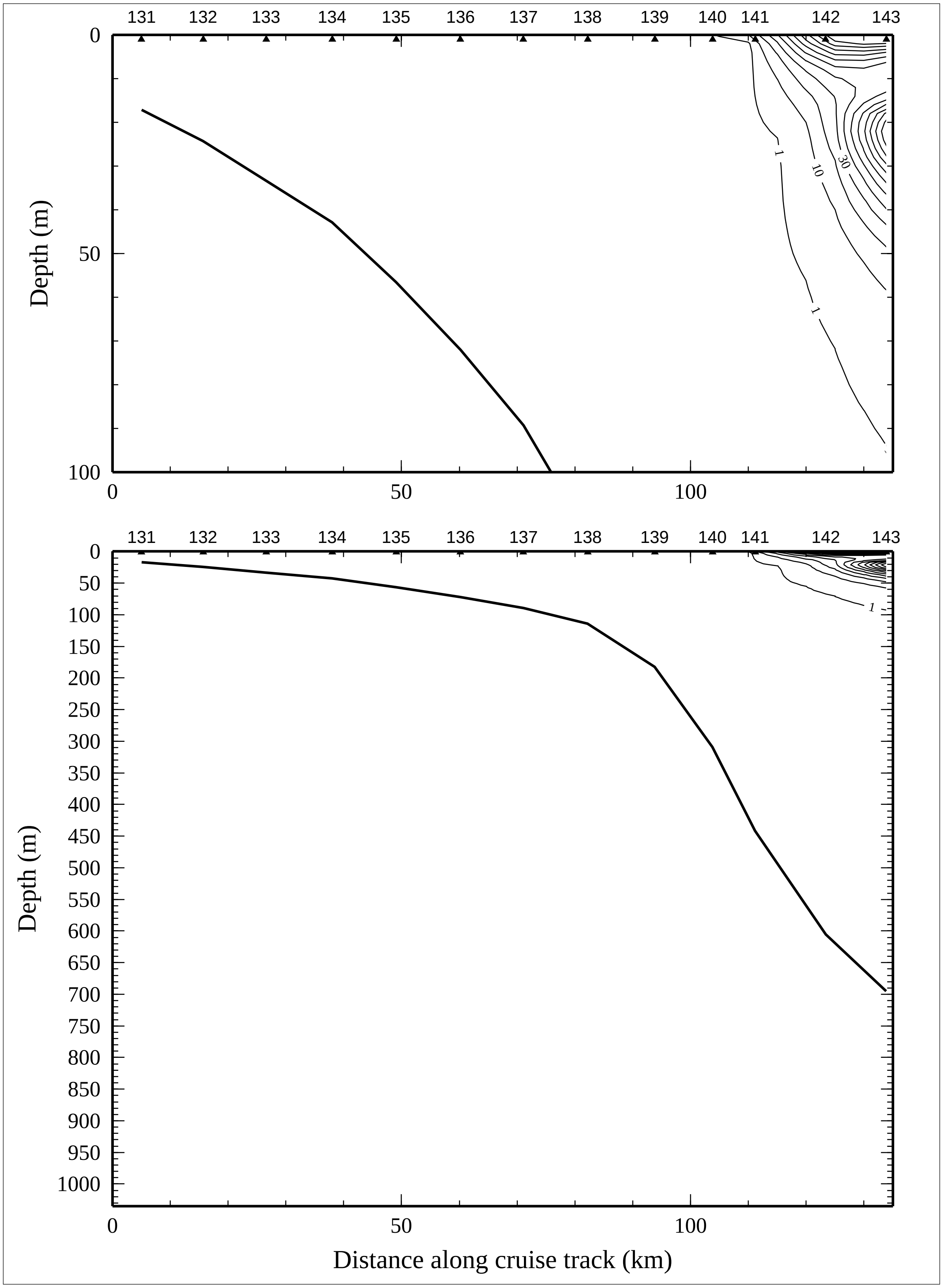

Figure 9.7.6. Downwelling irradiance as percent of surface irradiance on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

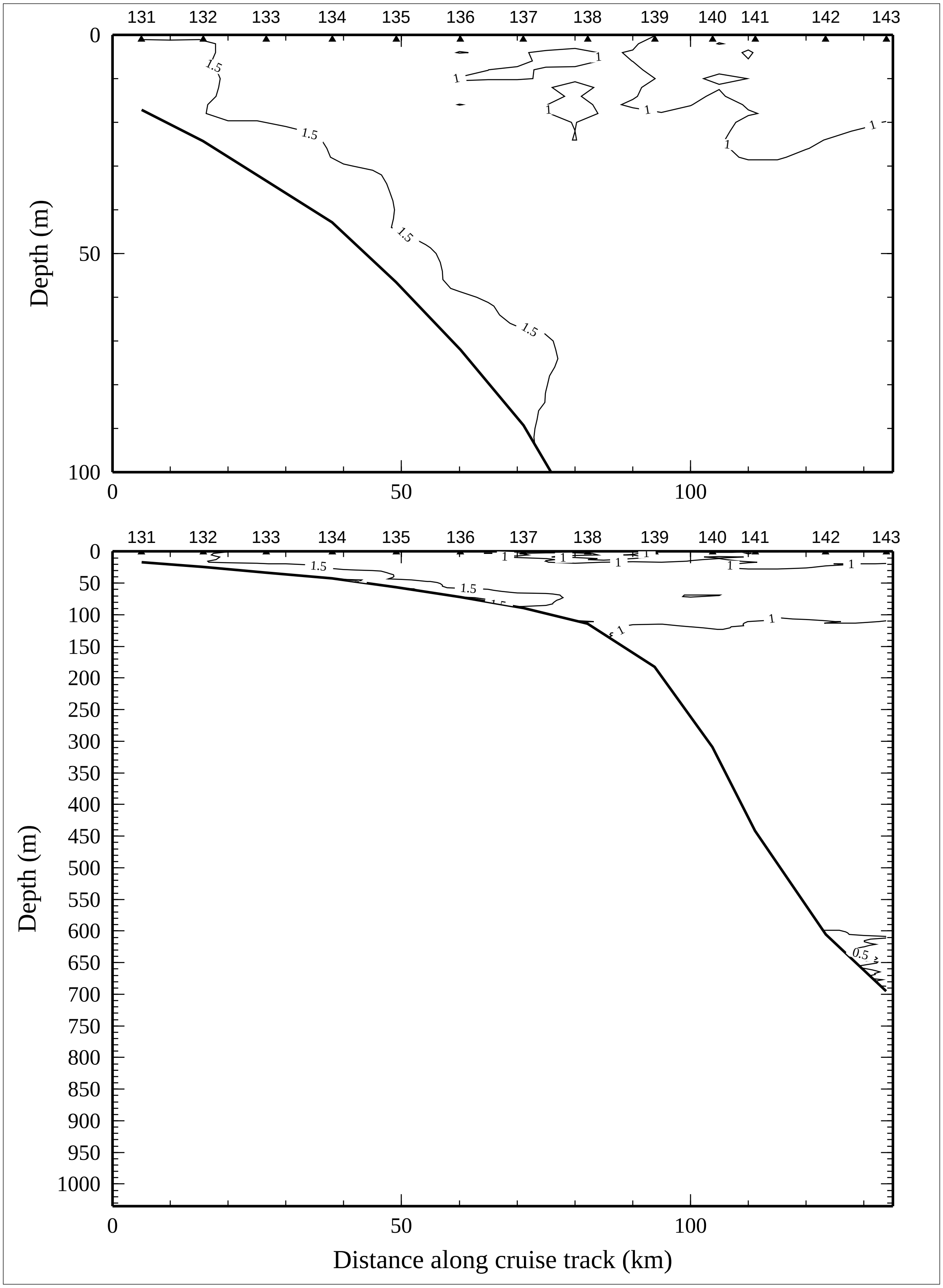

Figure 9.7.7. Relative fluorescence on line 7 of LATEX A survey H09,
26 July - 7 August 1994.

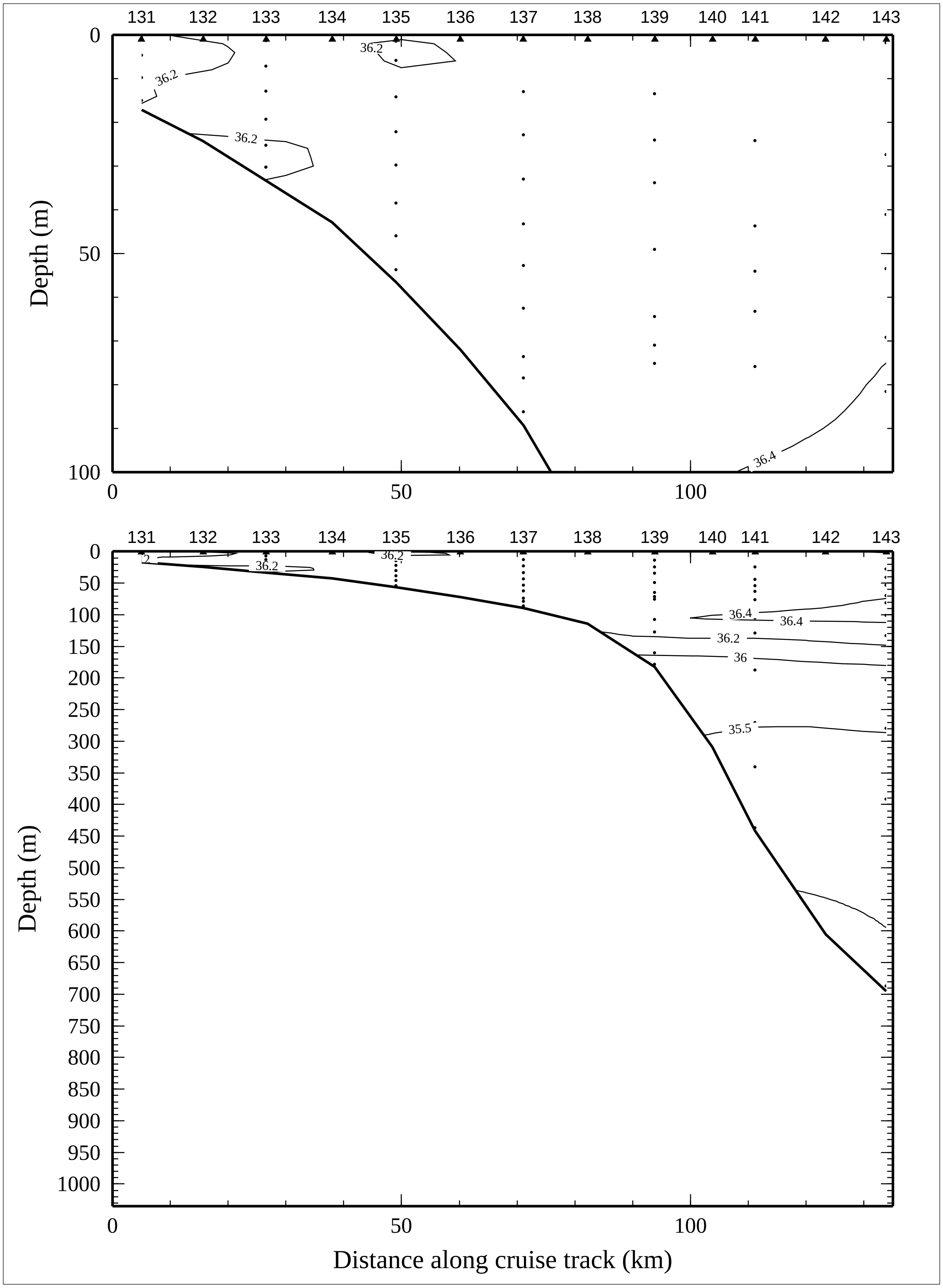

Figure 9.7.8. Bottle salinity on line 7 of LATEX A survey H09,
26 July - 7 August 1994.

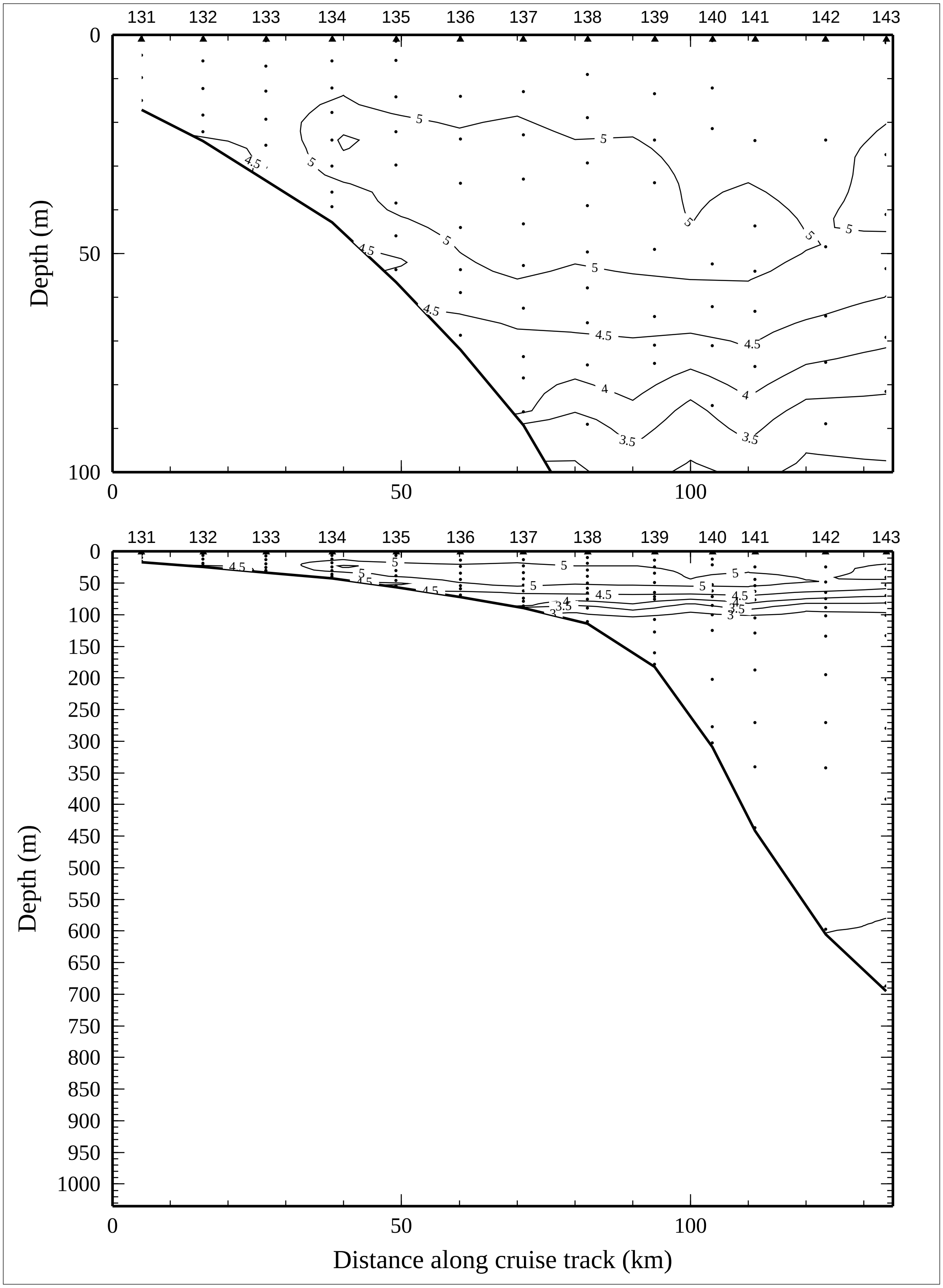

Figure 9.7.9. Dissolved oxygen (ml·l^{-1}) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

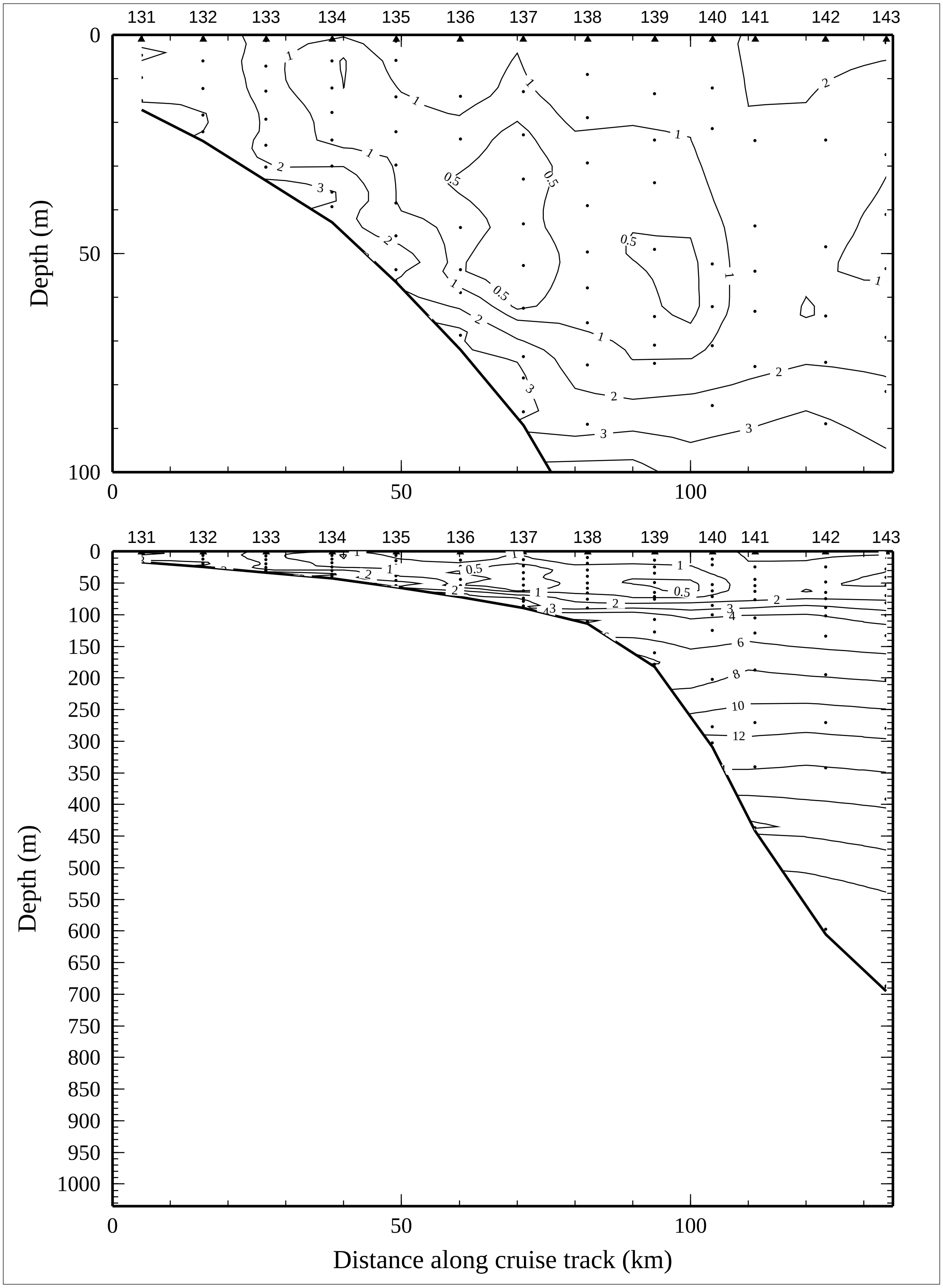

Figure 9.7.10. Silicate (μmol·l^{-1}) on line 7 of LATEX A survey H09,
26 July - 7 August 1994.

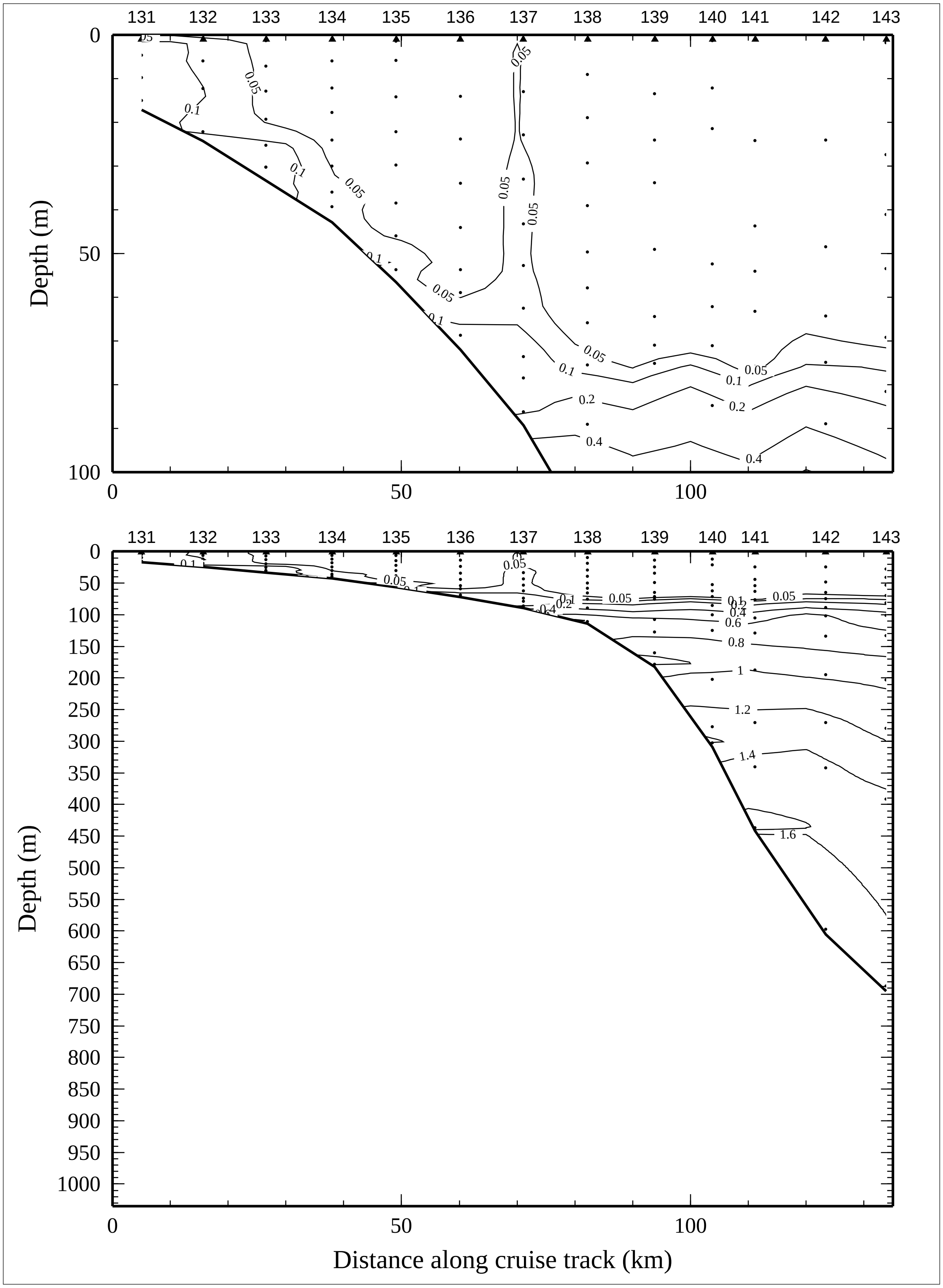

Figure 9.7.11. Phosphate (µmol·l^{-1}) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

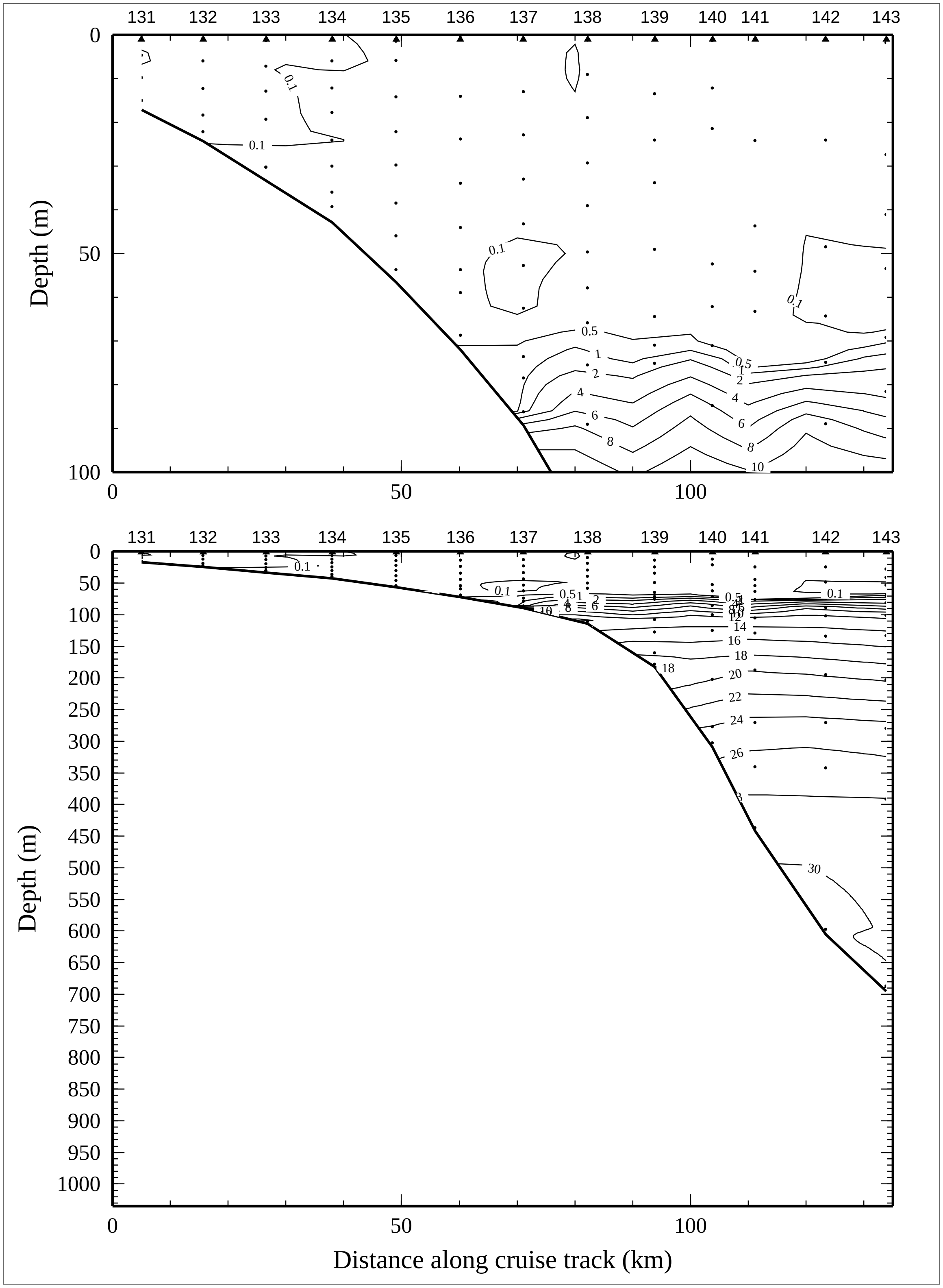

Figure 9.7.12. Nitrate (μmol·l⁻¹) on line 7 of LATEX A survey H09,
26 July - 7 August 1994.

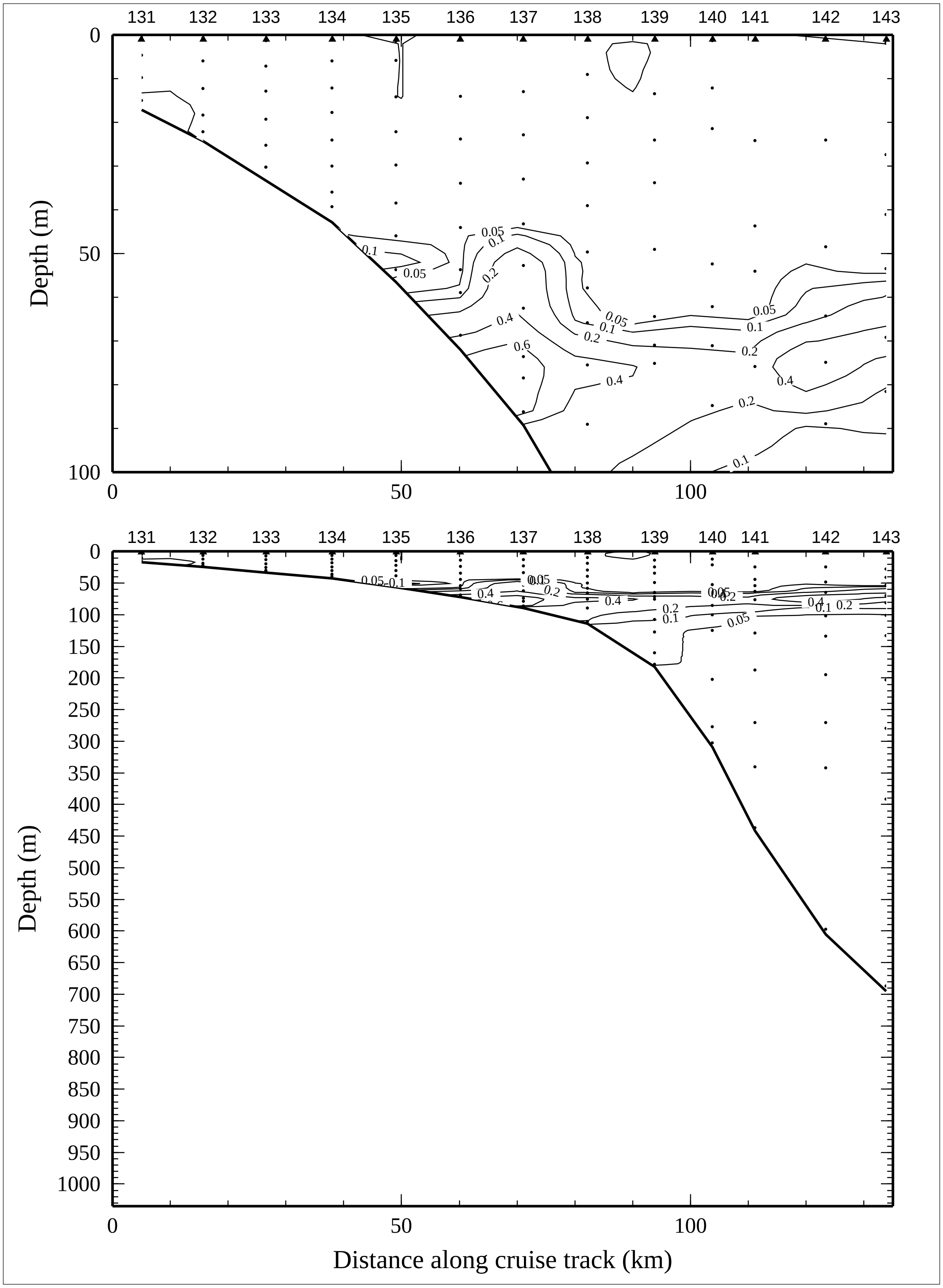

Figure 9.7.13. Nitrite (µmol·l⁻¹) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

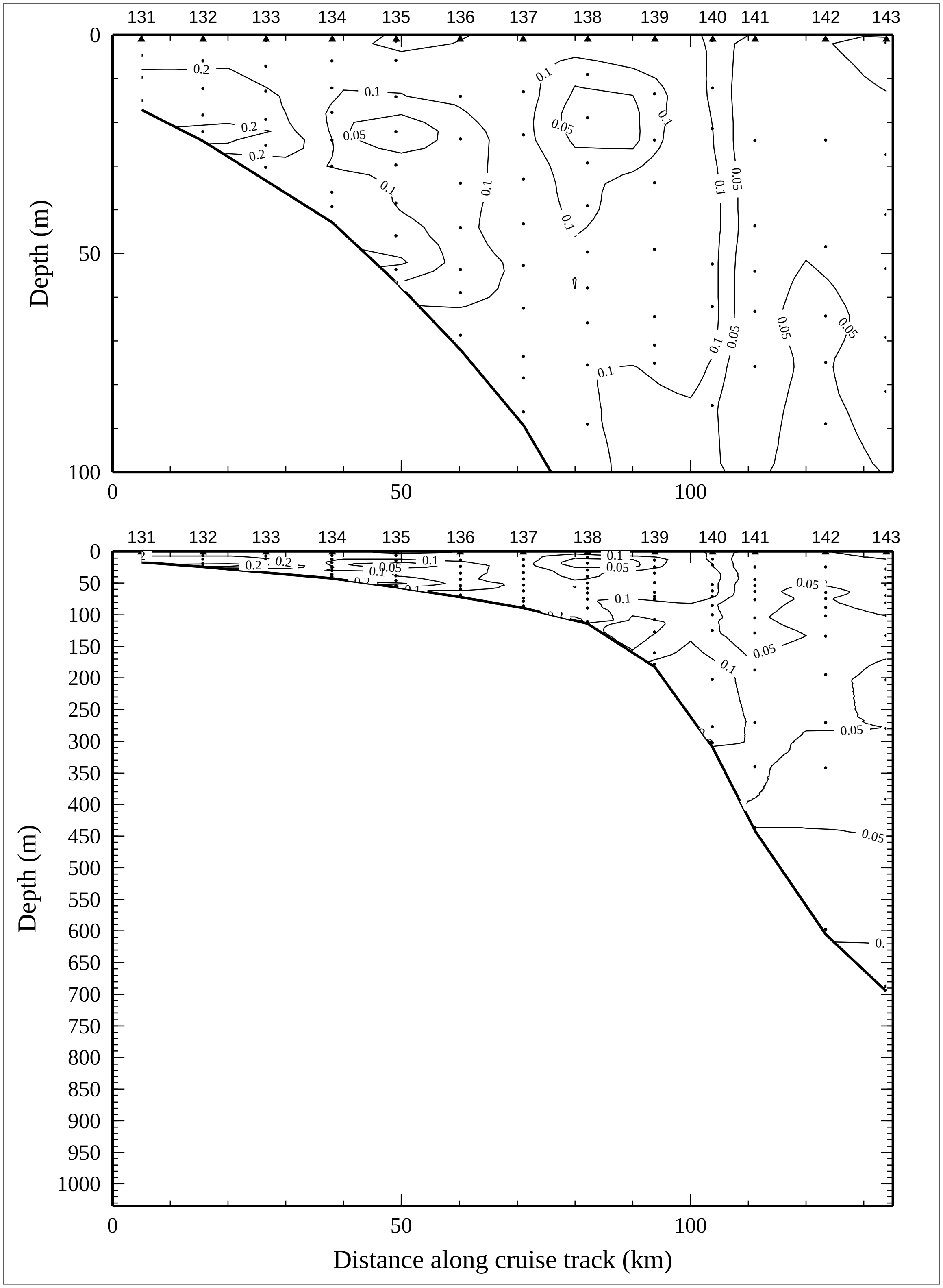

Figure 9.7.14. Ammonium (μmol·l-1) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

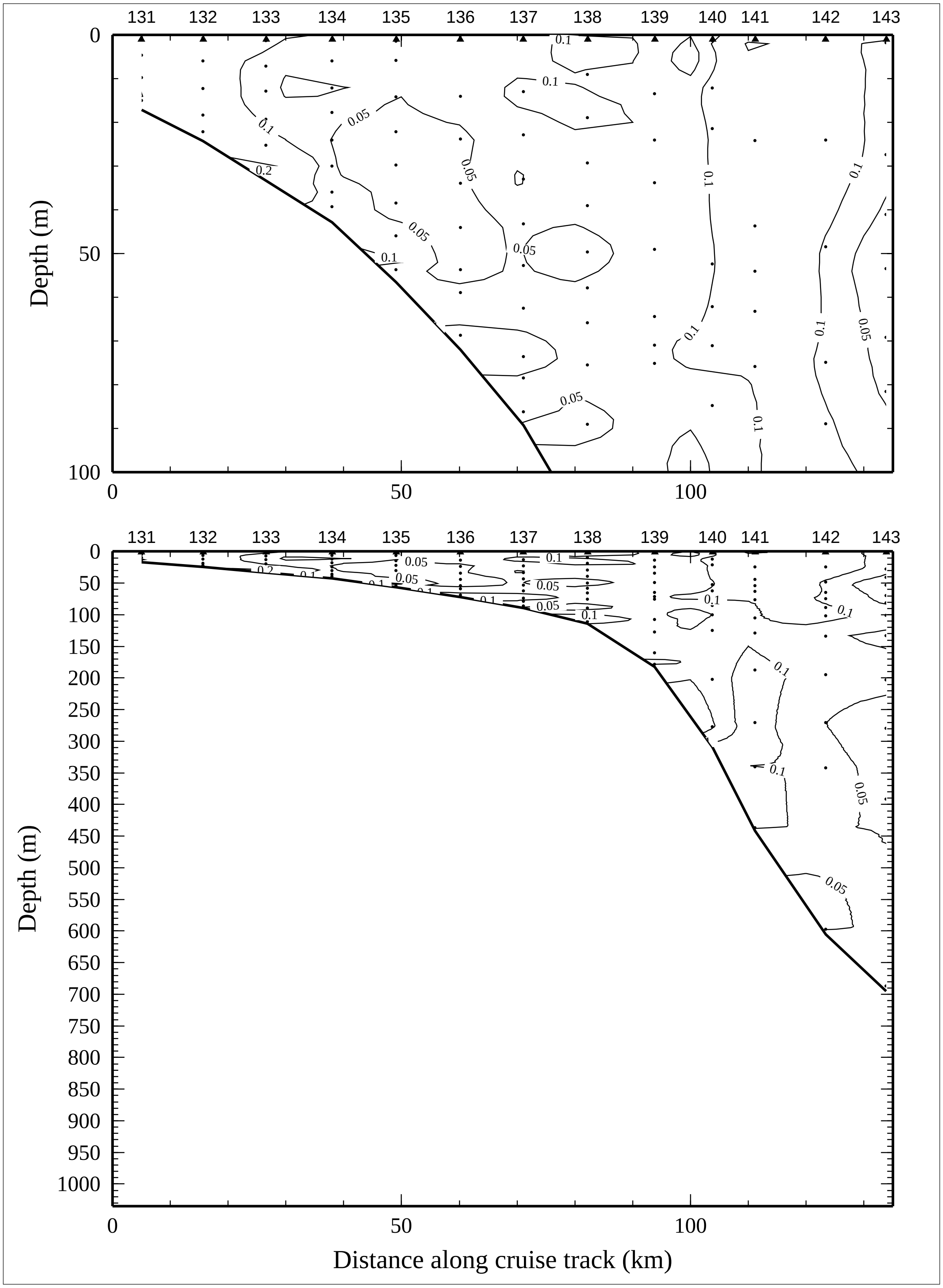

Figure 9.7.15. Urea ($\mu mol \cdot l^{-1}$) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

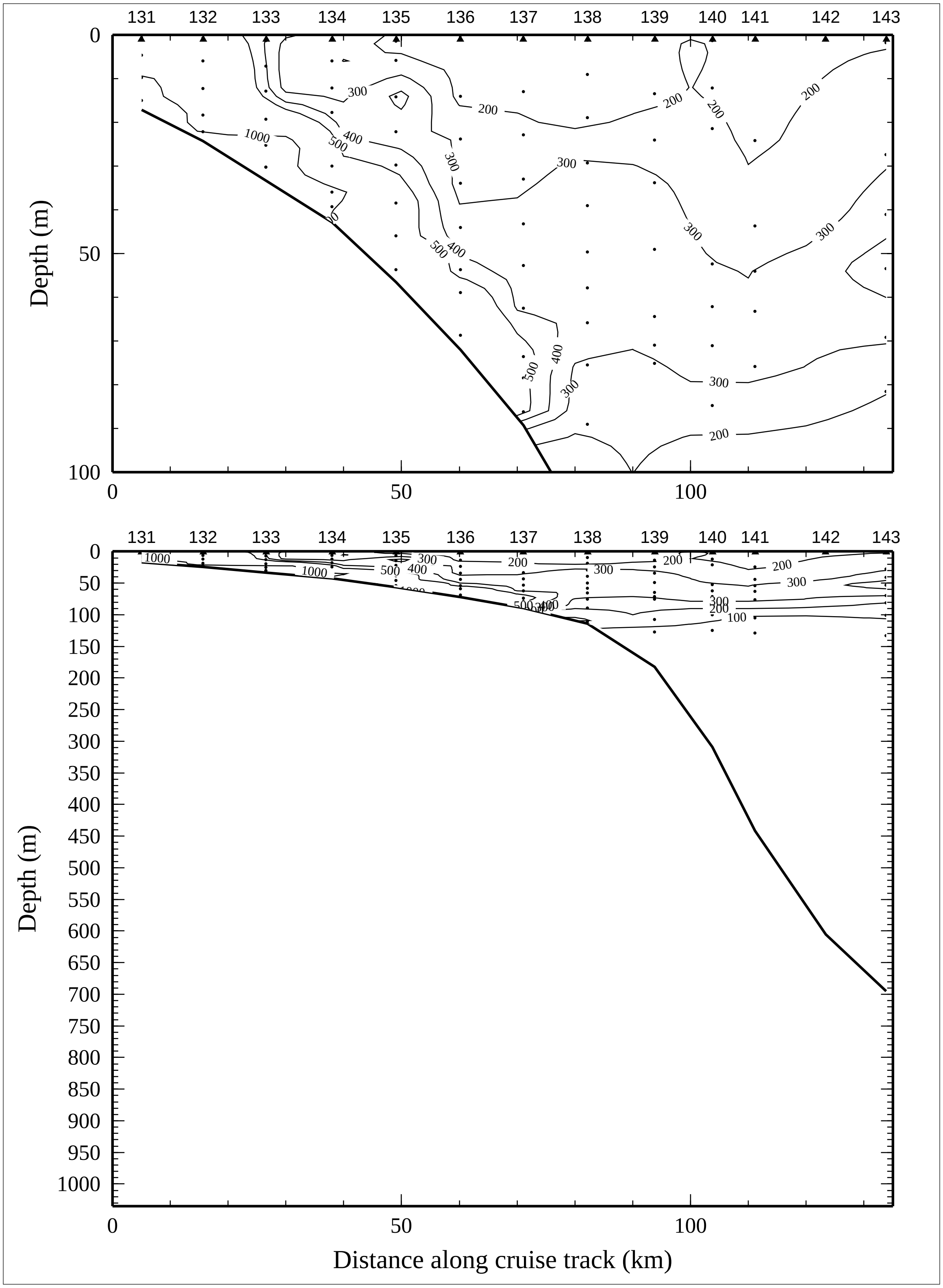

Figure 9.7.16. Chlorophyll a (ng·l-1) on line 7 of LATEX A survey H09, 26 July - 7 August 1994.

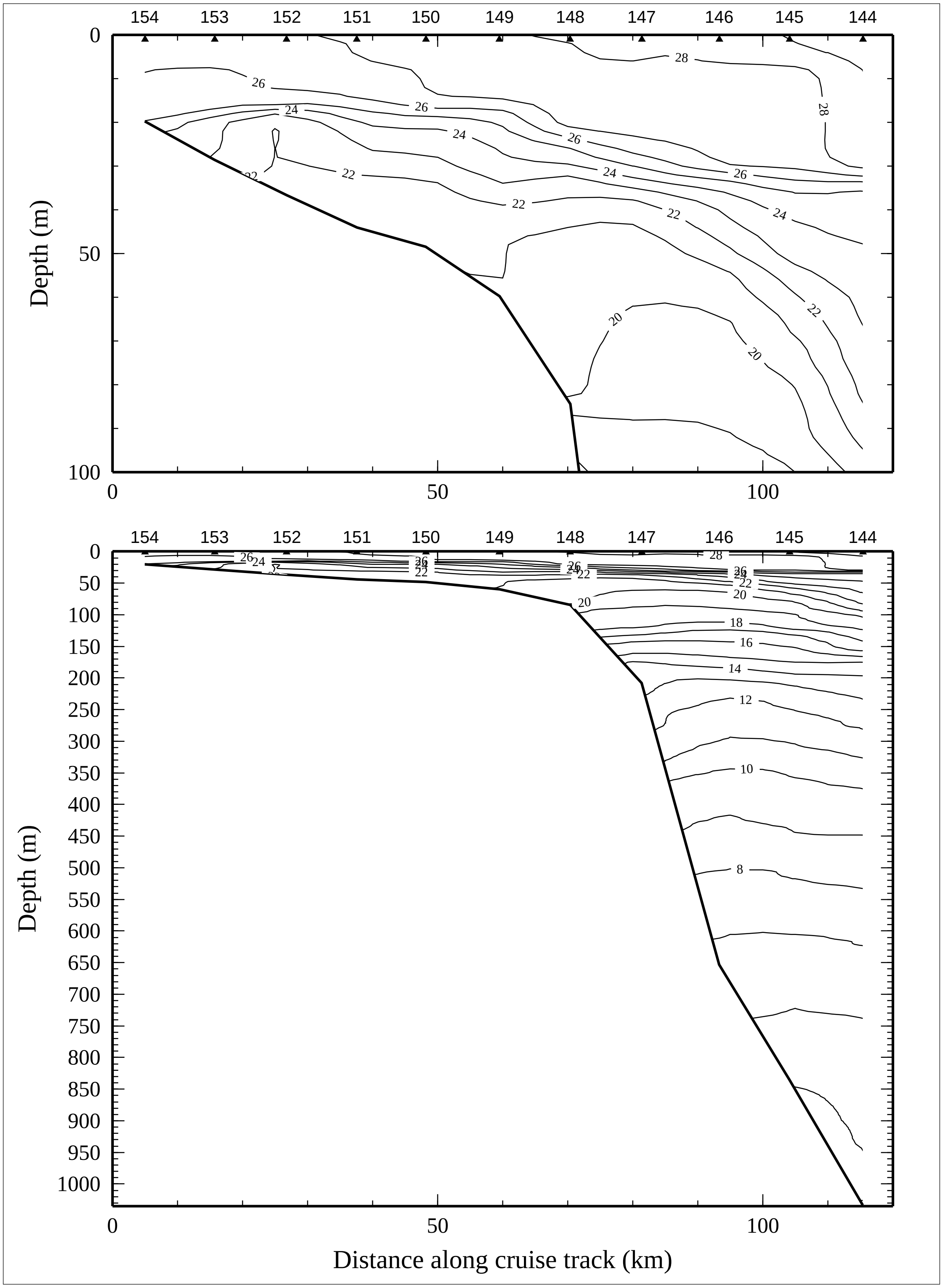

Figure 9.8.1. Potential temperature (˚C) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

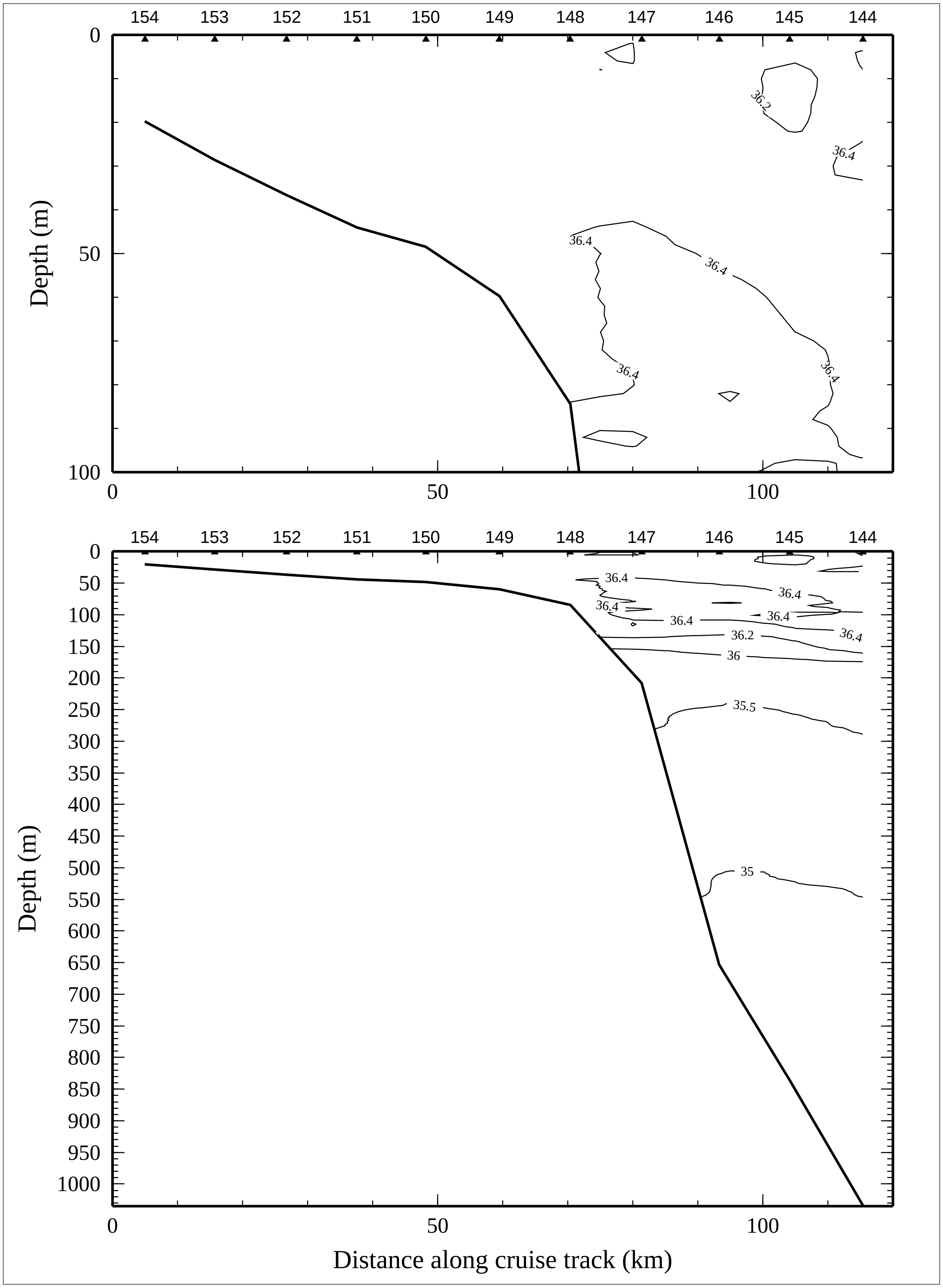

Figure 9.8.2. Salinity, derived from CTD data, on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

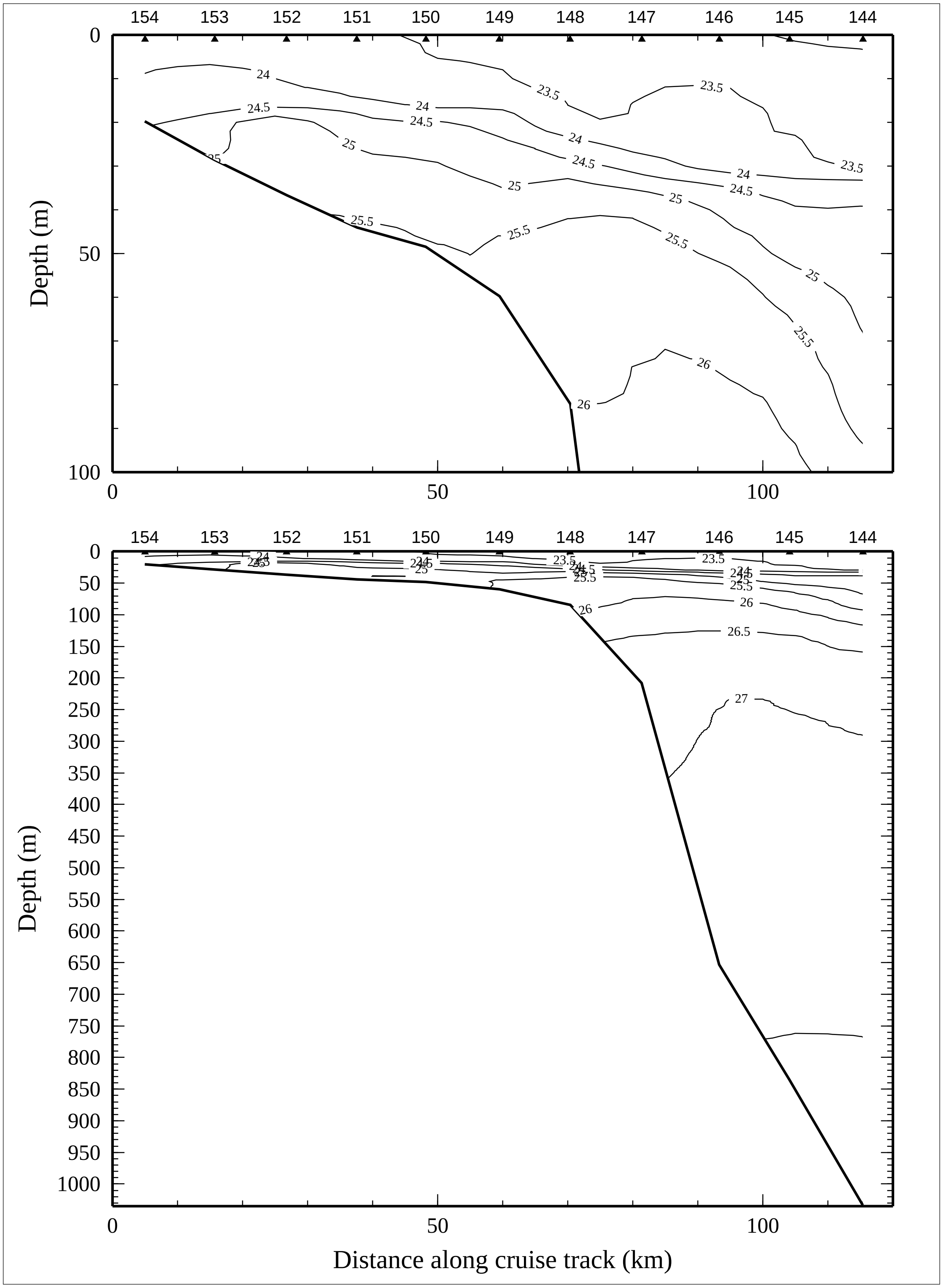

Figure 9.8.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

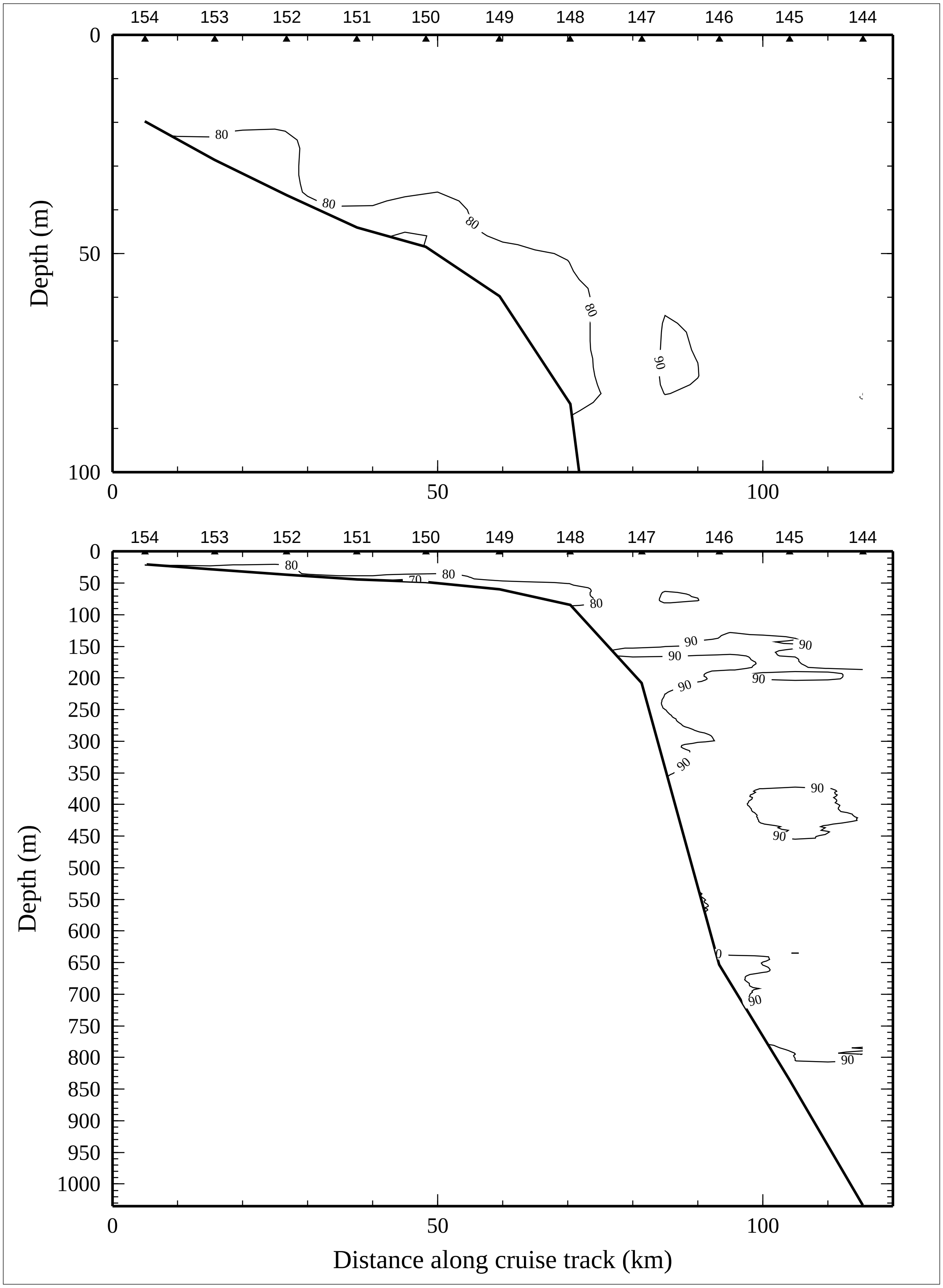

Figure 9.8.4. Percent transmission (660 nm wave length; 25-cm path length) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

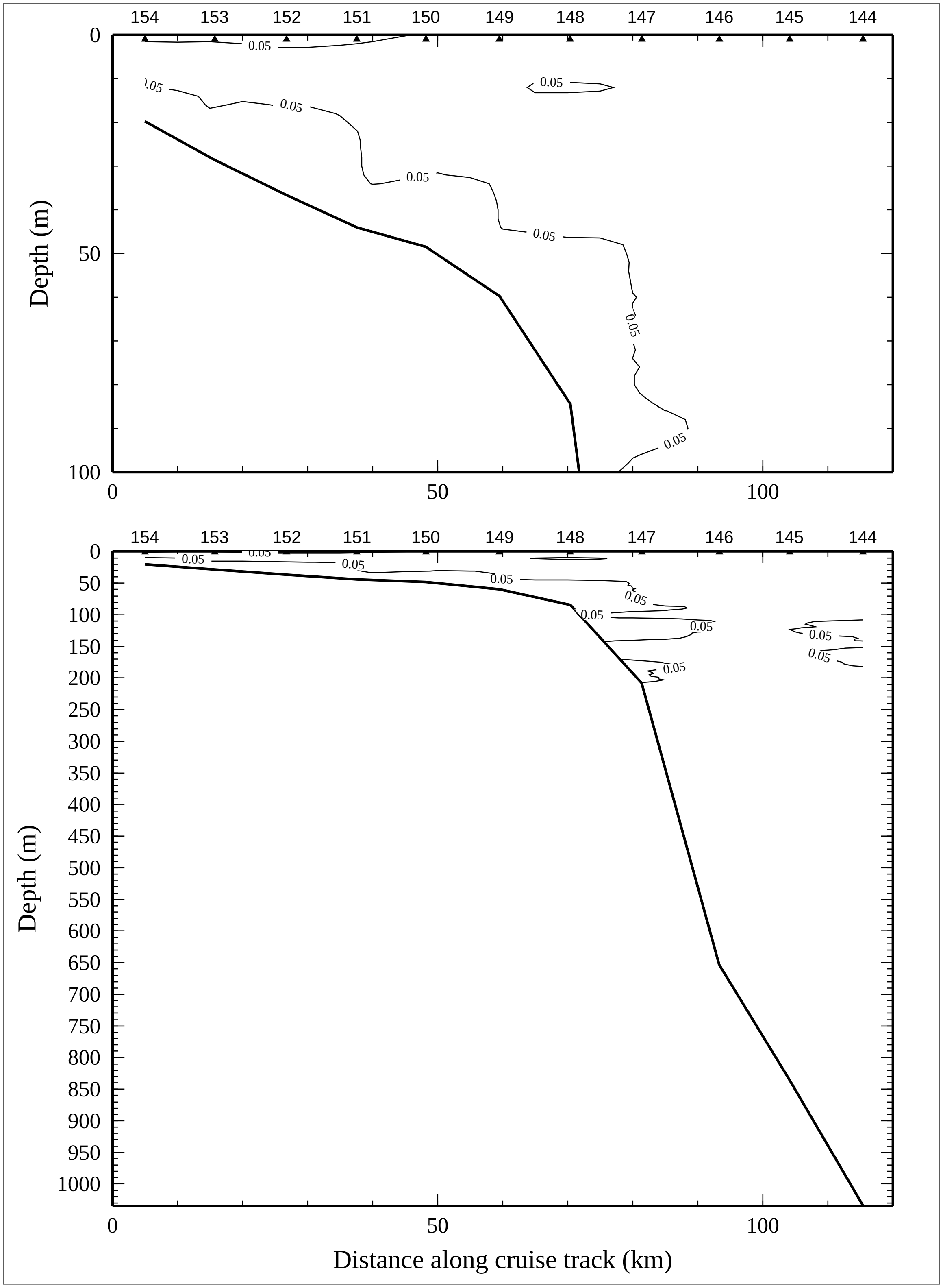

Figure 9.8.5. Optical backscatterance (voltage) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

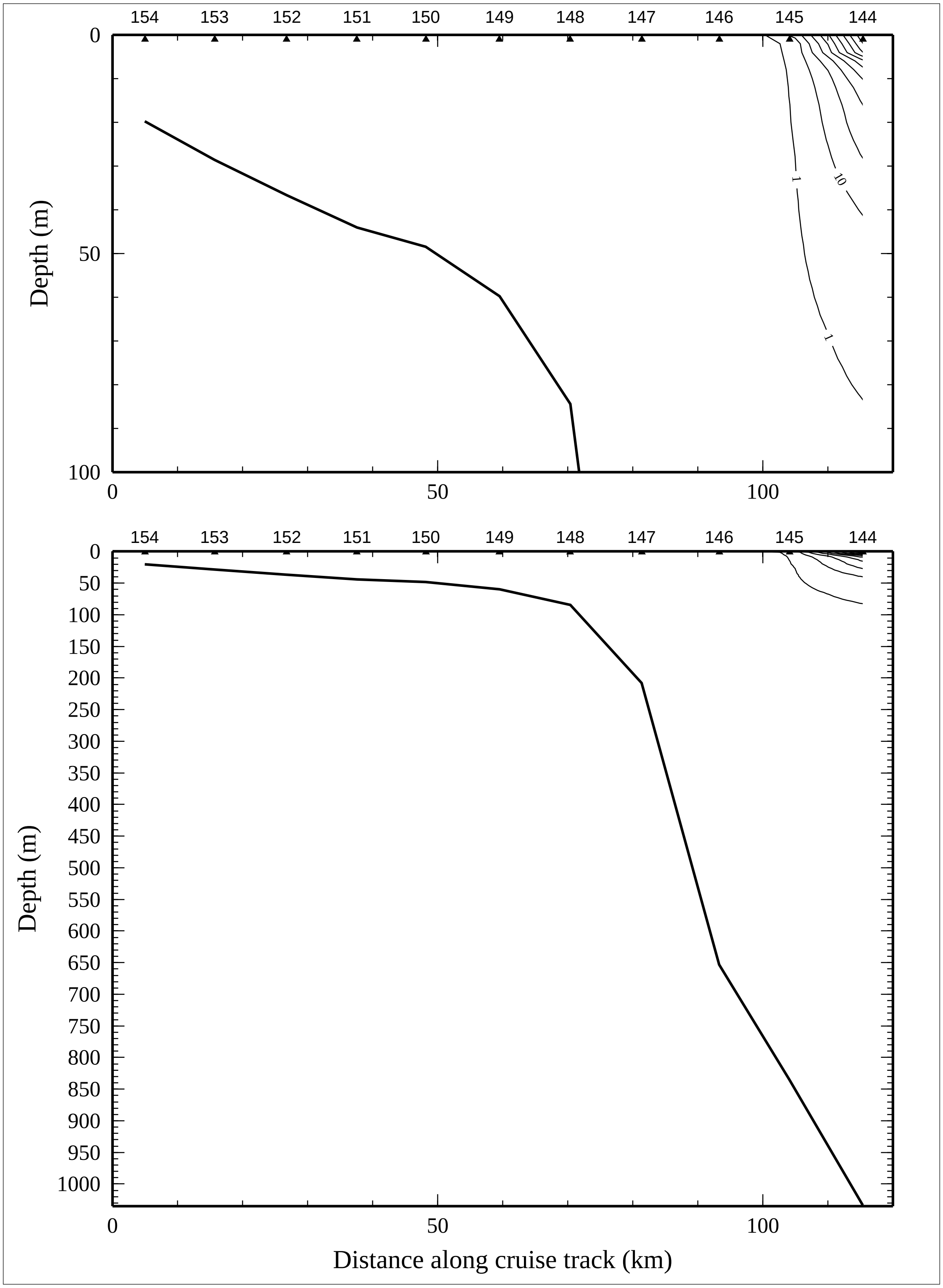

Figure 9.8.6. Downwelling irradiance as percent of surface irradiance on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

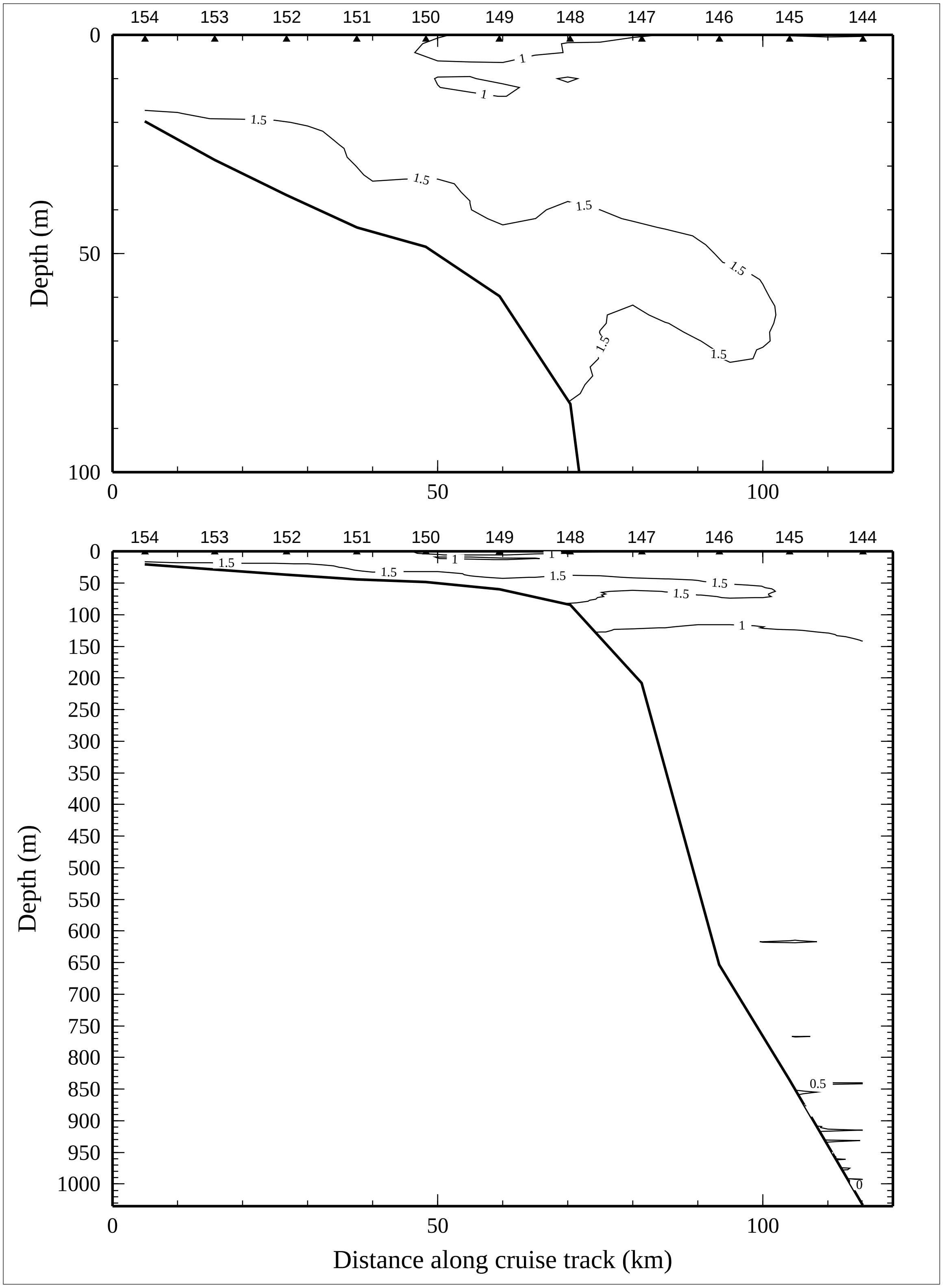

Figure 9.8.7. Relative fluorescence on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

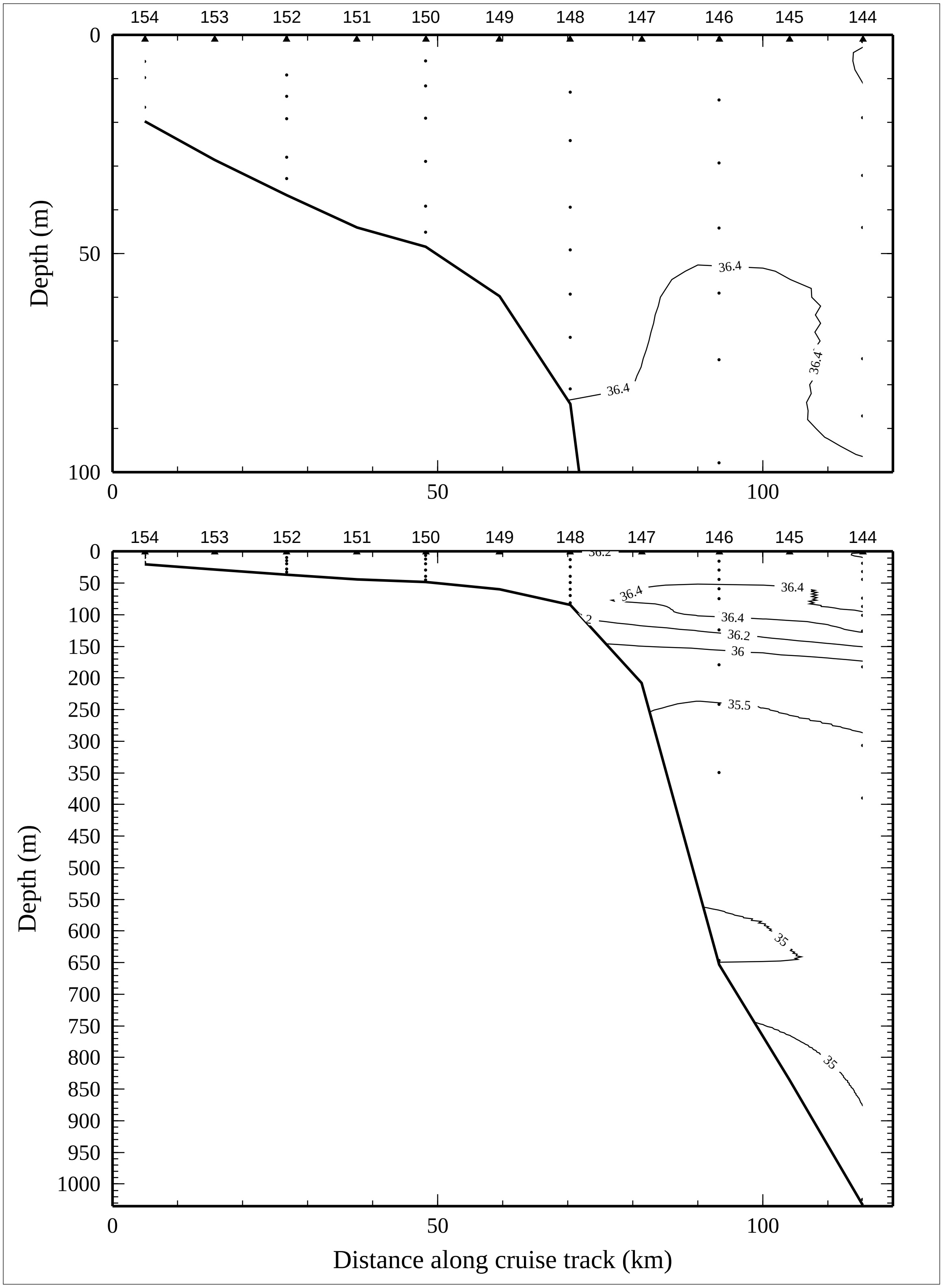

Figure 9.8.8. Bottle salinity on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

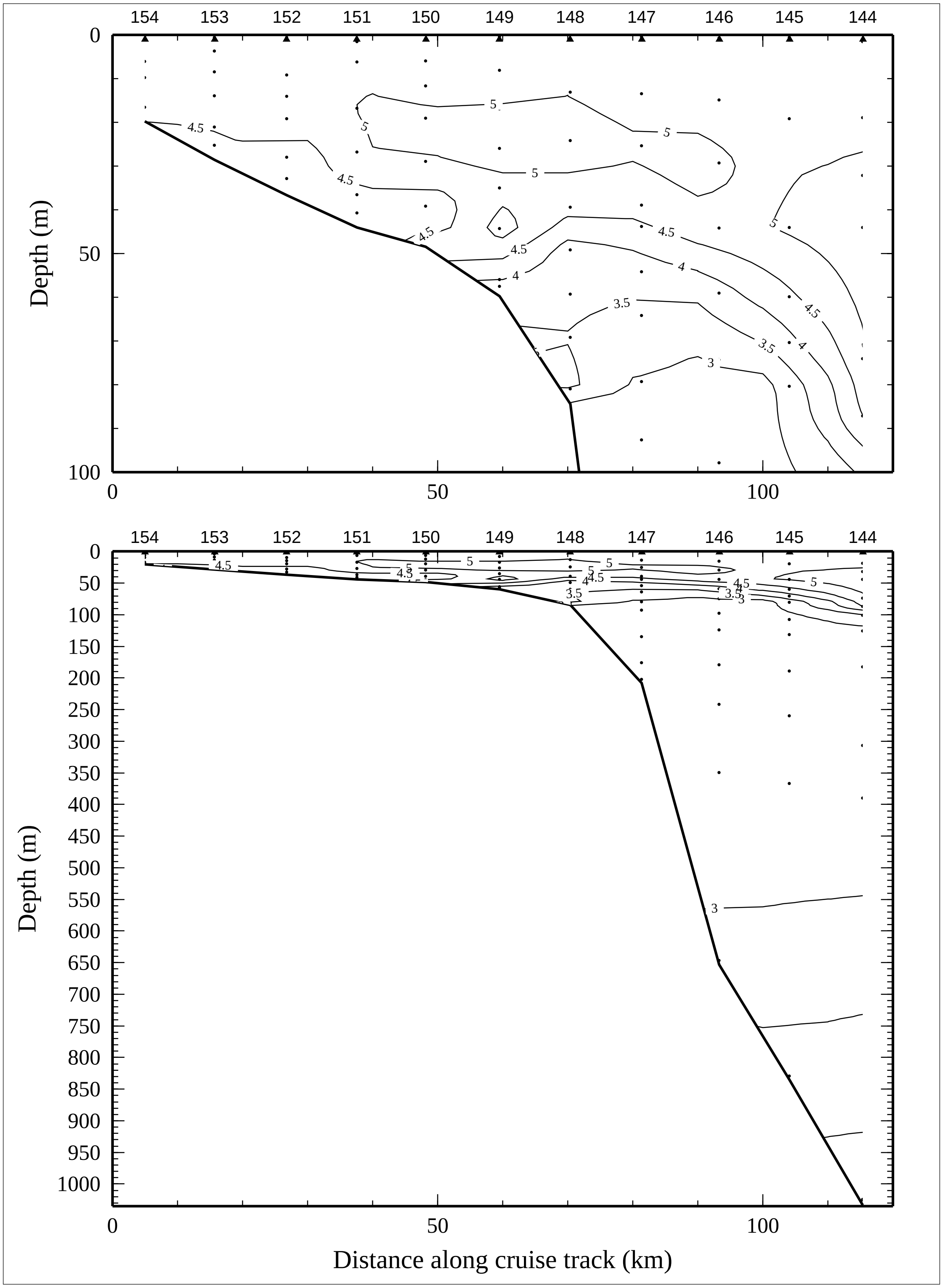

Figure 9.8.9. Dissolved oxygen (ml·l^{-1}) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

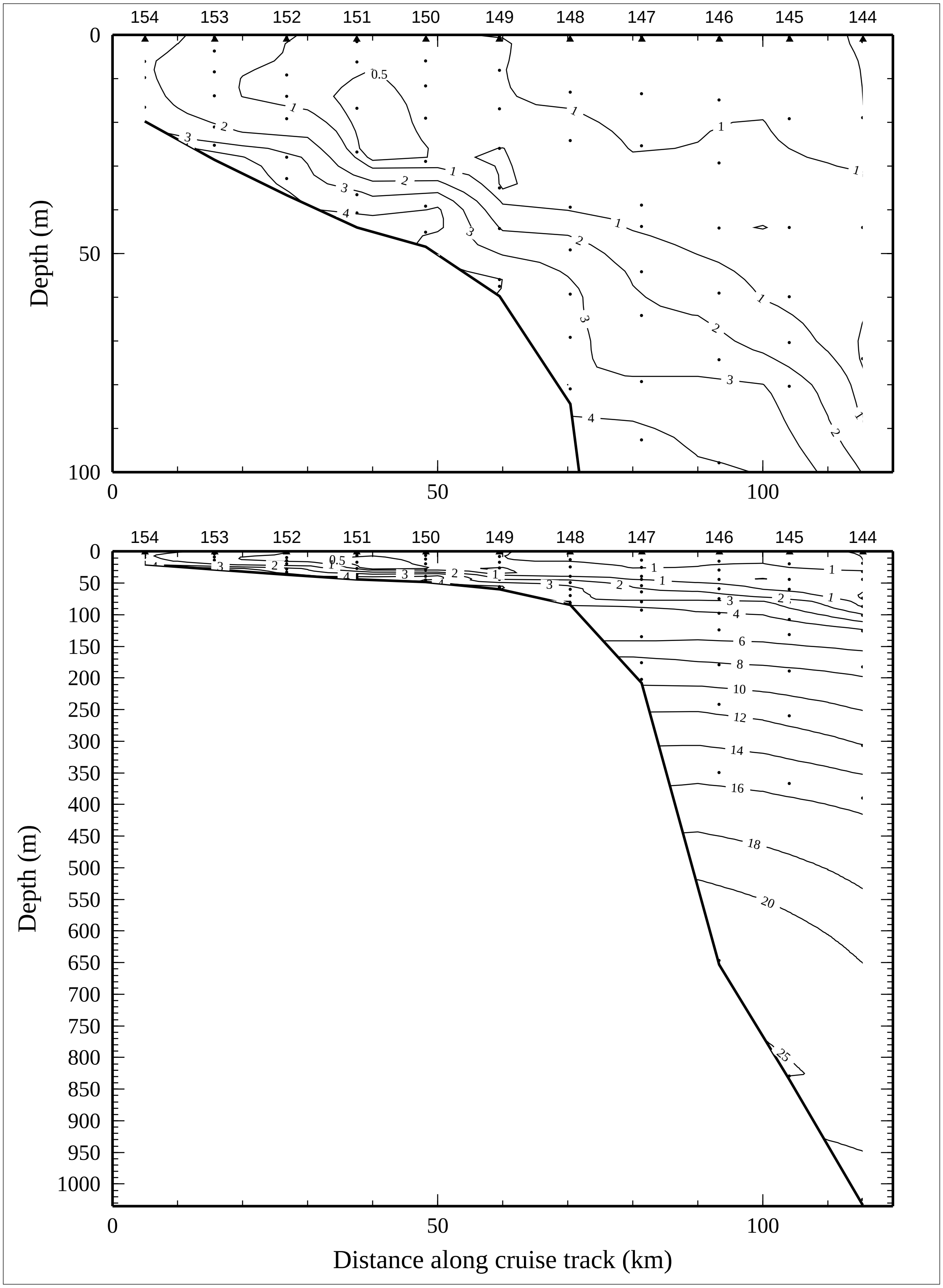

Figure 9.8.10. Silicate (μmol·l-1) on line 8 of LATEX A survey H09,
26 July - 7 August 1994.

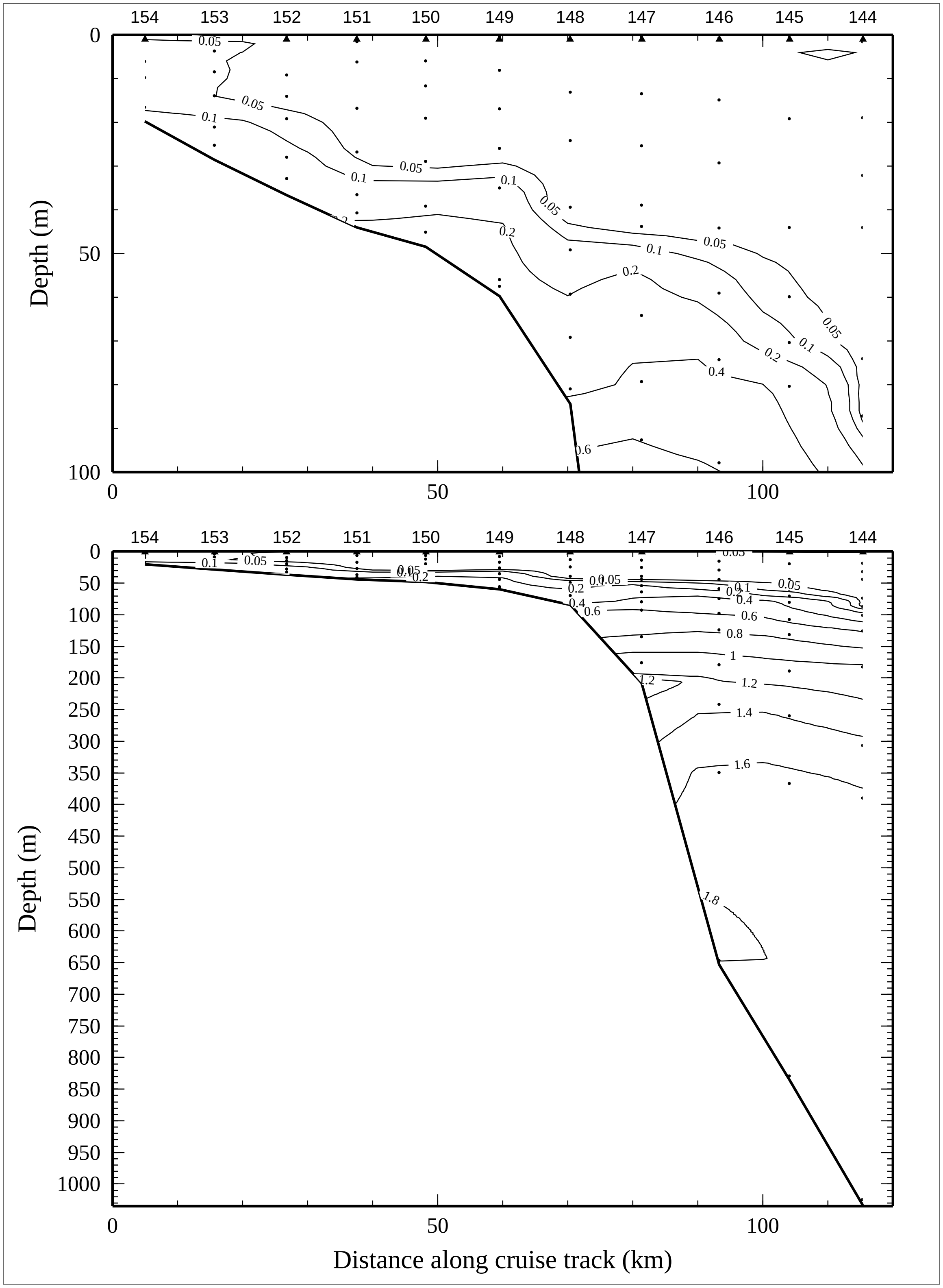

Figure 9.8.11. Phosphate (µmol·l^{-1}) on line 8 of LATEX A survey H09,
26 July - 7 August 1994.

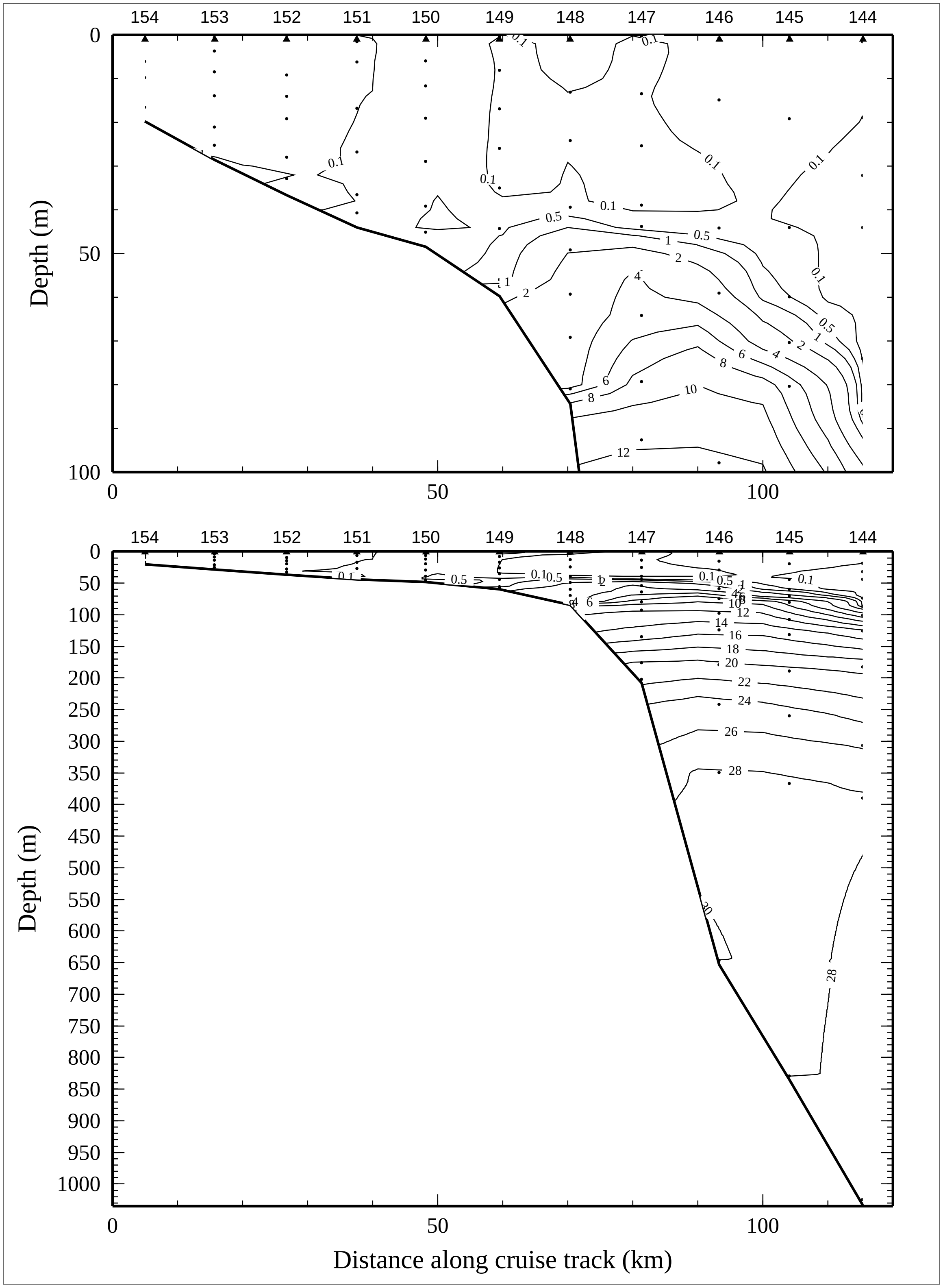

Figure 9.8.12. Nitrate (μmol·l^{-1}) on line 8 of LATEX A survey H09,
26 July - 7 August 1994.

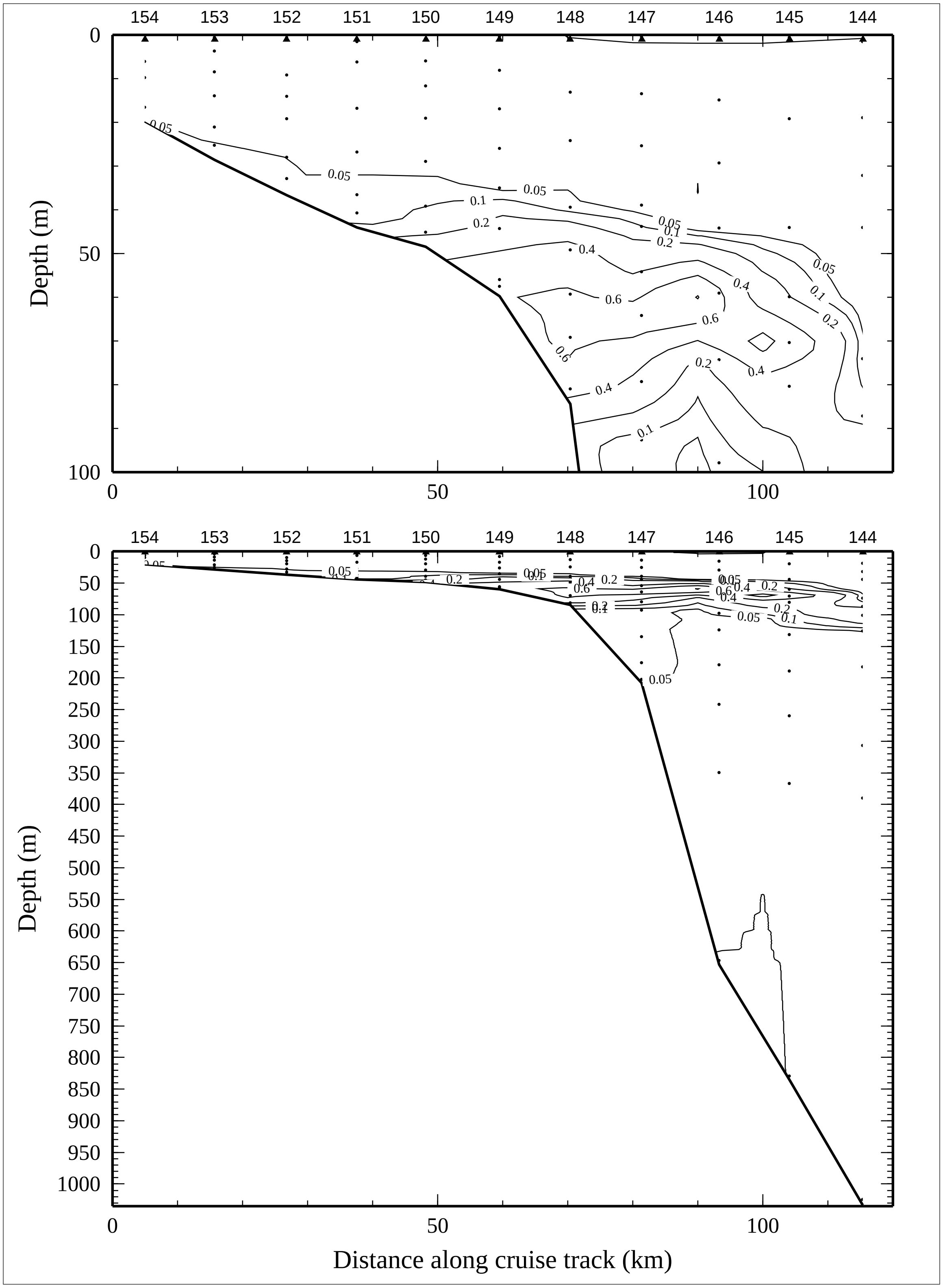

Figure 9.8.13. Nitrite (µmol·l^{-1}) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

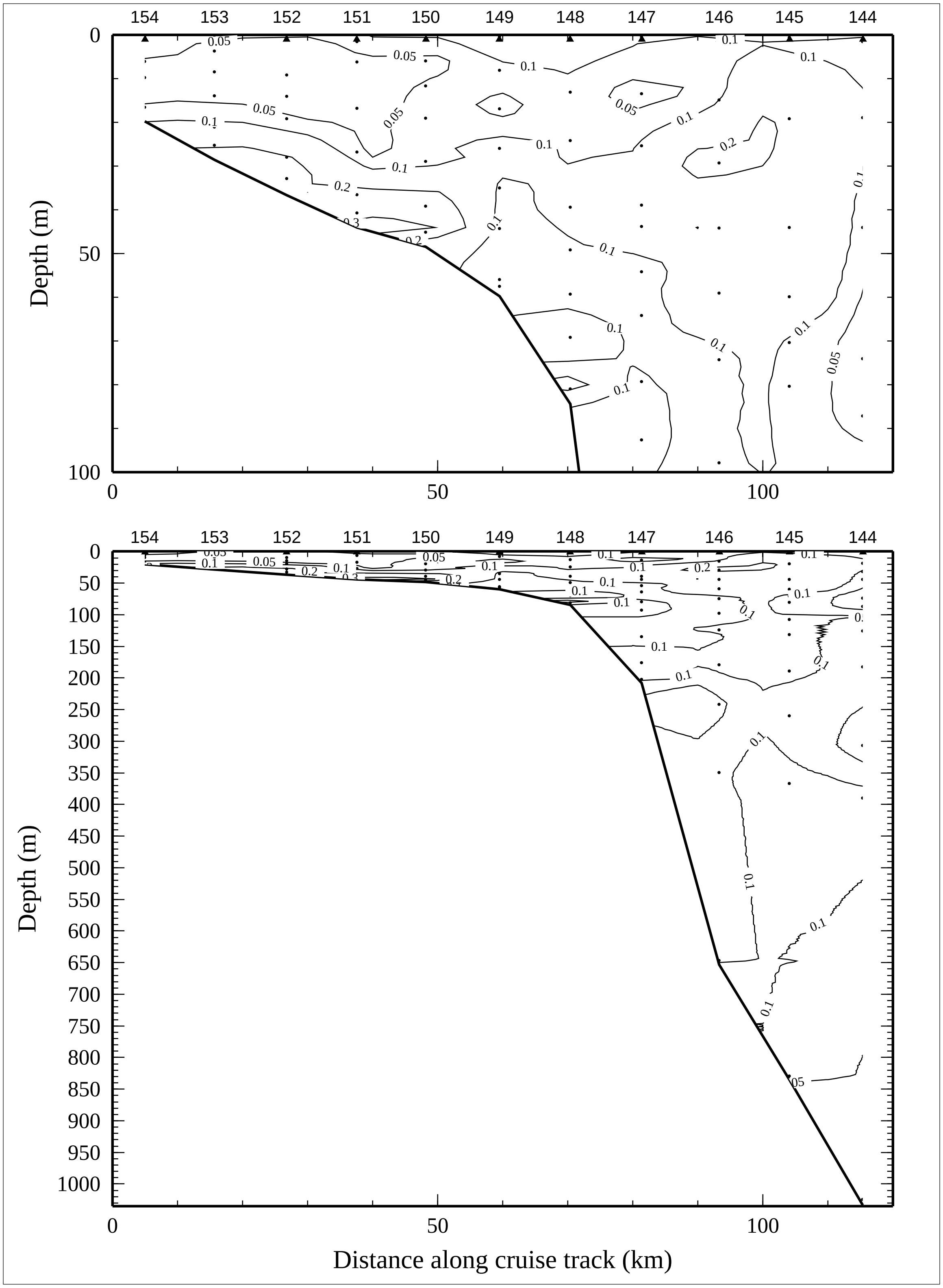

Figure 9.8.14. Ammonium (μmol·l⁻¹) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

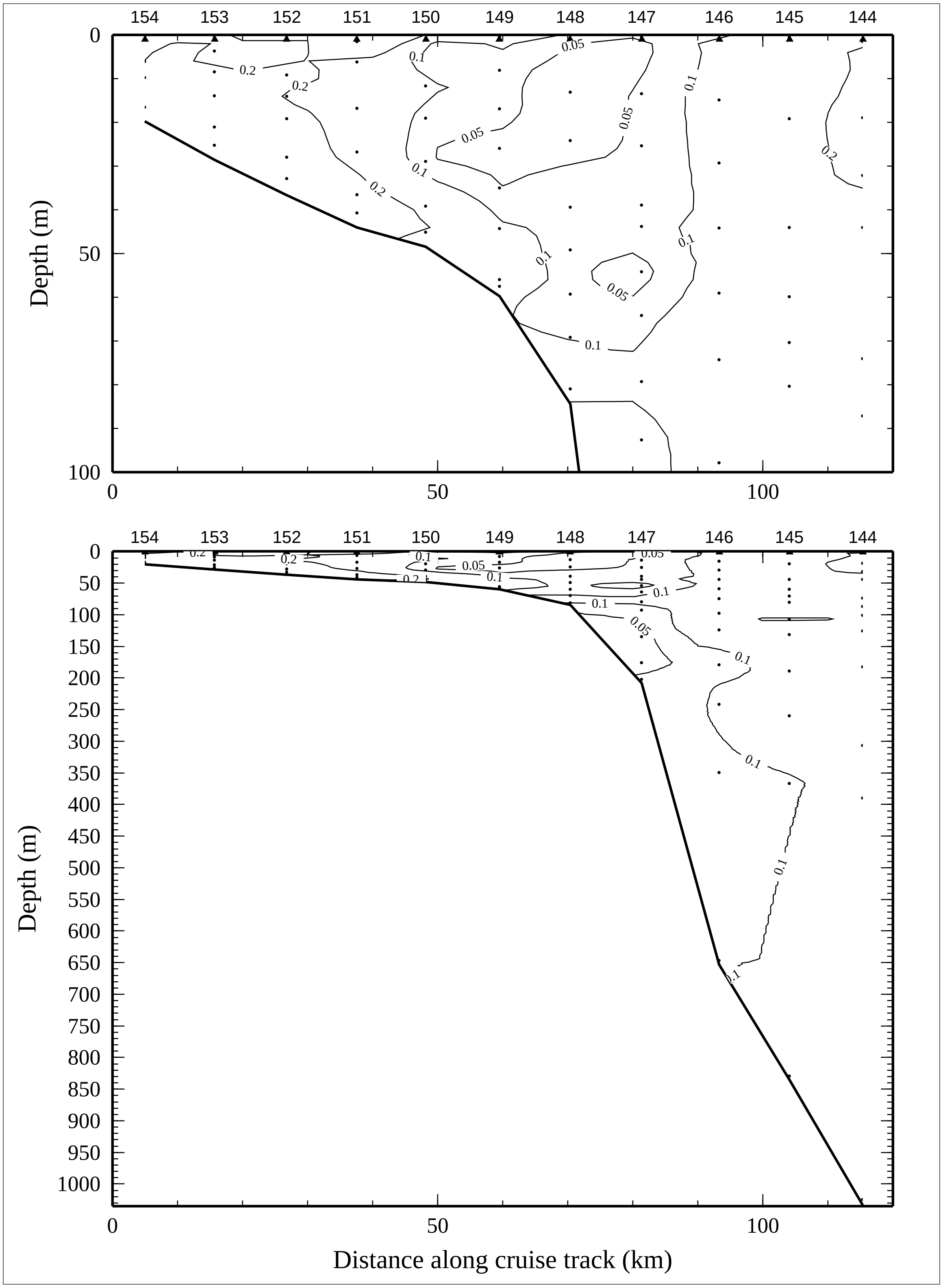

Figure 9.8.15. Urea ($\mu mol \cdot l^{-1}$) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

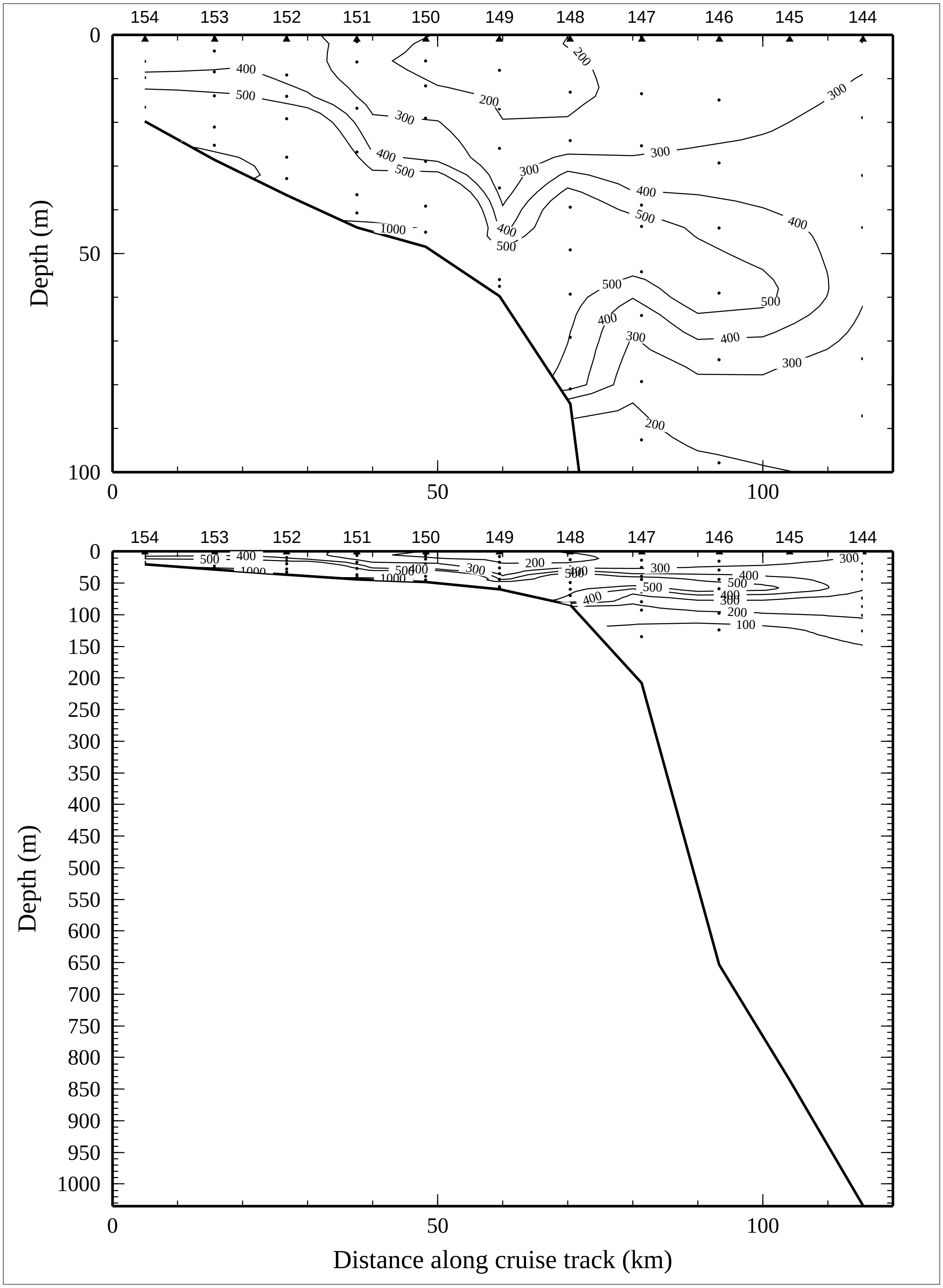

Figure 9.8.16. Chlorophyll a (ng·l^{-1}) on line 8 of LATEX A survey H09, 26 July - 7 August 1994.

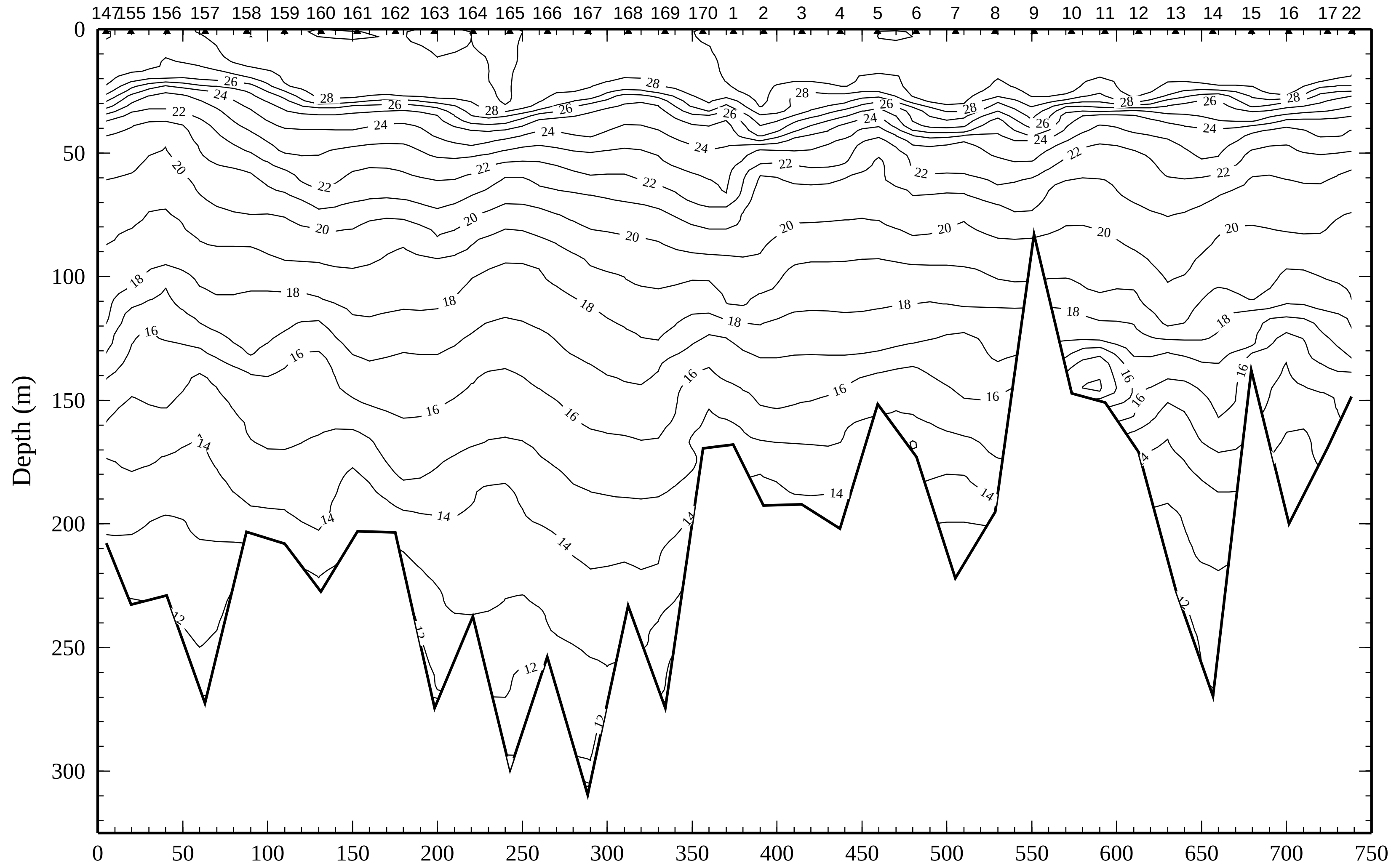

Figure 9.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

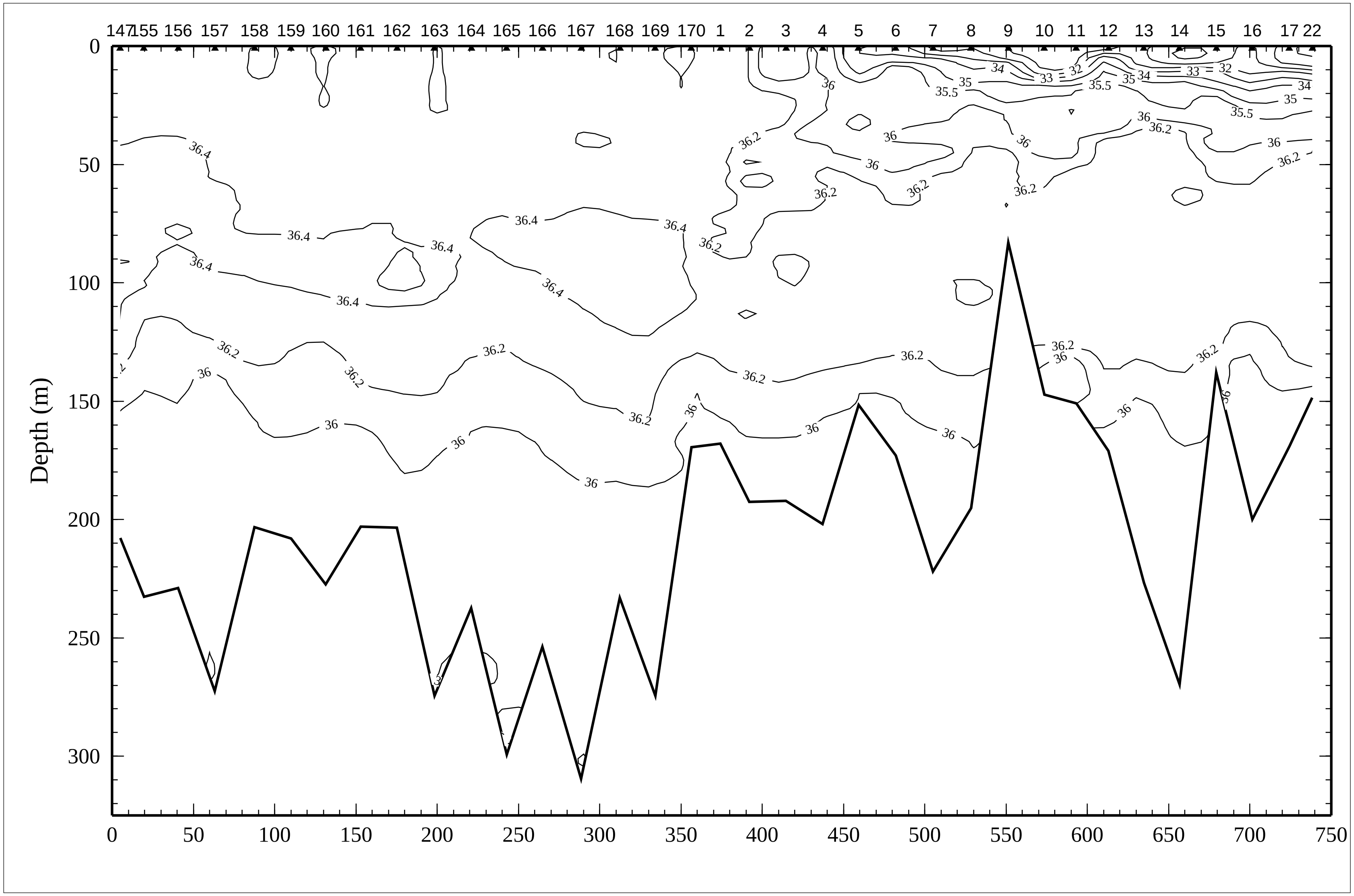

Figure 9.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

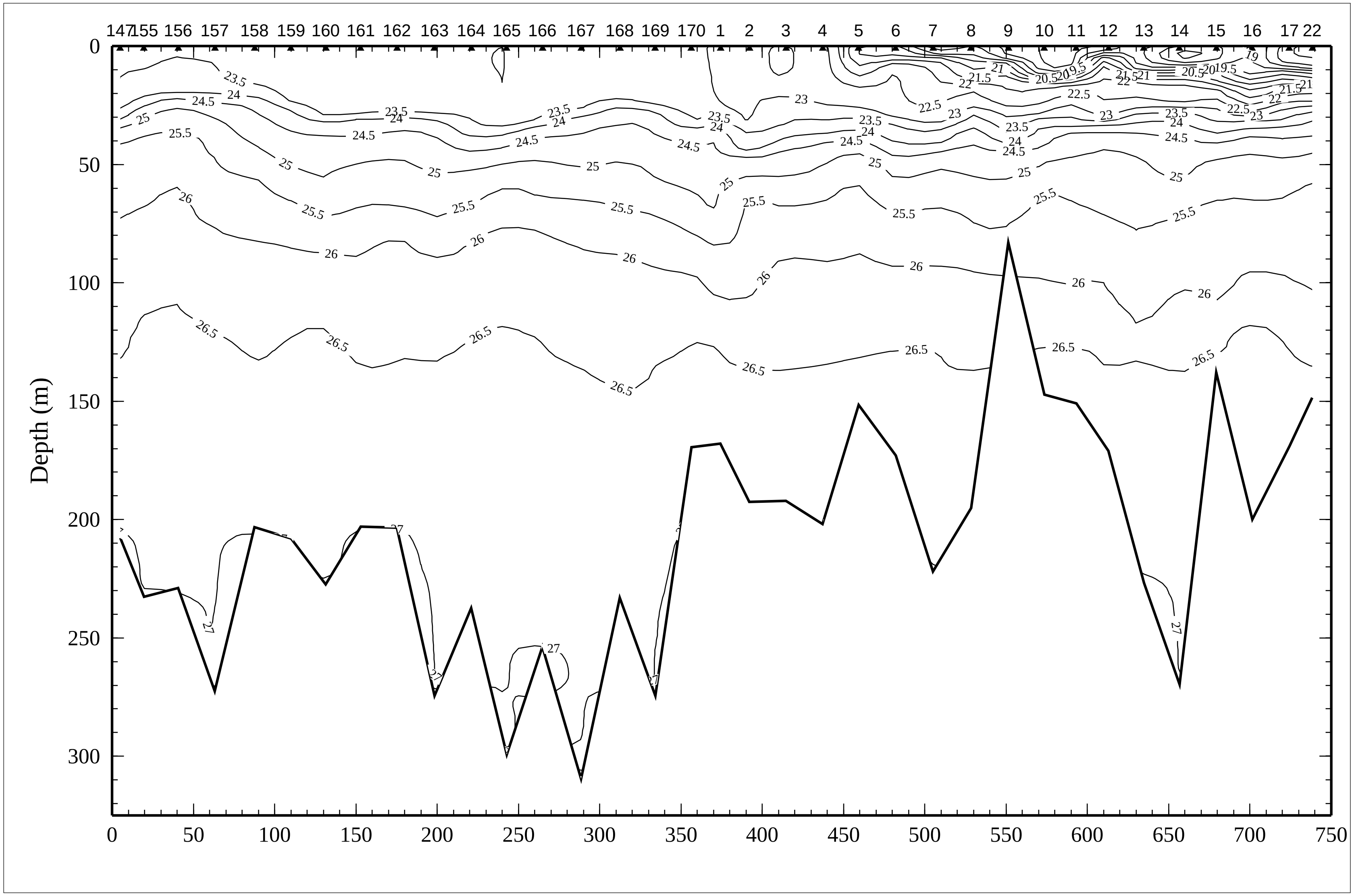

Figure 9.9.3. Density anomaly (σ_θ in kg·m^{-3}) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

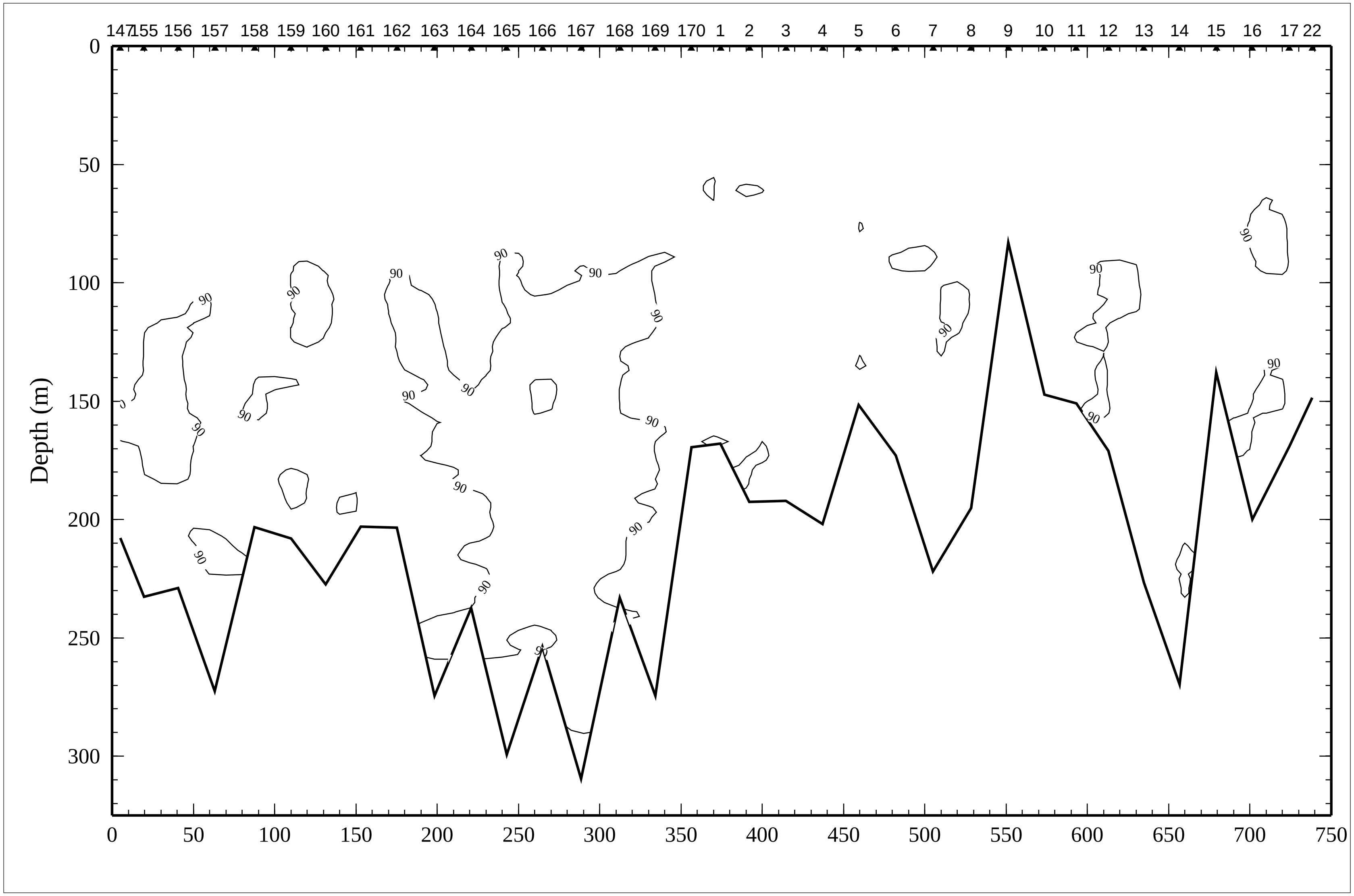

Figure 9.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

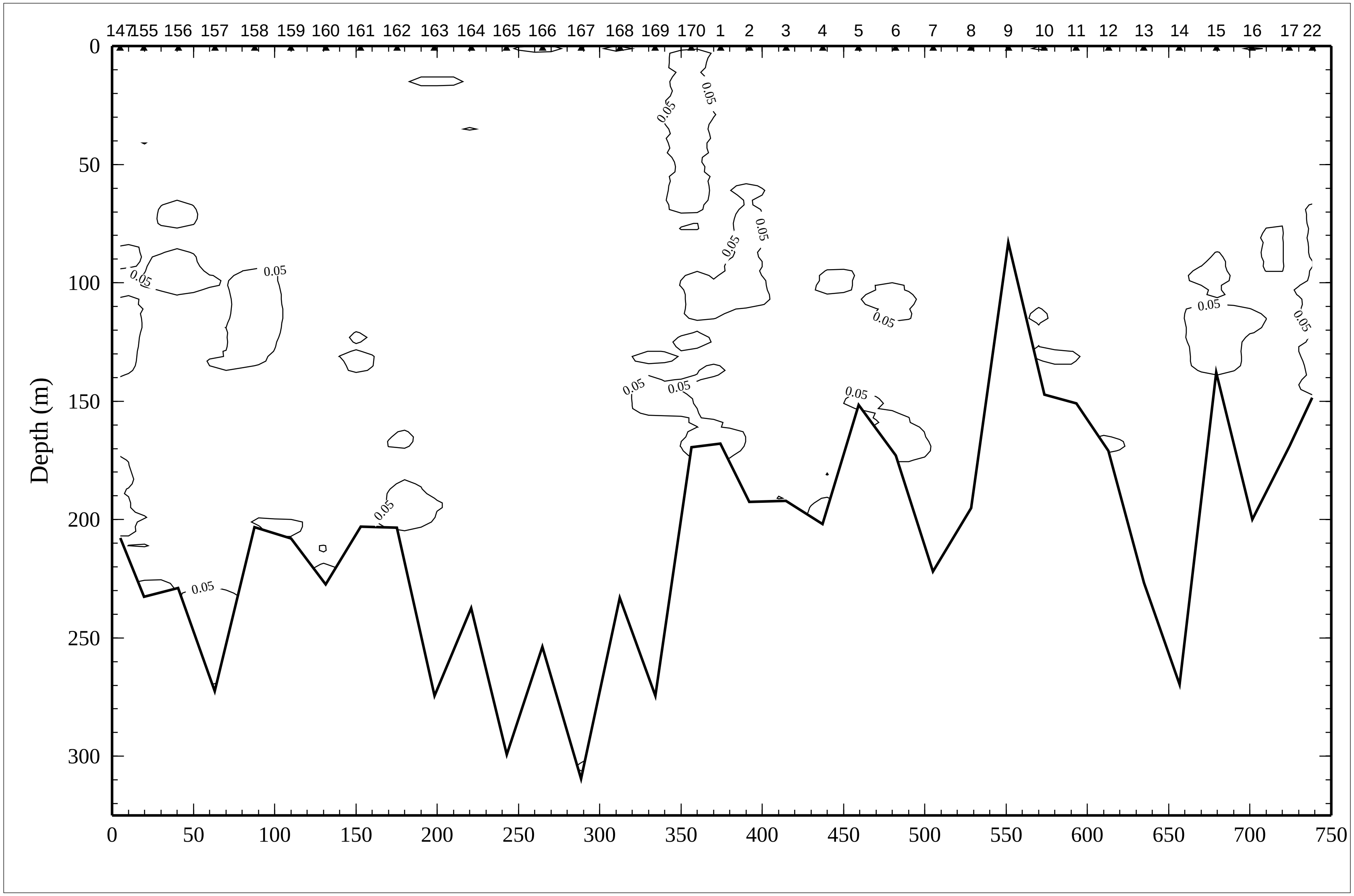

Figure 9.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

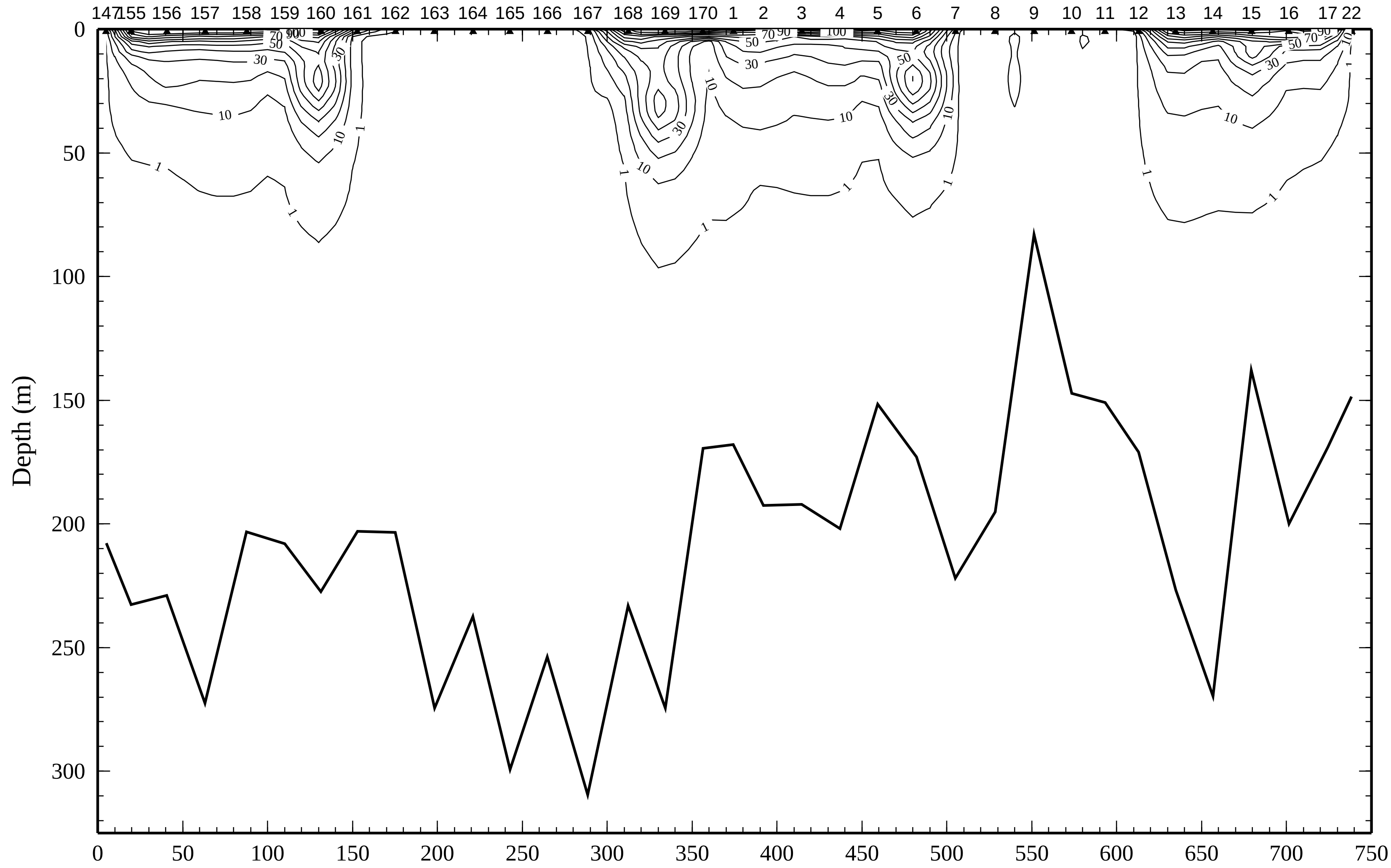

Figure 9.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

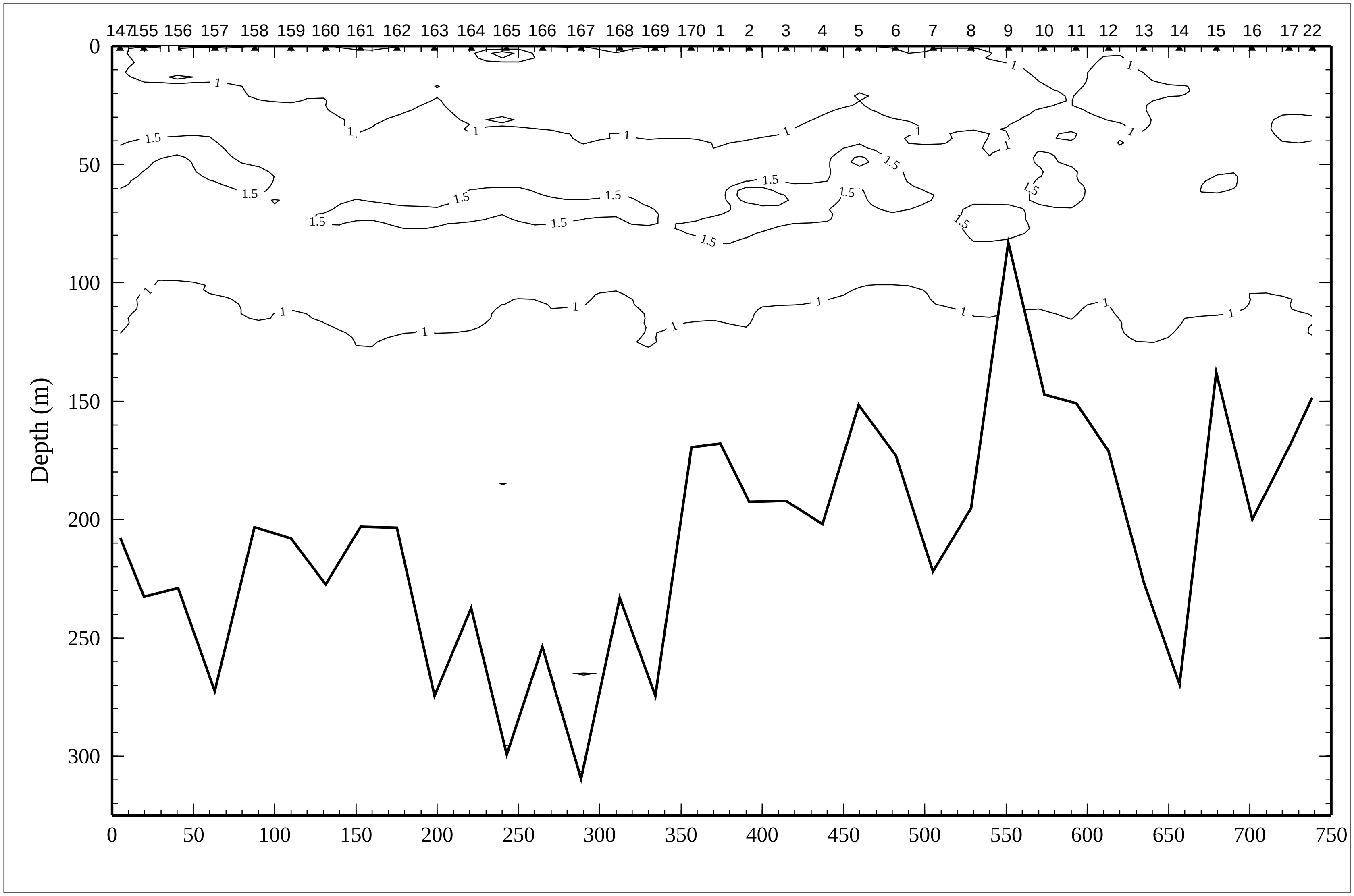

Figure 9.9.7. Relative fluorescence on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

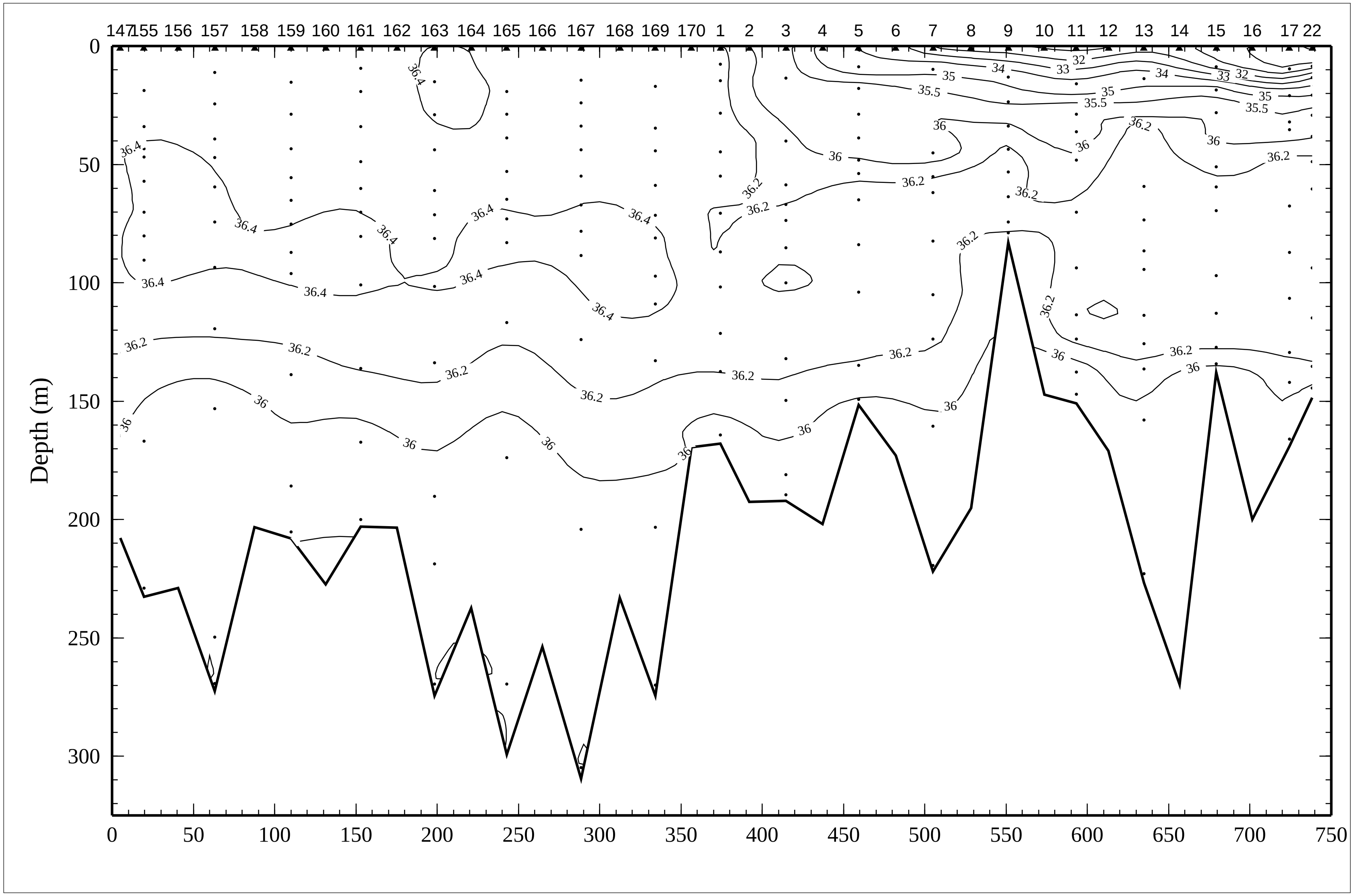

Figure 9.9.8. Bottle salinity on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

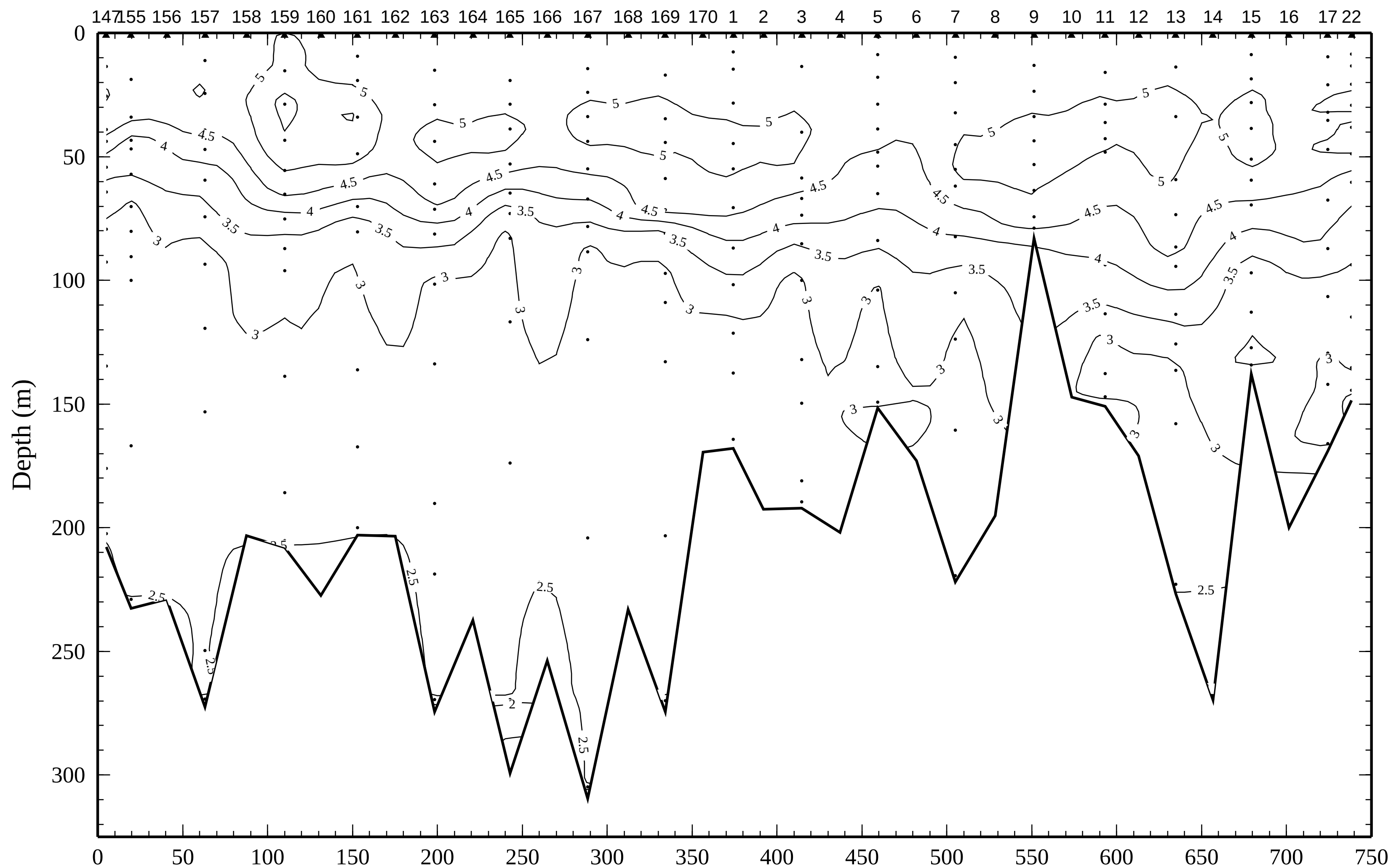

Figure 9.9.9. Dissolved oxygen (ml·l-1) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

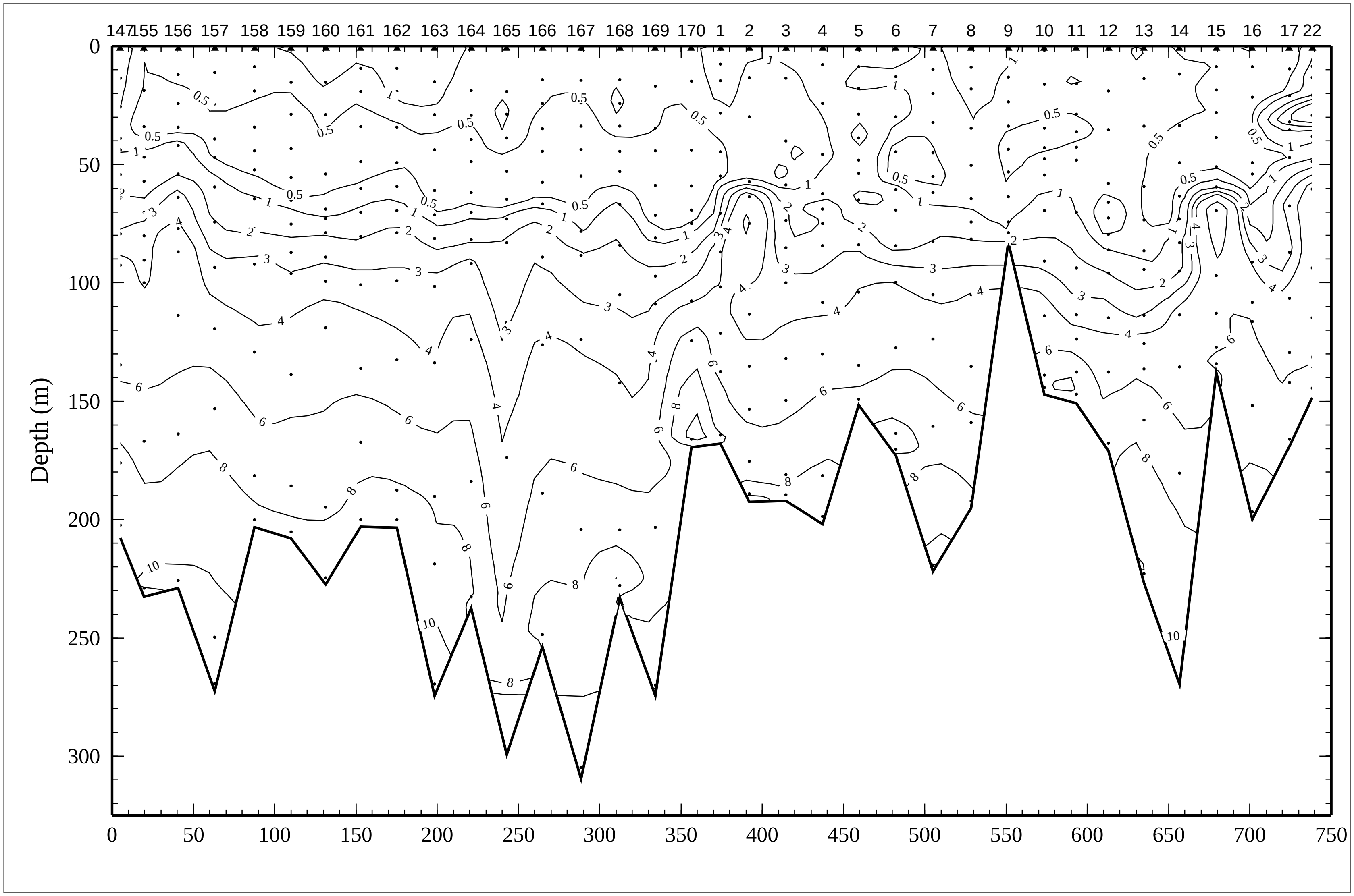

Figure 9.9.10. Silicate (μmol·l^{-1}) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

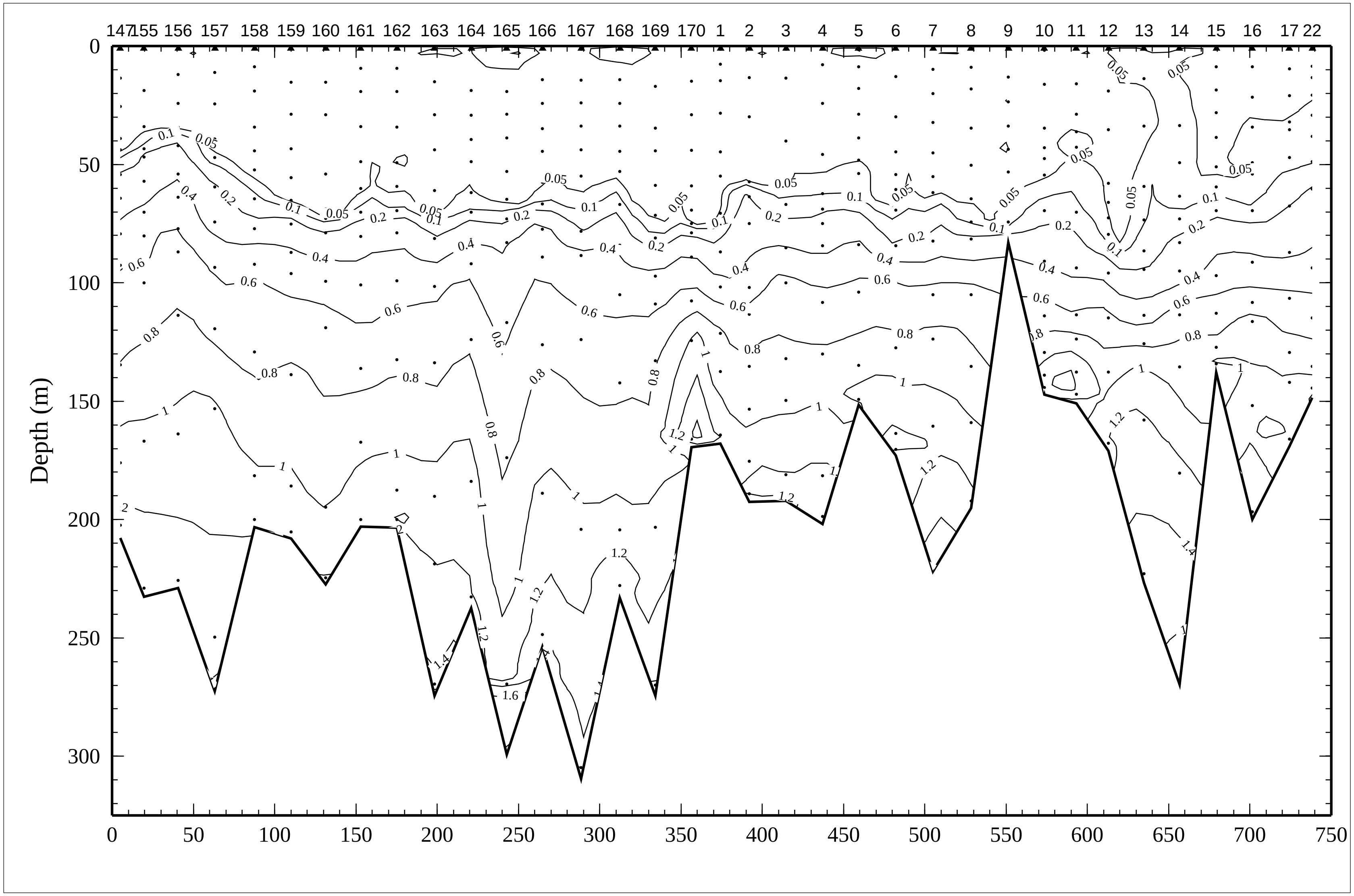

Figure 9.9.11. Phosphate (μmol·l-1) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

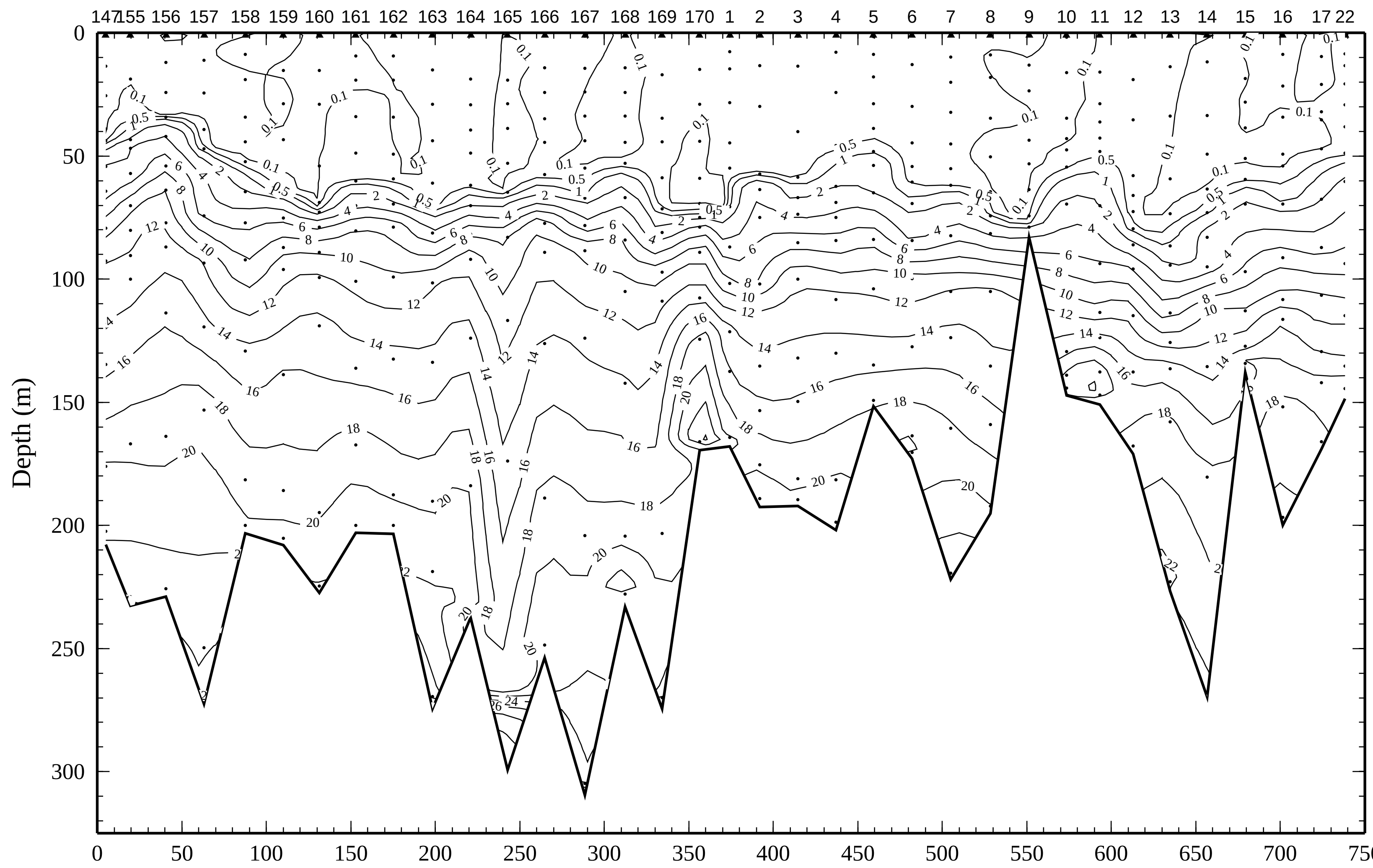

Figure 9.9.12. Nitrate (μmol·l-1) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

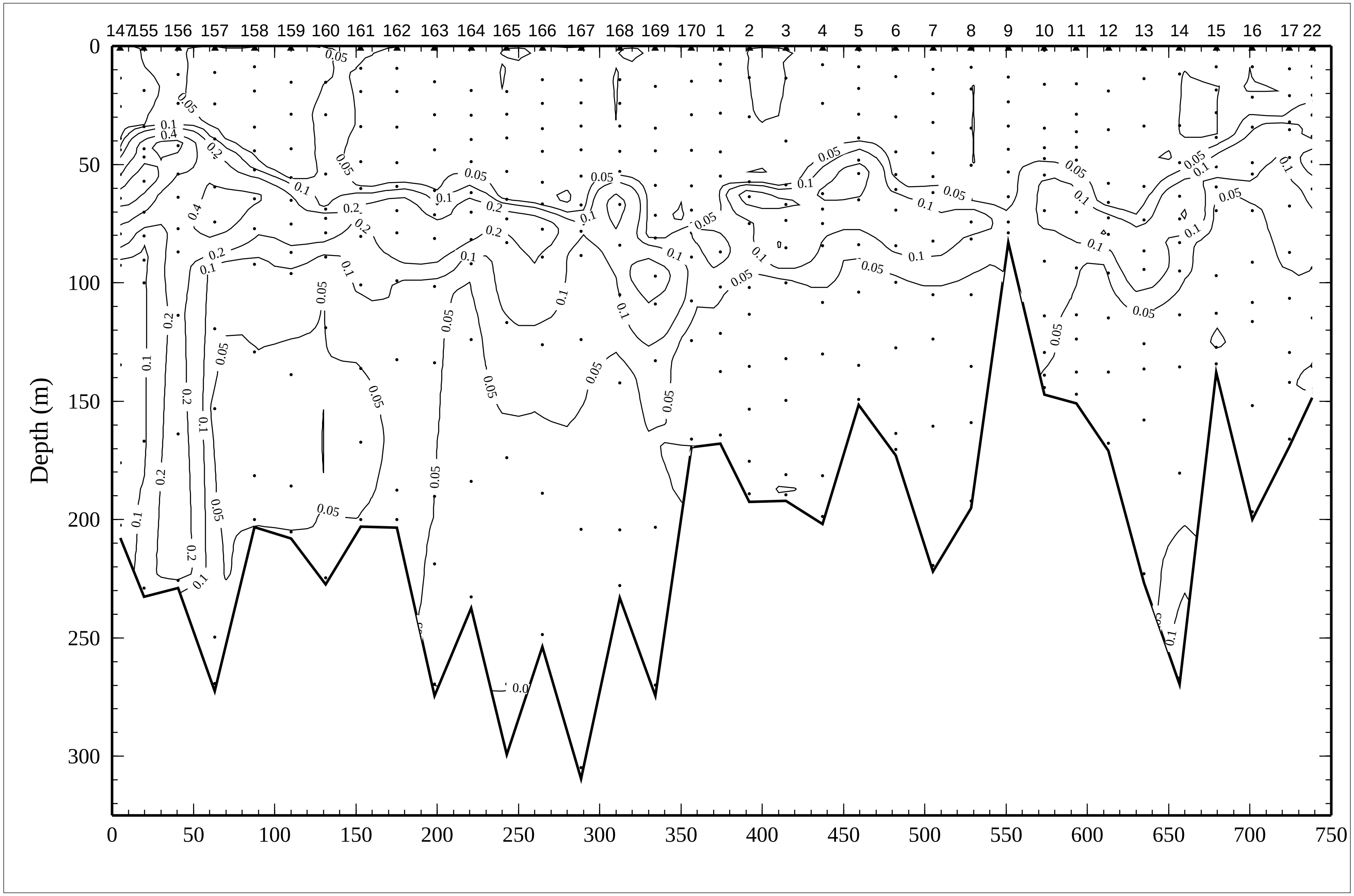

Figure 9.9.13. Nitrite (µmol·l-1) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

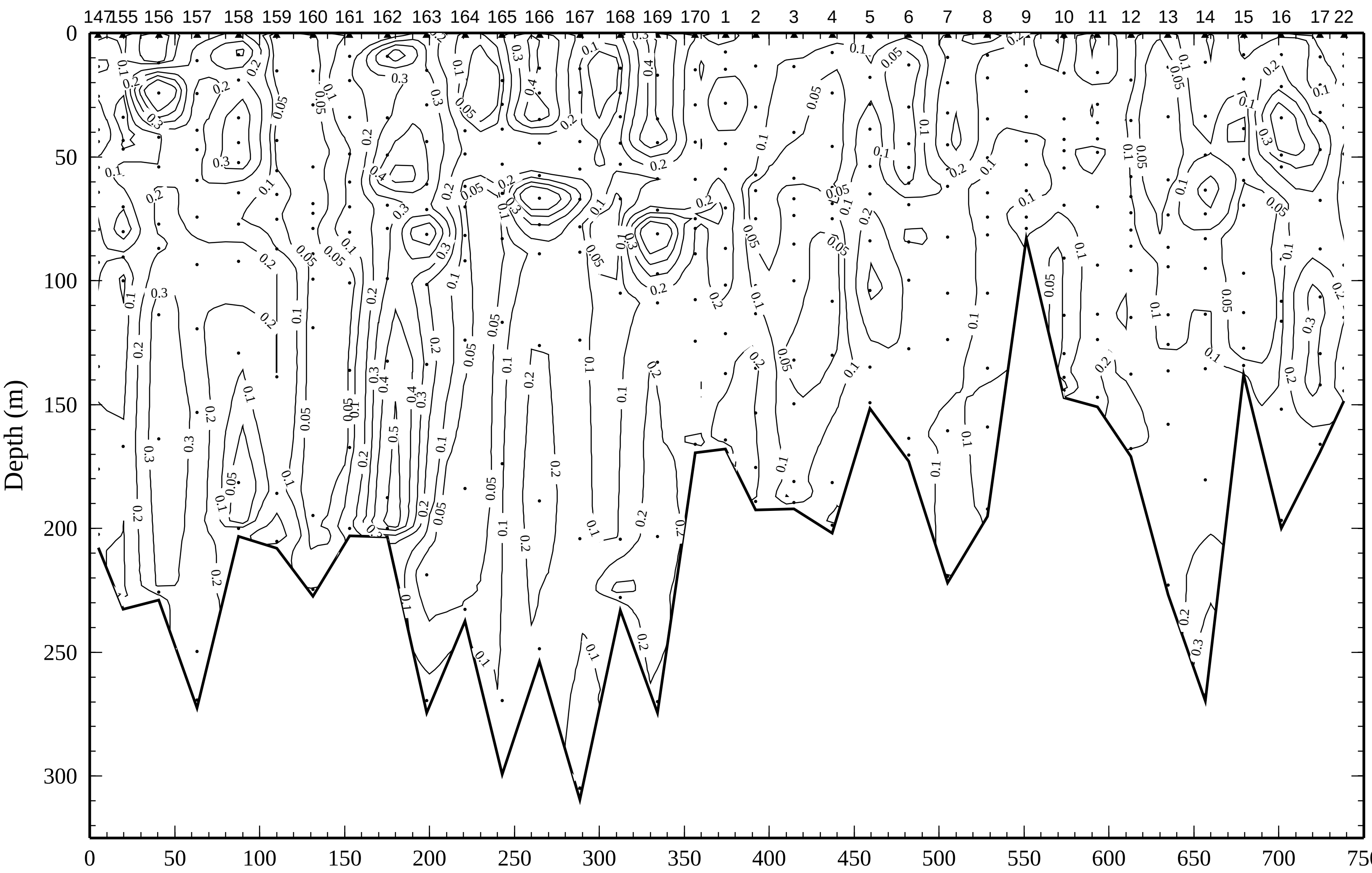

Figure 9.9.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

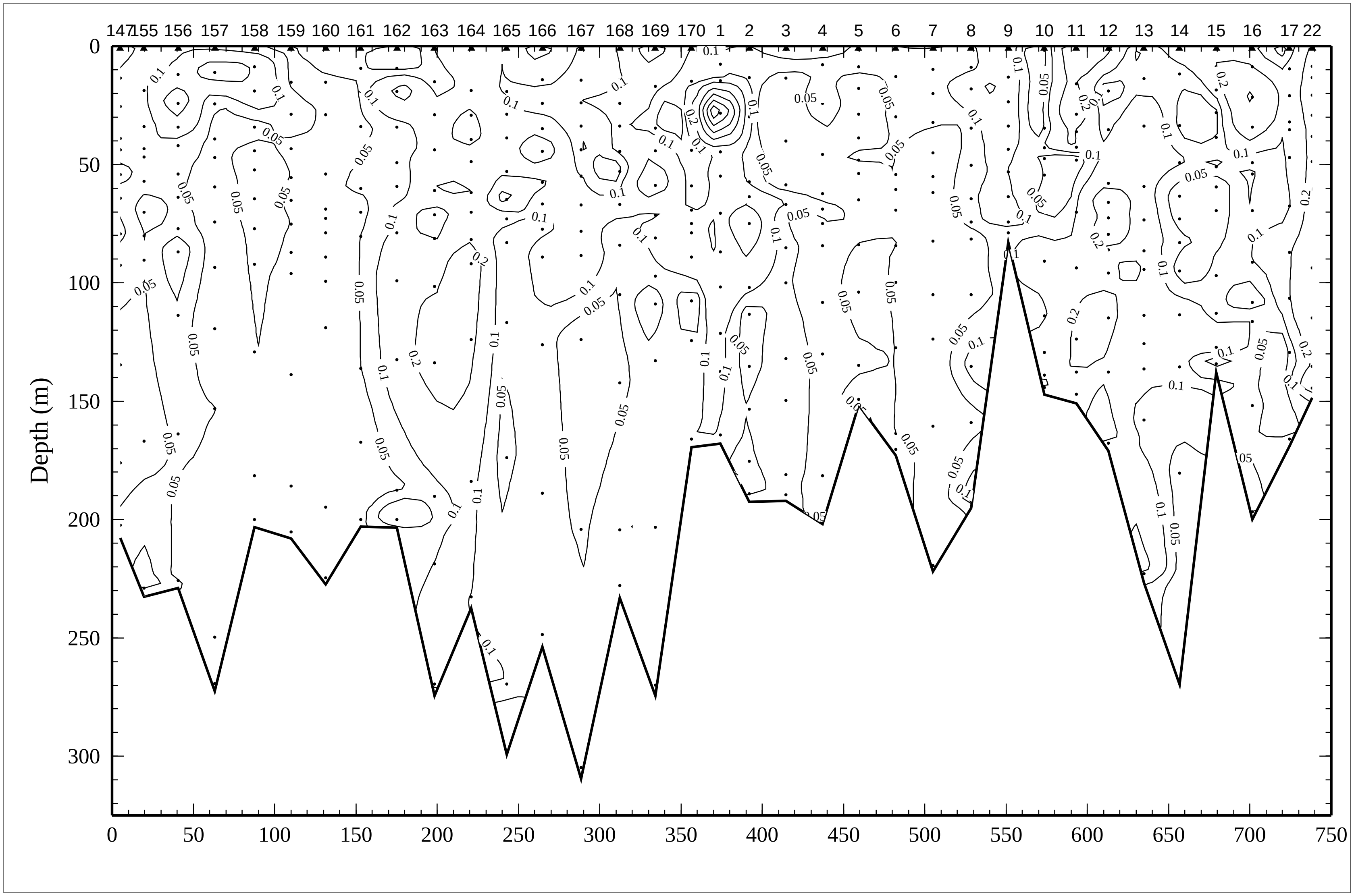

Figure 9.9.15. Urea (µmol·l-1) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

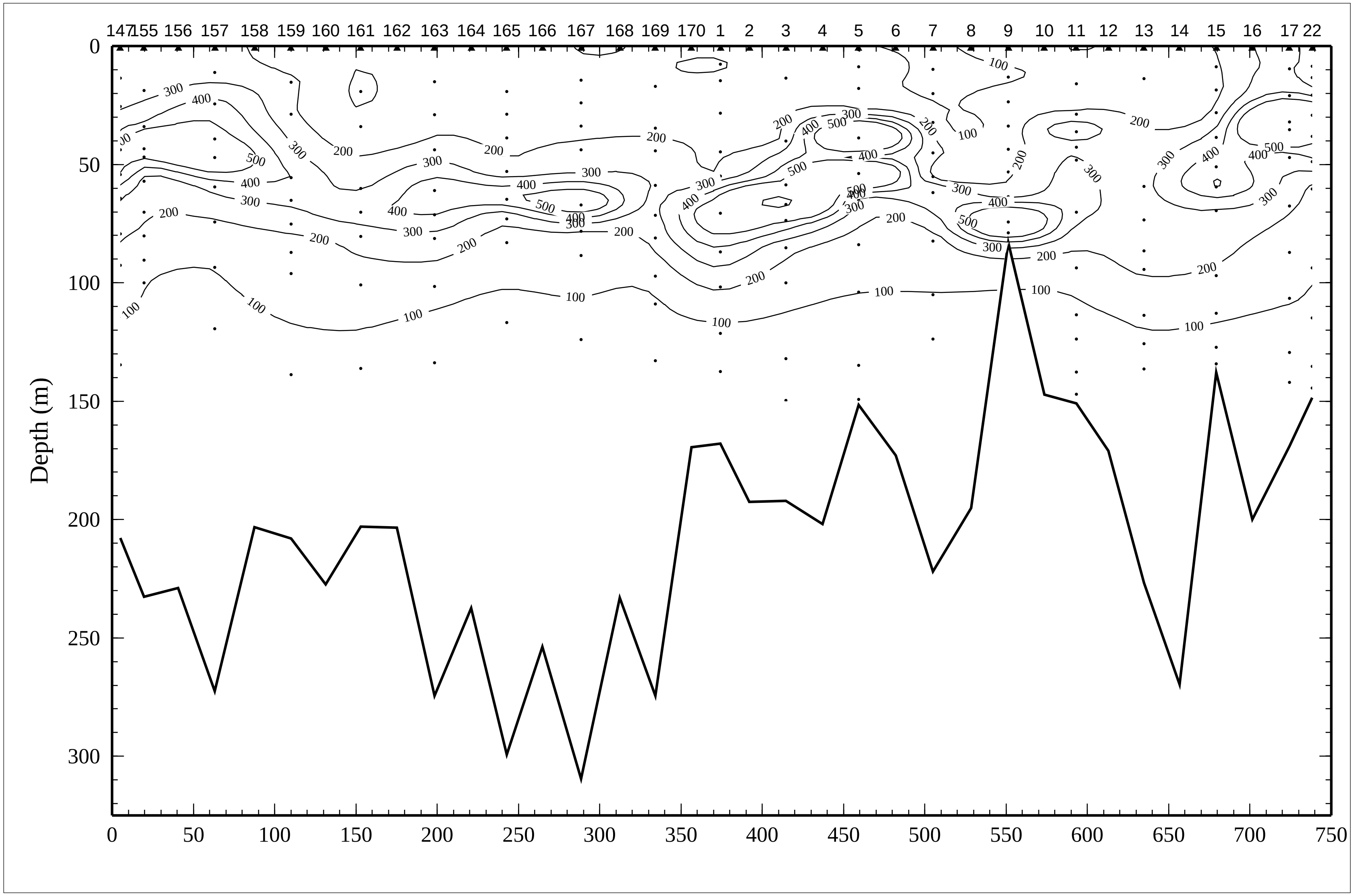

Figure 9.9.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 9 of LATEX A survey H09, 26 July - 7 August 1994.

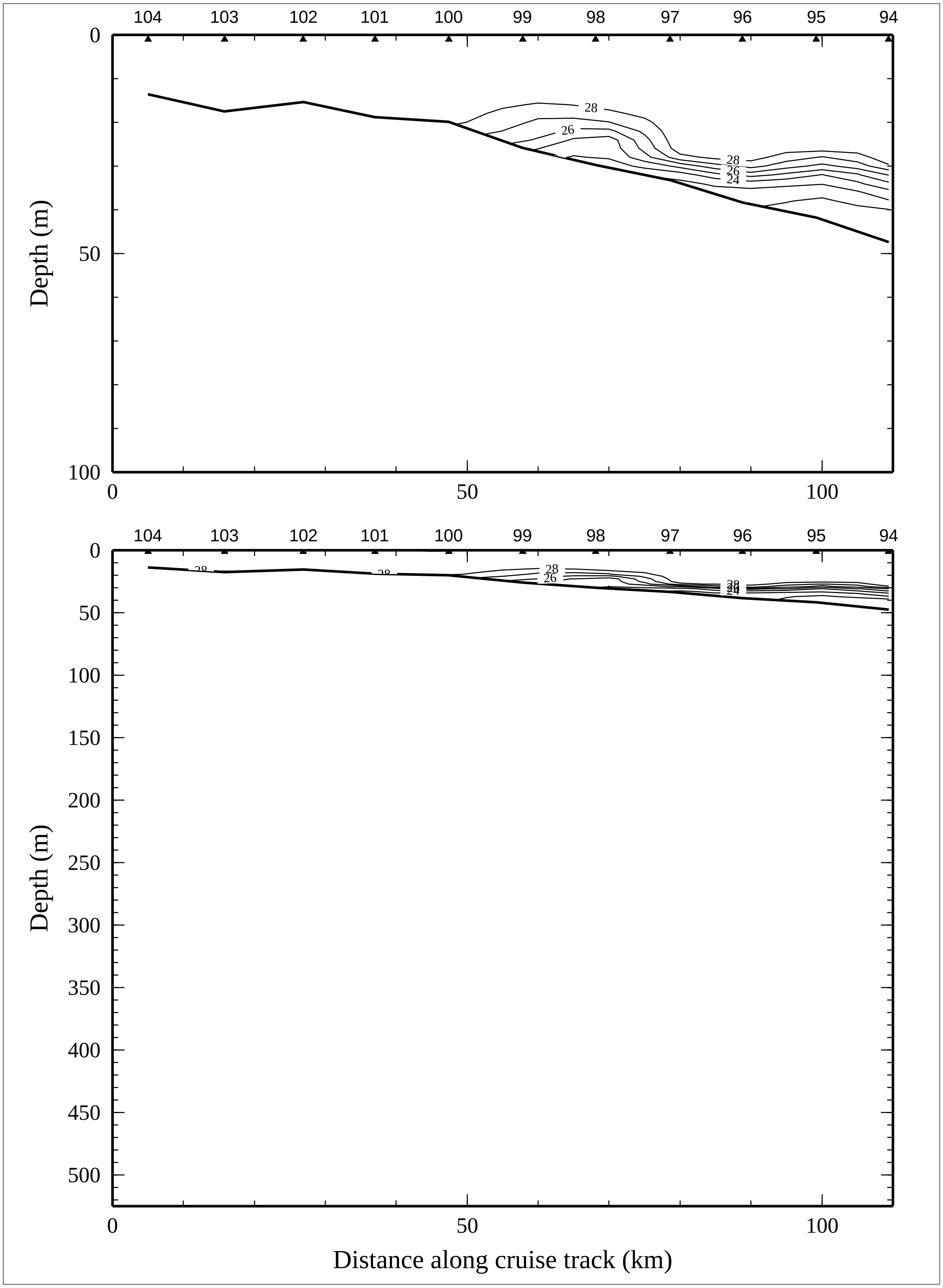

Figure 9.11.1. Potential temperature (˚C) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

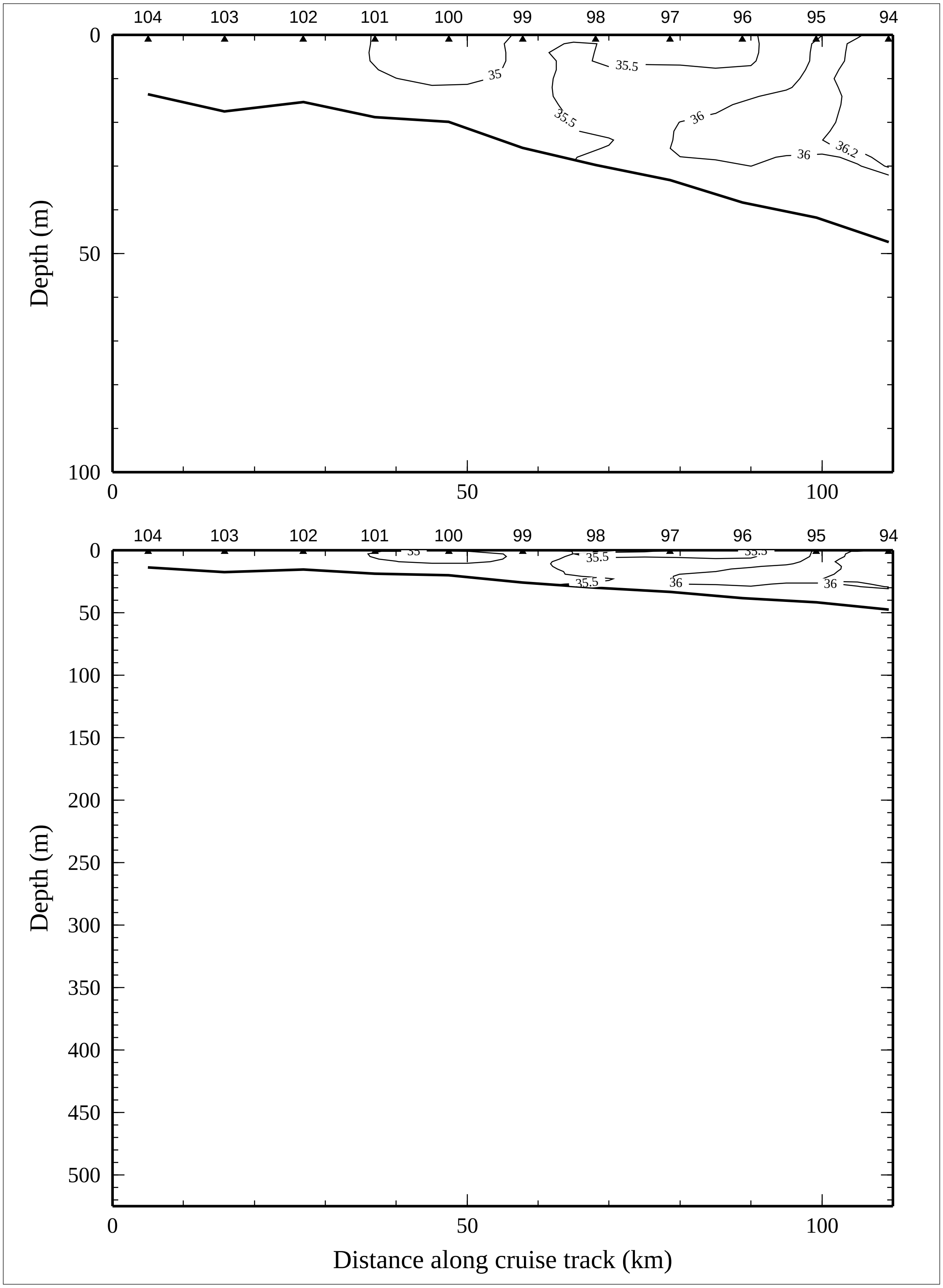

Figure 9.11.2. Salinity, derived from CTD data, on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

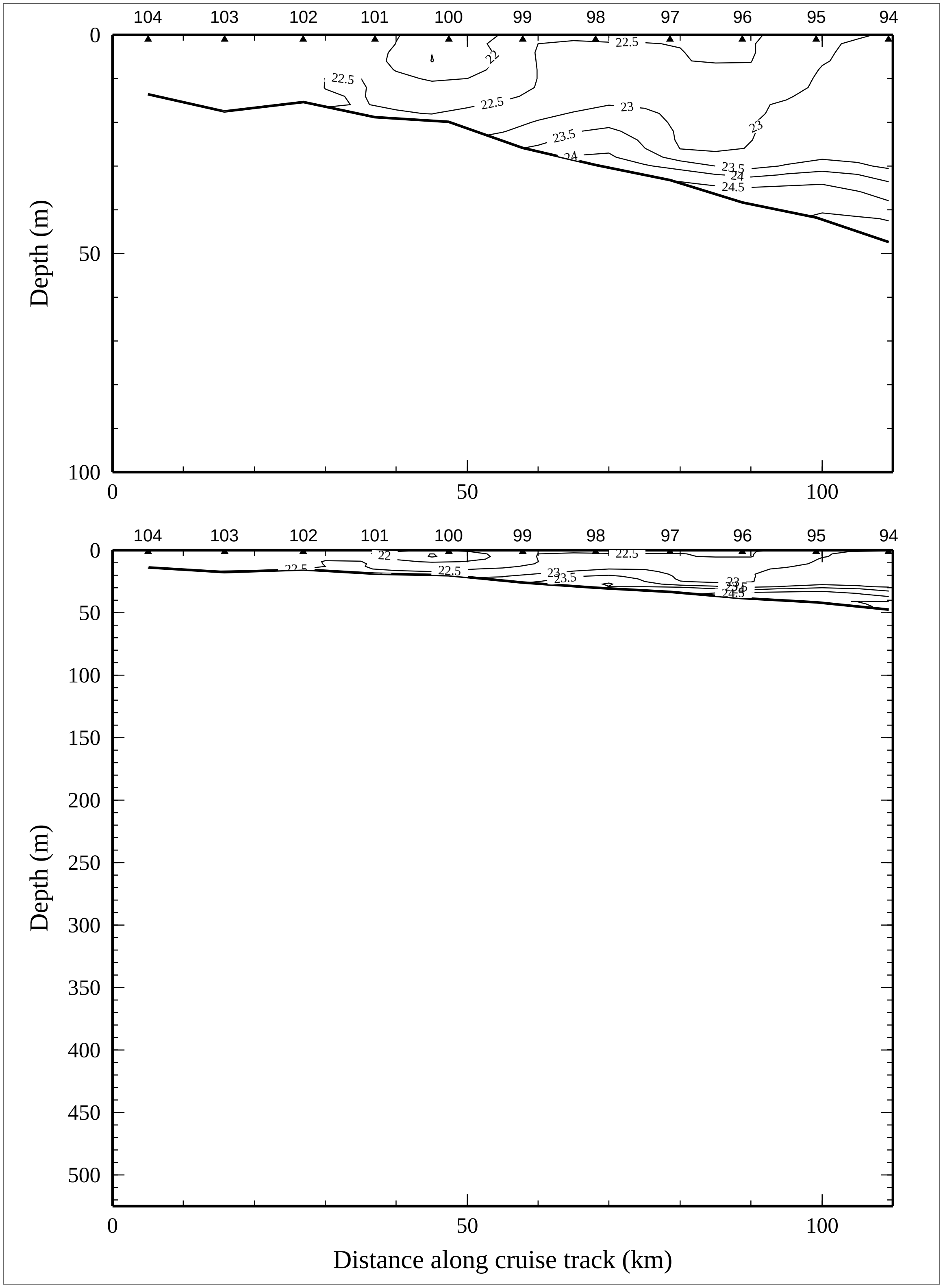

Figure 9.11.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

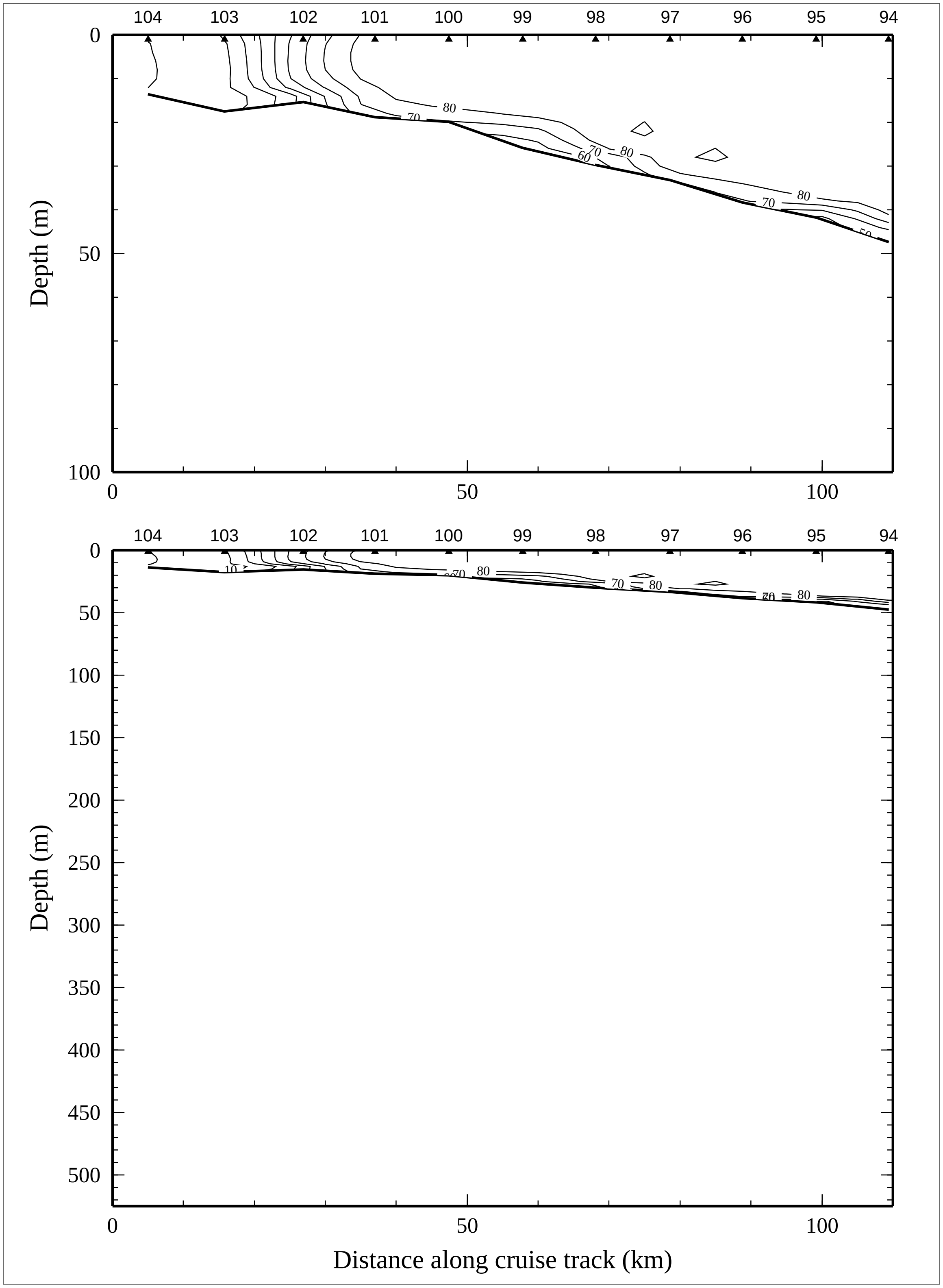

Figure 9.11.4. Percent transmission (660 nm wave length; 25-cm path length) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

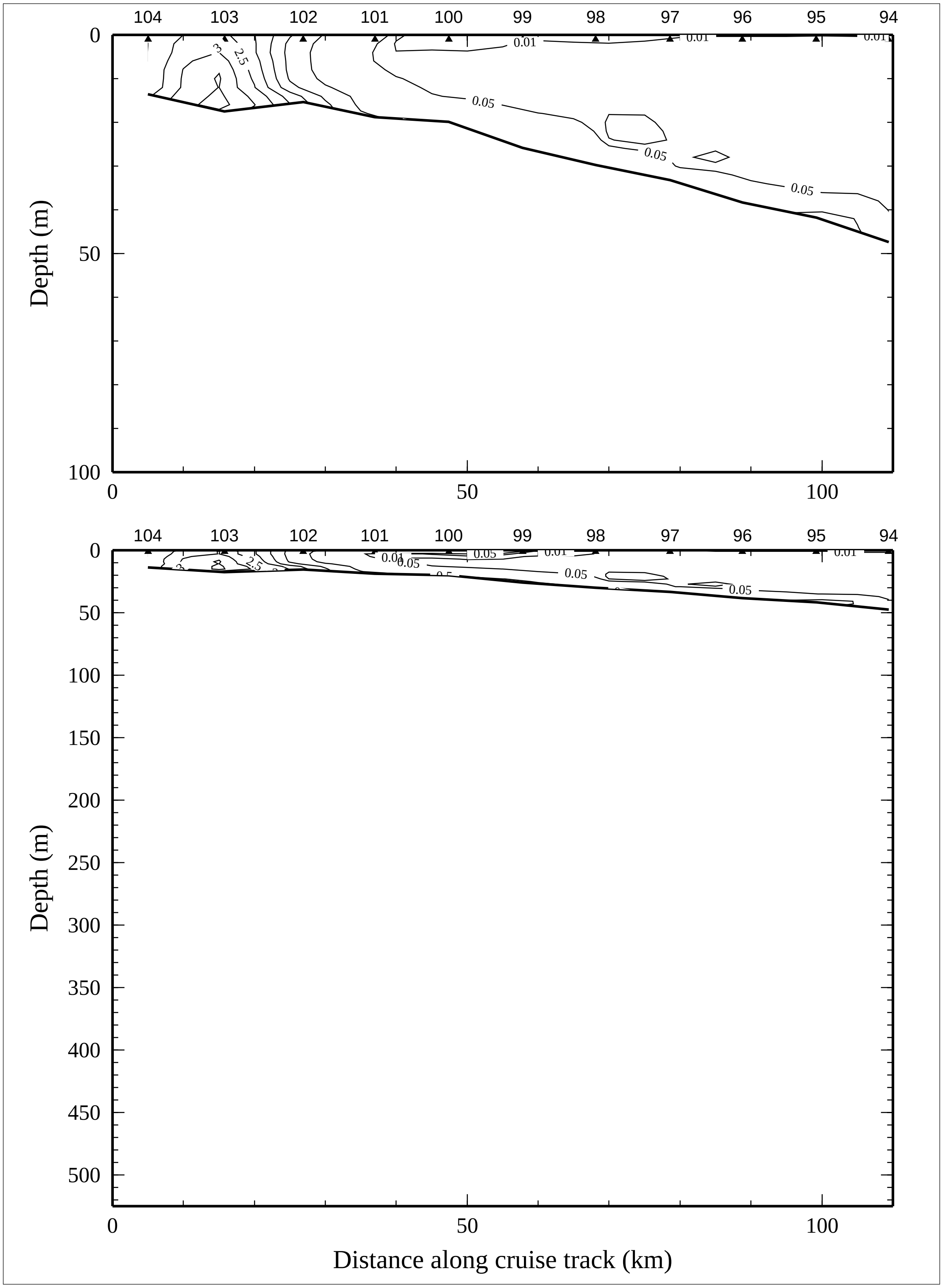

Figure 9.11.5. Optical backscatterance (voltage) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

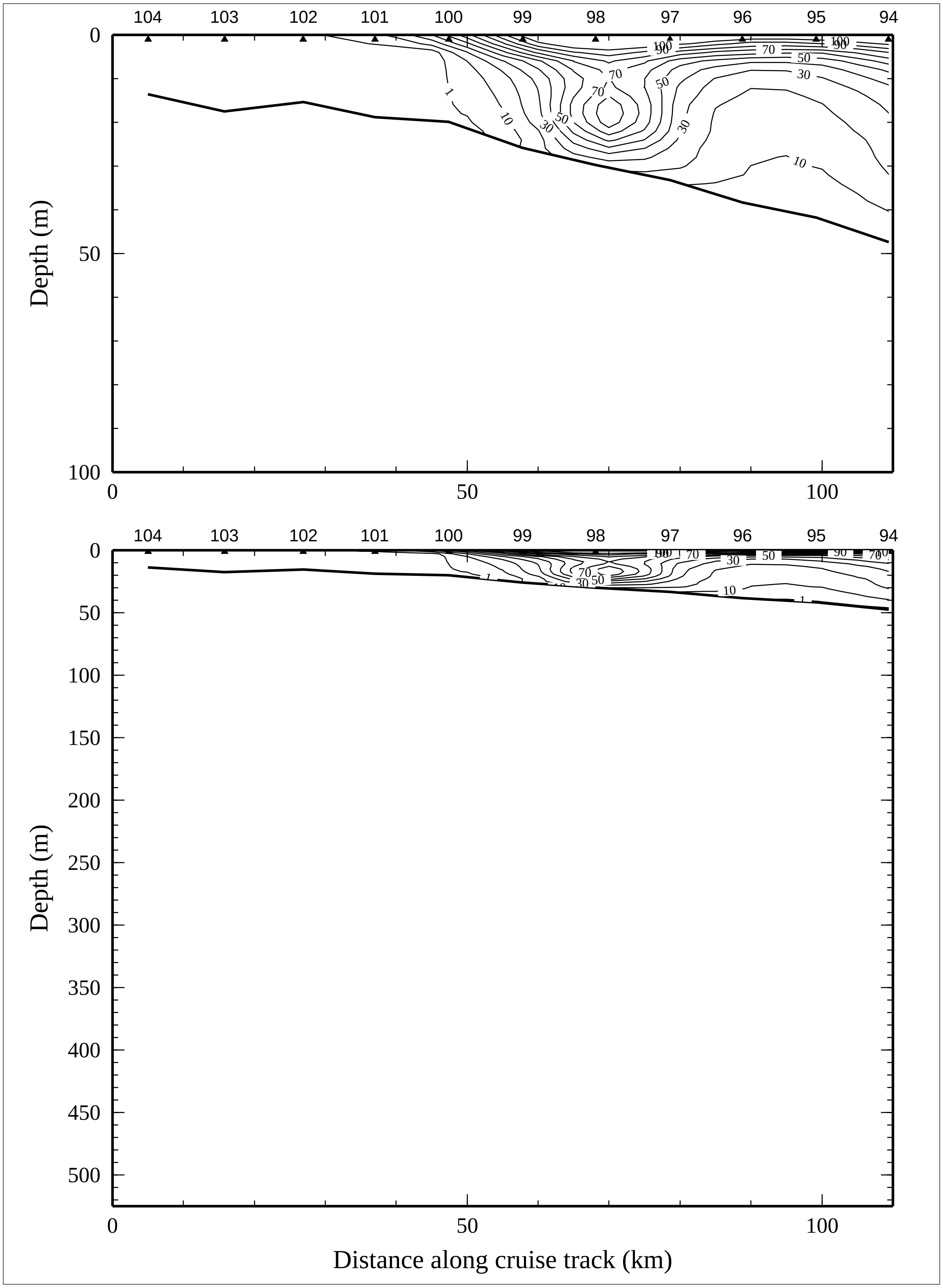

Figure 9.11.6. Downwelling irradiance as percent of surface irradiance on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

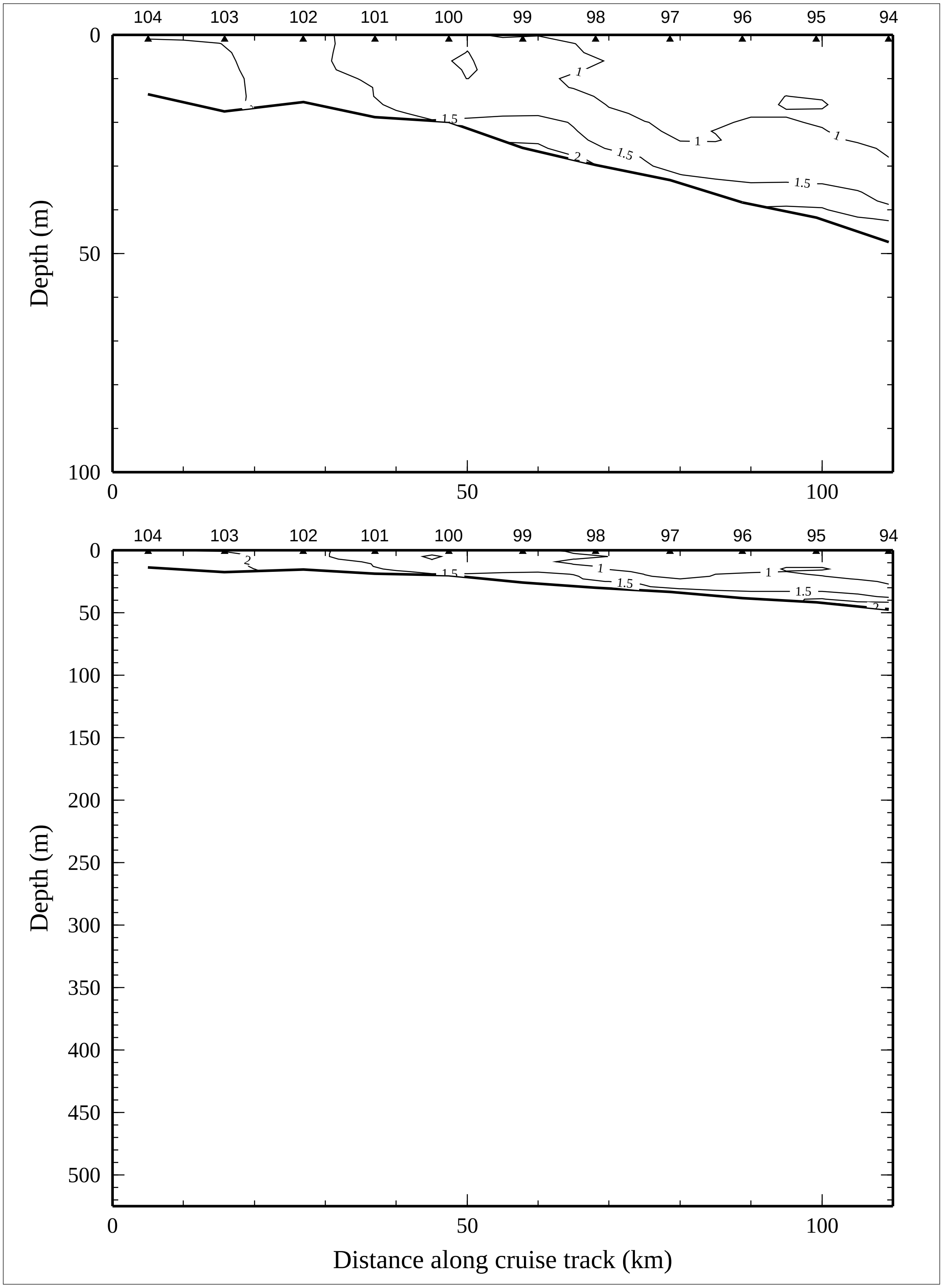

Figure 9.11.7. Relative fluorescence on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

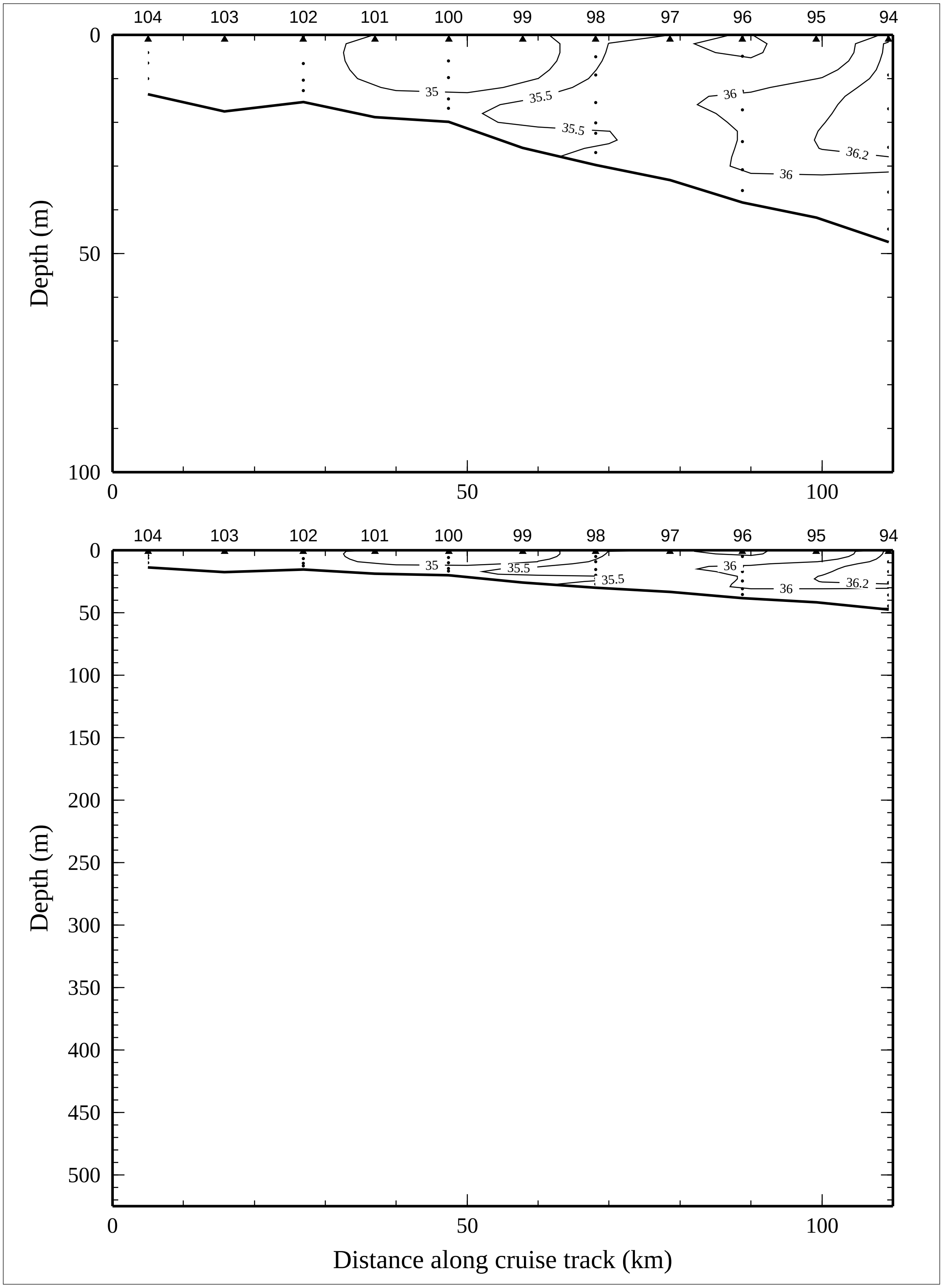

Figure 9.11.8. Bottle salinity on line 11 of LATEX A survey H09,
26 July - 7 August 1994.

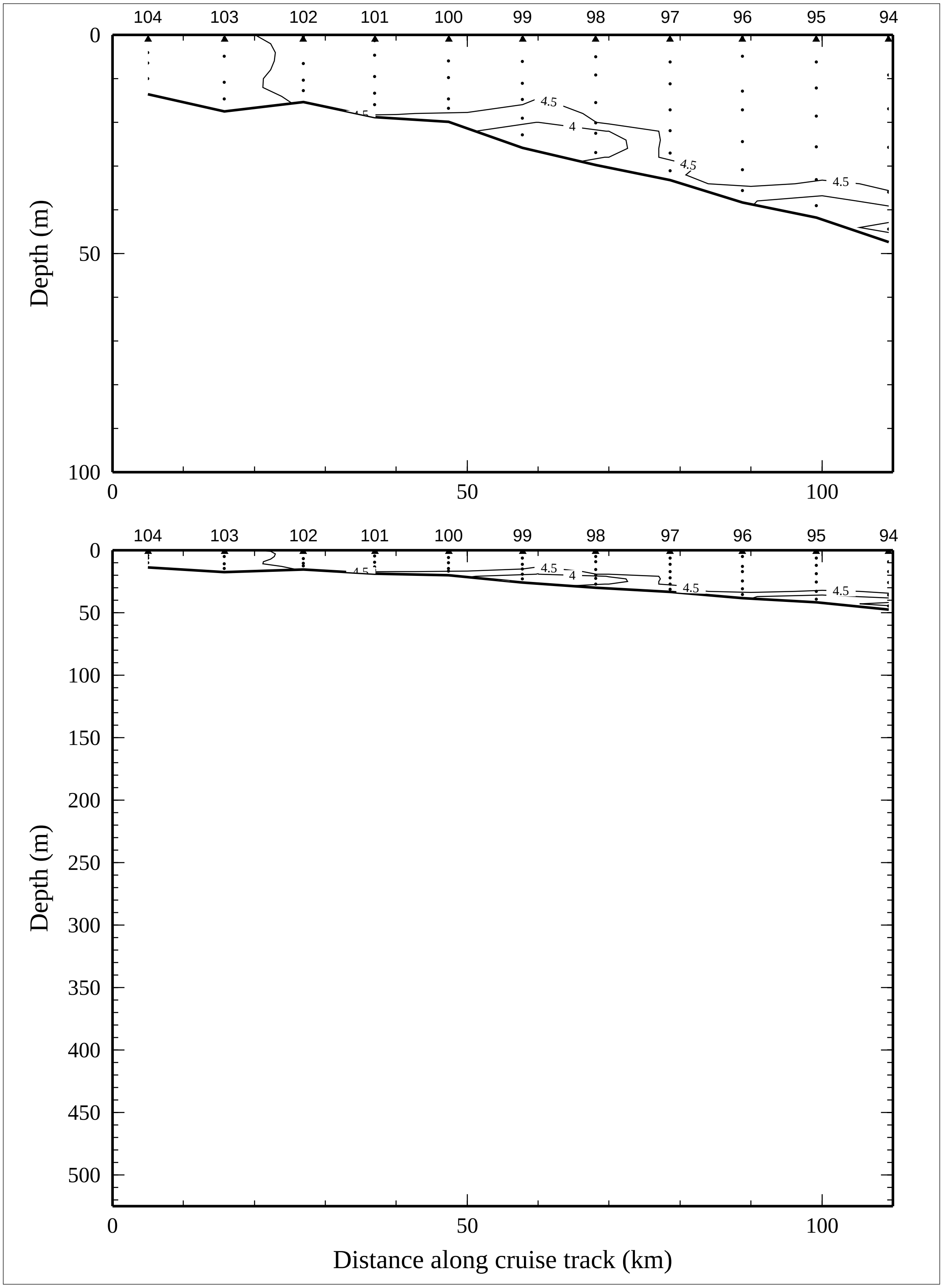

Figure 9.11.9. Dissolved oxygen (ml·l^{-1}) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

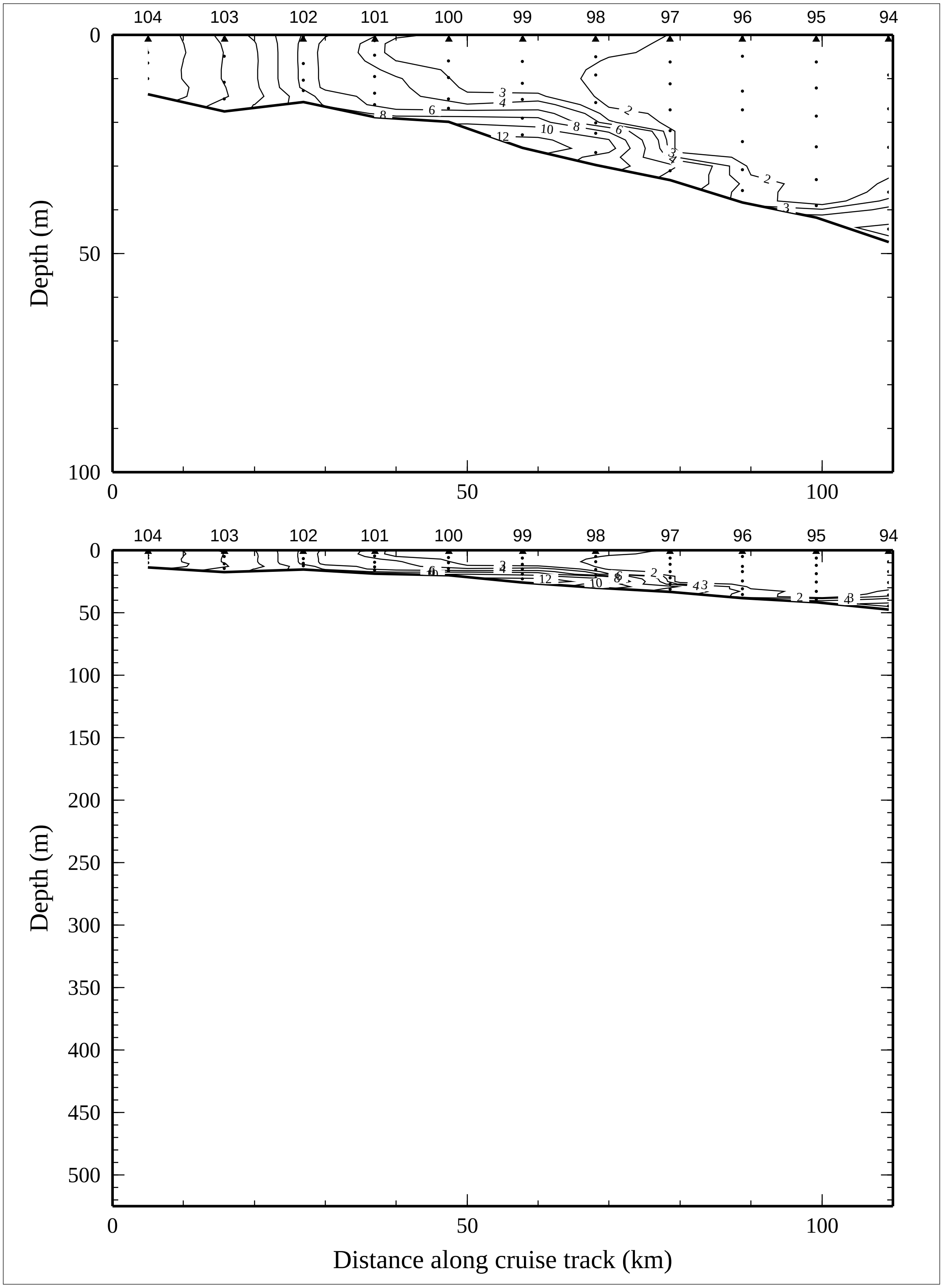

Figure 9.11.10. Silicate (μmol·l-1) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

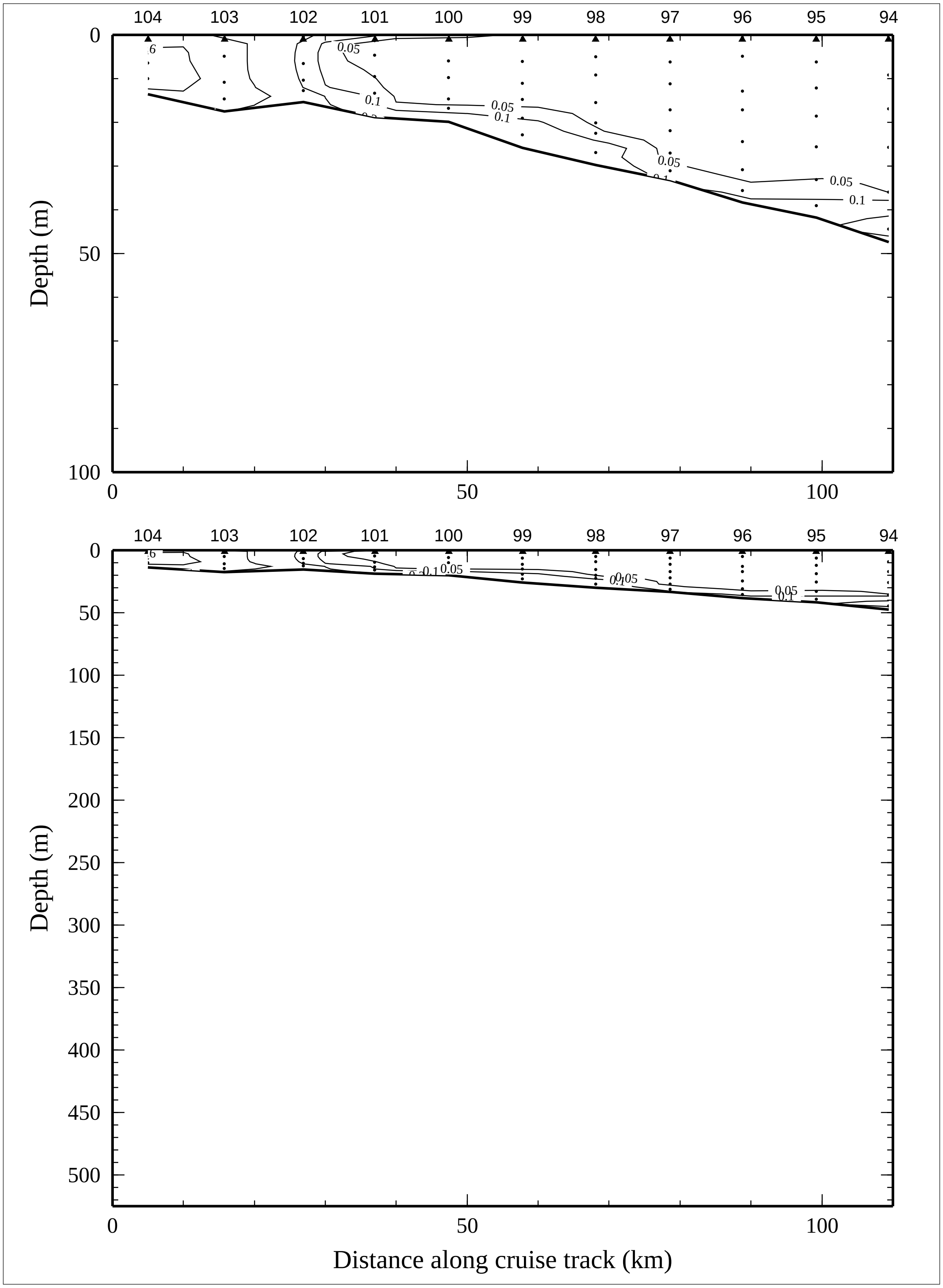

Figure 9.11.11. Phosphate (μmol·l⁻¹) on line 11 of LATEX A survey H09,
26 July - 7 August 1994.

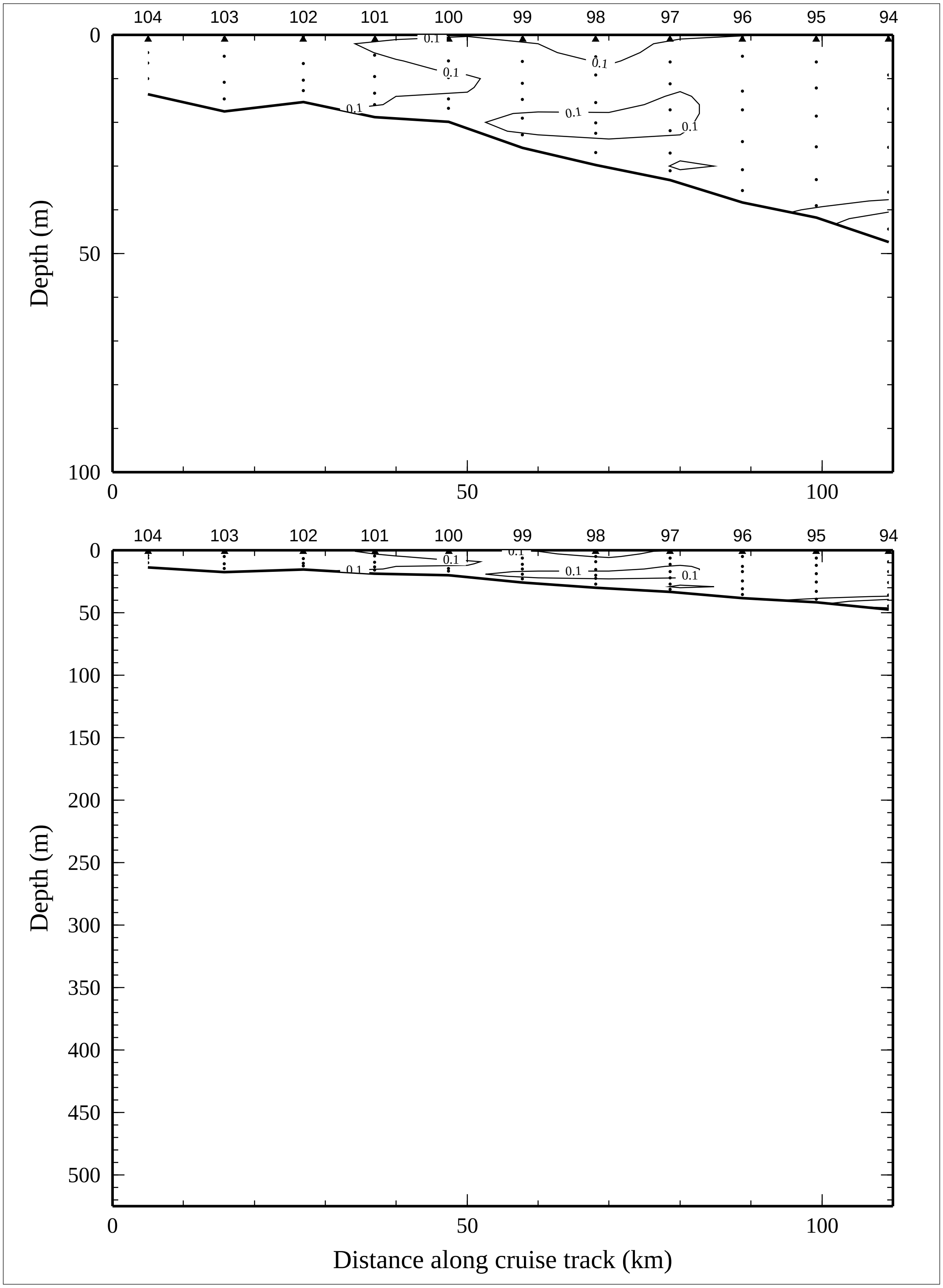

Figure 9.11.12. Nitrate (µmol·l-1) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

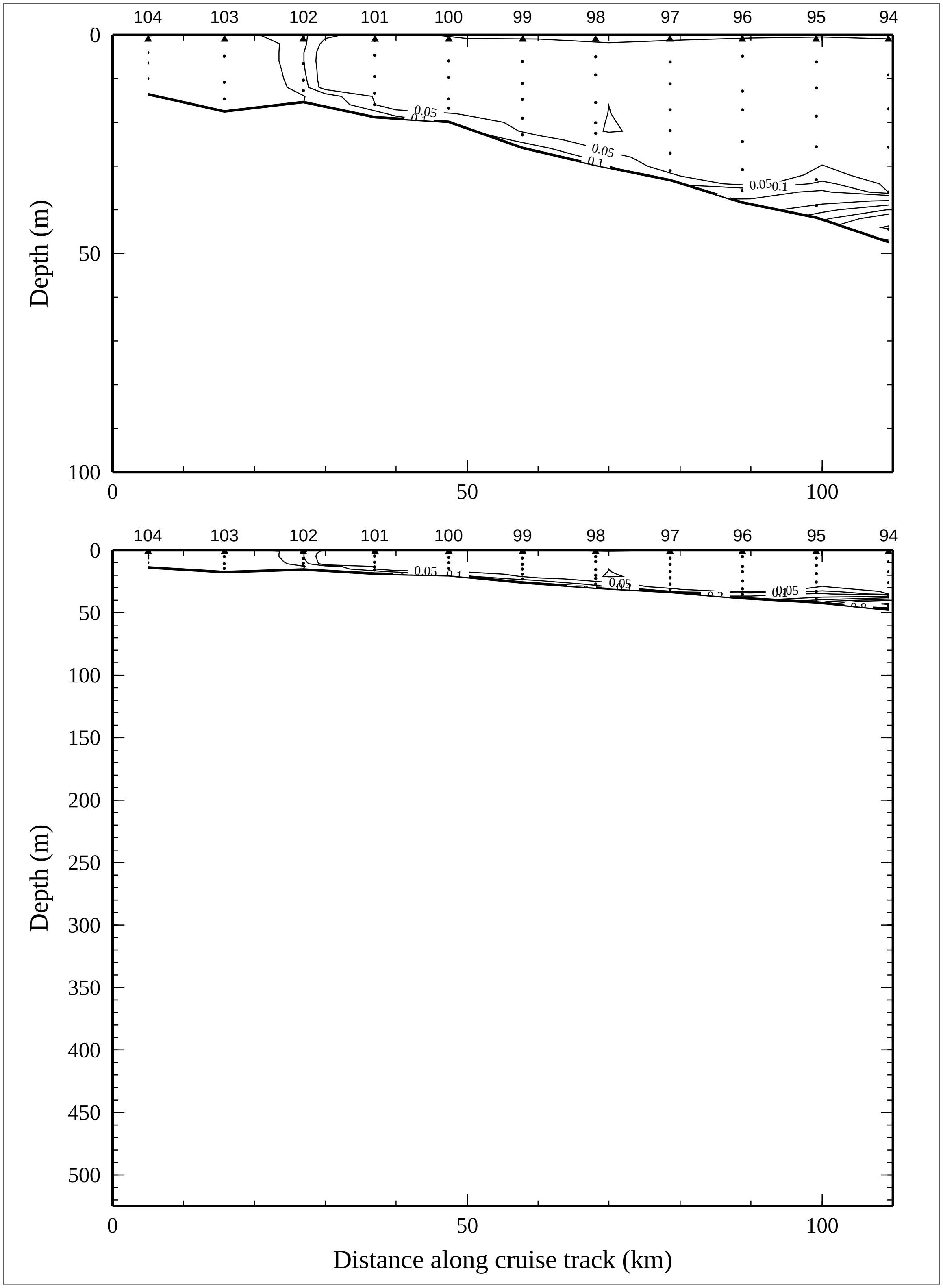

Figure 9.11.13. Nitrite (μmol·l^{-1}) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

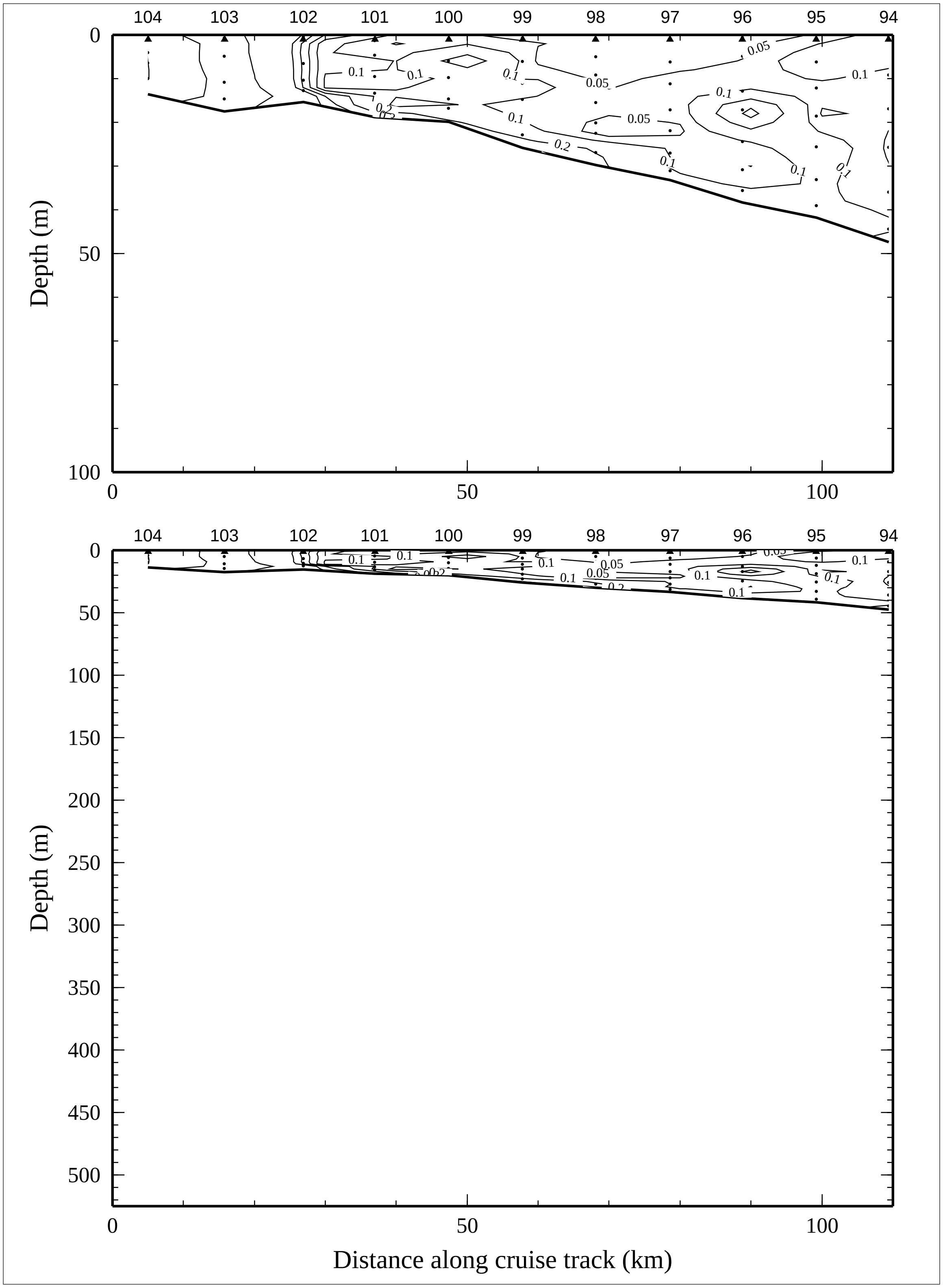

Figure 9.11.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

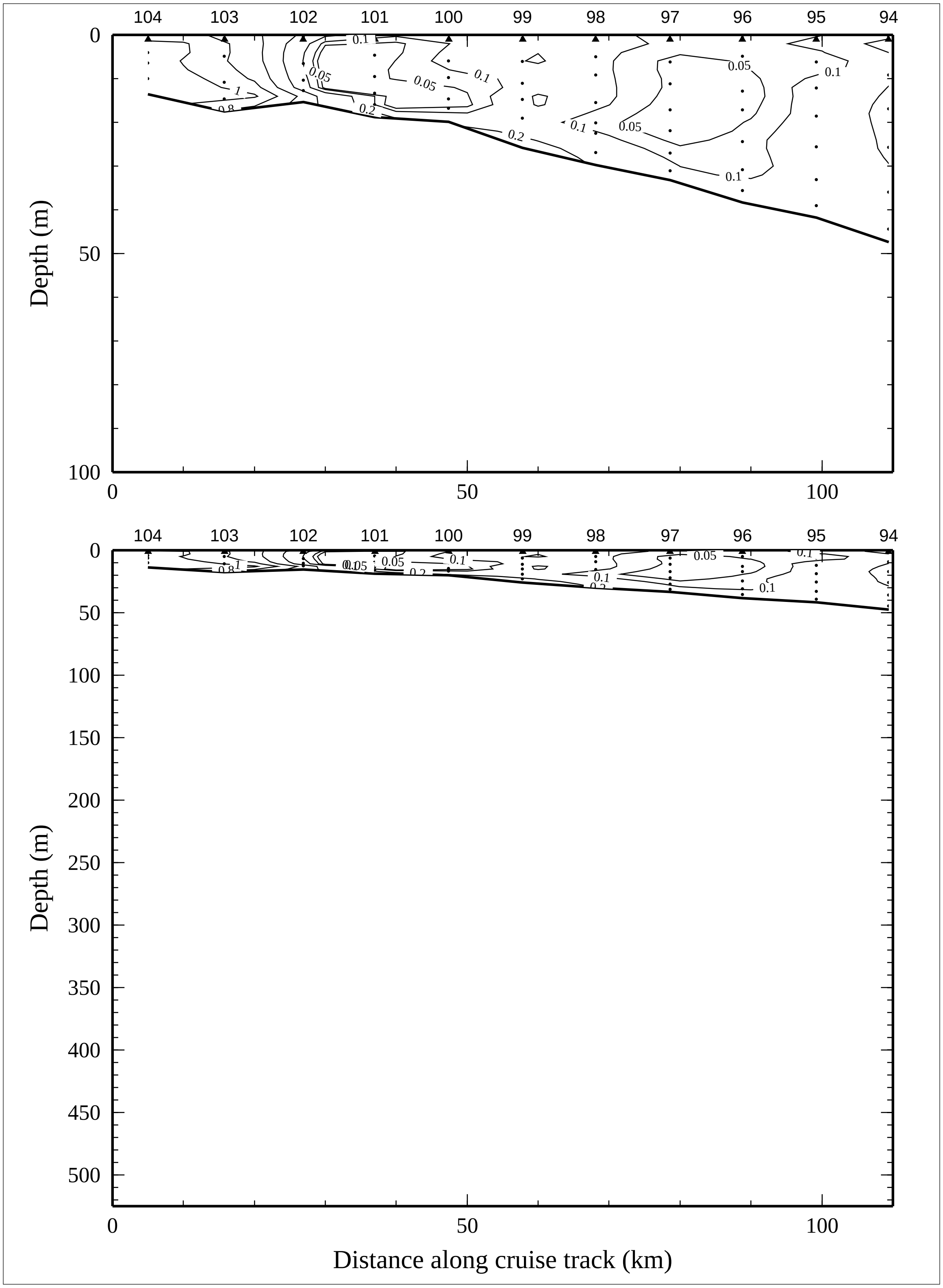

Figure 9.11.15. Urea (μmol·l⁻¹) on line 11 of LATEX A survey H09,
26 July - 7 August 1994.

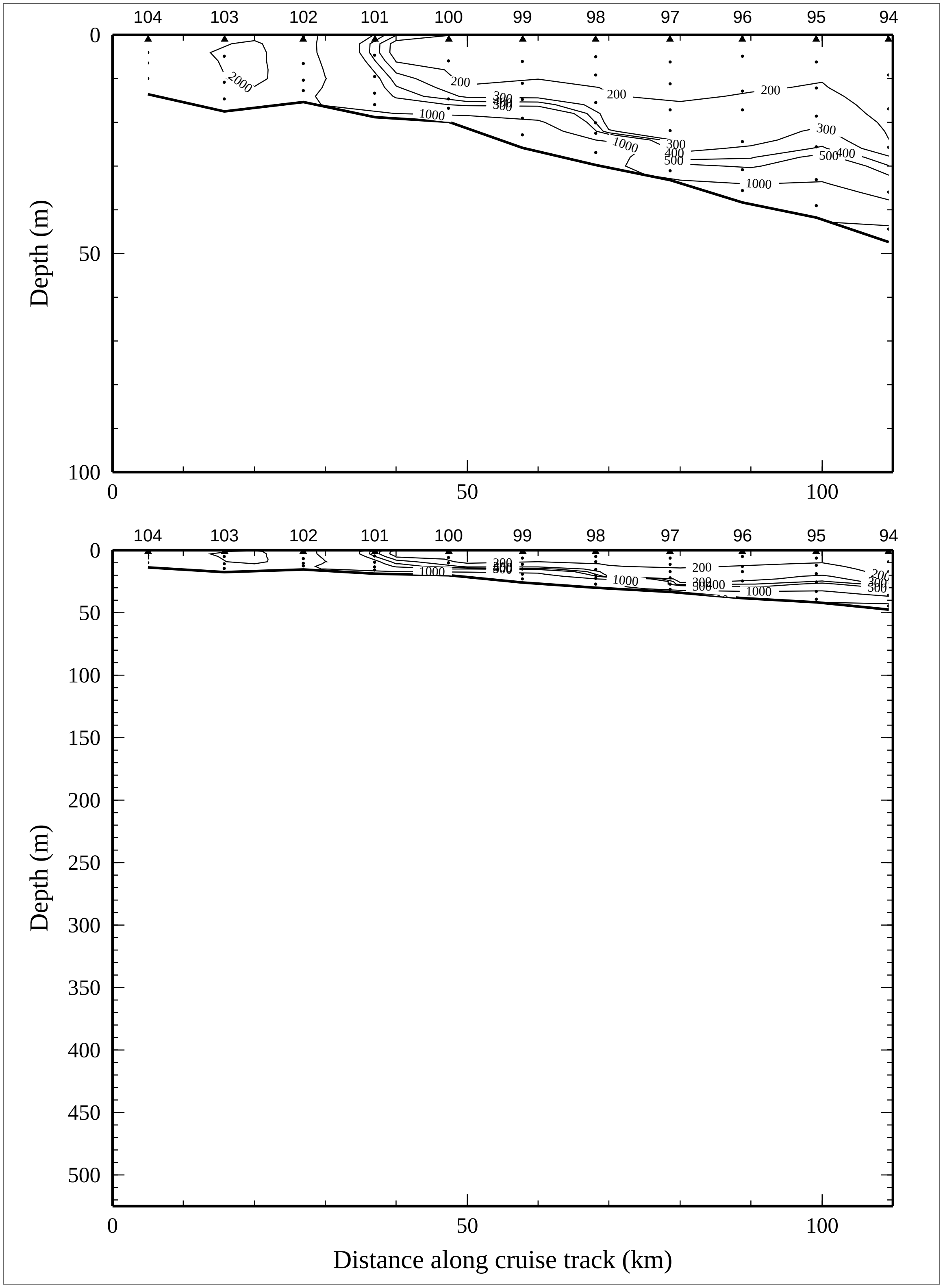

Figure 9.11.16. Chlorophyll a (ng·l^{-1}) on line 11 of LATEX A survey H09, 26 July - 7 August 1994.

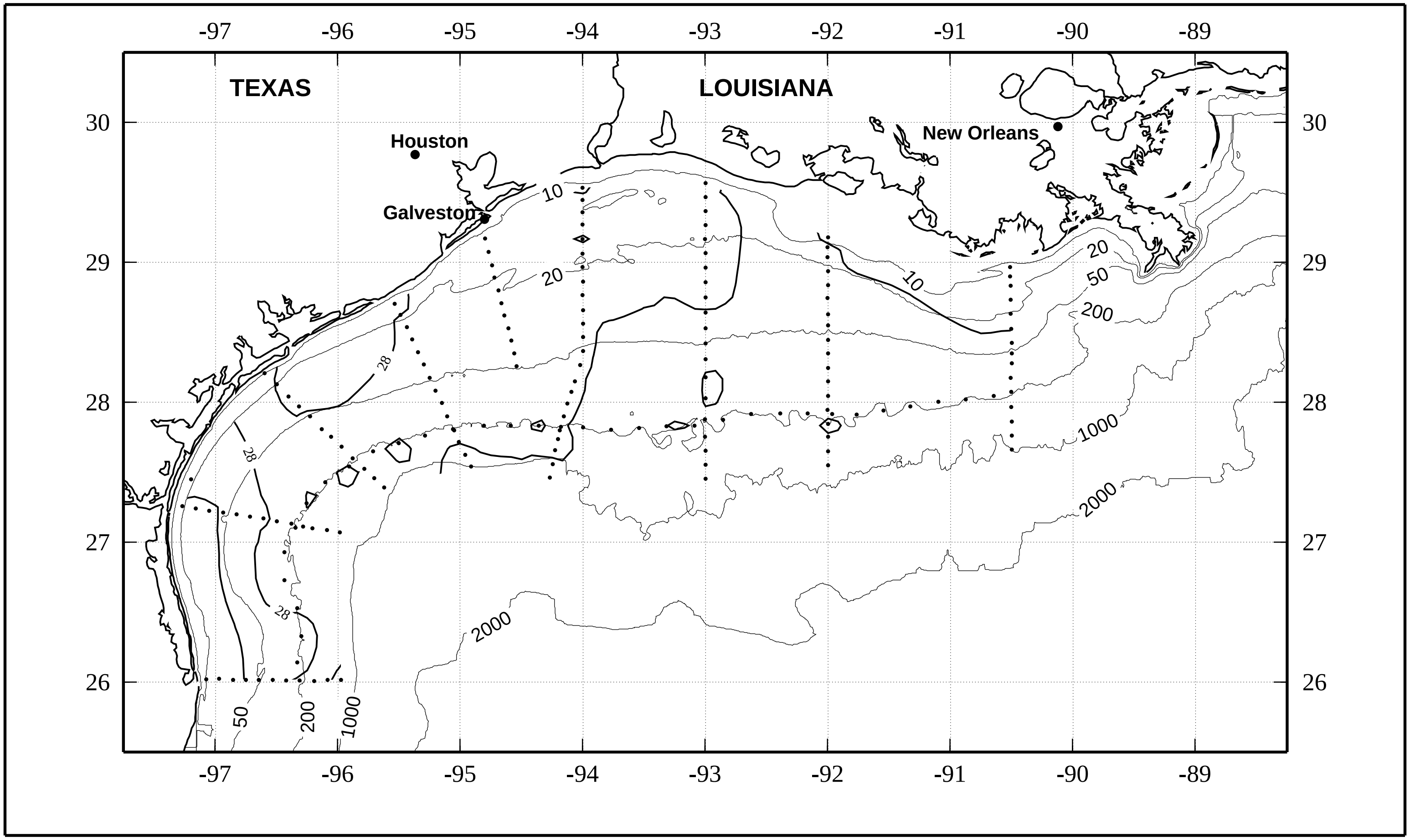

Figure 9.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

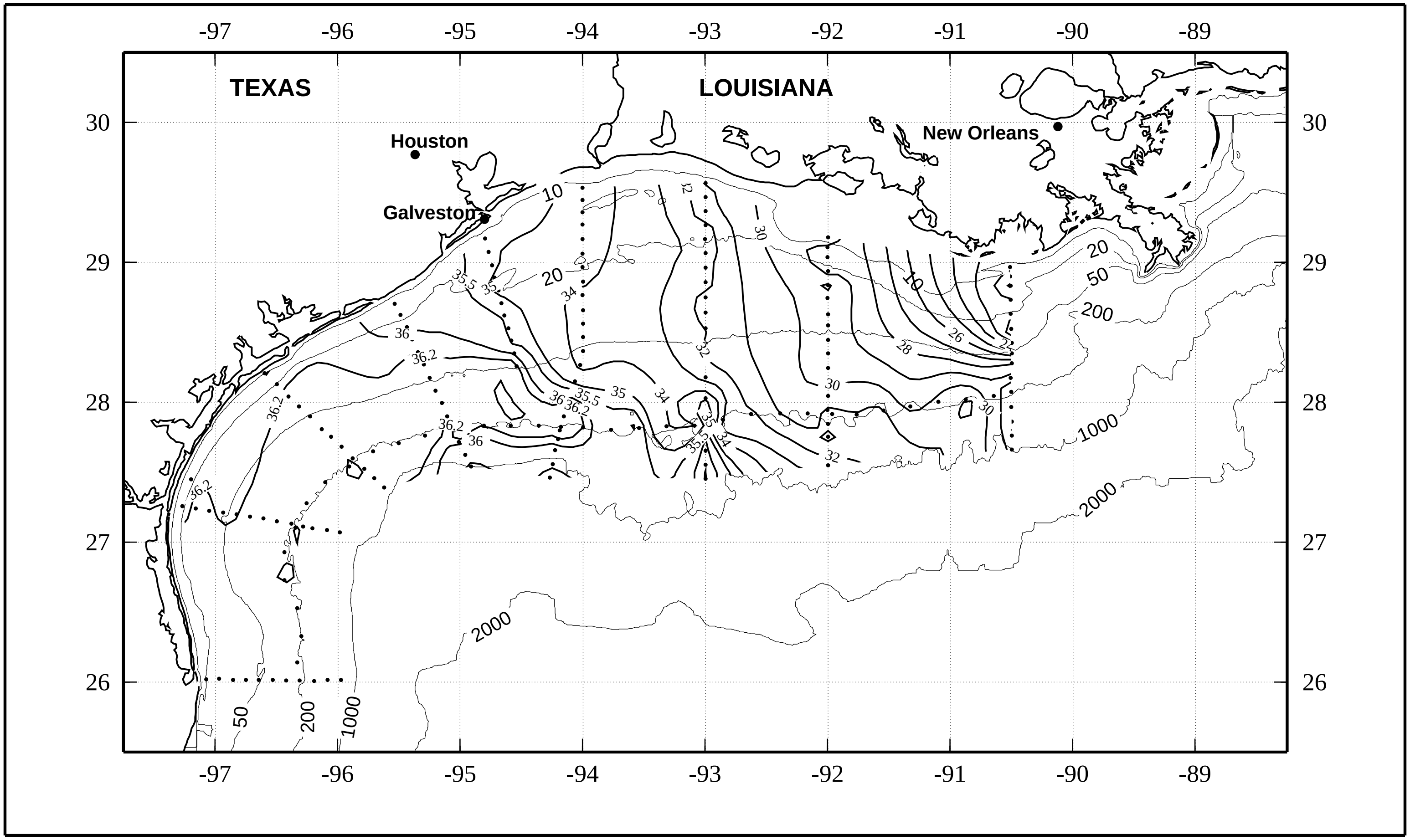

Figure 9.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

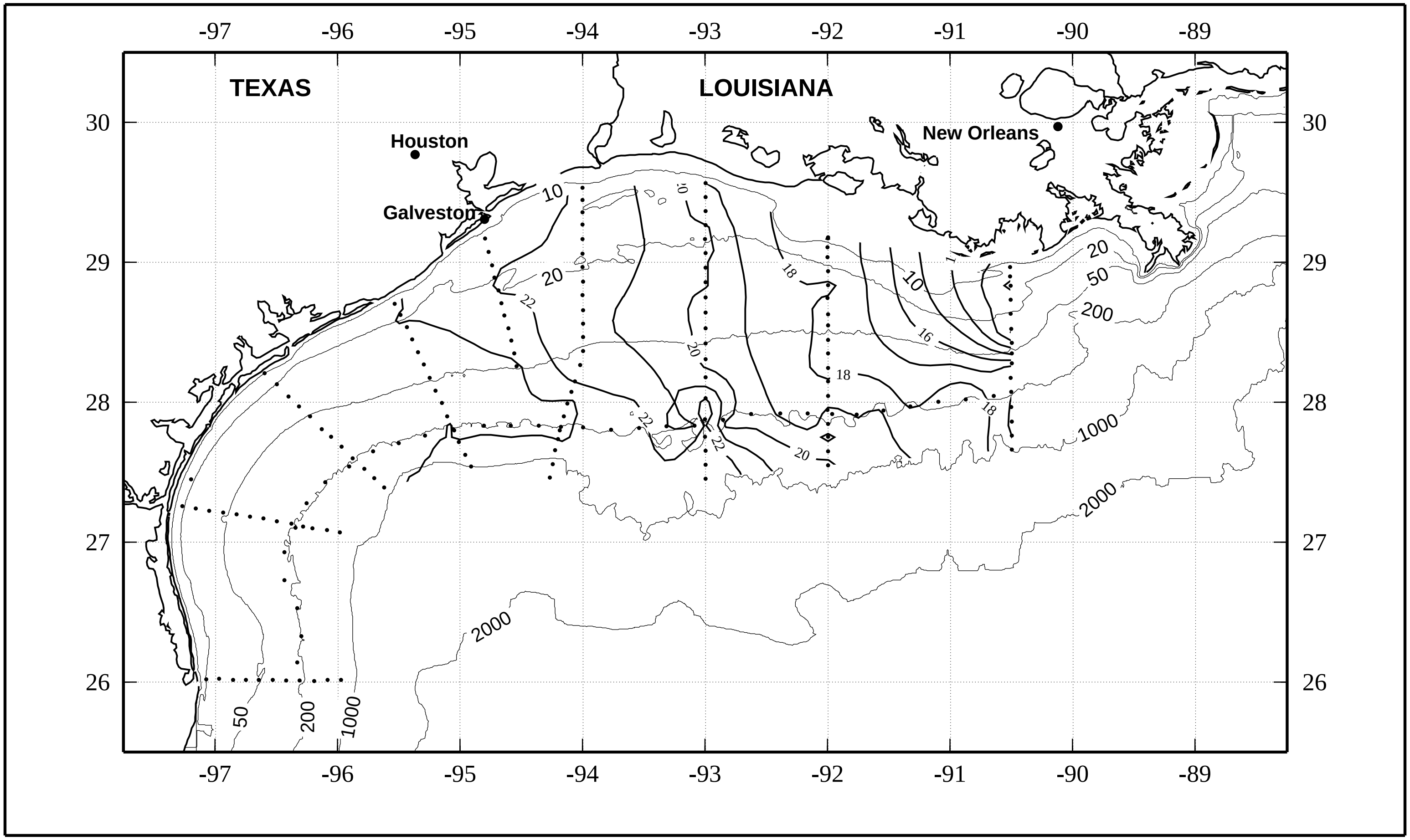

Figure 9.12.3. Density anomaly (σ_θ in kg·m^{-3}) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

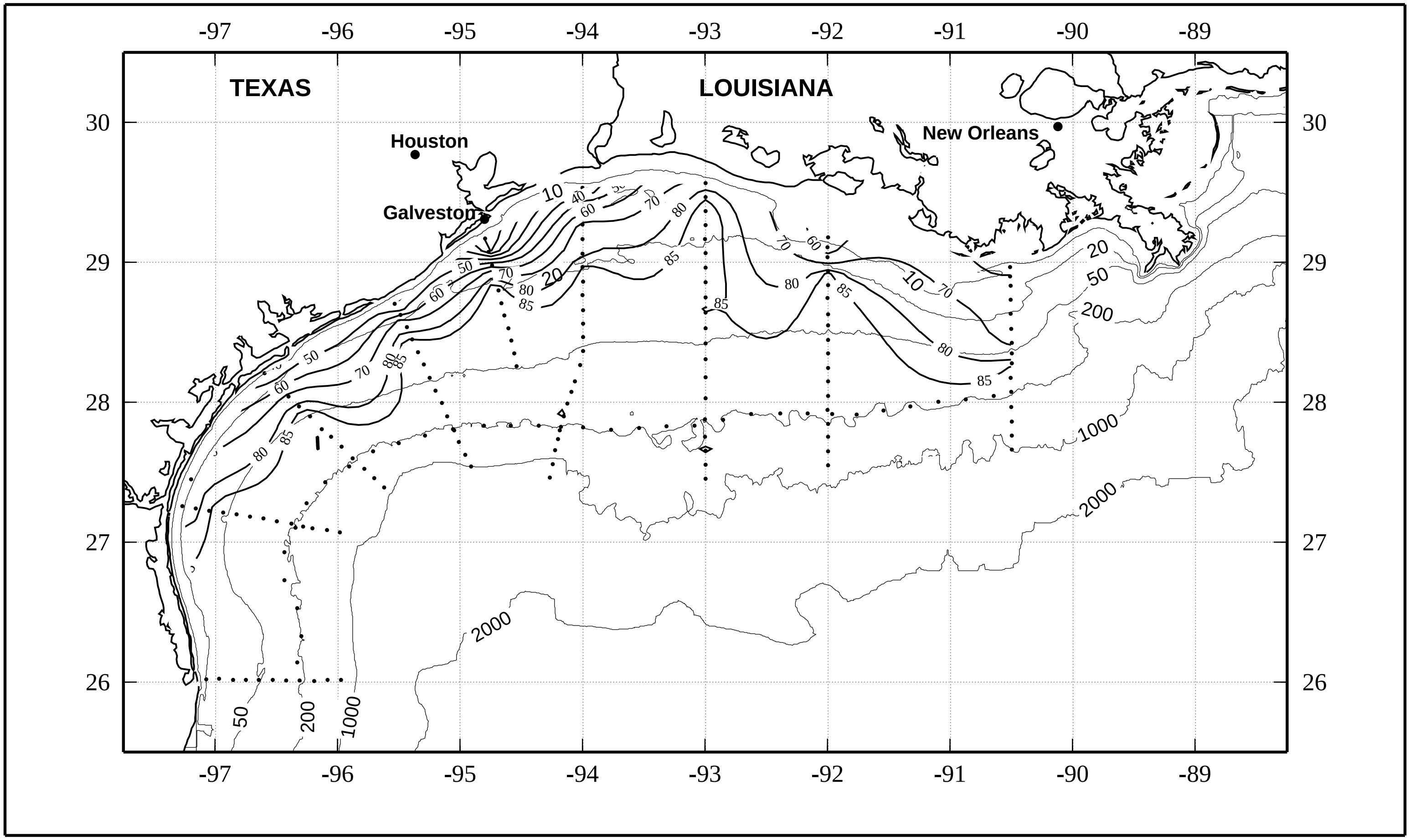

Figure 9.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

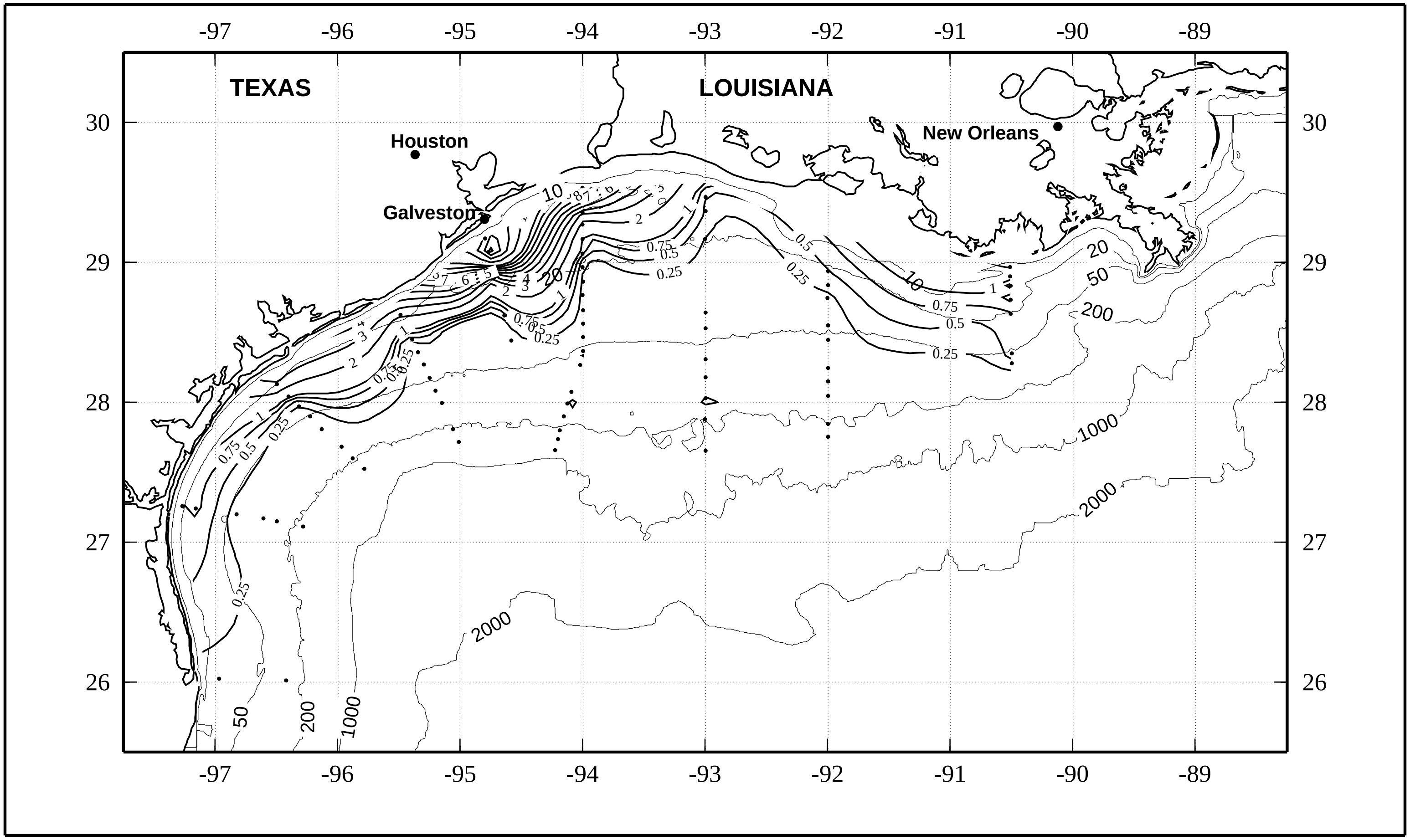

Figure 9.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

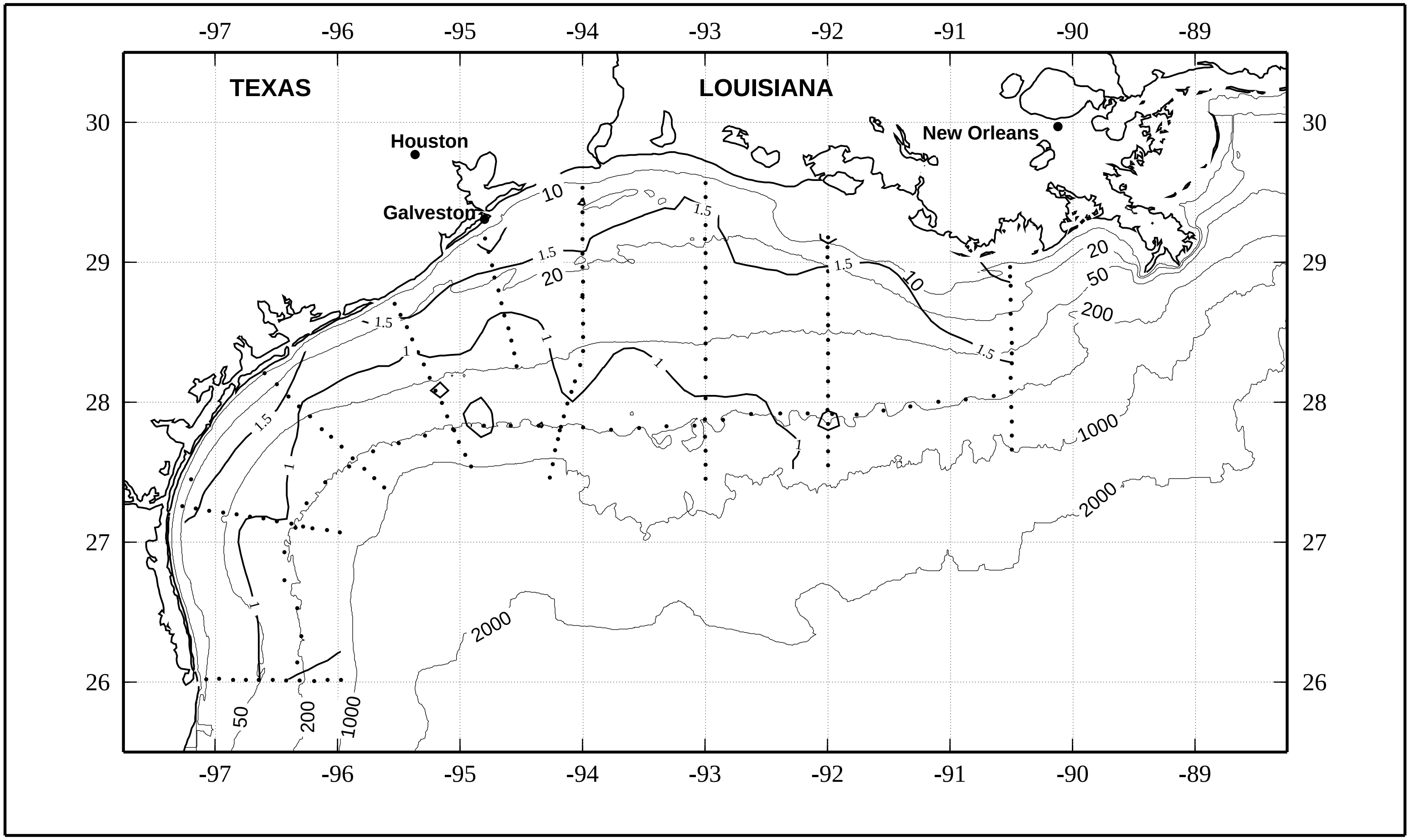

Figure 9.12.7. Relative fluorescence at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

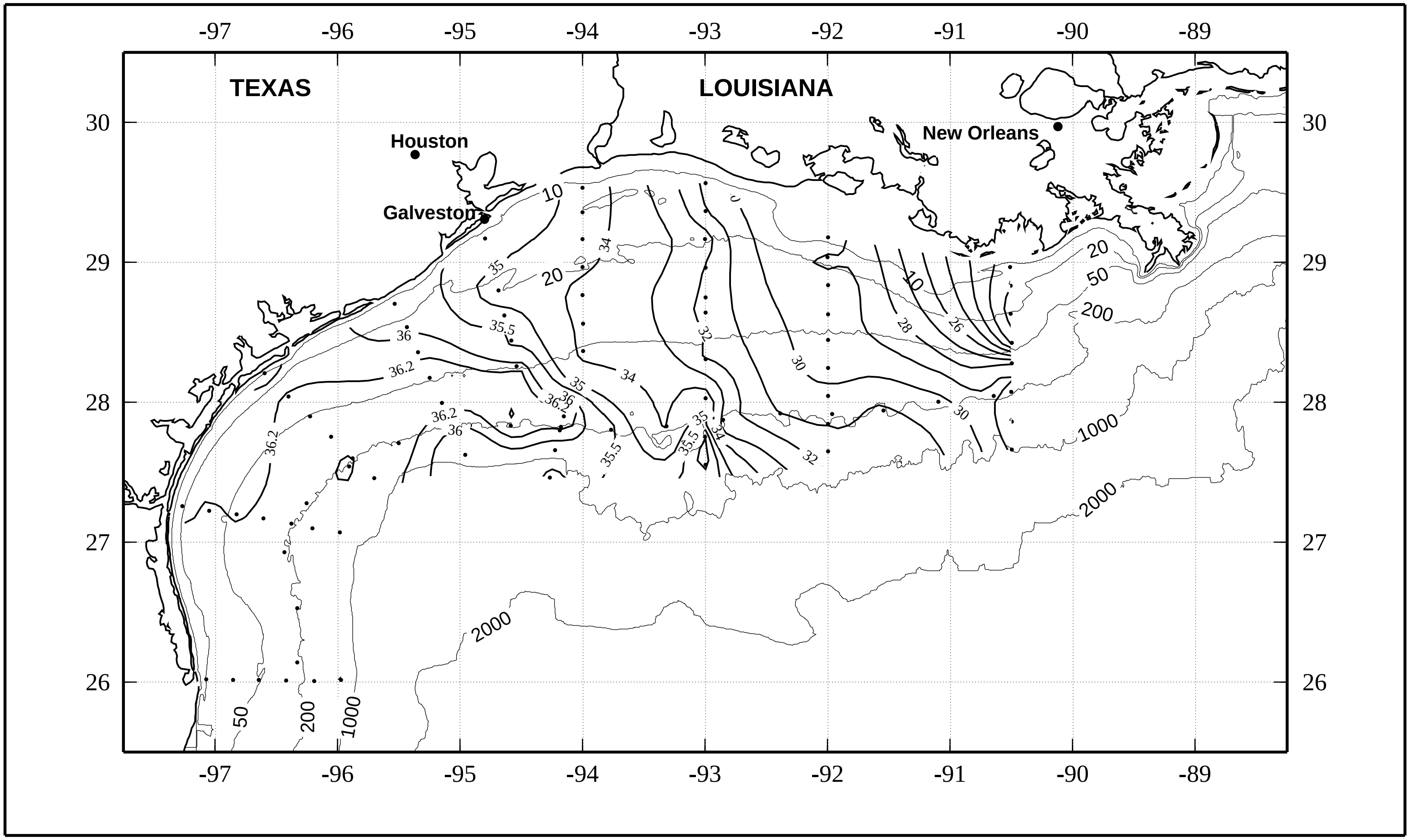

Figure 9.12.8. Bottle salinity at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

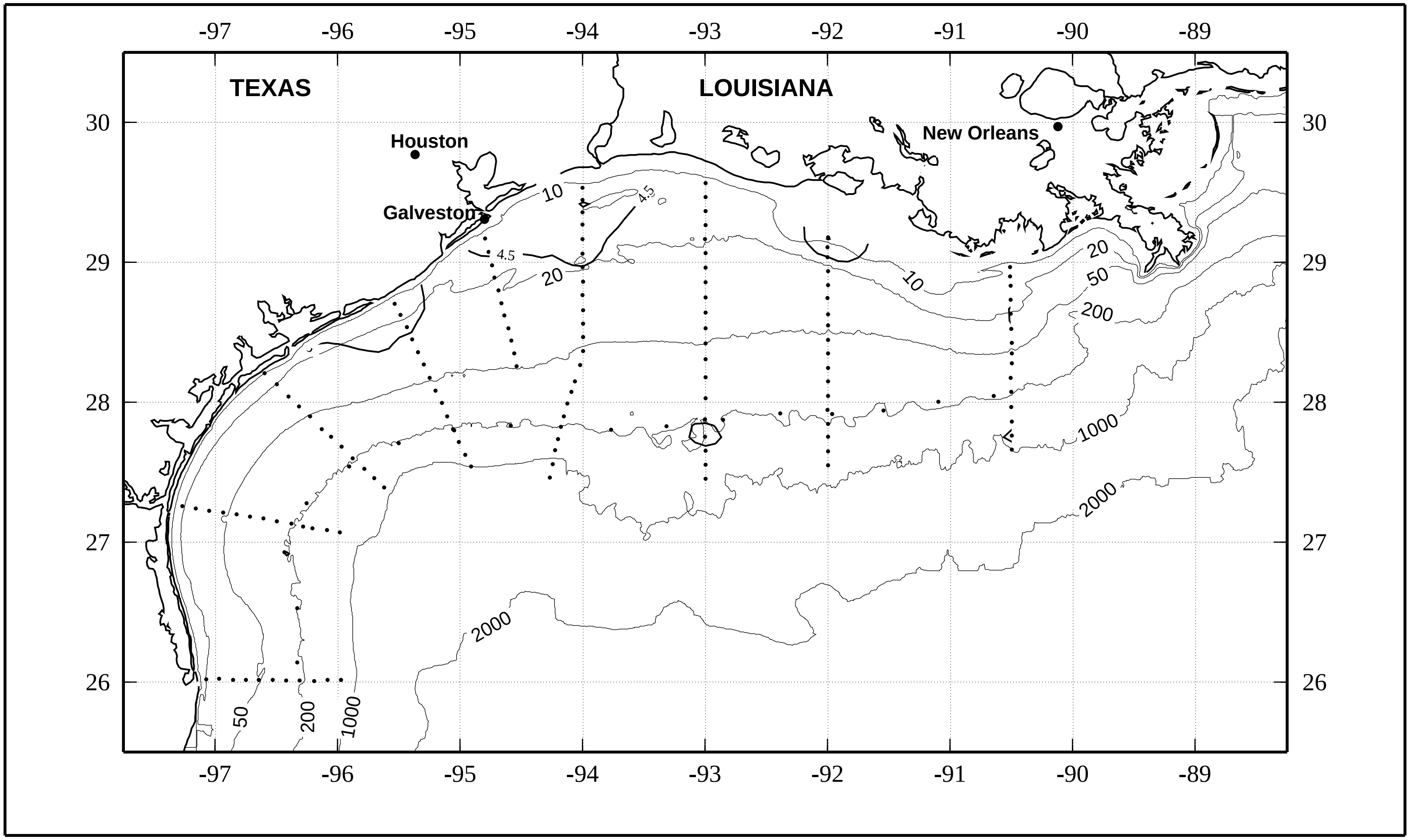

Figure 9.12.9. Dissolved oxygen (ml·l-1) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

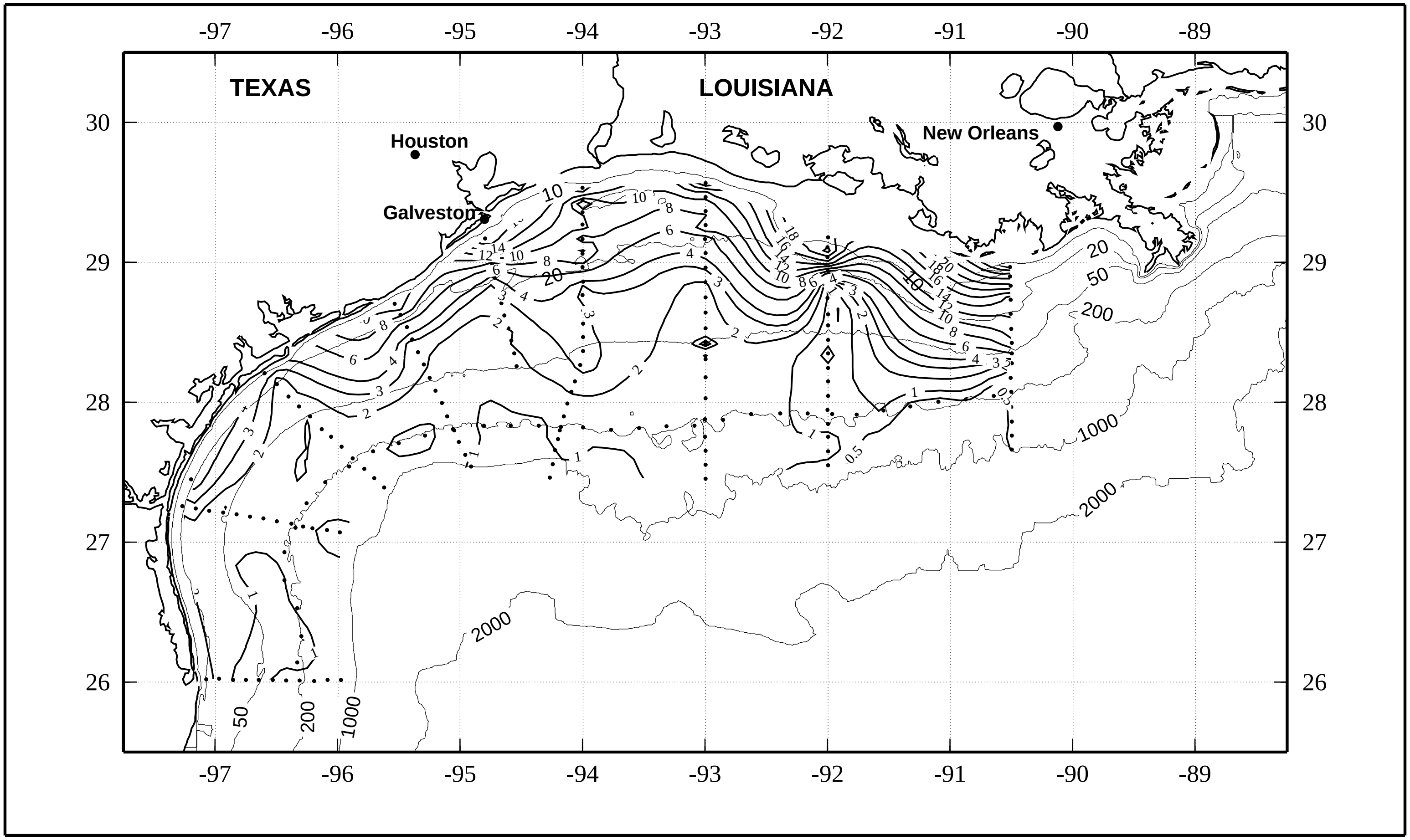

Figure 9.12.10. Silicate (μmol·l^{-1}) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

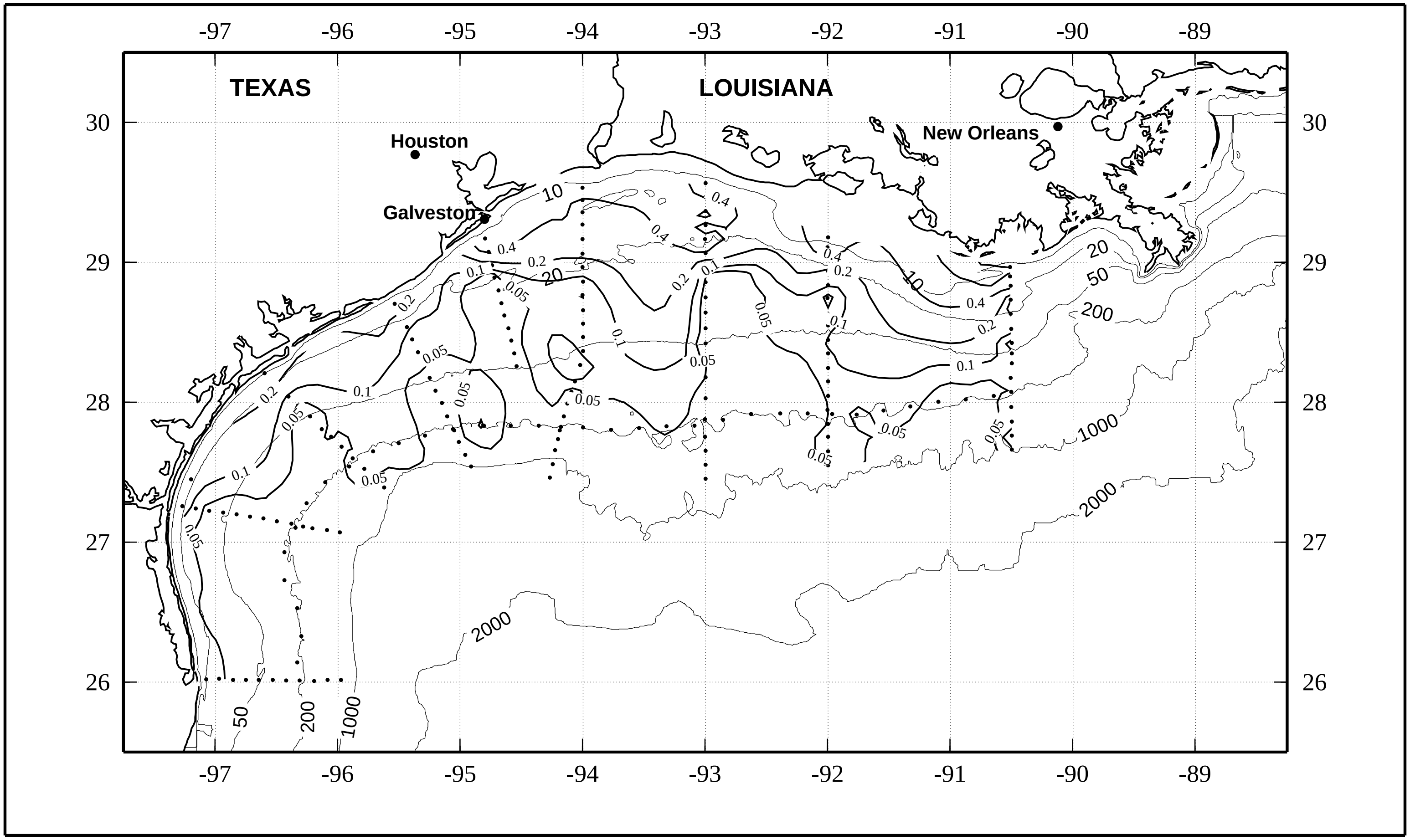

Figure 9.12.11. Phosphate (μmol·l^{-1}) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

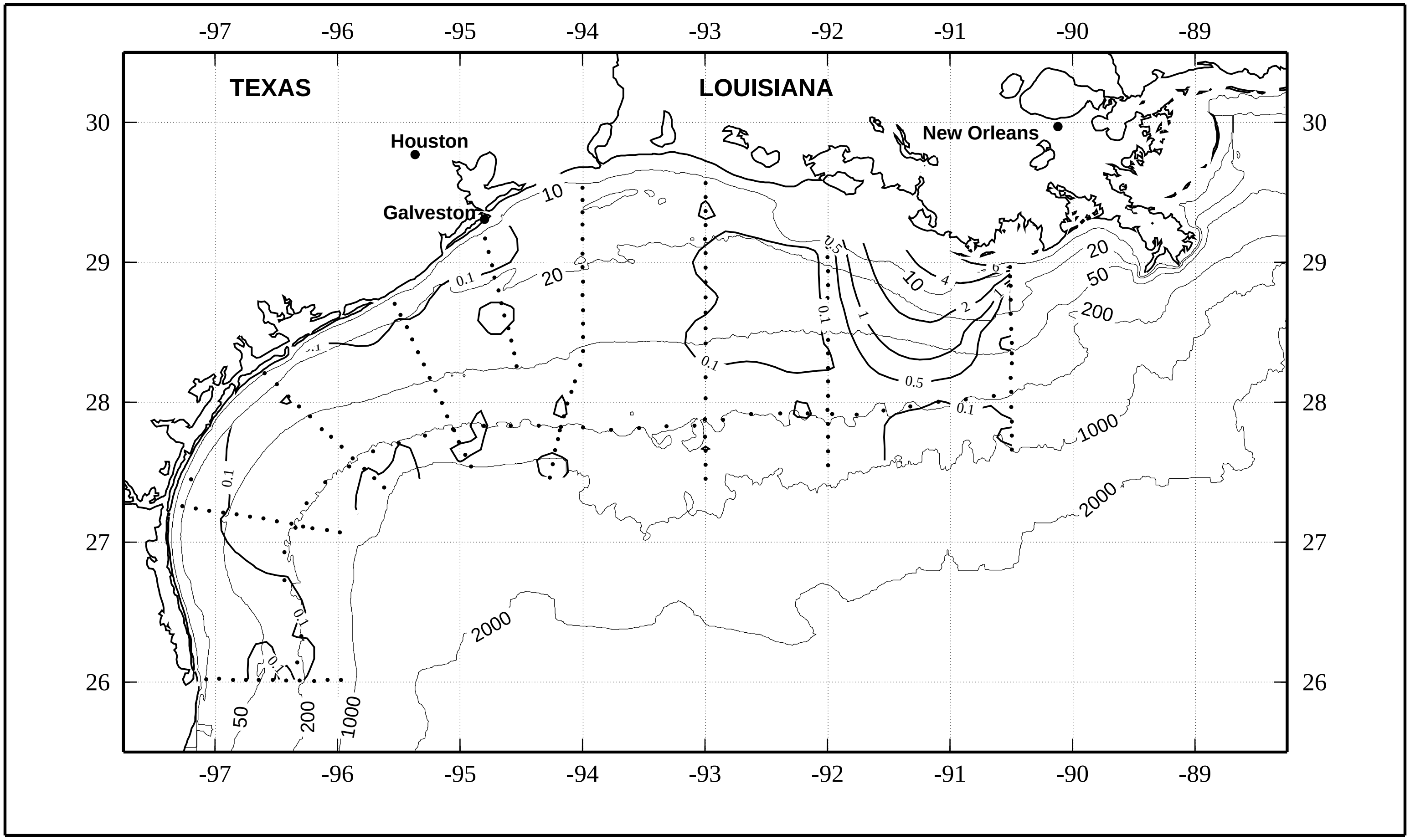

Figure 9.12.12. Nitrate (μmol·l-1) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

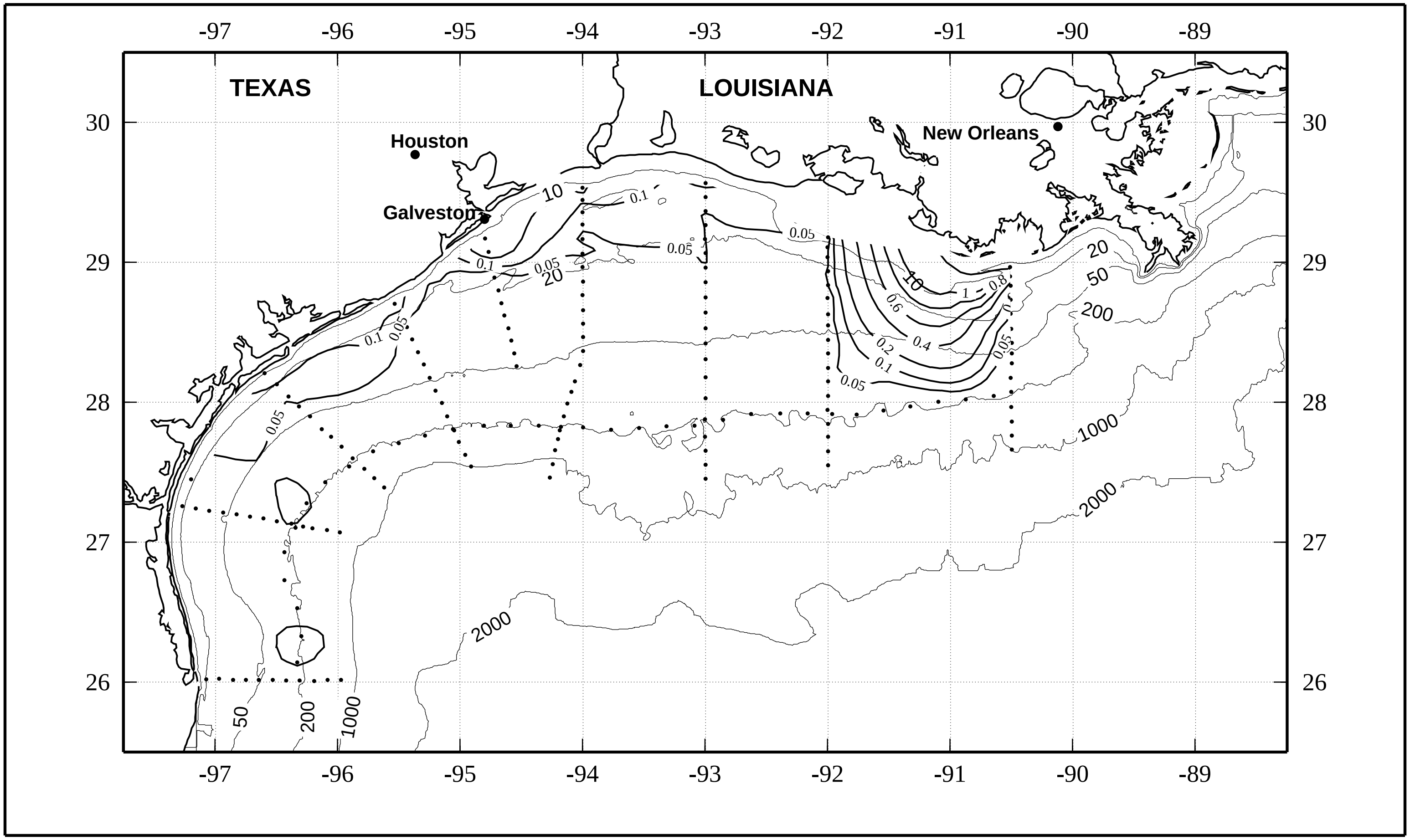

Figure 9.12.13. Nitrite ($\mu mol \cdot l^{-1}$) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

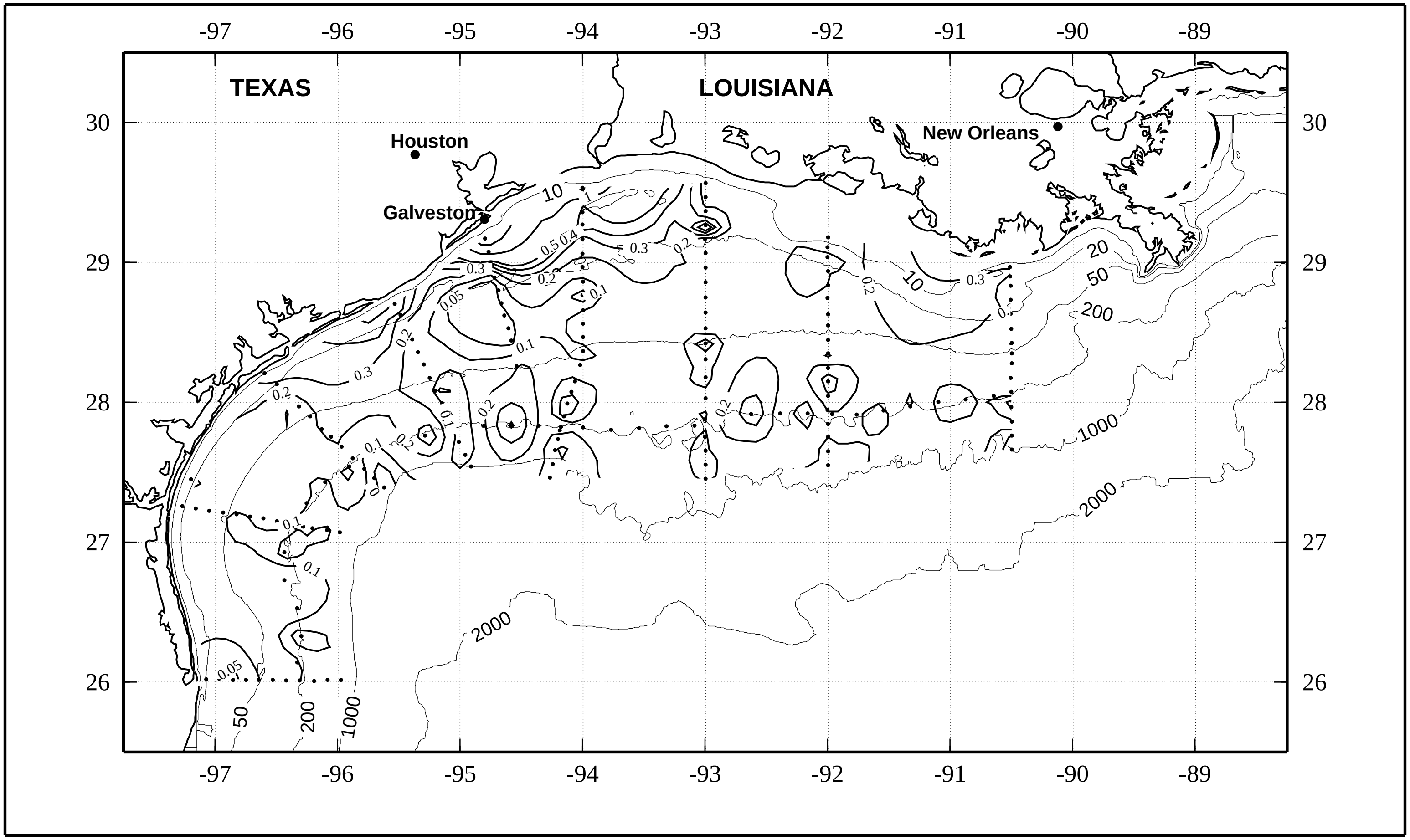

Figure 9.12.14. Ammonium (μmol·l^{-1}) at 3 m on LATEX A survey H09, 26 July - 7 August 1994.

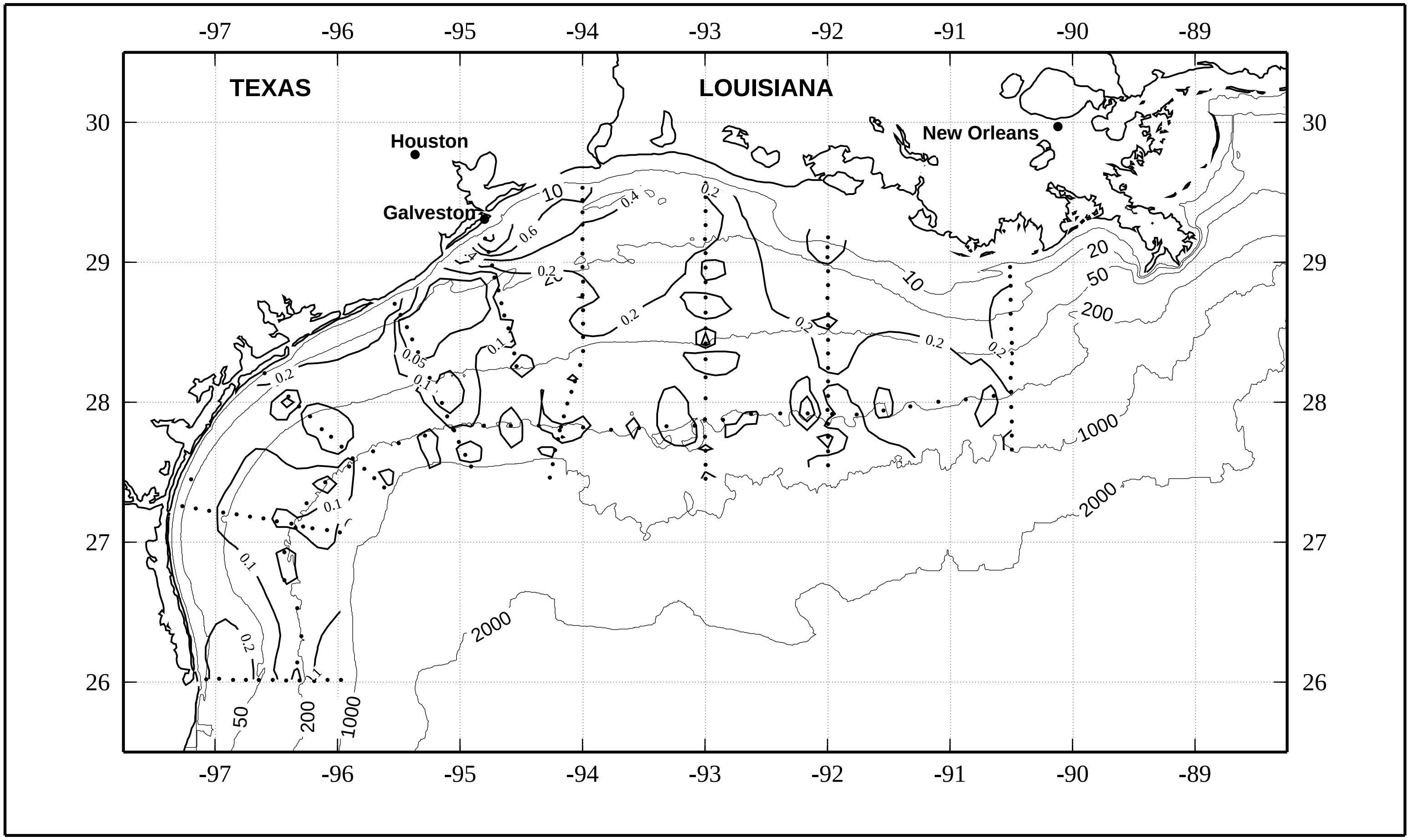

Figure 9.12.15. Urea (μmol·l⁻¹) on LATEX A survey H09, 26 July - 7 August 1994.

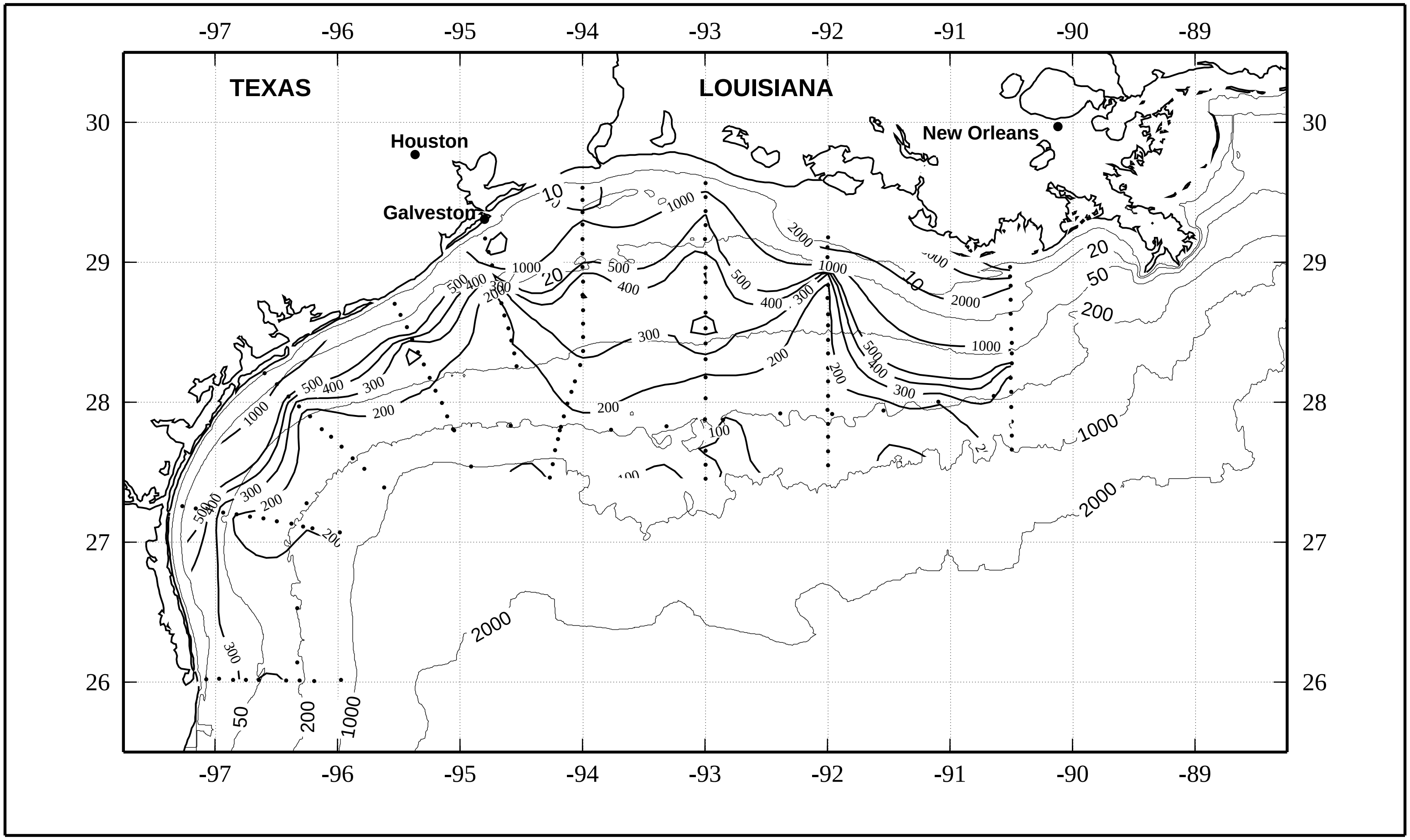

Figure 9.12.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H09, 26 July - 7 August 1994.

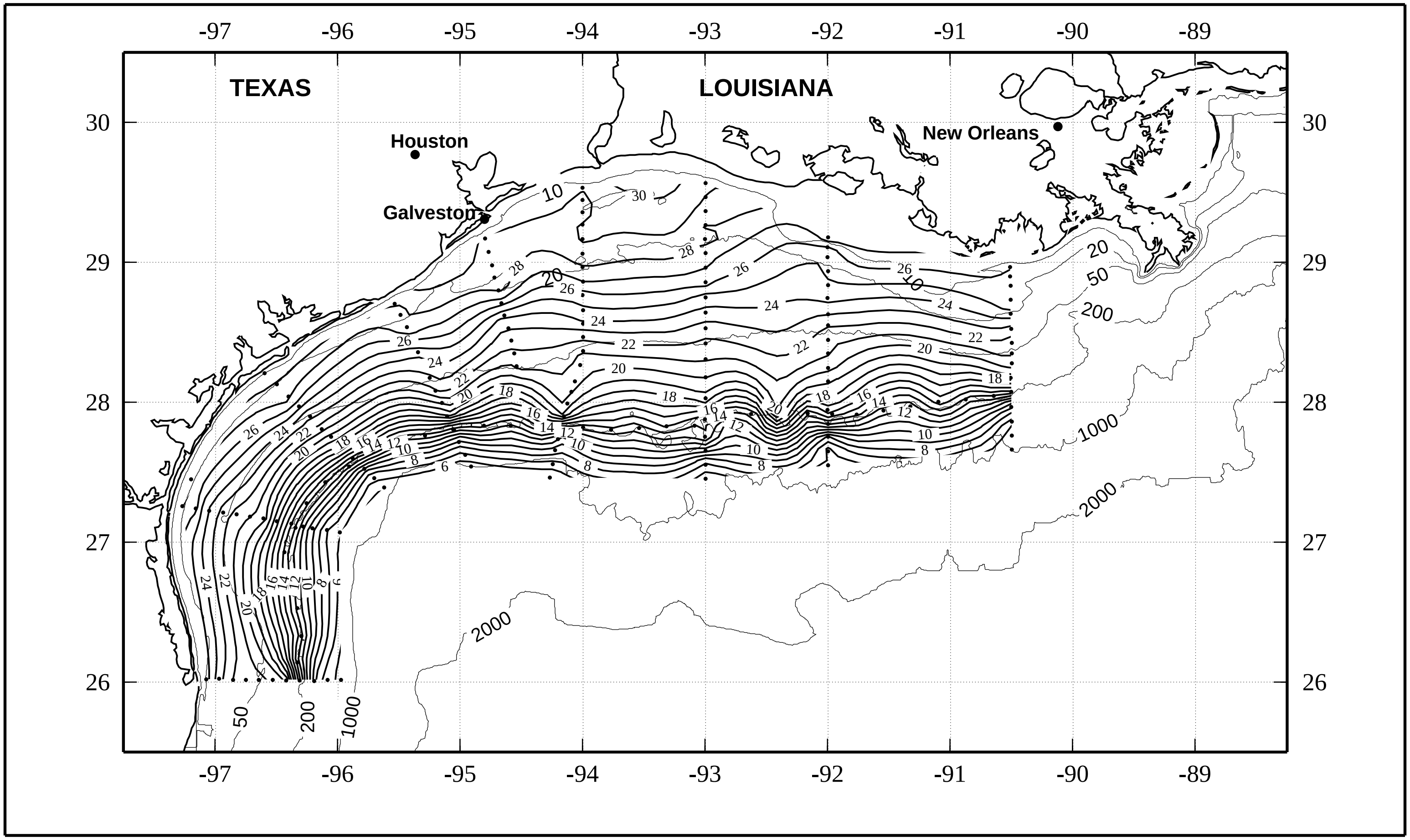

Figure 9.13.1. Potential temperature (˚C) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

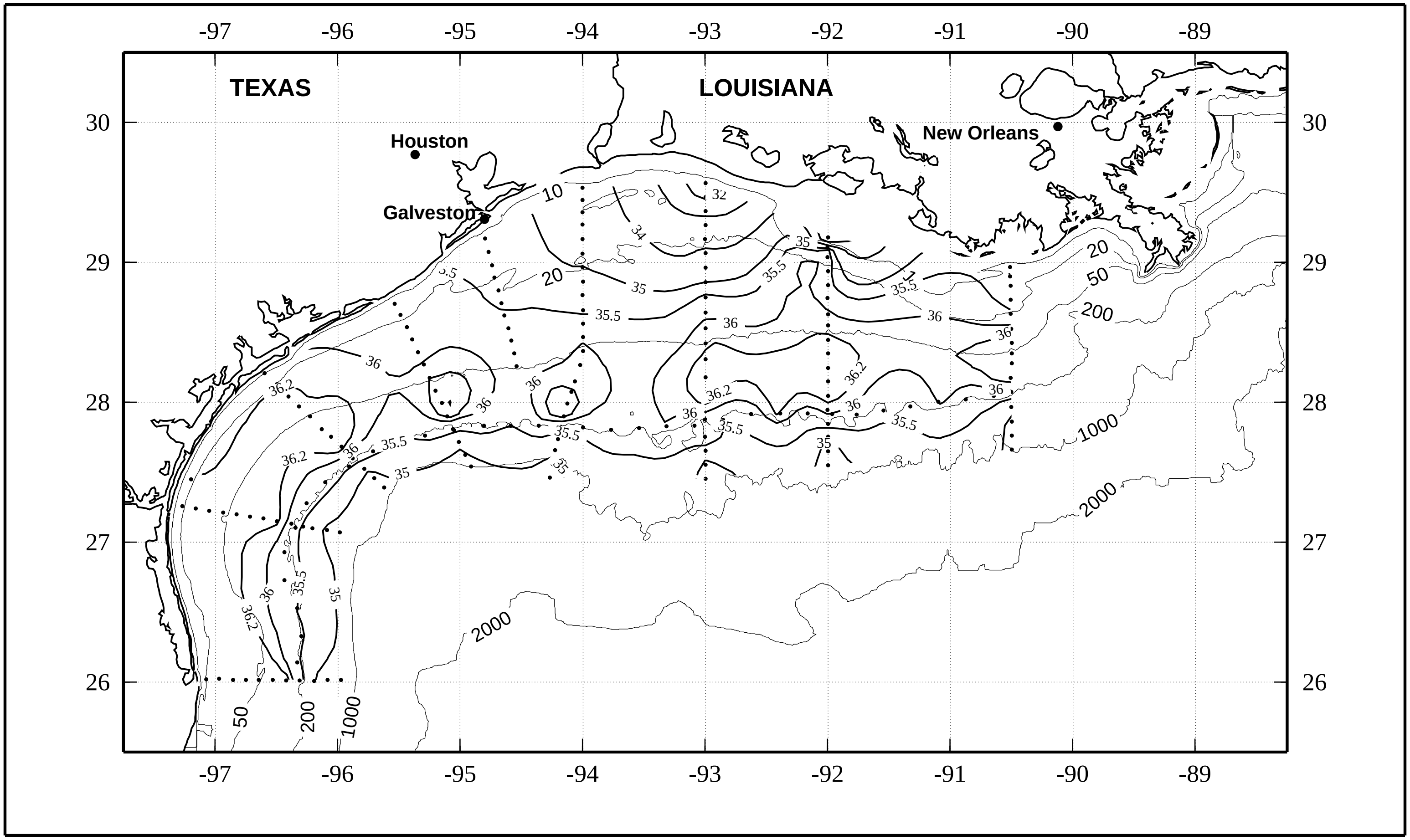

Figure 9.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H09, 26 July - 7 August 1994.

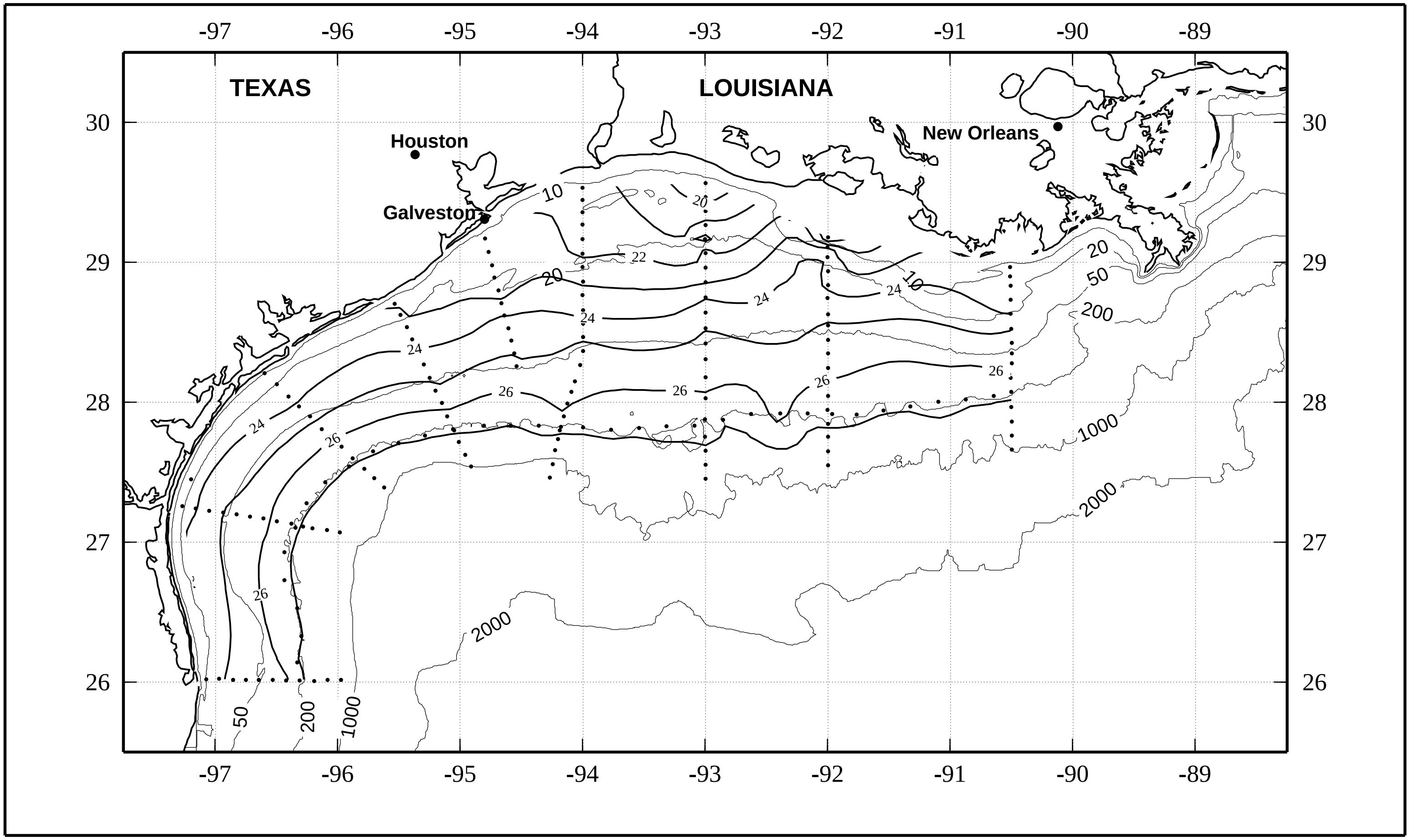

Figure 9.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

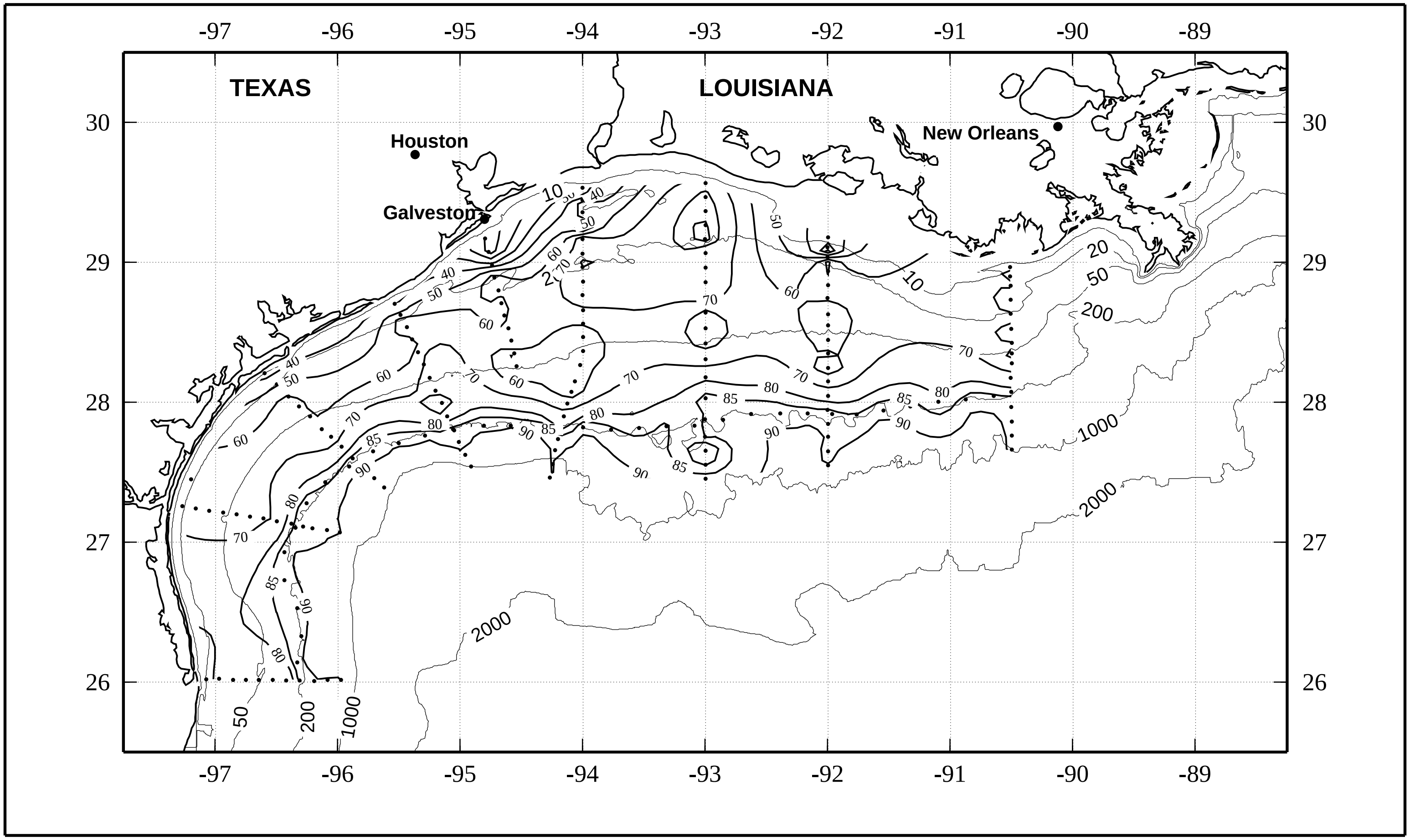

Figure 9.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

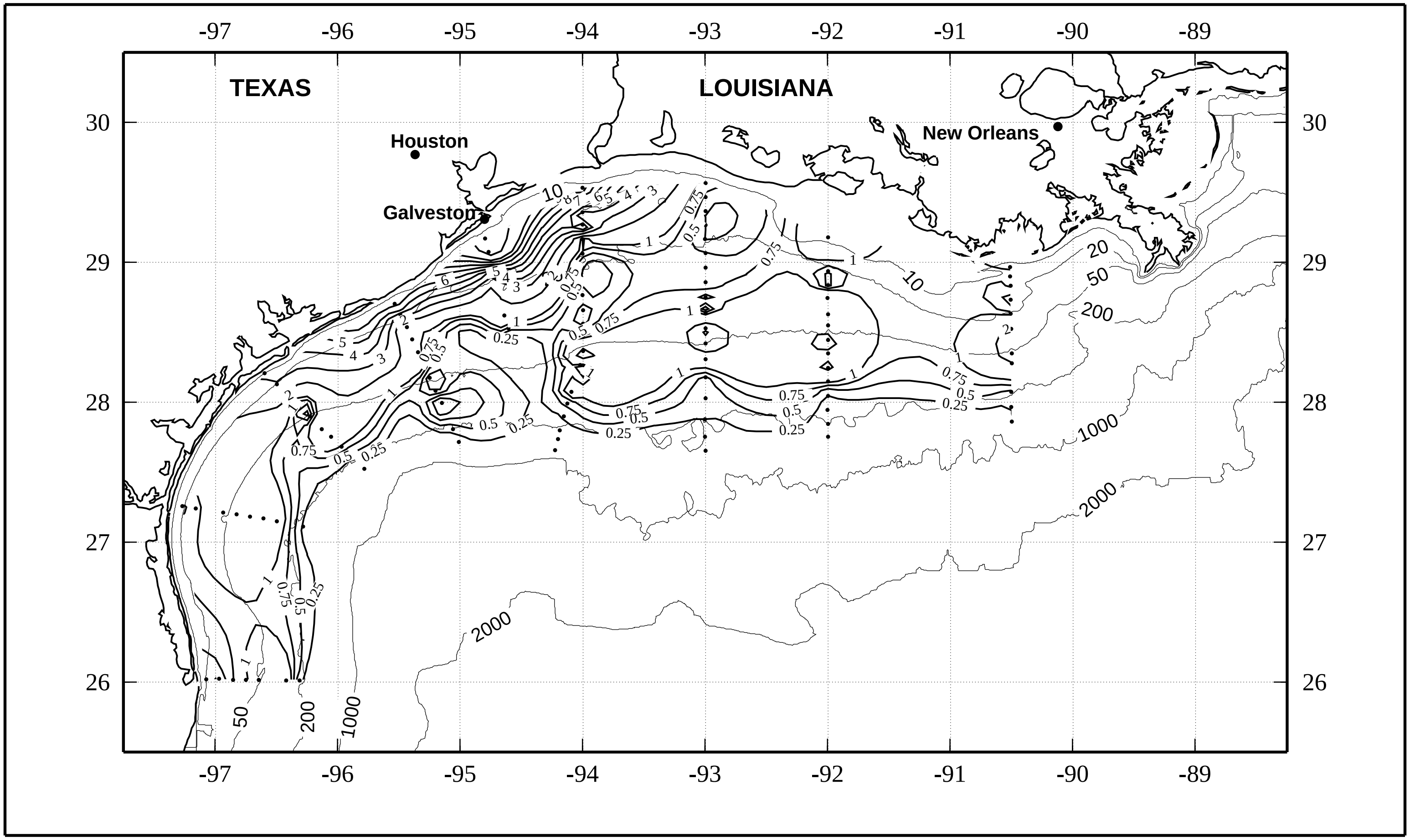

Figure 9.13.5. Suspended particulate material (mg·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

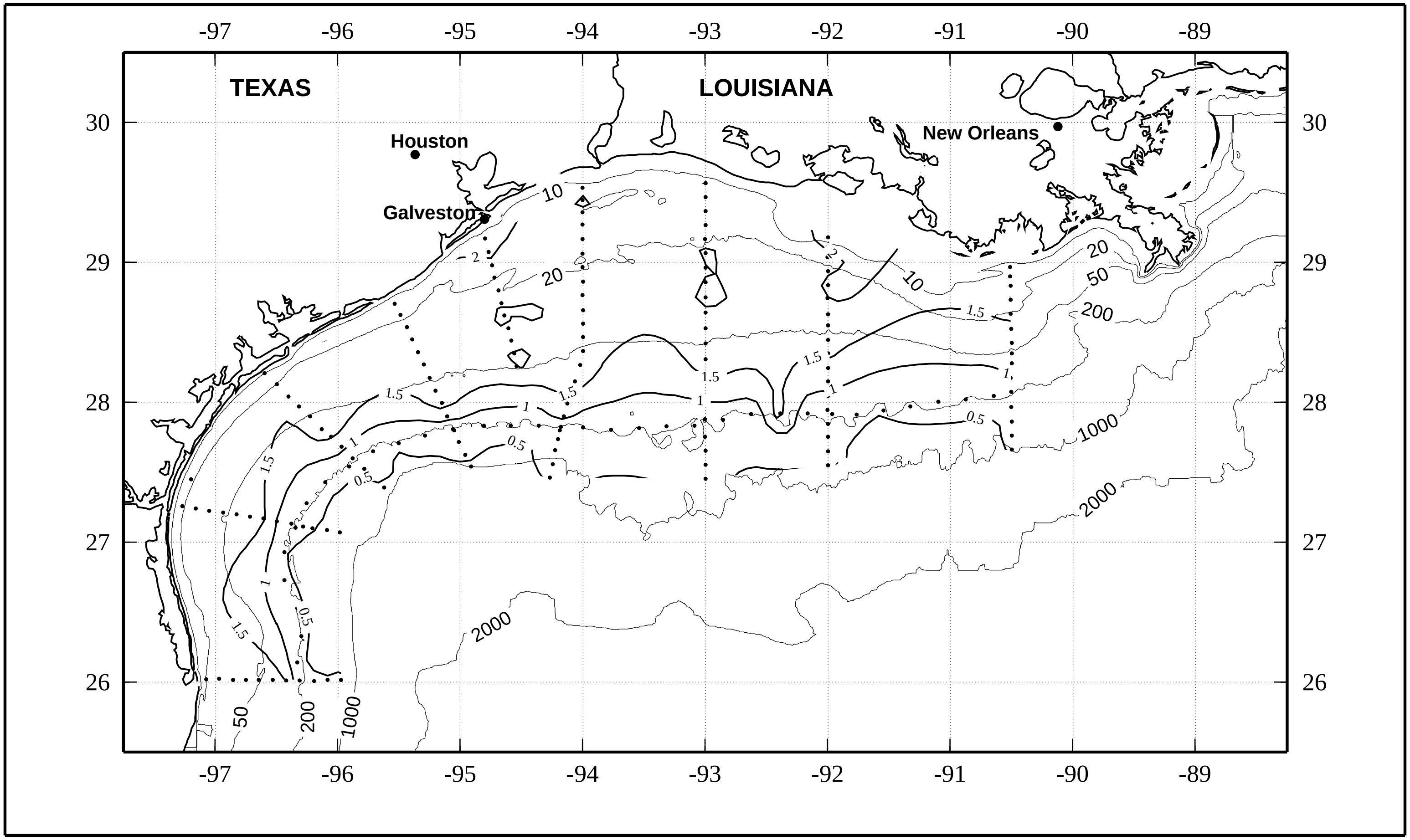

Figure 9.13.7. Relative fluorescence near bottom on LATEX A survey H09, 26 July - 7 August 1994.

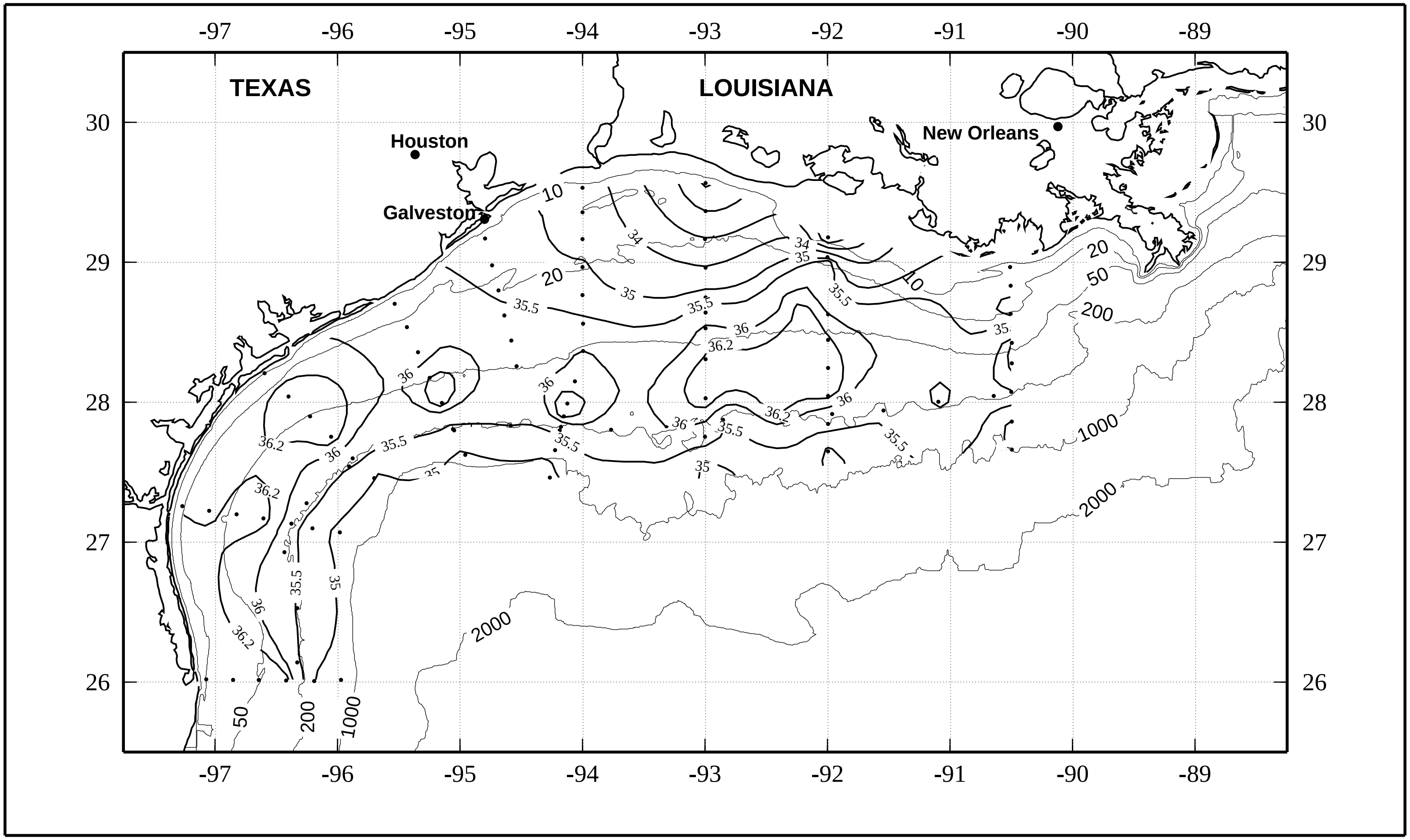

Figure 9.13.8. Bottle salinity near bottom on LATEX A survey H09, 26 July - 7 August 1994.

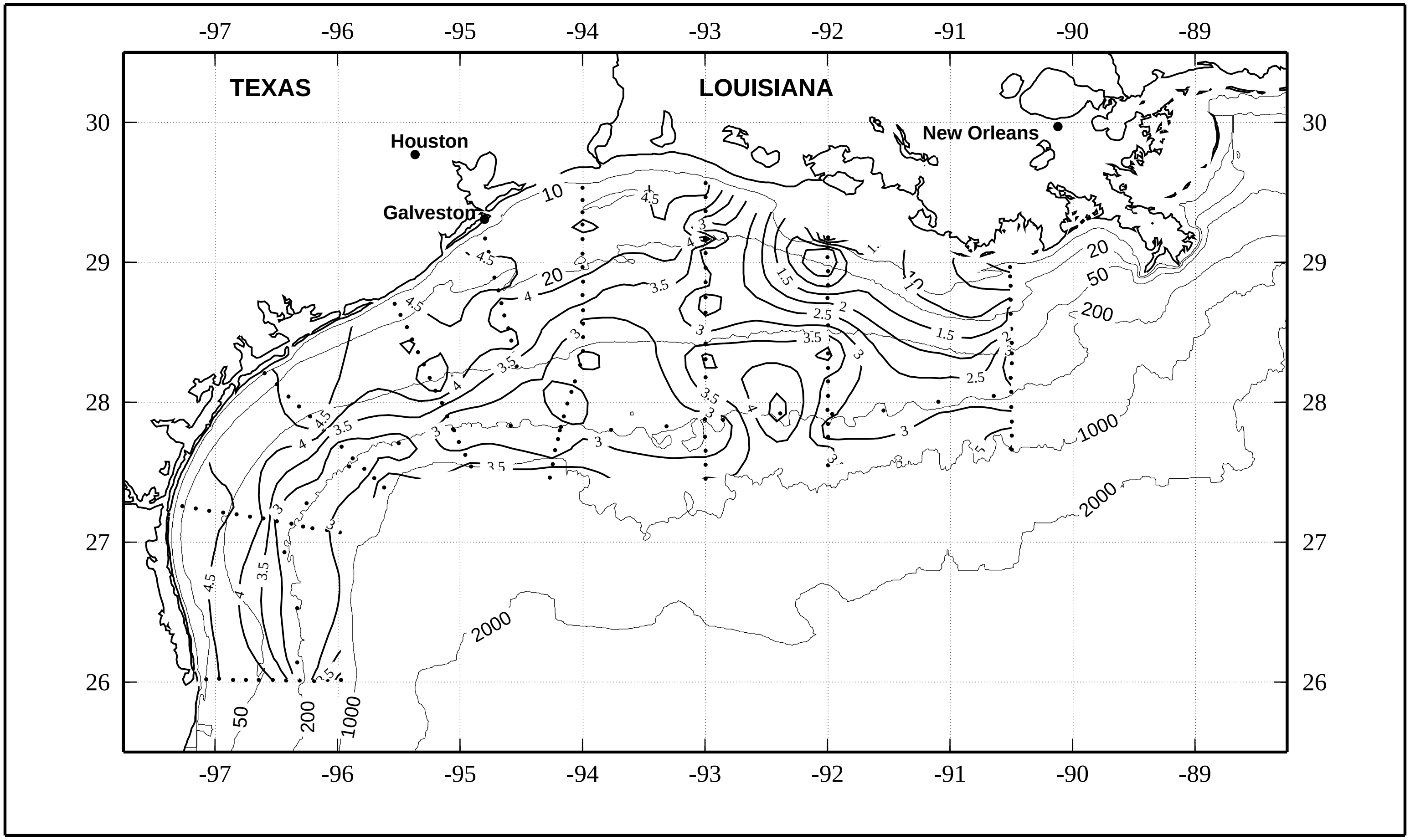

Figure 9.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

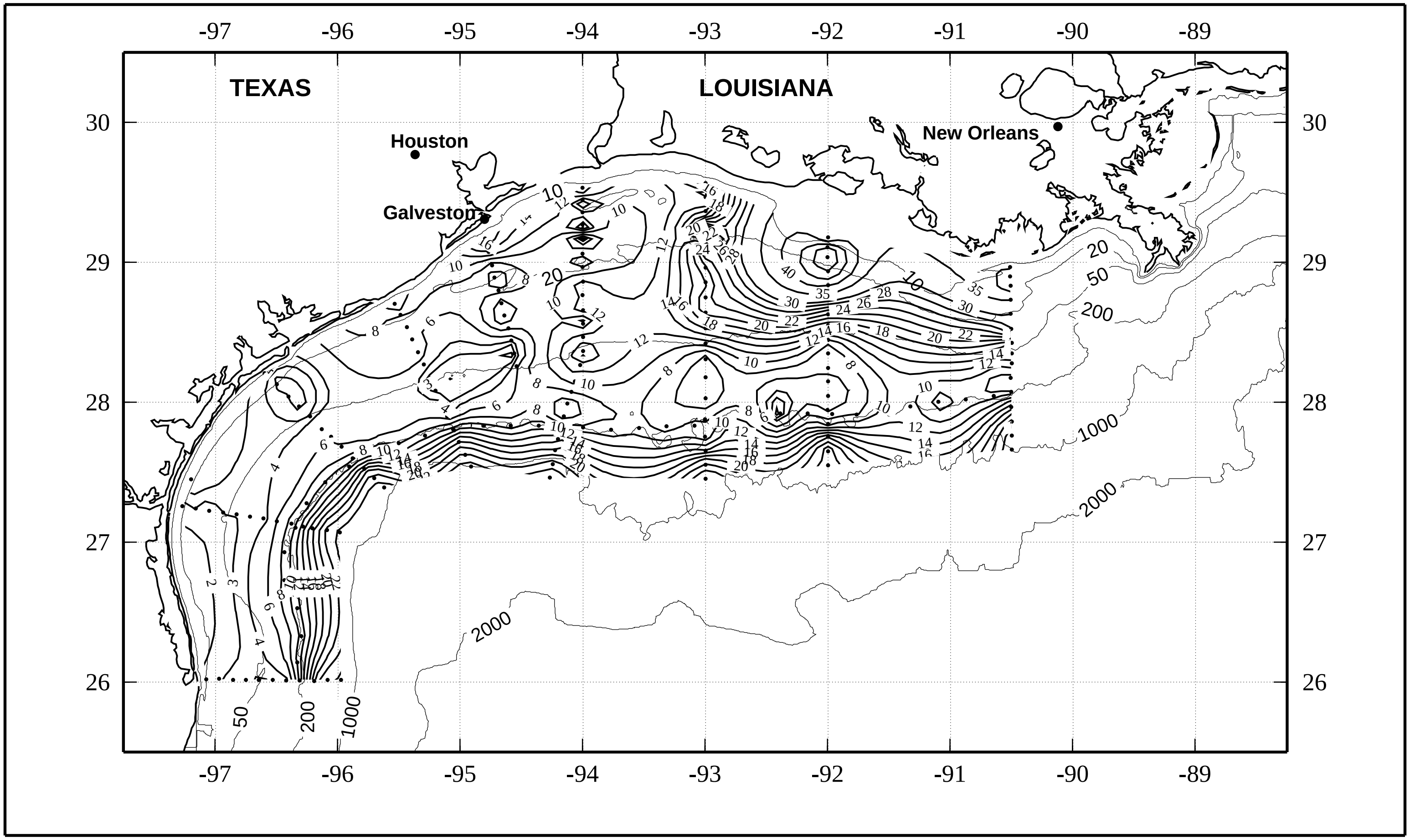

Figure 9.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

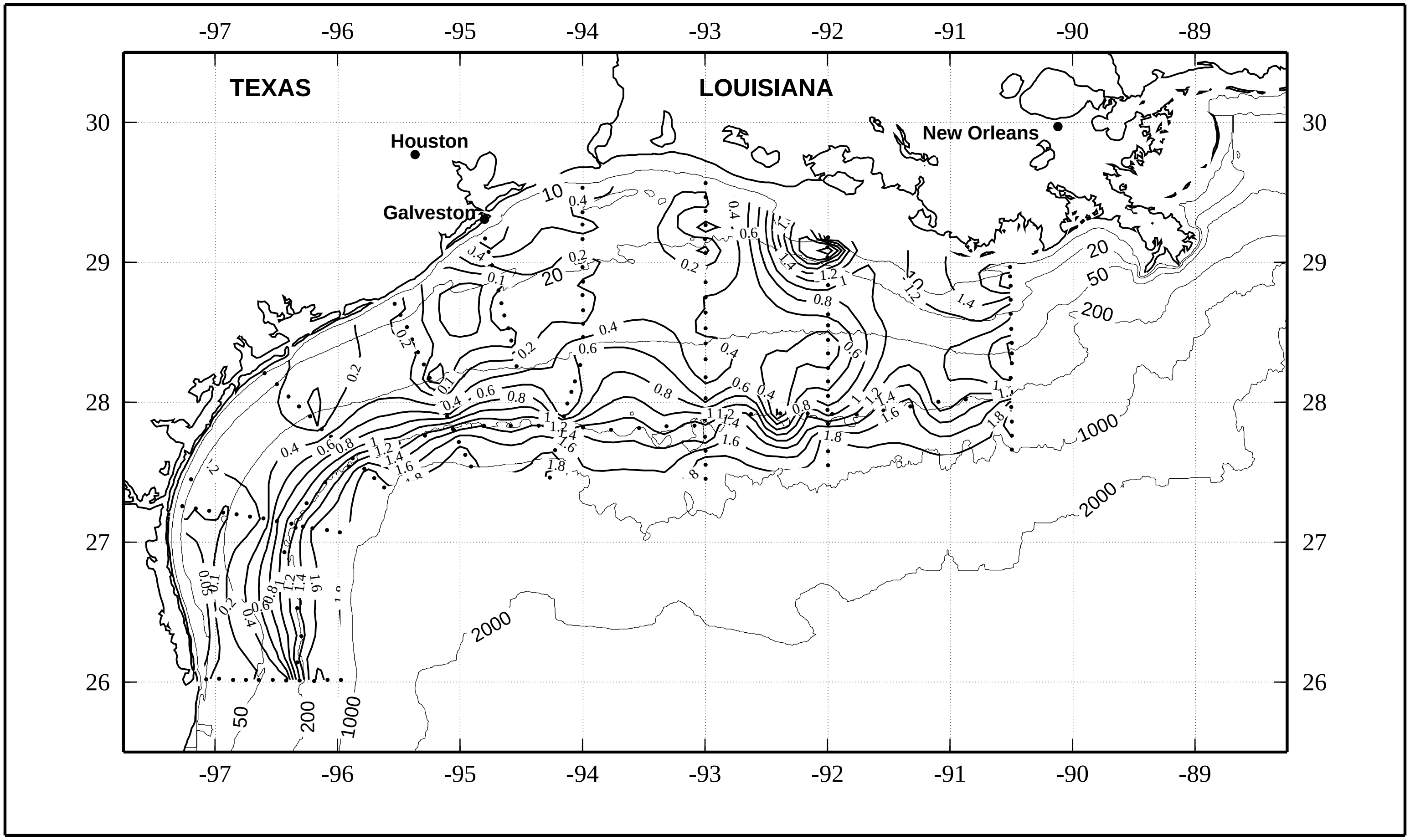

Figure 9.13.11. Phosphate (μmol·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

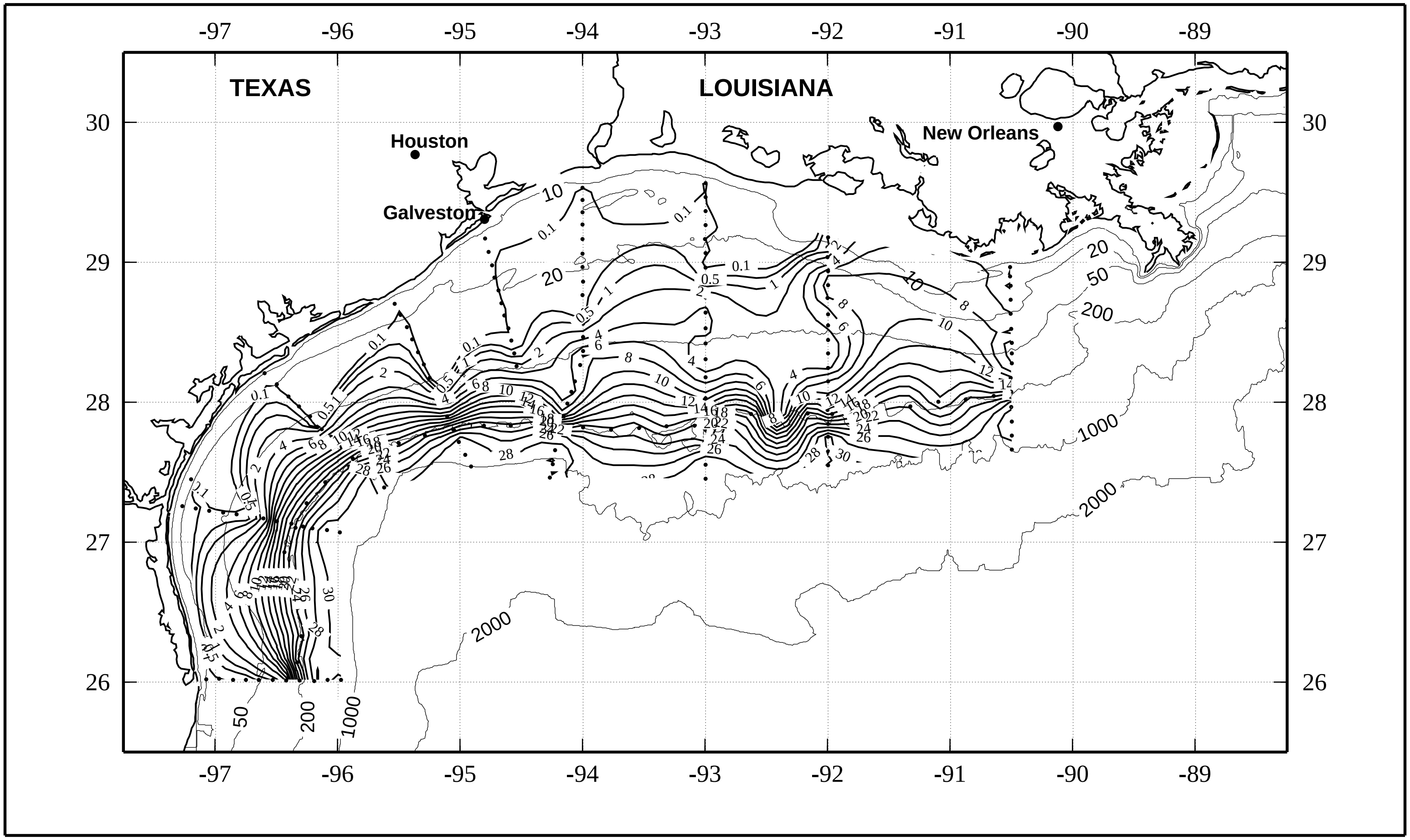

Figure 9.13.12. Nitrate (μmol·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

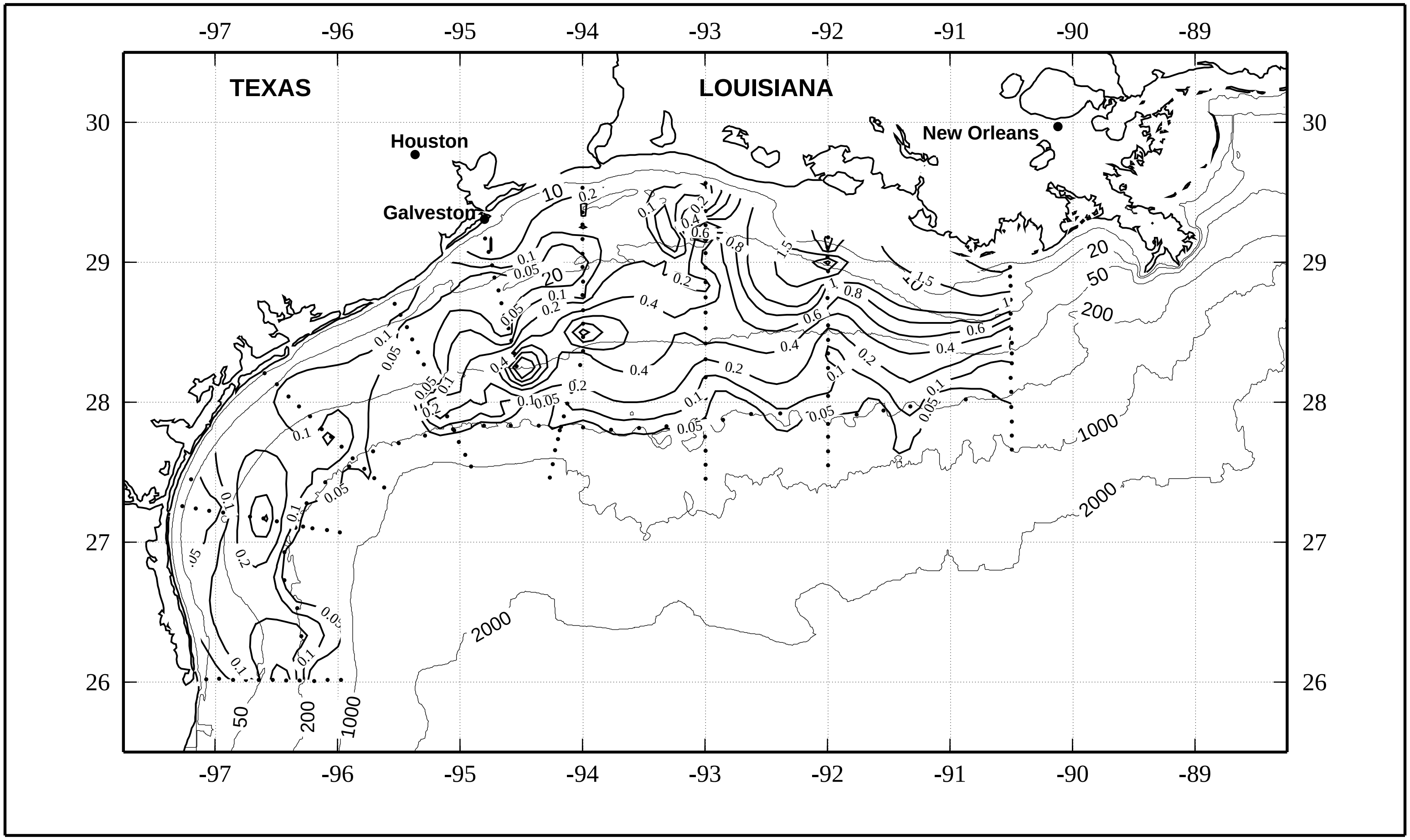

Figure 9.13.13. Nitrite (μmol·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

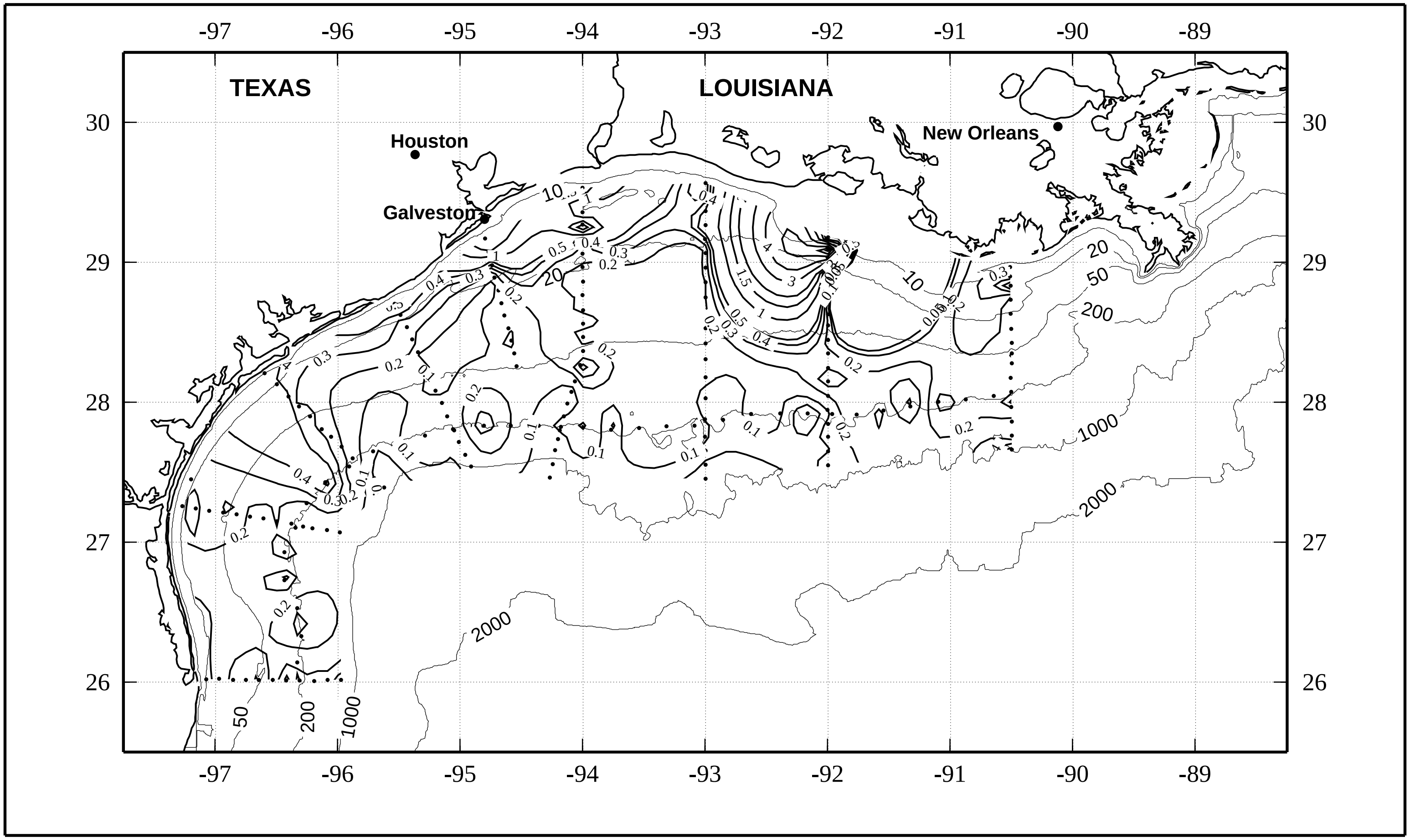

Figure 9.13.14. Ammonium (μmol·l^{-1}) near bottom on LATEX A survey H09, 26 July - 7 August 1994.

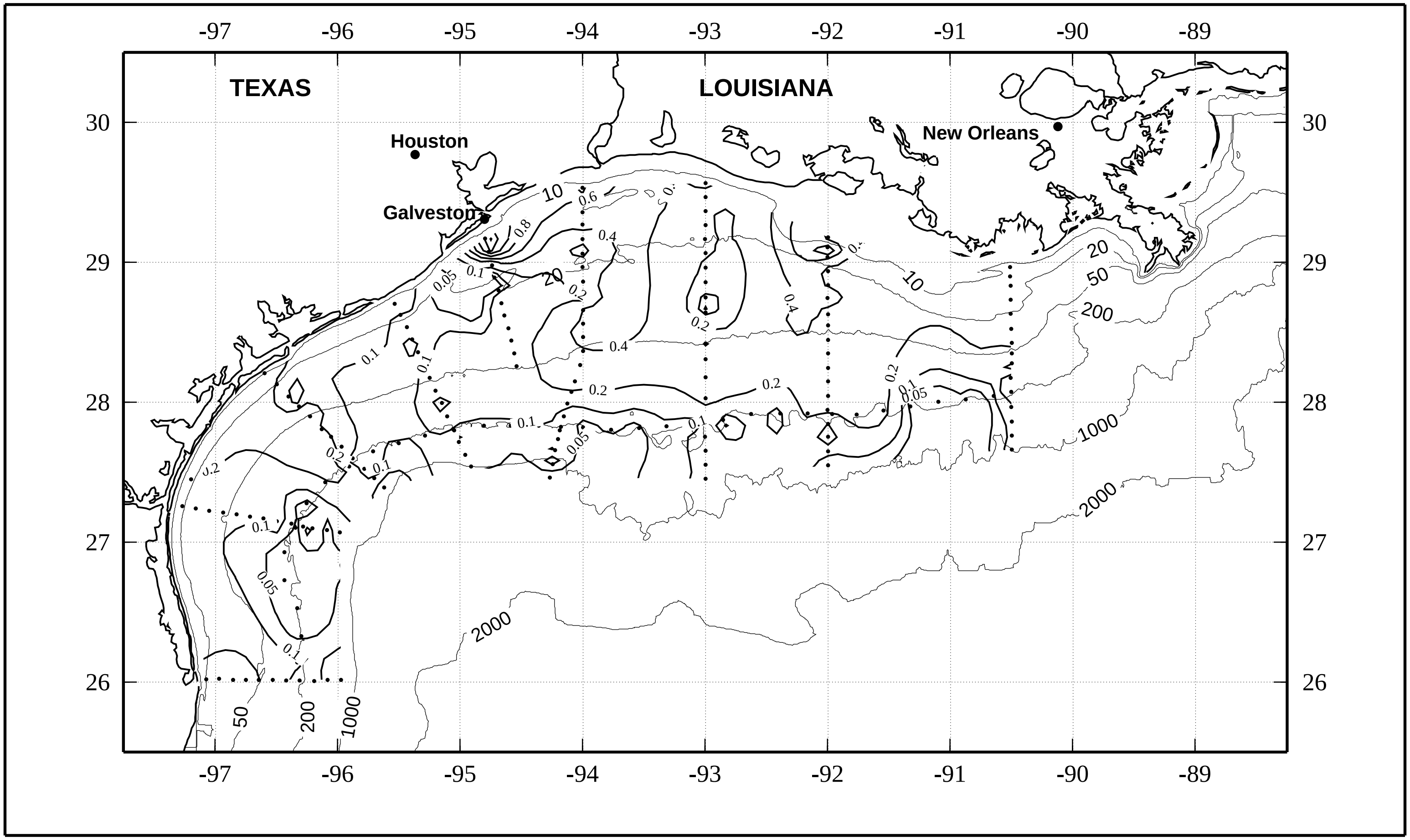

Figure 9.13.15. Urea (μmol·l^{-1}) on LATEX A survey H09, 26 July - 7 August 1994.

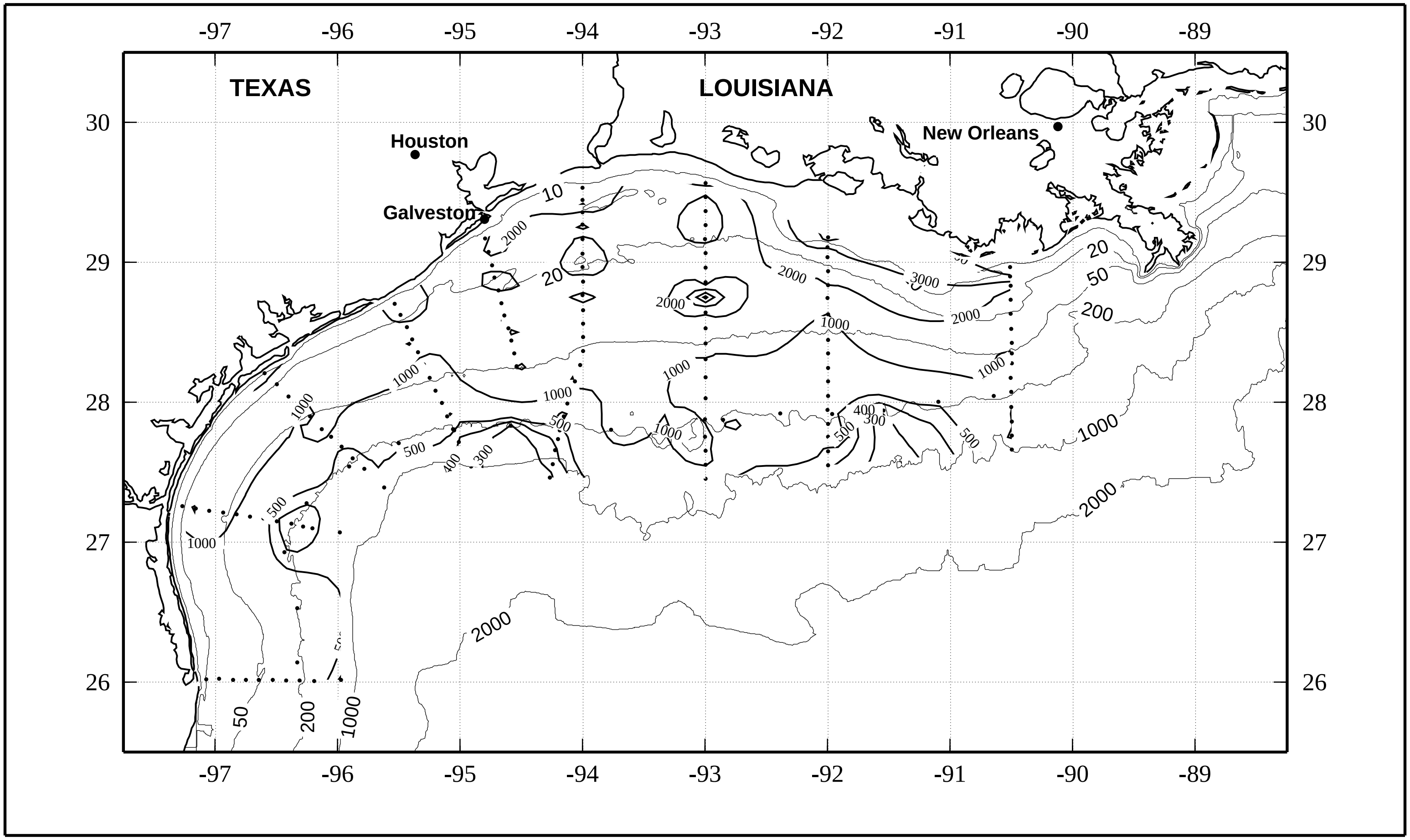

Figure 9.13.16. Chlorophyll a (ng·l^{-1}) at the chlorophyll maximum on LATEX A survey H09, 26 July - 7 August 1994.

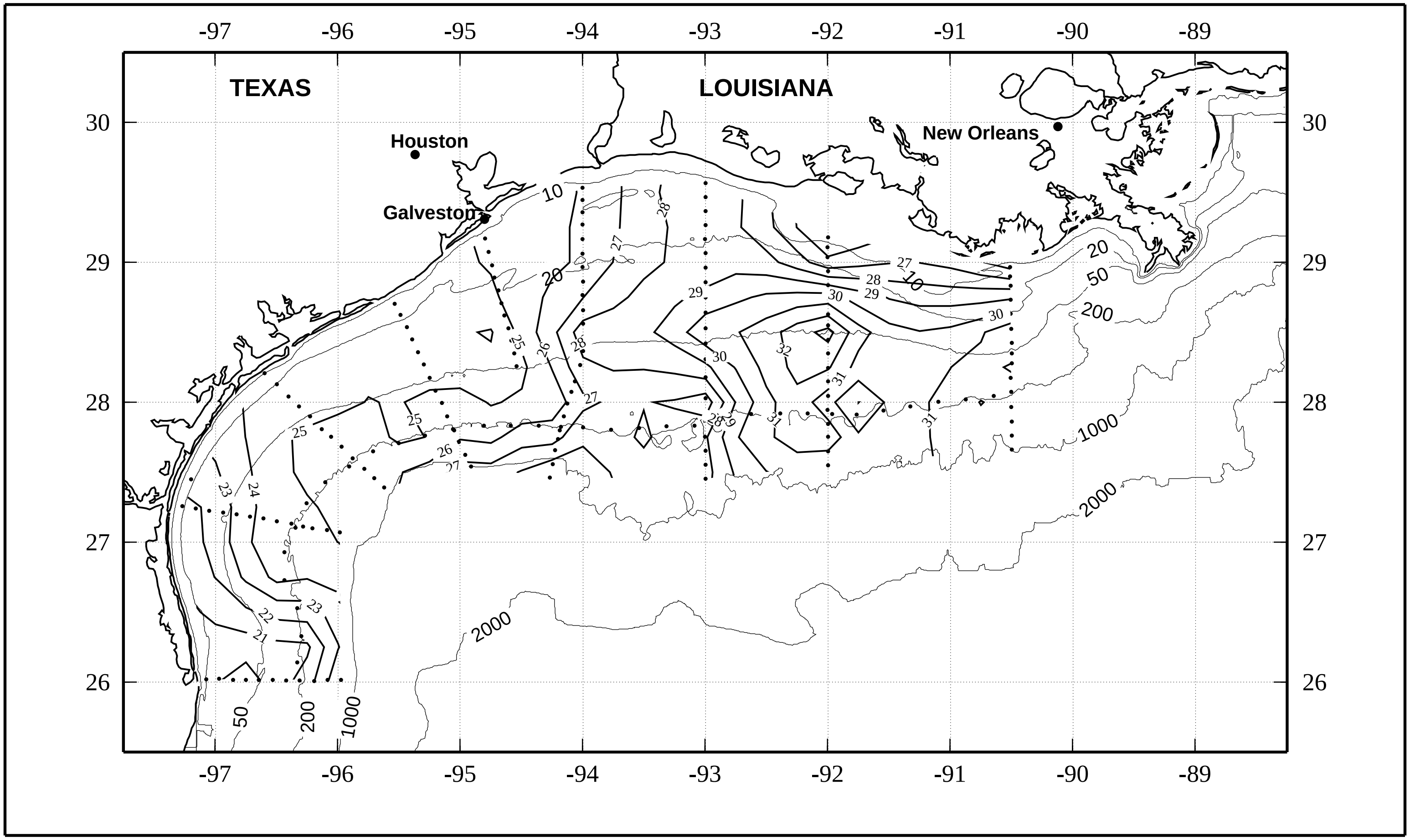

Figure 9.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H09, 26 July - 7 August 1994.

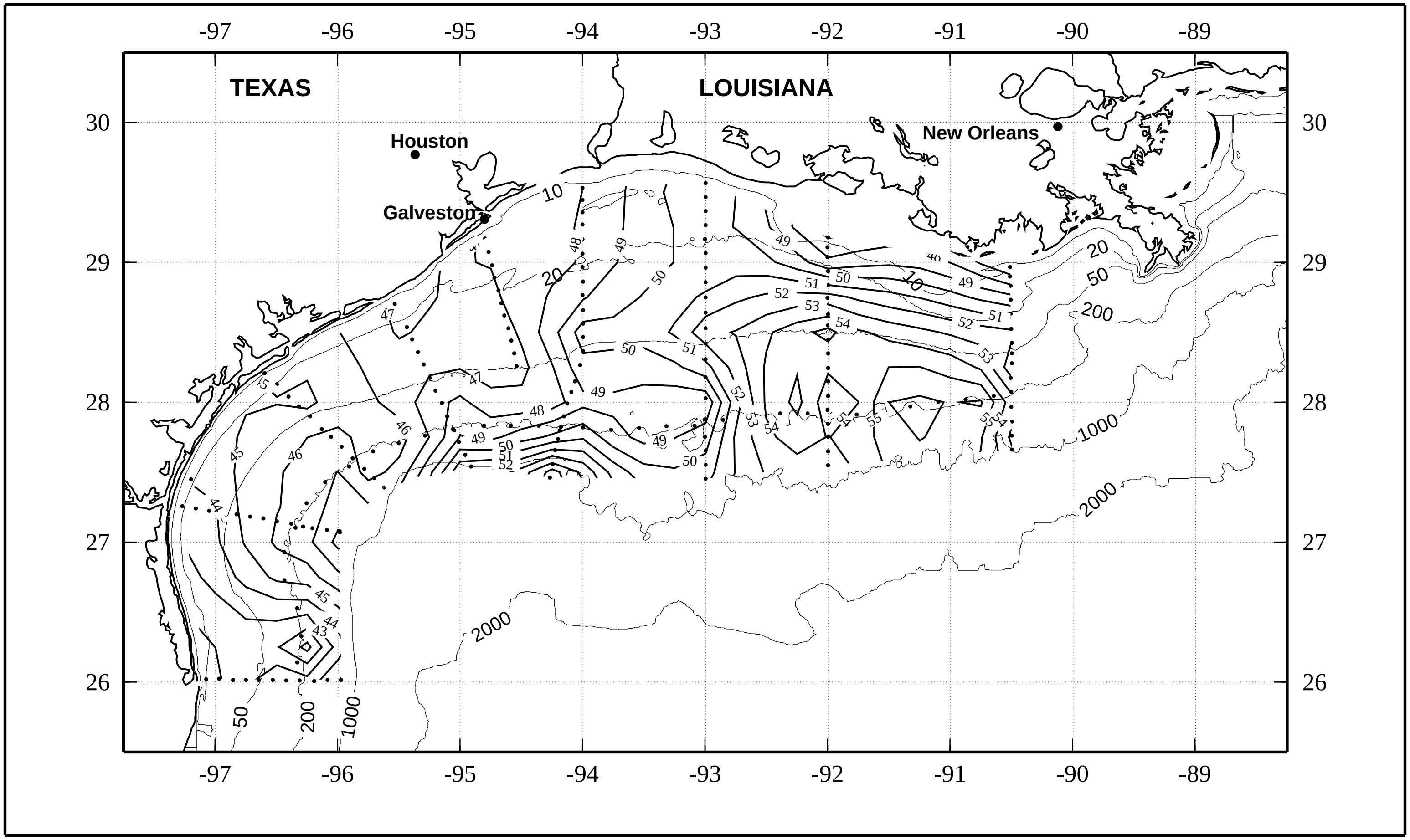

Figure 9.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H09, 26 July - 7 August 1994.

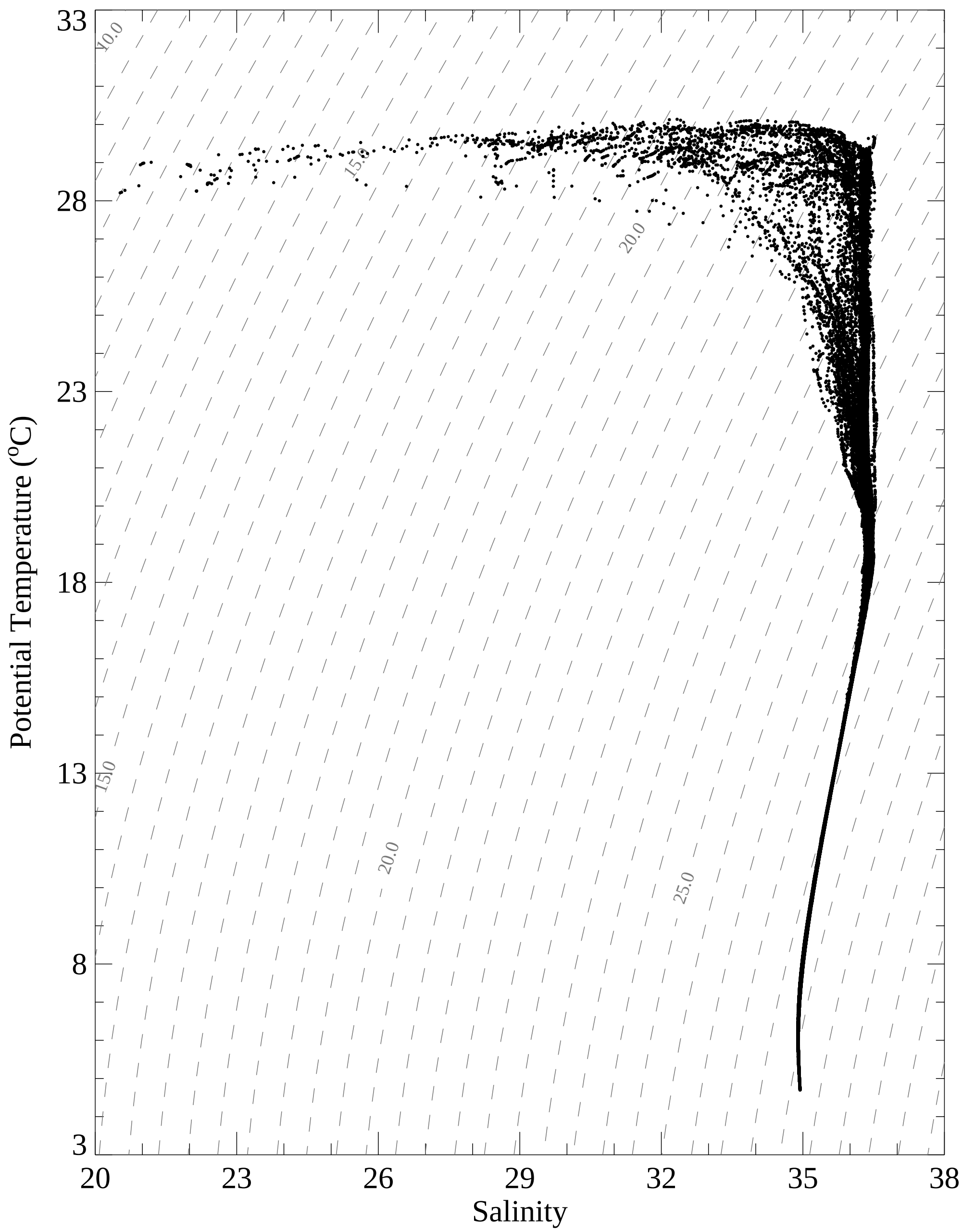

Figure 9.16. Composite potential temperature-salinity diagram for stations from cruise H09, 26 July - 7 August 1994.

LATEX A Hydrographic Survey Data Report

APPENDIX J: Cruise H10
November 1994

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Hydrographic Survey H10

This appendix provides plots of hydrographic data from LATEX A hydrographic survey H10, which was conducted 2 - 14 November 1994 aboard the *R/V Gyre*. The figure numbering scheme for the plots is an "x.y.z" format where x gives the cruise number, y denotes the type of plot, and z denotes the parameter plotted. Table 10.1 provides the definitions for x, y, and z used in this appendix. In the table, I_0 is the surface irradiance, which is taken to be the maximum value in the top five bins. Users of downwelling irradiance data should check the station metadata for processing caveats. The "bottom" horizontal plot for chlorophyll *a* (Figure 10.13.16) shows the values at the chlorophyll maximum, regardless of depth. Note there are no Figures 10.12.6 or 10.13.6.

Table 10.1. Definitions for "x.y.z" figure numbering scheme for cruise H10.

---

cruise number (x):
10 = hydrographic survey H10

plot type (y):
0 = station location map
1 = vertical section of line 1 (cross-shelf at ~90.5°W)
2 = vertical section of line 2 (cross-shelf at ~92°W)
3 = vertical section of line 3 (cross-shelf at ~93°W)
4 = vertical section of line 4 (cross-shelf at ~94°W)
5 = vertical section of line 5 (cross-shelf, diagonally across ~95°W)
6 = vertical section of line 6 (cross-shelf, diagonally across ~96°W)
7 = vertical section of line 7 (cross-shelf at ~27.3°N)
8 = vertical section of line 8 (cross-shelf at ~26°N)
9 = vertical section of line 9 (along 200-m isobath)
10 = none for H10
11 = vertical section of line 11 (cross-shelf at ~94.5°W)
12 = horizontal contours of the near-surface values (~3-4 m depth)
13 = horizontal contours of the bottom values
14 = geopotential anomaly map (3 db relative to 70 db)
15 = geopotential anomaly map (3 db relative to 200 db)
16 = ensemble potential temperature-salinity diagram

Table 10.1. Definitions for "x.y.z" figure numbering scheme for cruise H10. (continued)

parameter (z):

1 = potential temperature (°C) from CTD
2 = salinity from CTD
3 = potential density ($kg \cdot m^{-3}$)
4 = percent transmission
5 = vertical sections only: optical backscatterance (voltage)
5 = horizontal sections only: suspended particulate material ($mg \cdot l^{-1}$)
6 = vertical sections only: downwelling irradiance (as % of I_0)
6 = horizontal sections only: NONE
7 = fluorescence (relative fluorescence)
8 = bottle salinity
9 = bottle dissolved oxygen ($ml \cdot l^{-1}$)
10 = bottle silicate ($\mu mol \cdot l^{-1}$)
11 = bottle phosphate ($\mu mol \cdot l^{-1}$)
12 = bottle nitrate ($\mu mol \cdot l^{-1}$)
13 = bottle nitrite ($\mu mol \cdot l^{-1}$)
14 = bottle ammonium ($\mu mol \cdot l^{-1}$)
15 = bottle urea ($\mu mol \cdot l^{-1}$)
16 = chlorophyll-a ($ng \cdot l^{-1}$)

Chlorophyll *a* and phaeopigments were determined for each pigment station, using a Turner fluorometer. Only chlorophyll *a* is shown in the plots.

Secchi depths were taken at daytime stations. These data are included in the data set, but are not plotted here. No plots of horizontal downwelling irradiance (too uniform) or optical backscatterance (insufficient non-zero data) are included; no vertical plots of suspended particulate material (too few vdata points in the vertical) were done.

Table 10.2 lists the date and time, latitude and longitude, water depth, and number of bottles tripped for each station taken on H10. Figure 10.0 shows the location map for the stations.

Following Figure 10.0 are the plots of the hydrographic parameters. In the vertical sections, the dots represent the locations of available bottle data; no such dots are included for the continuous sensor data, which are available for every station and at 0.5-m

increments. In the horizontal sections, the dots represent the locations of available data for the parameter being plotted. The horizontal and vertical contours shown were produced using the Generic Mapping Tool (GMT) plotting routines (Smith and Wessel 1990; Wessel and Smith 1991, 1995). As with all computer-generated contouring, users should familiarize themselves of the limitations and advantages of the software and beware of contours that are in regions with few data points.

References

Smith, W. H. F., and P. Wessel. 1990. Gridding with continuous curvature splines in tension. *Geophysics,* 55:293-305.

Wessel, P., and W. H. F. Smith. 1991. Free software helps map and display data. *EOS Trans. Amer. Geophys. U.* 72: 441, 445-446.

Wessel, P., and W. H. F. Smith. 1995. New version of the Generic Mapping Tools released. *EOS Trans. Amer. Geophys. U.* 76: 329.

Table 10.2. Station times and positions for LATEX A cruise H10.

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
1	02-NOV-1994	1402	27°49.66'	94°10.82'	183.0	12
2	02-NOV-1994	1541	27°49.27'	94°00.02'	201.1	12
3	02-NOV-1994	1733	27°48.30'	93°46.25'	189.6	12
4	02-NOV-1994	1919	27°49.01'	93°32.56'	200.8	12
5	02-NOV-1994	2059	27°49.86'	93°19.14'	151.7	12
6	02-NOV-1994	2239	27°50.07'	93°05.28'	172.7	12
7	03-NOV-1994	0034	27°52.49'	92°51.38'	221.8	12
8	03-NOV-1994	0222	27°55.13'	92°37.48'	188.6	12
9	03-NOV-1994	0408	27°55.14'	92°23.41'	88.6	9
10	03-NOV-1994	0545	27°55.12'	92°09.95'	145.6	12
11	03-NOV-1994	0744	27°55.32'	91°58.13'	140.2	12
12	03-NOV-1994	0927	27°54.77'	91°45.87'	171.3	12
13	03-NOV-1994	1119	27°56.61'	91°32.71'	225.2	12
14	03-NOV-1994	1312	27°58.15'	91°19.50'	267.4	12
15	03-NOV-1994	1510	28°00.38'	91°05.85'	136.1	12
16	03-NOV-1994	1715	28°01.38'	90°52.40'	185.0	12
17	03-NOV-1994	1905	28°02.72'	90°38.59'	167.1	12
18	03-NOV-1994	2204	27°39.74'	90°30.01'	923.4	12
19	03-NOV-1994	2338	27°45.71'	90°30.00'	818.7	12
20	04-NOV-1994	0208	27°51.69'	90°29.99'	644.2	12
21	04-NOV-1994	0410	27°57.95'	90°30.13'	436.3	12
22	04-NOV-1994	0528	28°04.64'	90°30.22'	148.6	12
23	04-NOV-1994	0629	28°10.48'	90°30.30'	93.7	11
24	04-NOV-1994	0732	28°16.81'	90°29.99'	61.9	9
25	04-NOV-1994	0857	28°20.99'	90°29.97'	50.3	7
26	04-NOV-1994	0958	28°25.44'	90°29.97'	43.0	7
27	04-NOV-1994	1055	28°31.64'	90°30.20'	34.6	6
28	04-NOV-1994	1157	28°37.97'	90°30.33'	20.3	5
29	04-NOV-1994	1250	28°43.95'	90°30.37'	17.2	5
30	04-NOV-1994	1344	28°49.99'	90°30.60'	17.8	5
31	04-NOV-1994	1425	28°53.99'	90°30.61'	15.0	4
32	04-NOV-1994	1512	28°58.10'	90°30.60'	10.6	4
33	04-NOV-1994	2350	29°10.87'	91°59.98'	6.0	3
34	05-NOV-1994	0043	29°06.62'	92°00.06'	12.1	5
35	05-NOV-1994	0204	29°02.28'	92°00.08'	17.8	5
36	05-NOV-1994	0305	28°56.22'	91°59.97'	21.6	5
37	05-NOV-1994	0502	28°50.24'	92°00.01'	26.5	6
38	05-NOV-1994	0559	28°44.71'	92°00.08'	31.2	6
39	05-NOV-1994	0708	28°37.74'	91°59.90'	39.4	6
40	05-NOV-1994	0759	28°33.02'	91°59.85'	44.8	6
41	05-NOV-1994	0859	28°26.79'	91°59.84'	54.8	7
42	05-NOV-1994	1011	28°21.14'	91°59.82'	61.0	7
43	05-NOV-1994	1135	28°14.69'	91°59.87'	68.8	7
44	05-NOV-1994	1307	28°08.95'	91°59.93'	82.0	11

Table 10.2 Station times and positions for LATEX A cruise H10 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
45	05-NOV-1994	1440	28°02.69'	91°59.93'	104.4	12
46	05-NOV-1994	1608	27°56.80'	92°00.08'	107.0	11
47	05-NOV-1994	1736	27°50.68'	91°59.99'	199.5	12
48	05-NOV-1994	1910	27°44.92'	91°59.86'	490.4	12
49	05-NOV-1994	2116	27°38.97'	91°59.97'	865.5	12
50	05-NOV-1994	2309	27°32.94'	91°59.96'	736.5	12
51	06-NOV-1994	0548	27°27.40'	92°59.95'	944.5	12
52	06-NOV-1994	0738	27°33.40'	92°59.95'	655.4	12
53	06-NOV-1994	0908	27°39.41'	92°59.92'	314.0	12
54	06-NOV-1994	1034	27°45.26'	93°00.17'	206.7	12
55	06-NOV-1994	1154	27°52.84'	93°00.12'	192.0	11
56	06-NOV-1994	1327	28°01.81'	92°59.86'	98.5	10
57	06-NOV-1994	1457	28°10.85'	92°59.92'	70.4	10
58	06-NOV-1994	1609	28°18.48'	92°59.88'	51.8	8
59	06-NOV-1994	1712	28°25.38'	92°59.95'	47.8	8
60	06-NOV-1994	1827	28°31.87'	92°59.99'	42.7	7
61	06-NOV-1994	1924	28°38.41'	92°59.95'	33.5	7
62	06-NOV-1994	2016	28°44.91'	92°59.94'	29.3	6
63	06-NOV-1994	2110	28°51.43'	92°59.97'	25.1	5
64	06-NOV-1994	2200	28°57.81'	93°00.00'	22.1	5
65	06-NOV-1994	2249	29°04.00'	92°59.97'	22.8	5
66	06-NOV-1994	2338	29°10.04'	93°00.06'	18.9	5
67	07-NOV-1994	0029	29°15.87'	93°00.15'	17.3	5
68	07-NOV-1994	0122	29°22.00'	92°59.96'	14.1	4
69	07-NOV-1994	0212	29°27.93'	92°59.96'	13.1	5
70	07-NOV-1994	0305	29°34.03'	93°00.07'	10.5	3
71	07-NOV-1994	0848	29°32.04'	94°00.17'	9.6	4
72	07-NOV-1994	0950	29°26.63'	94°00.14'	10.7	4
73	07-NOV-1994	1035	29°21.61'	94°00.12'	10.2	4
74	07-NOV-1994	1125	29°16.21'	94°00.09'	12.5	4
75	07-NOV-1994	1218	29°09.99'	94°00.08'	16.1	5
76	07-NOV-1994	1312	29°03.78'	94°00.13'	18.2	5
77	07-NOV-1994	1401	28°57.93'	94°00.15'	16.5	5
78	07-NOV-1994	1506	28°51.90'	93°59.97'	23.9	6
79	07-NOV-1994	1557	28°46.02'	94°00.10'	23.8	6
80	07-NOV-1994	1652	28°39.65'	93°59.94'	28.8	6
81	07-NOV-1994	1751	28°33.81'	93°59.94'	35.2	7
82	07-NOV-1994	1854	28°27.94'	94°00.00'	42.1	7
83	07-NOV-1994	1947	28°21.94'	94°00.00'	51.3	7
84	07-NOV-1994	2051	28°16.01'	94°01.30'	57.7	8
85	07-NOV-1994	2201	28°08.95'	94°03.77'	64.3	8
86	07-NOV-1994	2246	28°04.66'	94°05.52'	69.1	8
87	07-NOV-1994	2339	27°59.54'	94°07.49'	81.1	9
88	08-NOV-1994	0036	27°54.12'	94°09.27'	97.4	10

Table 10.2 Station times and positions for LATEX A cruise H10 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
89	08-NOV-1994	0139	27°48.00'	94°11.40'	269.5	11
90	08-NOV-1994	0235	27°44.27'	94°12.21'	452.8	12
91	08-NOV-1994	0347	27°39.62'	94°13.48'	443.6	12
92	08-NOV-1994	0517	27°33.61'	94°14.65'	667.0	12
93	08-NOV-1994	0647	27°27.73'	94°16.21'	995.0	12
94	08-NOV-1994	1253	28°15.59'	94°32.42'	46.9	7
95	08-NOV-1994	1346	28°21.00'	94°33.59'	41.4	7
96	08-NOV-1994	1439	28°26.40'	94°35.15'	38.8	7
97	08-NOV-1994	1532	28°31.76'	94°36.61'	33.8	7
98	08-NOV-1994	1623	28°37.18'	94°38.42'	30.0	6
99	08-NOV-1994	1713	28°42.58'	94°39.90'	25.1	6
100	08-NOV-1994	1804	28°48.02'	94°41.45'	19.8	5
101	08-NOV-1994	1903	28°53.40'	94°43.22'	19.2	5
102	08-NOV-1994	1955	28°58.79'	94°44.42'	16.0	4
103	08-NOV-1994	2046	29°04.51'	94°46.24'	17.0	4
104	08-NOV-1994	2141	29°10.19'	94°47.99'	13.2	4
105	09-NOV-1994	0300	28°42.21'	95°32.21'	13.9	4
106	09-NOV-1994	0347	28°37.45'	95°29.32'	18.3	4
107	09-NOV-1994	0434	28°32.38'	95°26.34'	24.9	5
108	09-NOV-1994	0527	28°27.01'	95°23.49'	31.6	6
109	09-NOV-1994	0632	28°21.63'	95°20.87'	33.0	6
110	09-NOV-1994	0736	28°16.36'	95°17.86'	38.3	7
111	09-NOV-1994	0837	28°10.51'	95°15.01'	47.2	7
112	09-NOV-1994	0955	28°05.02'	95°12.13'	54.4	7
113	09-NOV-1994	1058	27°59.65'	95°09.11'	77.3	9
114	09-NOV-1994	1203	27°54.10'	95°06.41'	107.5	11
115	09-NOV-1994	1311	27°48.55'	95°03.59'	268.4	12
116	09-NOV-1994	1423	27°43.02'	95°00.67'	497.7	12
117	09-NOV-1994	1543	27°37.69'	94°57.60'	700.1	12
118	09-NOV-1994	1710	27°32.40'	94°54.82'	850.6	12
119	09-NOV-1994	2220	27°23.38'	95°37.34'	916.4	12
120	10-NOV-1994	0007	27°27.57'	95°42.12'	716.2	12
121	10-NOV-1994	0143	27°31.50'	95°47.13'	523.2	12
122	10-NOV-1994	0311	27°36.11'	95°52.68'	193.7	12
123	10-NOV-1994	0421	27°41.09'	95°58.20'	103.6	10
124	10-NOV-1994	0525	27°45.28'	96°03.33'	79.3	7
125	10-NOV-1994	0701	27°48.58'	96°07.85'	67.0	7
126	10-NOV-1994	0834	27°53.96'	96°13.53'	49.2	6
127	10-NOV-1994	1026	27°58.21'	96°18.93'	36.6	6
128	10-NOV-1994	1139	28°02.39'	96°24.07'	27.1	5
129	10-NOV-1994	1302	28°07.80'	96°30.02'	18.8	5
130	10-NOV-1994	1408	28°12.62'	96°36.05'	9.5	4
131	10-NOV-1994	2037	27°15.43'	97°16.09'	16.3	4
132	10-NOV-1994	2132	27°14.40'	97°09.61'	25.1	5

Table 10.2 Station times and positions for LATEX A cruise H10 (continued).

Station Number	Date (UTC)	Time (UTC)	Latitude (°N)	Longitude (°W)	Depth (m)	Niskin Nos.
133	10-NOV-1994	2226	27°13.56'	97°03.14'	31.5	6
134	10-NOV-1994	2326	27°12.71'	96°56.24'	42.5	7
135	11-NOV-1994	0024	27°11.93'	96°49.59'	56.7	9
136	11-NOV-1994	0136	27°11.04'	96°42.91'	71.5	8
137	11-NOV-1994	0242	27°10.17'	96°36.37'	89.0	10
138	11-NOV-1994	0347	27°09.09'	96°29.79'	111.4	11
139	11-NOV-1994	0504	27°08.09'	96°22.81'	183.5	12
140	11-NOV-1994	0612	27°06.87'	96°16.95'	314.0	12
141	11-NOV-1994	0715	27°05.99'	96°12.58'	446.5	12
142	11-NOV-1994	0837	27°05.27'	96°05.25'	618.4	12
143	11-NOV-1994	0956	27°04.31'	95°58.91'	730.7	12
144	11-NOV-1994	1658	26°00.95'	95°58.31'	1026.5	12
145	11-NOV-1994	1958	26°00.95'	96°05.16'	829.3	12
146	11-NOV-1994	2136	26°00.61'	96°11.56'	655.3	12
147	11-NOV-1994	2306	26°00.79'	96°18.67'	205.9	12
148	12-NOV-1994	0032	26°00.73'	96°25.28'	83.4	9
149	12-NOV-1994	0129	26°00.98'	96°31.86'	58.9	8
150	12-NOV-1994	0225	26°00.96'	96°38.62'	48.1	7
151	12-NOV-1994	0315	26°00.97'	96°44.98'	44.9	6
152	12-NOV-1994	0407	26°00.97'	96°51.46'	36.8	6
153	12-NOV-1994	0501	26°01.51'	96°58.14'	28.0	6
154	12-NOV-1994	0559	26°01.37'	97°04.58'	19.4	4
155	12-NOV-1994	1227	26°08.61'	96°19.96'	230.0	12
156	12-NOV-1994	1406	26°19.81'	96°17.84'	251.6	12
157	12-NOV-1994	1548	26°31.82'	96°19.95'	288.6	12
158	12-NOV-1994	1734	26°43.78'	96°26.26'	204.9	12
159	12-NOV-1994	1911	26°55.81'	96°26.25'	207.9	12
160	12-NOV-1994	2051	27°06.32'	96°20.74'	228.1	12
161	12-NOV-1994	2228	27°16.79'	96°15.20'	205.9	12
162	13-NOV-1994	0044	27°25.85'	96°06.30'	202.3	12
163	13-NOV-1994	0237	27°32.41'	95°54.47'	266.3	12
164	13-NOV-1994	0435	27°39.04'	95°42.70'	246.9	12
165	13-NOV-1994	0624	27°42.49'	95°30.14'	303.5	12
166	13-NOV-1994	0816	27°45.69'	95°17.22'	266.3	12
167	13-NOV-1994	1010	27°47.92'	95°02.91'	314.2	12
168	13-NOV-1994	1236	27°50.16'	94°48.58'	233.9	12
169	13-NOV-1994	1443	27°50.13'	94°35.33'	272.1	12
170	13-NOV-1994	1635	27°50.04'	94°21.67'	170.6	12

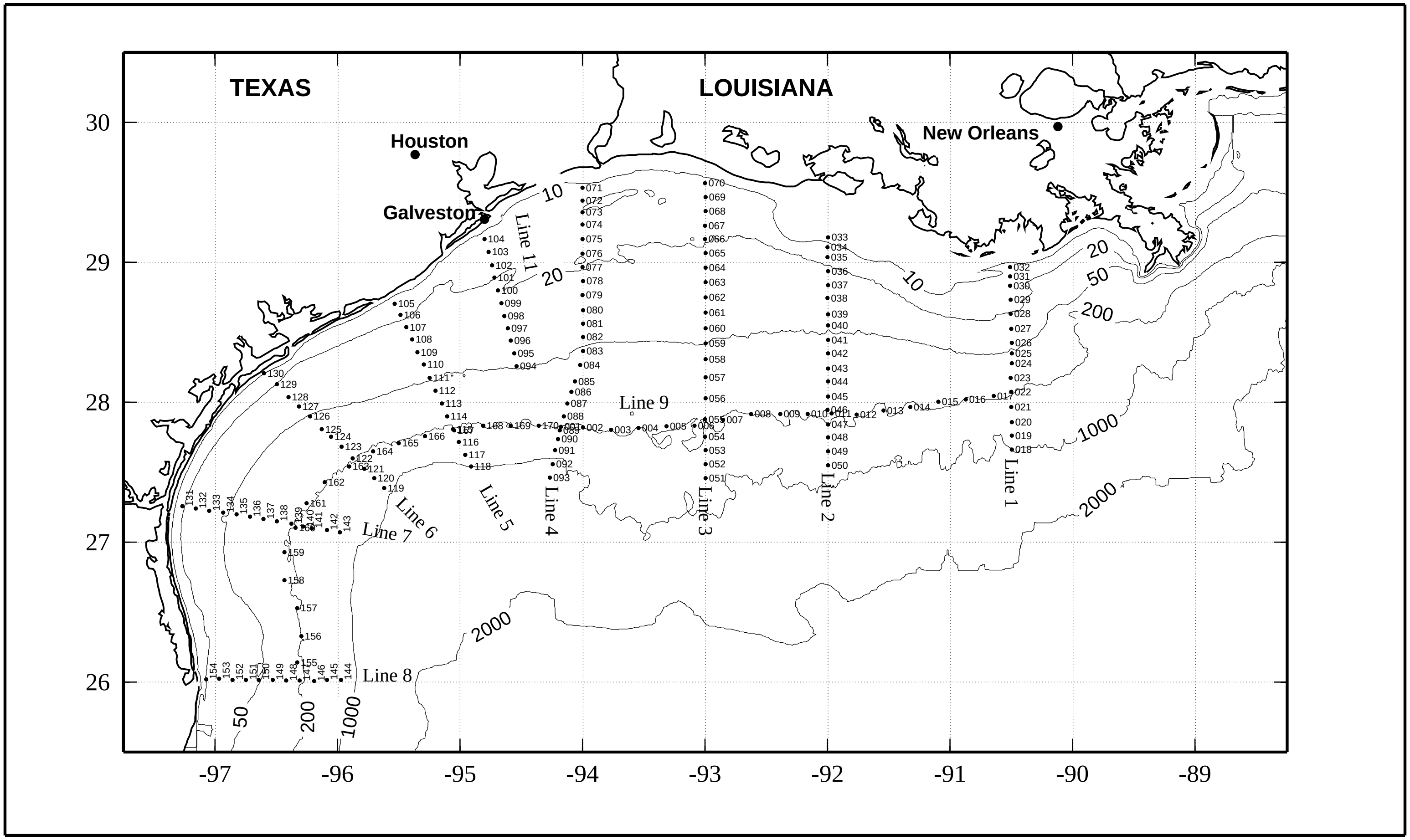

Figure 10.0. Cruise track and station locations for LATEX A Hydrographic Survey H10, 2 - 14 November 1994.

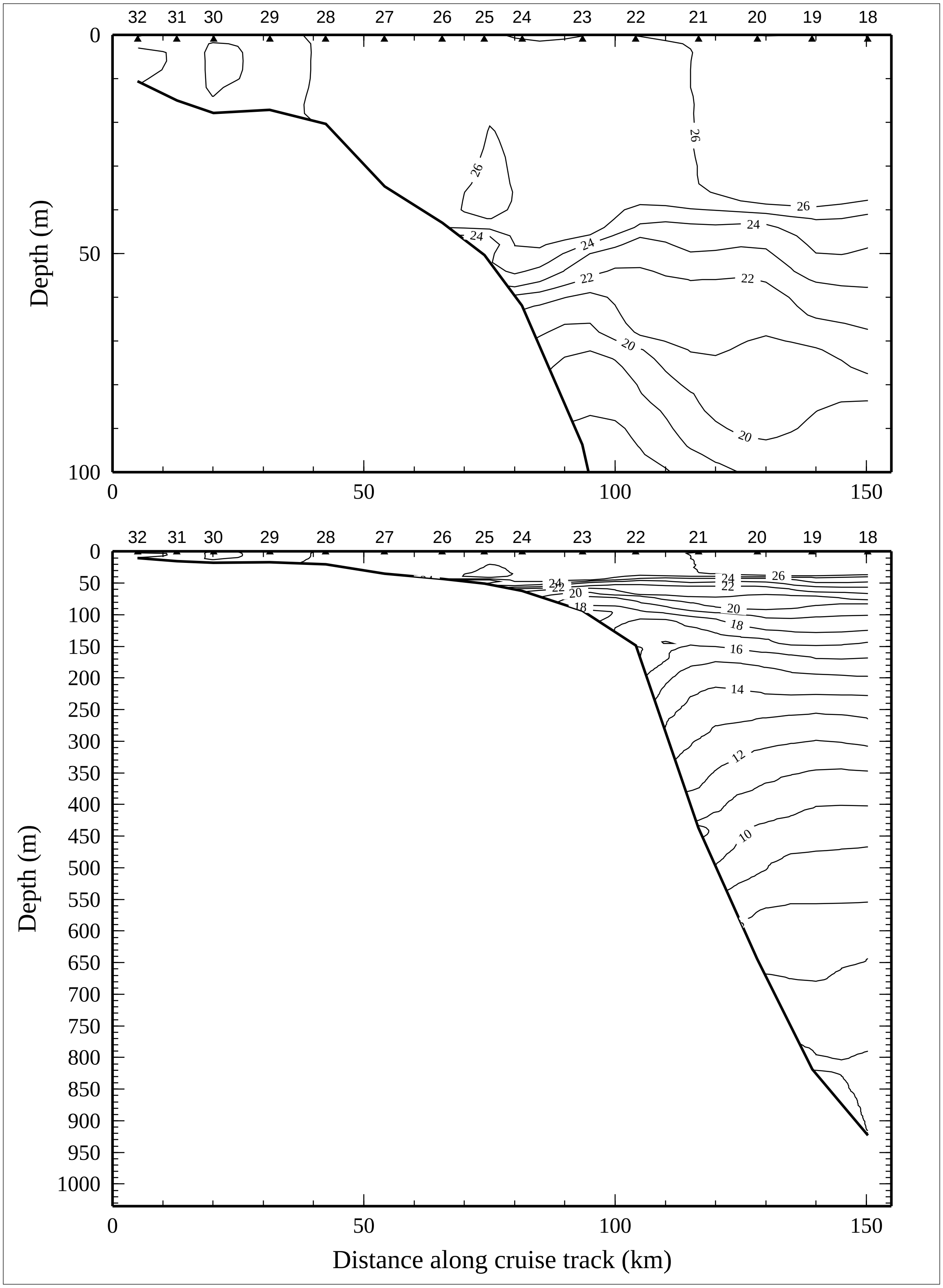

Figure 10.1.1. Potential temperature (˚C) on line 1 of LATEX A survey H10, 2-14 November 1994.

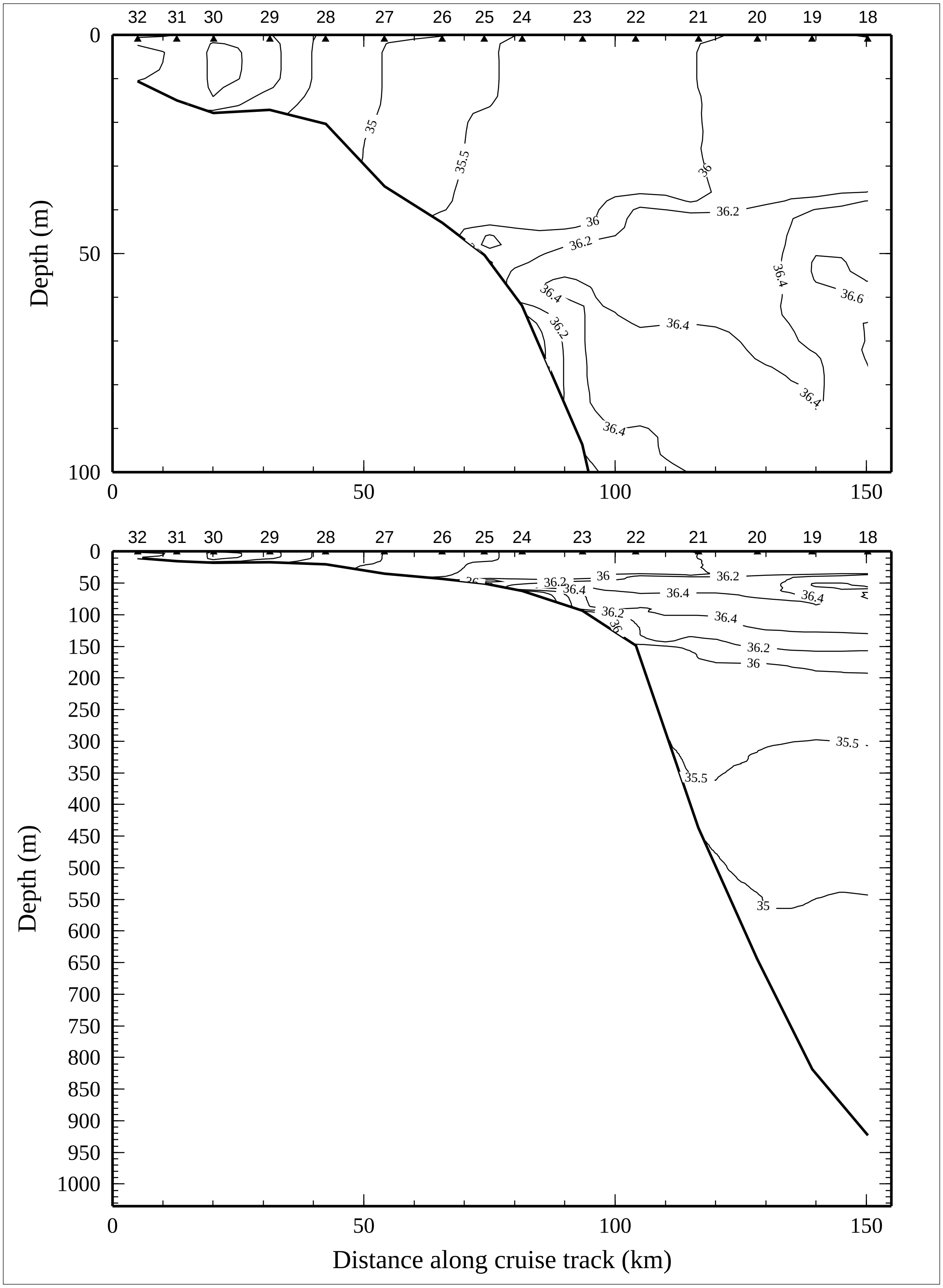

Figure 10.1.2. Salinity, derived from CTD data, on line 1 of LATEX A survey H10, 2-14 November 1994.

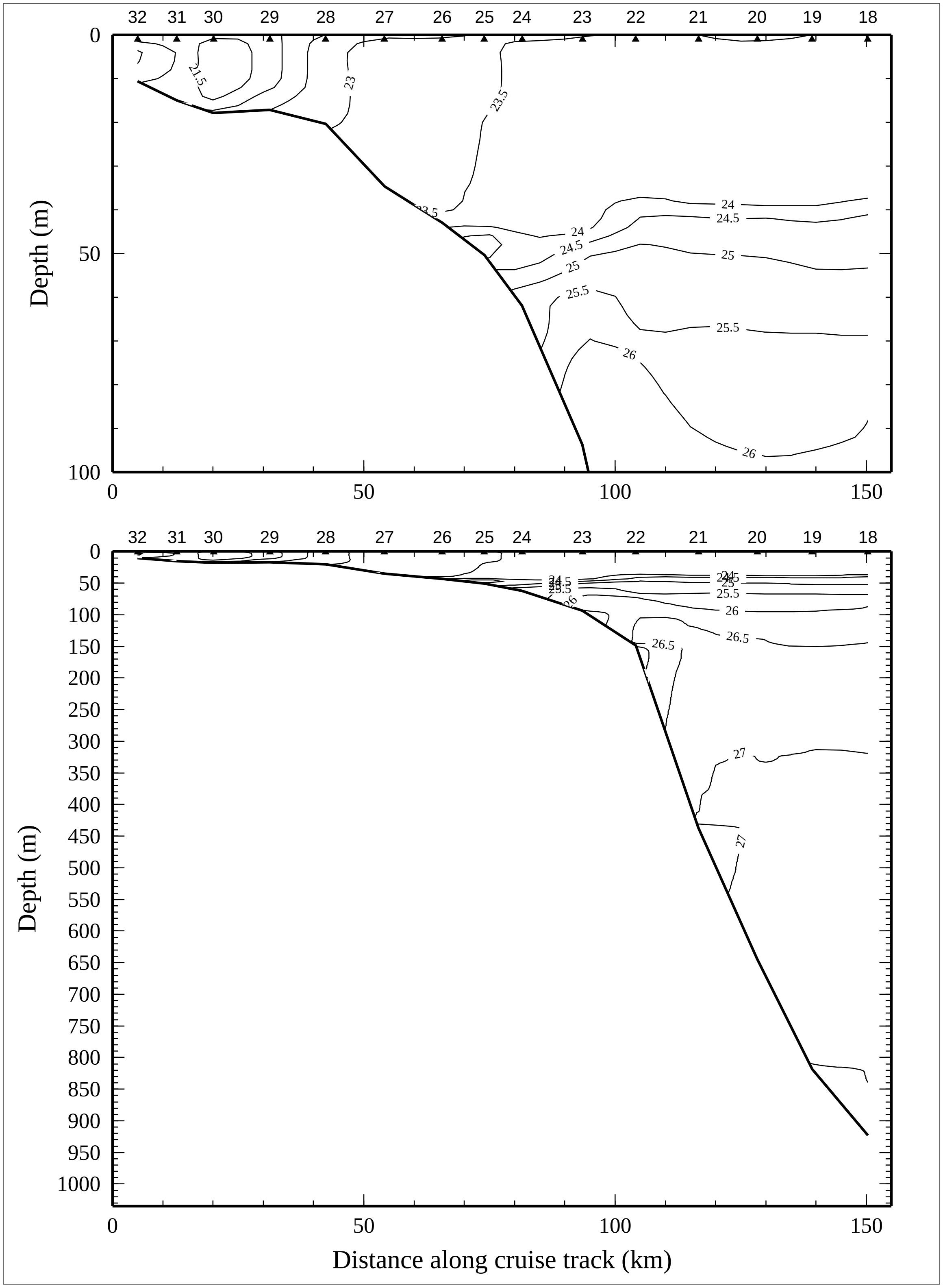

Figure 10.1.3. Density anomaly (σ_θ in kg·m^{-3}) on line 1 of LATEX A survey H10, 2-14 November 1994.

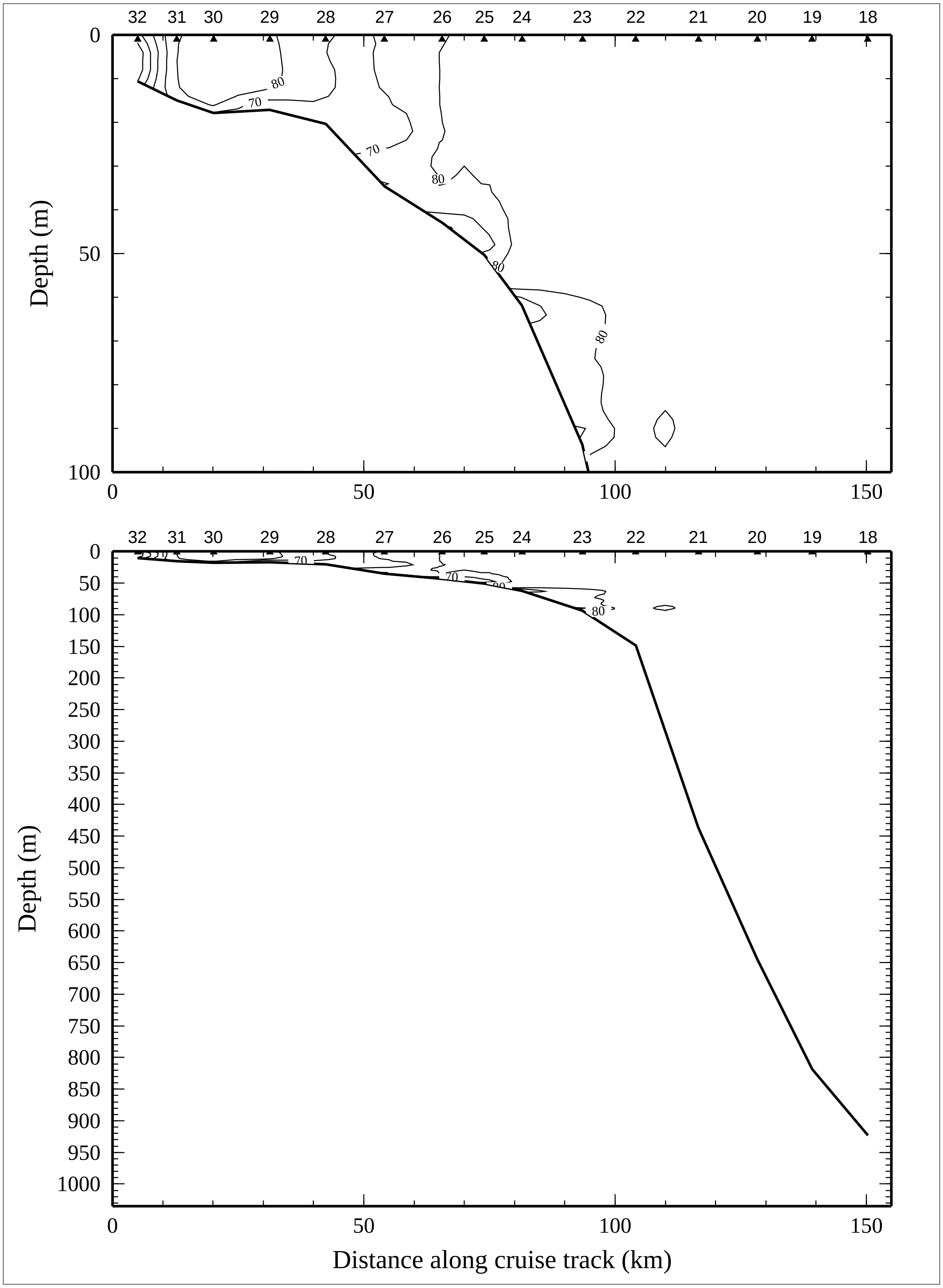

Figure 10.1.4. Percent transmission (660 nm wave length; 25-cm path length) on line 1 of LATEX A survey H10, 2-14 November 1994.

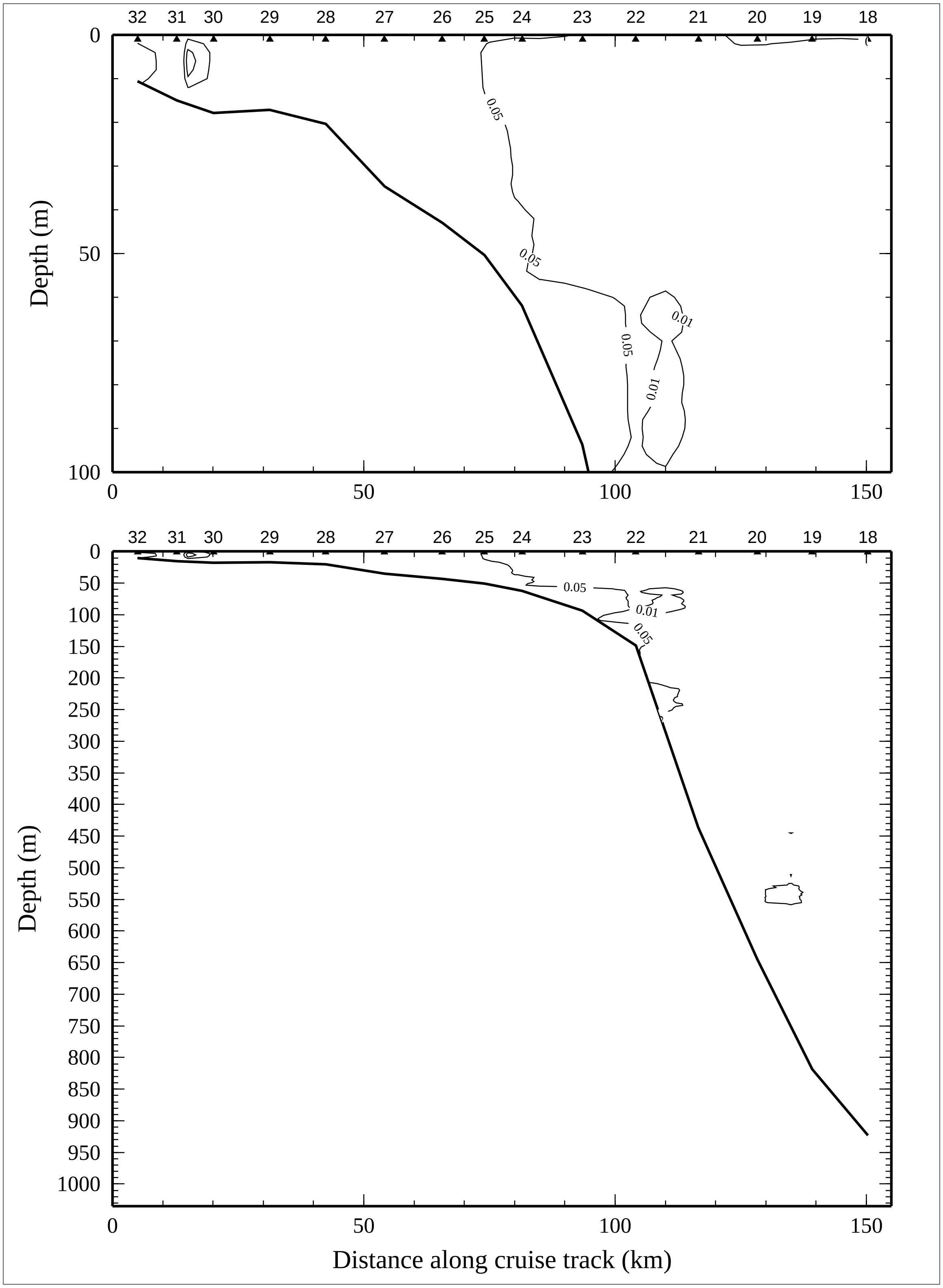

Figure 10.1.5. Optical backscatterance (voltage) on line 1 of LATEX A survey H10, 2-14 November 1994.

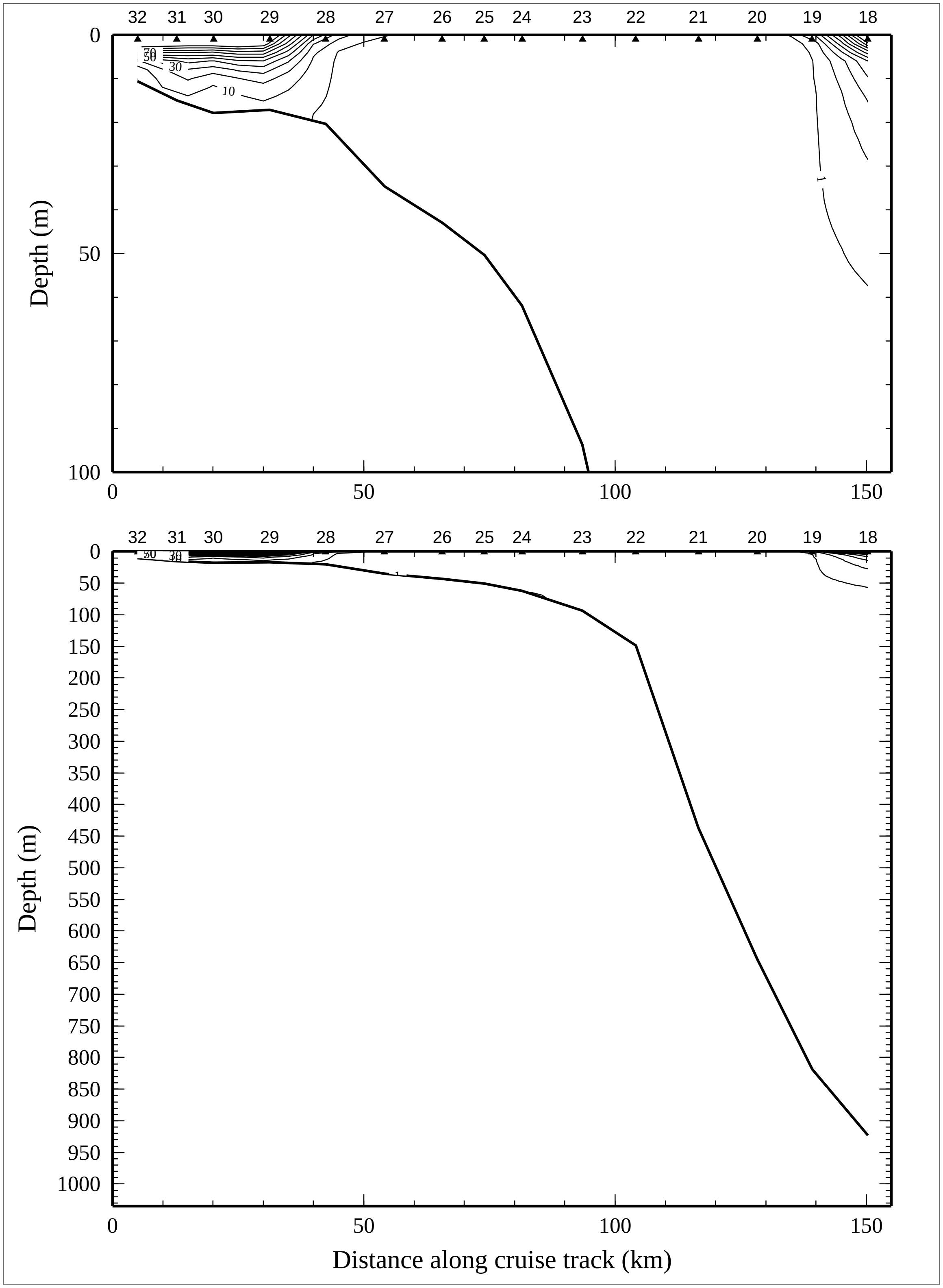

Figure 10.1.6. Downwelling irradiance as percent of surface irradiance on line 1 of LATEX A survey H10, 2-14 November 1994.

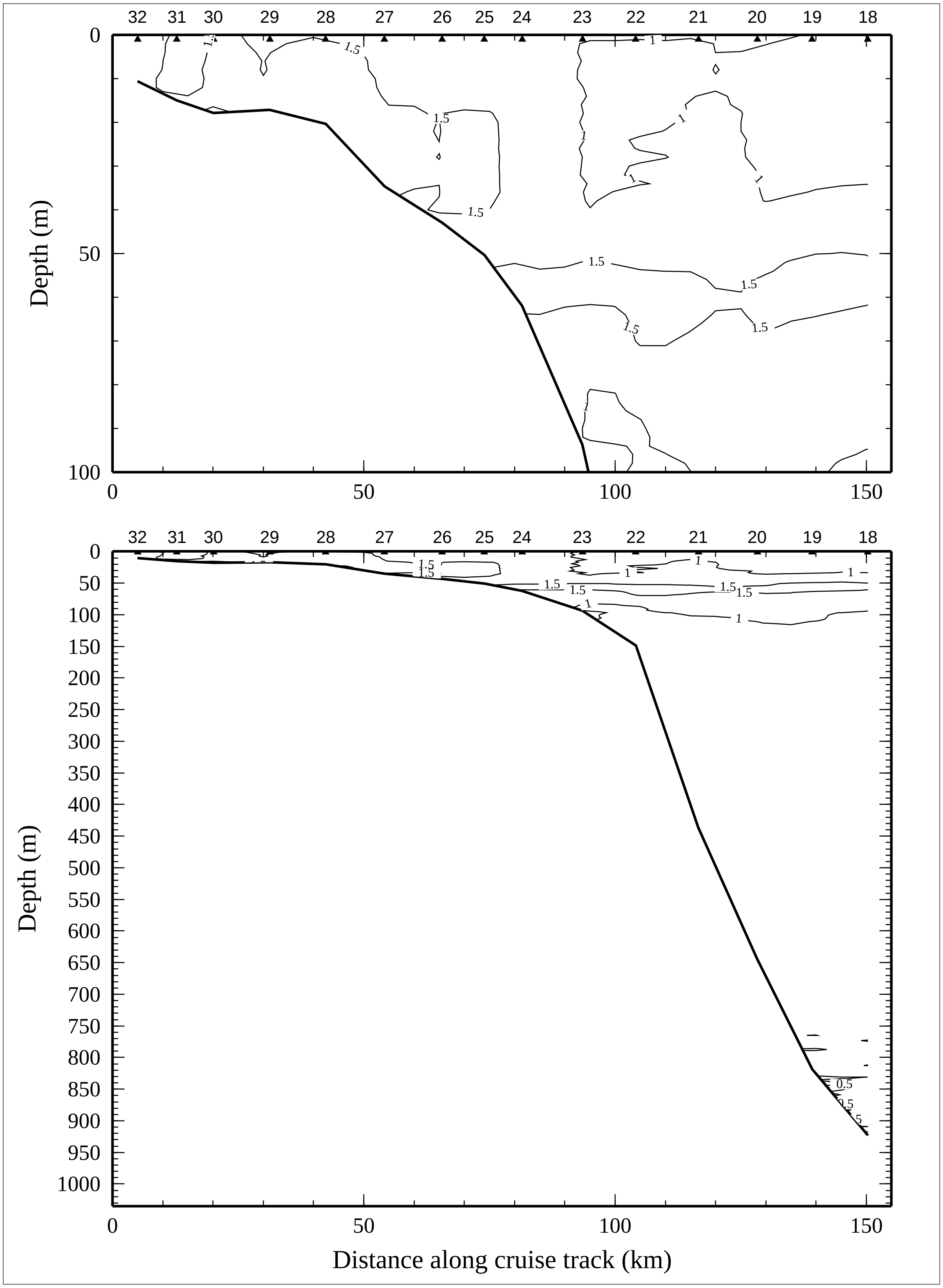

Figure 10.1.7. Relative fluorescence on line 1 of LATEX A survey H10,
2-14 November 1994.

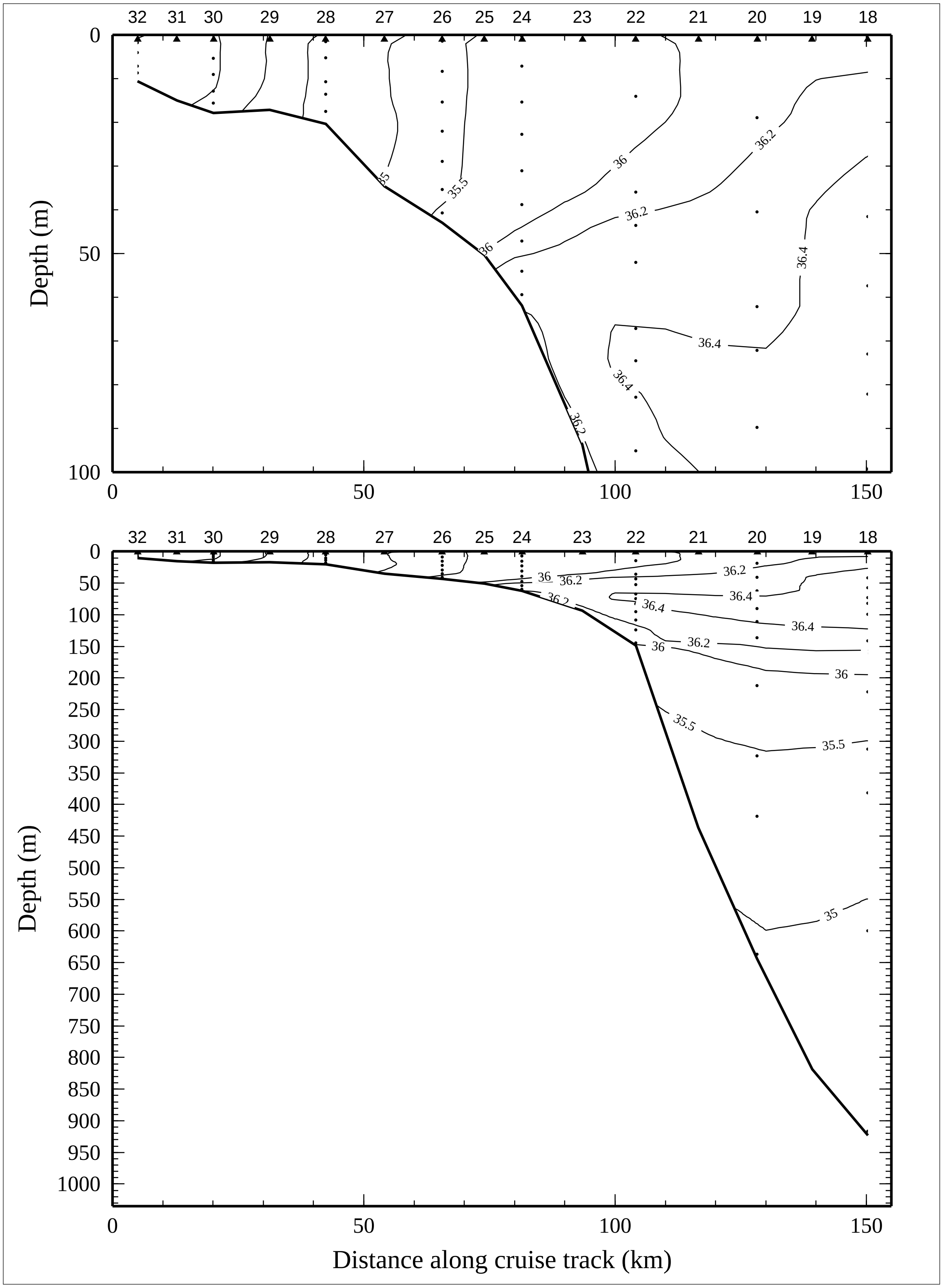

Figure 10.1.8. Bottle salinity on line 1 of LATEX A survey H10,
2-14 November 1994.

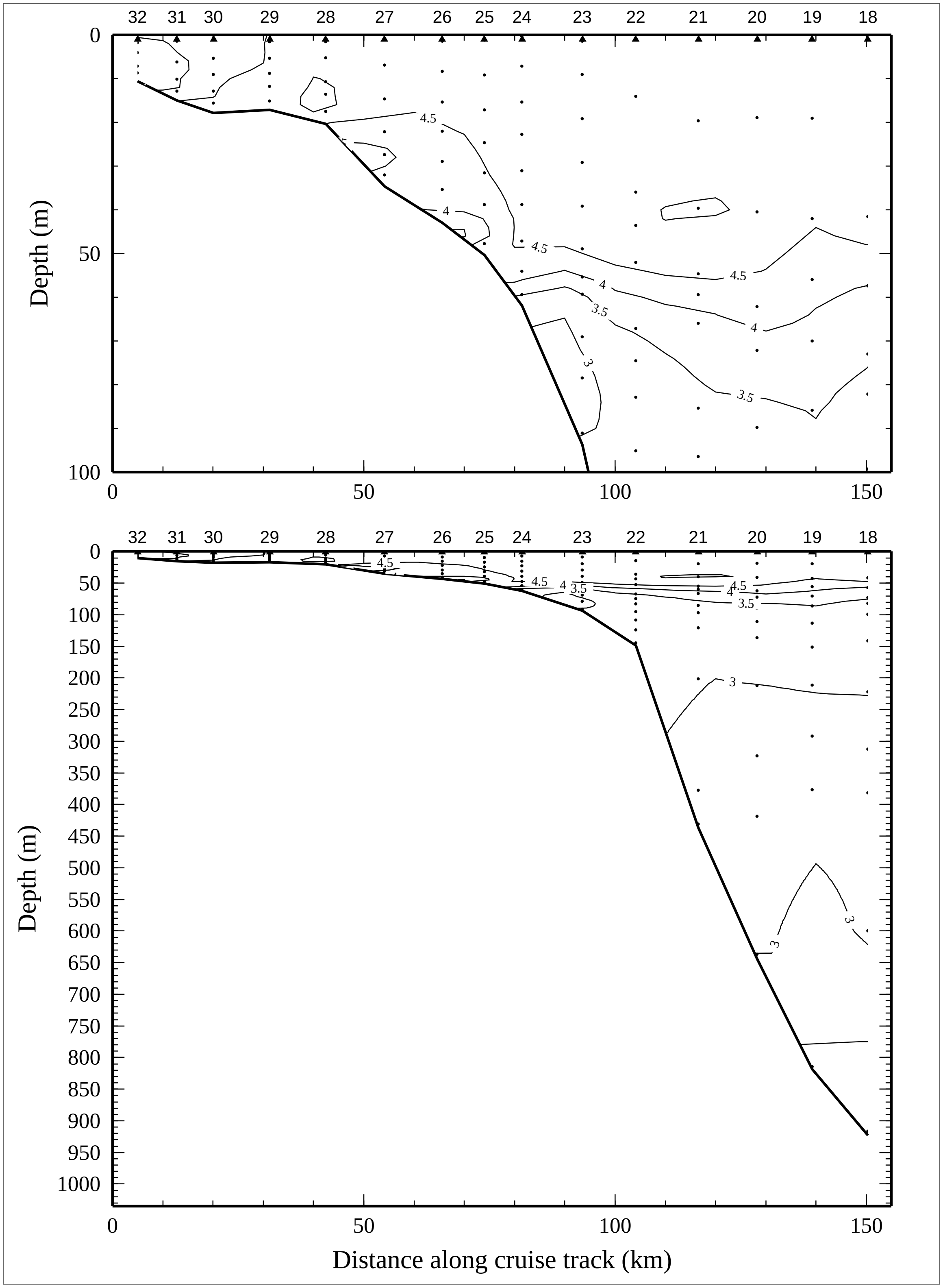

Figure 10.1.9. Dissolved oxygen (ml·l-1) on line 1 of LATEX A survey H10, 2-14 November 1994.

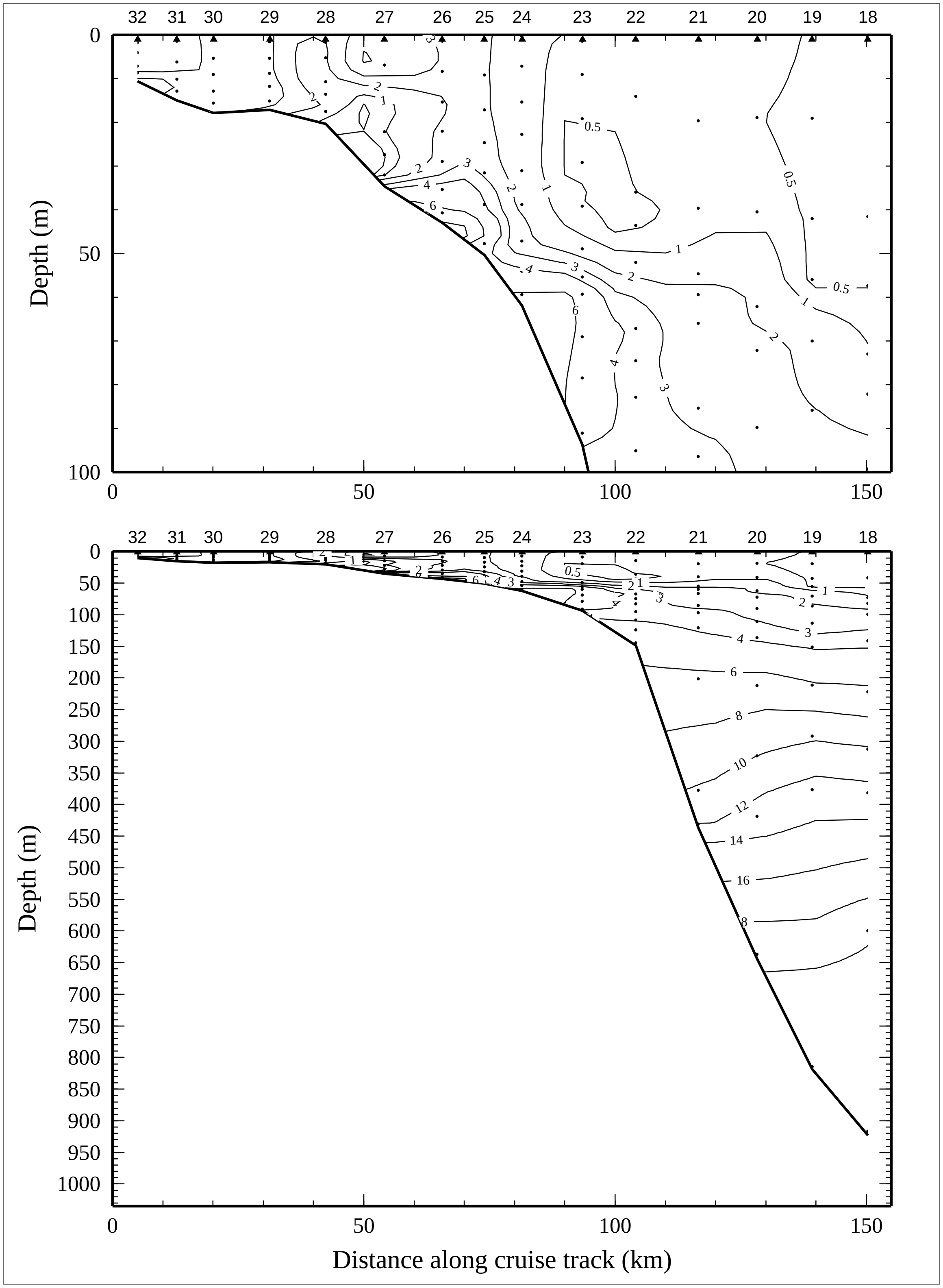

Figure 10.1.10. Silicate (μmol·l-1) on line 1 of LATEX A survey H10, 2-14 November 1994.

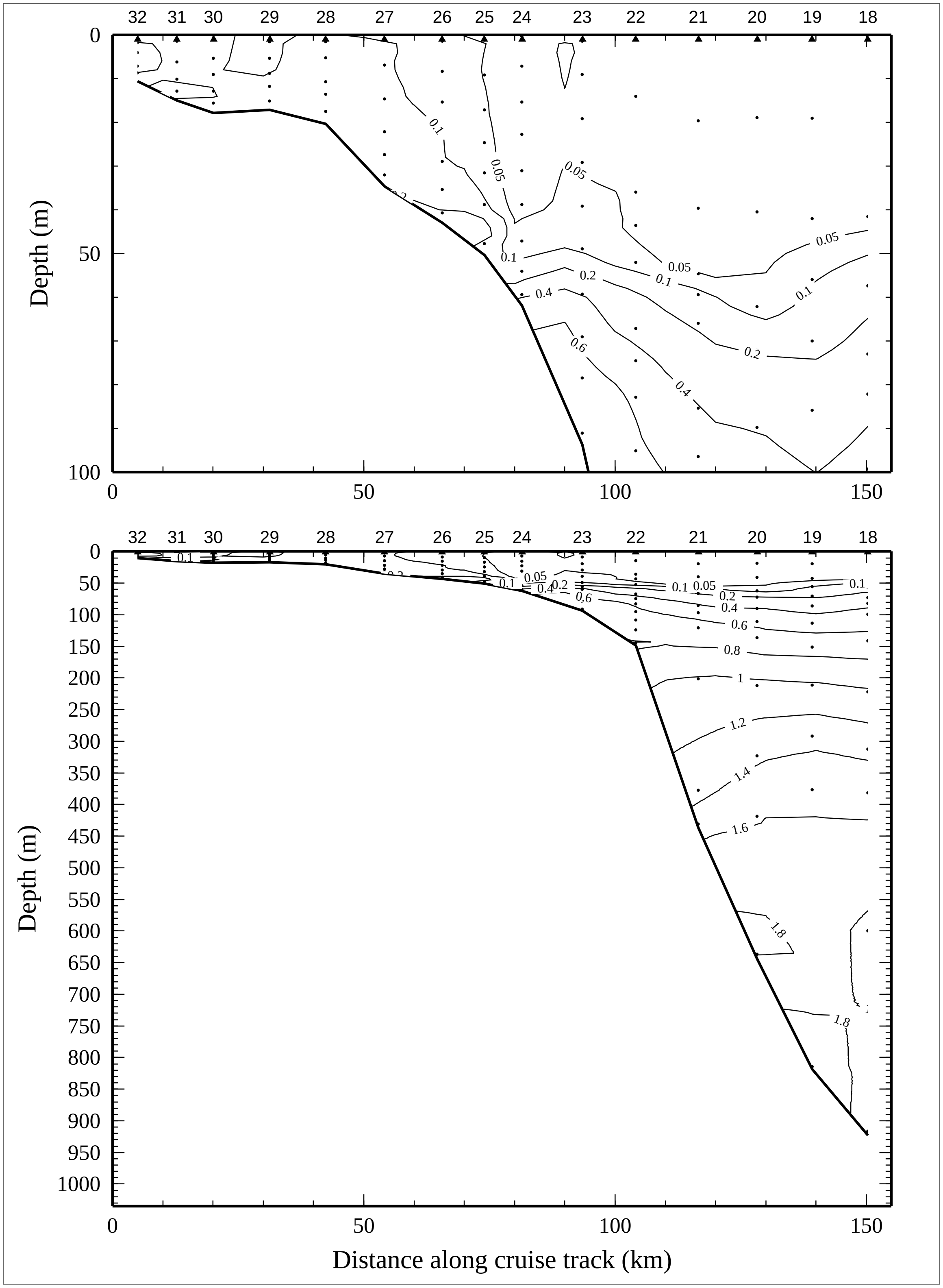

Figure 10.1.11. Phosphate (μmol·l-1) on line 1 of LATEX A survey H10, 2-14 November 1994.

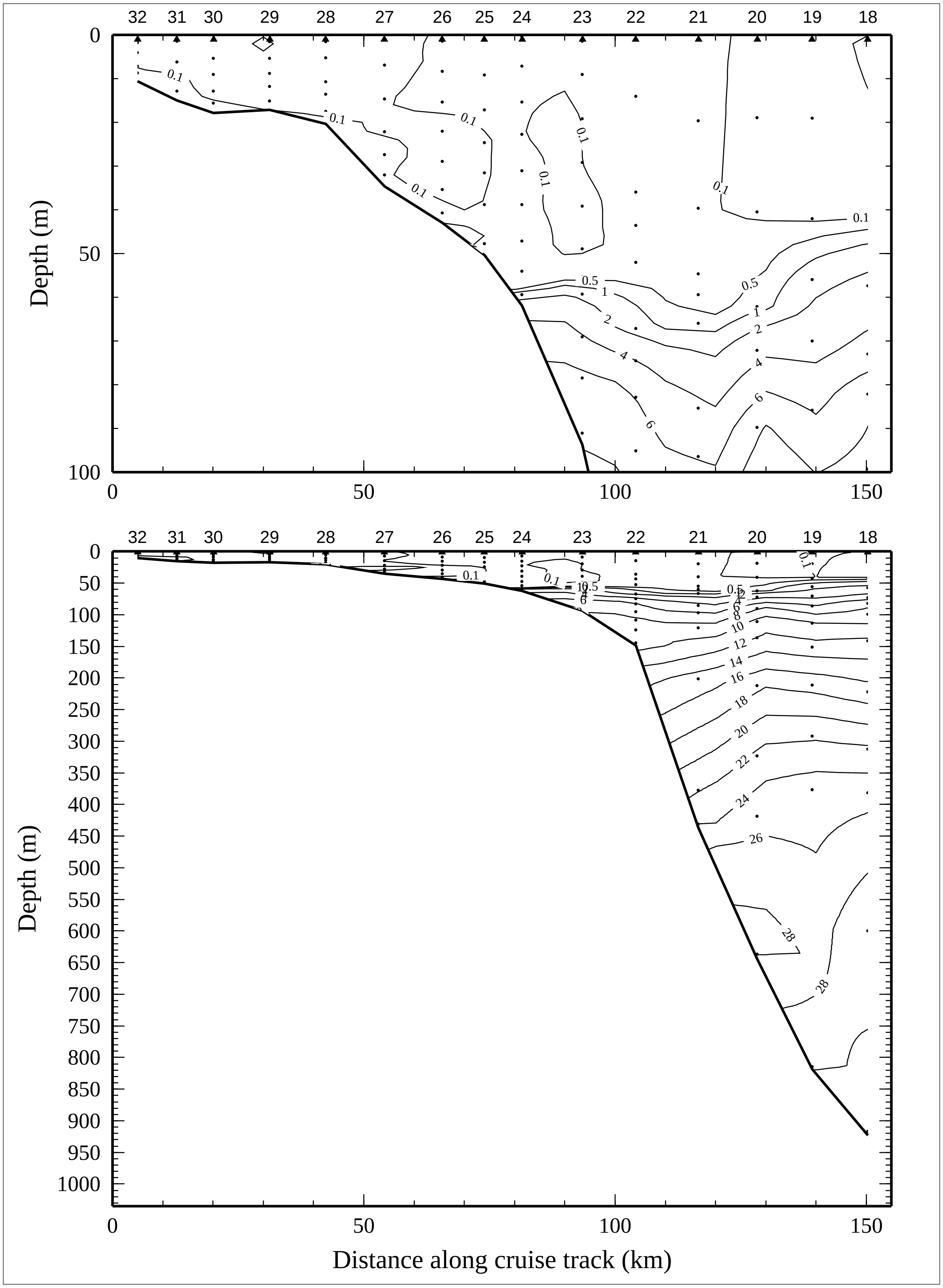

Figure 10.1.12. Nitrate (µmol·l^{-1}) on line 1 of LATEX A survey H10, 2-14 November 1994.

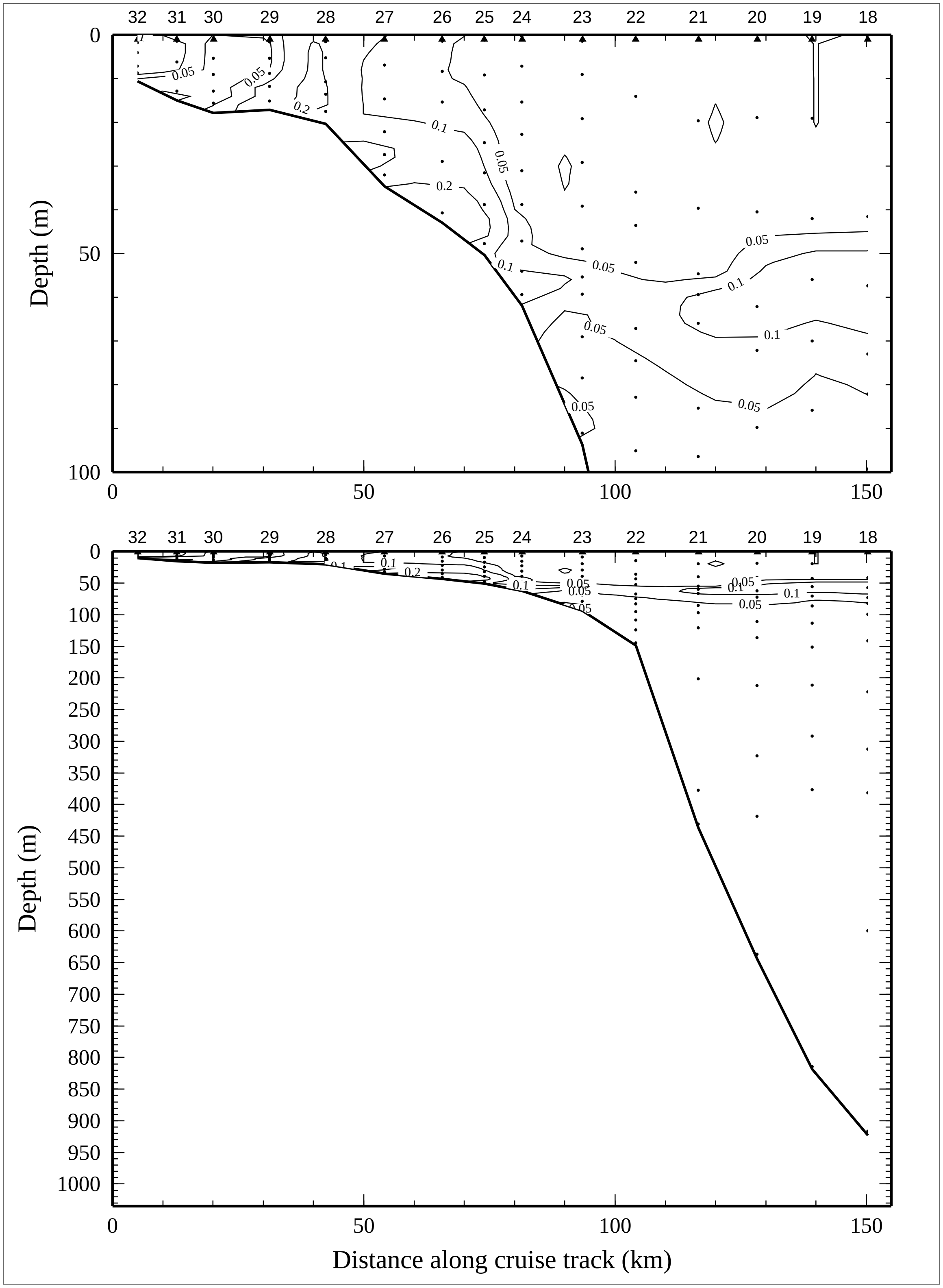

Figure 10.1.13. Nitrite (µmol·l-1) on line 1 of LATEX A survey H10,
2-14 November 1994.

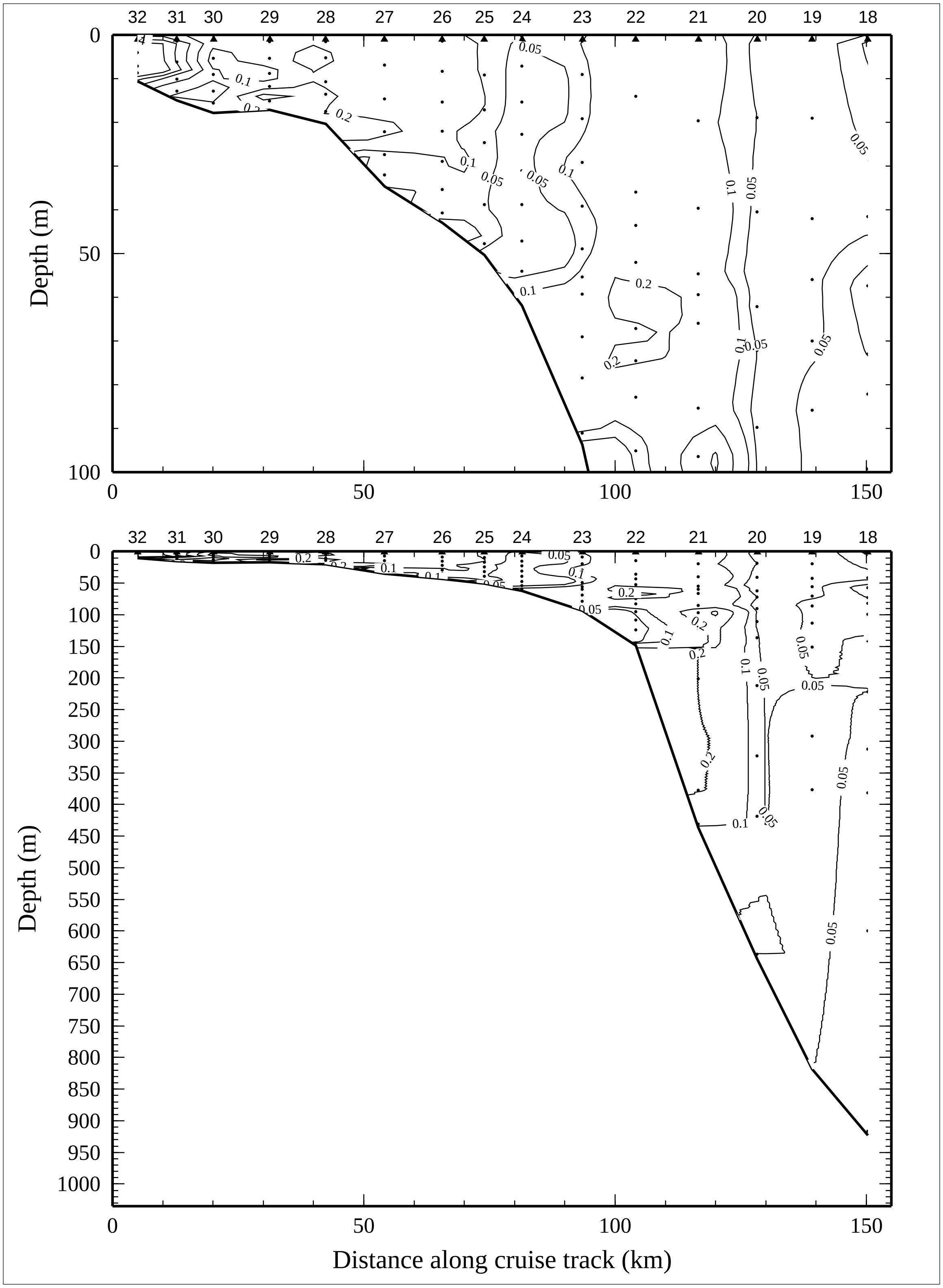

Figure 10.1.14. Ammonium (µmol·l^{-1}) on line 1 of LATEX A survey H10, 2-14 November 1994.

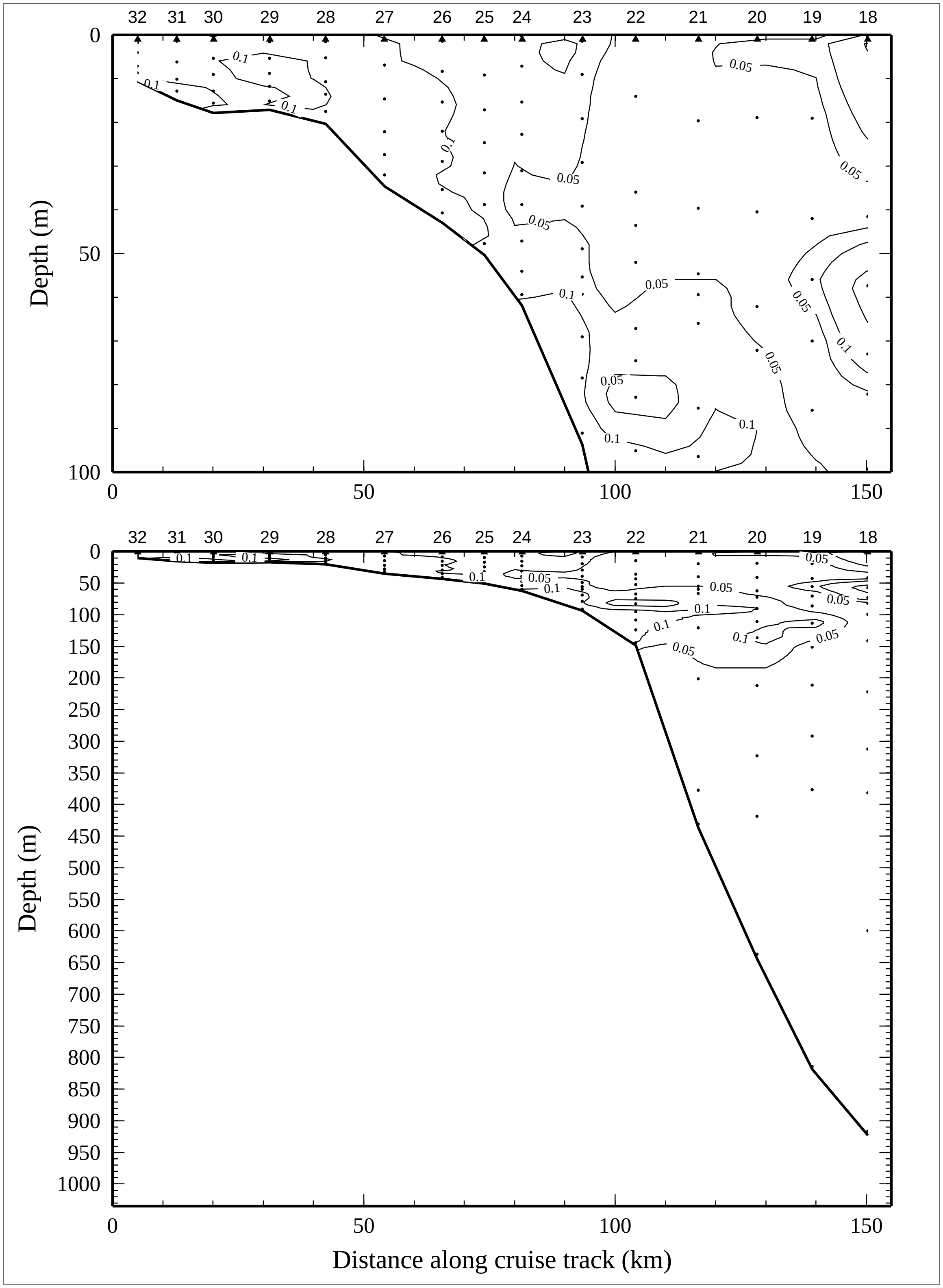

Figure 10.1.15. Urea (µmol·l^{-1}) on line 1 of LATEX A survey H10, 2-14 November 1994.

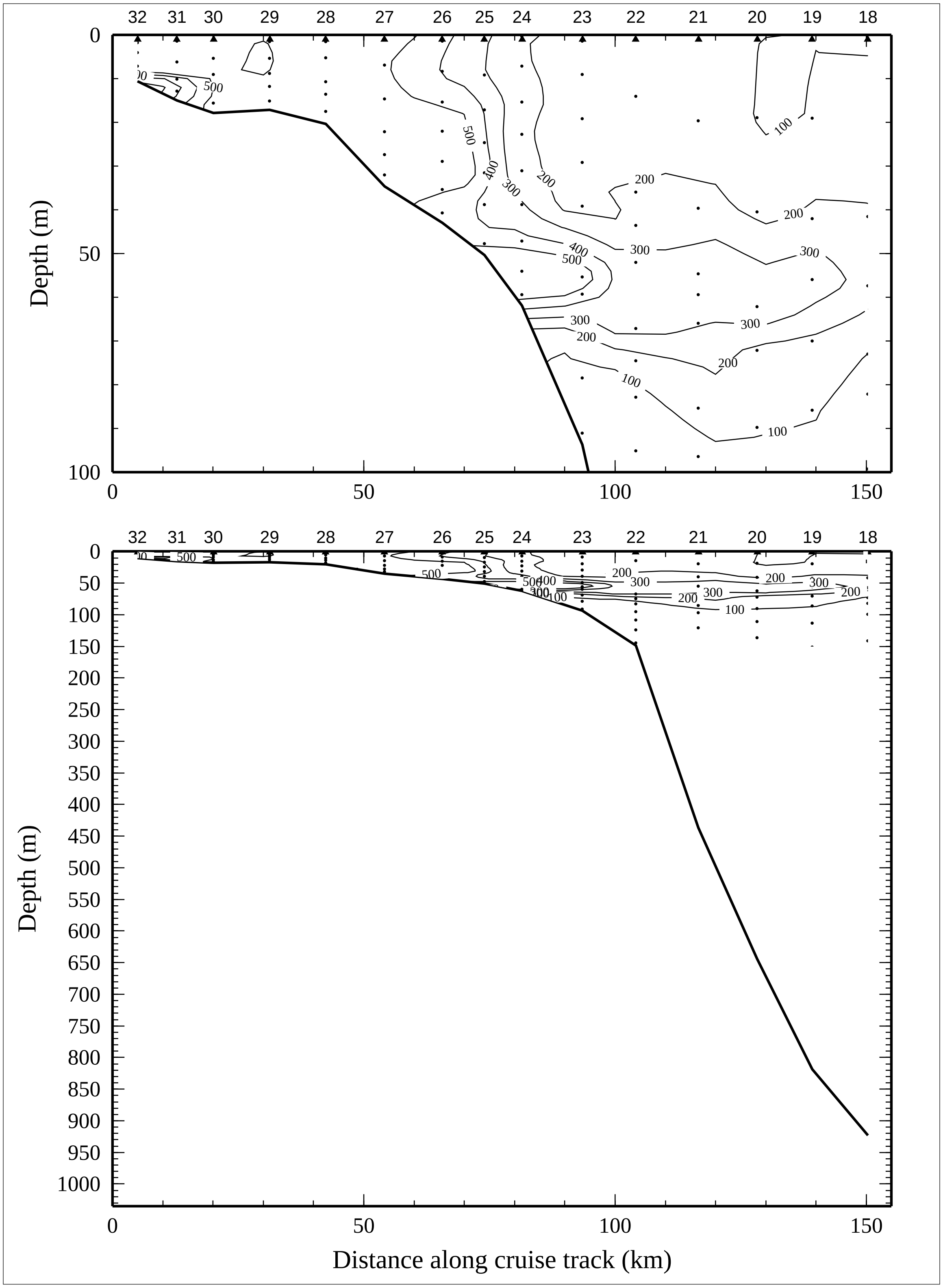

Figure 10.1.16. Chlorophyll a (ng·l-1) on line 1 of LATEX A survey H10, 2-14 November 1994.

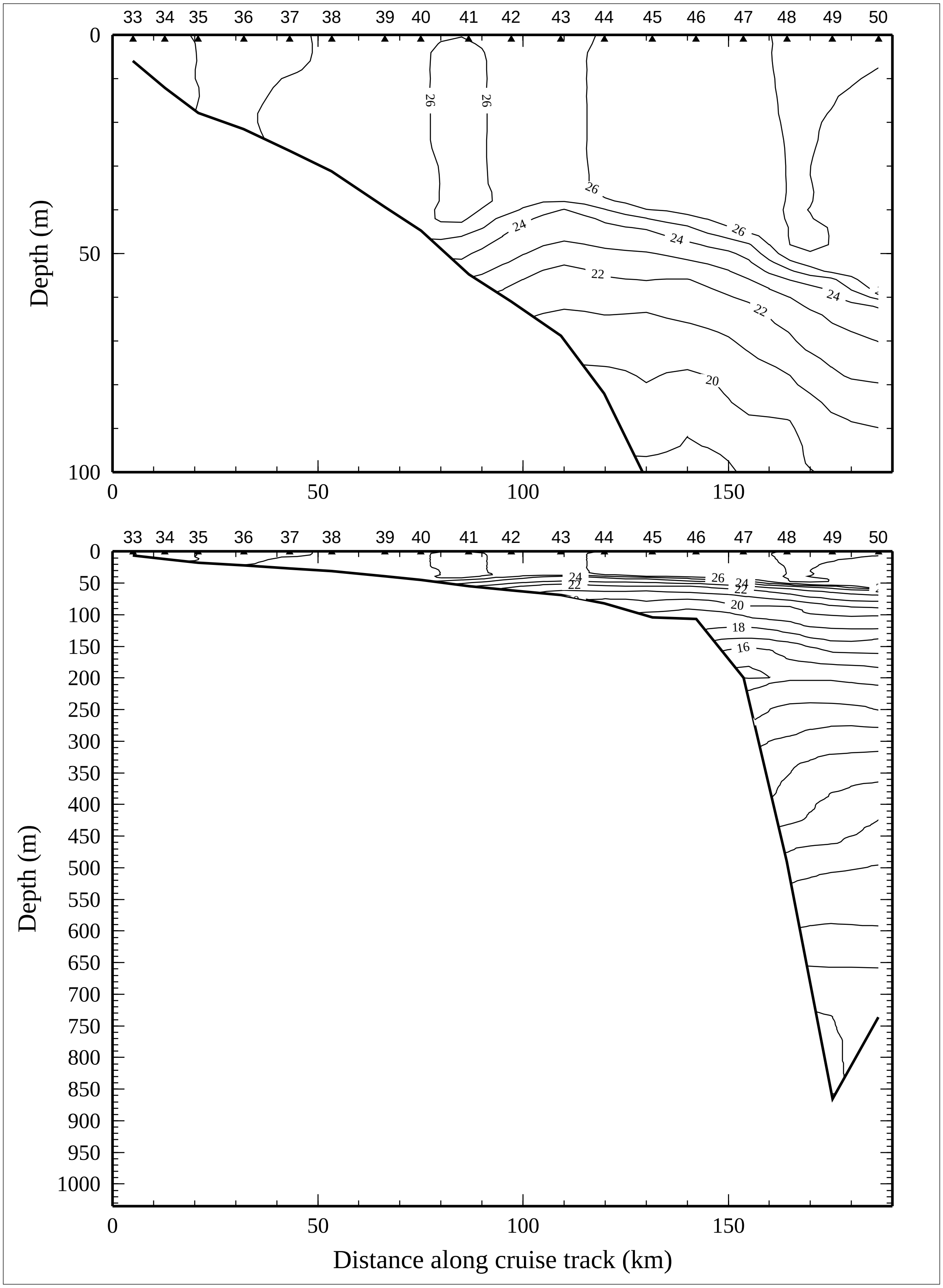

Figure 10.2.1. Potential temperature (˚C) on line 2 of LATEX A survey H10,
2-14 November 1994.

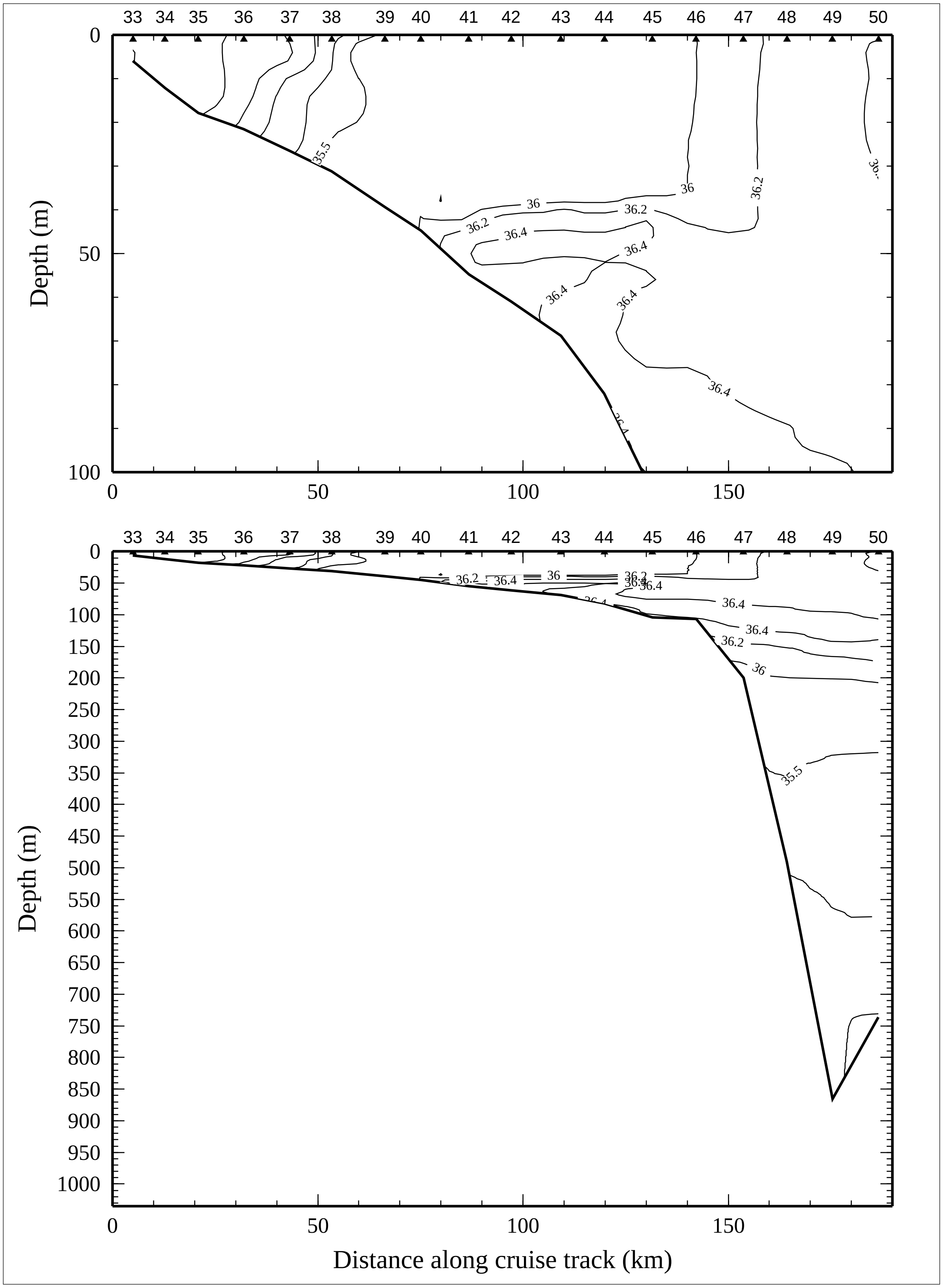

Figure 10.2.2. Salinity, derived from CTD data, on line 2 of LATEX A survey H10, 2-14 November 1994.

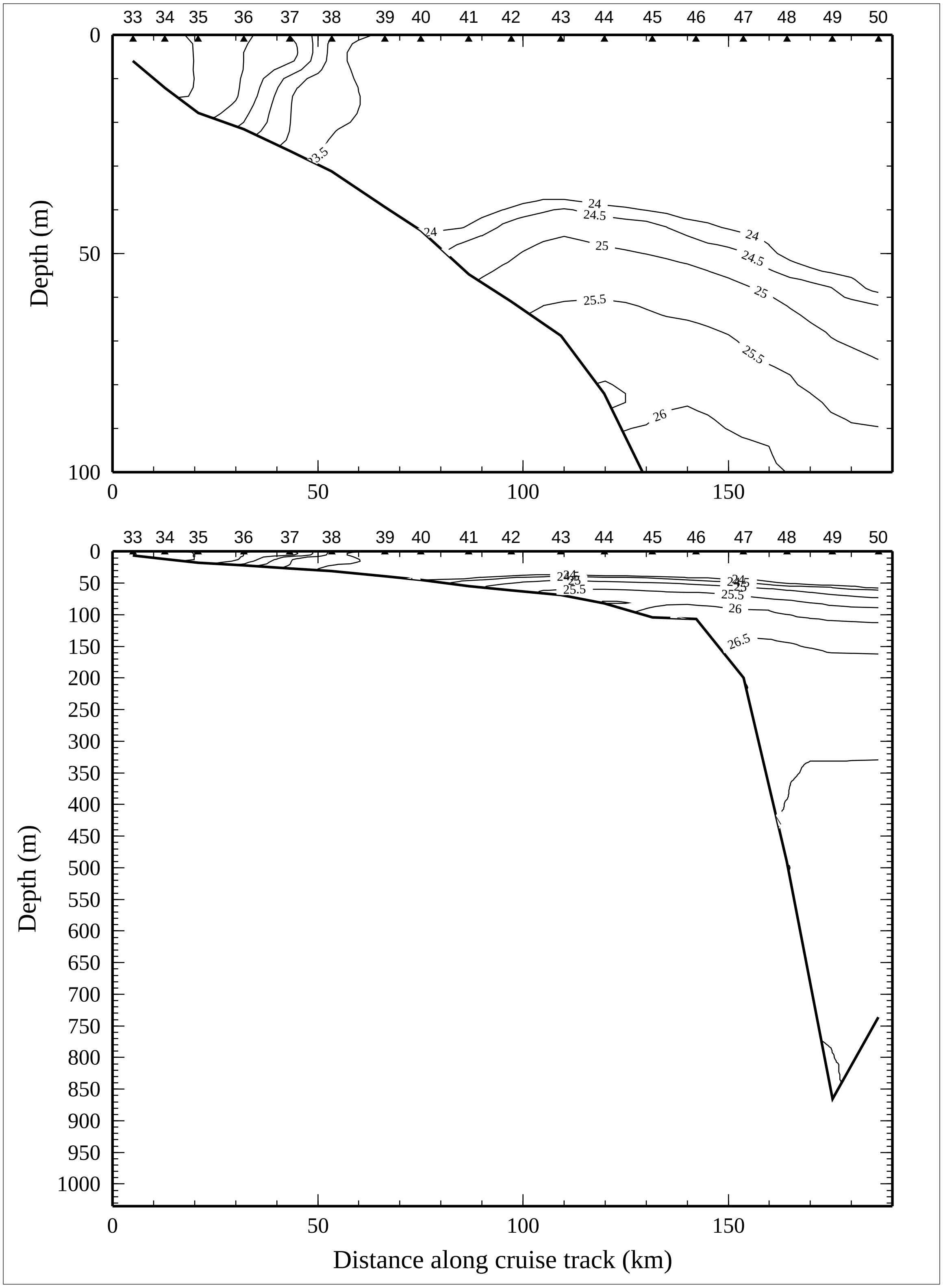

Figure 10.2.3. Density anomaly (σ_θ in kg·m^{-3}) on line 2 of LATEX A survey H10, 2-14 November 1994.

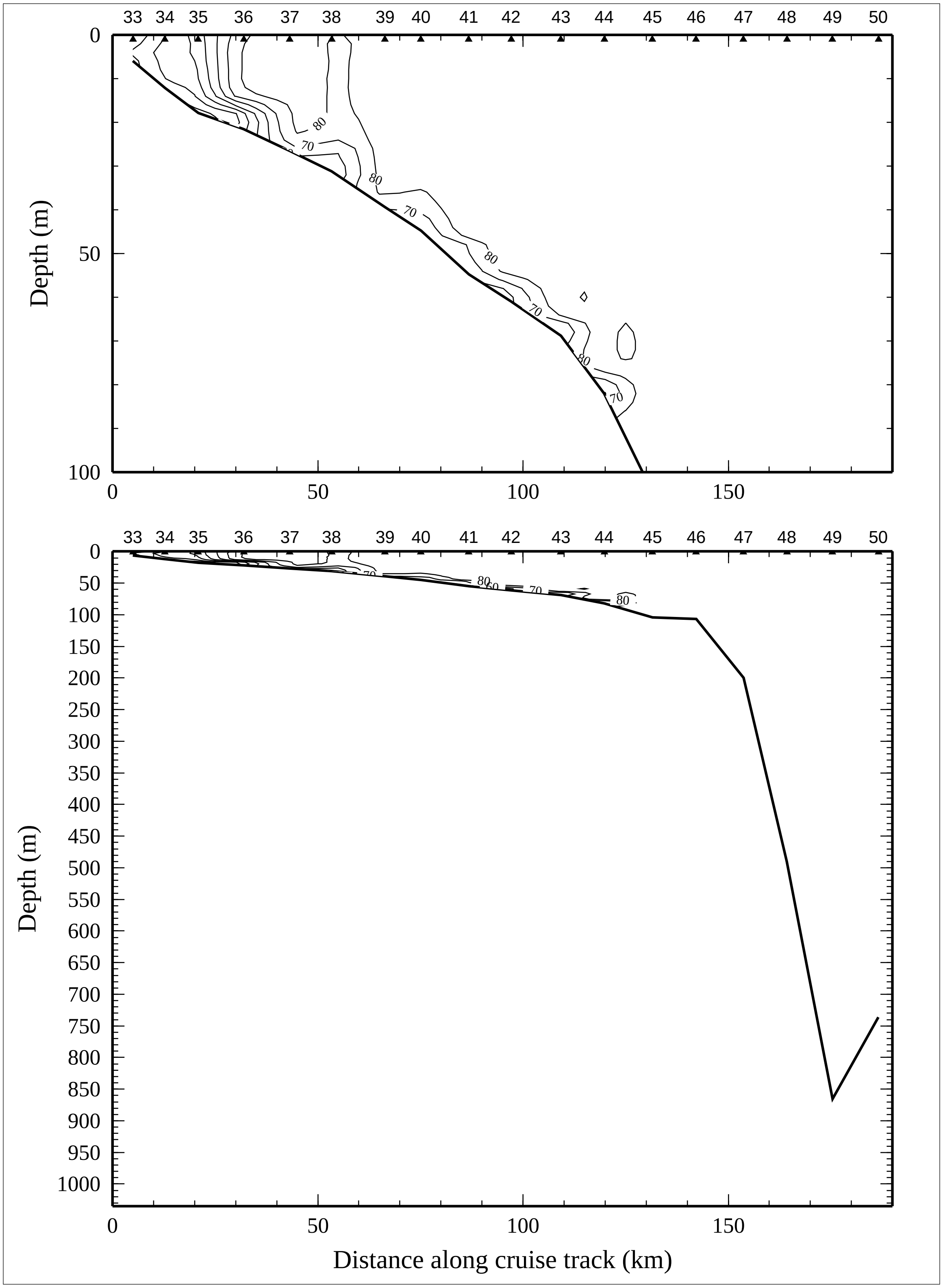

Figure 10.2.4. Percent transmission (660 nm wave length; 25-cm path length) on line 2 of LATEX A survey H10, 2-14 November 1994.

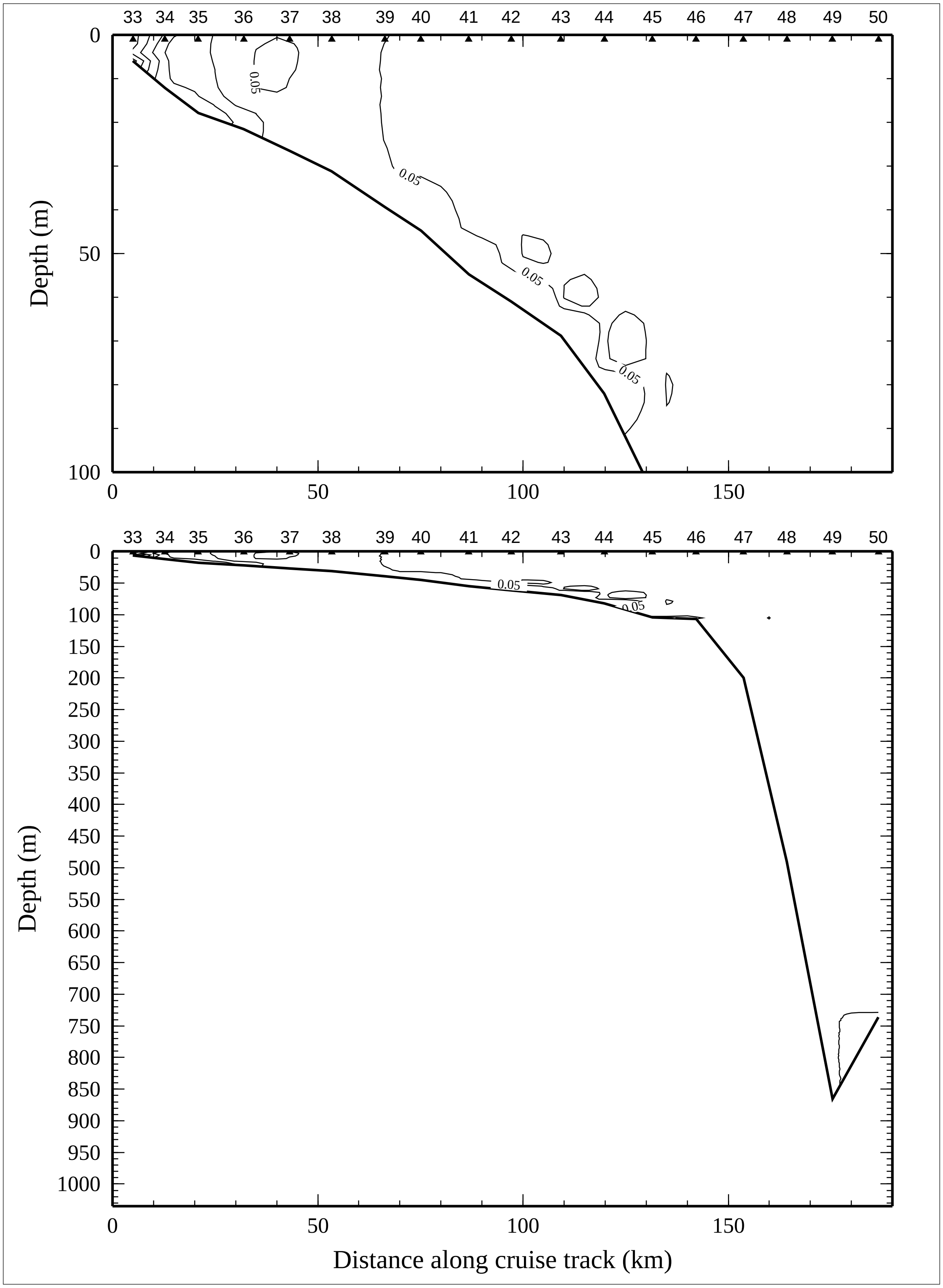

Figure 10.2.5. Optical backscatterance (voltage) on line 2 of LATEX A survey H10, 2-14 November 1994.

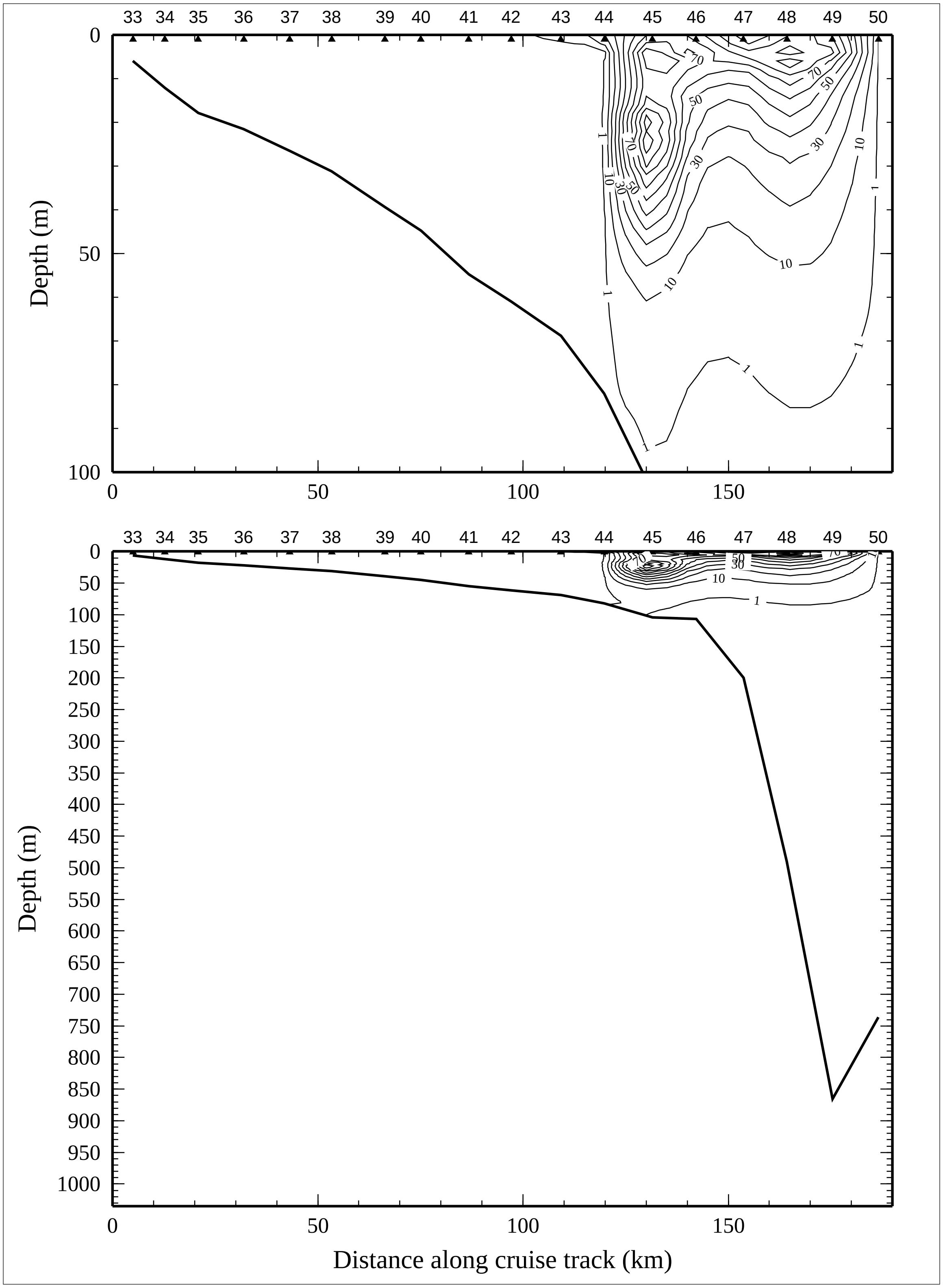

Figure 10.2.6. Downwelling irradiance as percent of surface irradiance on line 2 of LATEX A survey H10, 2-14 November 1994.

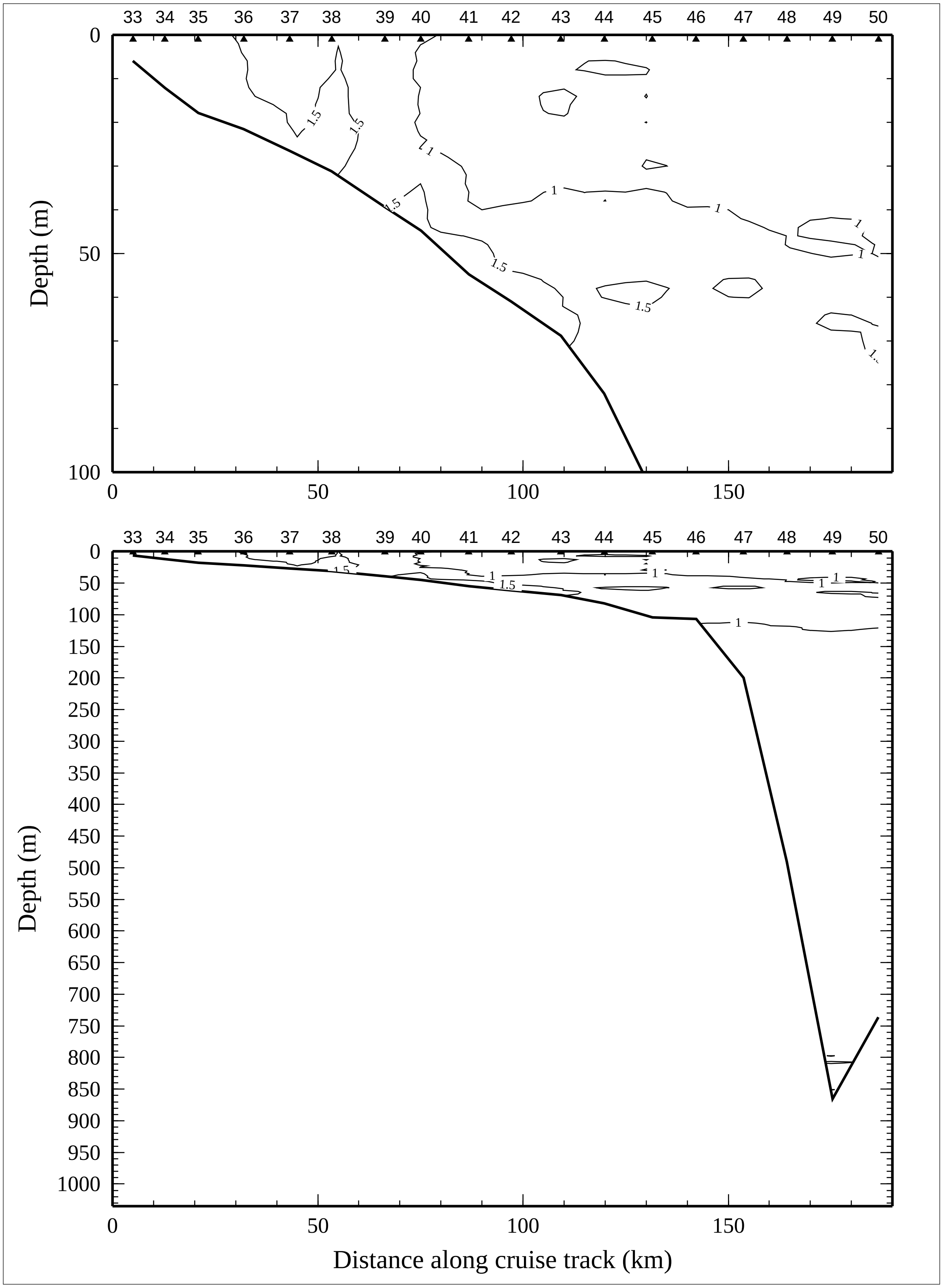

Figure 10.2.7. Relative fluorescence on line 2 of LATEX A survey H10, 2-14 November 1994.

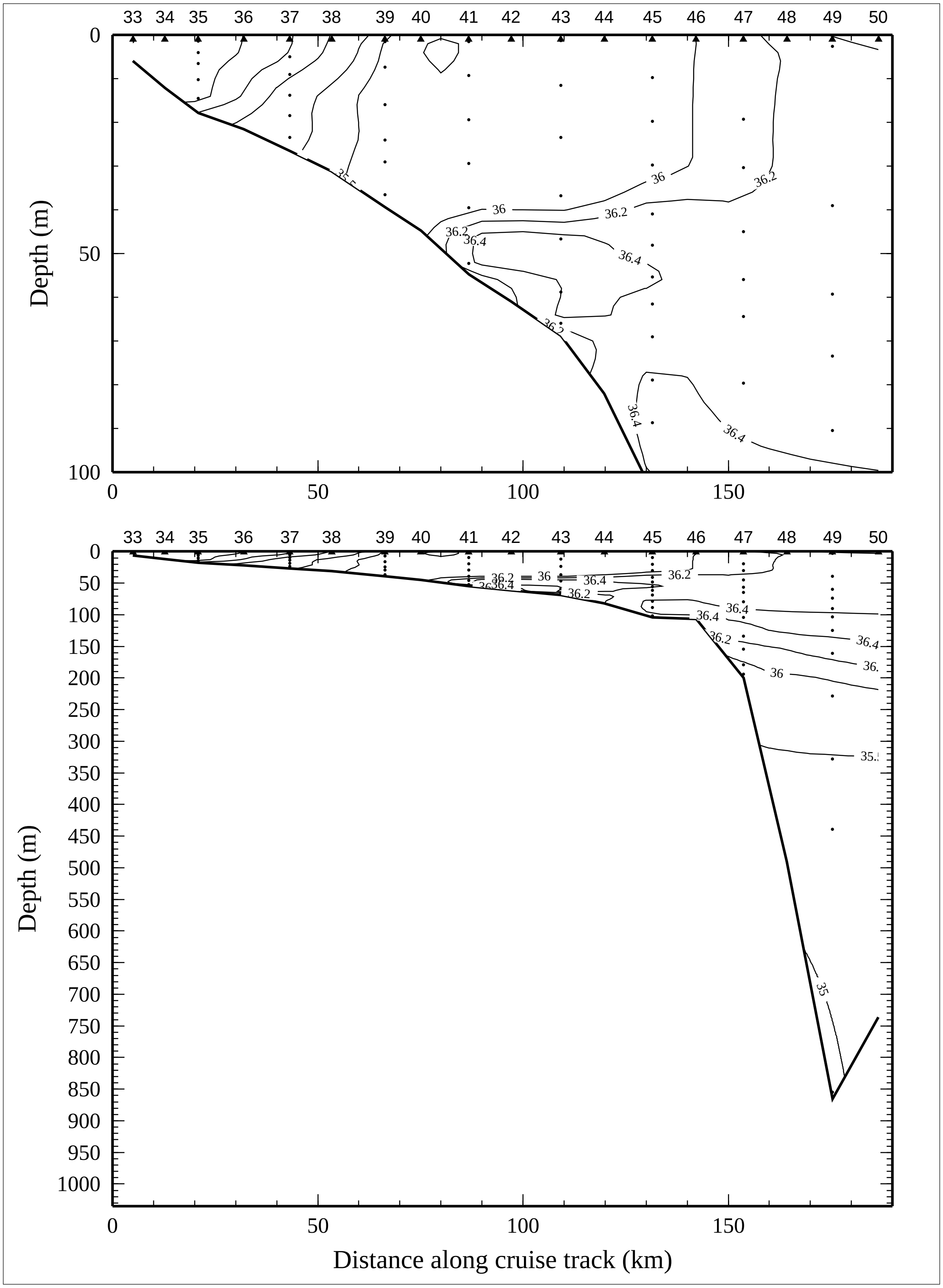

Figure 10.2.8. Bottle salinity on line 2 of LATEX A survey H10,
2-14 November 1994.

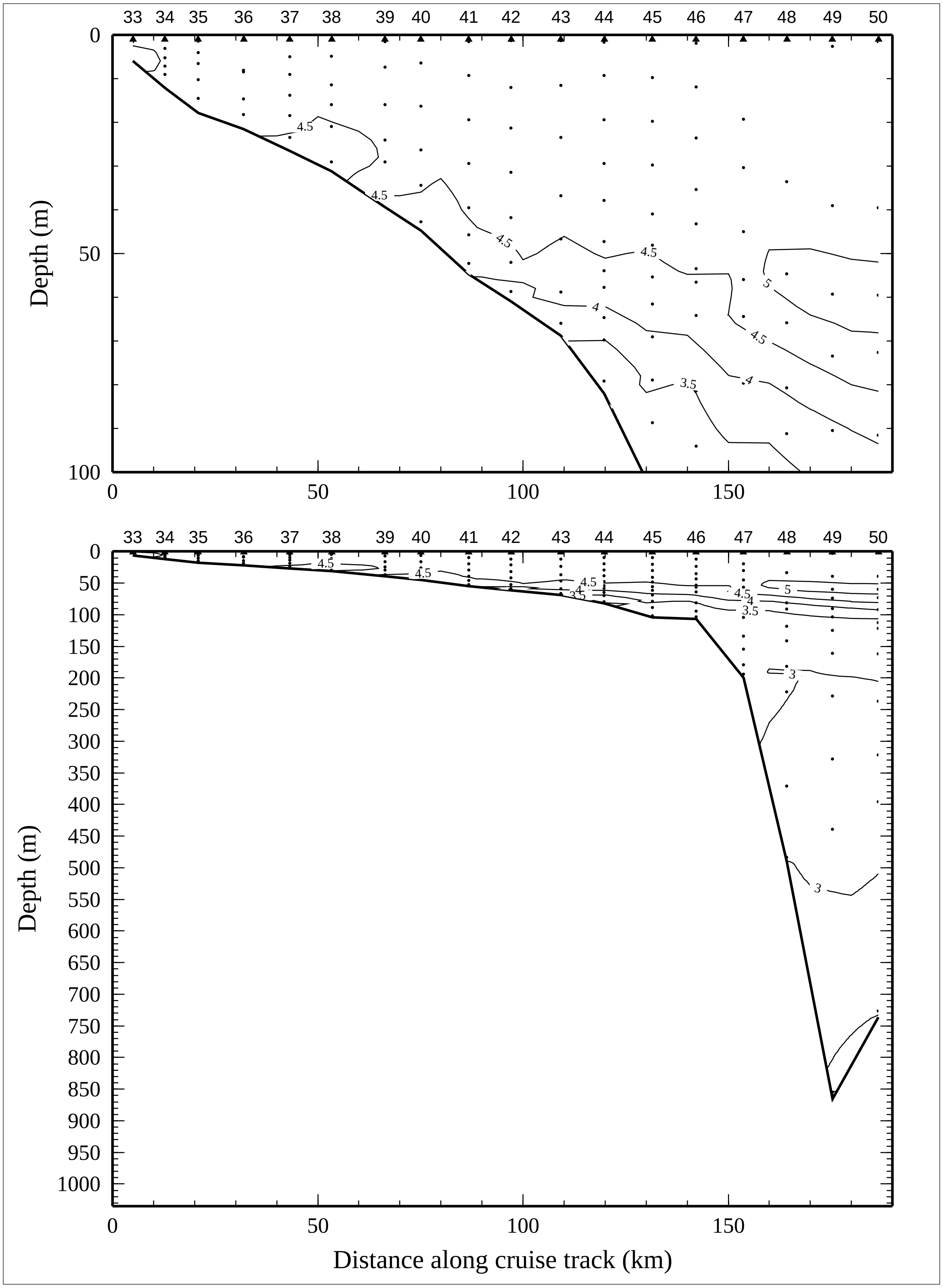

Figure 10.2.9. Dissolved oxygen (ml·l^{-1}) on line 2 of LATEX A survey H10, 2-14 November 1994.

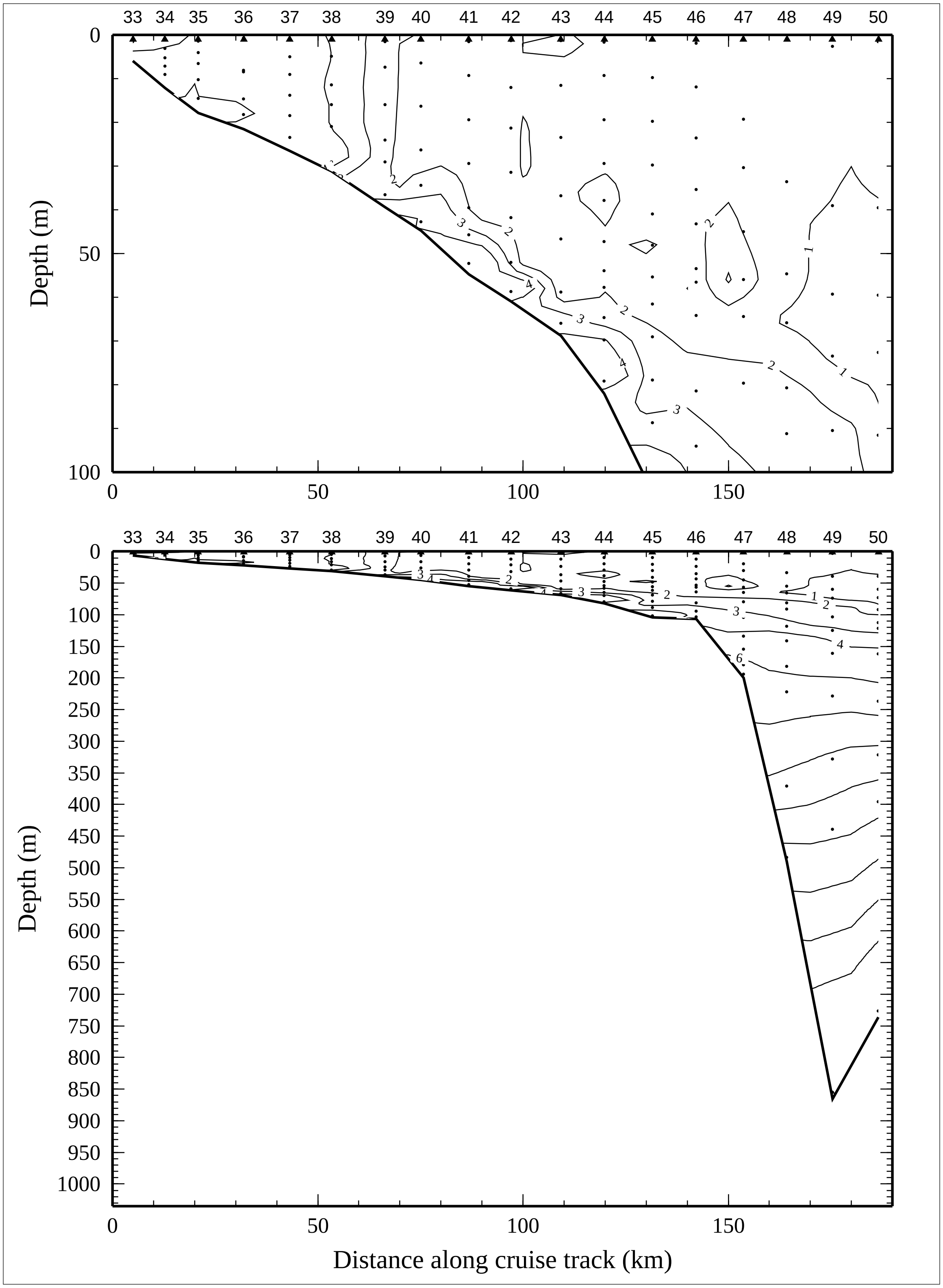

Figure 10.2.10. Silicate (μmol·l-1) on line 2 of LATEX A survey H10, 2-14 November 1994.

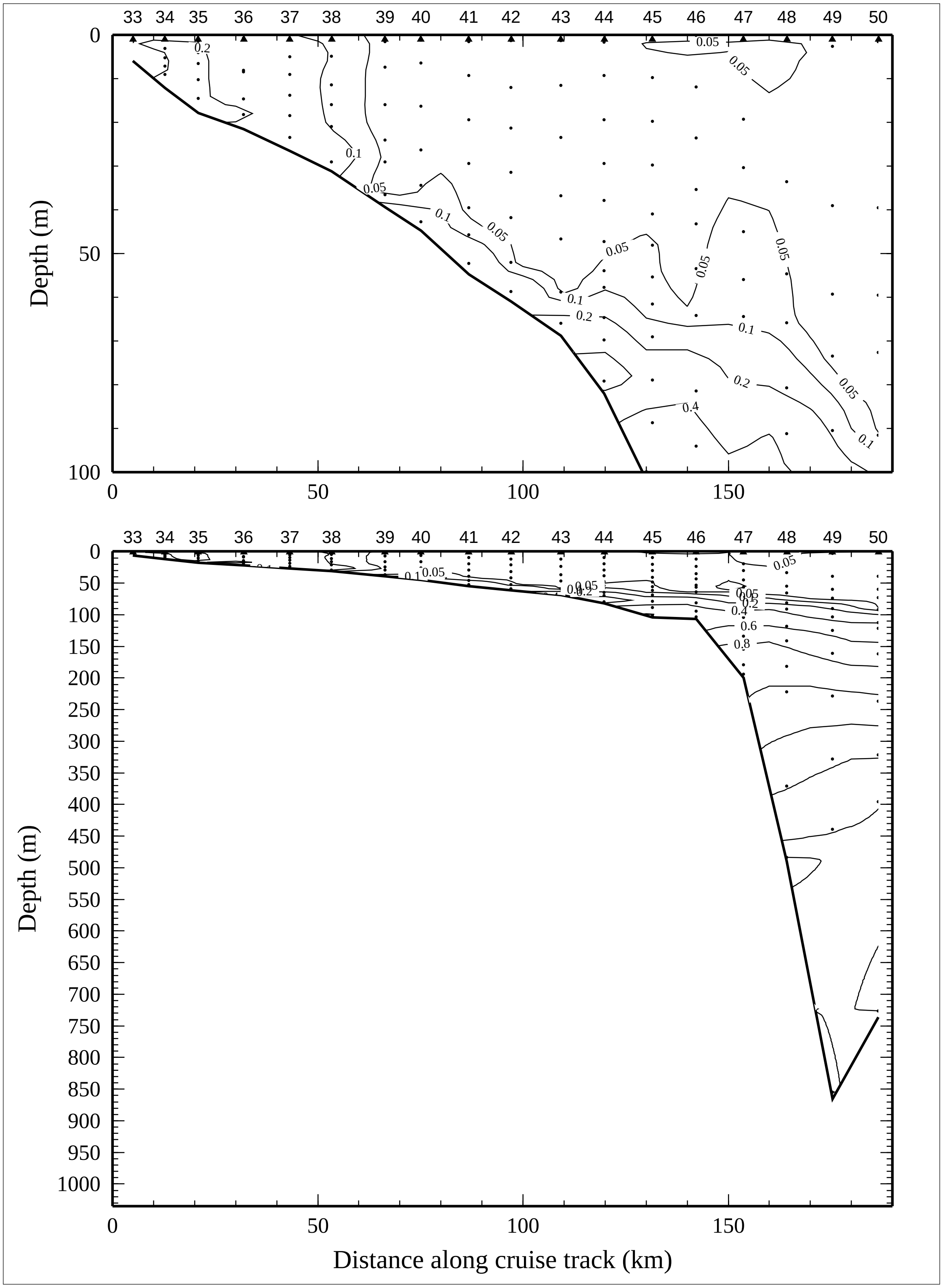

Figure 10.2.11. Phosphate (μmol·l-1) on line 2 of LATEX A survey H10, 2-14 November 1994.

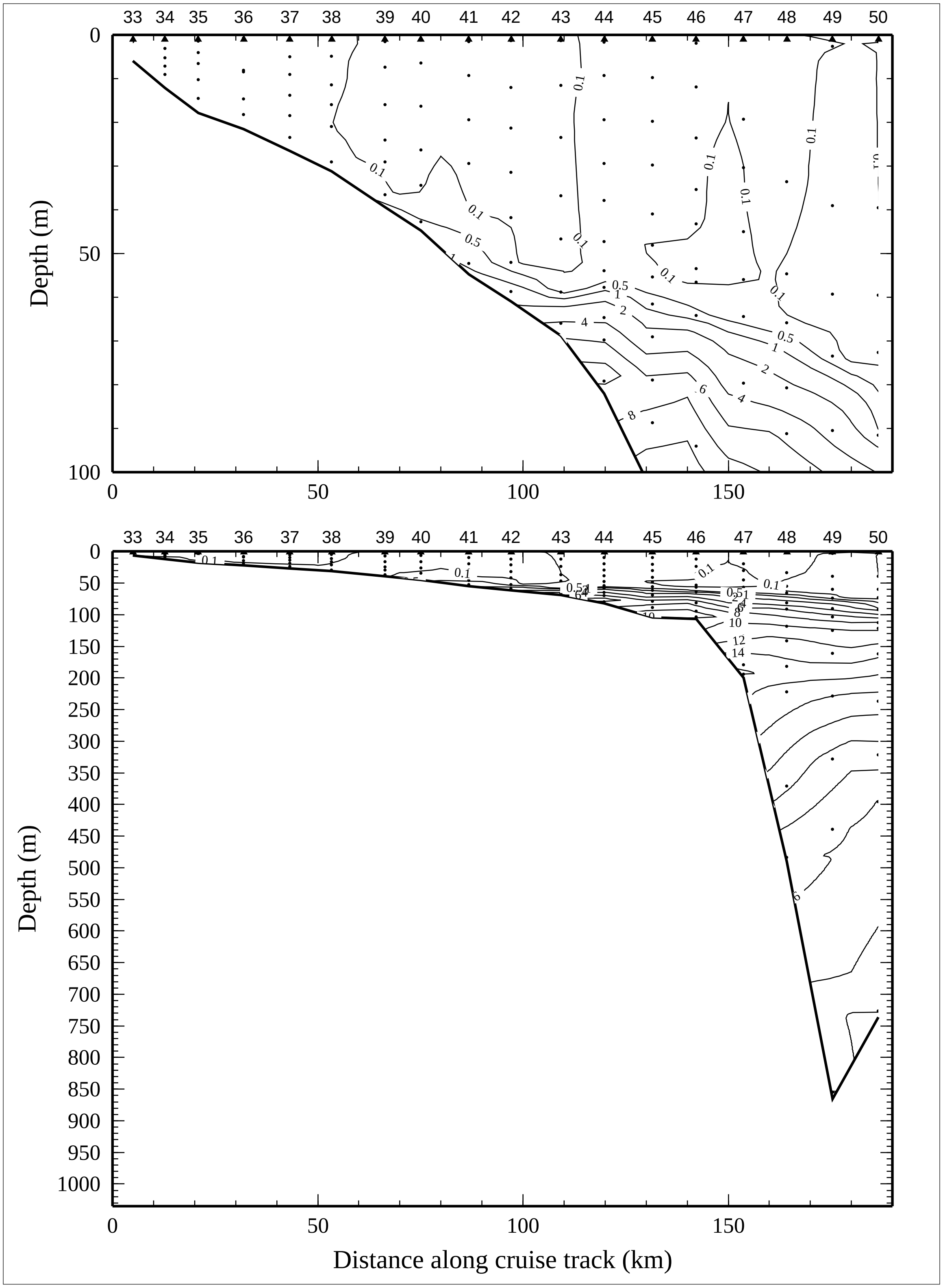

Figure 10.2.12. Nitrate (µmol·l^{-1}) on line 2 of LATEX A survey H10, 2-14 November 1994.

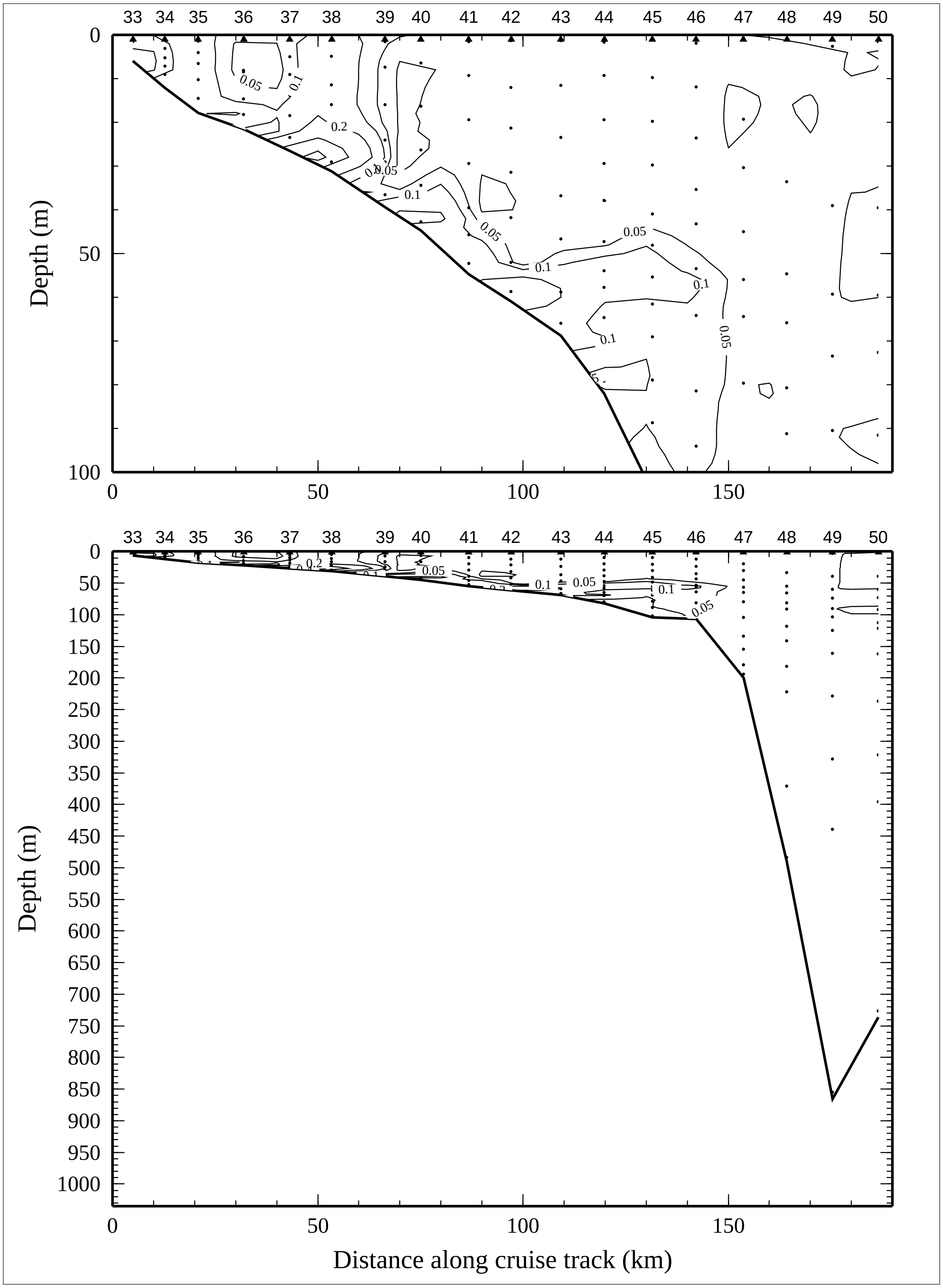

Figure 10.2.13. Nitrite (μmol·l-1) on line 2 of LATEX A survey H10,
2-14 November 1994.

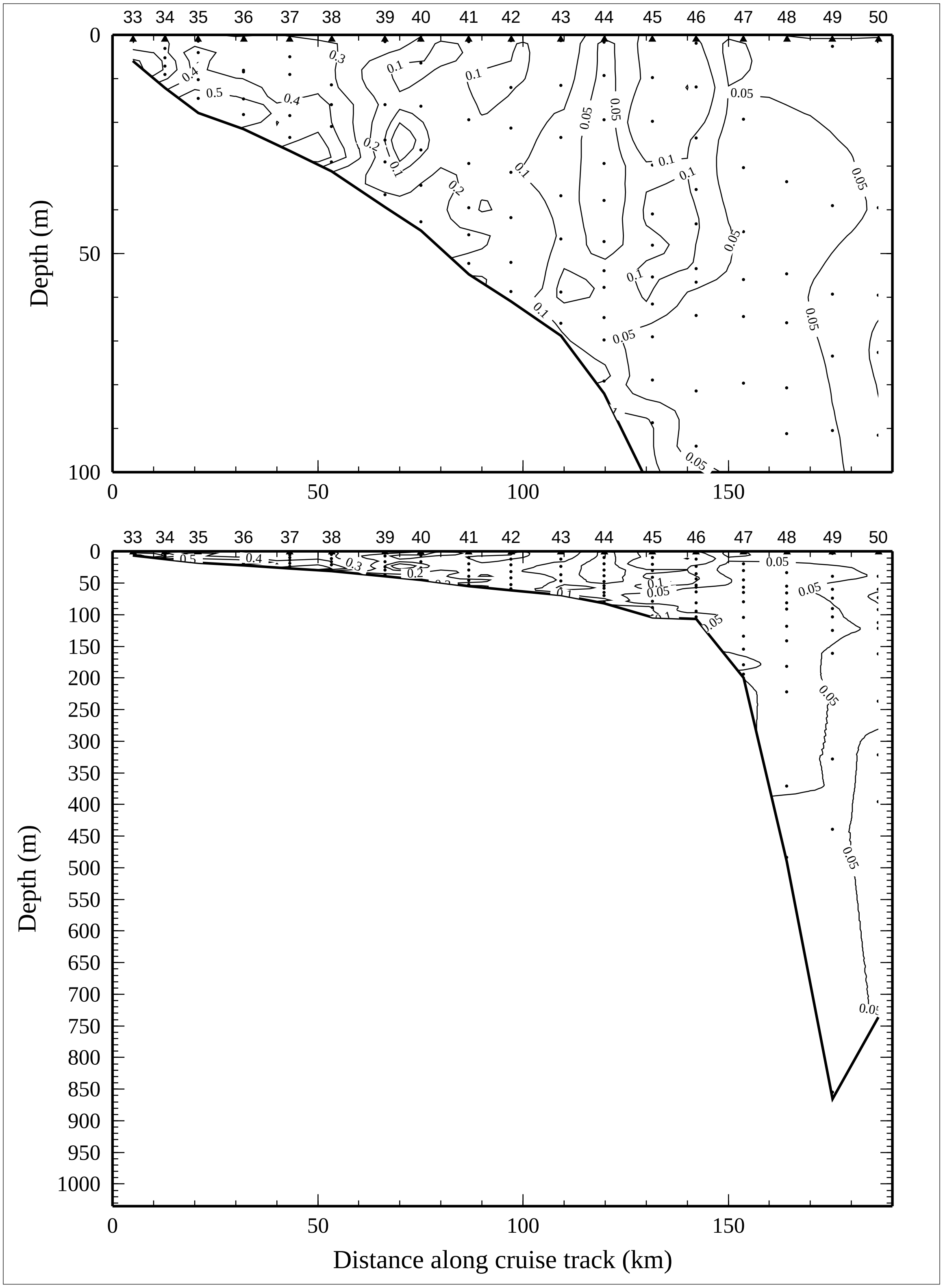

Figure 10.2.14. Ammonium (μmol·l⁻¹) on line 2 of LATEX A survey H10, 2-14 November 1994.

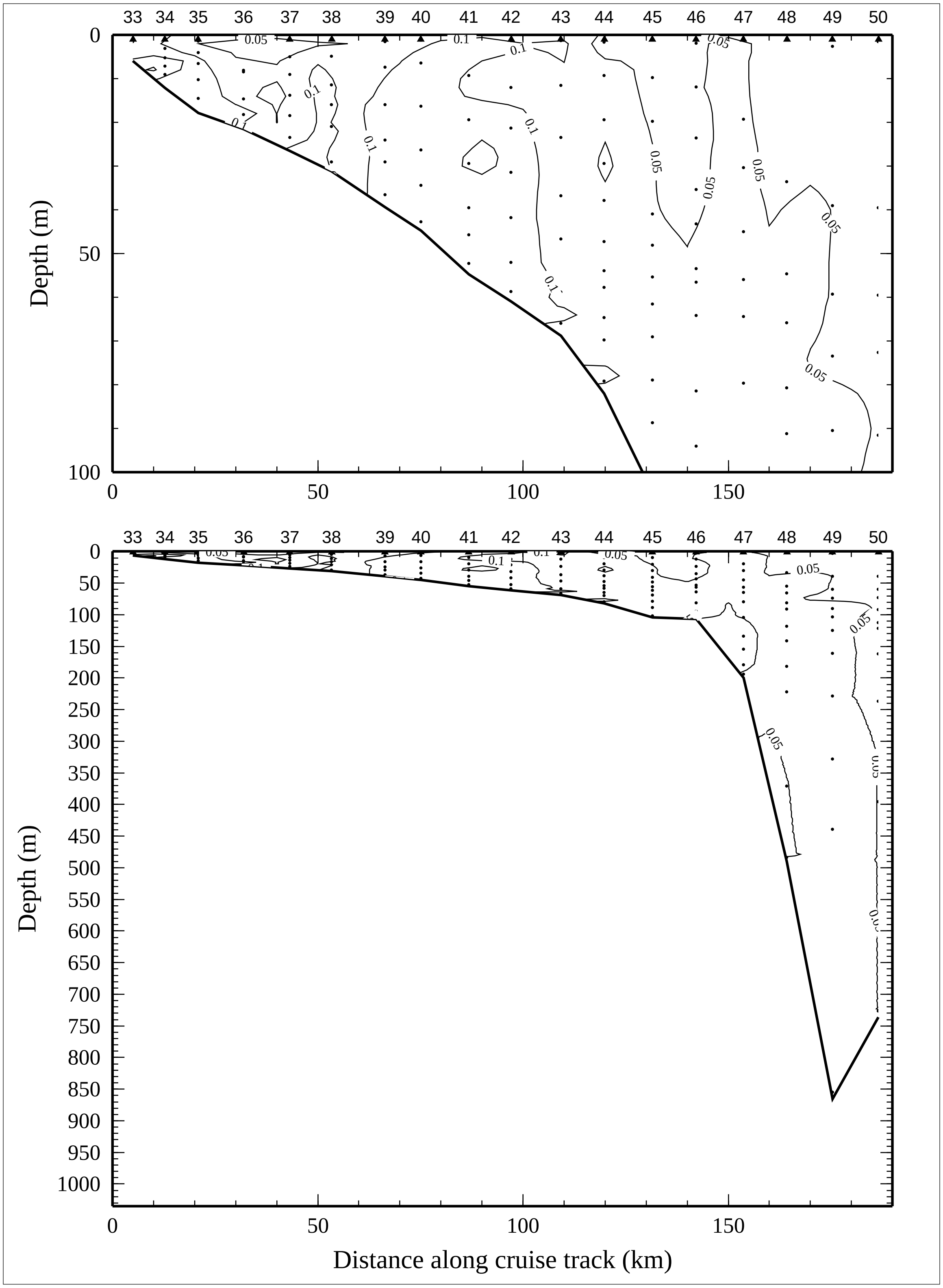

Figure 10.2.15. Urea (μmol·l-1) on line 2 of LATEX A survey H10,
2-14 November 1994.

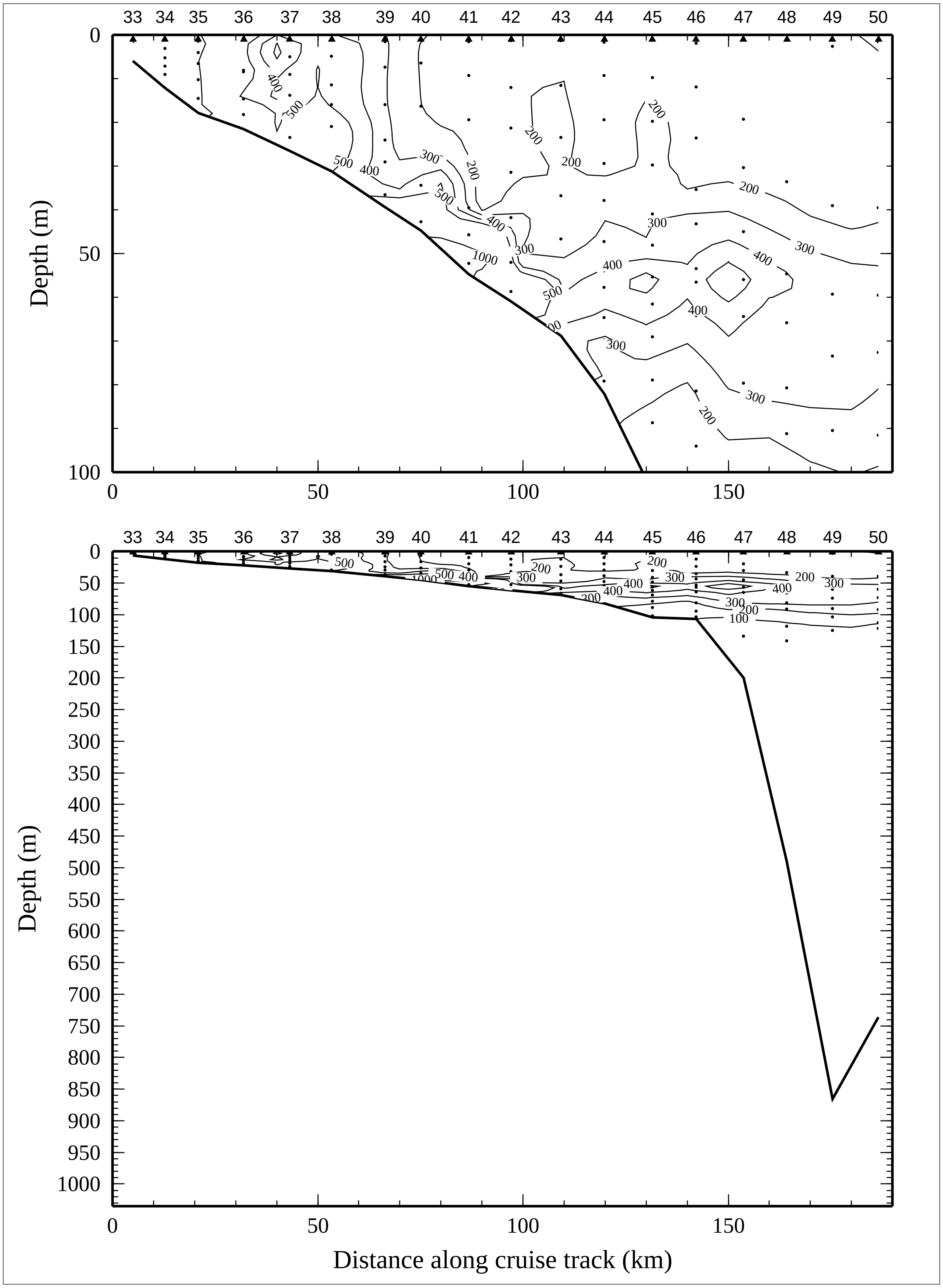

Figure 10.2.16. Chlorophyll a (ng·l-1) on line 2 of LATEX A survey H10, 2-14 November 1994.

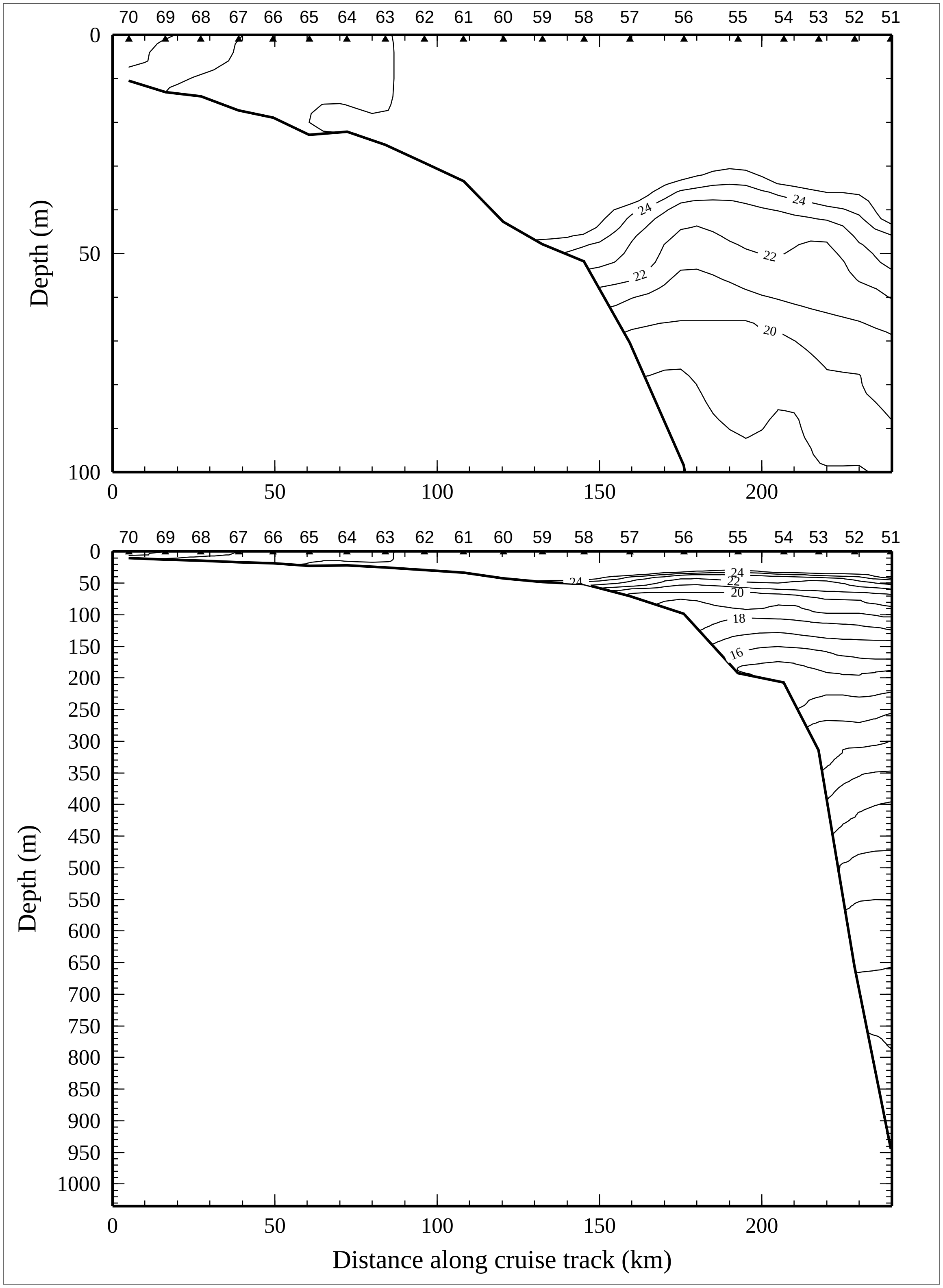

Figure 10.3.1. Potential temperature (˚C) on line 3 of LATEX A survey H10,
2-14 November 1994.

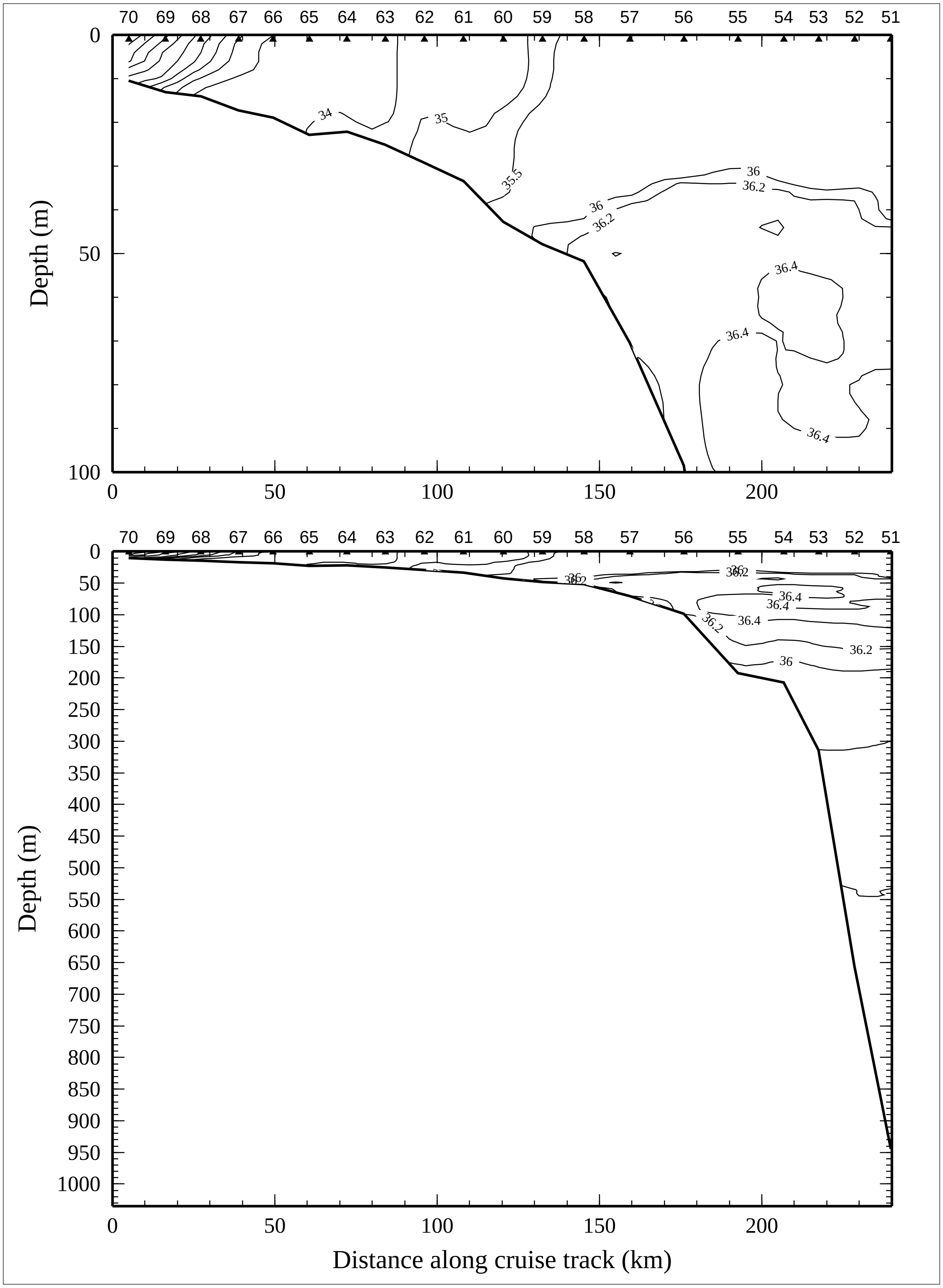

Figure 10.3.2. Salinity, derived from CTD data, on line 3 of LATEX A survey H10, 2-14 November 1994.

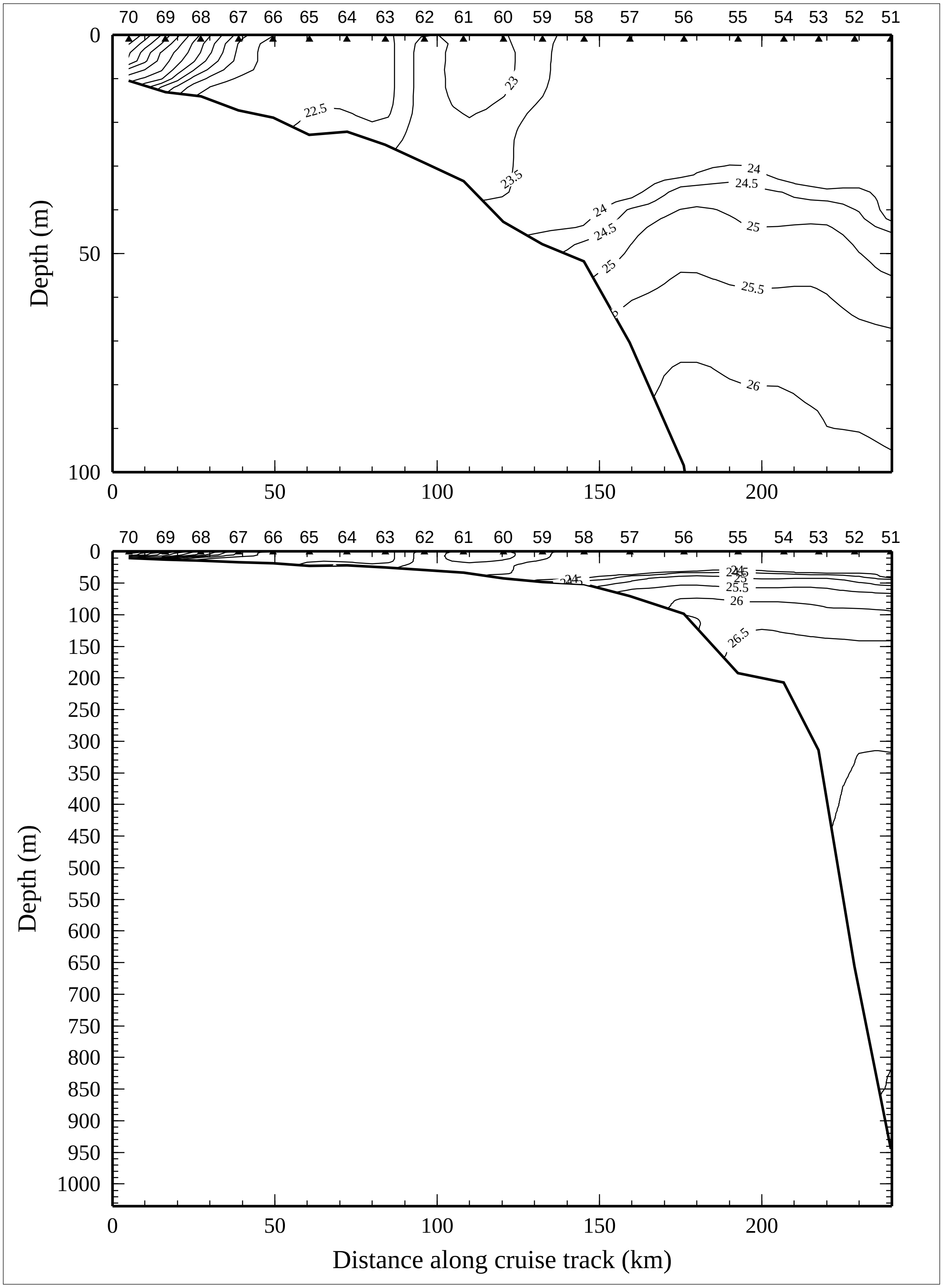

Figure 10.3.3. Density anomaly (σ_θ in kg·m^{-3}) on line 3 of LATEX A survey H10, 2-14 November 1994.

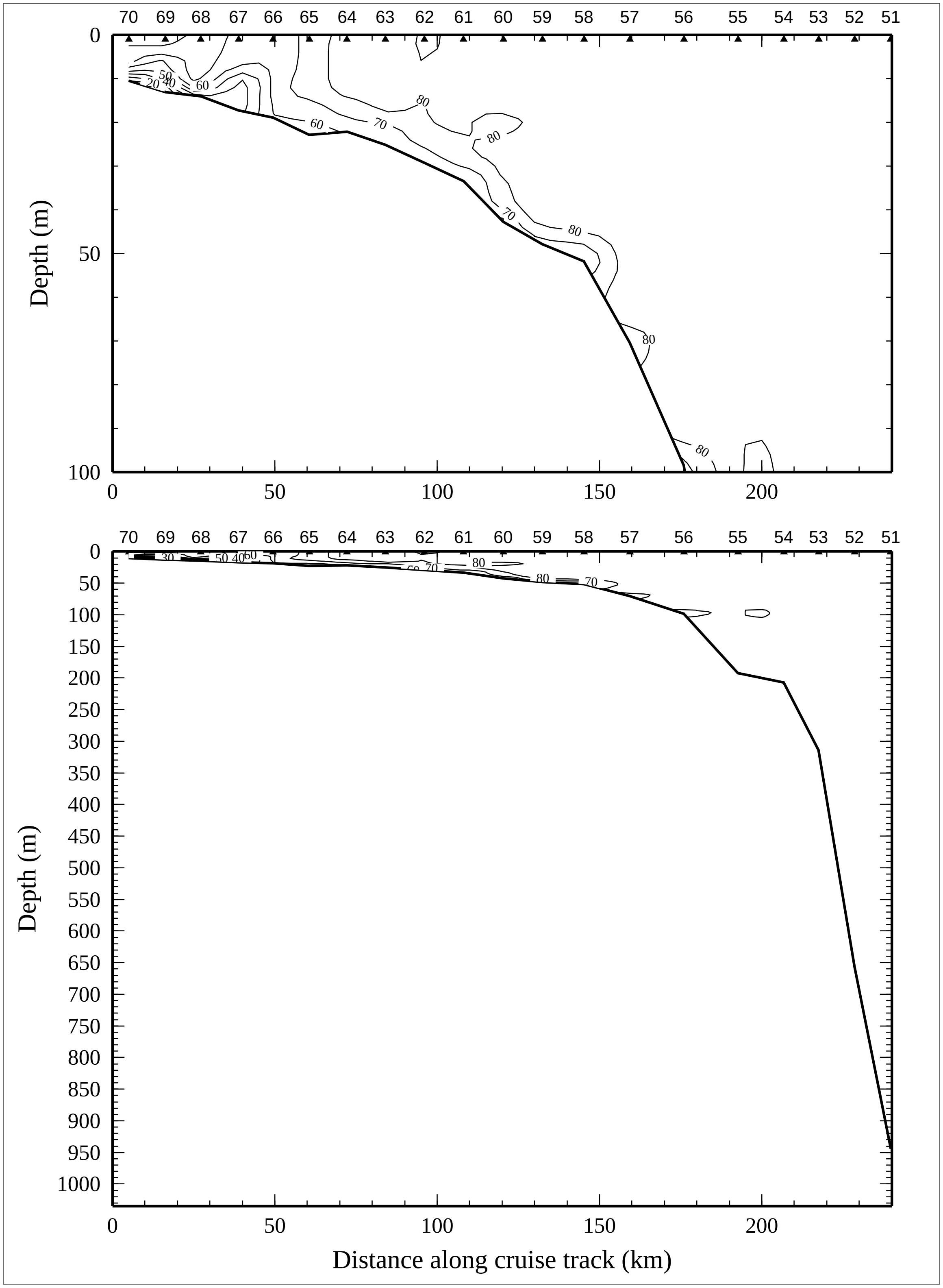

Figure 10.3.4. Percent transmission (660 nm wave length; 25-cm path length) on line 3 of LATEX A survey H10, 2-14 November 1994.

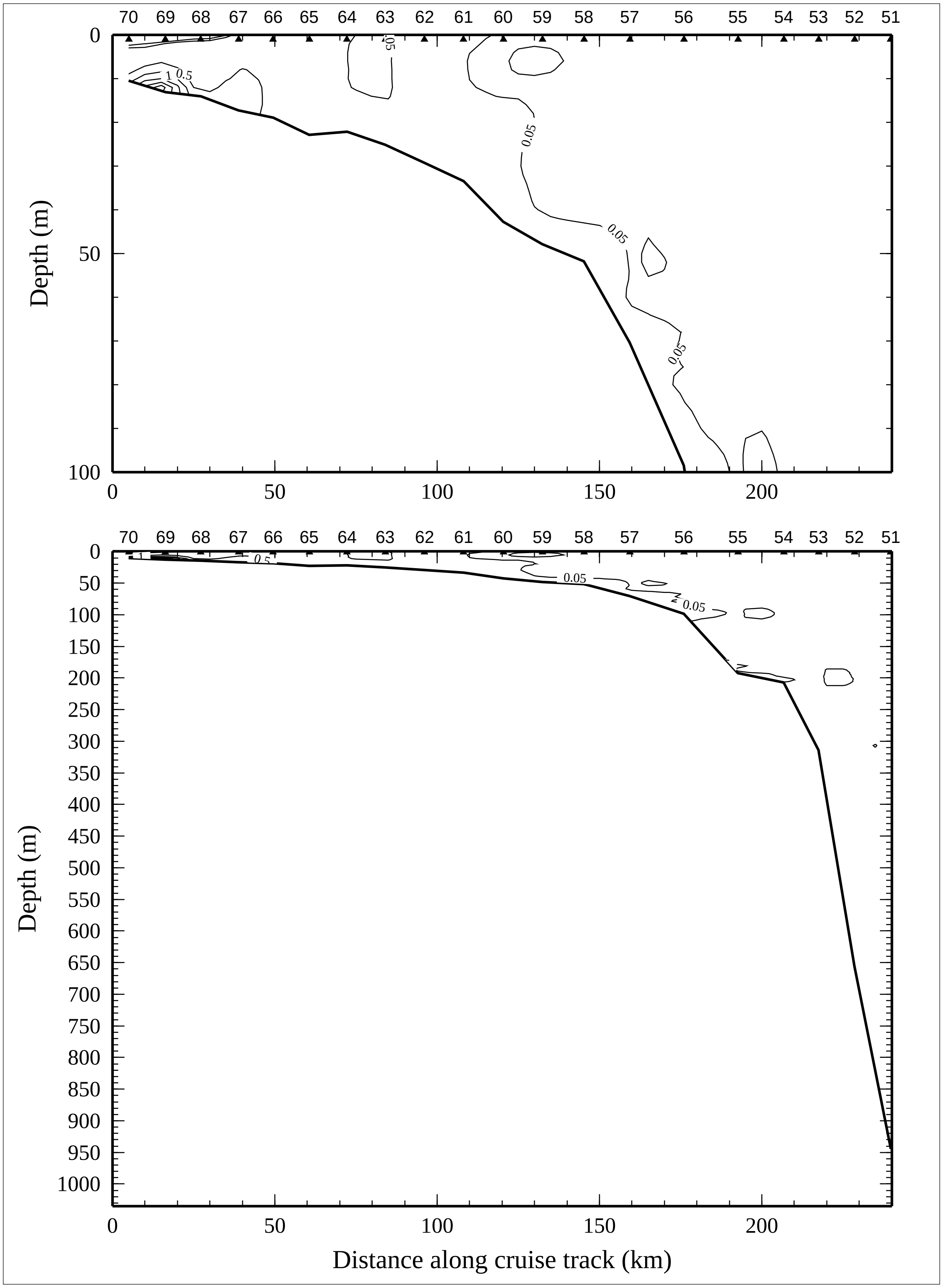

Figure 10.3.5. Optical backscatterance (voltage) on line 3 of LATEX A survey H10, 2-14 November 1994.

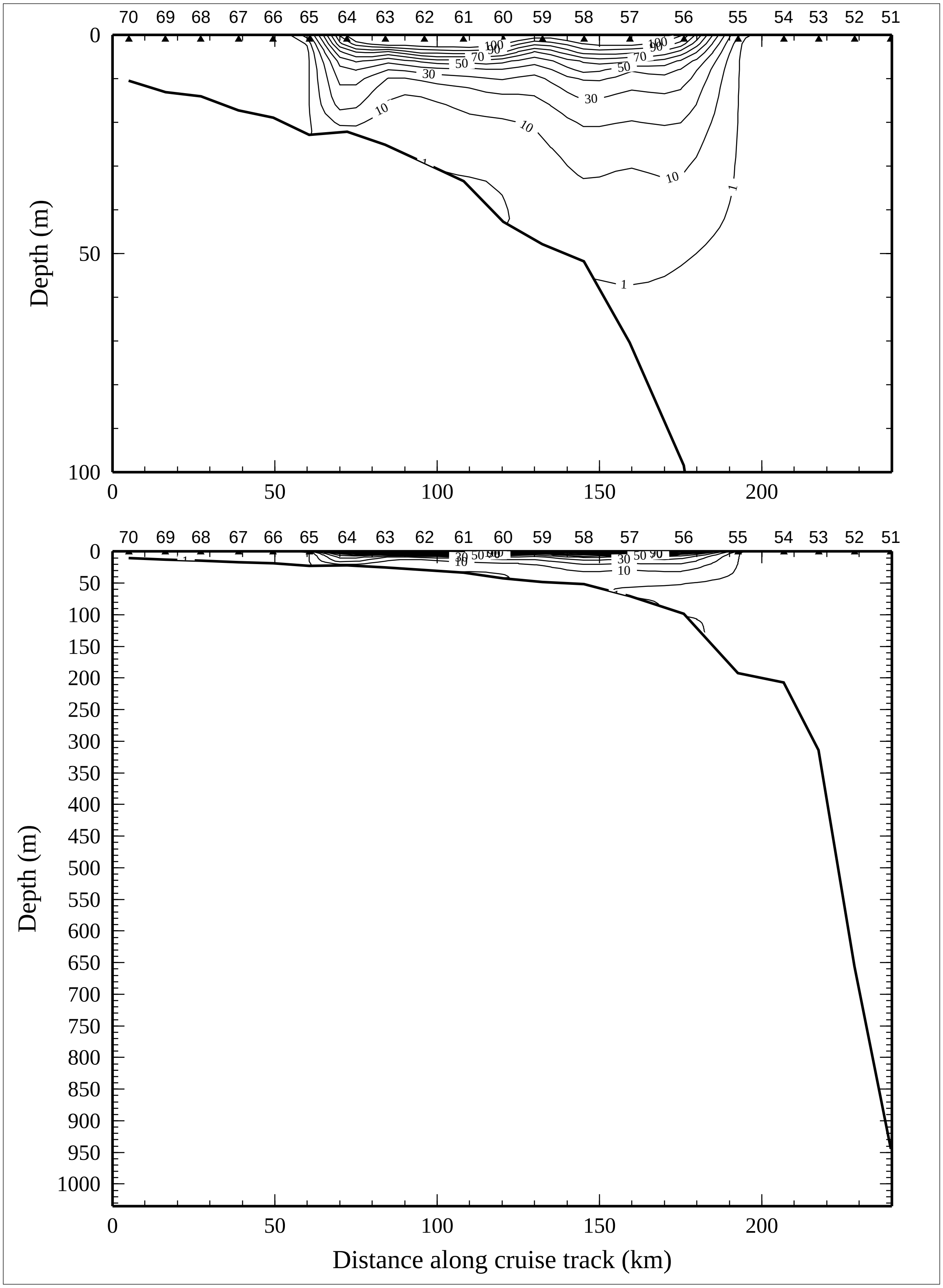

Figure 10.3.6. Downwelling irradiance as percent of surface irradiance on line 3 of LATEX A survey H10, 2-14 November 1994.

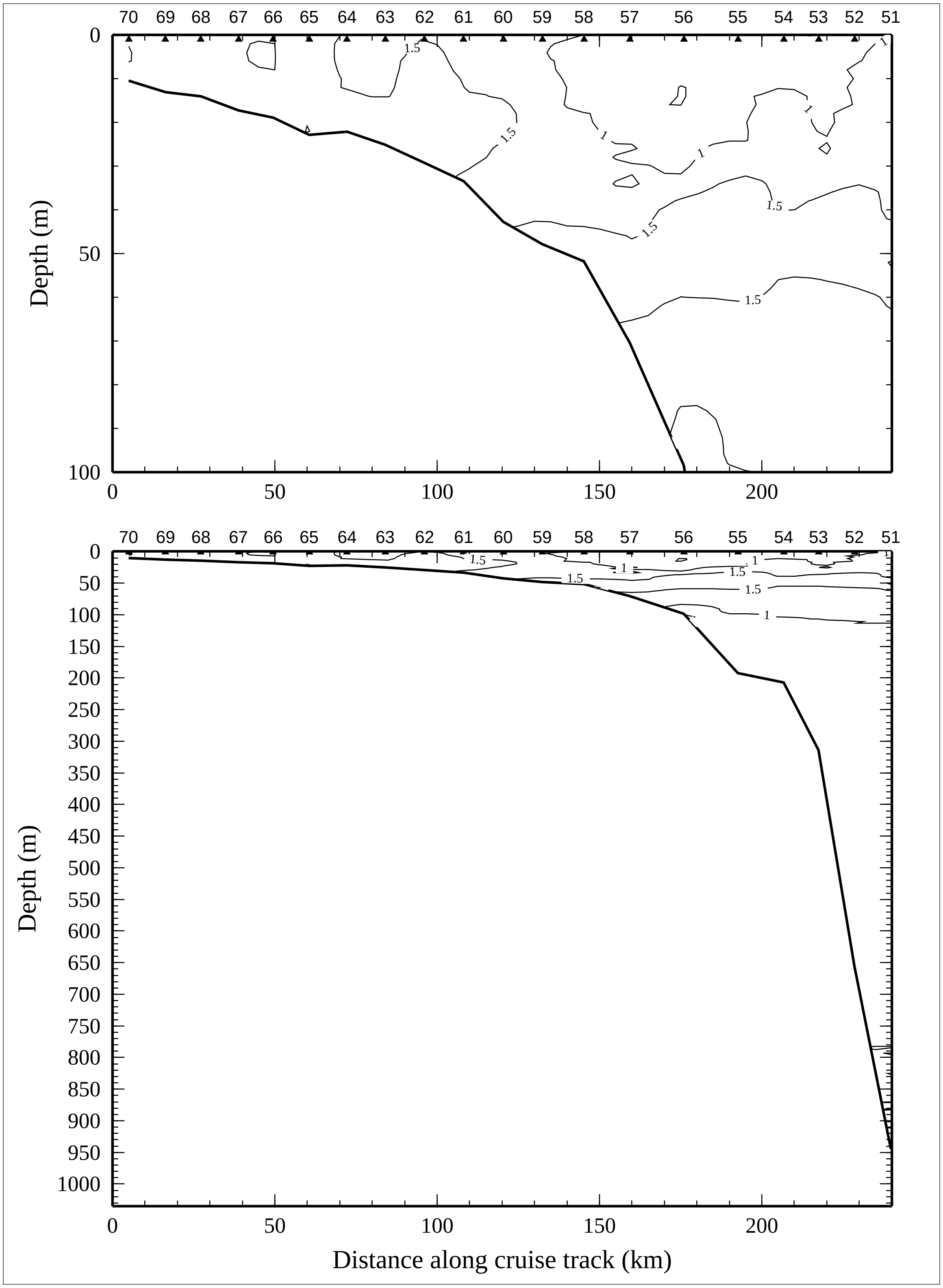

Figure 10.3.7. Relative fluorescence on line 3 of LATEX A survey H10, 2-14 November 1994.

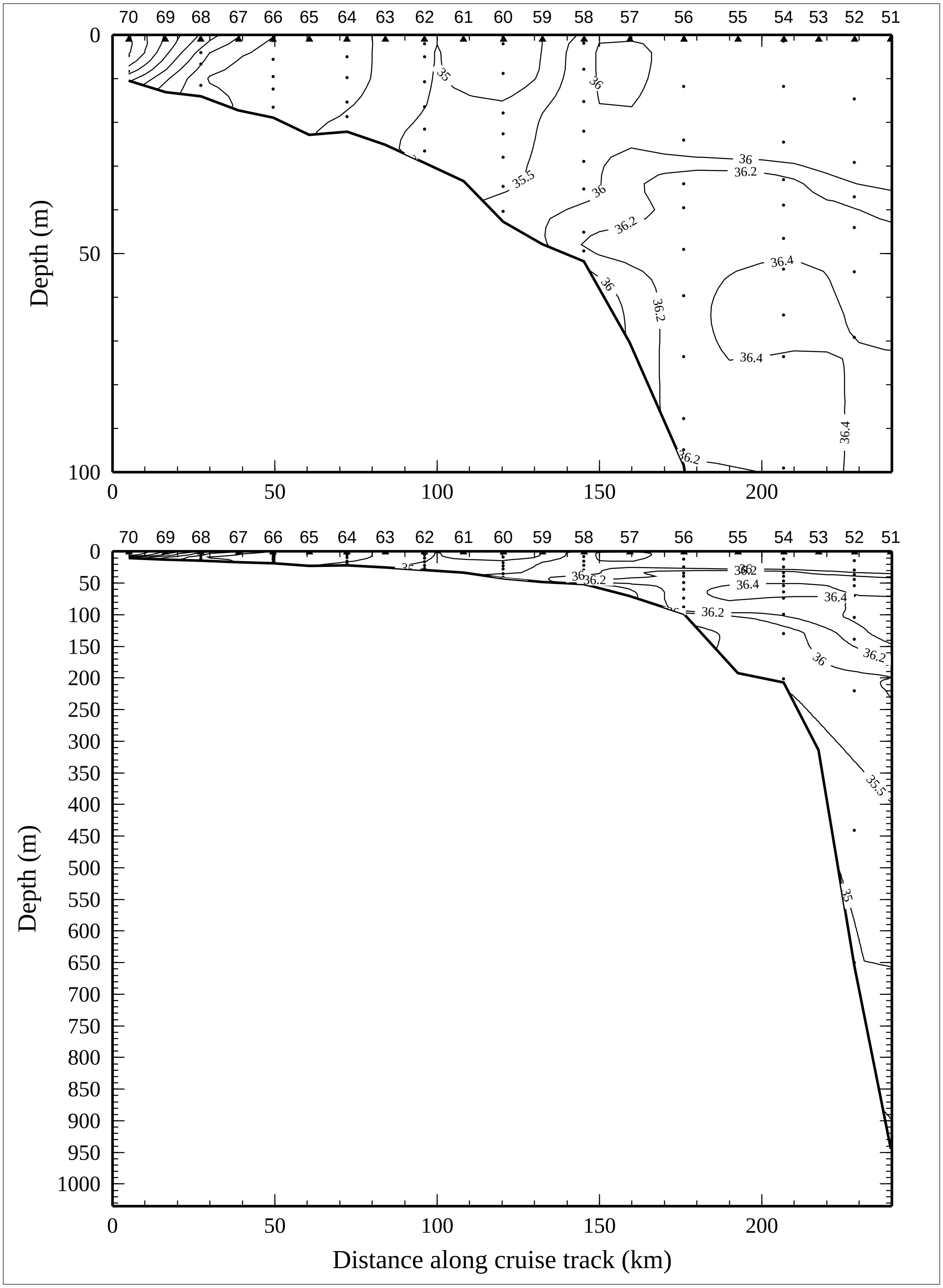

Figure 10.3.8. Bottle salinity on line 3 of LATEX A survey H10,
2-14 November 1994.

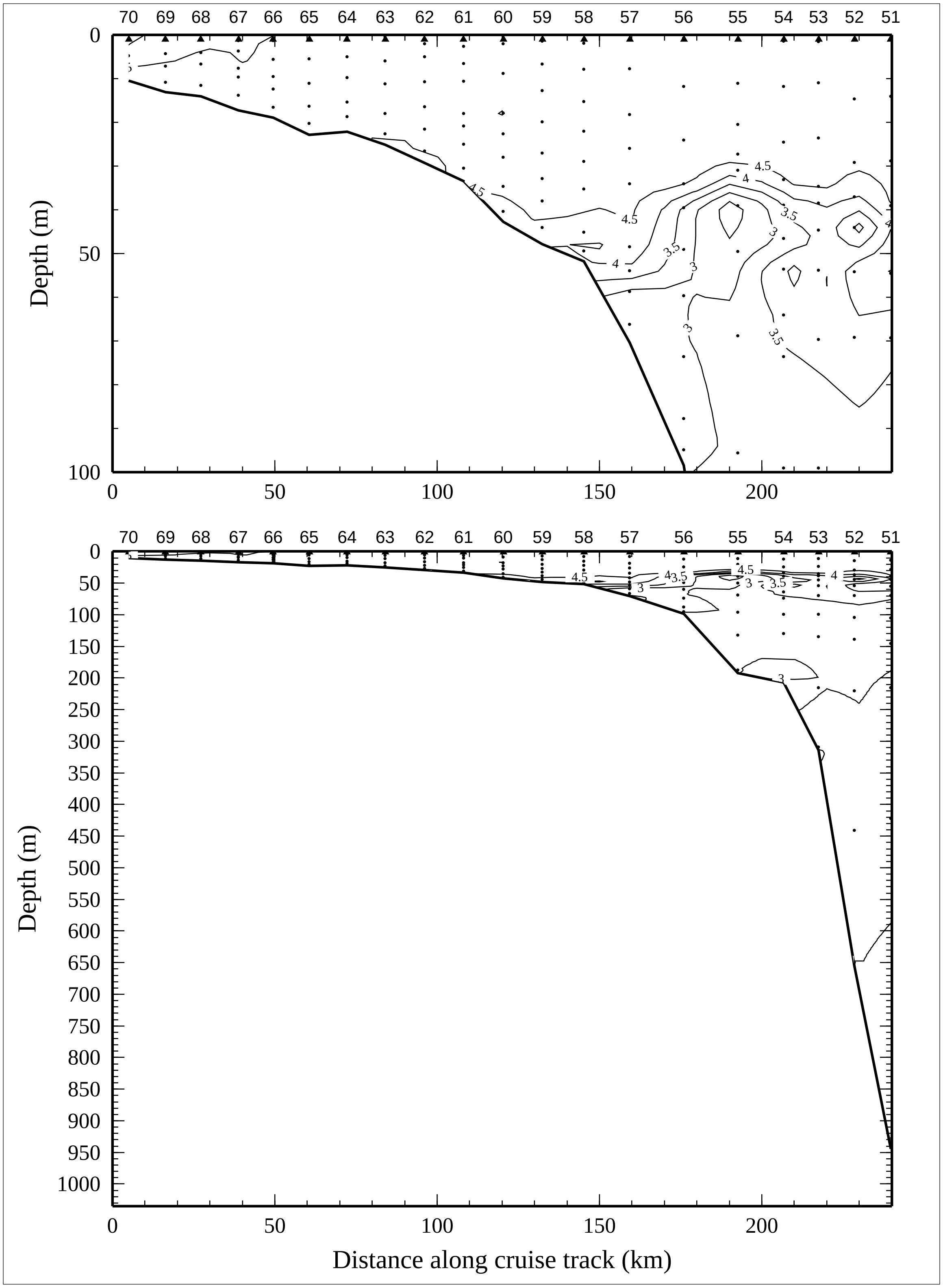

Figure 10.3.9. Dissolved oxygen (ml·l-1) on line 3 of LATEX A survey H10, 2-14 November 1994.

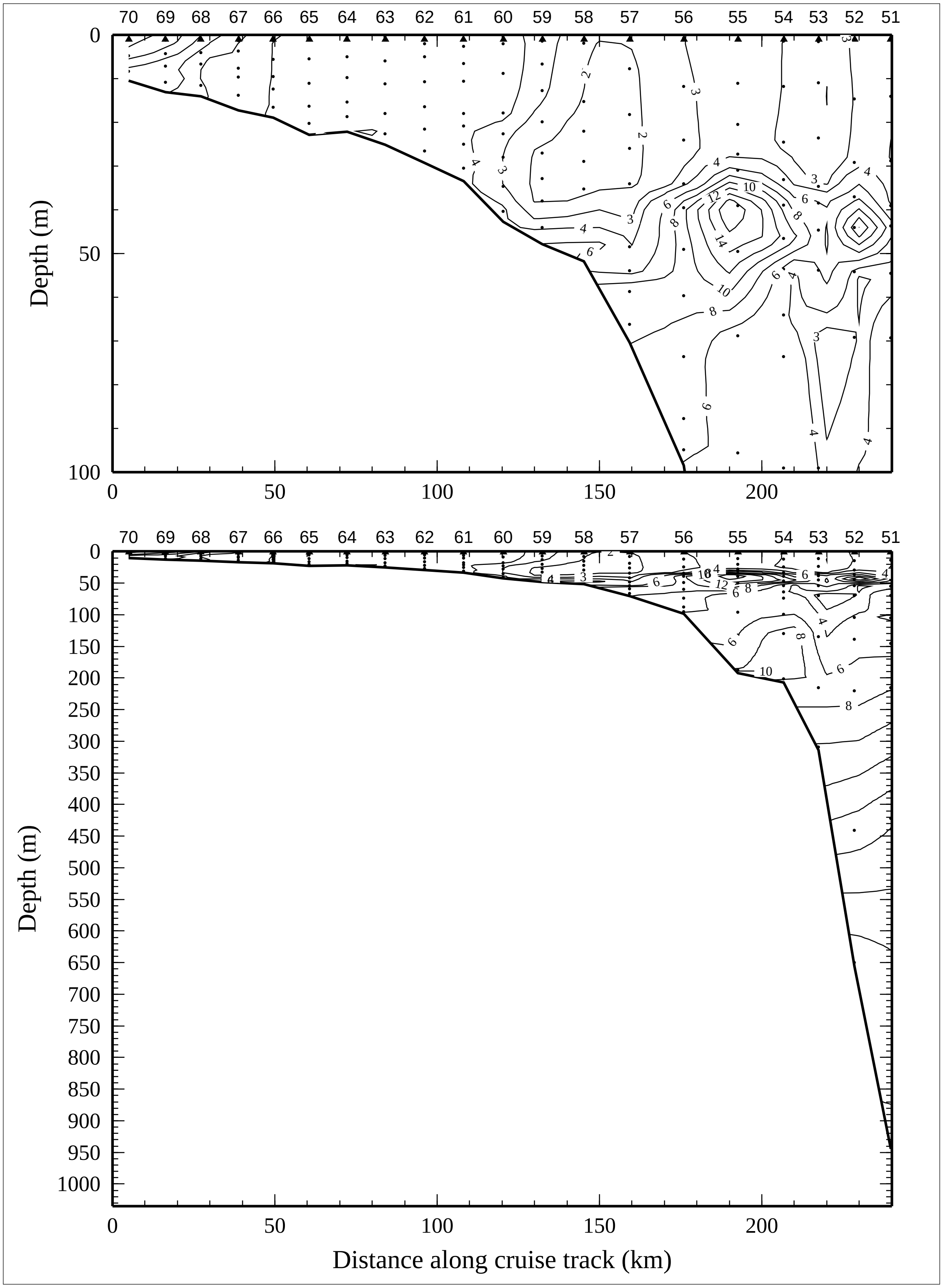

Figure 10.3.10. Silicate (μmol·l⁻¹) on line 3 of LATEX A survey H10, 2-14 November 1994.

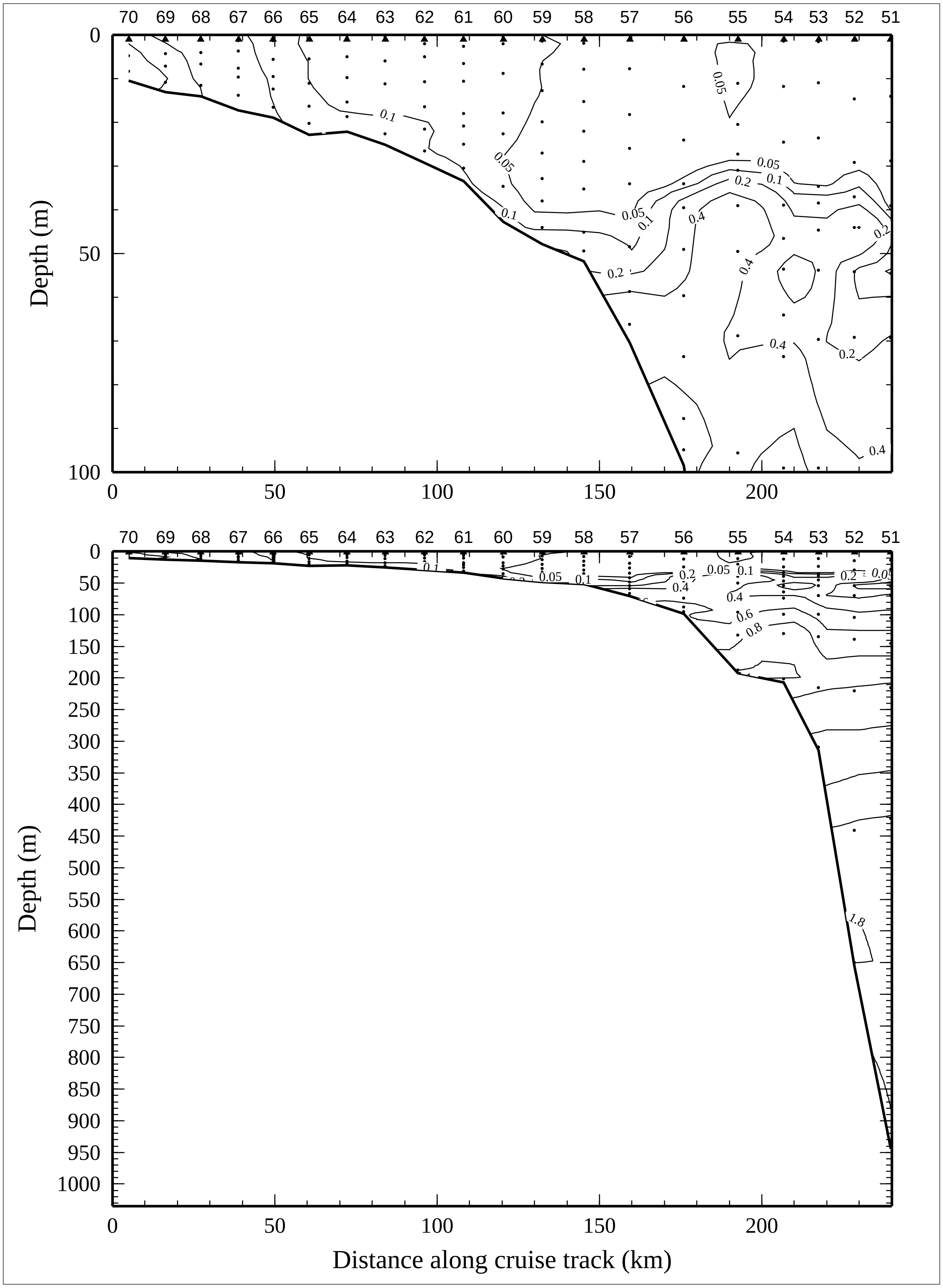

Figure 10.3.11. Phosphate (μmol·l-1) on line 3 of LATEX A survey H10,
2-14 November 1994.

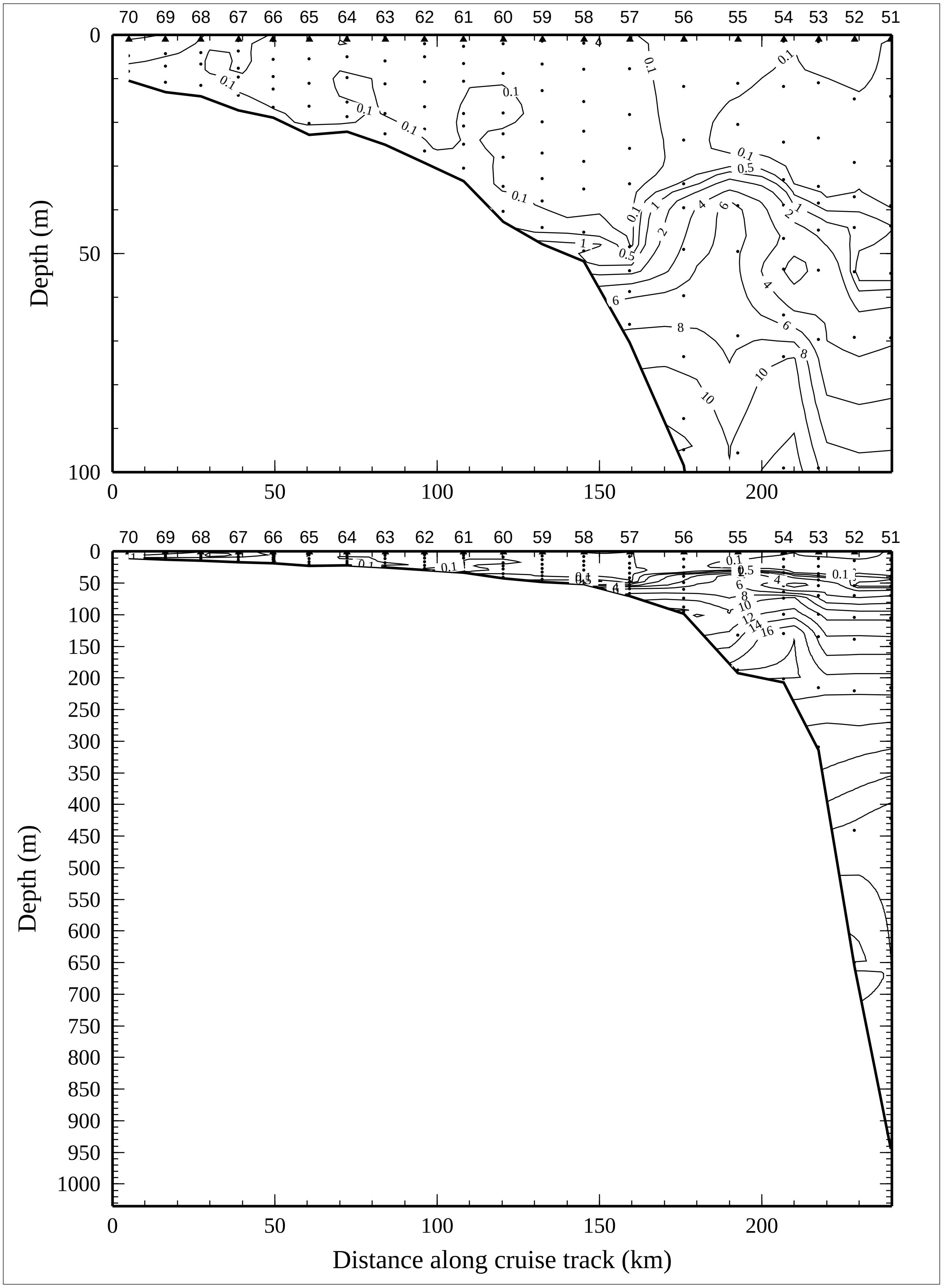

Figure 10.3.12. Nitrate (μmol·l⁻¹) on line 3 of LATEX A survey H10, 2-14 November 1994.

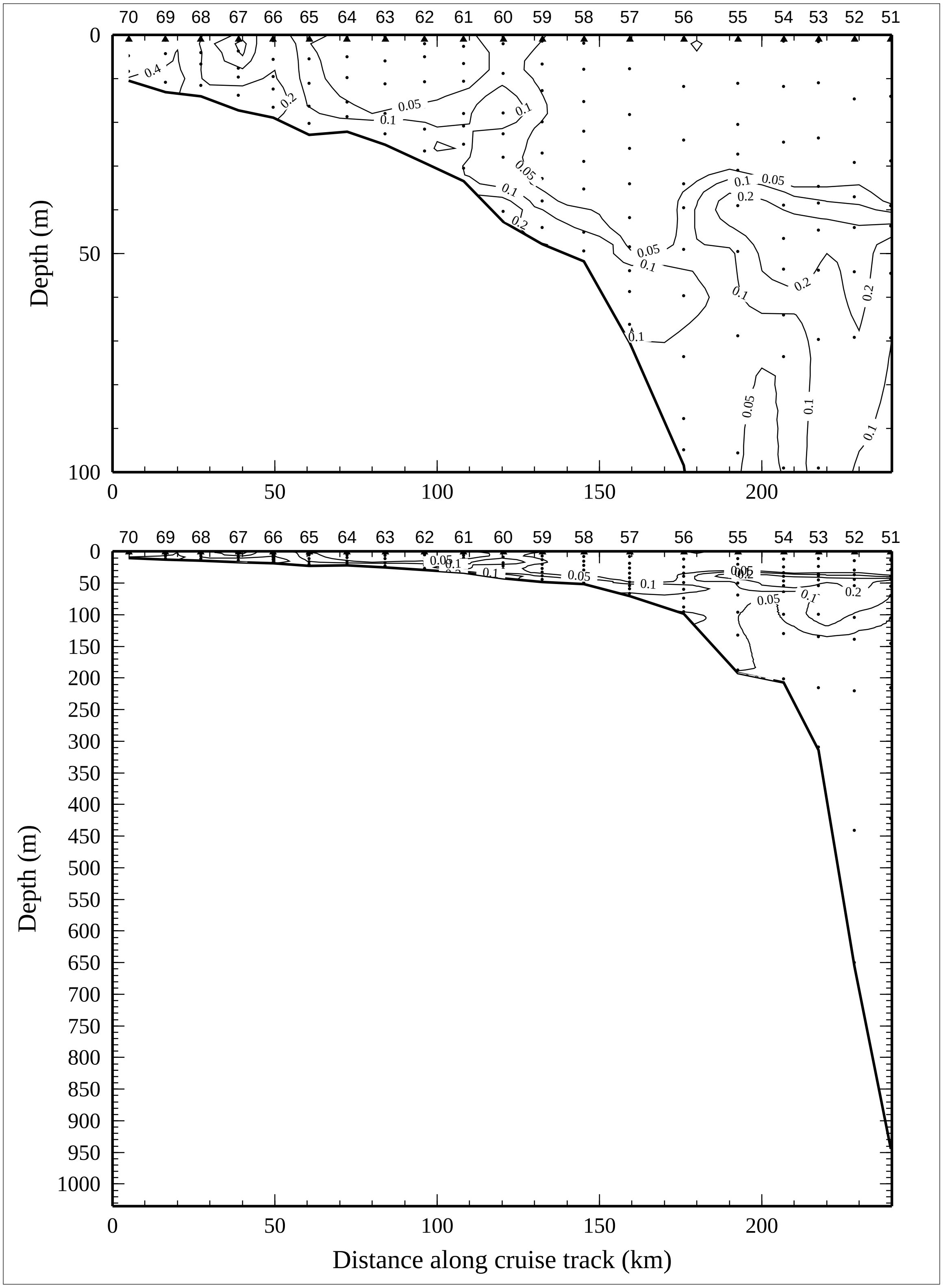

Figure 10.3.13. Nitrite (µmol·l-1) on line 3 of LATEX A survey H10, 2-14 November 1994.

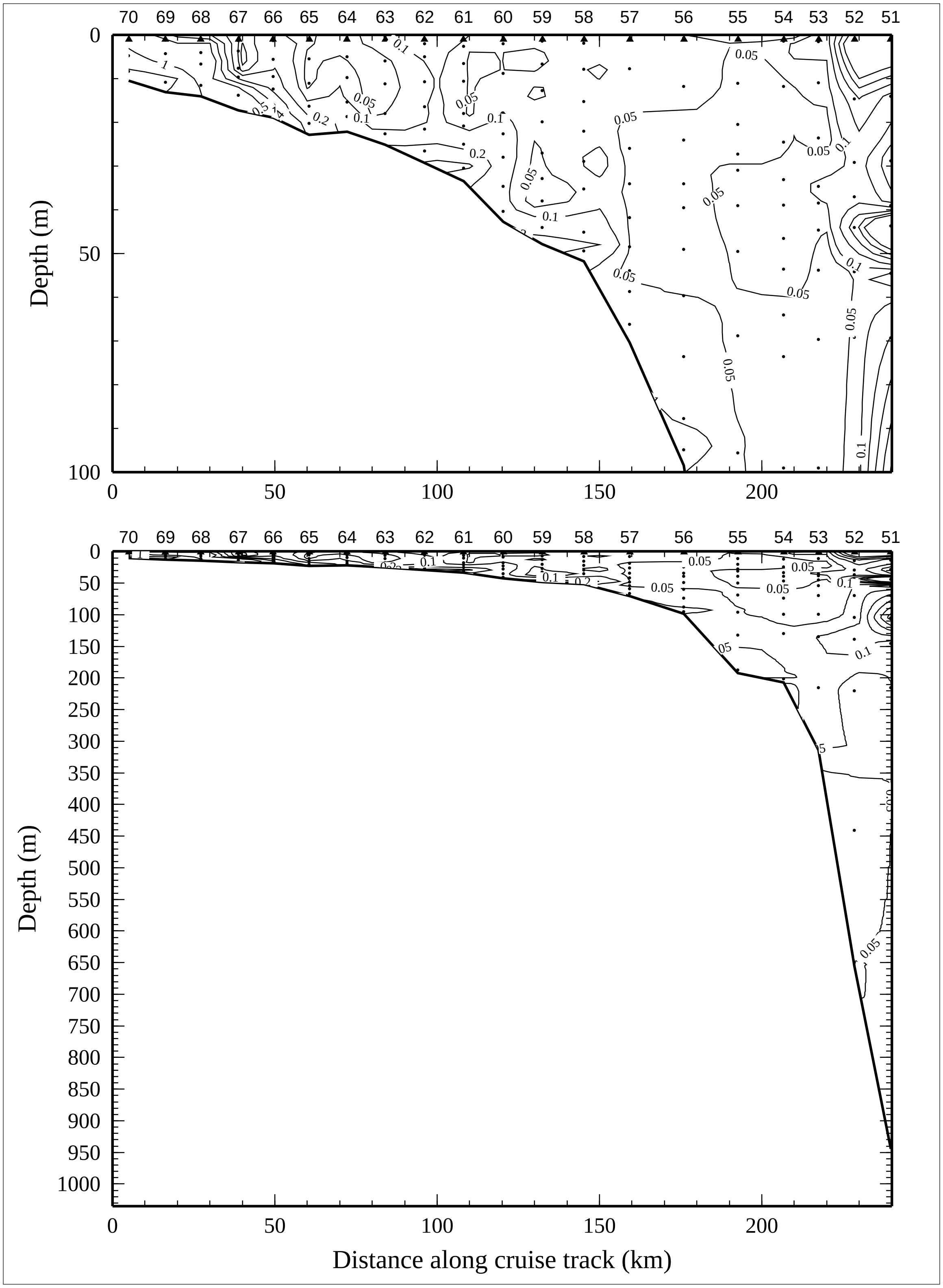

Figure 10.3.14. Ammonium (μmol·l[-1]) on line 3 of LATEX A survey H10,
2-14 November 1994.

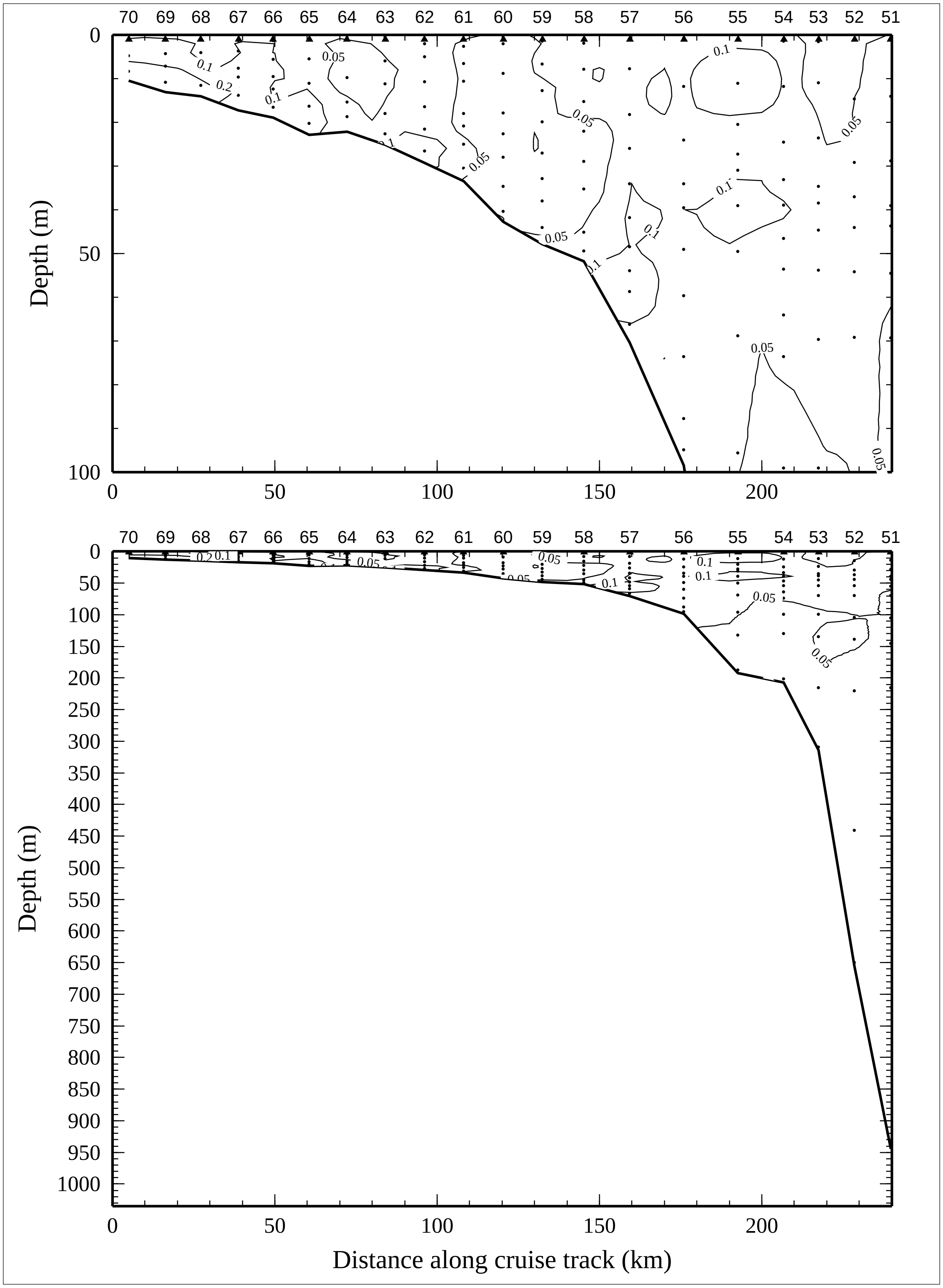

Figure 10.3.15. Urea (μmol·l-1) on line 3 of LATEX A survey H10, 2-14 November 1994.

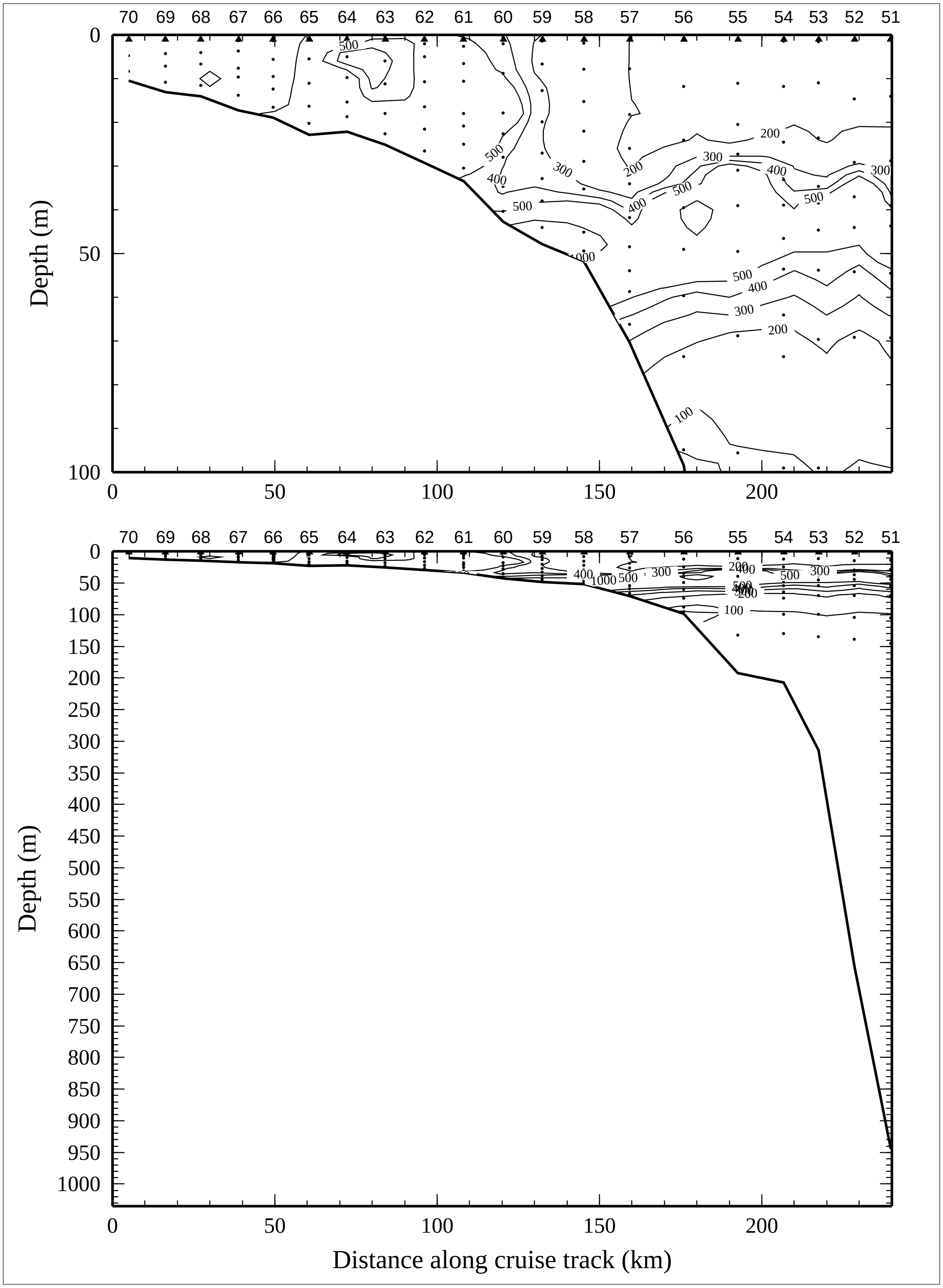

Figure 10.3.16. Chlorophyll a (ng·l^{-1}) on line 3 of LATEX A survey H10, 2-14 November 1994.

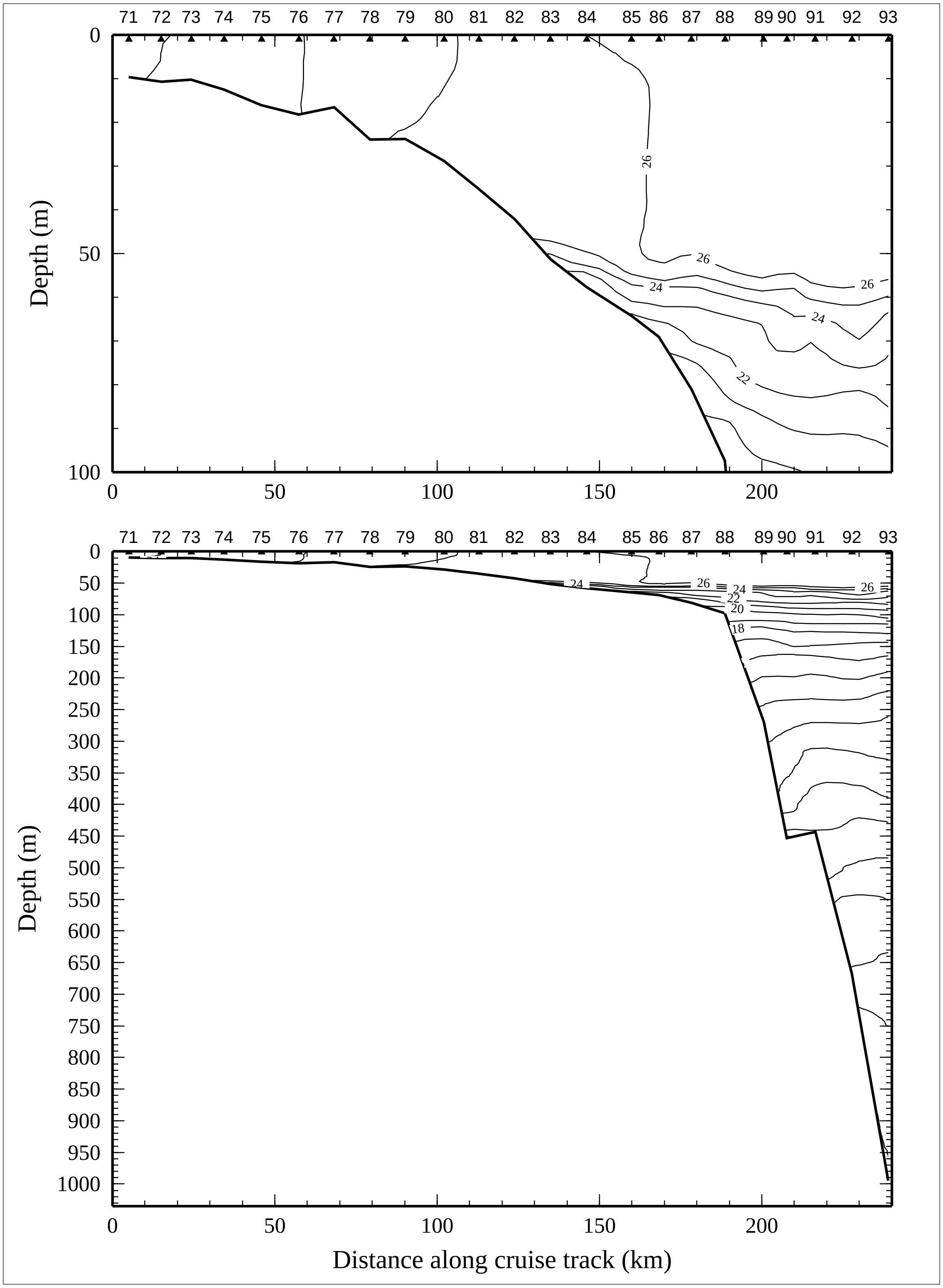

Figure 10.4.1. Potential temperature (˚C) on line 4 of LATEX A survey H10, 2-14 November 1994.

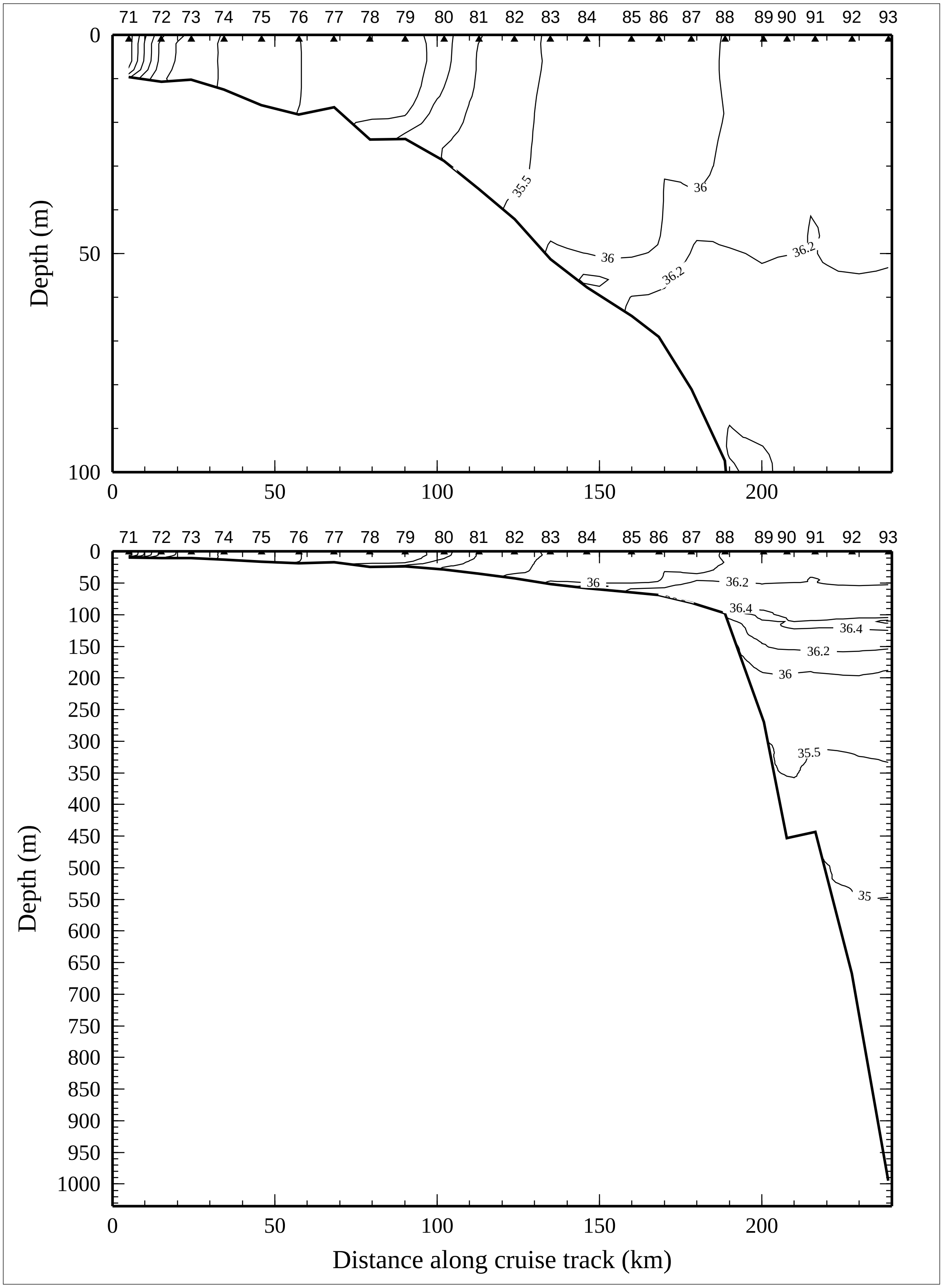

Figure 10.4.2. Salinity, derived from CTD data, on line 4 of LATEX A survey H10, 2-14 November 1994.

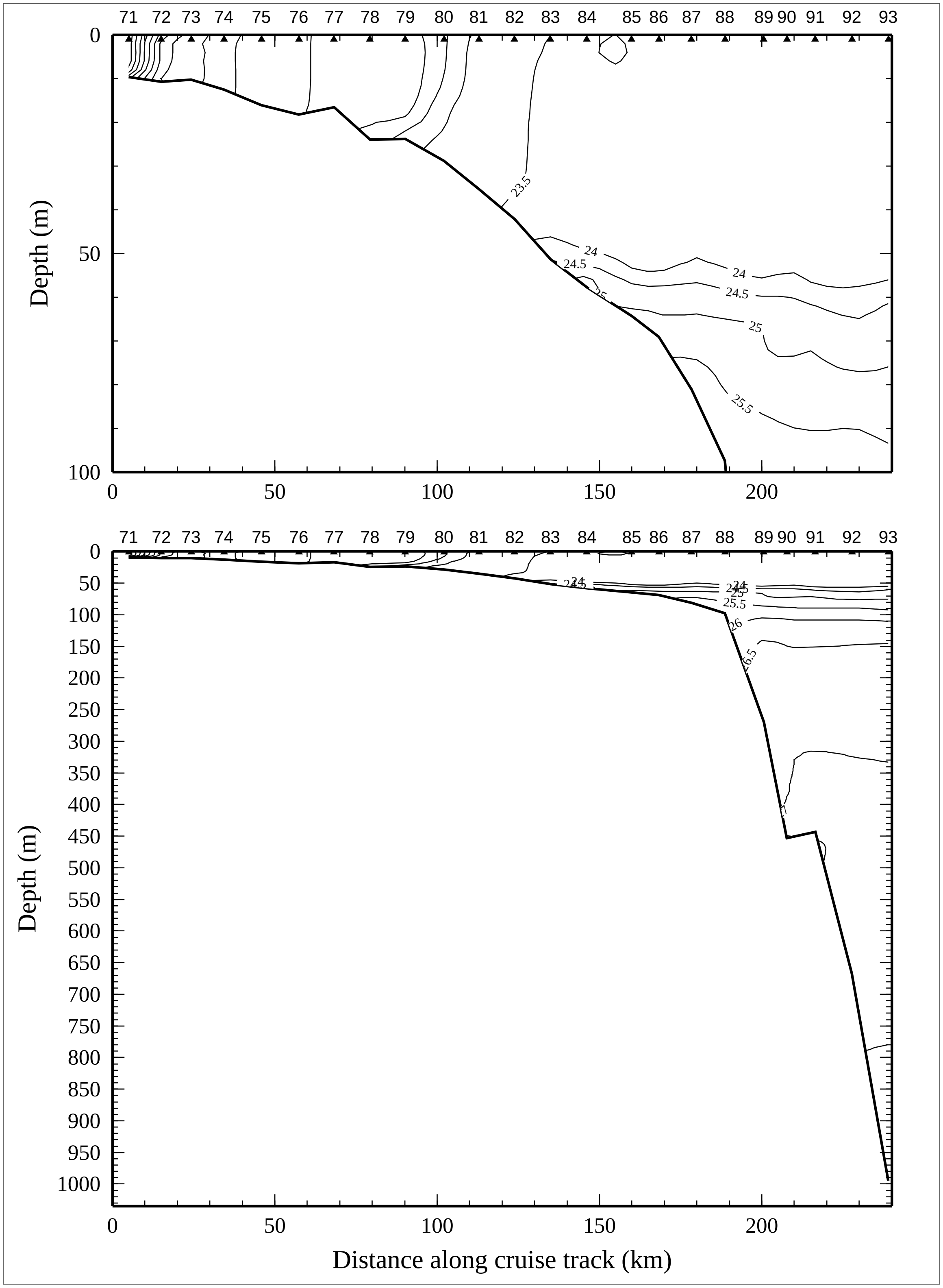

Figure 10.4.3. Density anomaly (σ_θ in kg·m^{-3}) on line 4 of LATEX A survey H10, 2-14 November 1994.

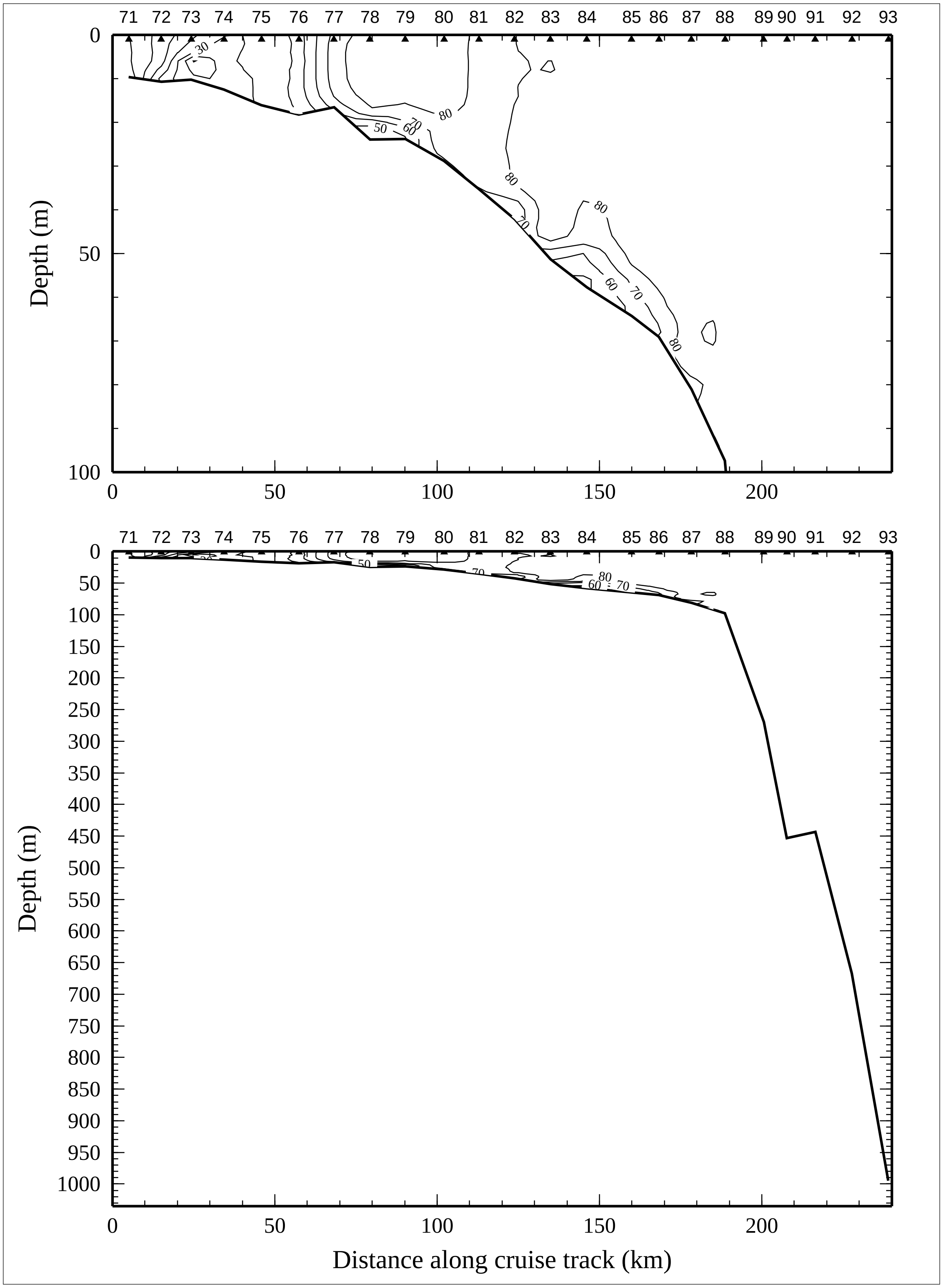

Figure 10.4.4. Percent transmission (660 nm wave length; 25-cm path length) on line 4 of LATEX A survey H10, 2-14 November 1994.

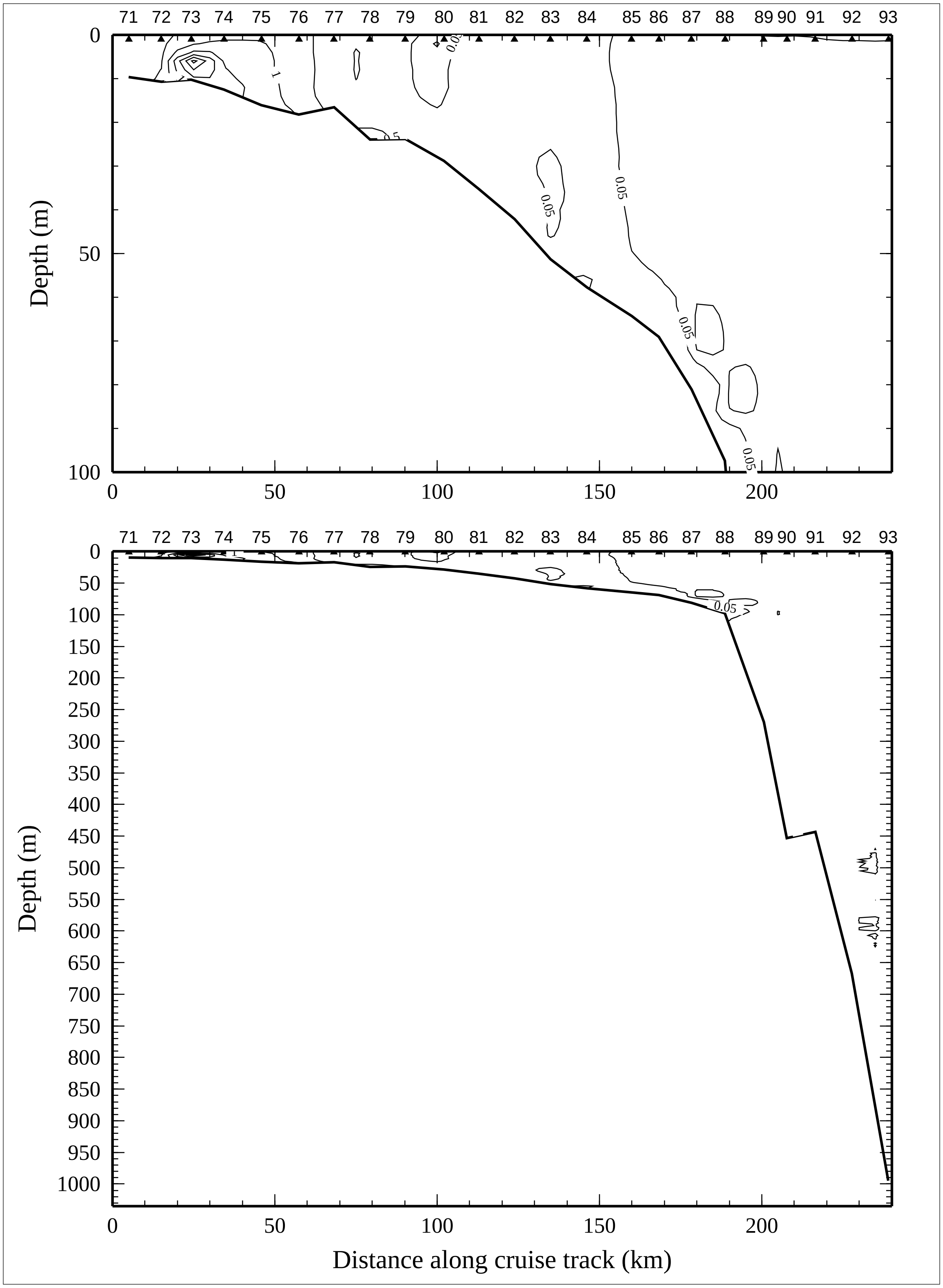

Figure 10.4.5. Optical backscatterance (voltage) on line 4 of LATEX A survey H10, 2-14 November 1994.

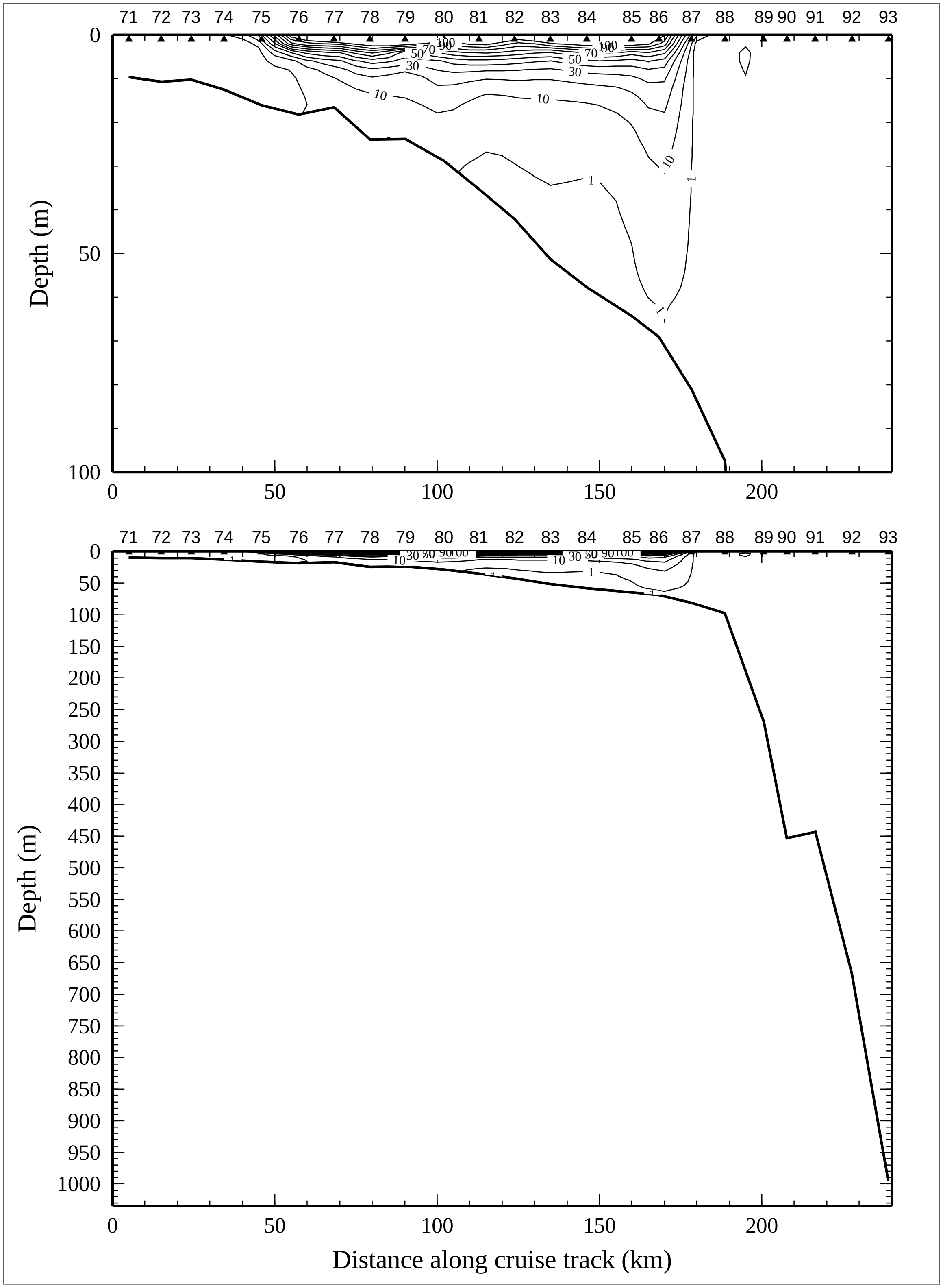

Figure 10.4.6. Downwelling irradiance as percent of surface irradiance on line 4 of LATEX A survey H10, 2-14 November 1994.

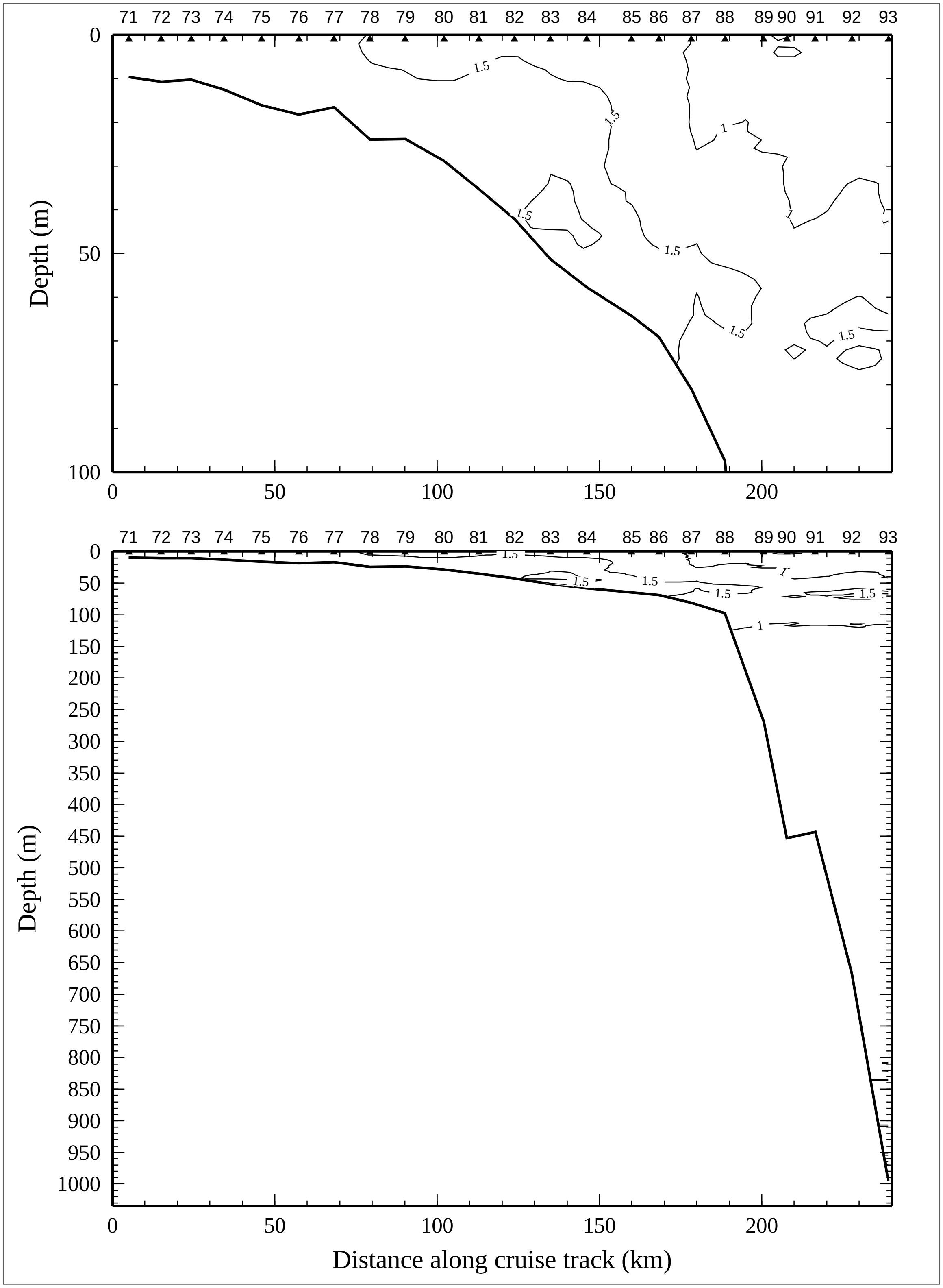

Figure 10.4.7. Relative fluorescence on line 4 of LATEX A survey H10, 2-14 November 1994.

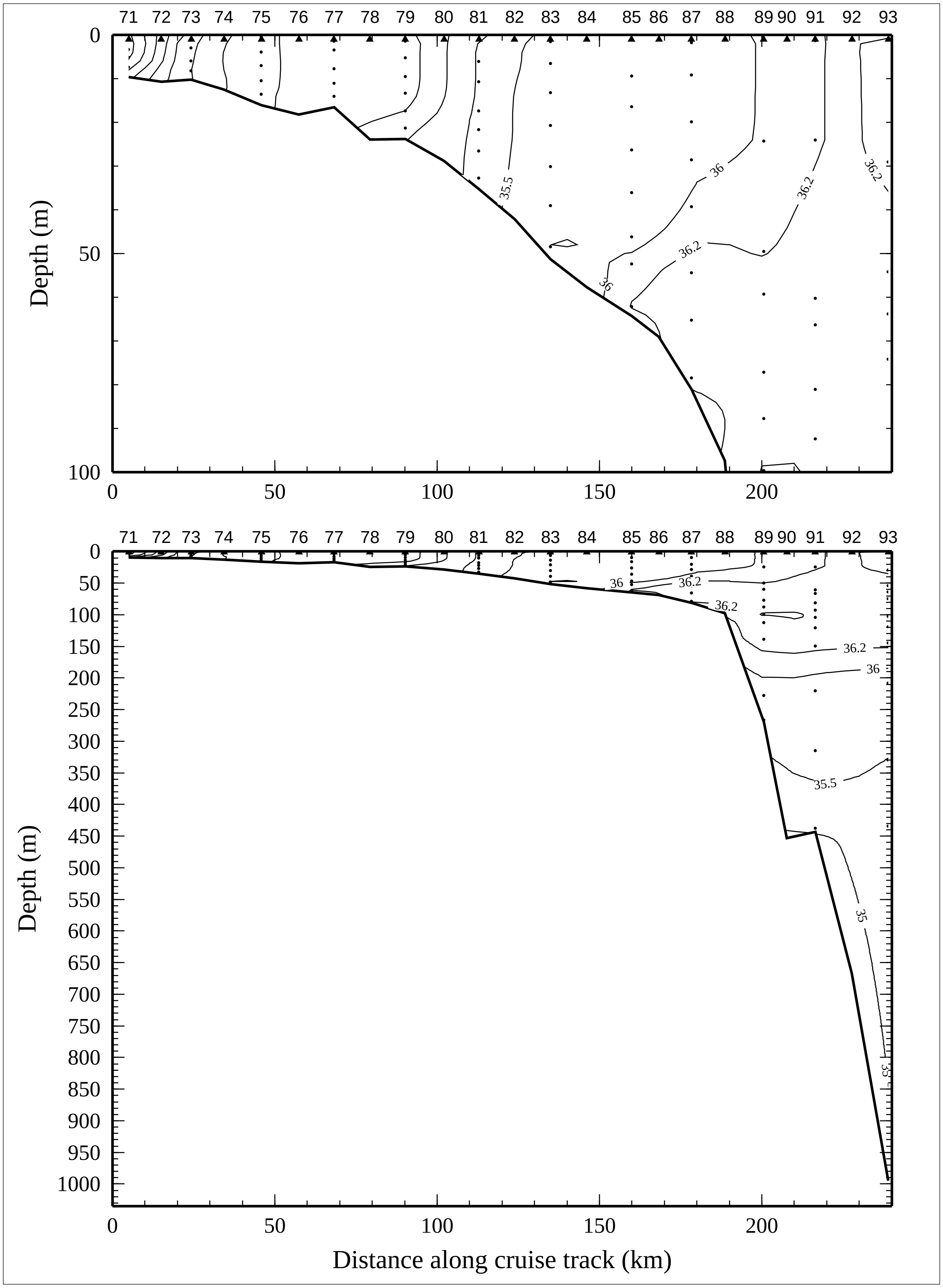

Figure 10.4.8. Bottle salinity on line 4 of LATEX A survey H10,
2-14 November 1994.

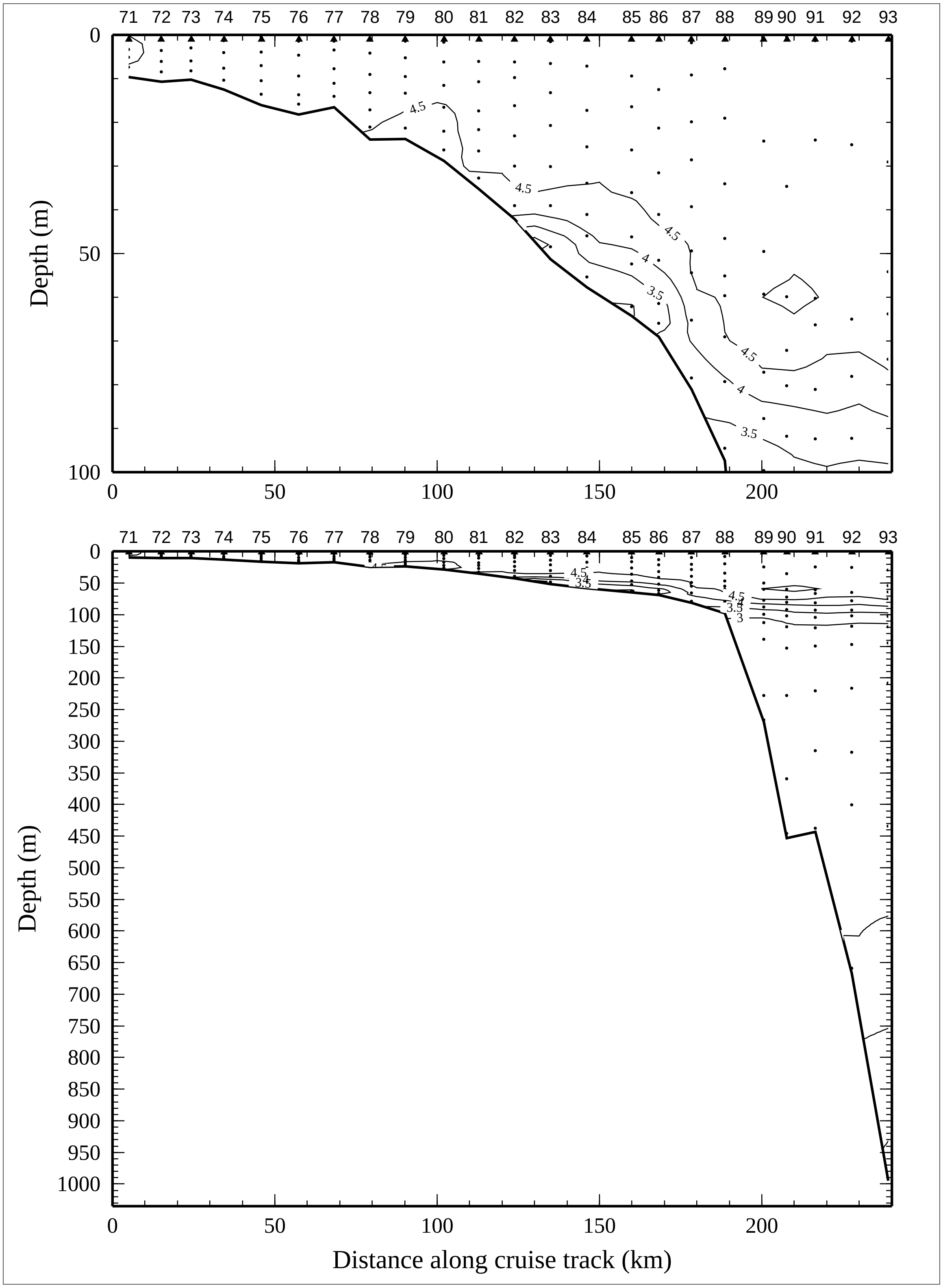

Figure 10.4.9. Dissolved oxygen (ml·l^{-1}) on line 4 of LATEX A survey H10, 2-14 November 1994.

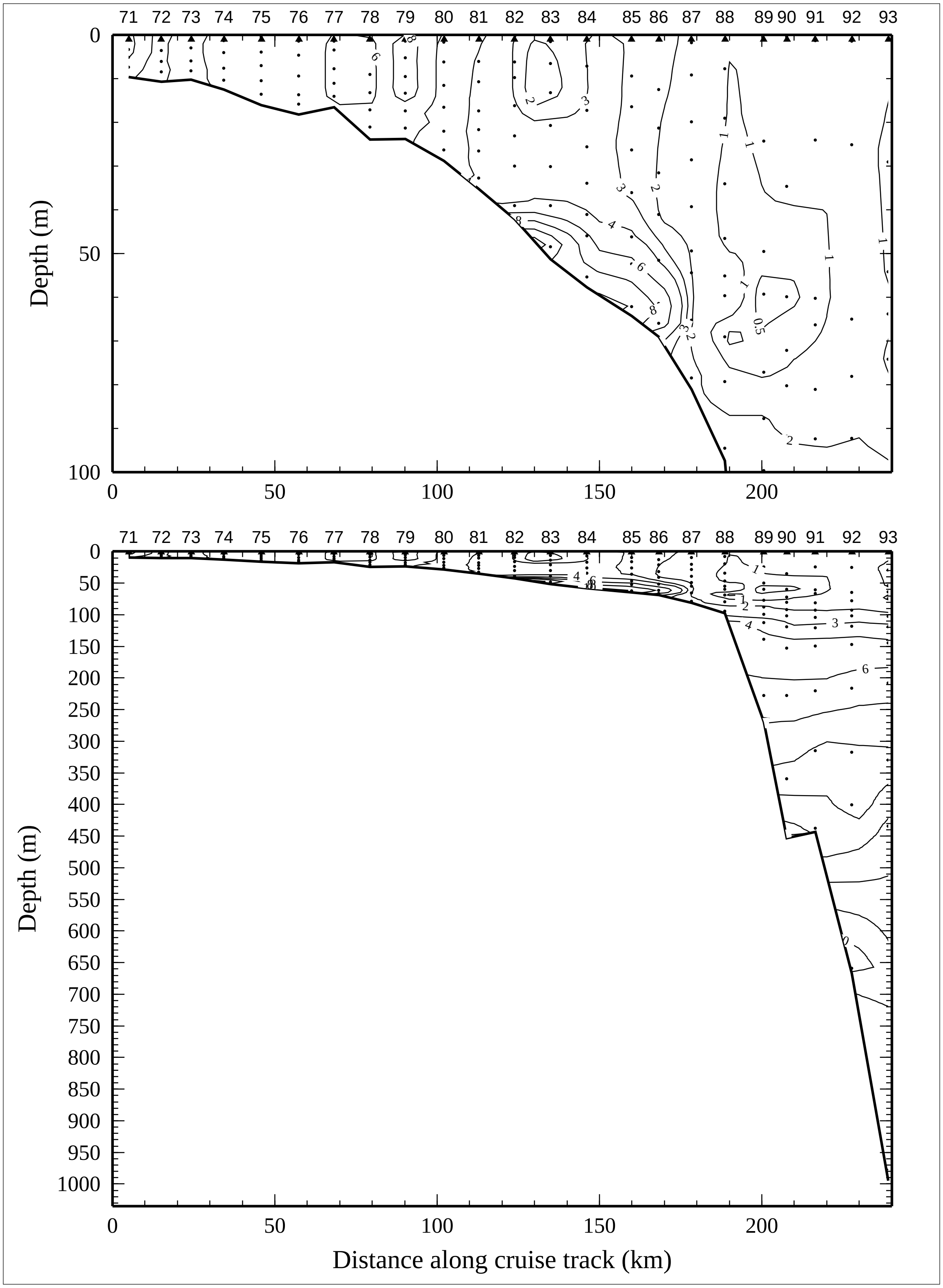

Figure 10.4.10. Silicate (µmol·l^{-1}) on line 4 of LATEX A survey H10, 2-14 November 1994.

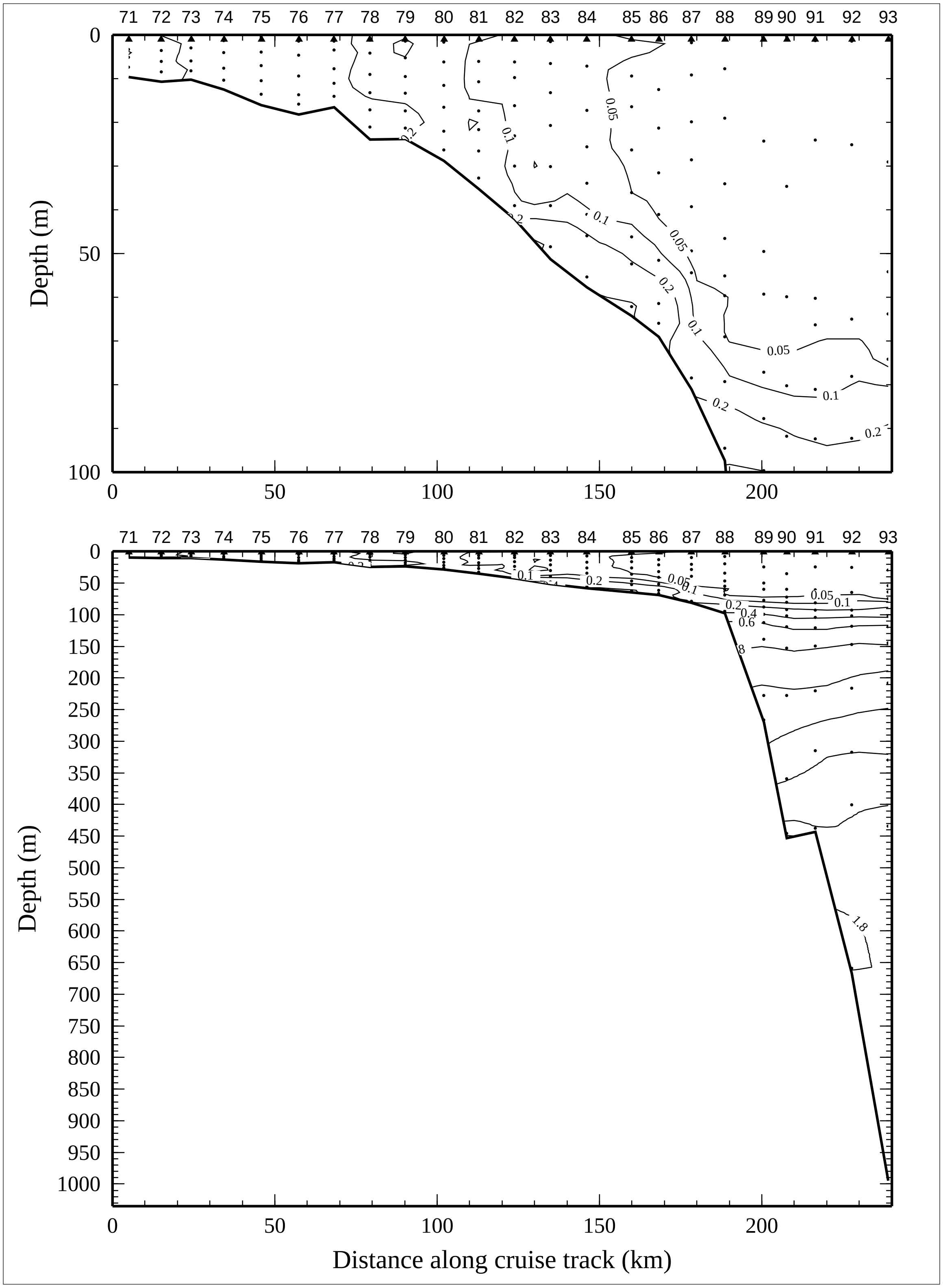

Figure 10.4.11. Phosphate (μmol·l[-1]) on line 4 of LATEX A survey H10, 2-14 November 1994.

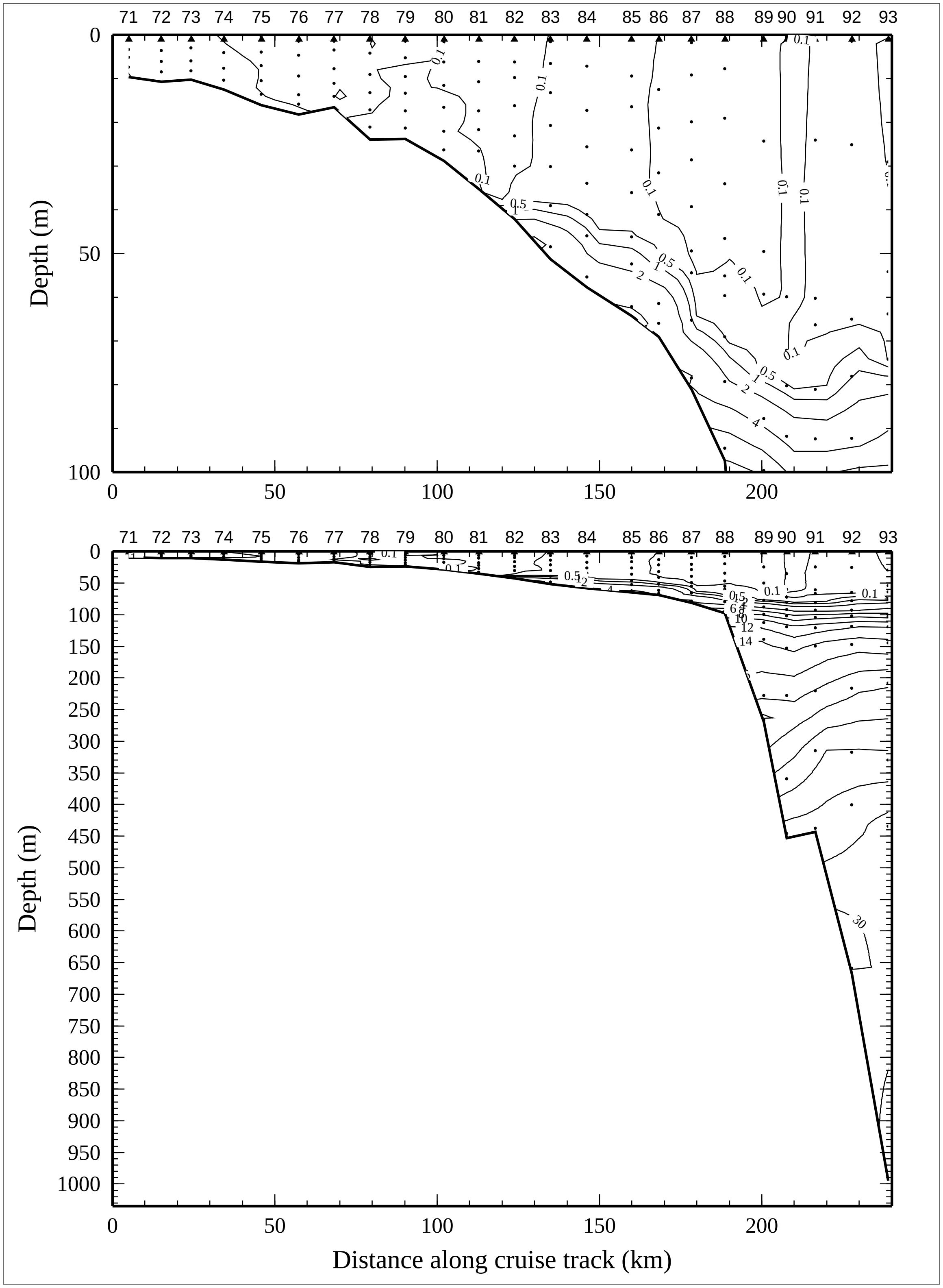

Figure 10.4.12. Nitrate ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H10, 2-14 November 1994.

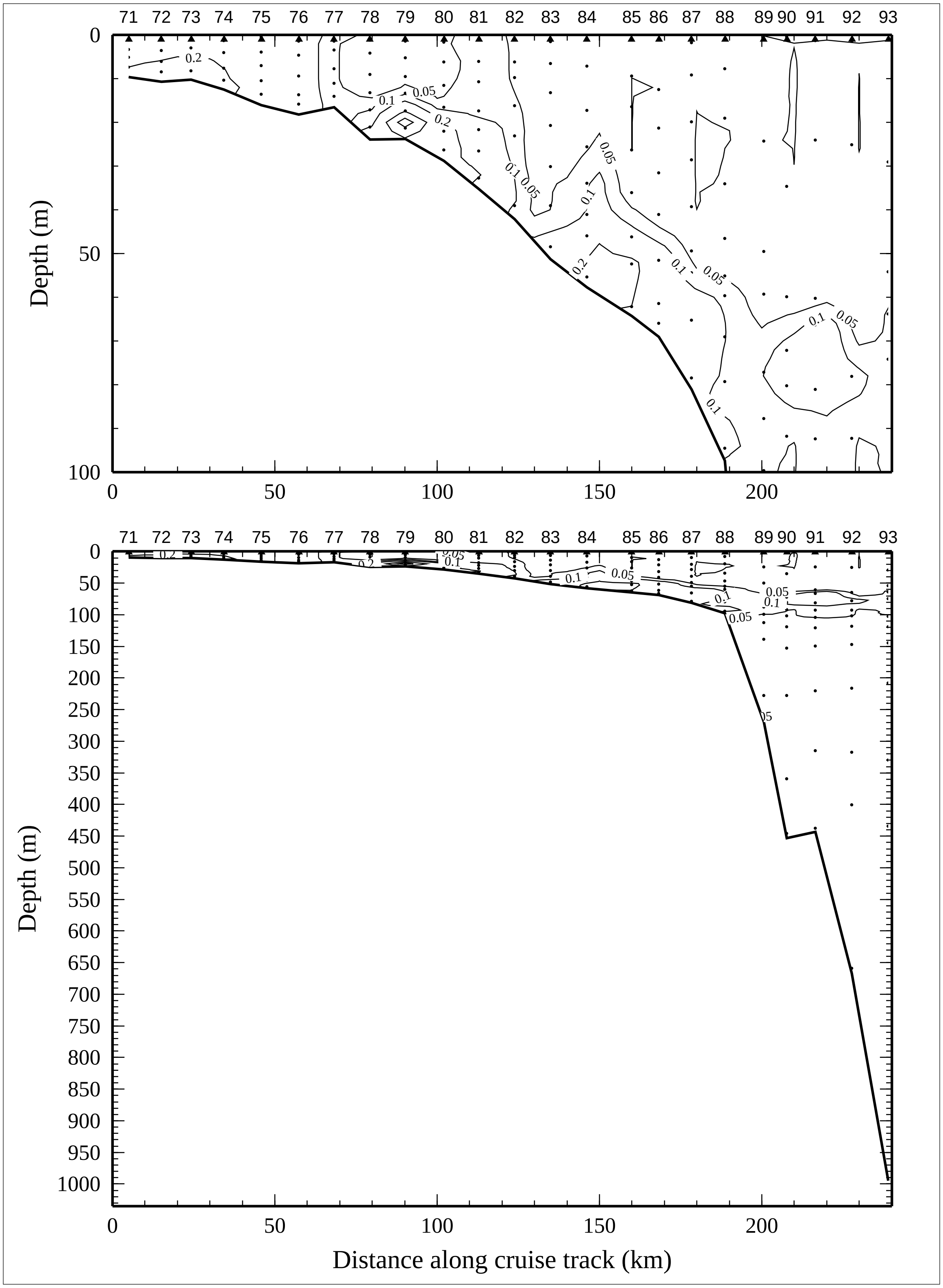

Figure 10.4.13. Nitrite (µmol·l^{-1}) on line 4 of LATEX A survey H10, 2-14 November 1994.

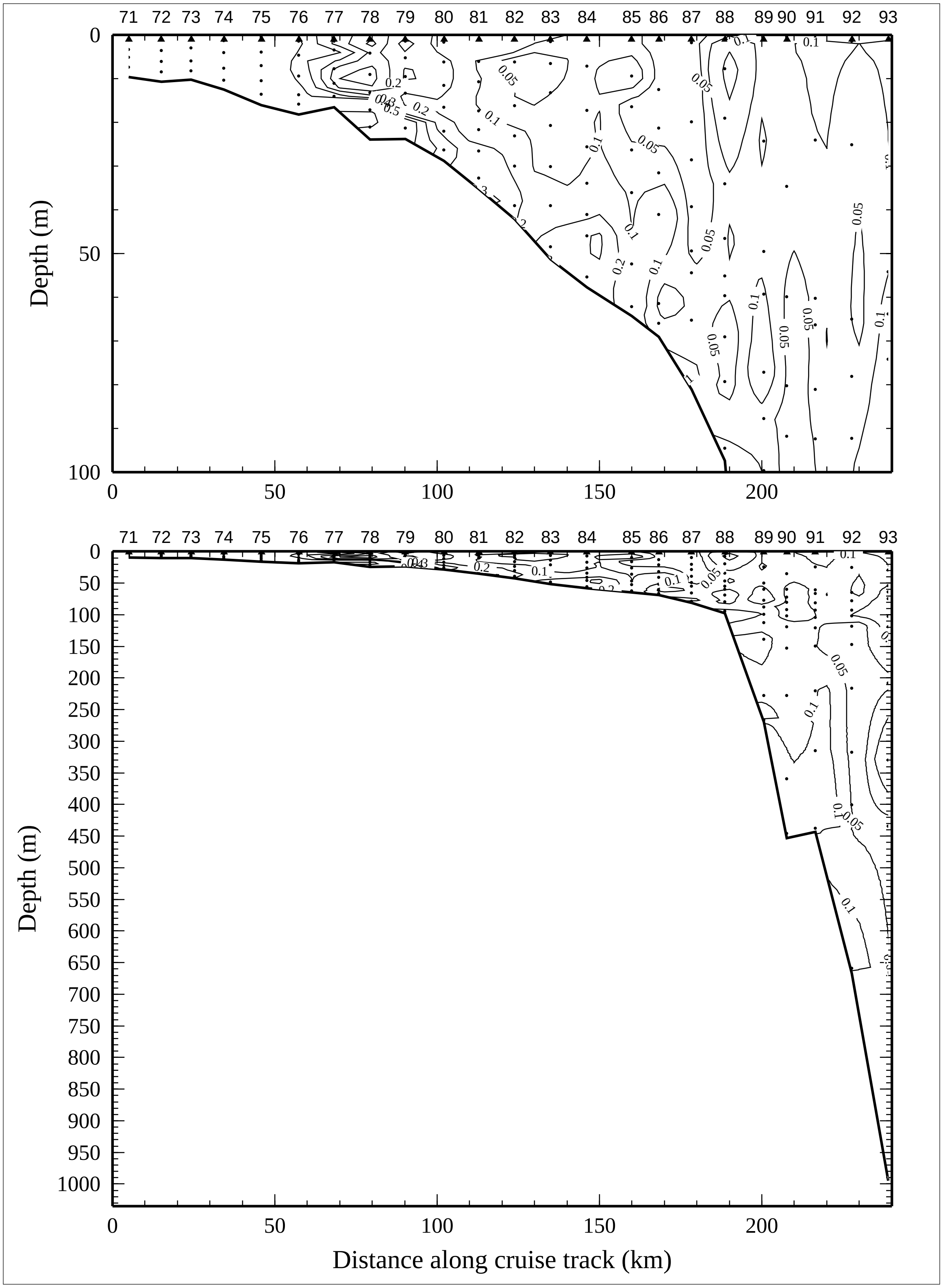

Figure 10.4.14. Ammonium ($\mu mol \cdot l^{-1}$) on line 4 of LATEX A survey H10, 2-14 November 1994.

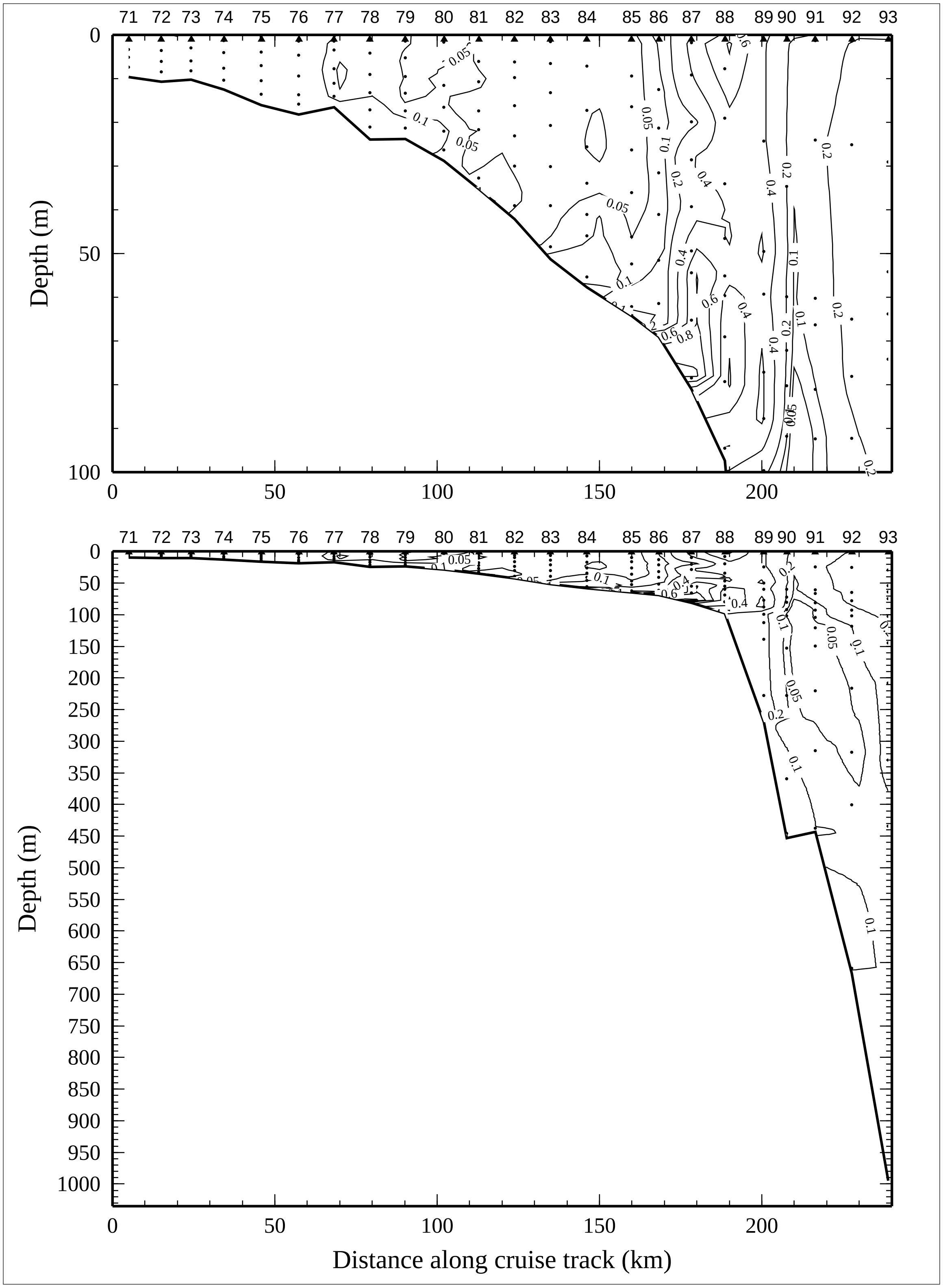

Figure 10.4.15. Urea (μmol·l^{-1}) on line 4 of LATEX A survey H10,
2-14 November 1994.

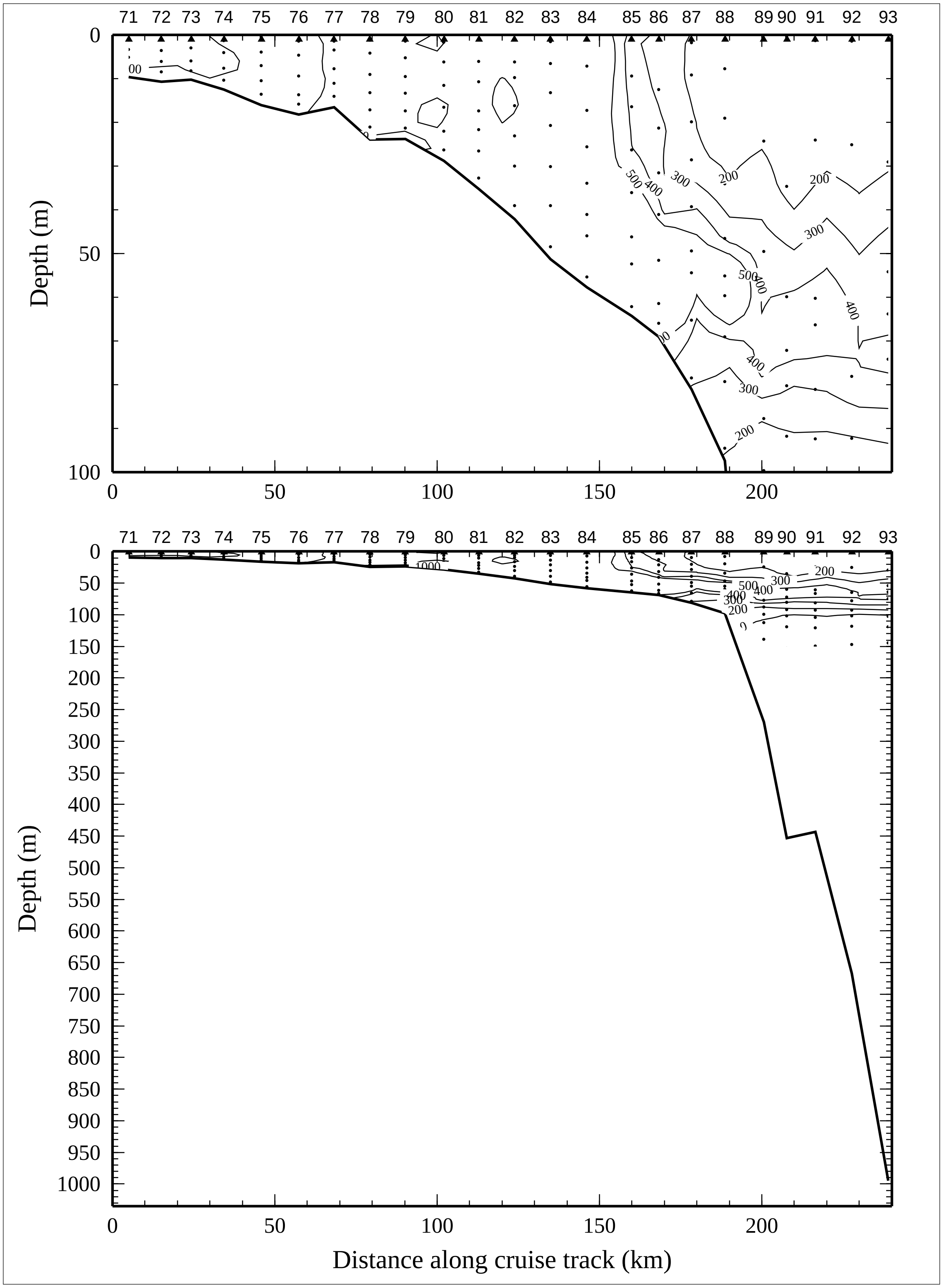

Figure 10.4.16. Chlorophyll a (ng·l^{-1}) on line 4 of LATEX A survey H10, 2-14 November 1994.

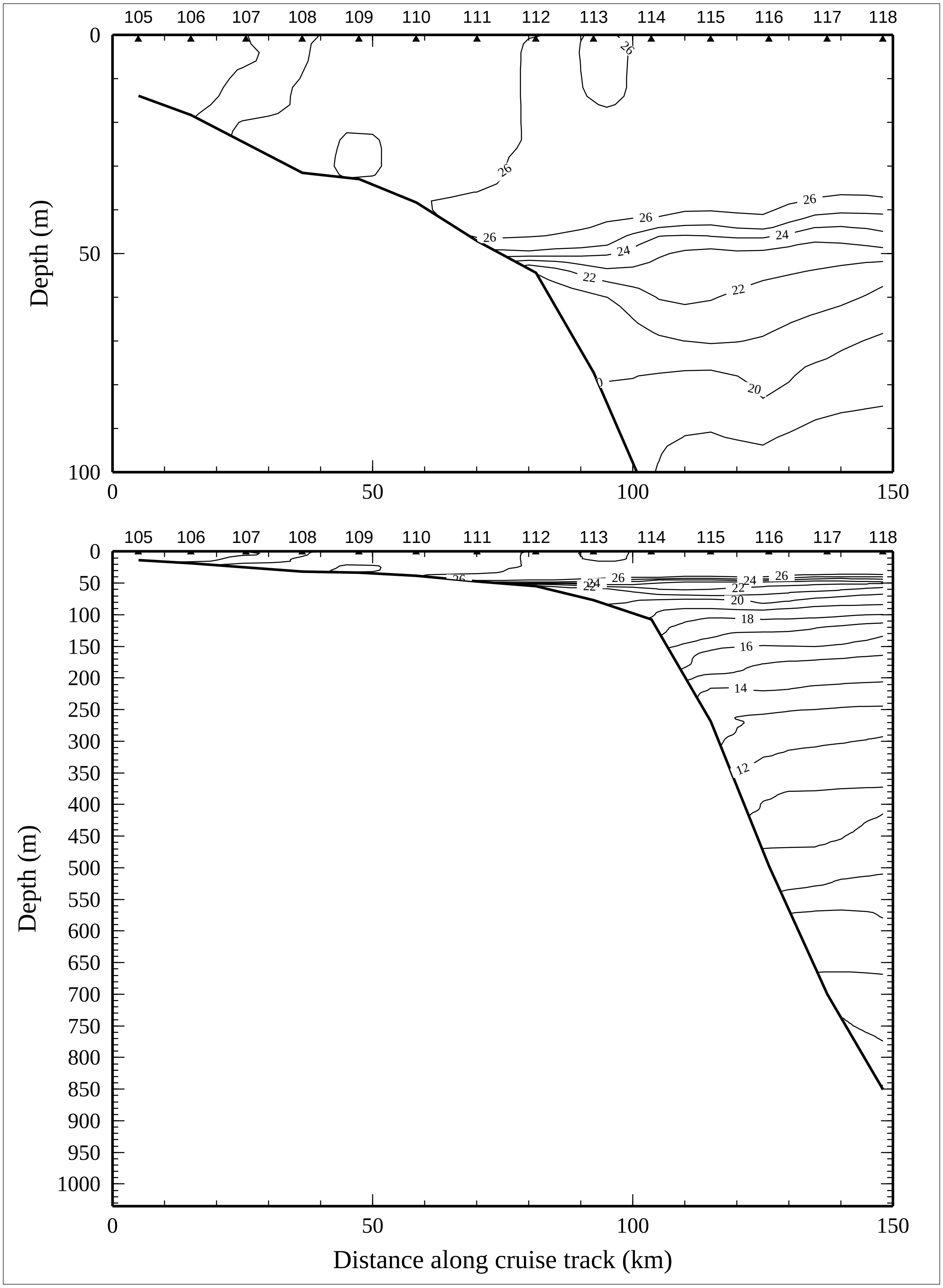

Figure 10.5.1. Potential temperature (˚C) on line 5 of LATEX A survey H10, 2-14 November 1994.

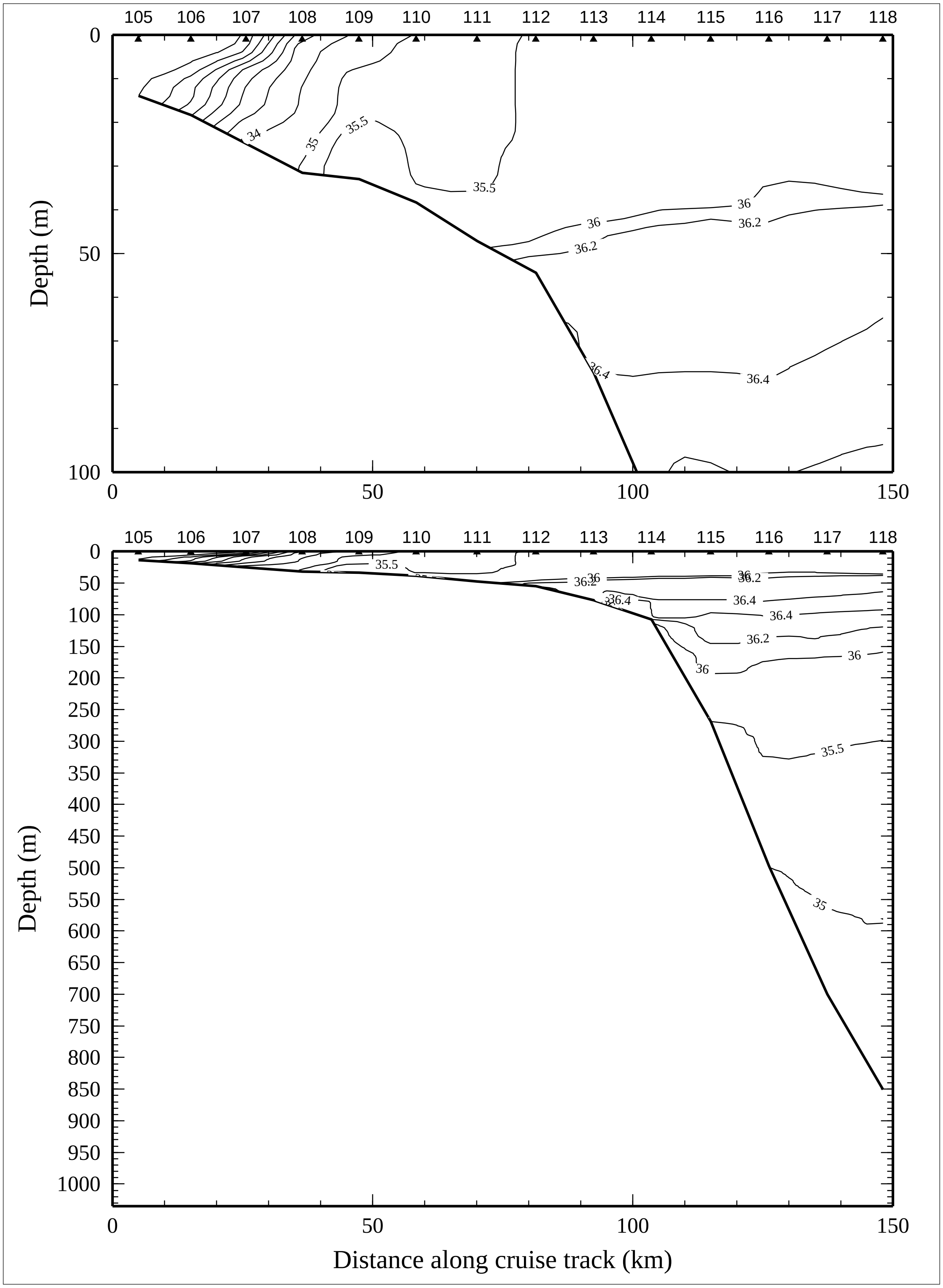

Figure 10.5.2. Salinity, derived from CTD data, on line 5 of LATEX A survey H10, 2-14 November 1994.

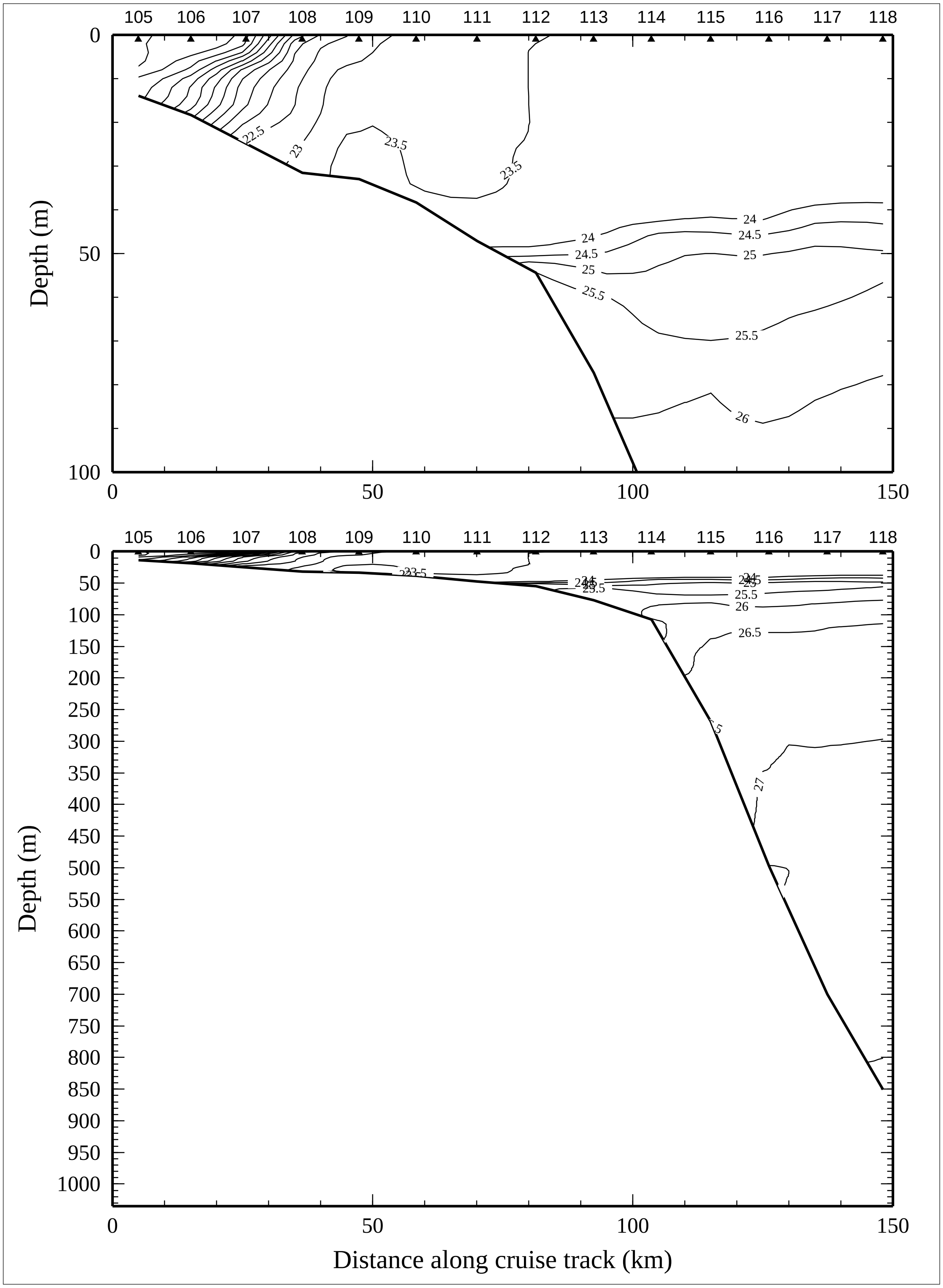

Figure 10.5.3. Density anomaly (σ_θ in kg·m^{-3}) on line 5 of LATEX A survey H10, 2-14 November 1994.

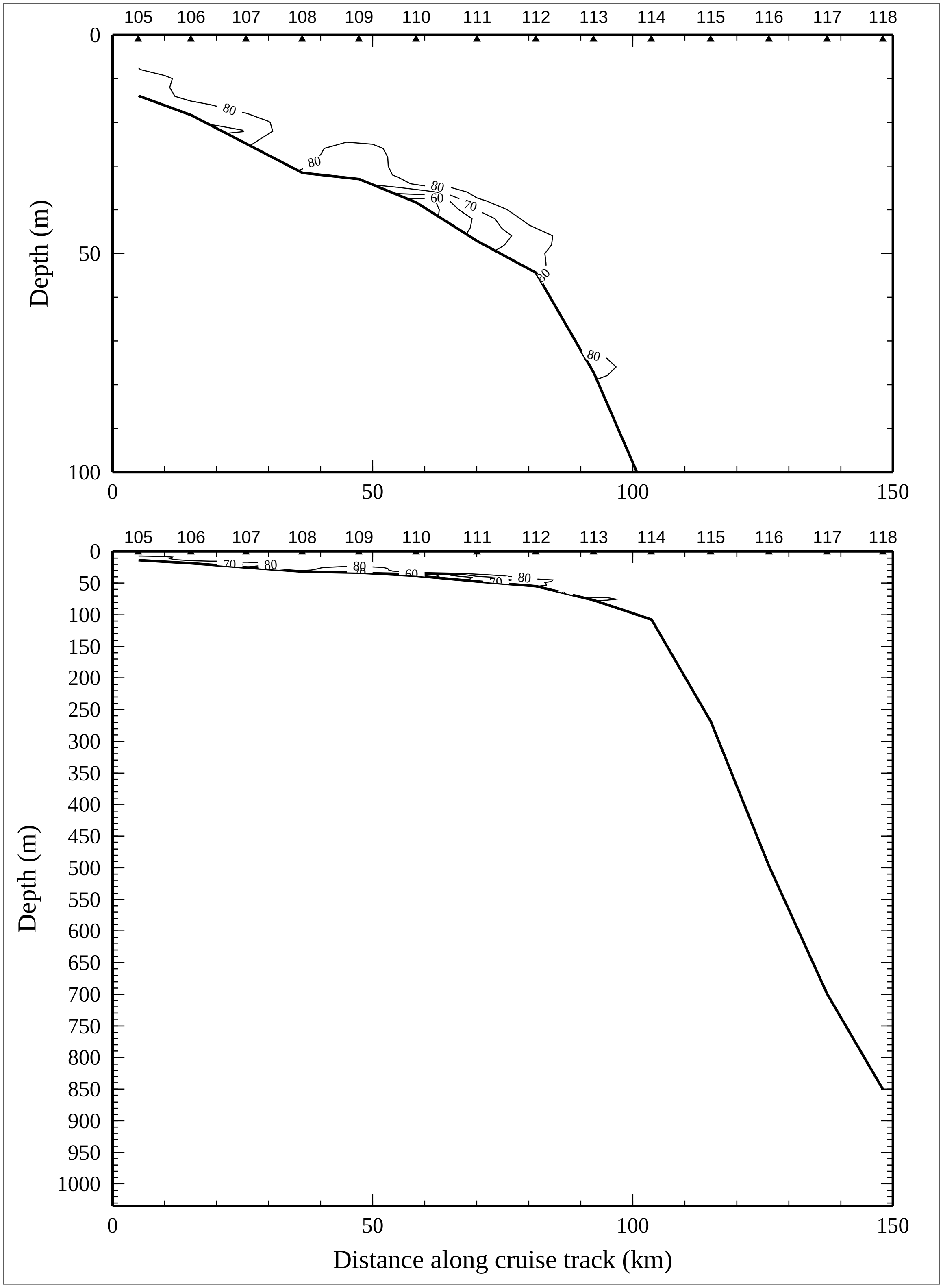

Figure 10.5.4. Percent transmission (660 nm wave length; 25-cm path length) on line 5 of LATEX A survey H10, 2-14 November 1994.

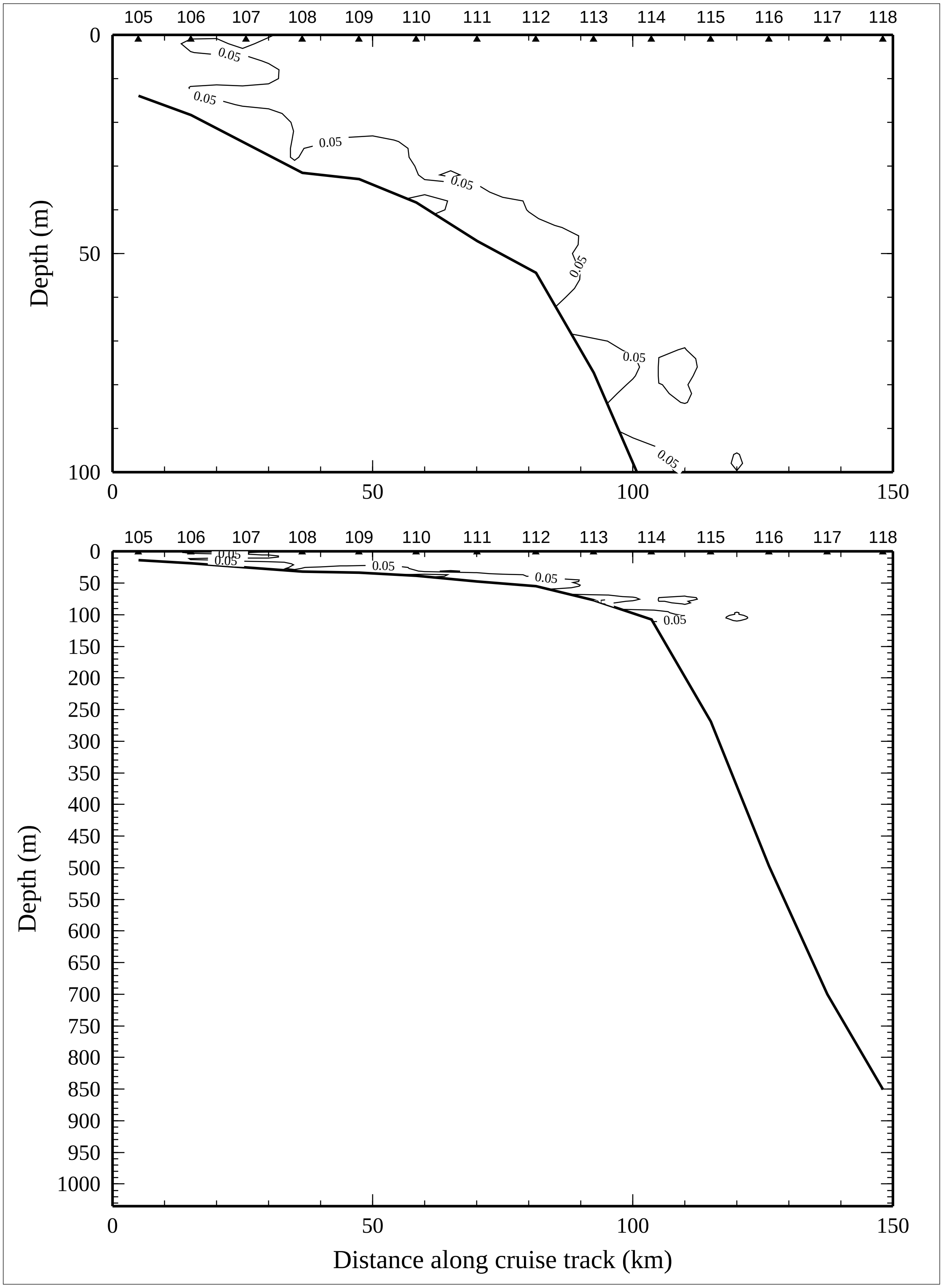

Figure 10.5.5. Optical backscatterance (voltage) on line 5 of LATEX A survey H10, 2-14 November 1994.

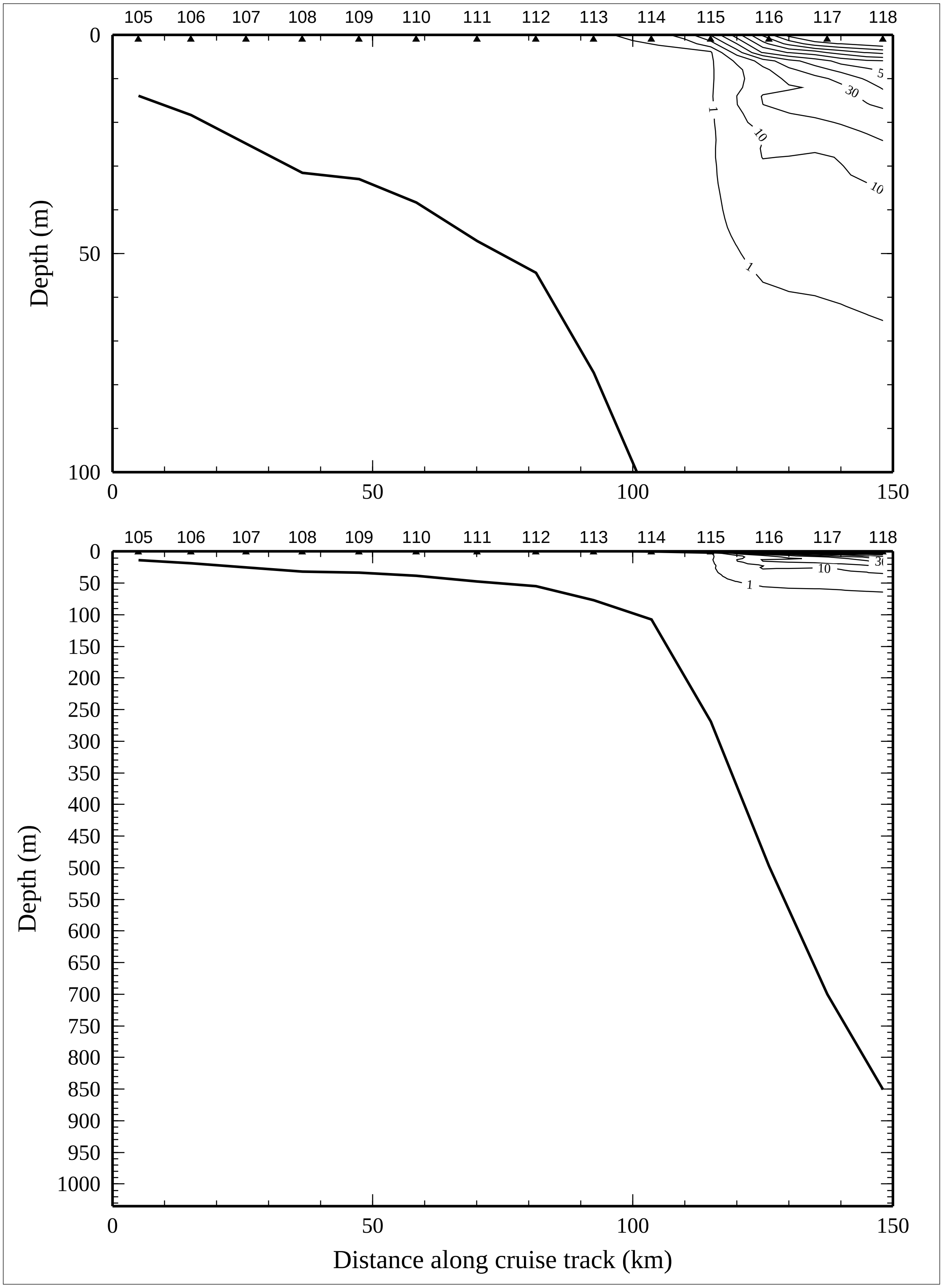

Figure 10.5.6. Downwelling irradiance as percent of surface irradiance on line 5 of LATEX A survey H10, 2-14 November 1994.

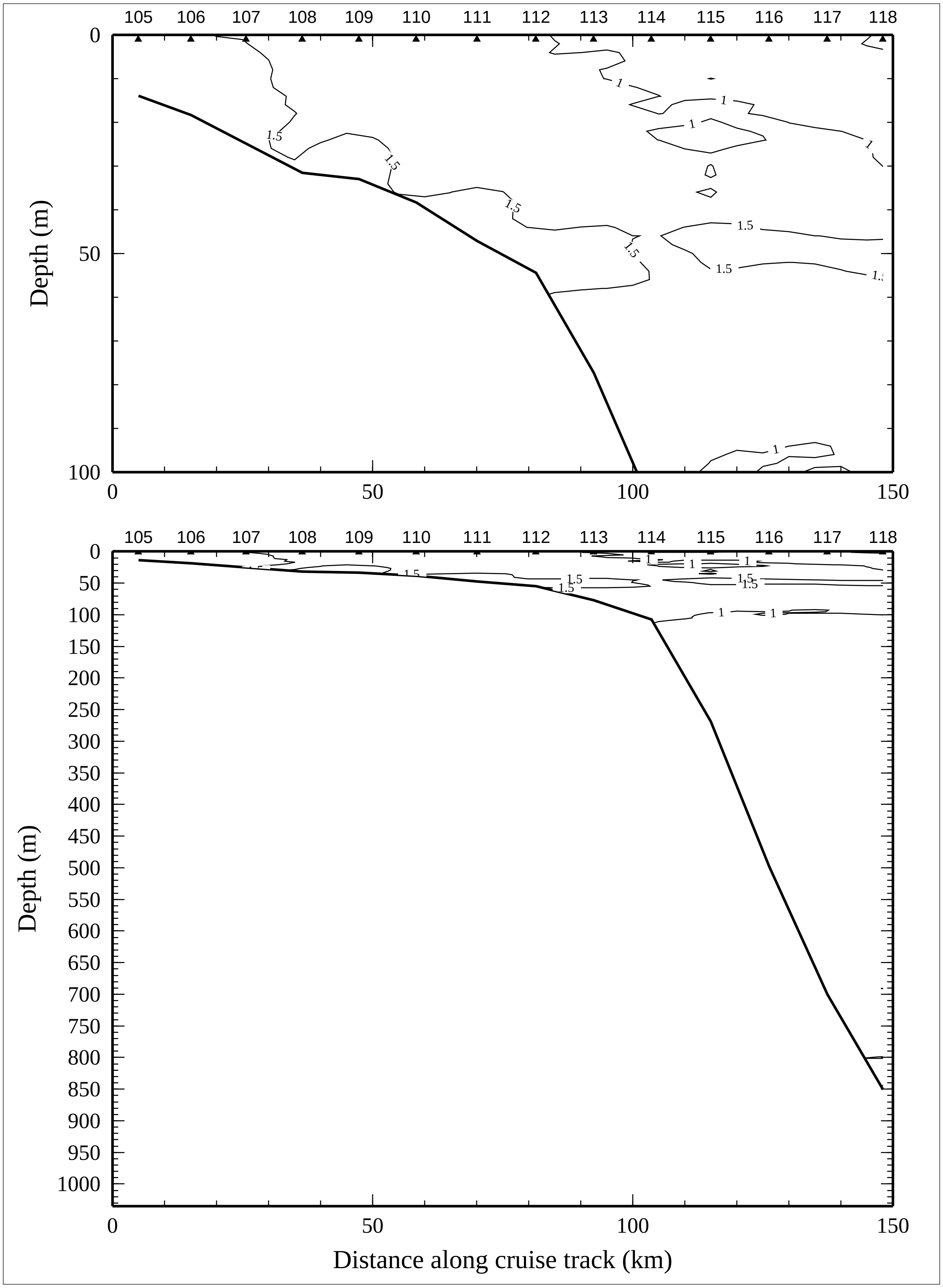

Figure 10.5.7. Relative fluorescence on line 5 of LATEX A survey H10, 2-14 November 1994.

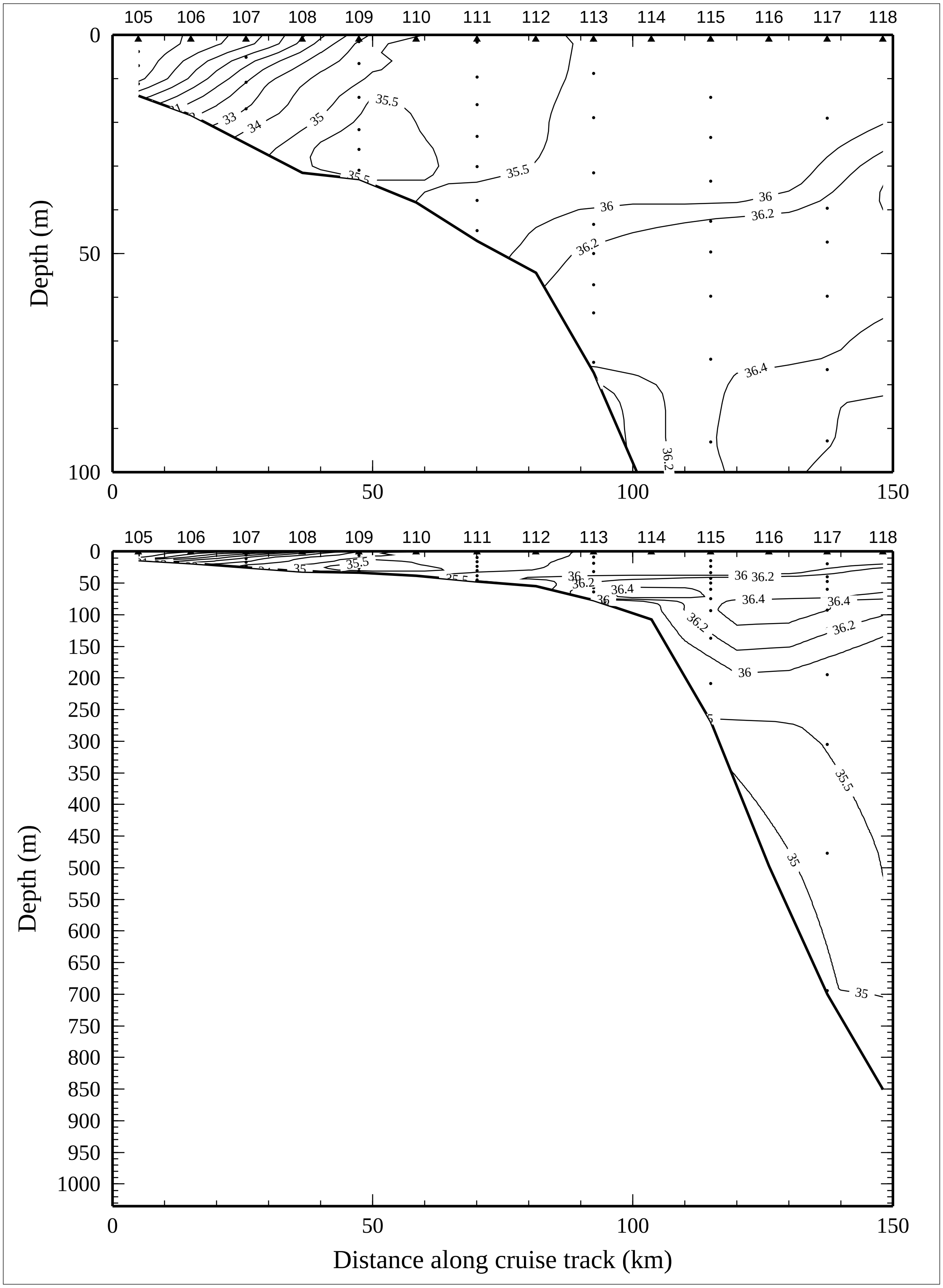

Figure 10.5.8. Bottle salinity on line 5 of LATEX A survey H10,
2-14 November 1994.

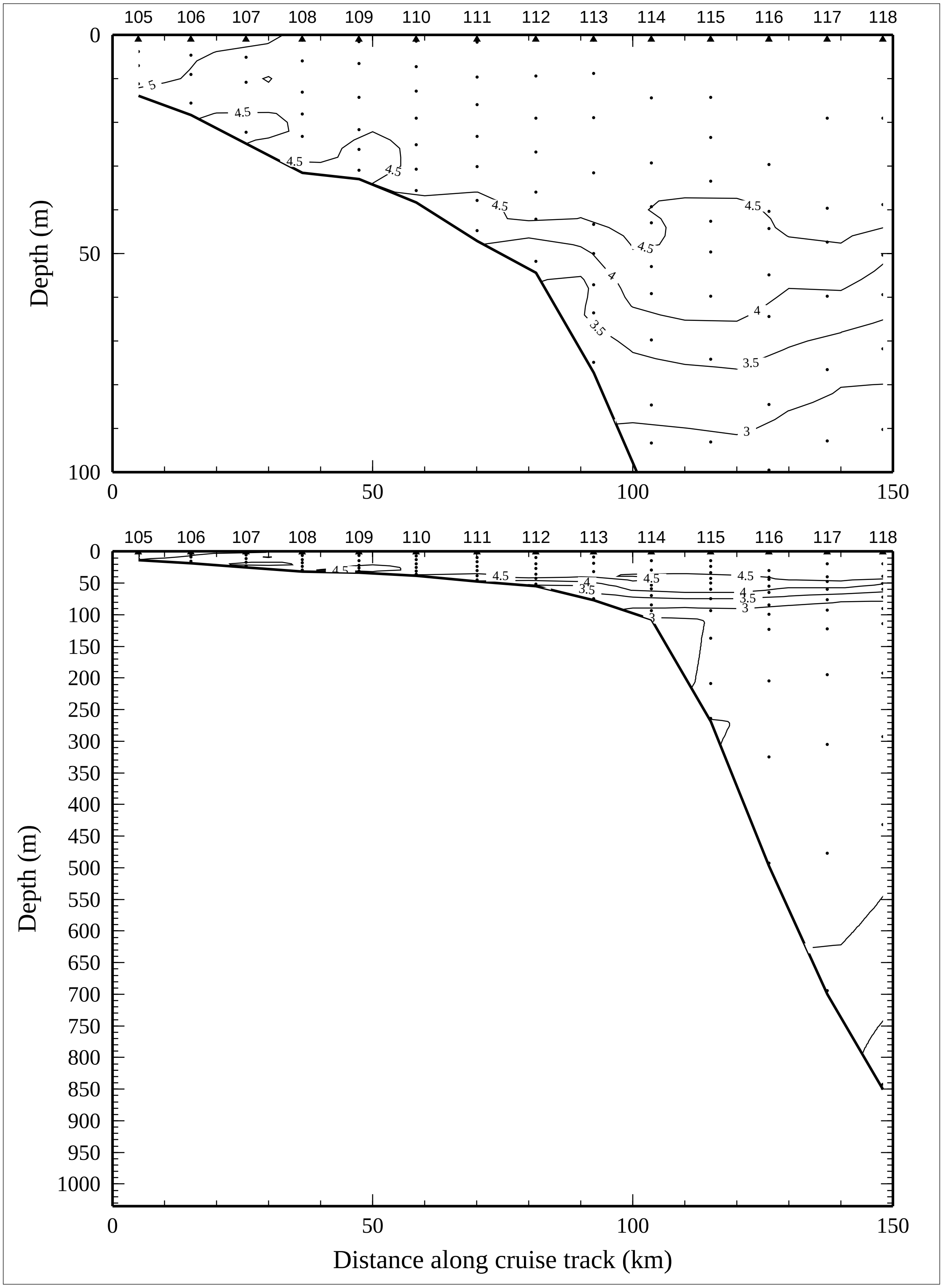

Figure 10.5.9. Dissolved oxygen (ml·l-1) on line 5 of LATEX A survey H10, 2-14 November 1994.

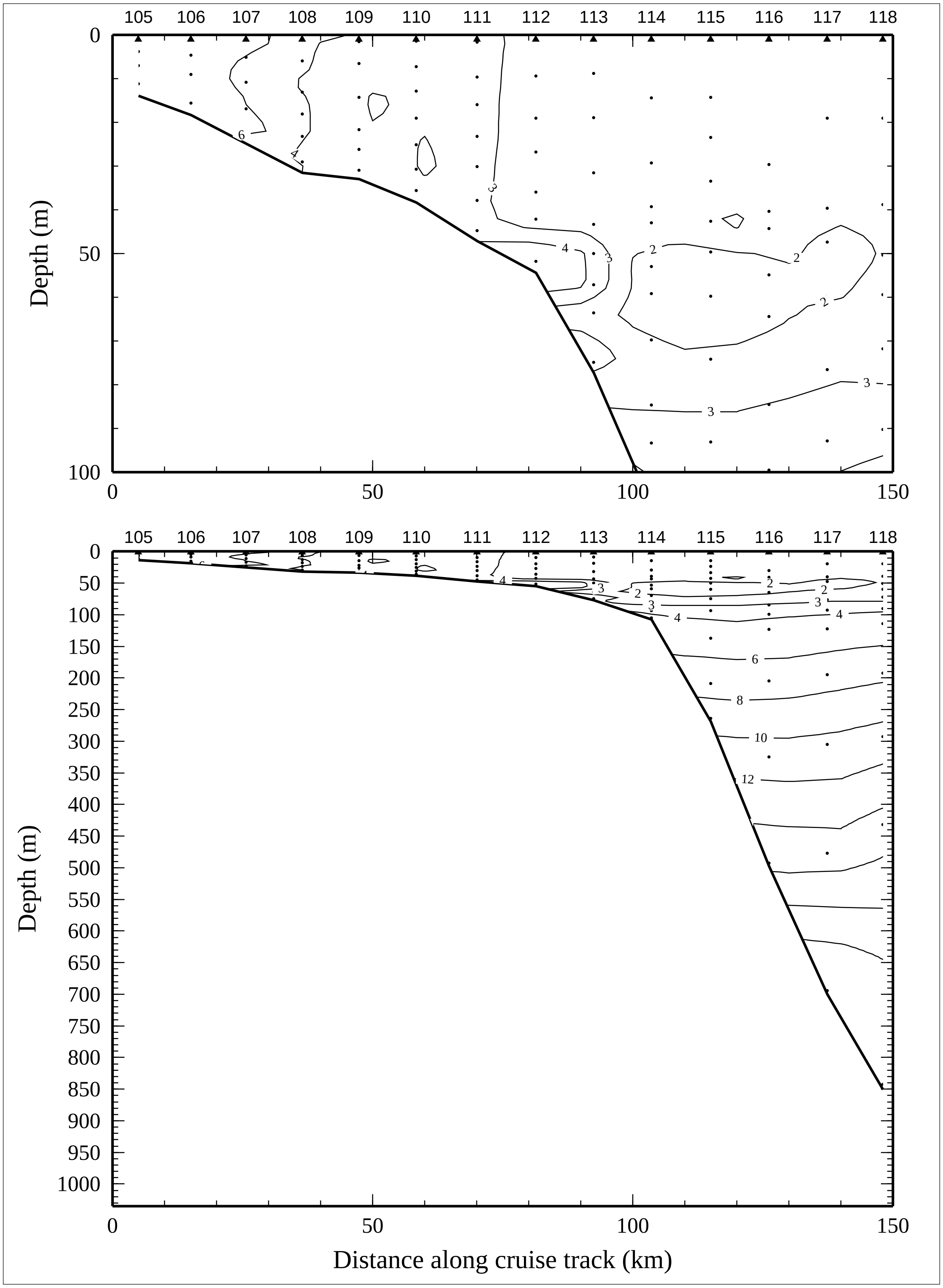

Figure 10.5.10. Silicate (μmol·l^{-1}) on line 5 of LATEX A survey H10, 2-14 November 1994.

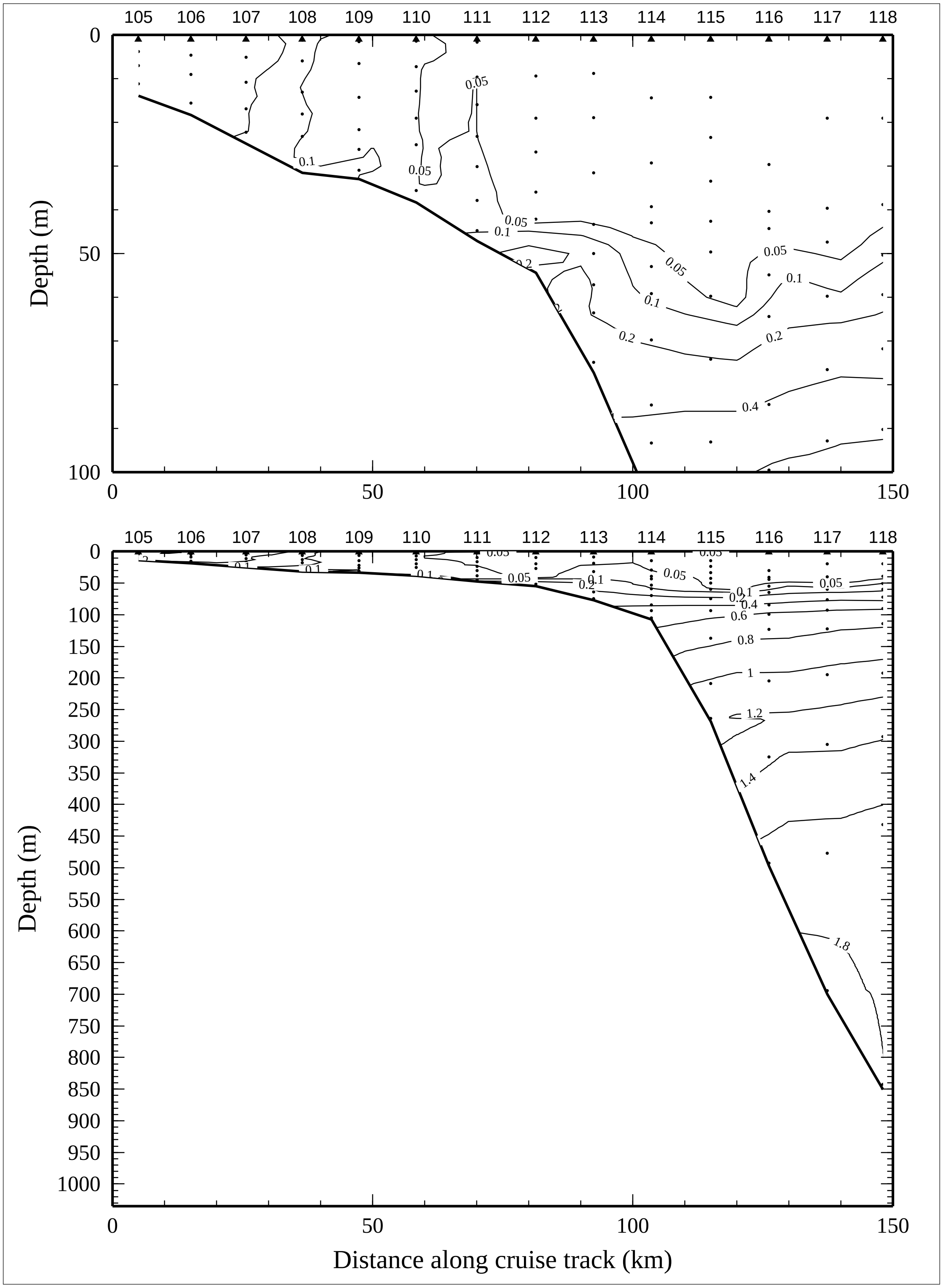

Figure 10.5.11. Phosphate (μmol·l⁻¹) on line 5 of LATEX A survey H10,
2-14 November 1994.

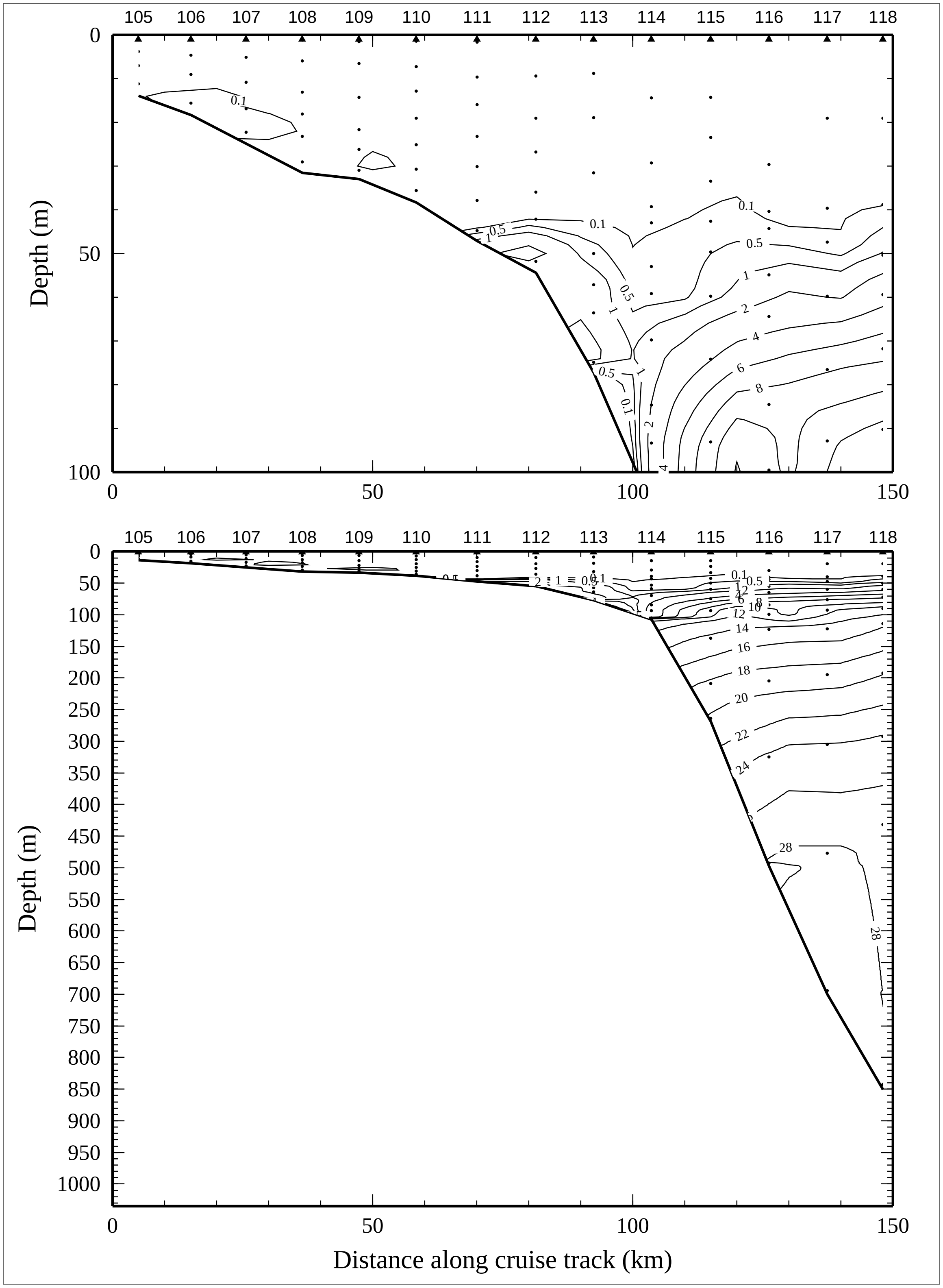

Figure 10.5.12. Nitrate (µmol·l-1) on line 5 of LATEX A survey H10, 2-14 November 1994.

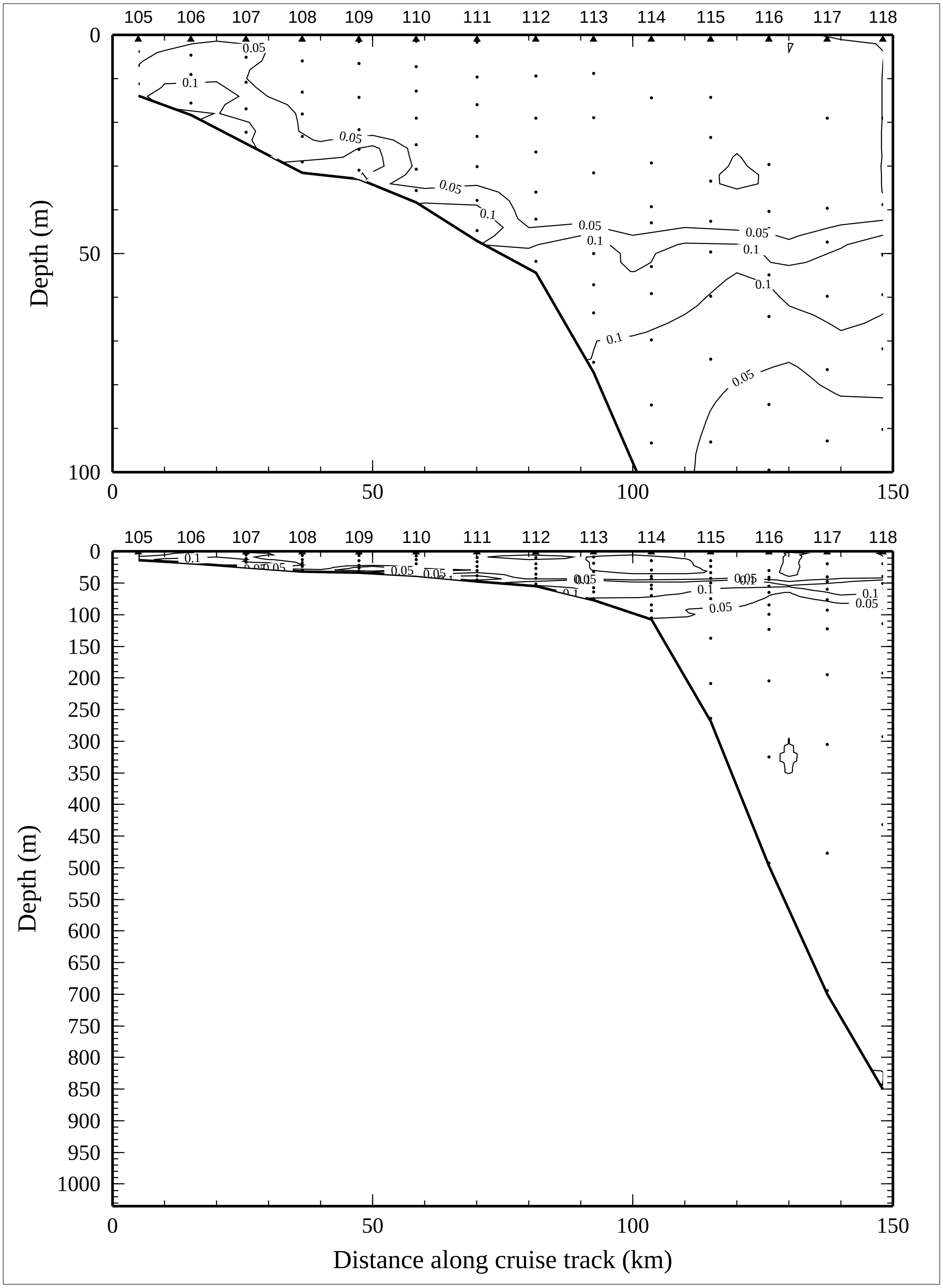

Figure 10.5.13. Nitrite (μmol·l-1) on line 5 of LATEX A survey H10, 2-14 November 1994.

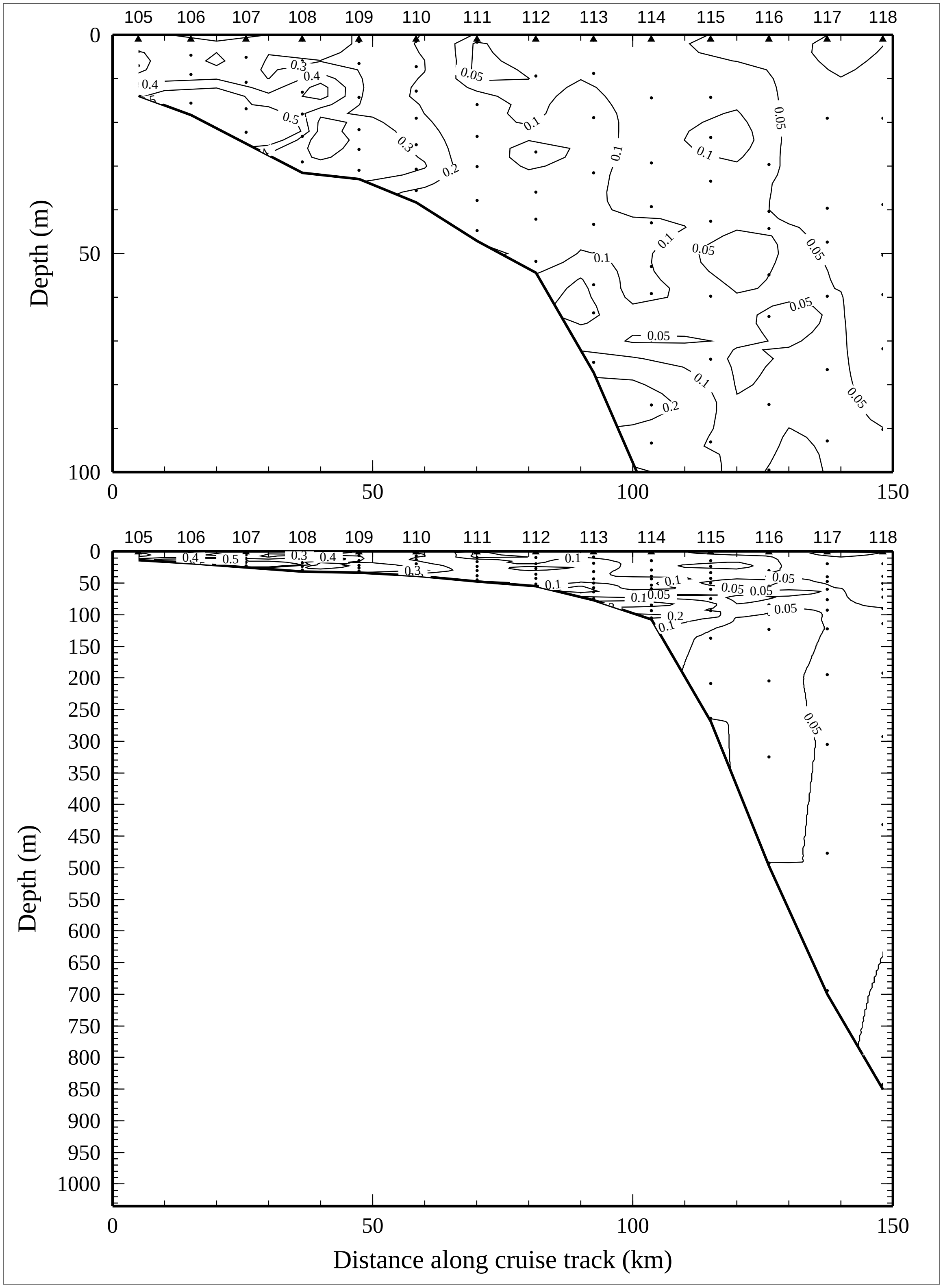

Figure 10.5.14. Ammonium (μmol·l^{-1}) on line 5 of LATEX A survey H10, 2-14 November 1994.

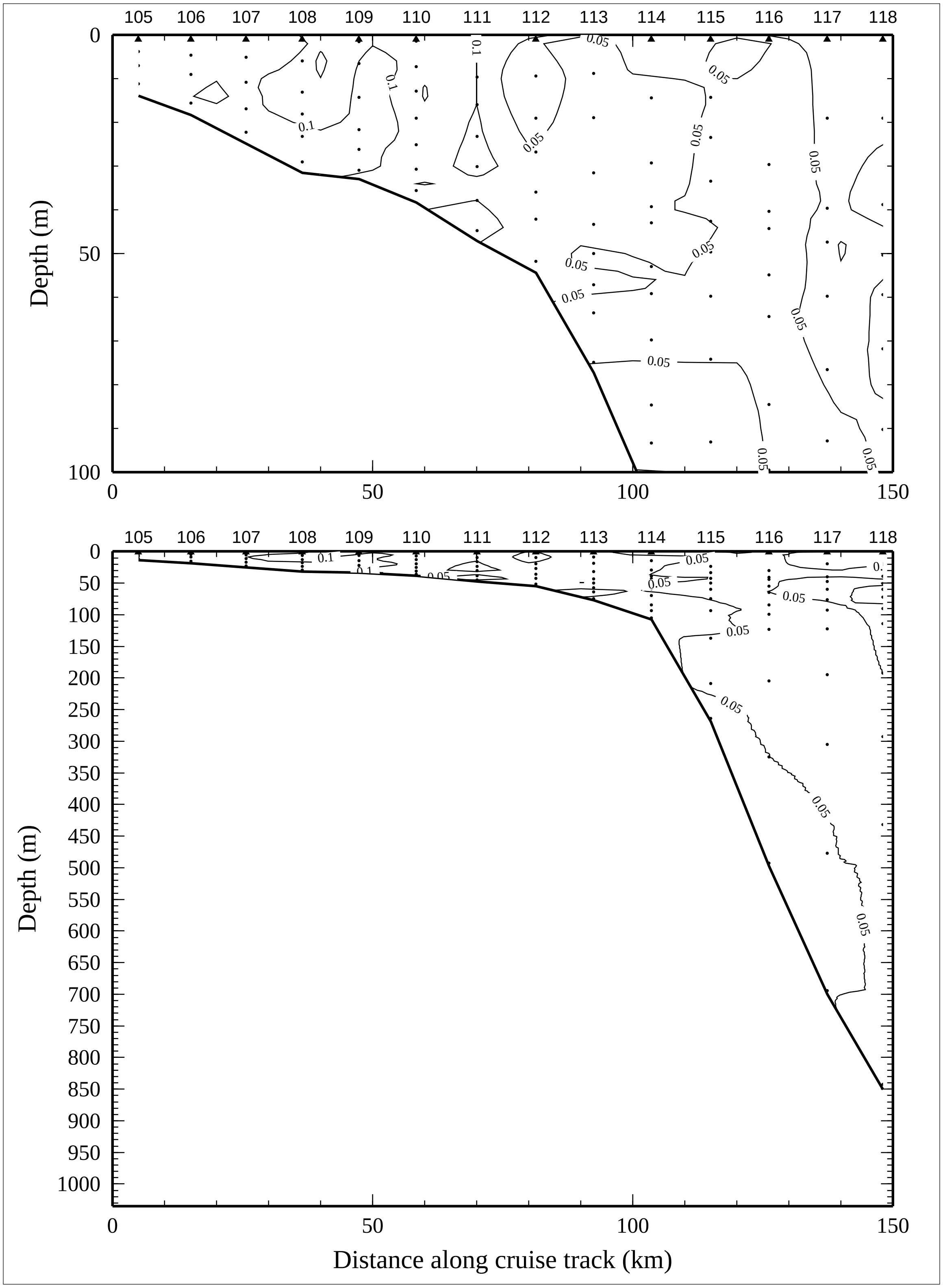

Figure 10.5.15. Urea (µmol·l-1) on line 5 of LATEX A survey H10,
2-14 November 1994.

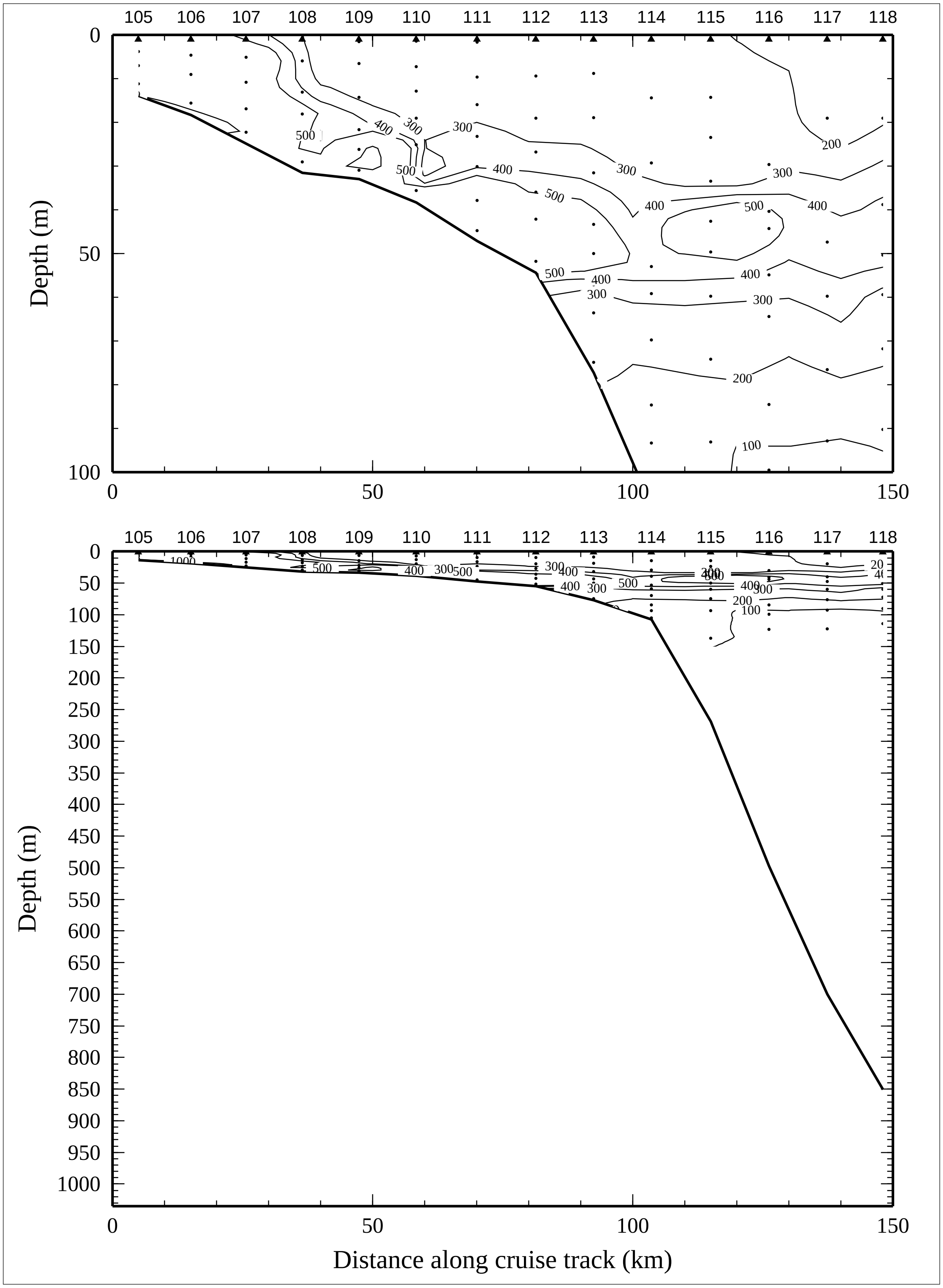

Figure 10.5.16. Chlorophyll a (ng·l-1) on line 5 of LATEX A survey H10,
2-14 November 1994.

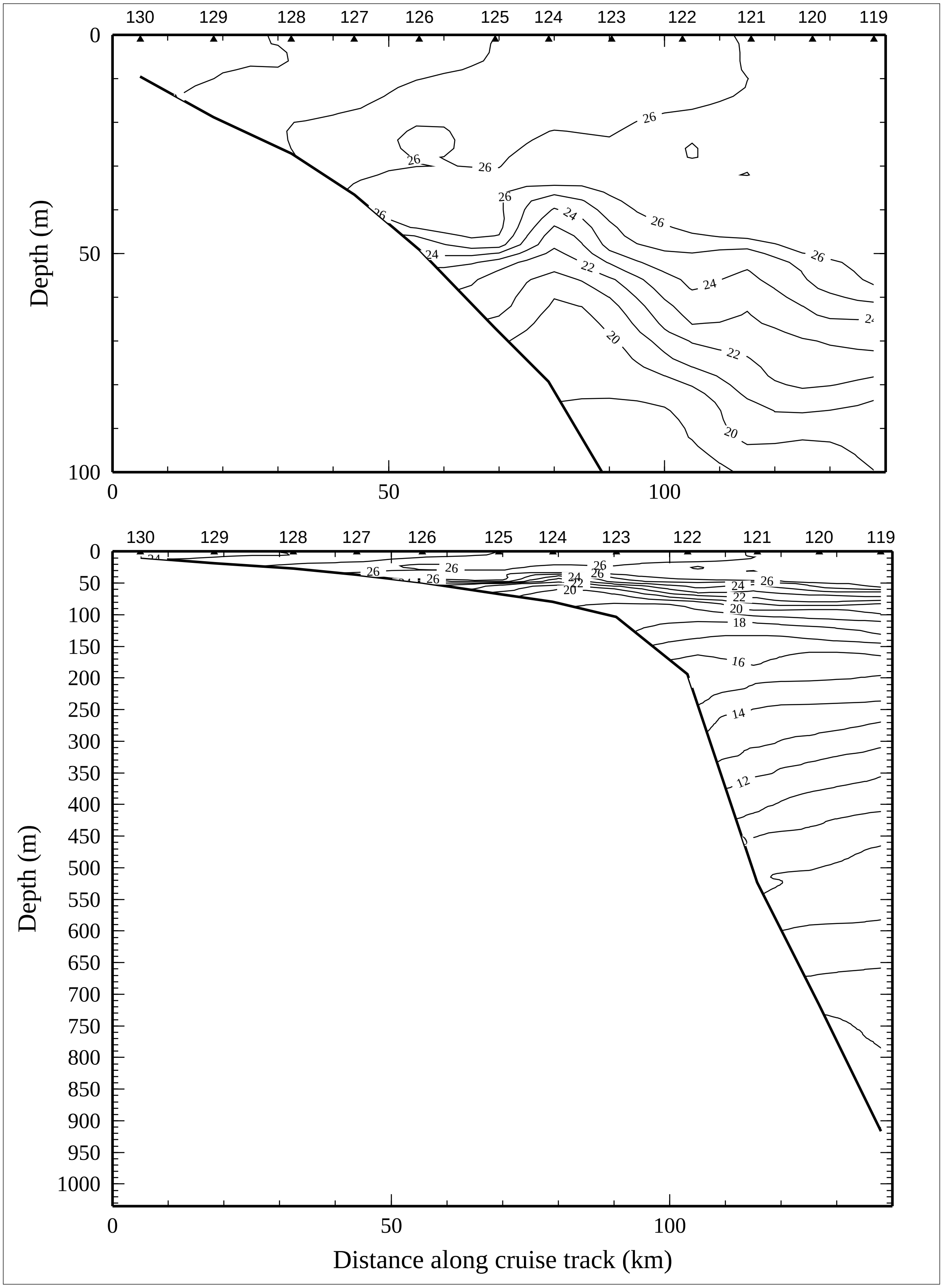

Figure 10.6.1. Potential temperature (˚C) on line 6 of LATEX A survey H10, 2-14 November 1994.

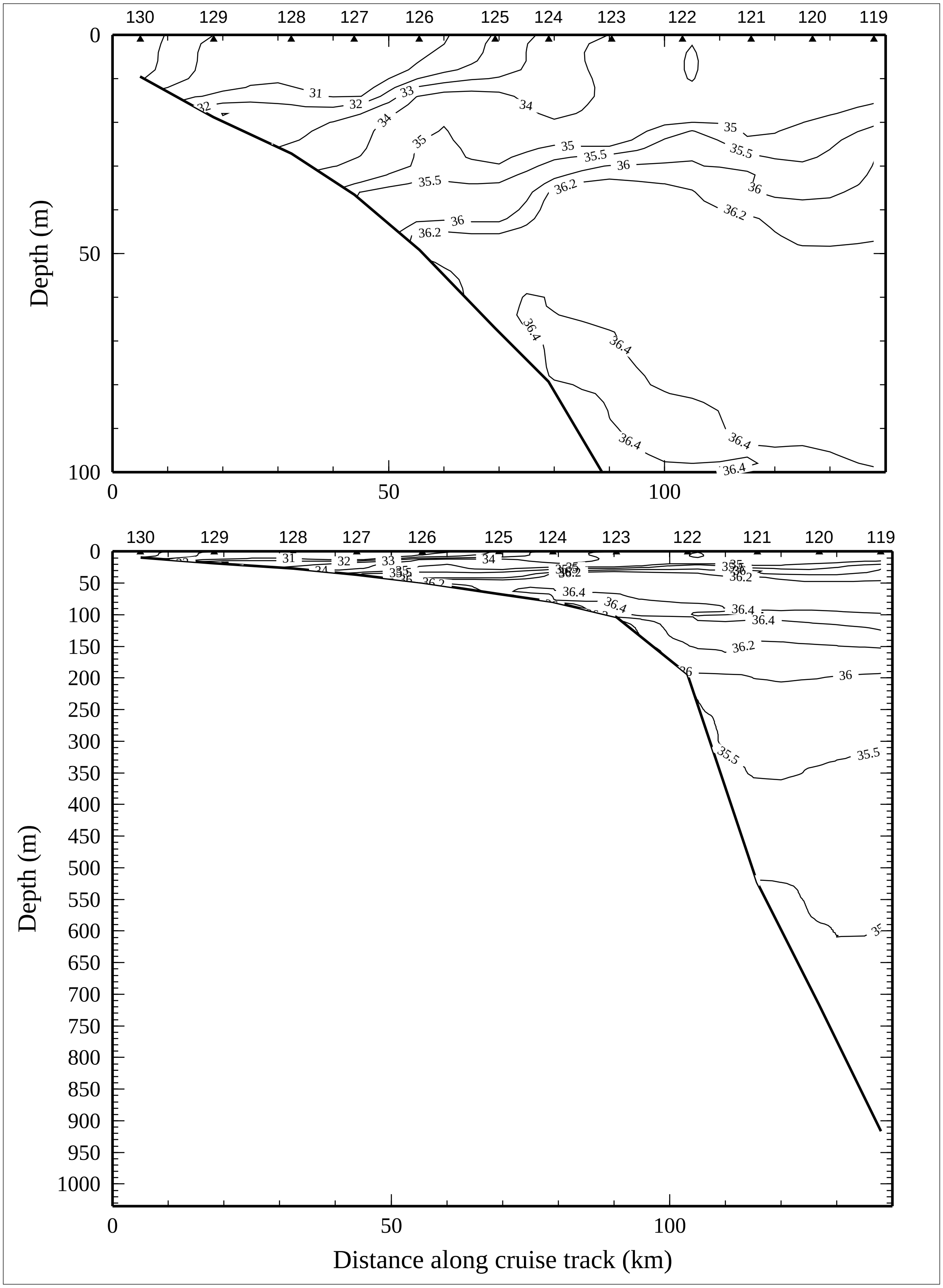

Figure 10.6.2. Salinity, derived from CTD data, on line 6 of LATEX A survey H10, 2-14 November 1994.

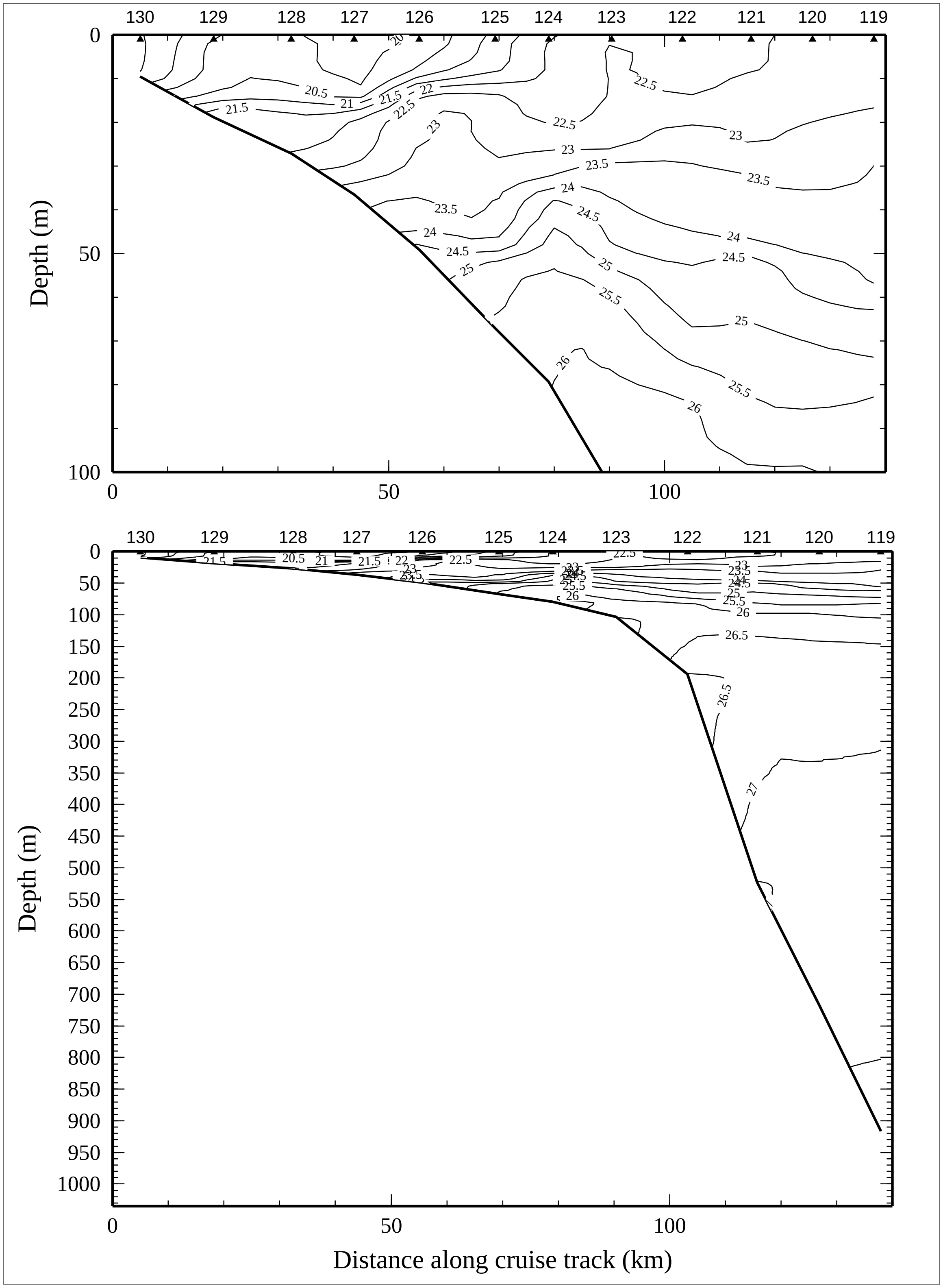

Figure 10.6.3. Density anomaly (σ_θ in kg·m^{-3}) on line 6 of LATEX A survey H10, 2-14 November 1994.

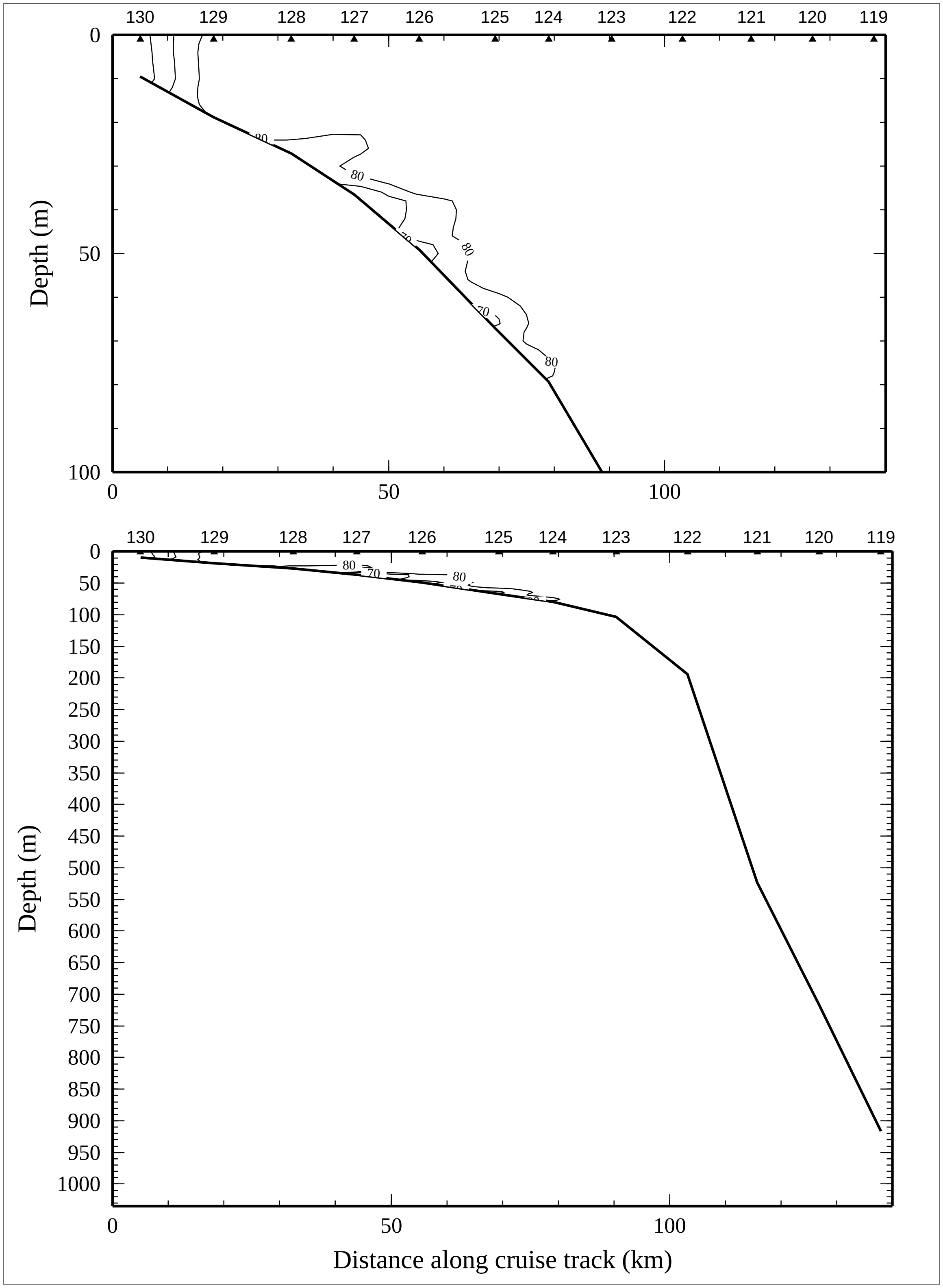

Figure 10.6.4. Percent transmission (660 nm wave length; 25-cm path length) on line 6 of LATEX A survey H10, 2-14 November 1994.

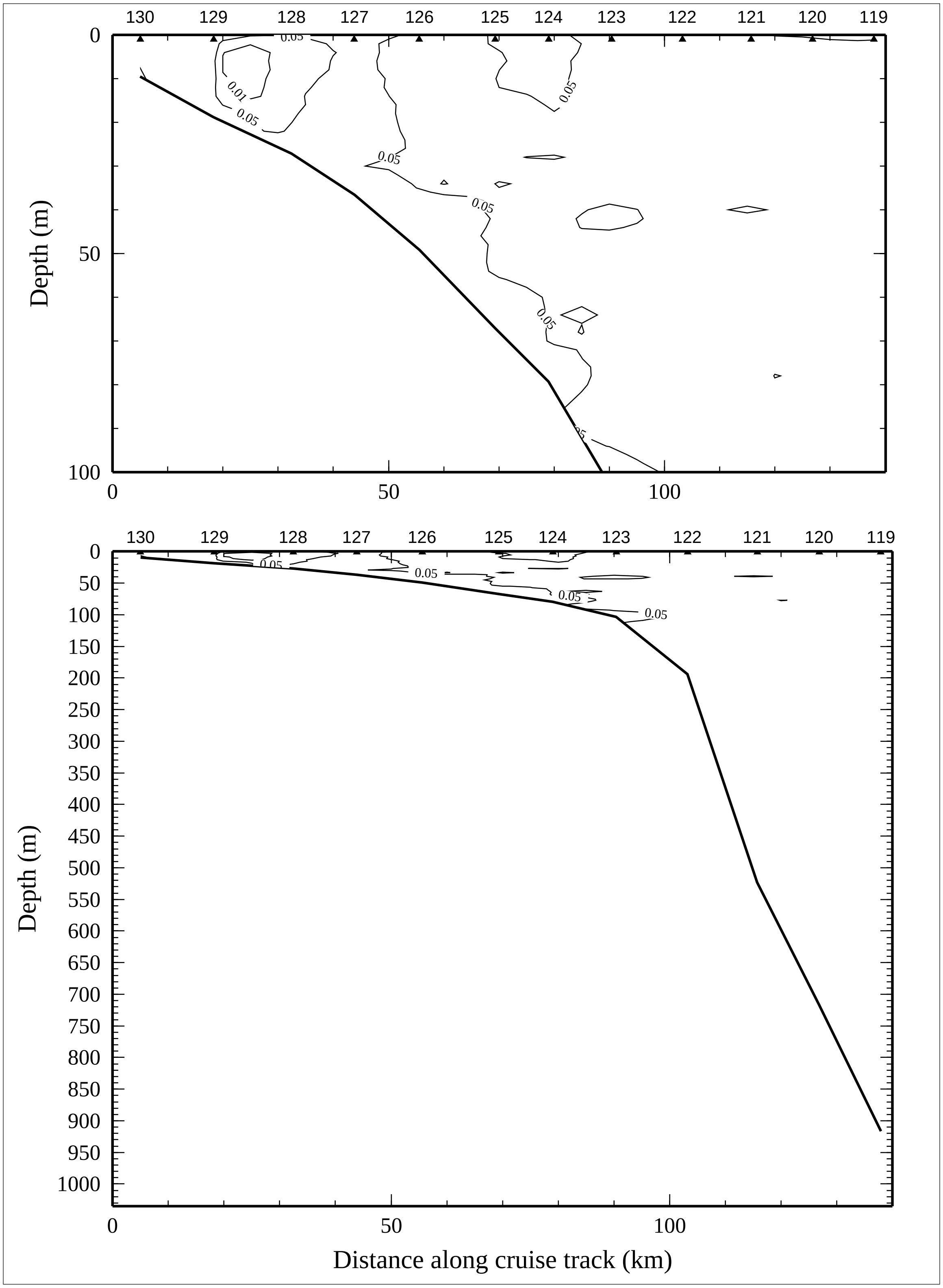

Figure 10.6.5. Optical backscatterance (voltage) on line 6 of LATEX A survey H10, 2-14 November 1994.

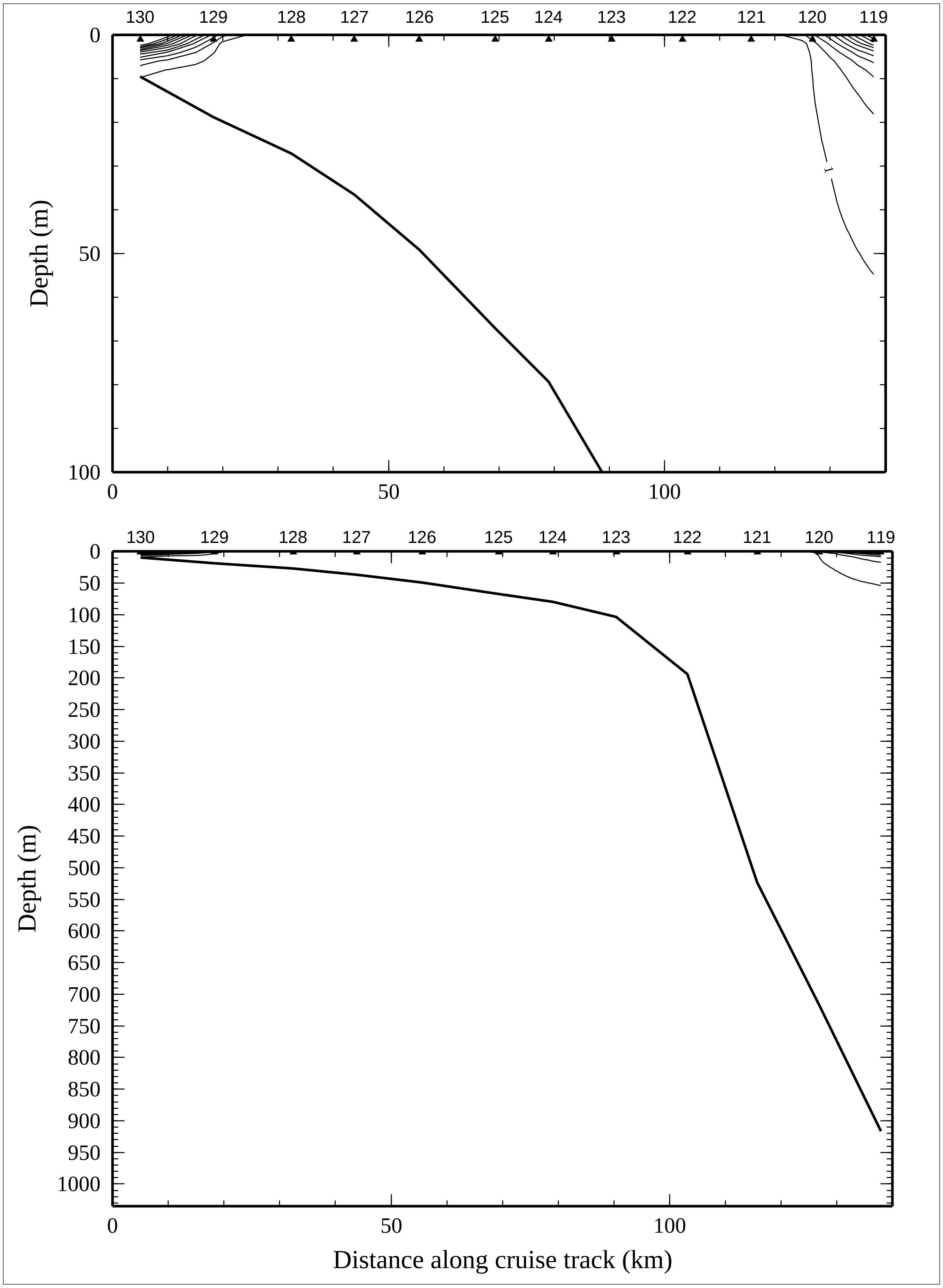

Figure 10.6.6. Downwelling irradiance as percent of surface irradiance on line 6 of LATEX A survey H10, 2-14 November 1994.

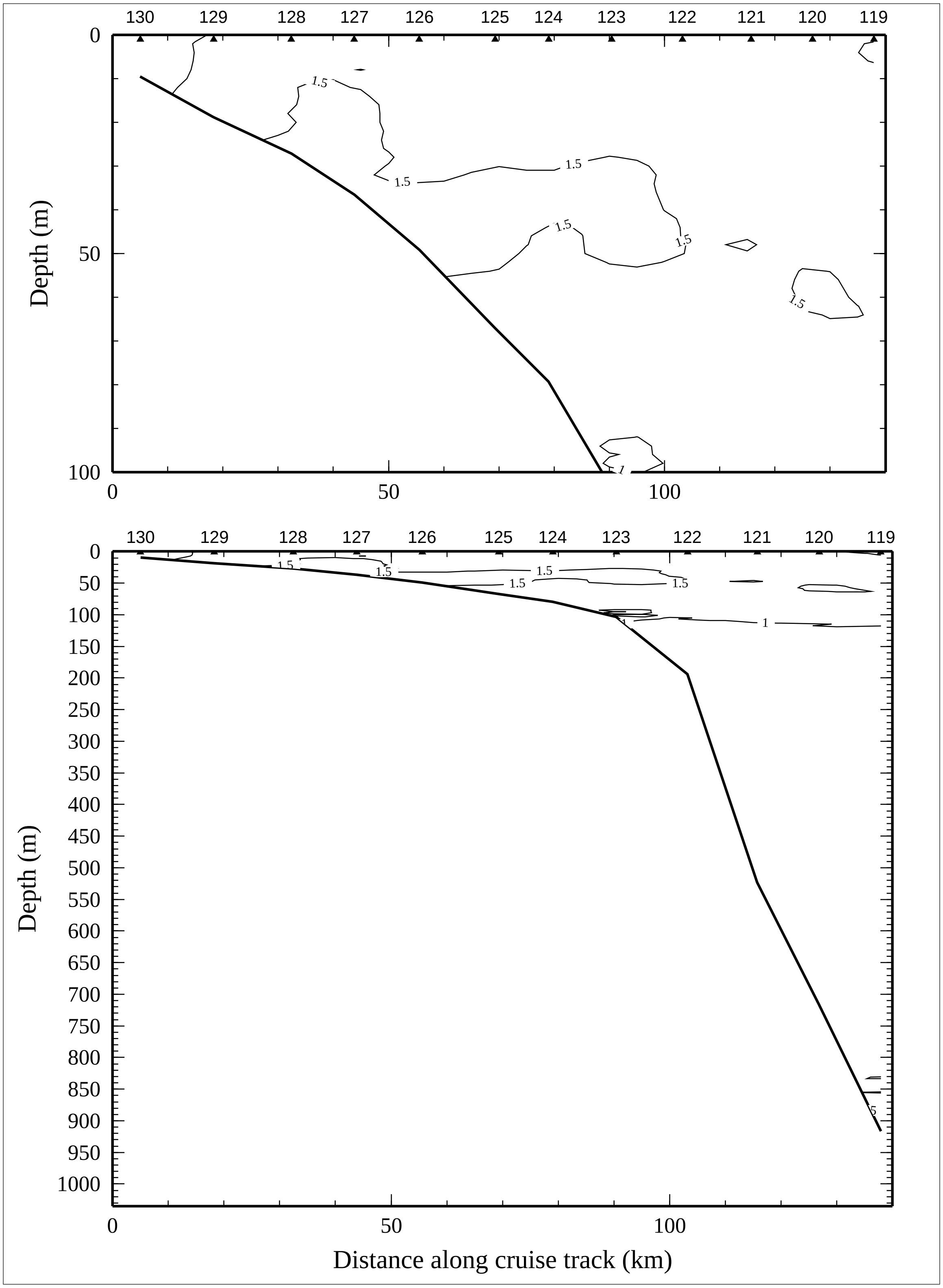

Figure 10.6.7. Relative fluorescence on line 6 of LATEX A survey H10,
2-14 November 1994.

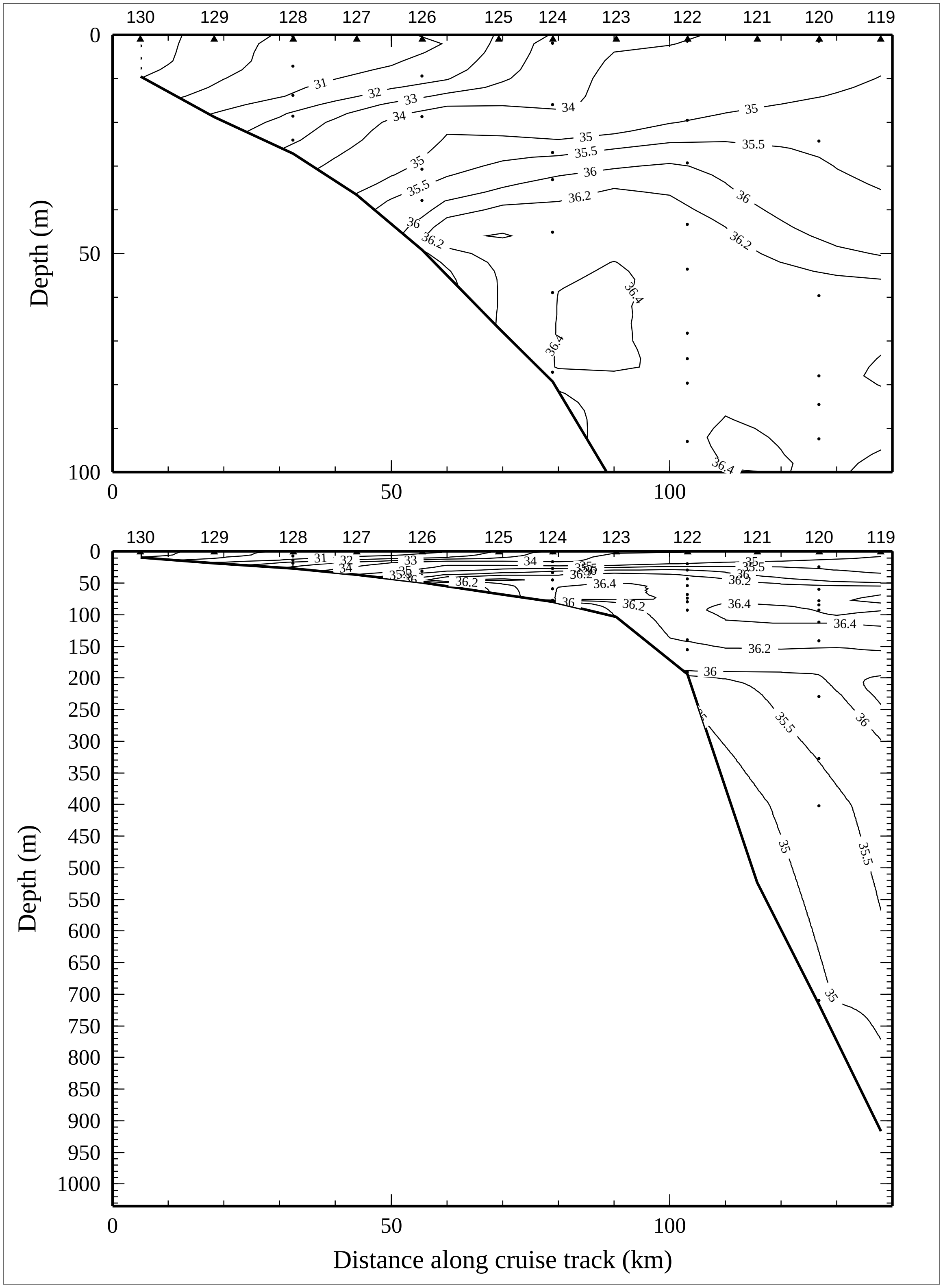

Figure 10.6.8. Bottle salinity on line 6 of LATEX A survey H10,
2-14 November 1994.

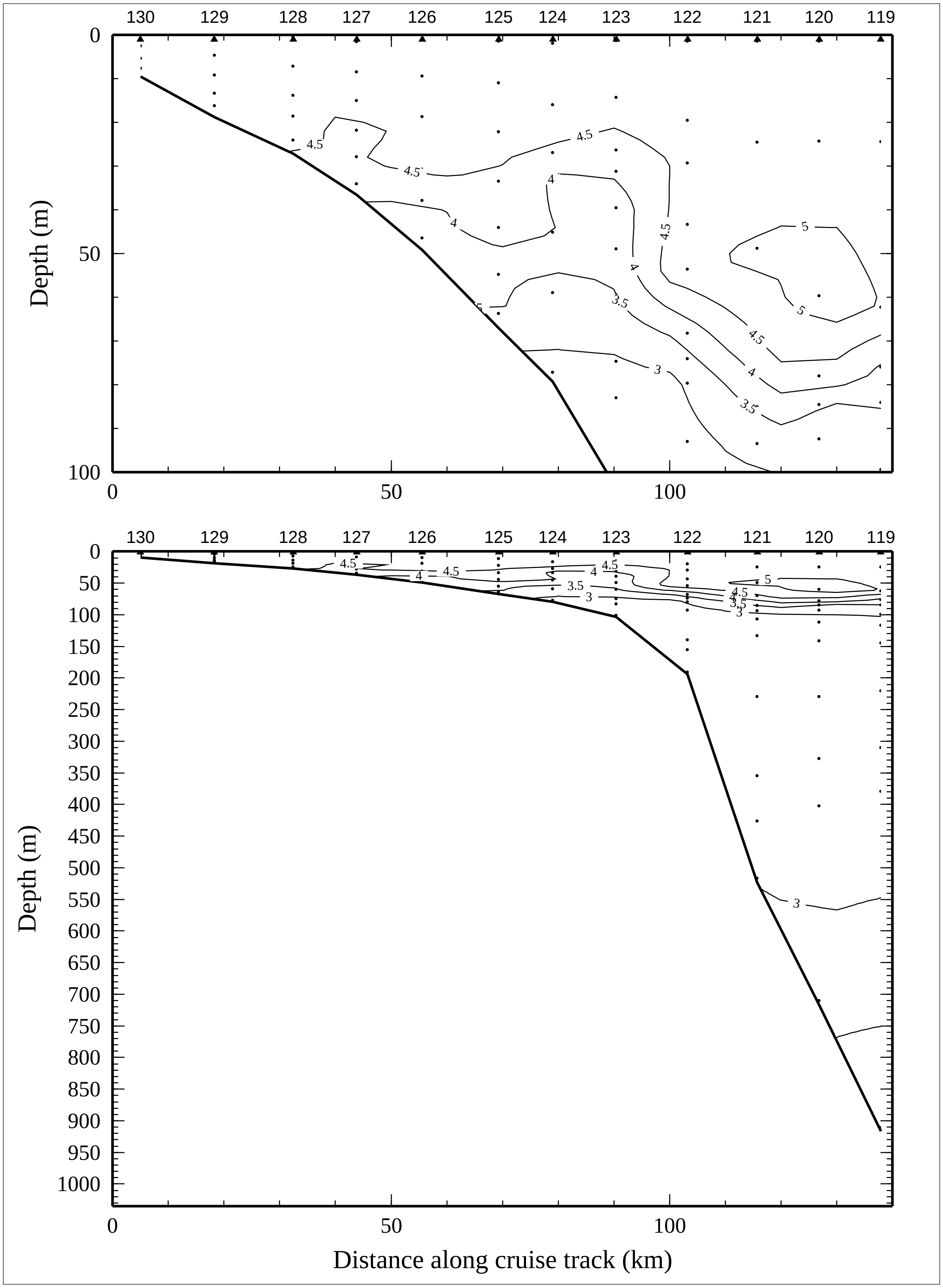

Figure 10.6.9. Dissolved oxygen (ml·l^{-1}) on line 6 of LATEX A survey H10, 2-14 November 1994.

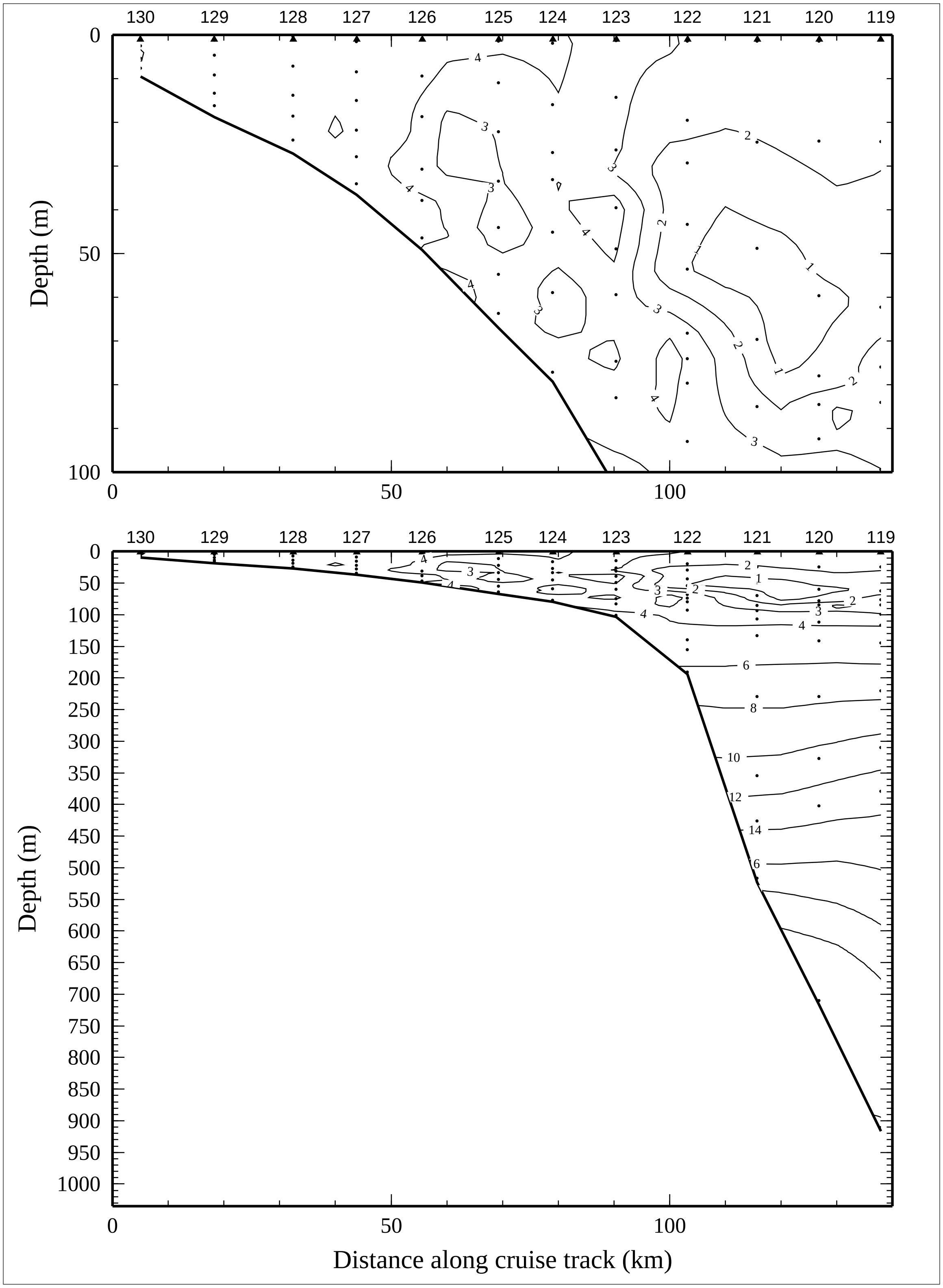

Figure 10.6.10. Silicate (μmol·l-1) on line 6 of LATEX A survey H10, 2-14 November 1994.

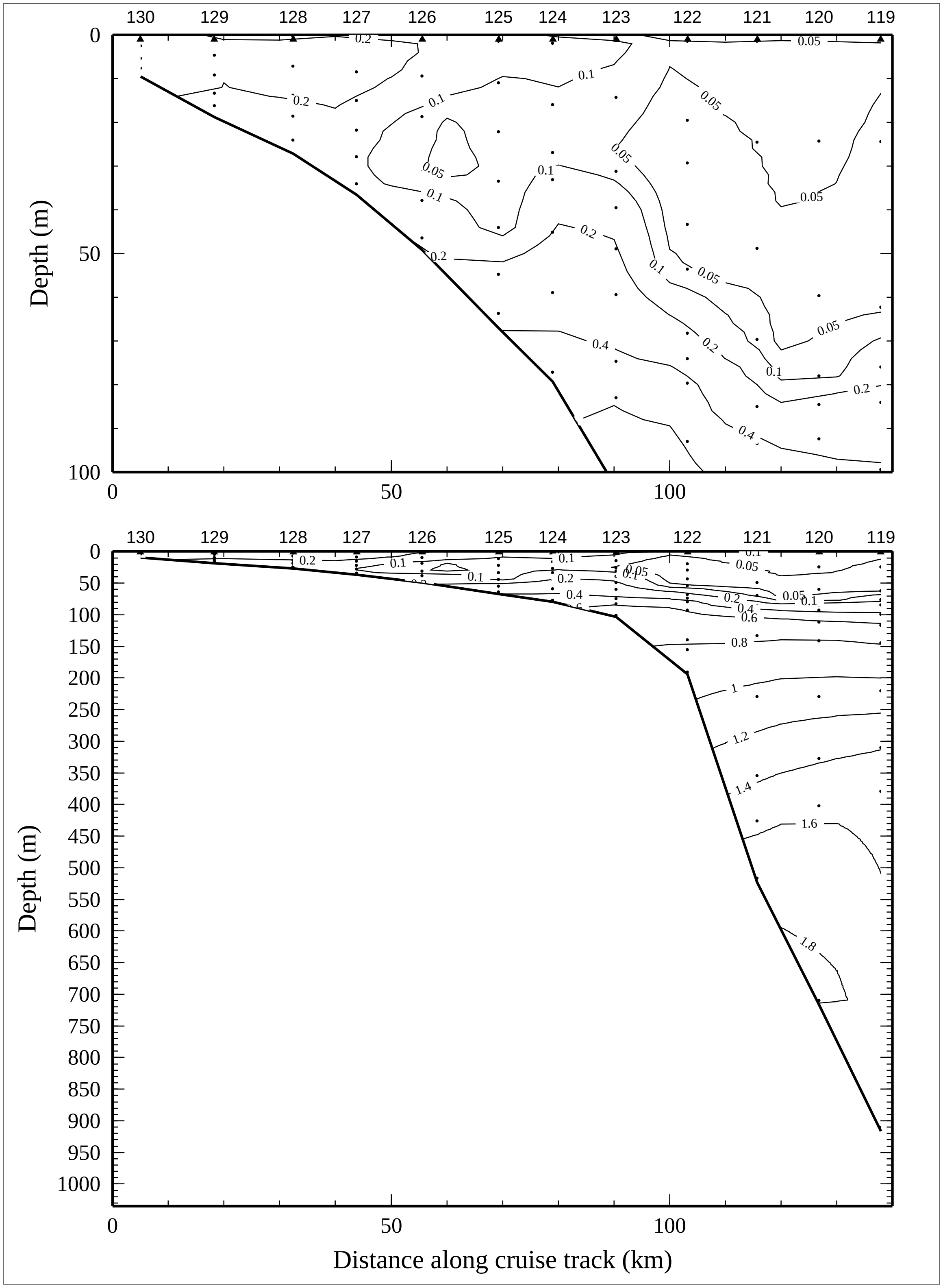

Figure 10.6.11. Phosphate (μmol·l-1) on line 6 of LATEX A survey H10, 2-14 November 1994.

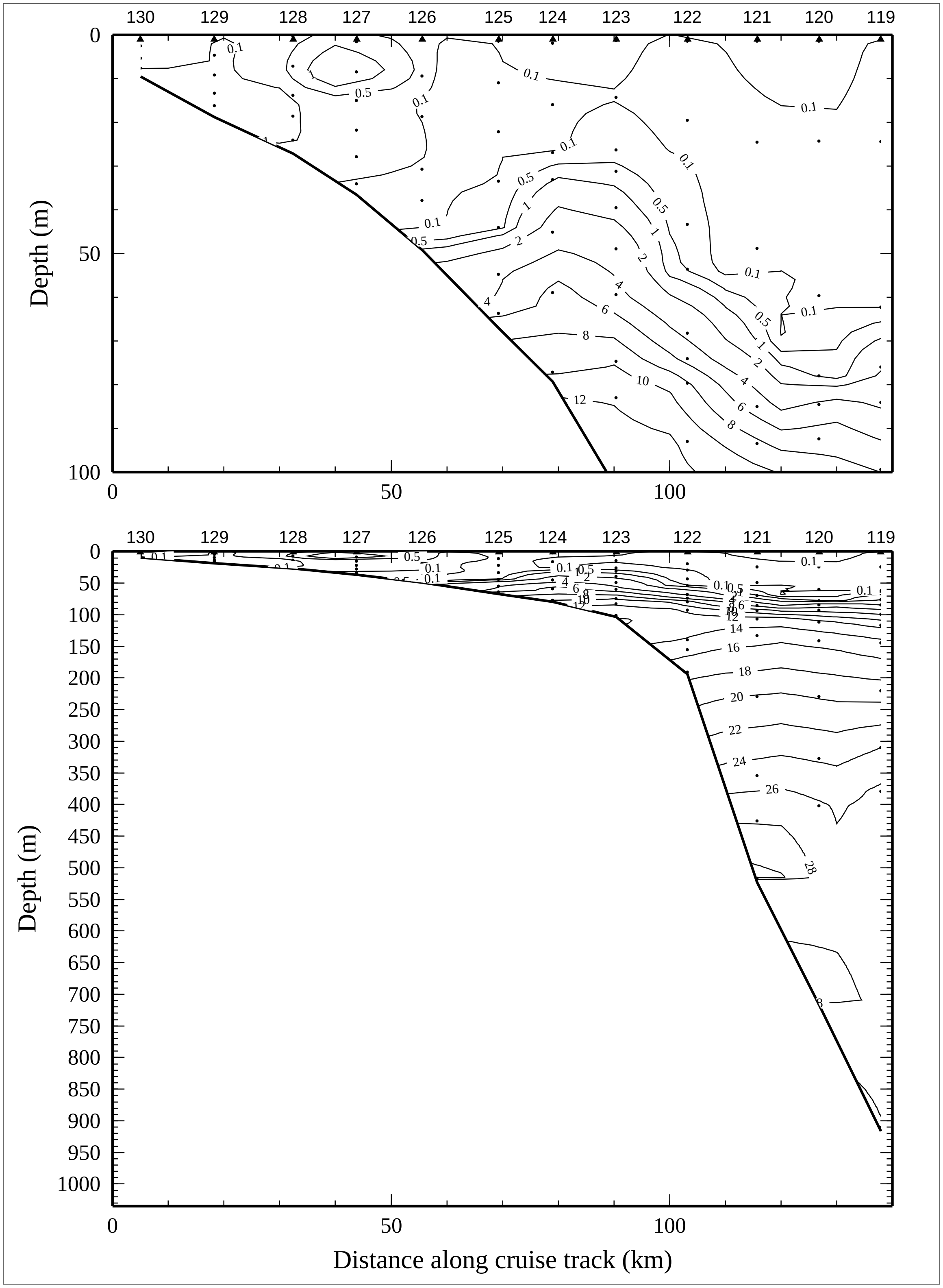

Figure 10.6.12. Nitrate (µmol·l-1) on line 6 of LATEX A survey H10, 2-14 November 1994.

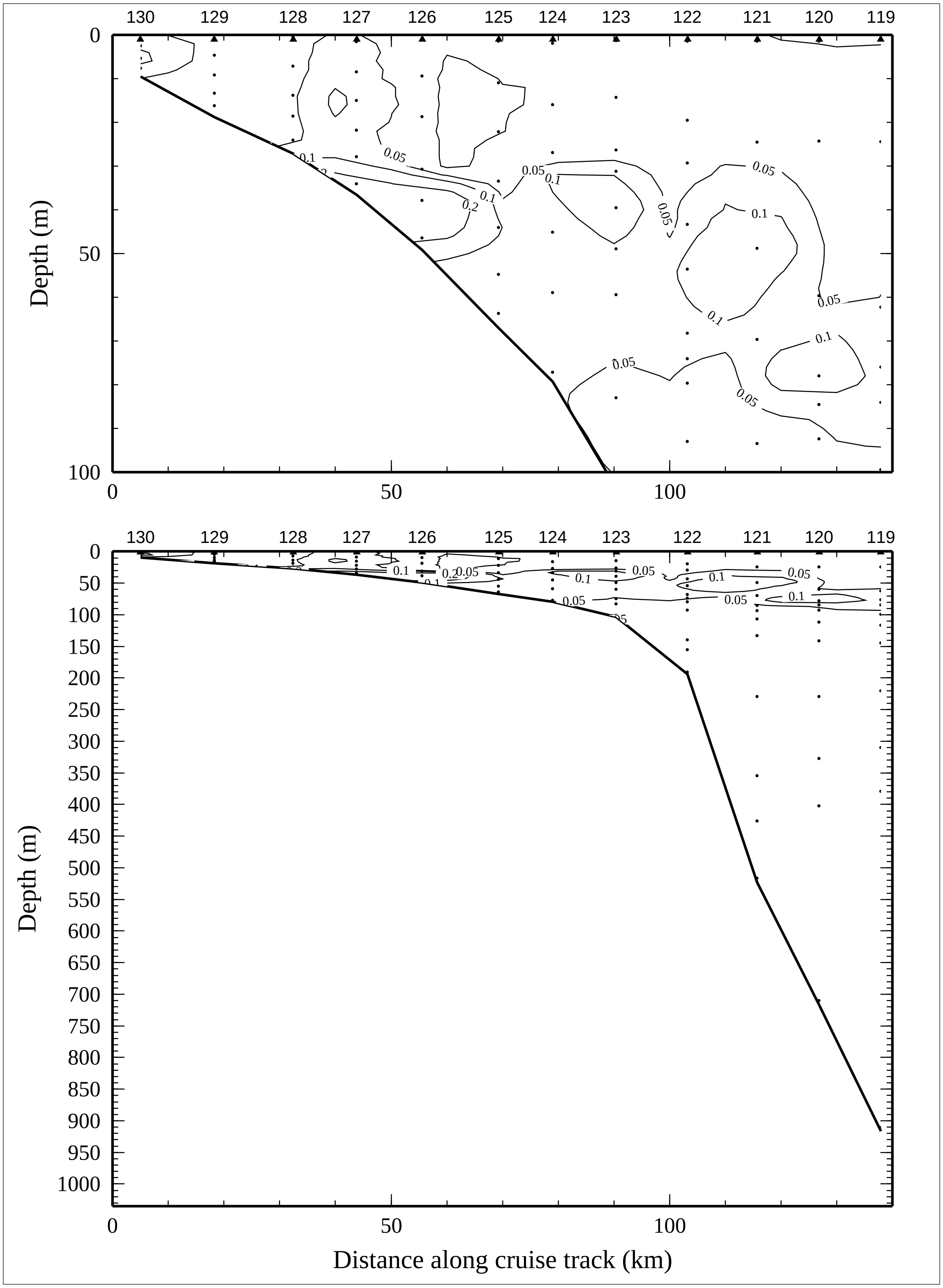

Figure 10.6.13. Nitrite (μmol·l-1) on line 6 of LATEX A survey H10, 2-14 November 1994.

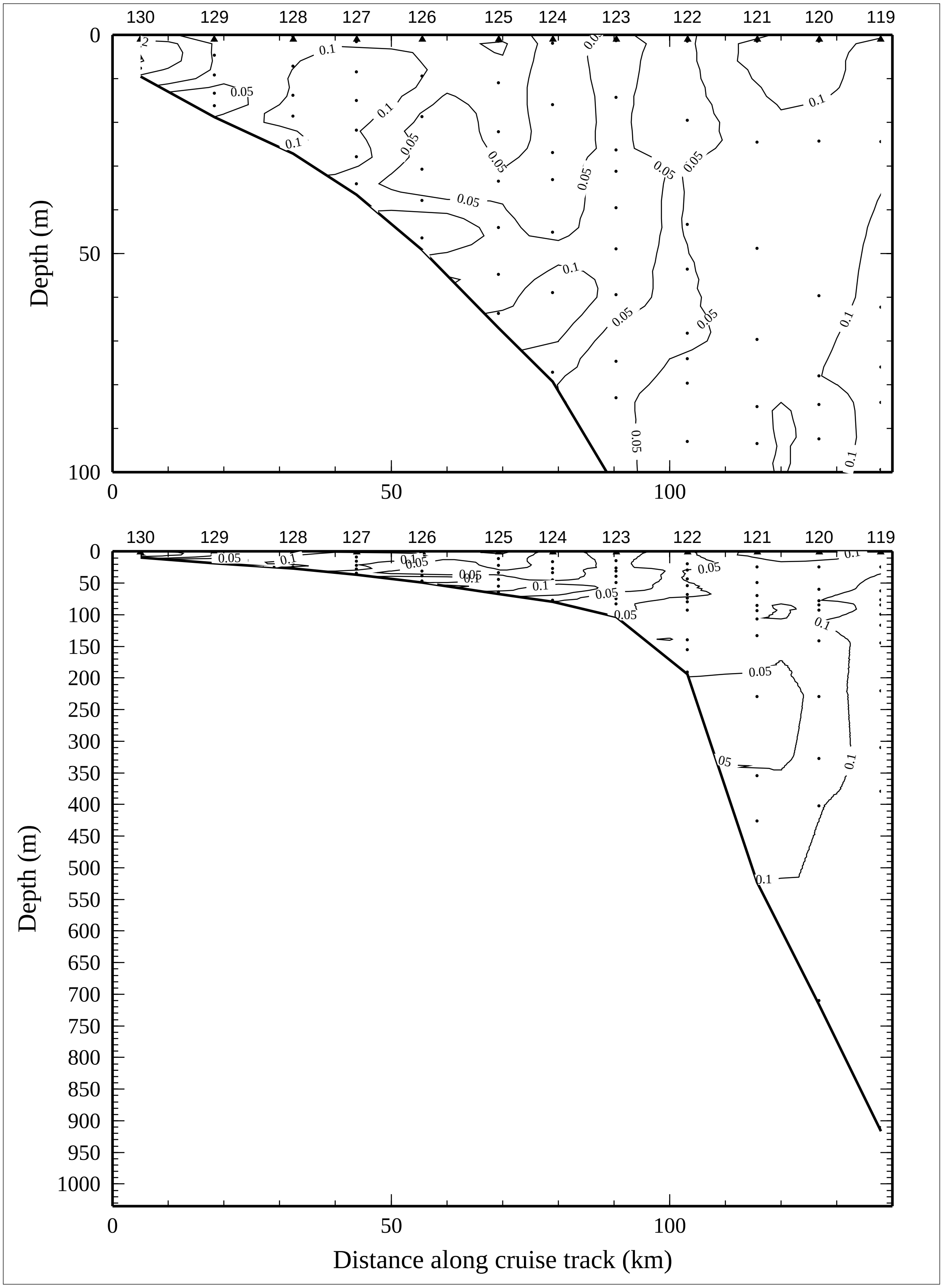

Figure 10.6.14. Ammonium (μmol·l⁻¹) on line 6 of LATEX A survey H10, 2-14 November 1994.

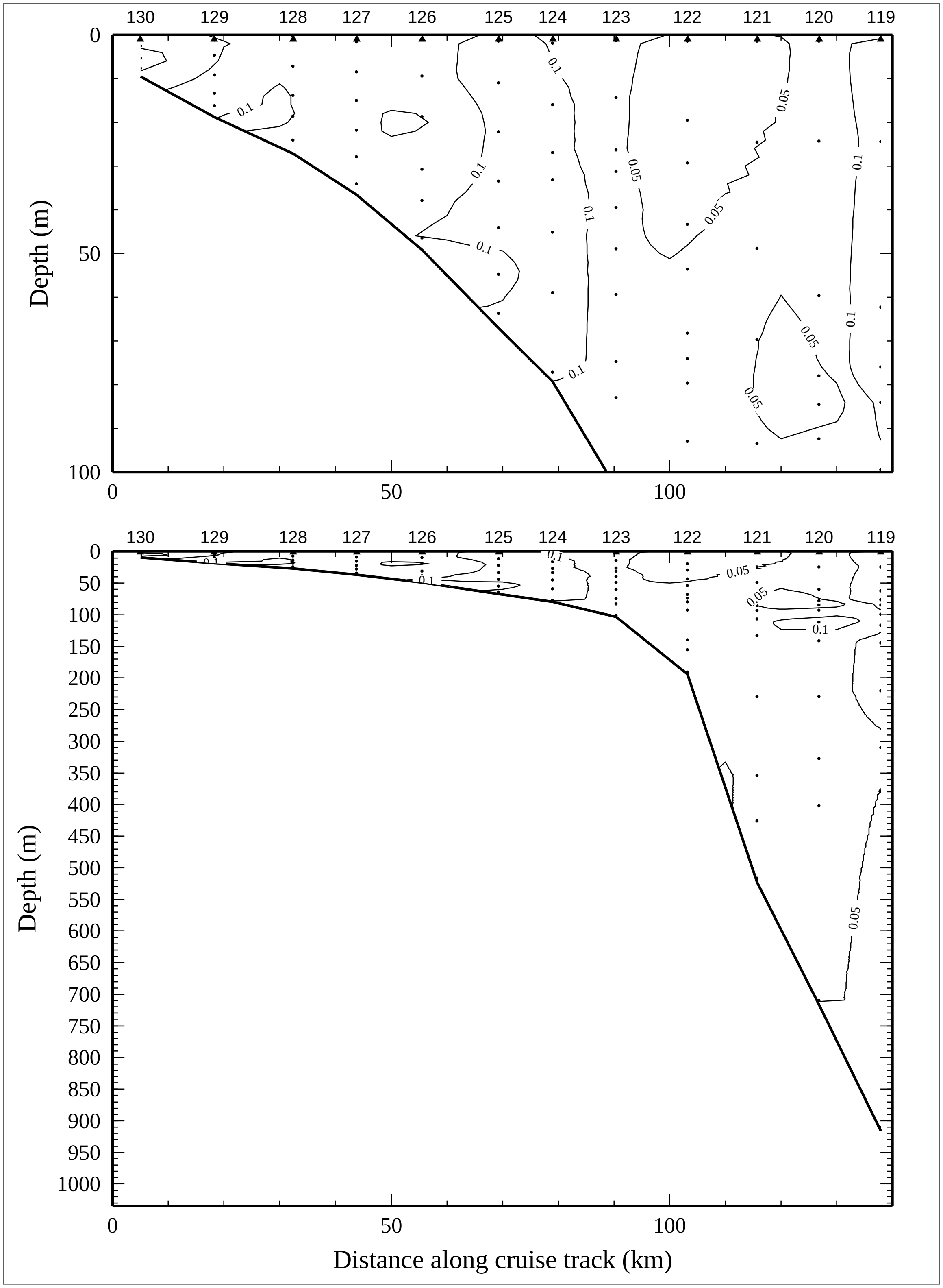

Figure 10.6.15. Urea (µmol·l^{-1}) on line 6 of LATEX A survey H10,
2-14 November 1994.

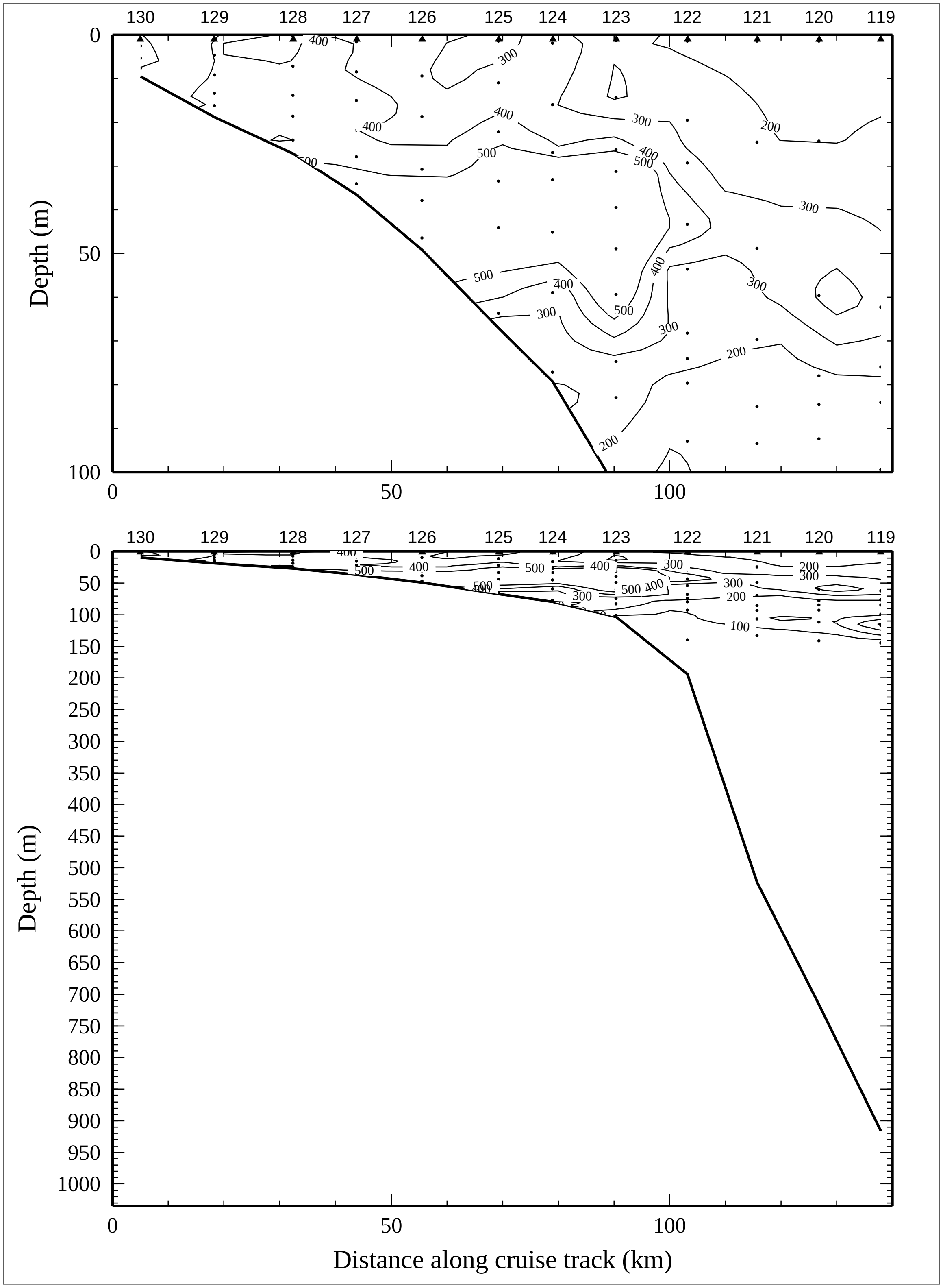

Figure 10.6.16. Chlorophyll a (ng·l^{-1}) on line 6 of LATEX A survey H10, 2-14 November 1994.

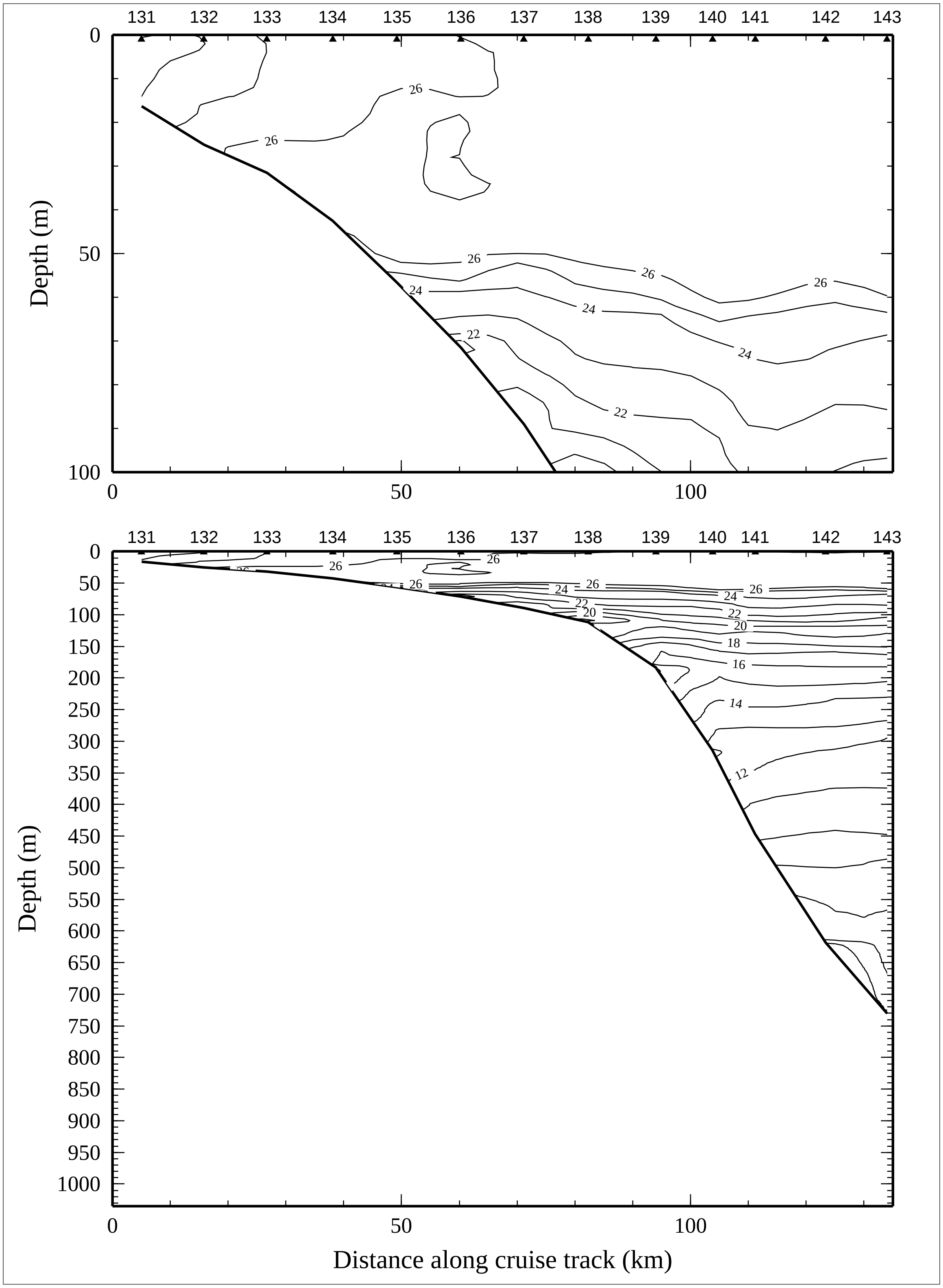

Figure 10.7.1. Potential temperature (˚C) on line 7 of LATEX A survey H10,
2-14 November 1994.

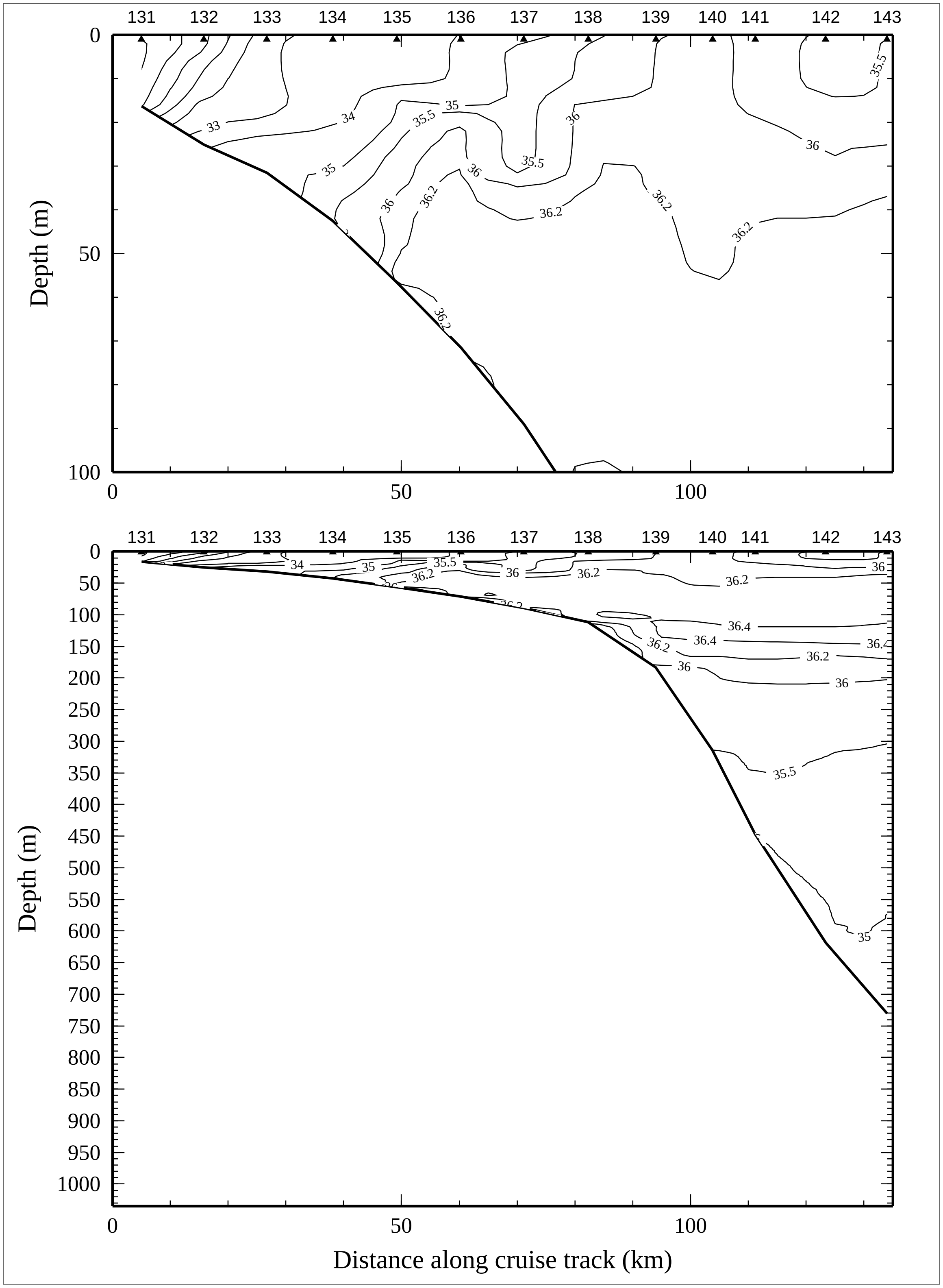

Figure 10.7.2. Salinity, derived from CTD data, on line 7 of LATEX A survey H10, 2-14 November 1994.

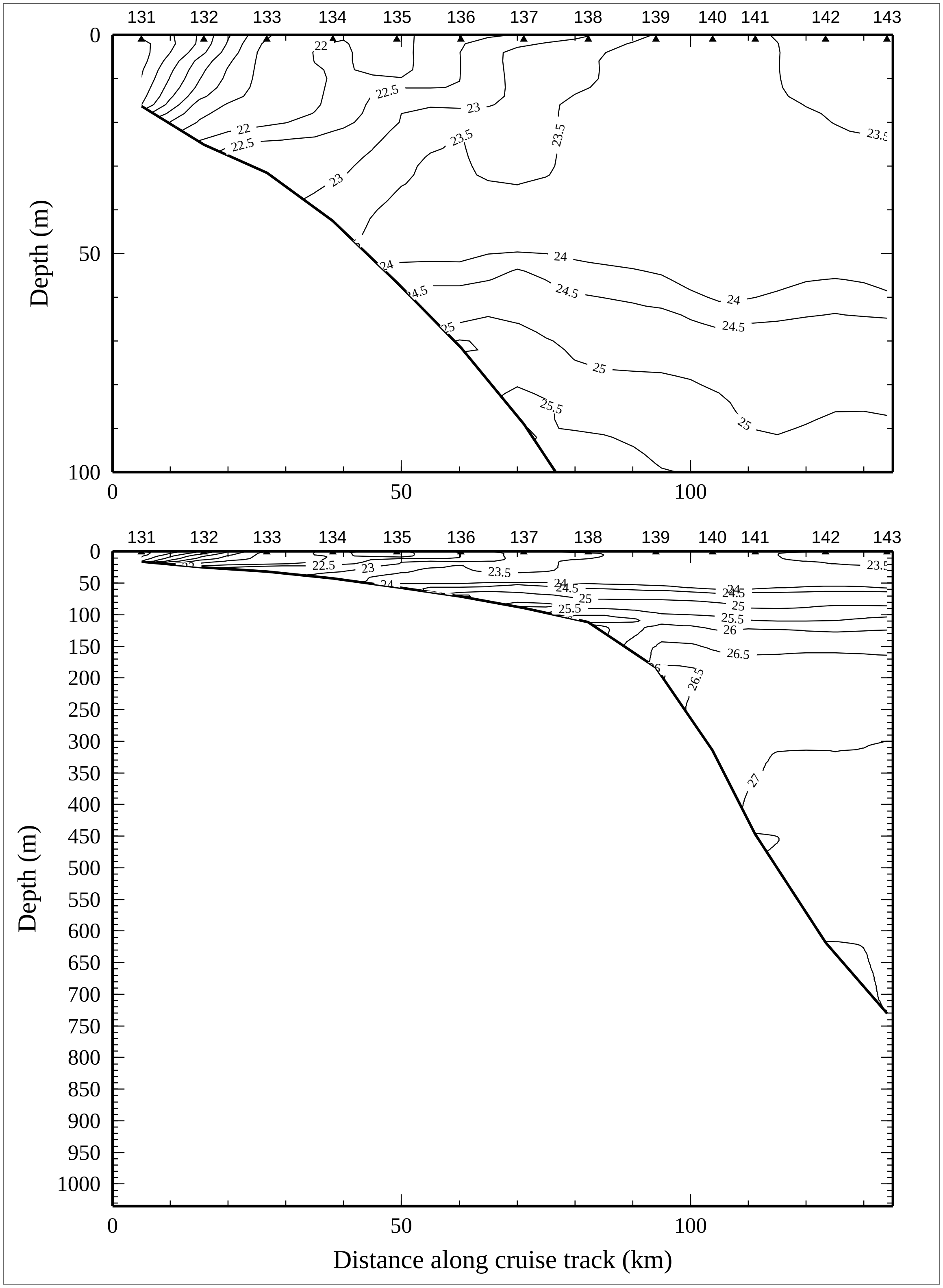

Figure 10.7.3. Density anomaly (σ_θ in kg·m^{-3}) on line 7 of LATEX A survey H10, 2-14 November 1994.

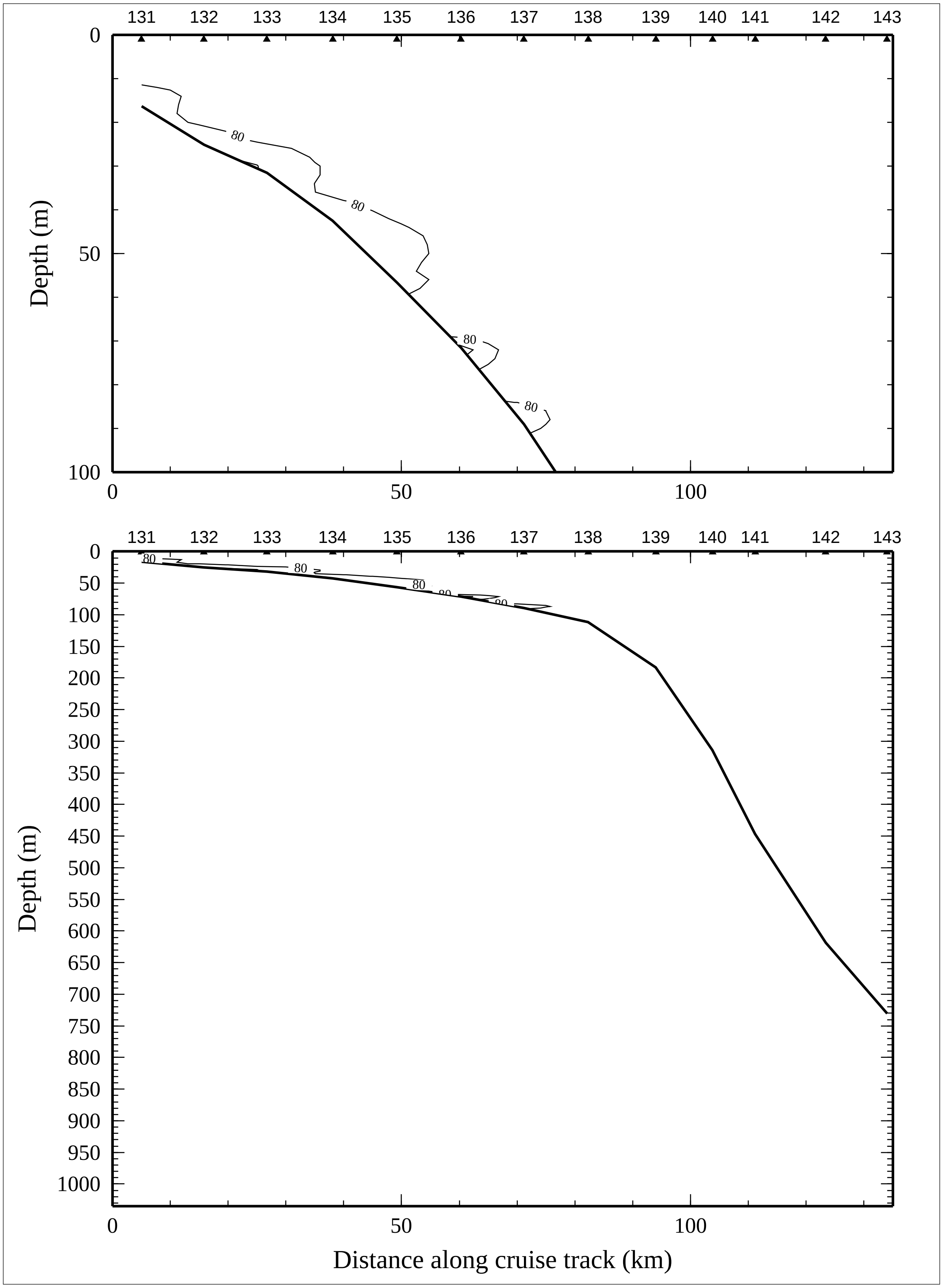

Figure 10.7.4. Percent transmission (660 nm wave length; 25-cm path length) on line 7 of LATEX A survey H10, 2-14 November 1994.

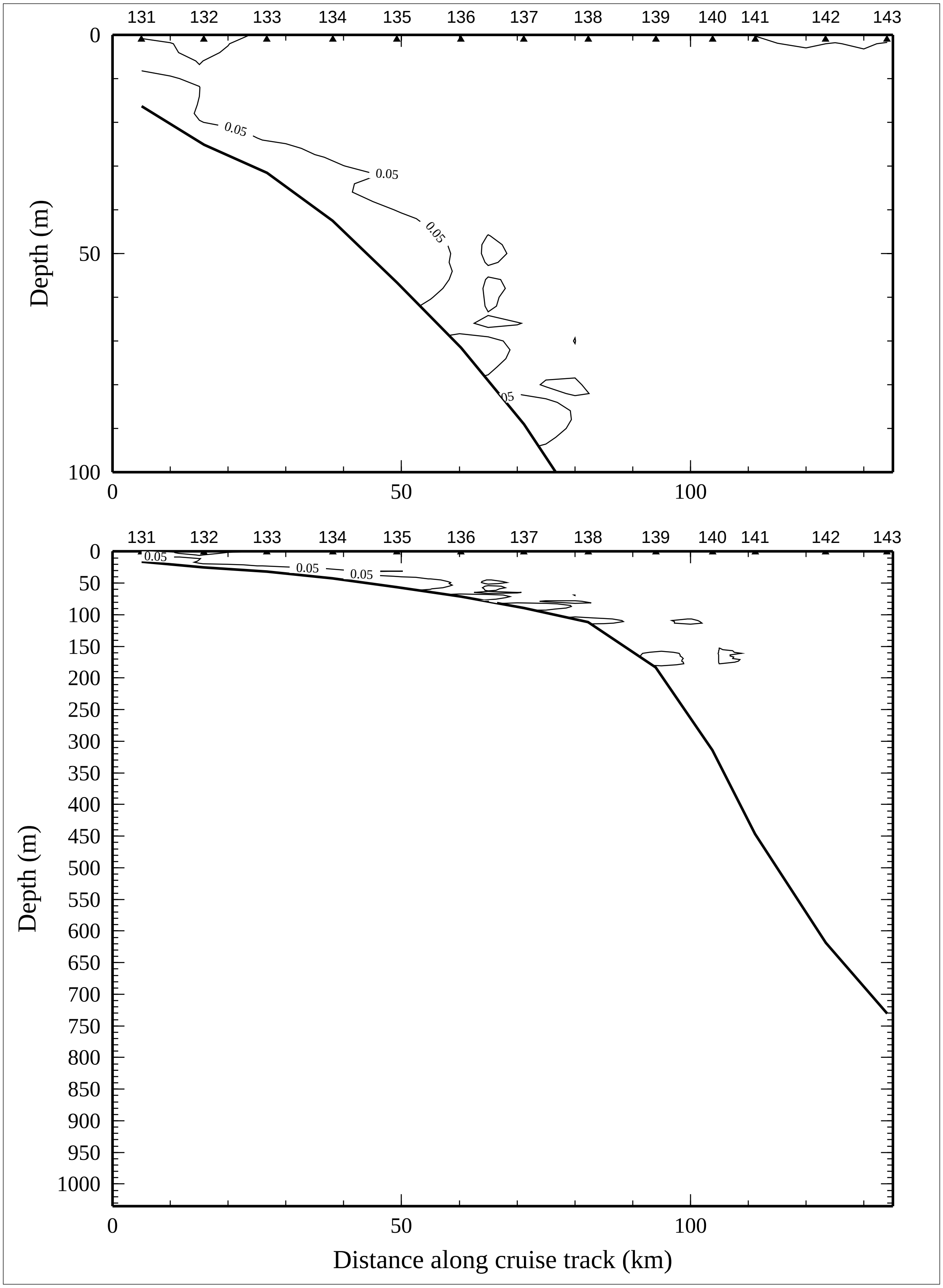

Figure 10.7.5. Optical backscatterance (voltage) on line 7 of LATEX A survey H10, 2-14 November 1994.

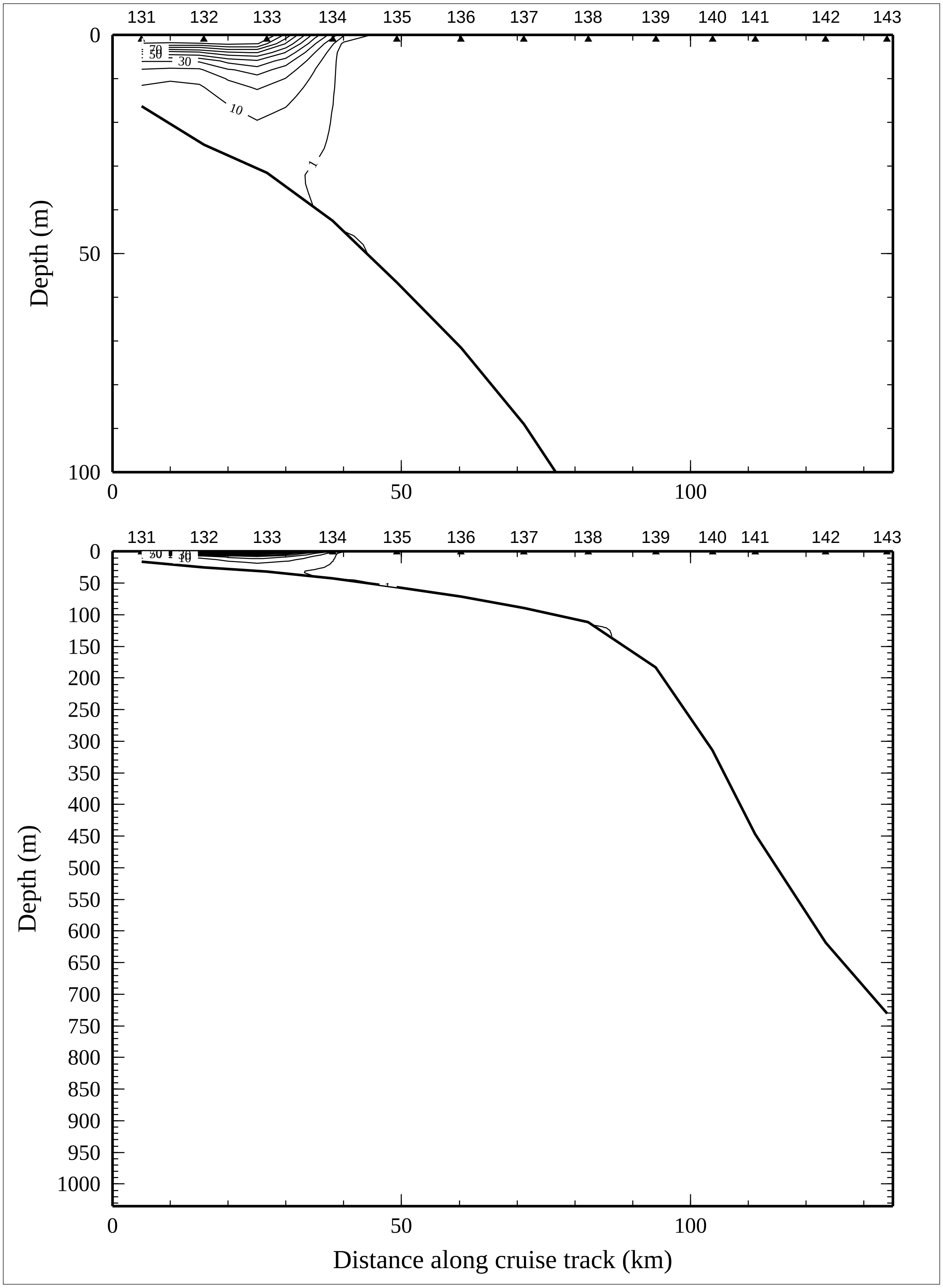

Figure 10.7.6. Downwelling irradiance as percent of surface irradiance on line 7 of LATEX A survey H10, 2-14 November 1994.

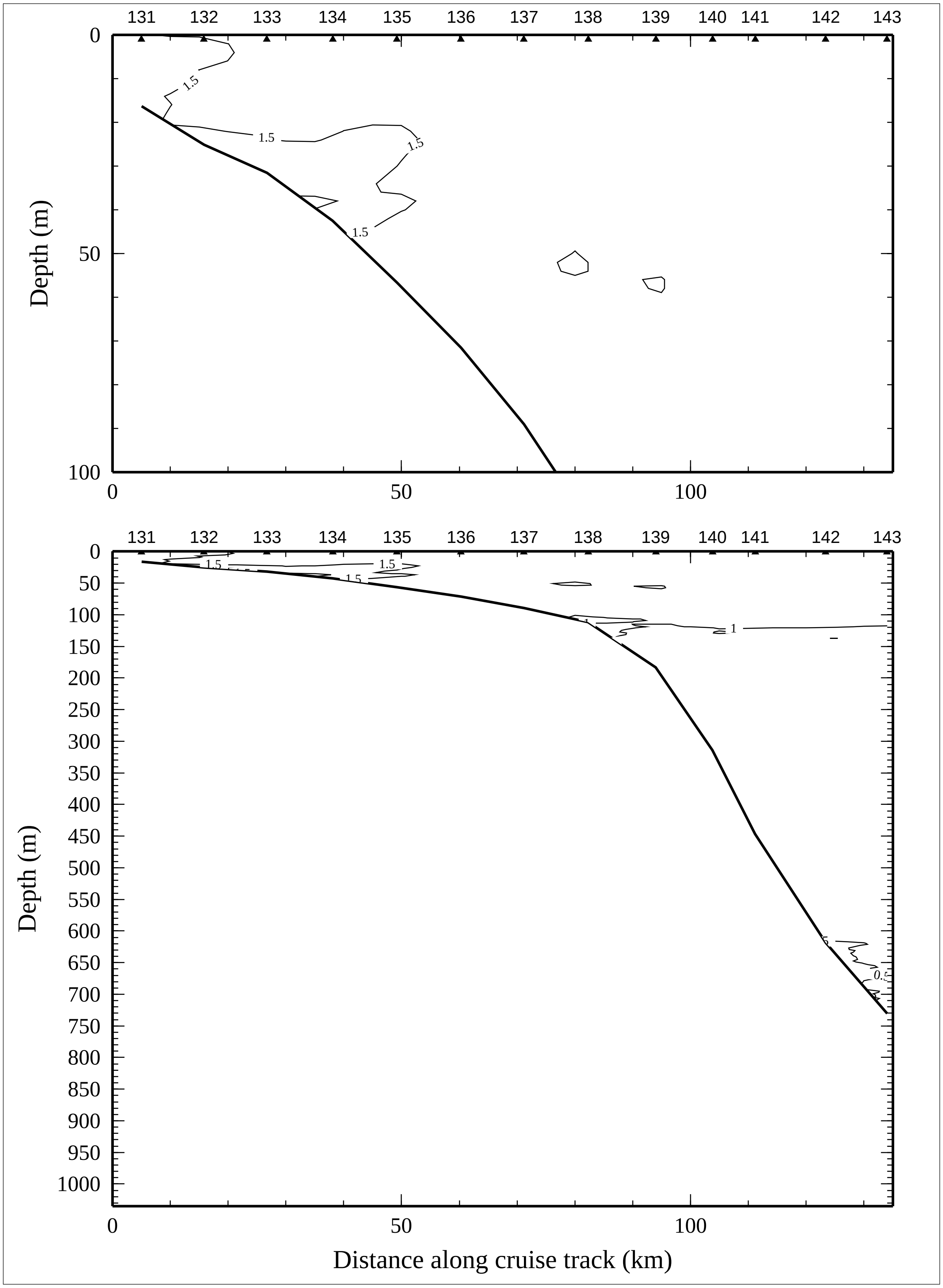

Figure 10.7.7. Relative fluorescence on line 7 of LATEX A survey H10, 2-14 November 1994.

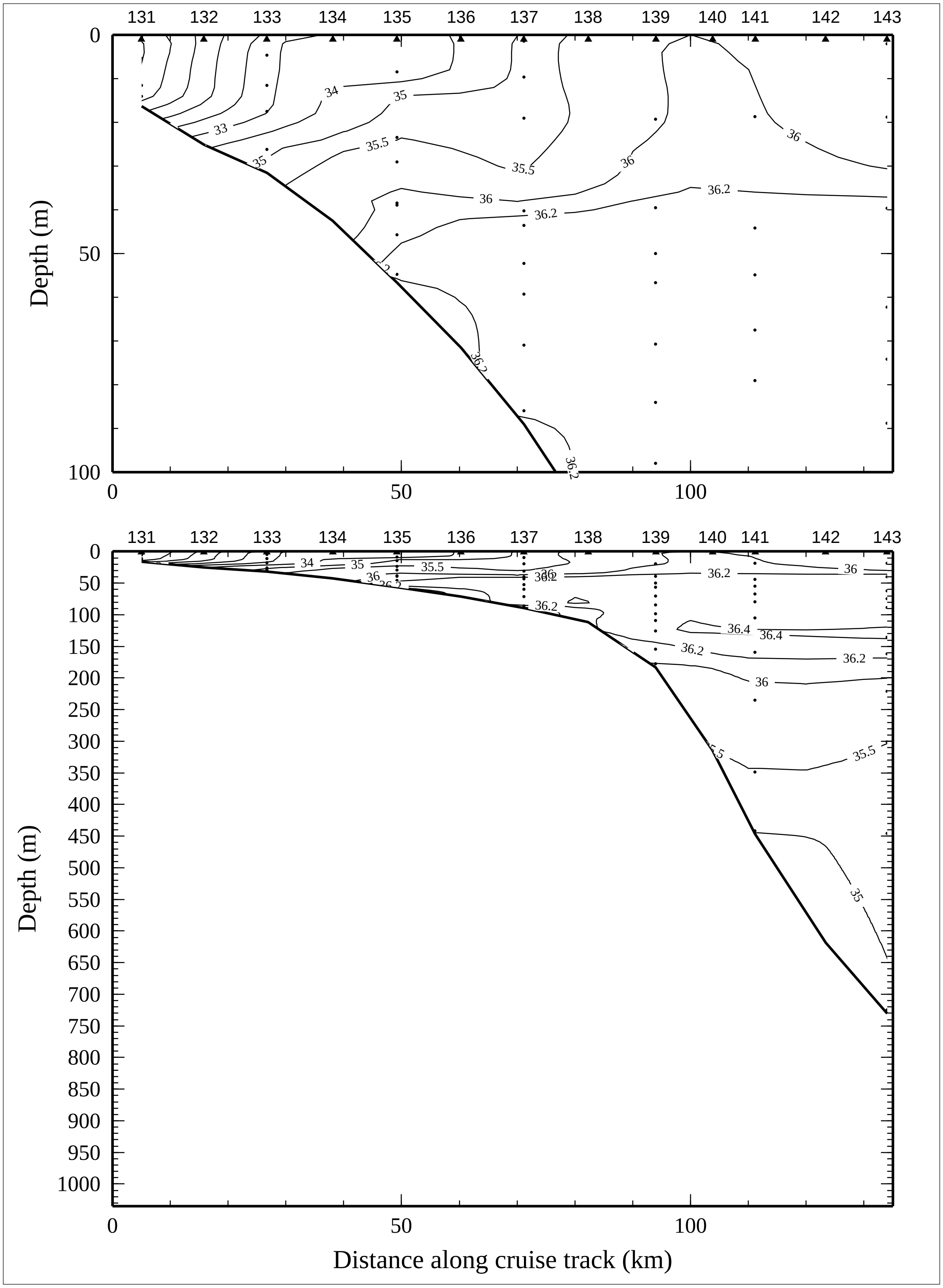

Figure 10.7.8. Bottle salinity on line 7 of LATEX A survey H10, 2-14 November 1994.

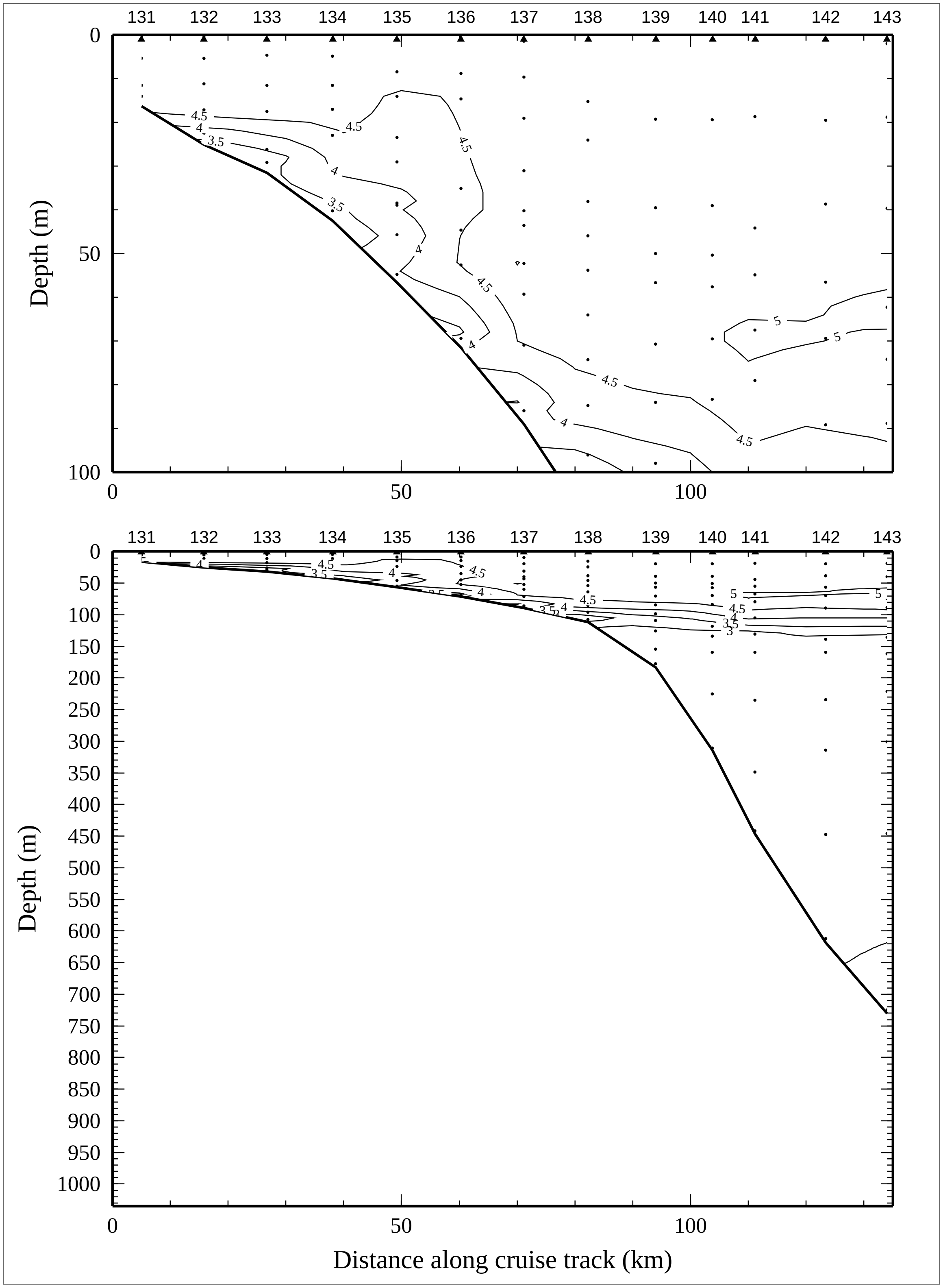

Figure 10.7.9. Dissolved oxygen (ml·l^{-1}) on line 7 of LATEX A survey H10, 2-14 November 1994.

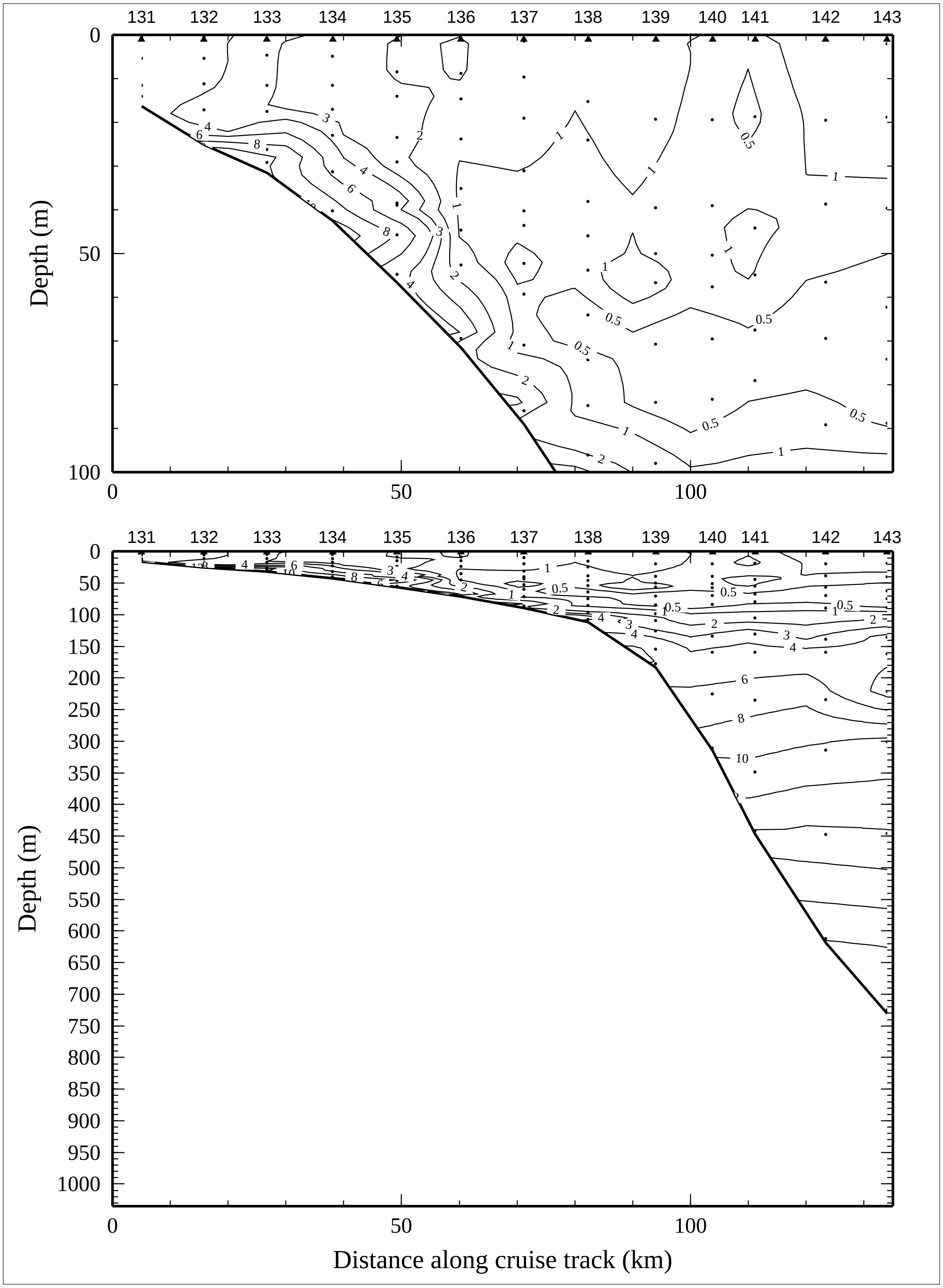

Figure 10.7.10. Silicate (μmol·l⁻¹) on line 7 of LATEX A survey H10, 2-14 November 1994.

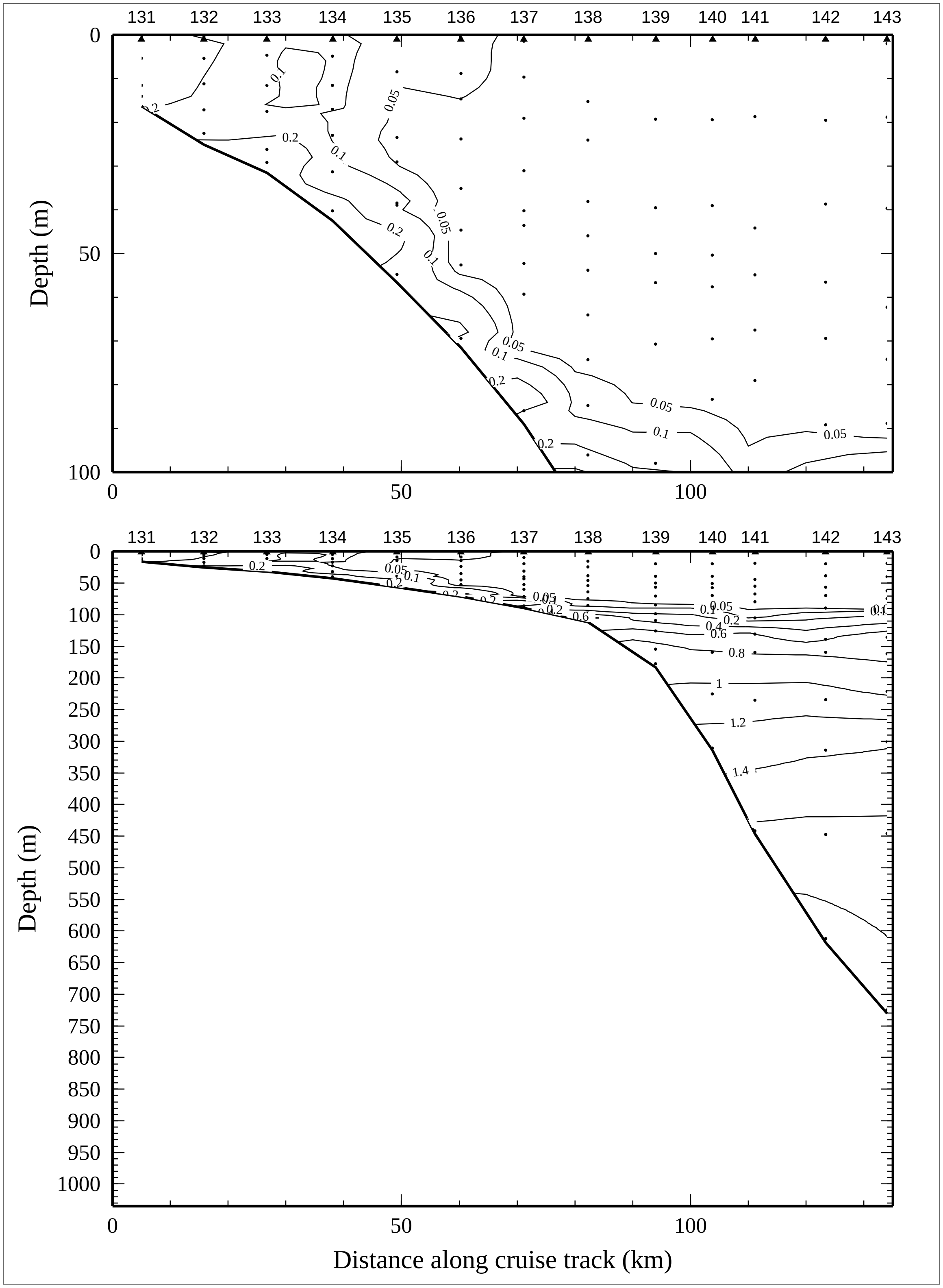

Figure 10.7.11. Phosphate (μmol·l-1) on line 7 of LATEX A survey H10, 2-14 November 1994.

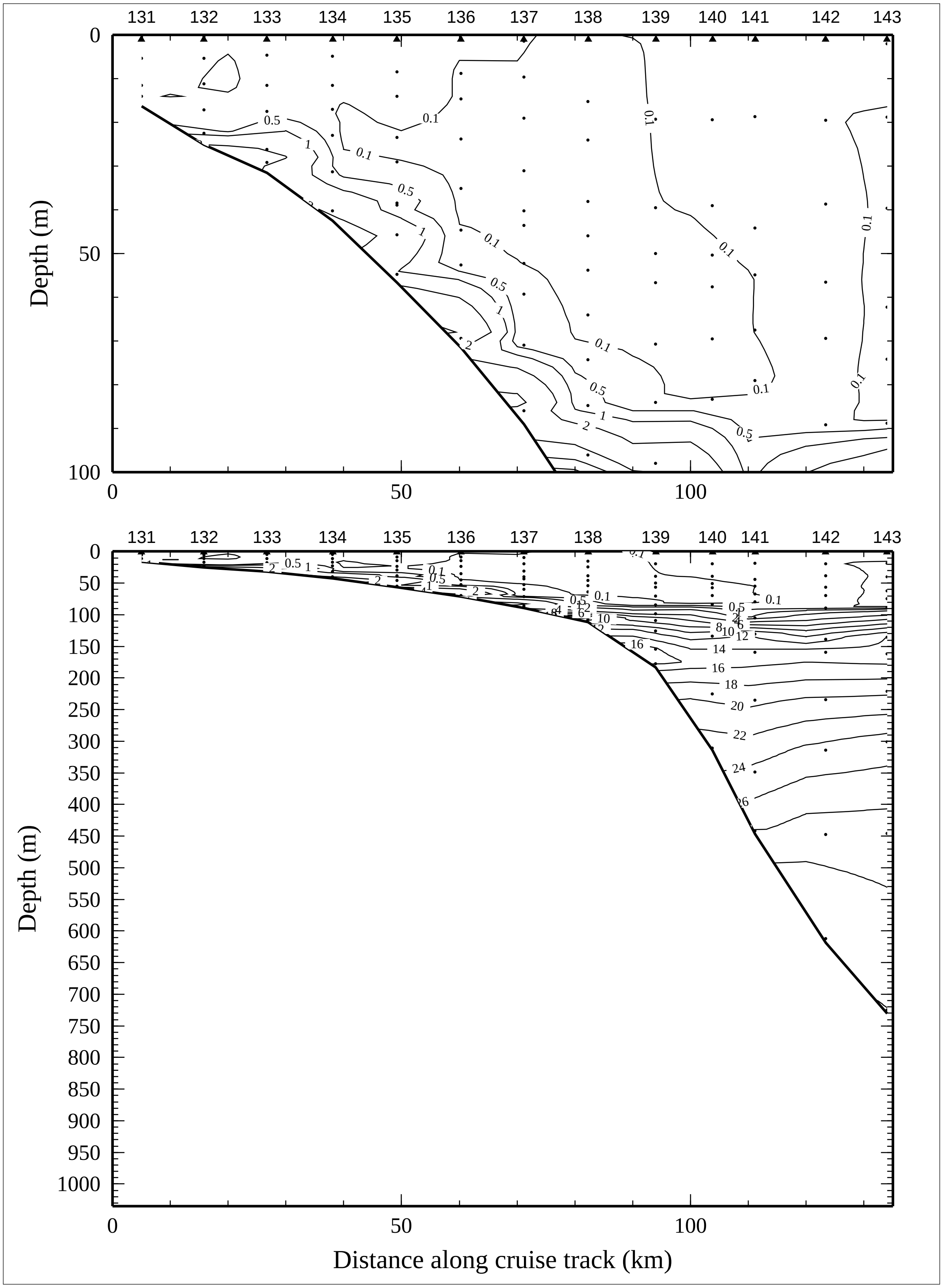

Figure 10.7.12. Nitrate (µmol·l-1) on line 7 of LATEX A survey H10,
2-14 November 1994.

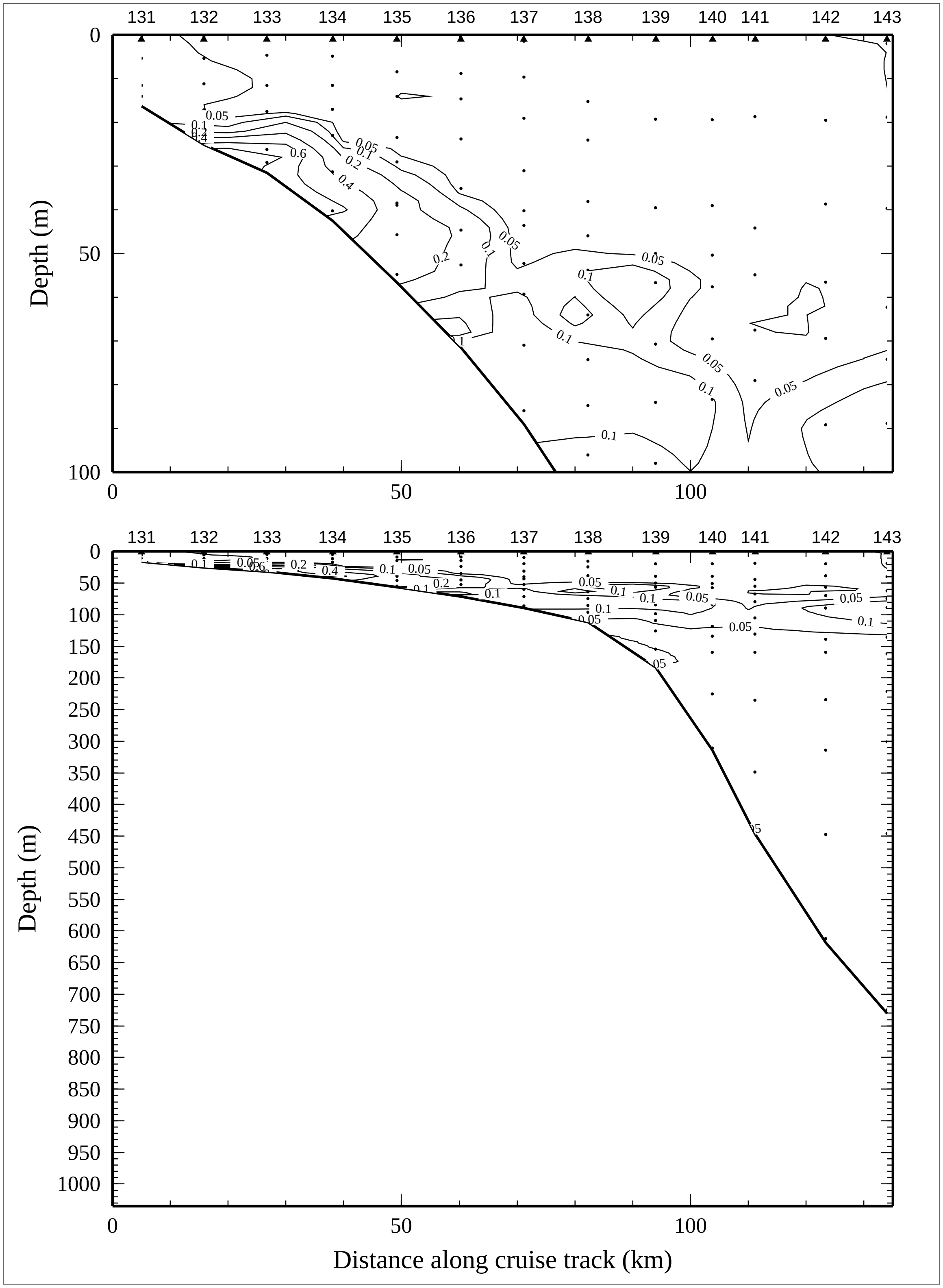

Figure 10.7.13. Nitrite (μmol·l⁻¹) on line 7 of LATEX A survey H10, 2-14 November 1994.

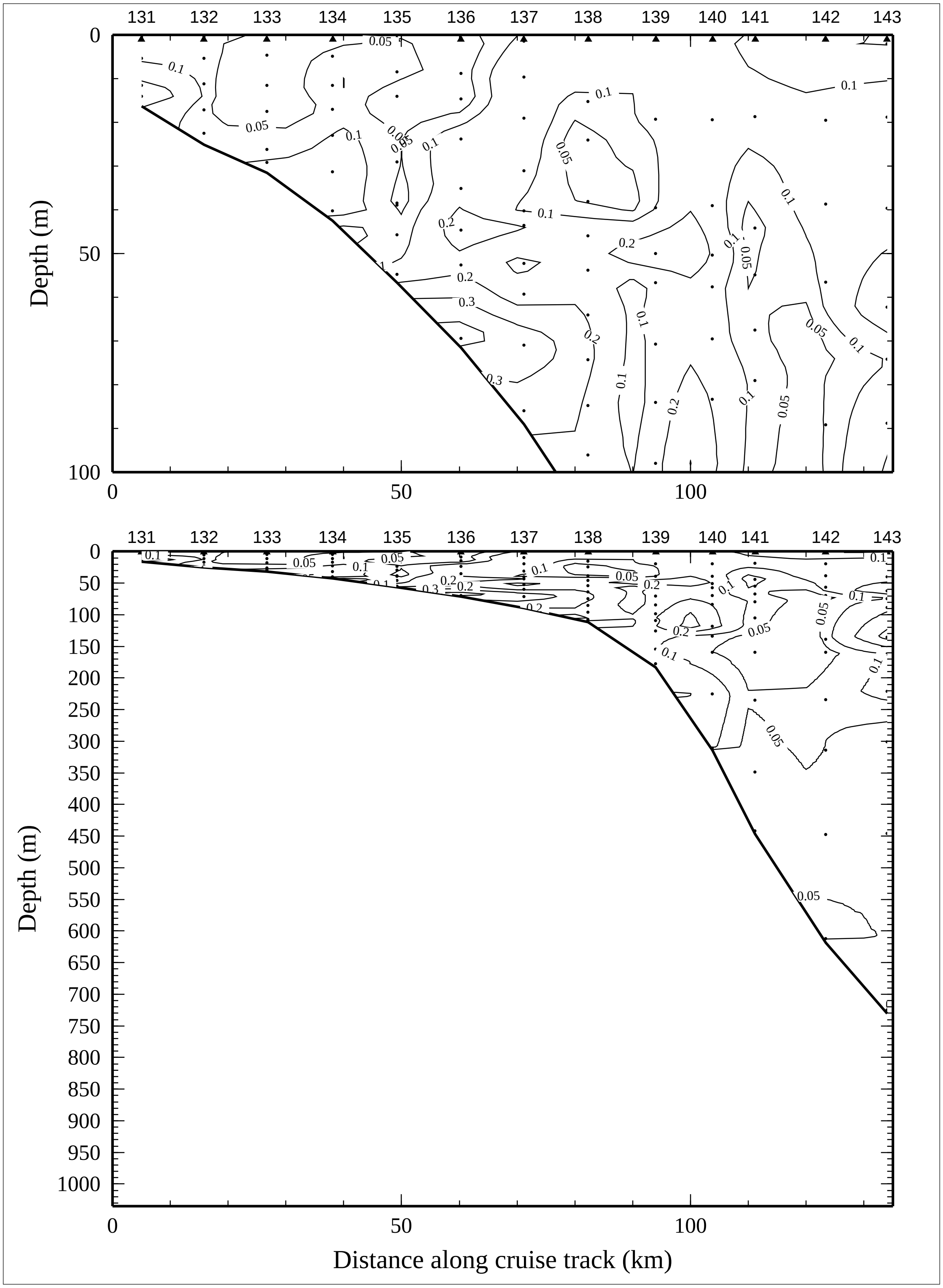

Figure 10.7.14. Ammonium (μmol·l^{-1}) on line 7 of LATEX A survey H10, 2-14 November 1994.

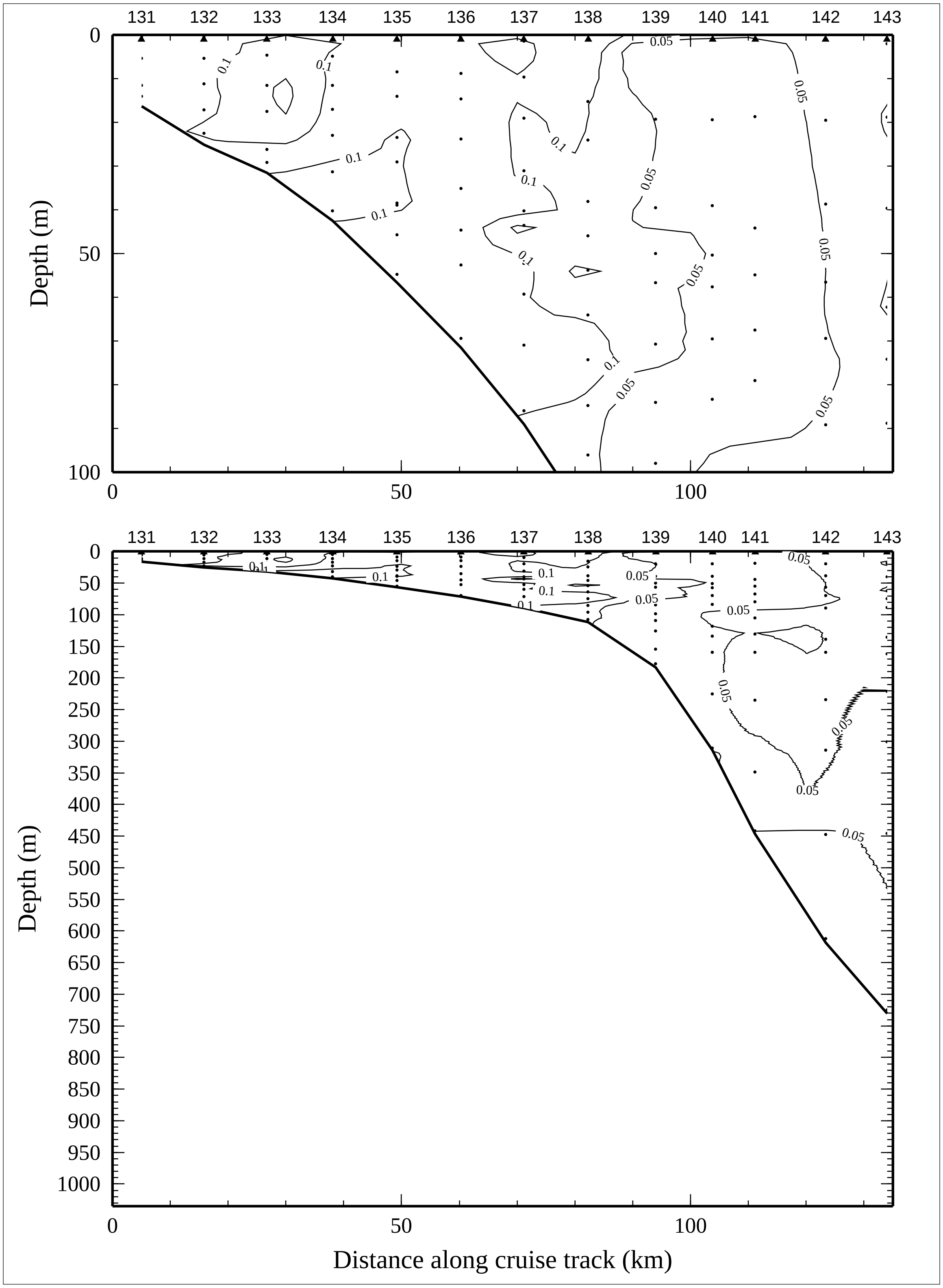

Figure 10.7.15. Urea (μmol·l^{-1}) on line 7 of LATEX A survey H10, 2-14 November 1994.

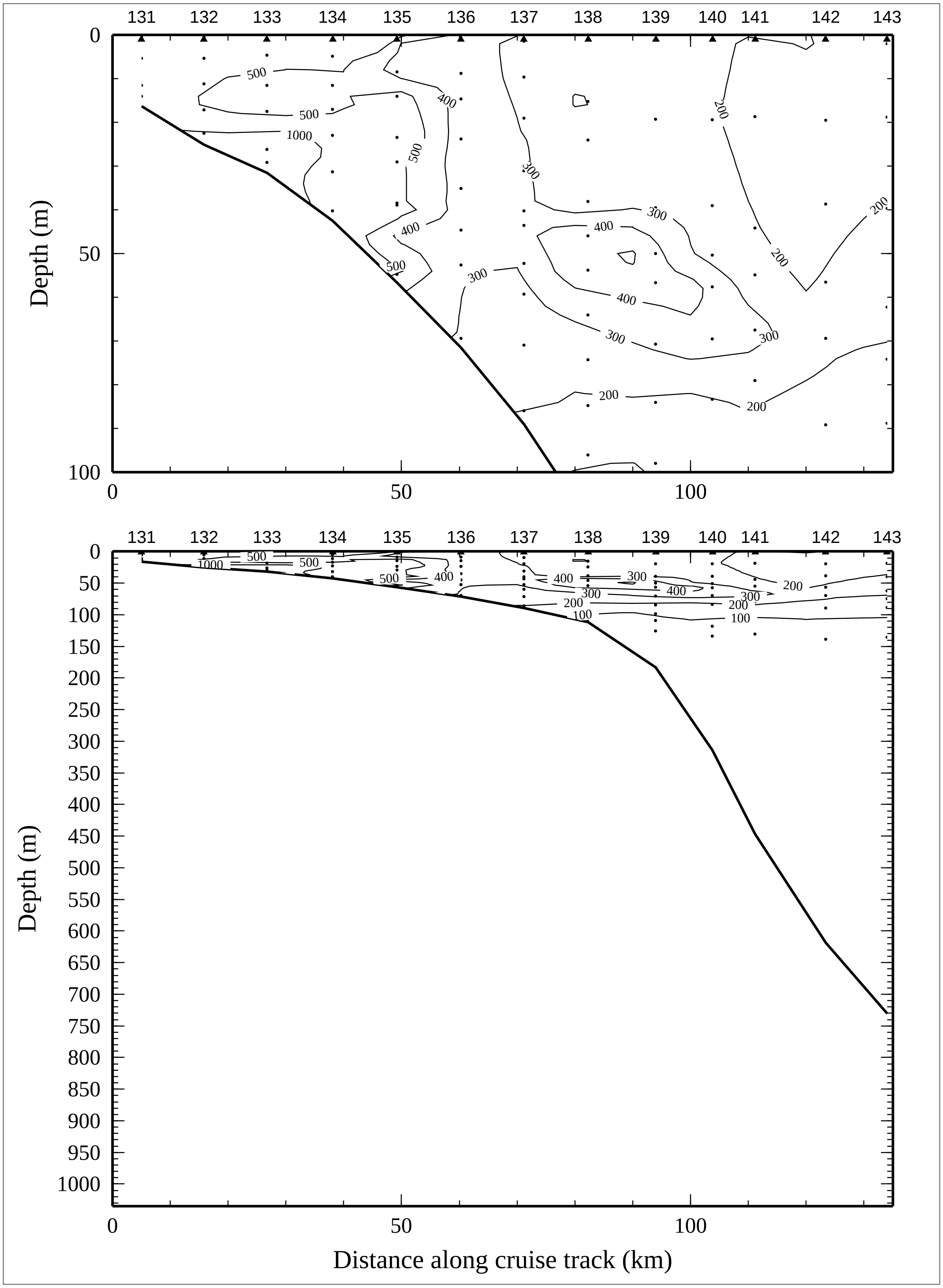

Figure 10.7.16. Chlorophyll a (ng·l-1) on line 7 of LATEX A survey H10, 2-14 November 1994.

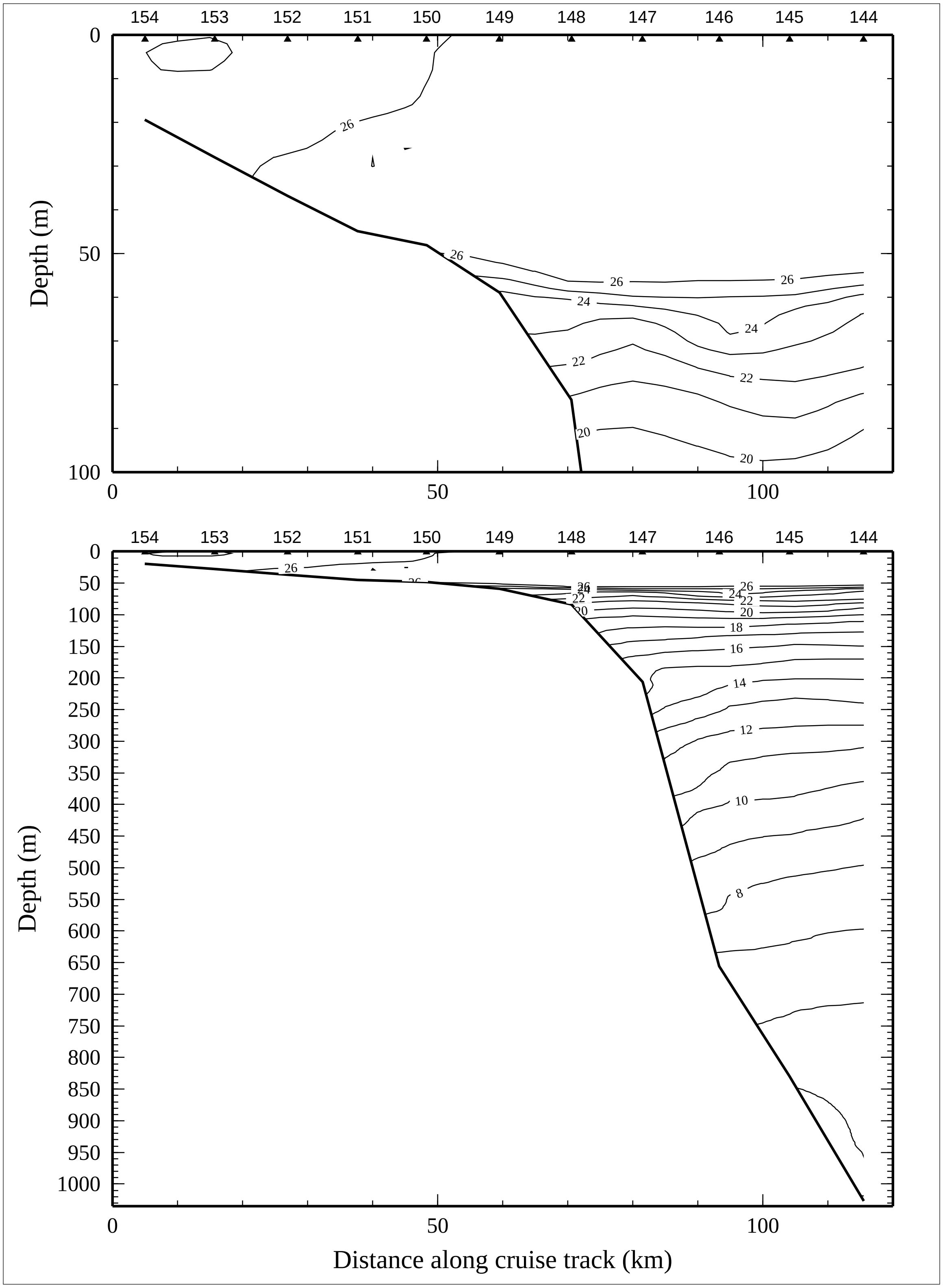

Figure 10.8.1. Potential temperature (˚C) on line 8 of LATEX A survey H10, 2-14 November 1994.

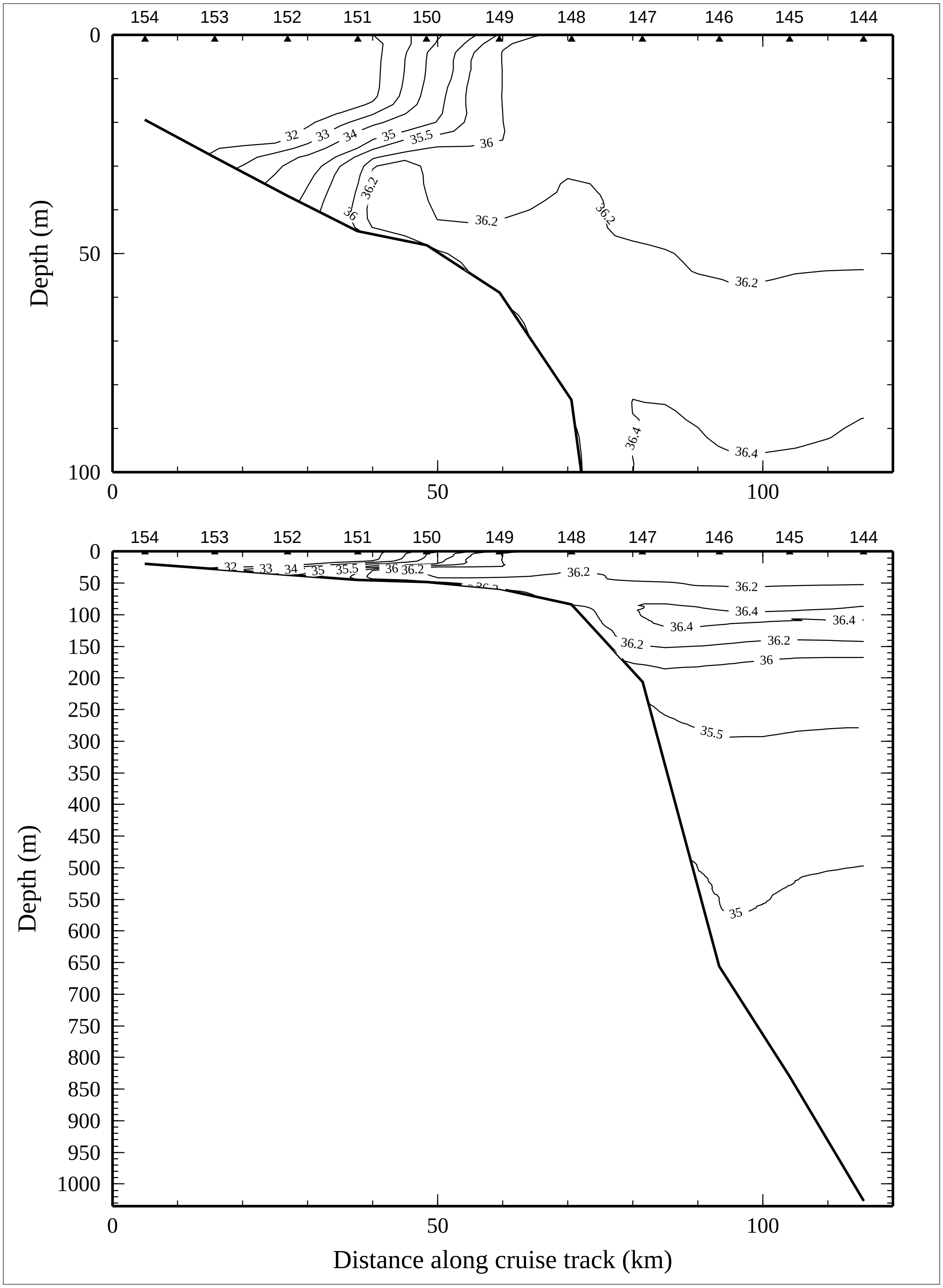

Figure 10.8.2. Salinity, derived from CTD data, on line 8 of LATEX A survey H10, 2-14 November 1994.

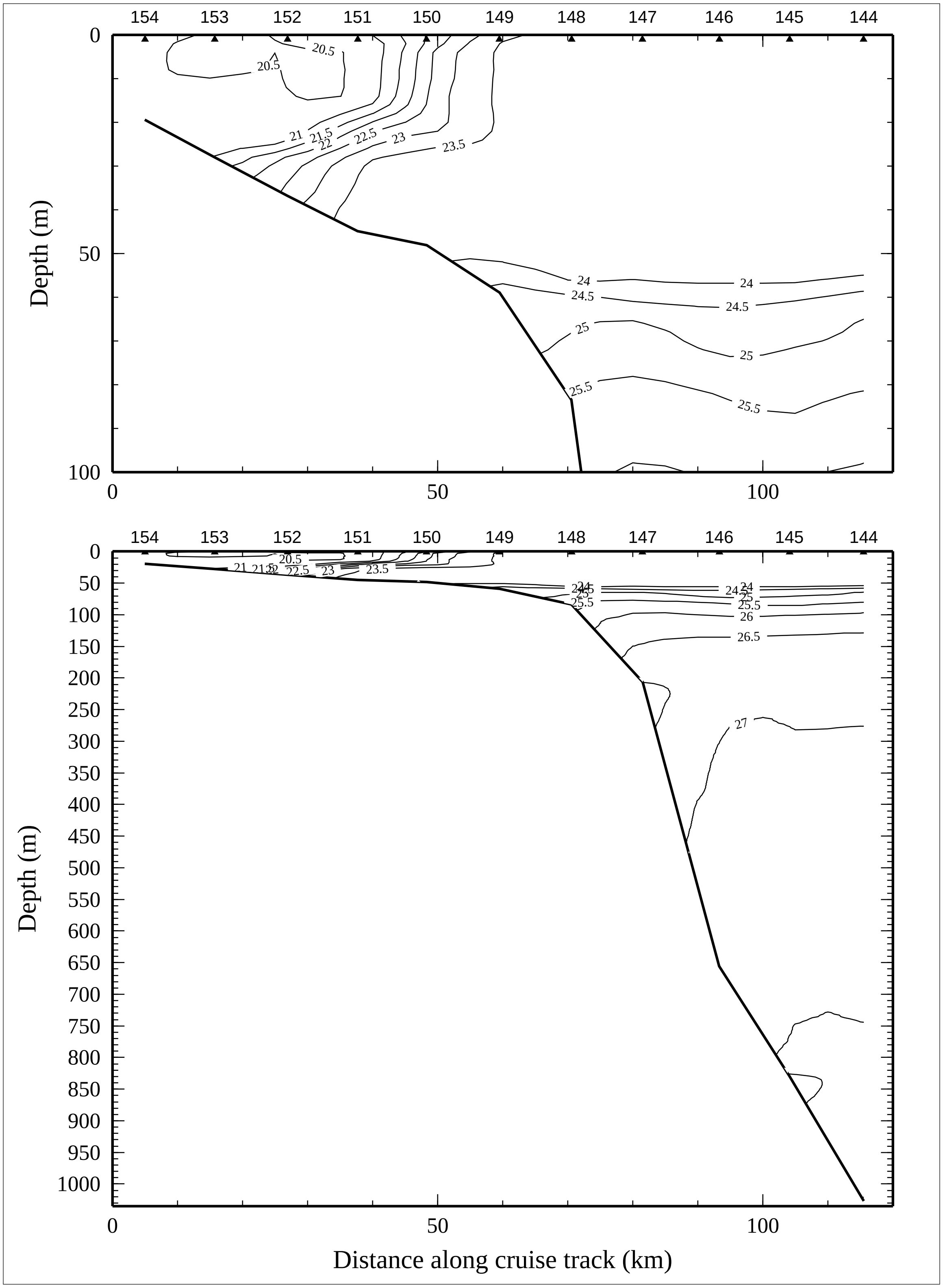

Figure 10.8.3. Density anomaly (σ_θ in kg·m^{-3}) on line 8 of LATEX A survey H10, 2-14 November 1994.

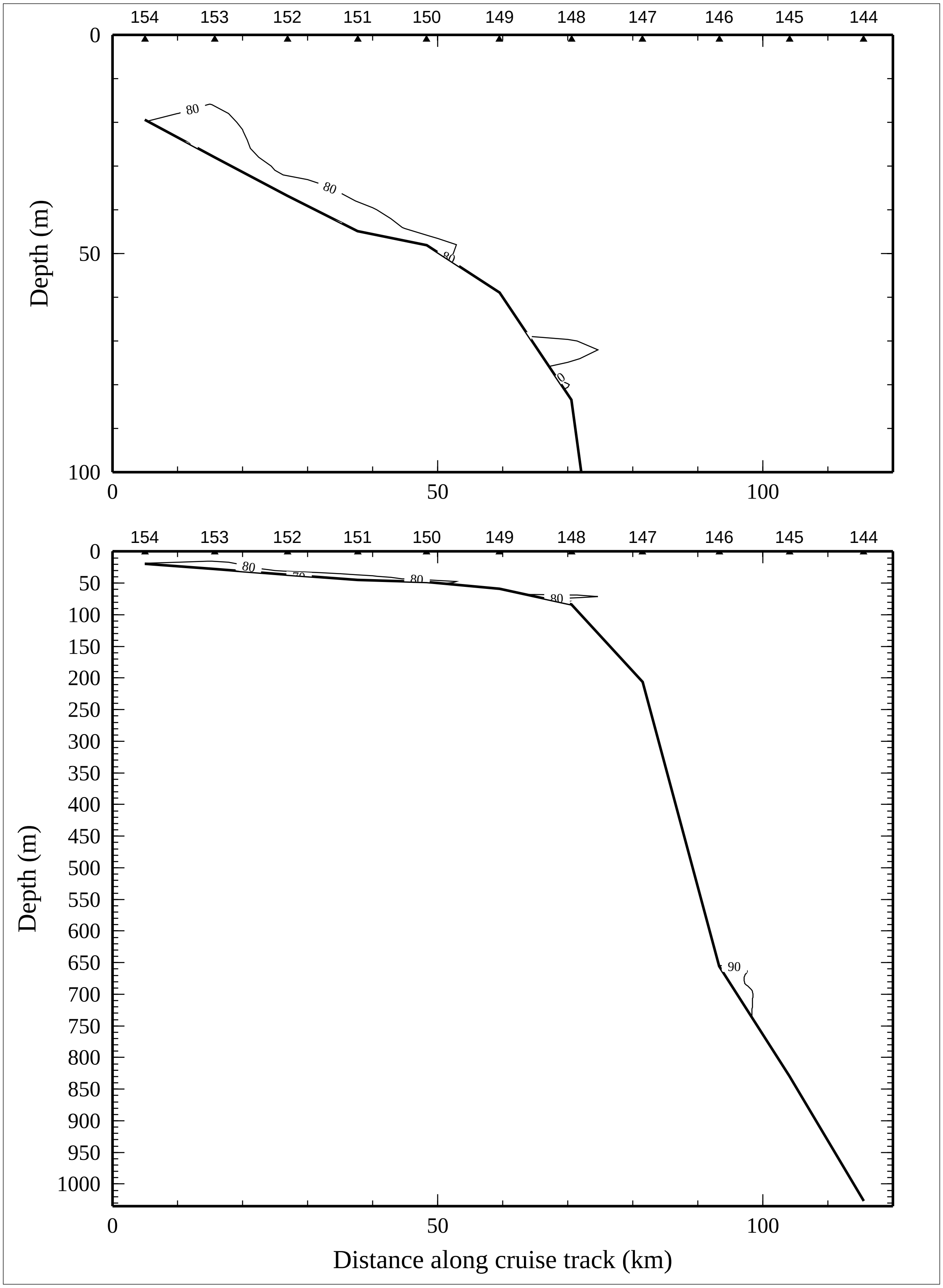

Figure 10.8.4. Percent transmission (660 nm wave length; 25-cm path length) on line 8 of LATEX A survey H10, 2-14 November 1994.

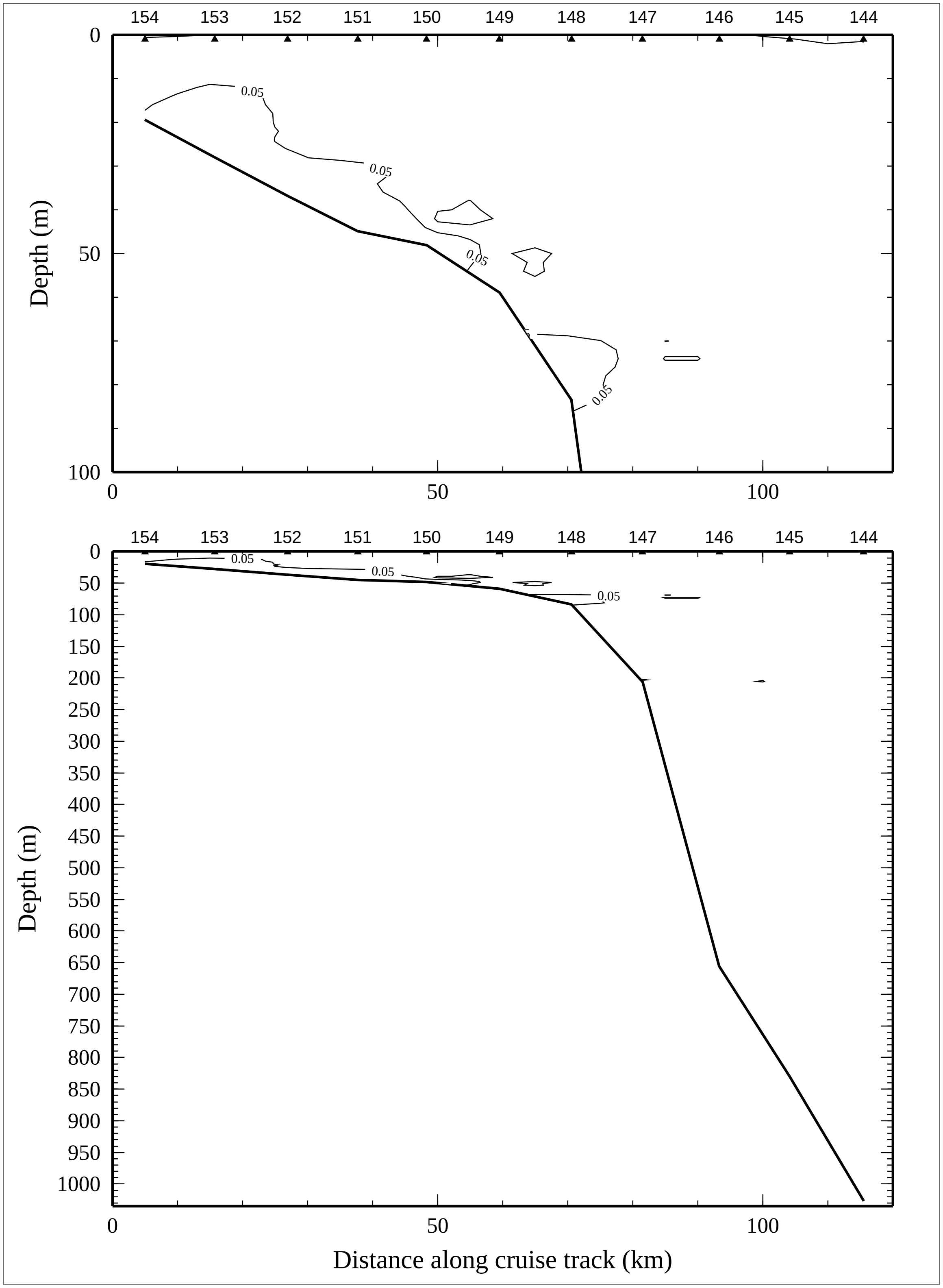

Figure 10.8.5. Optical backscatterance (voltage) on line 8 of LATEX A survey H10, 2-14 November 1994.

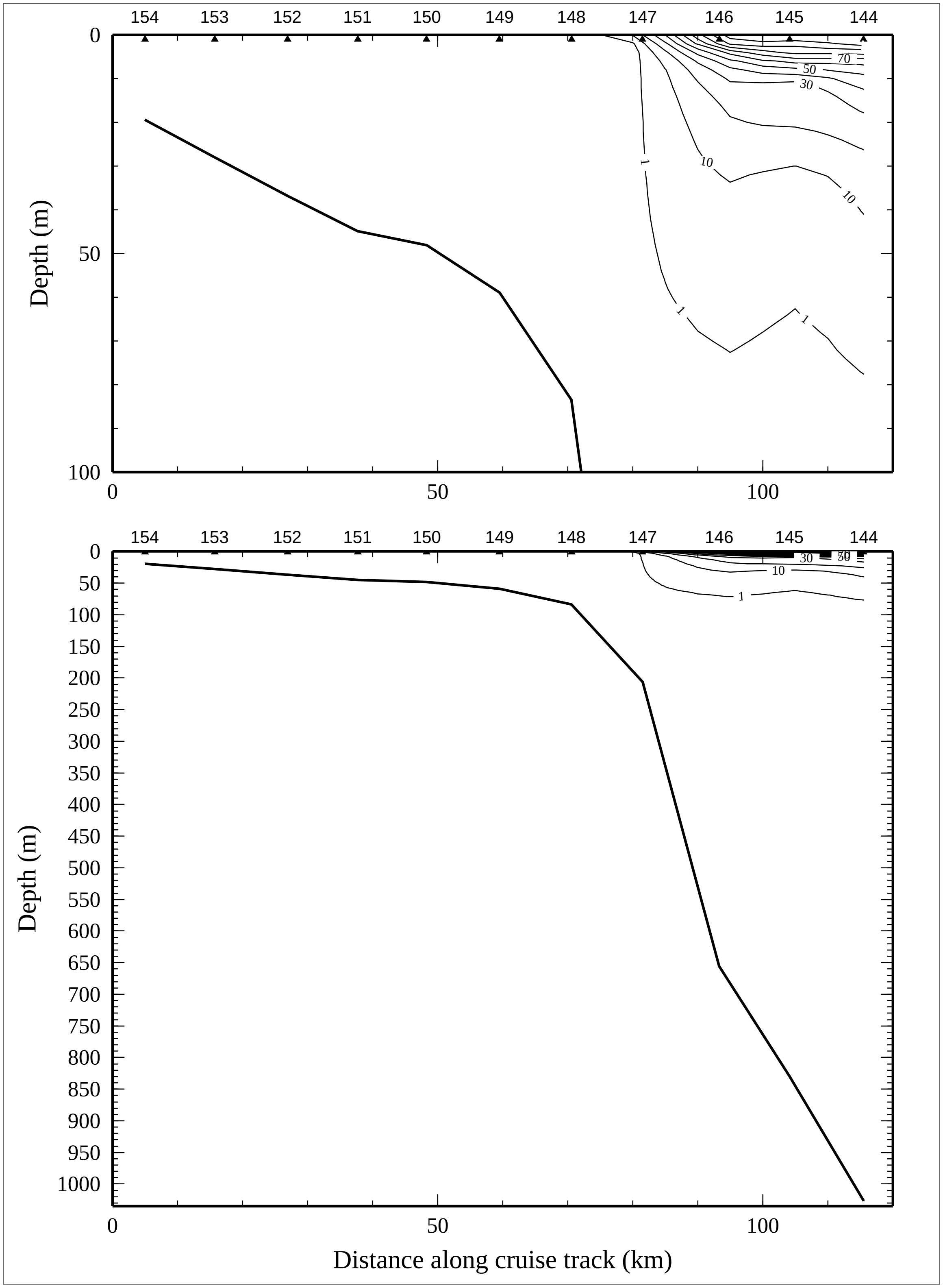

Figure 10.8.6. Downwelling irradiance as percent of surface irradiance on line 8 of LATEX A survey H10, 2-14 November 1994.

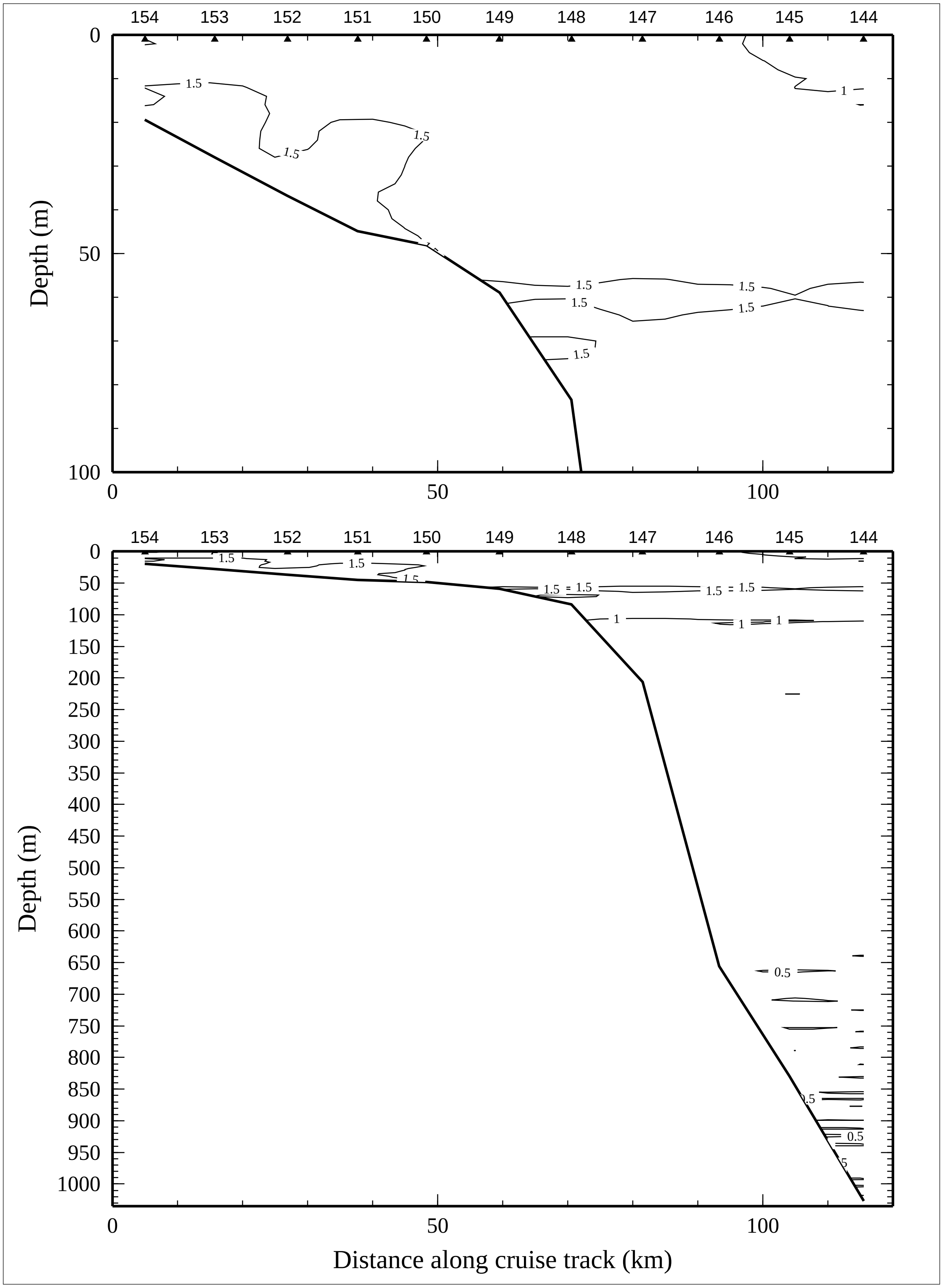

Figure 10.8.7. Relative fluorescence on line 8 of LATEX A survey H10, 2-14 November 1994.

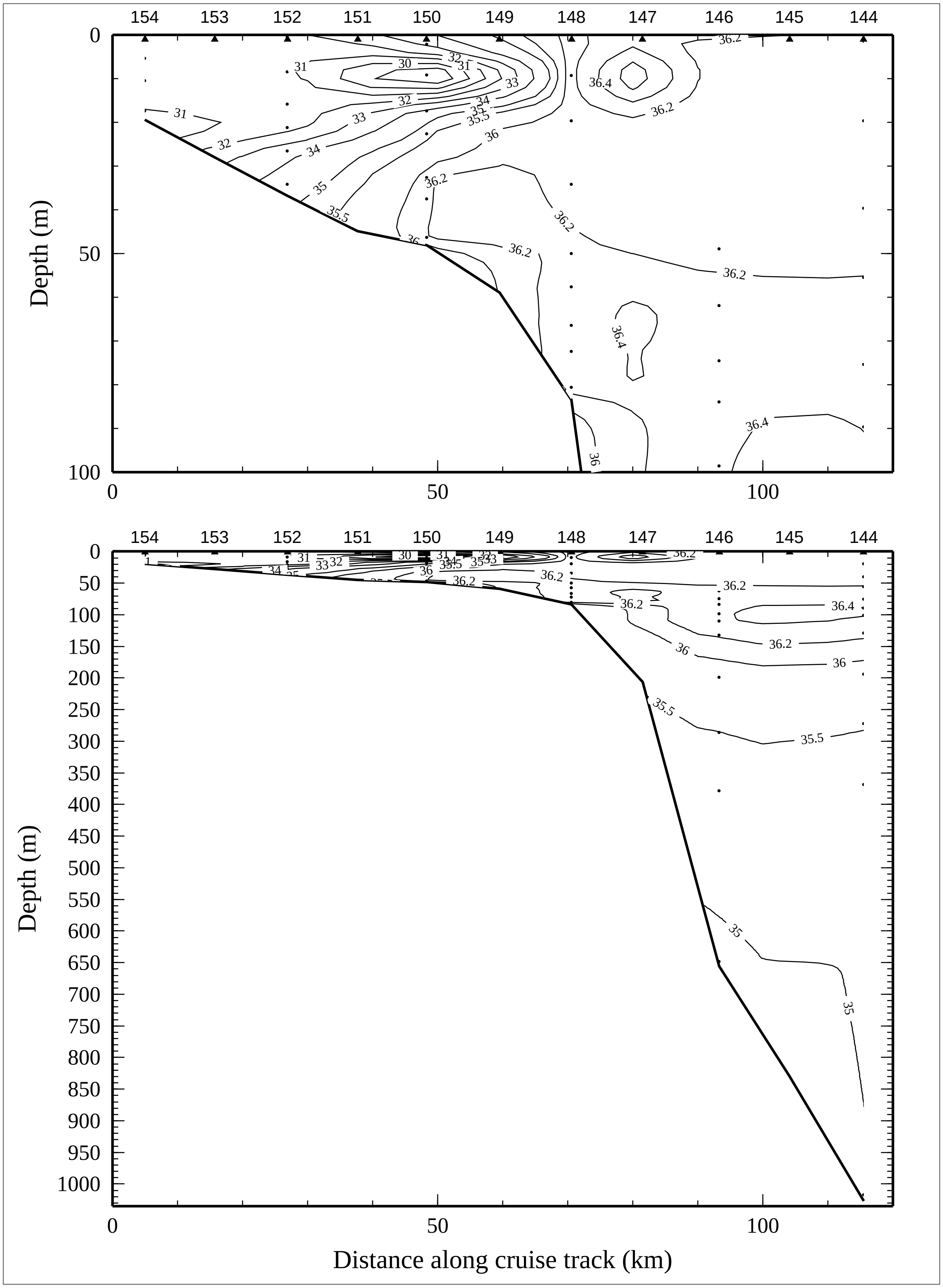

Figure 10.8.8. Bottle salinity on line 8 of LATEX A survey H10,
2-14 November 1994.

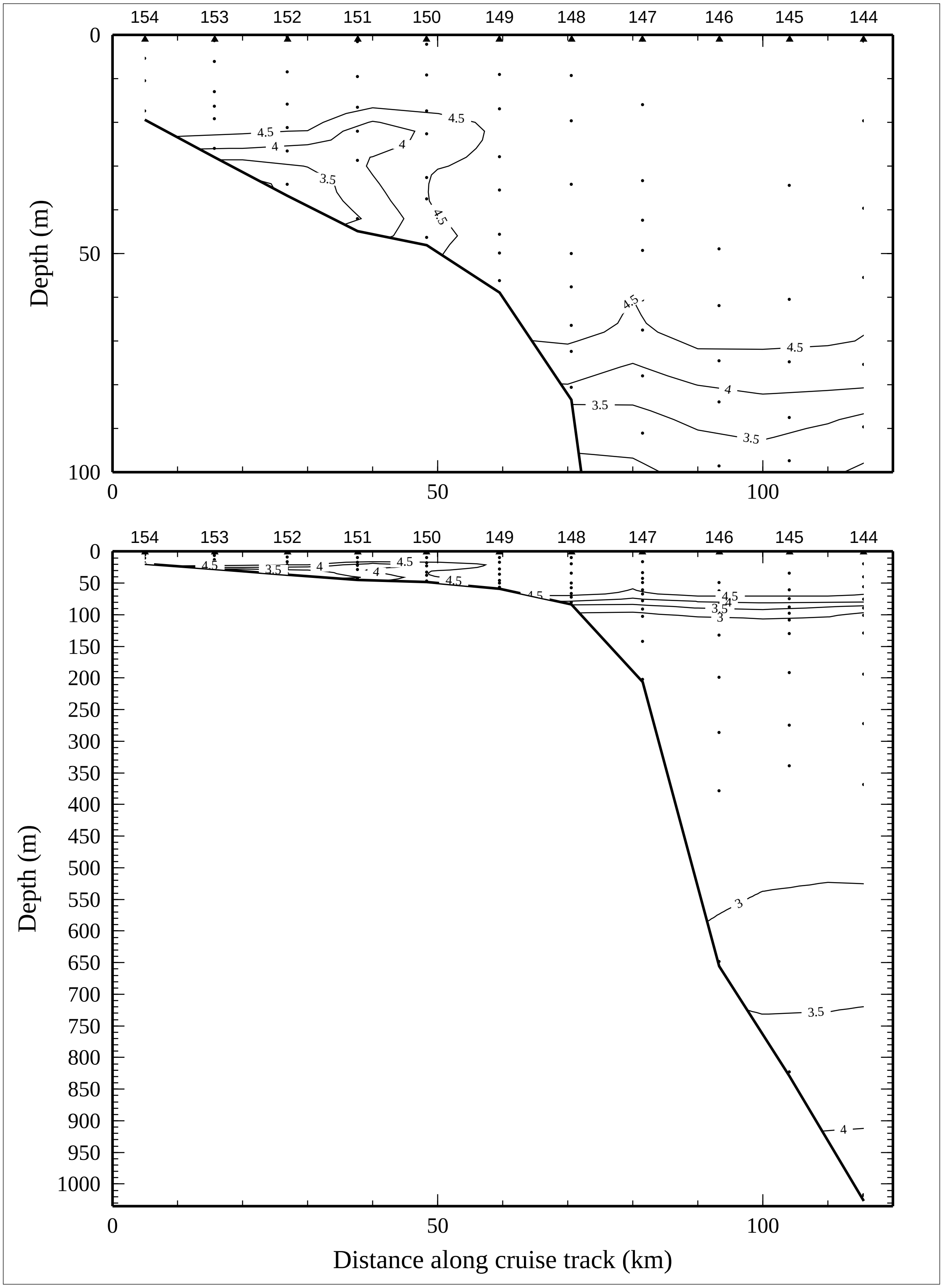

Figure 10.8.9. Dissolved oxygen (ml·l^{-1}) on line 8 of LATEX A survey H10, 2-14 November 1994.

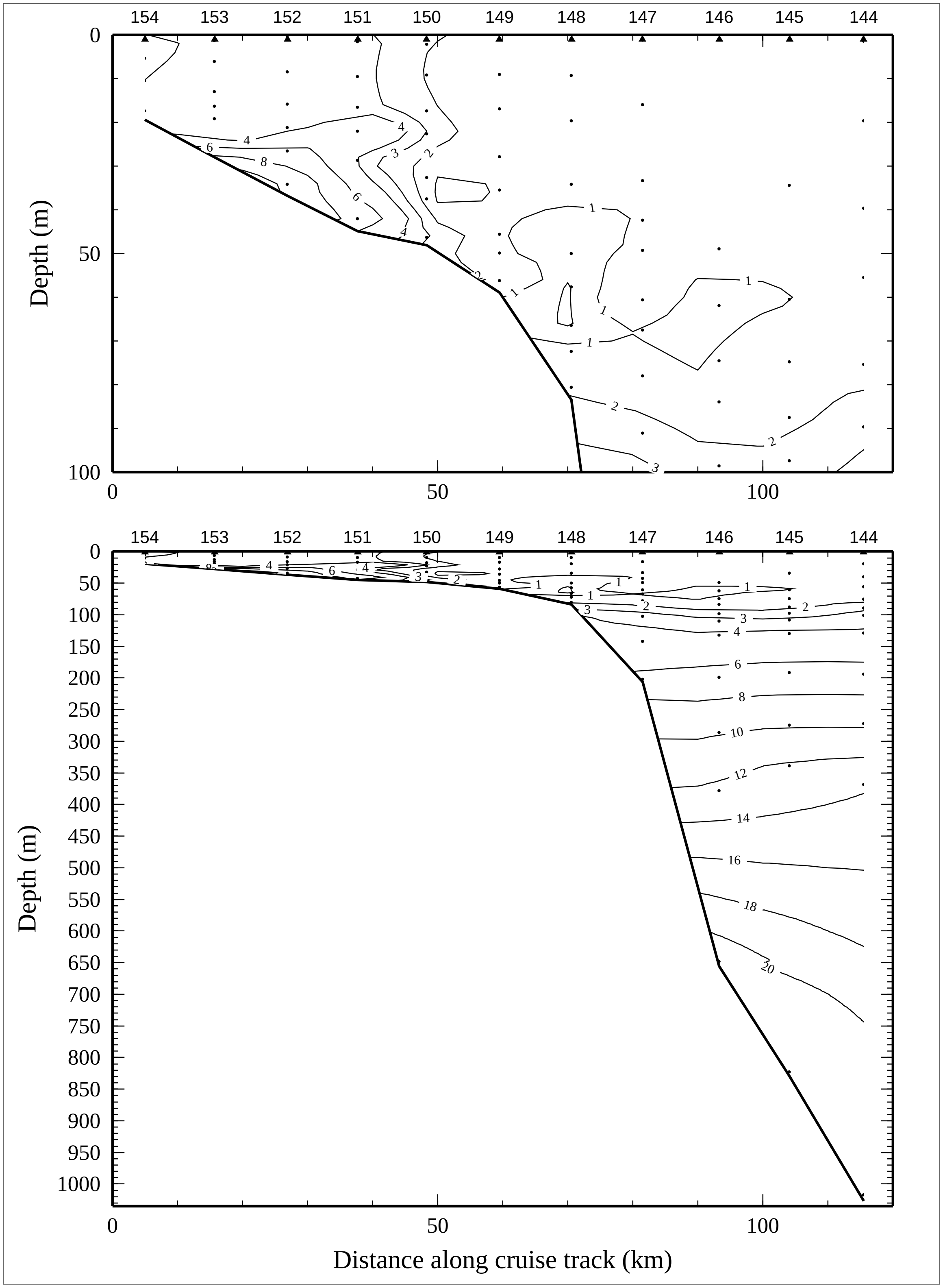

Figure 10.8.10. Silicate (μmol·l-1) on line 8 of LATEX A survey H10, 2-14 November 1994.

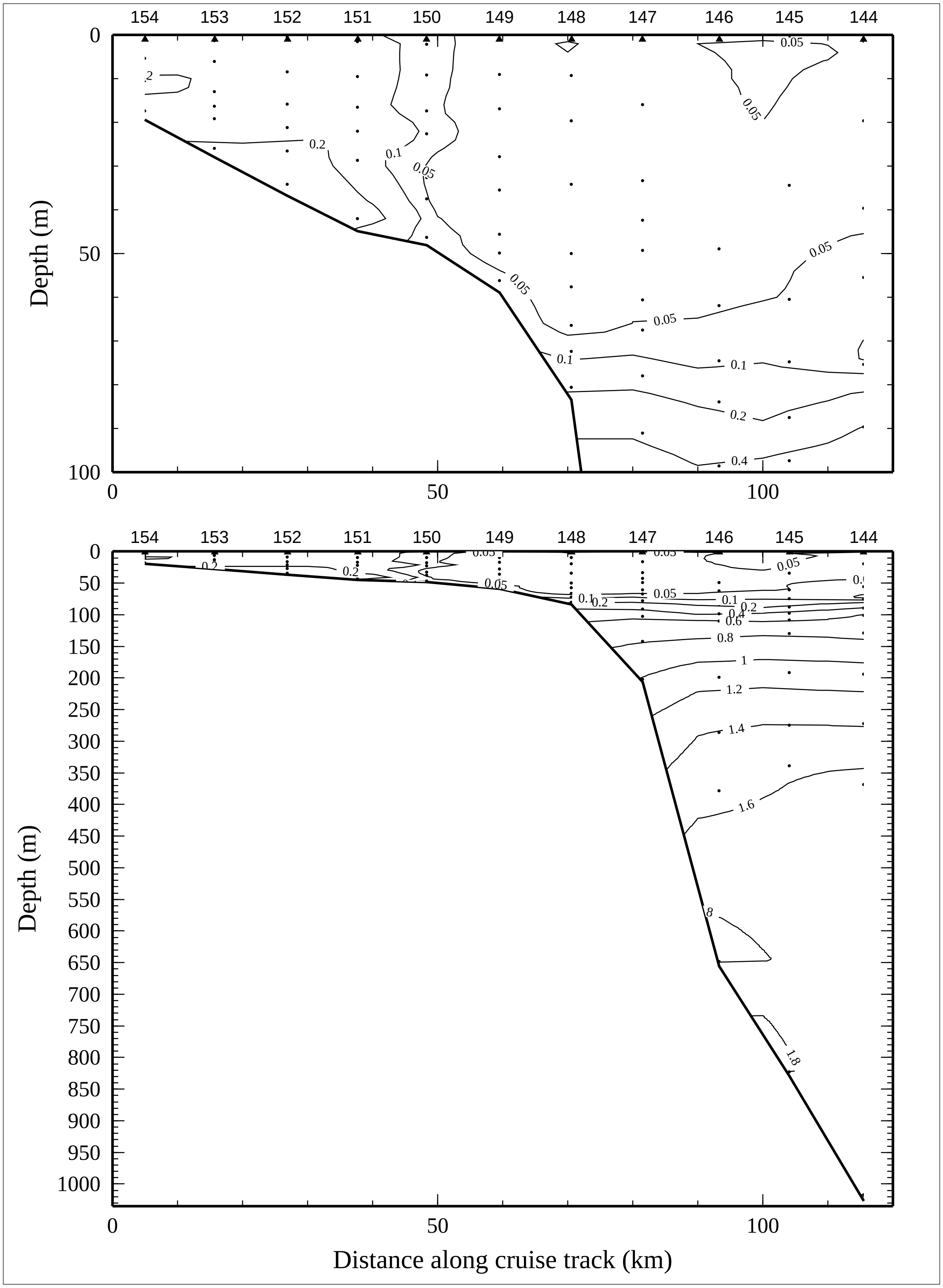

Figure 10.8.11. Phosphate (μmol·l^{-1}) on line 8 of LATEX A survey H10,
2-14 November 1994.

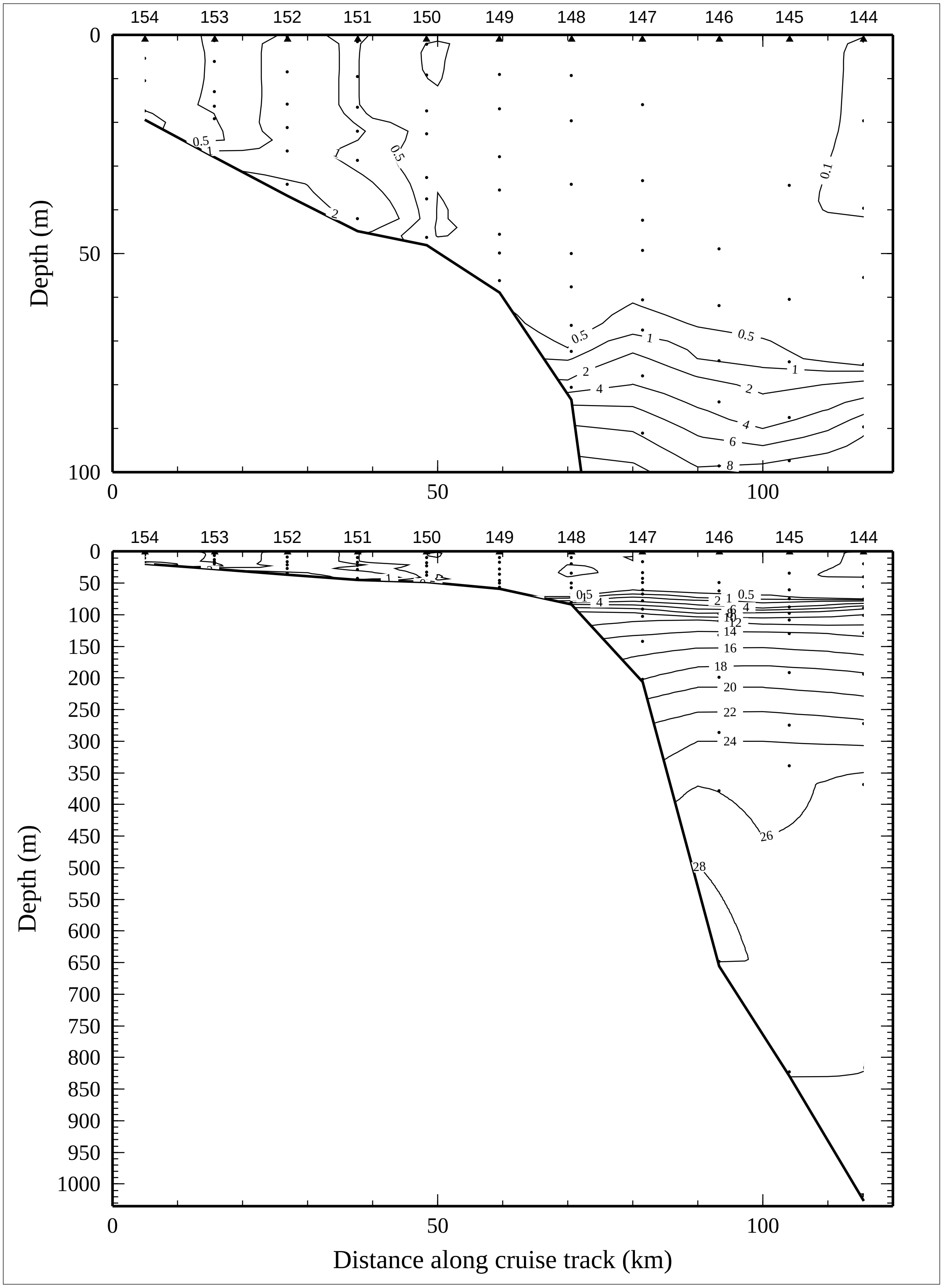

Figure 10.8.12. Nitrate (µmol·l-1) on line 8 of LATEX A survey H10,
2-14 November 1994.

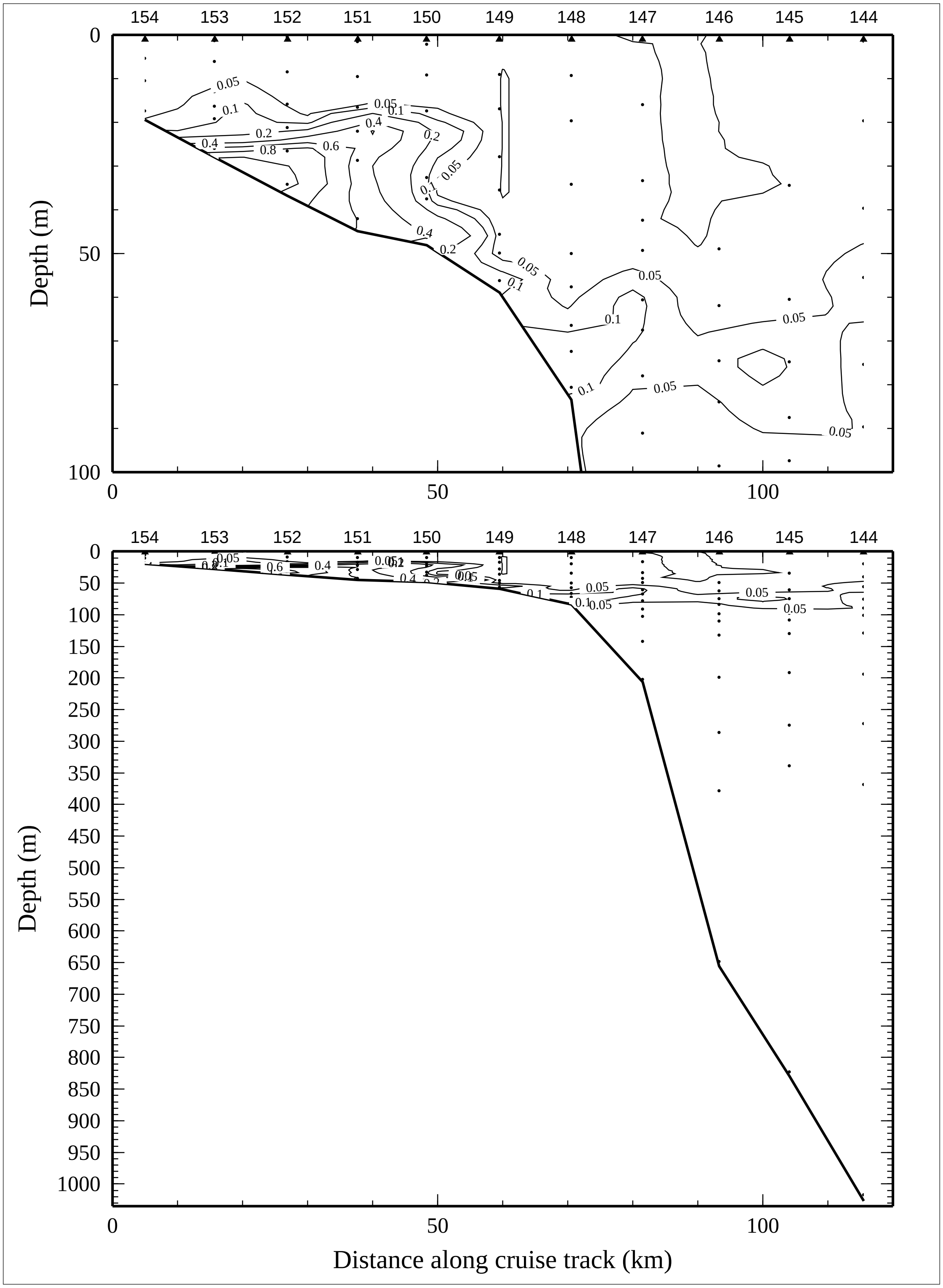

Figure 10.8.13. Nitrite (µmol·l⁻¹) on line 8 of LATEX A survey H10, 2-14 November 1994.

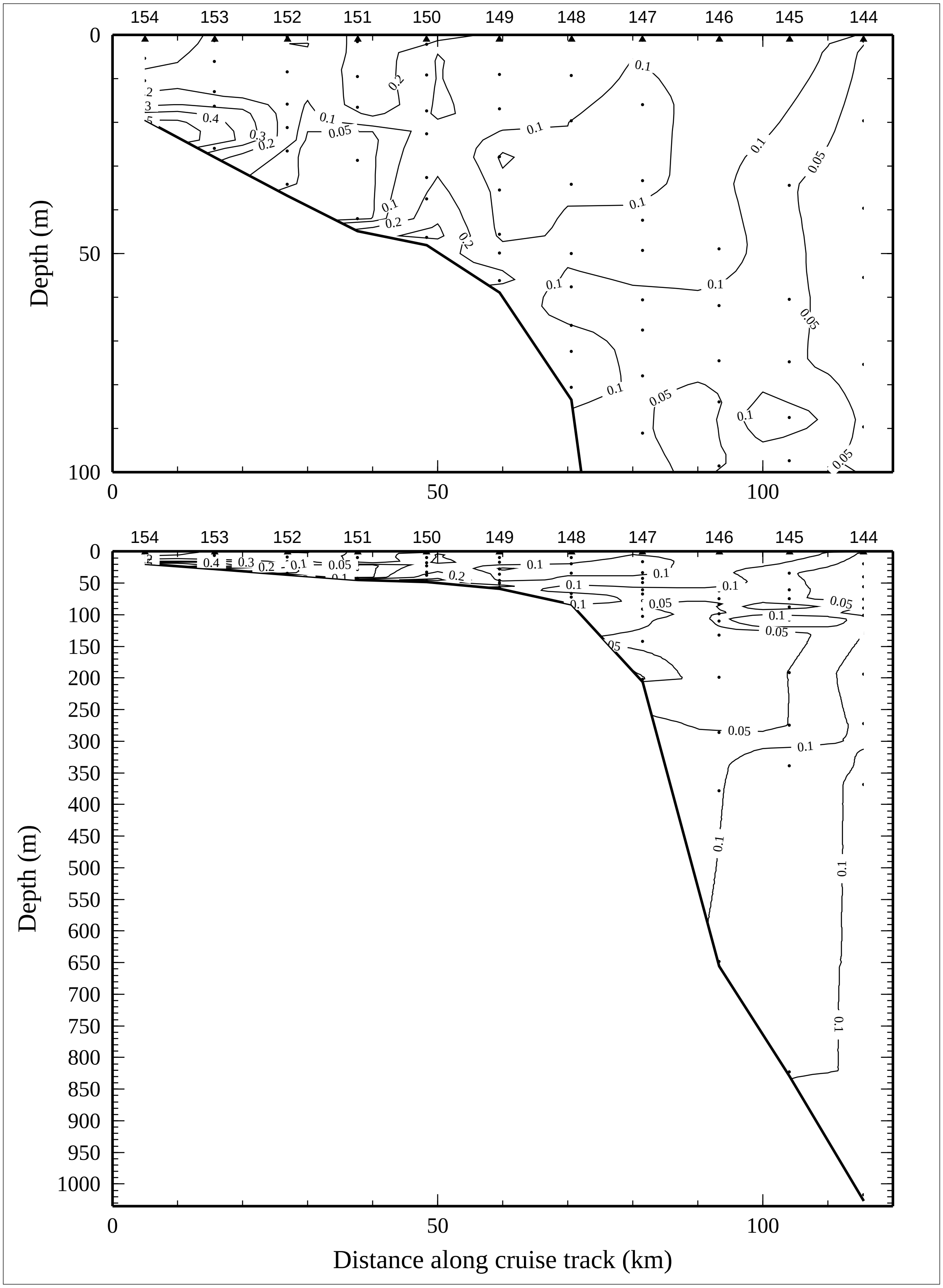

Figure 10.8.14. Ammonium (μmol·l-1) on line 8 of LATEX A survey H10, 2-14 November 1994.

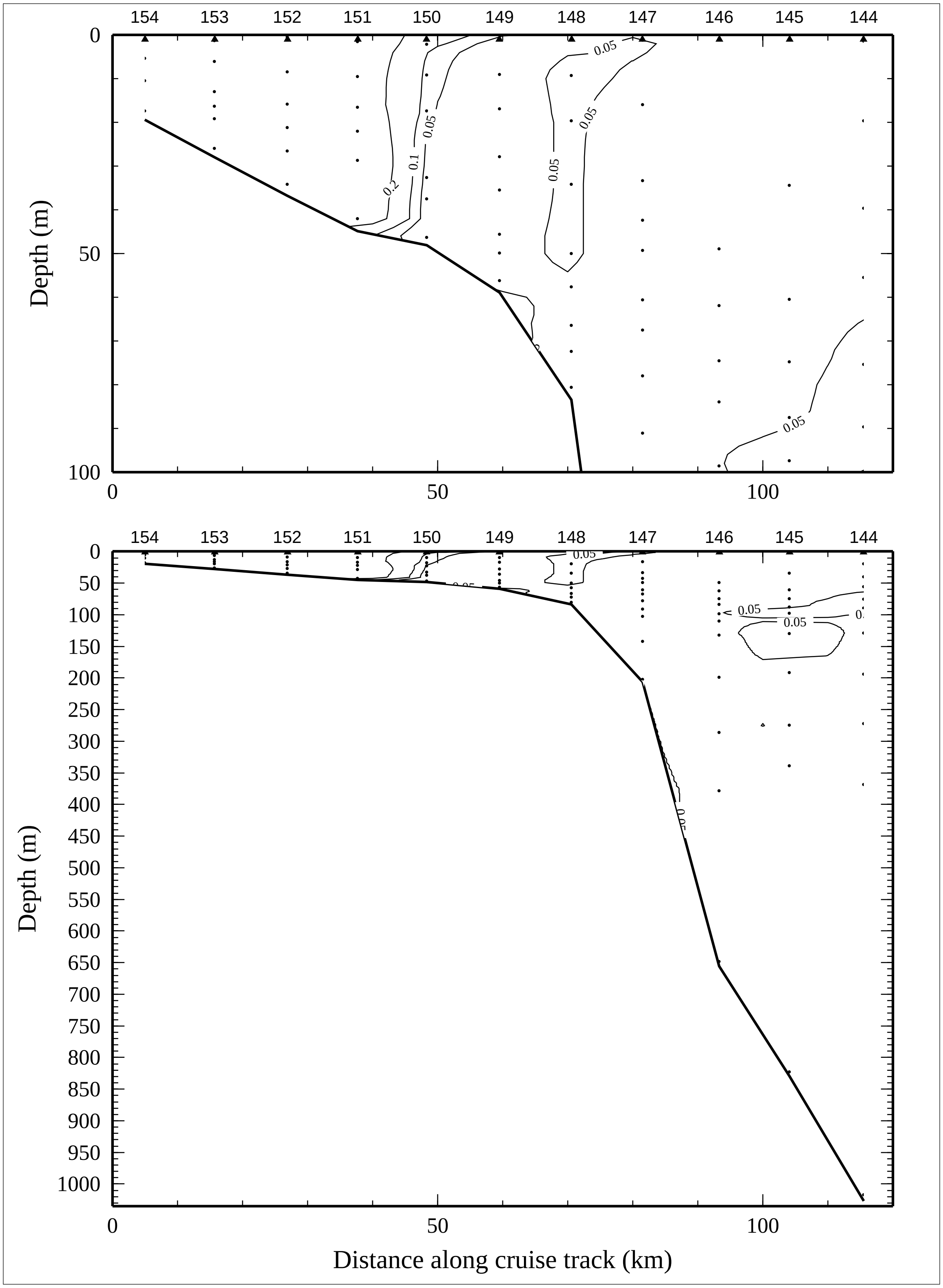

Figure 10.8.15. Urea (µmol·l⁻¹) on line 8 of LATEX A survey H10,
2-14 November 1994.

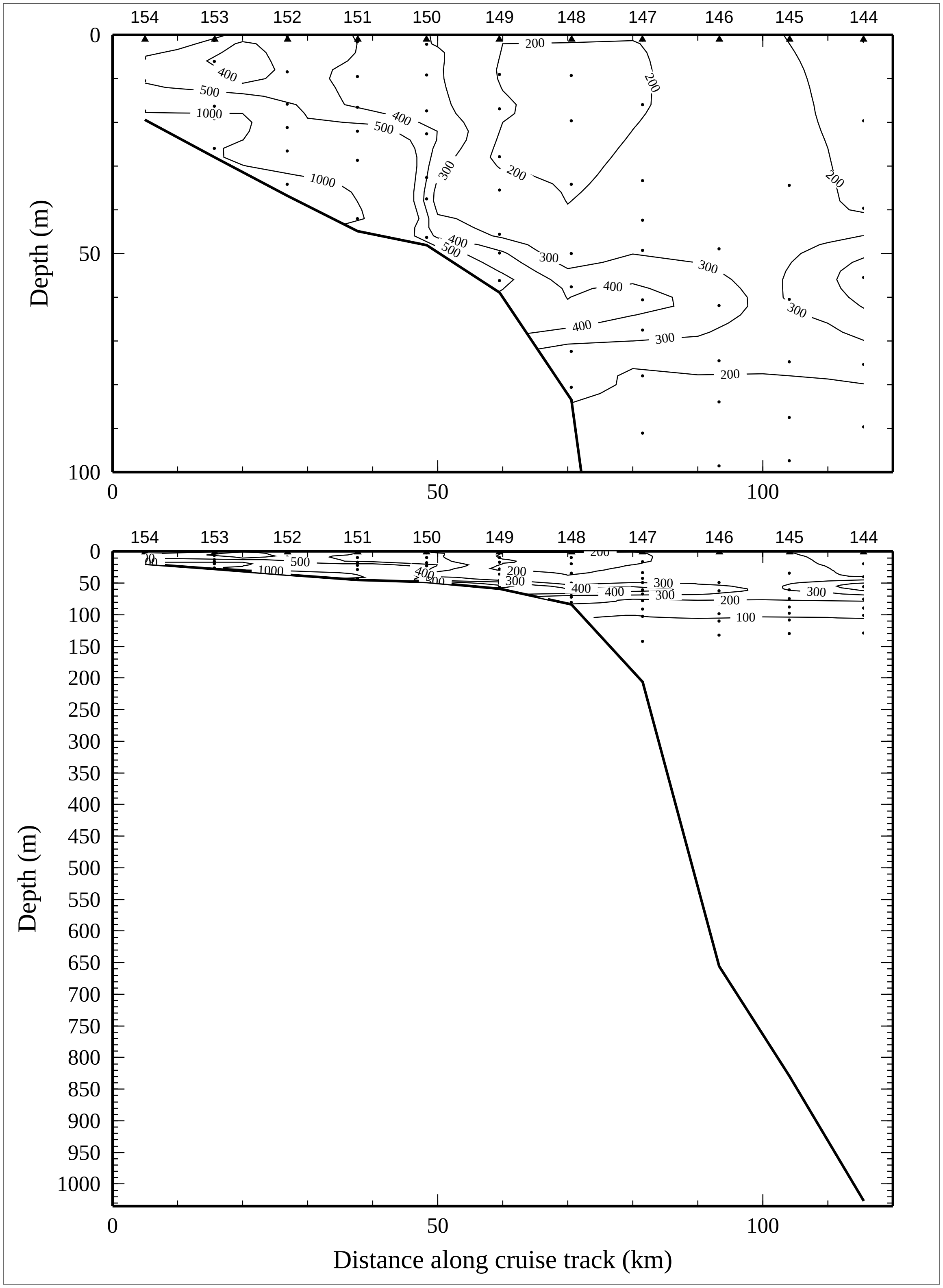

Figure 10.8.16. Chlorophyll a (ng·l-1) on line 8 of LATEX A survey H10, 2-14 November 1994.

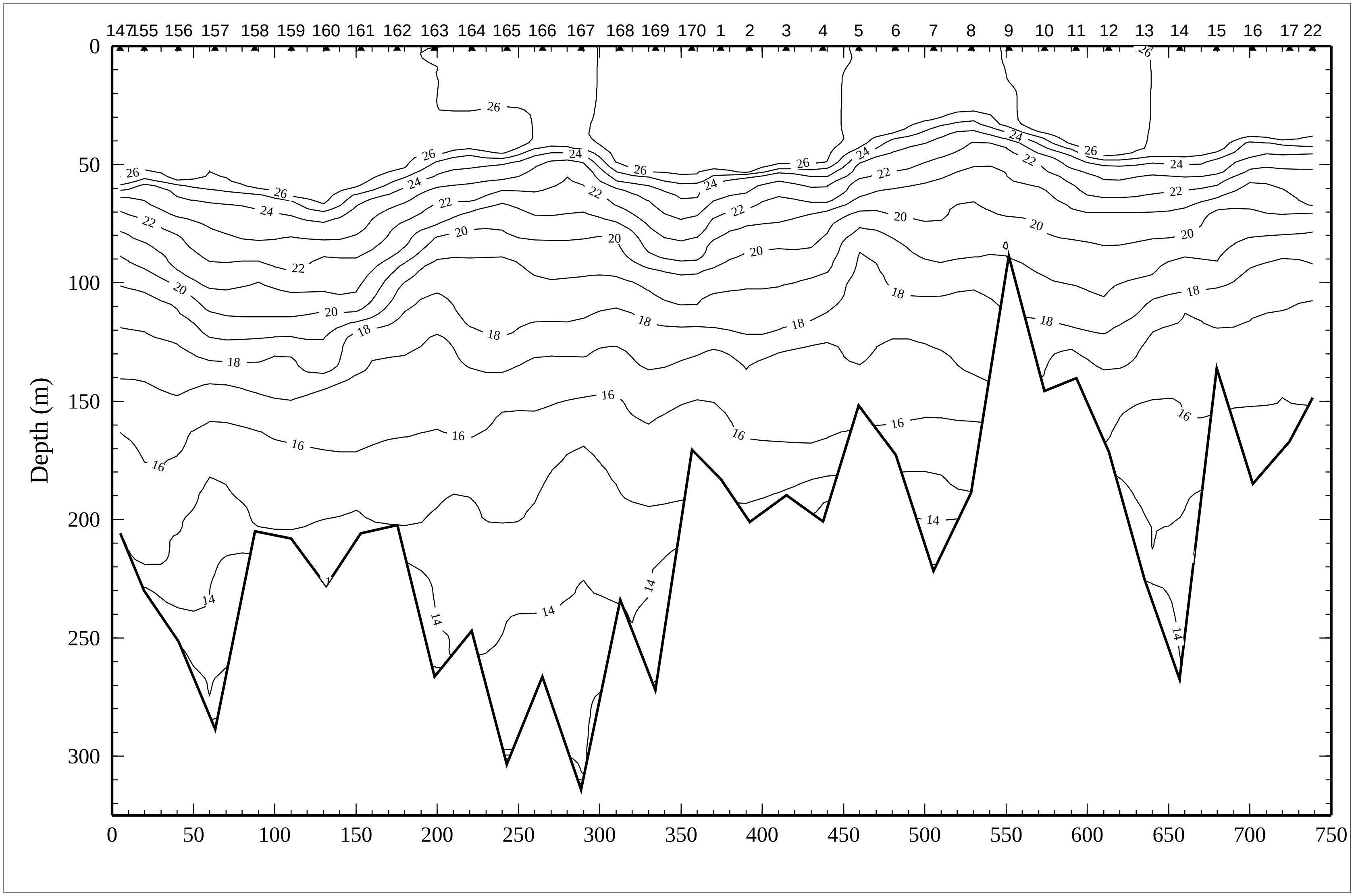

Figure 10.9.1. Potential temperature (˚C) on line 9 of LATEX A survey H10, 2-14 November 1994.

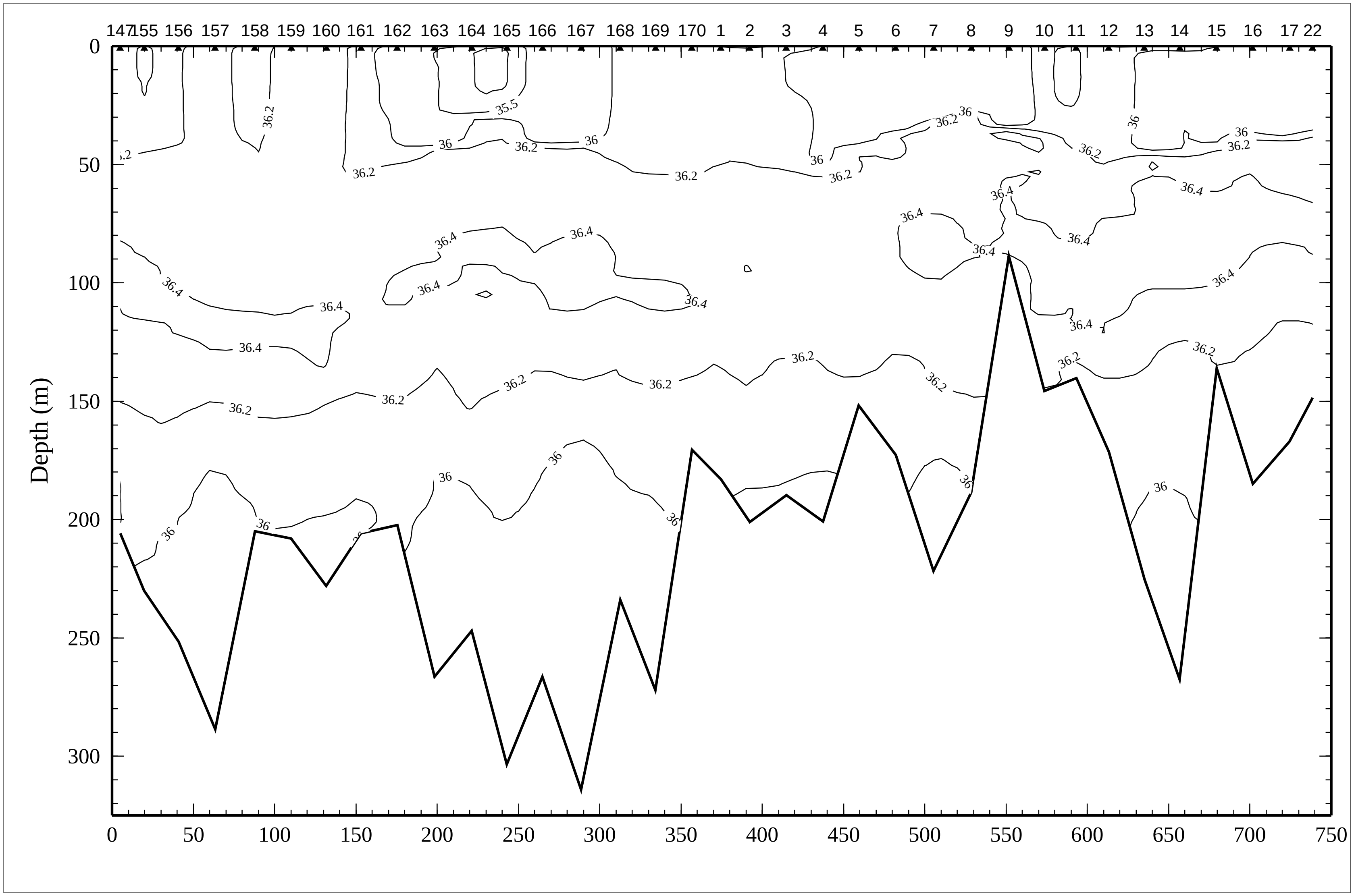

Figure 10.9.2. Salinity, derived from CTD data, on line 9 of LATEX A survey H10, 2-14 November 1994.

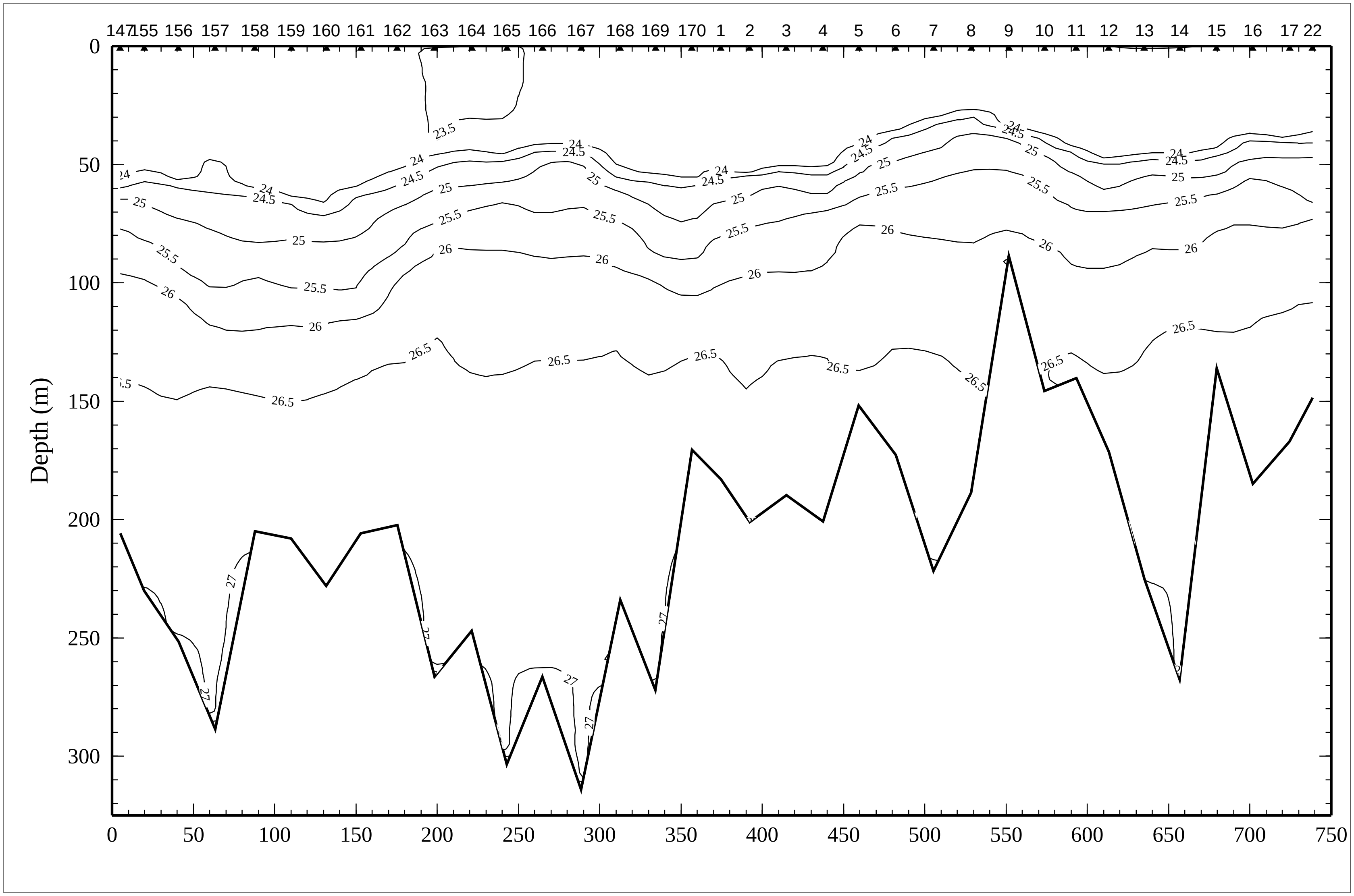

Figure 10.9.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) on line 9 of LATEX A survey H10, 2-14 November 1994.

J141

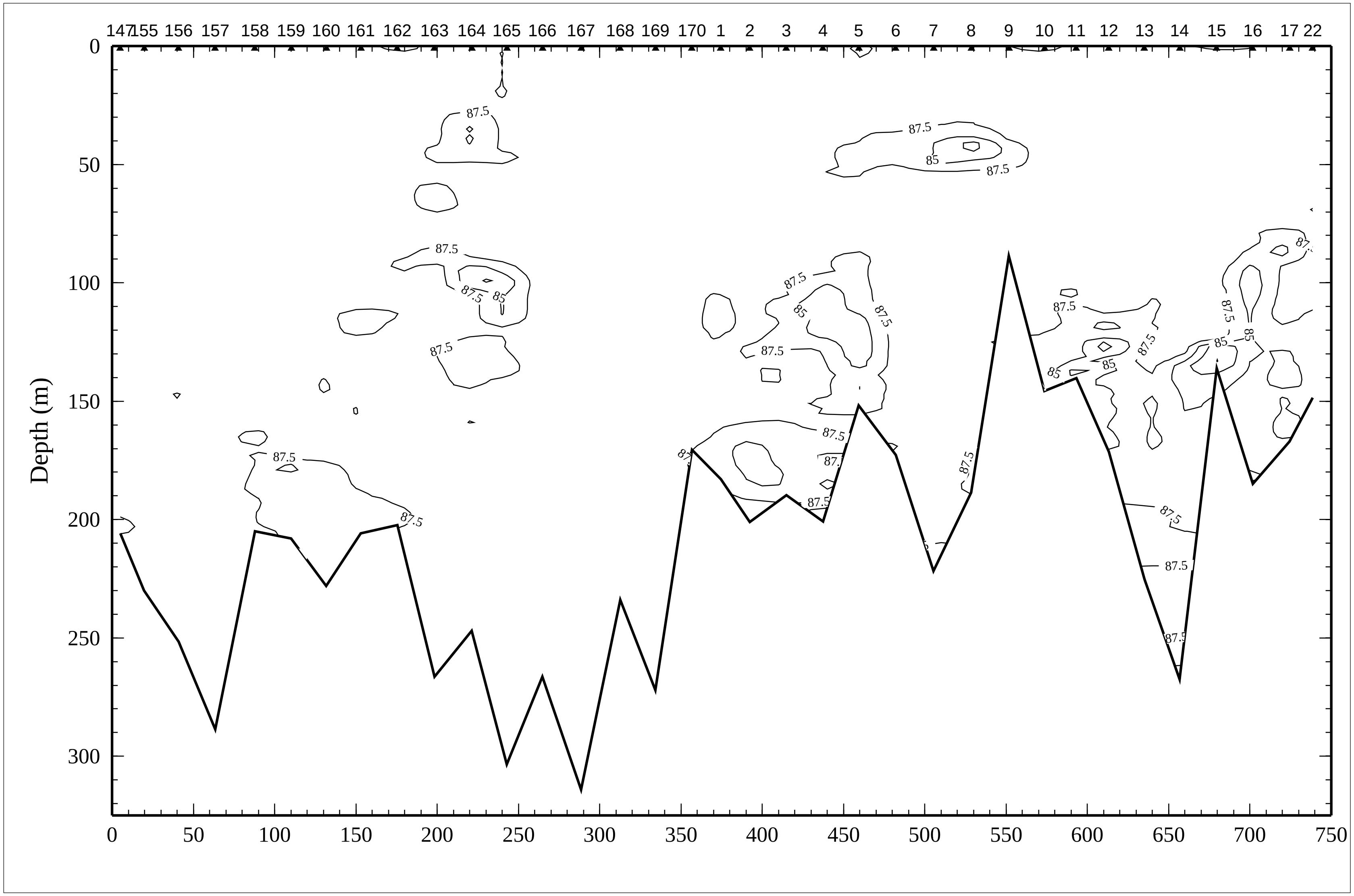

Figure 10.9.4. Percent transmission (660 nm wave length; 25-cm path length) on line 9 of LATEX A survey H10, 2-14 November 1994.

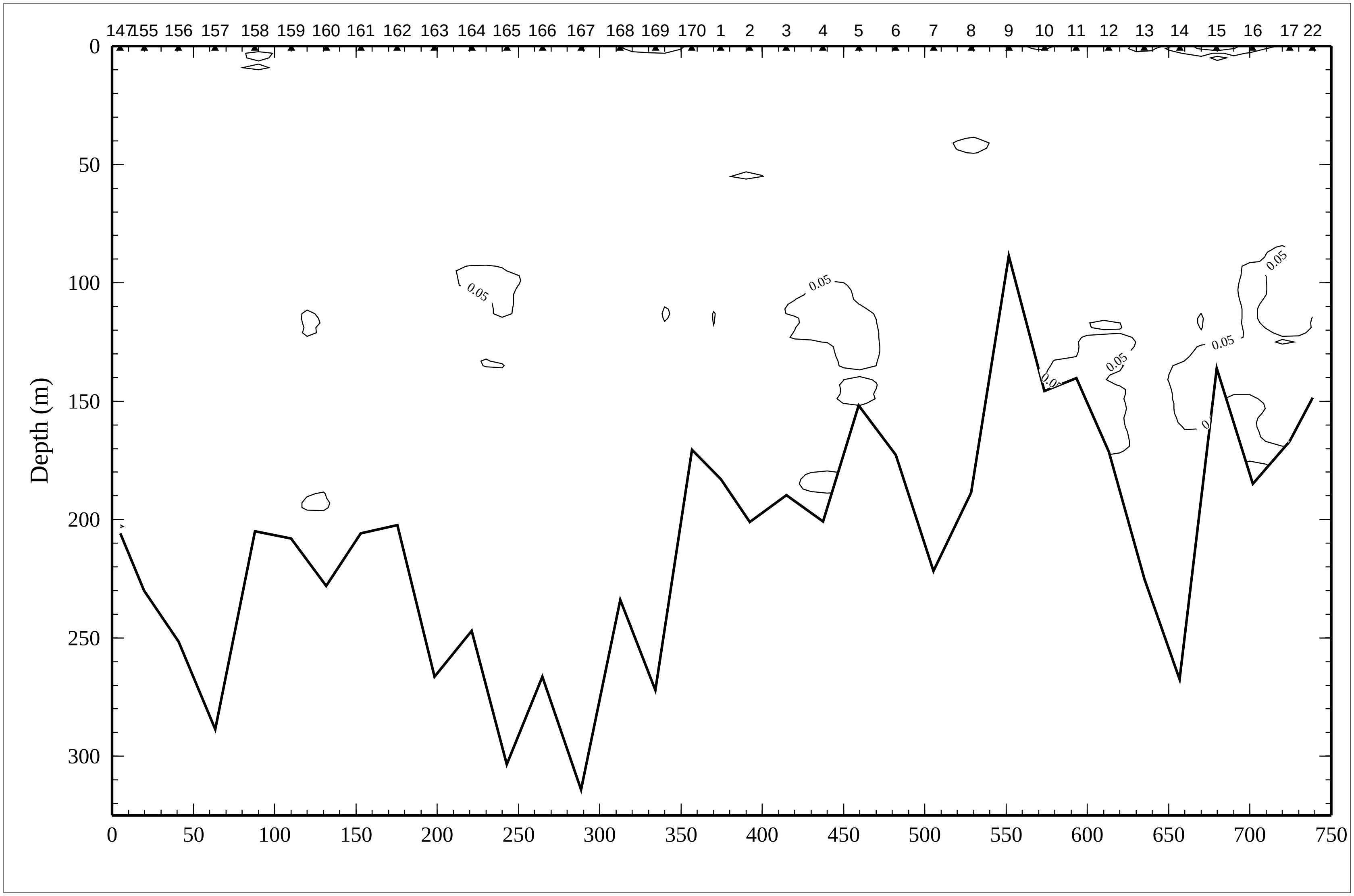

Figure 10.9.5. Optical backscatterance (voltage) on line 9 of LATEX A survey H10, 2-14 November 1994.

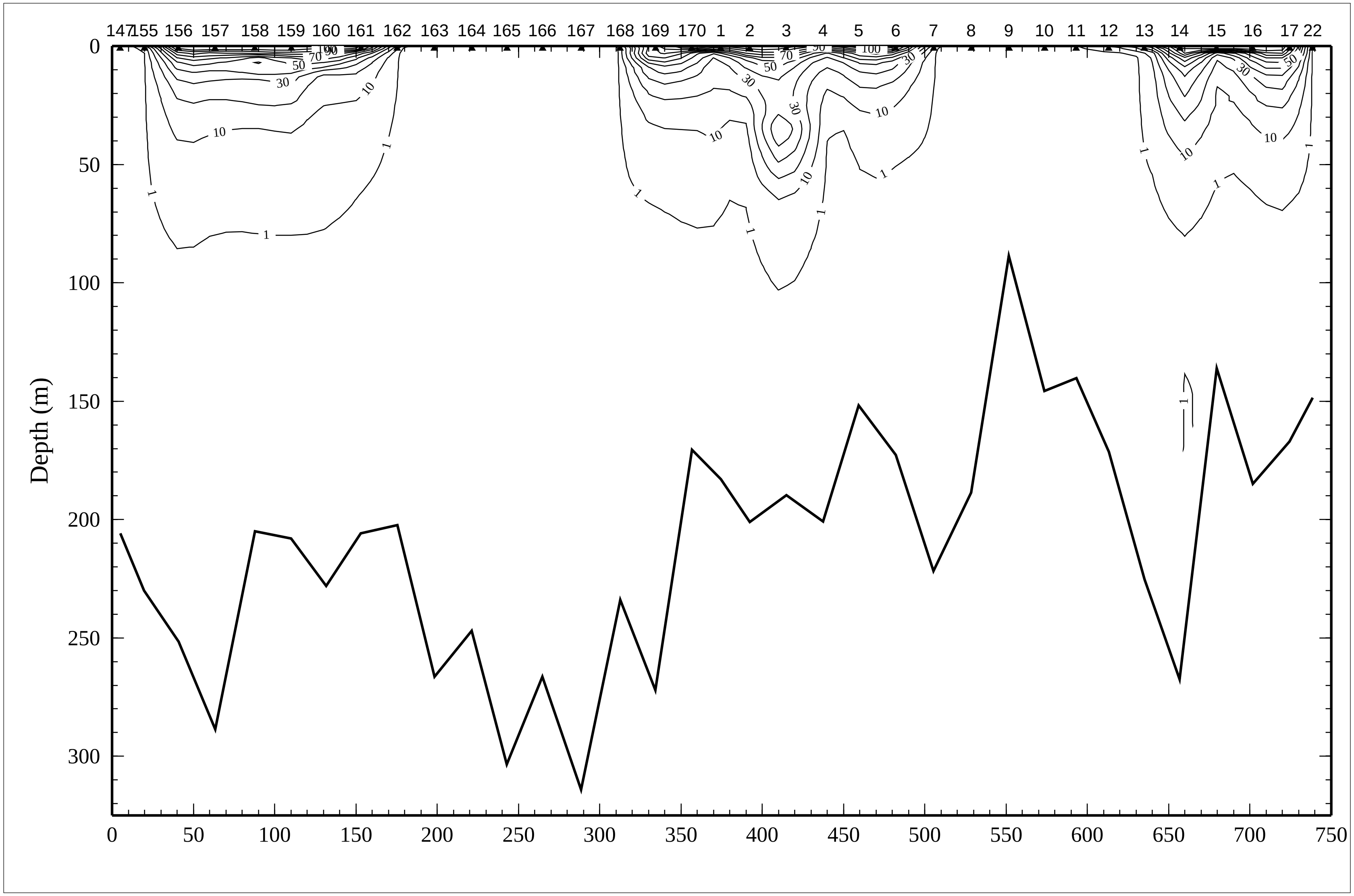

Figure 10.9.6. Downwelling irradiance as percent of surface irradiance on line 9 of LATEX A survey H10, 2-14 November 1994.

J144

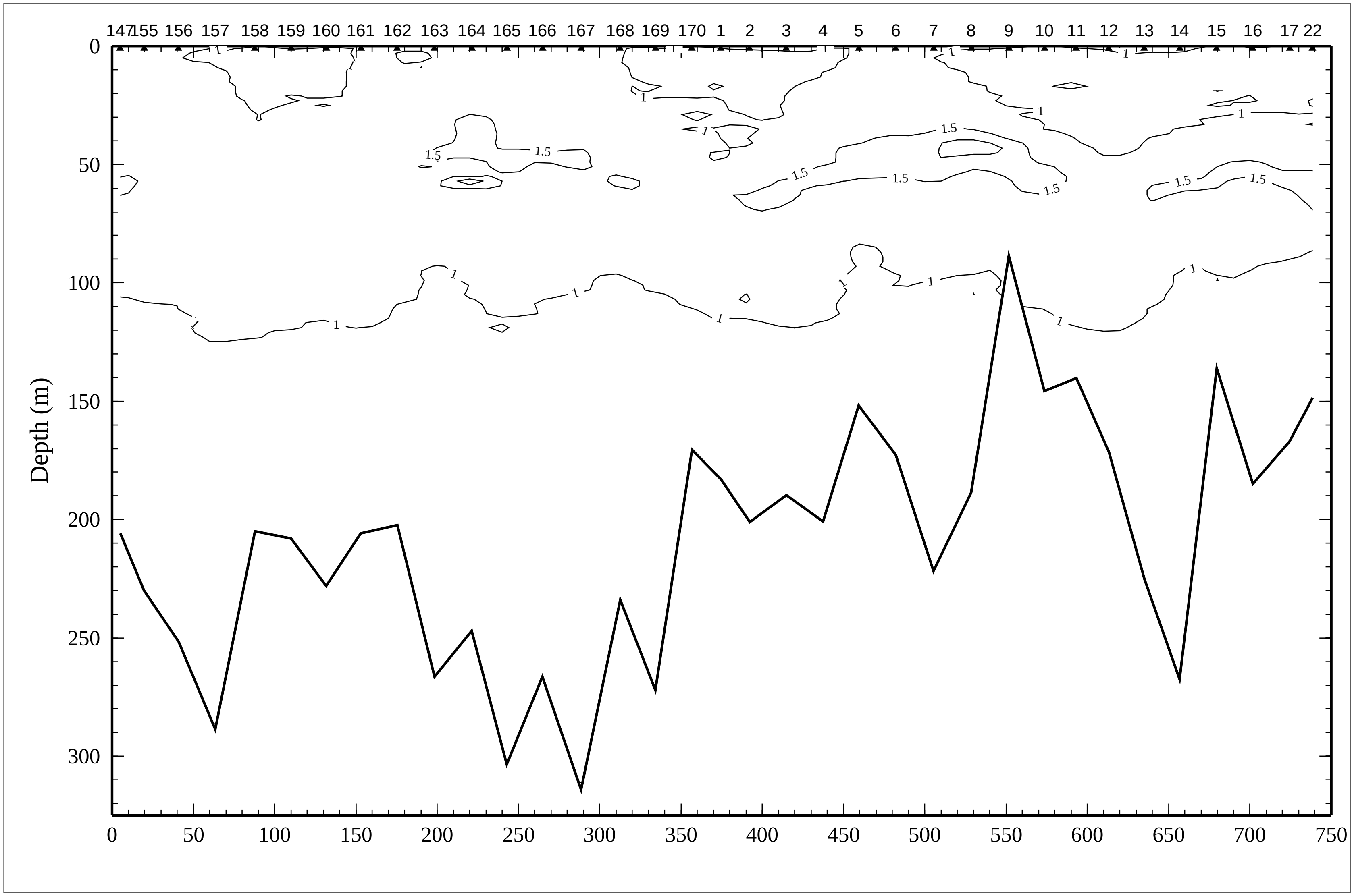

Figure 10.9.7. Relative fluorescence on line 9 of LATEX A survey H10, 2-14 November 1994.

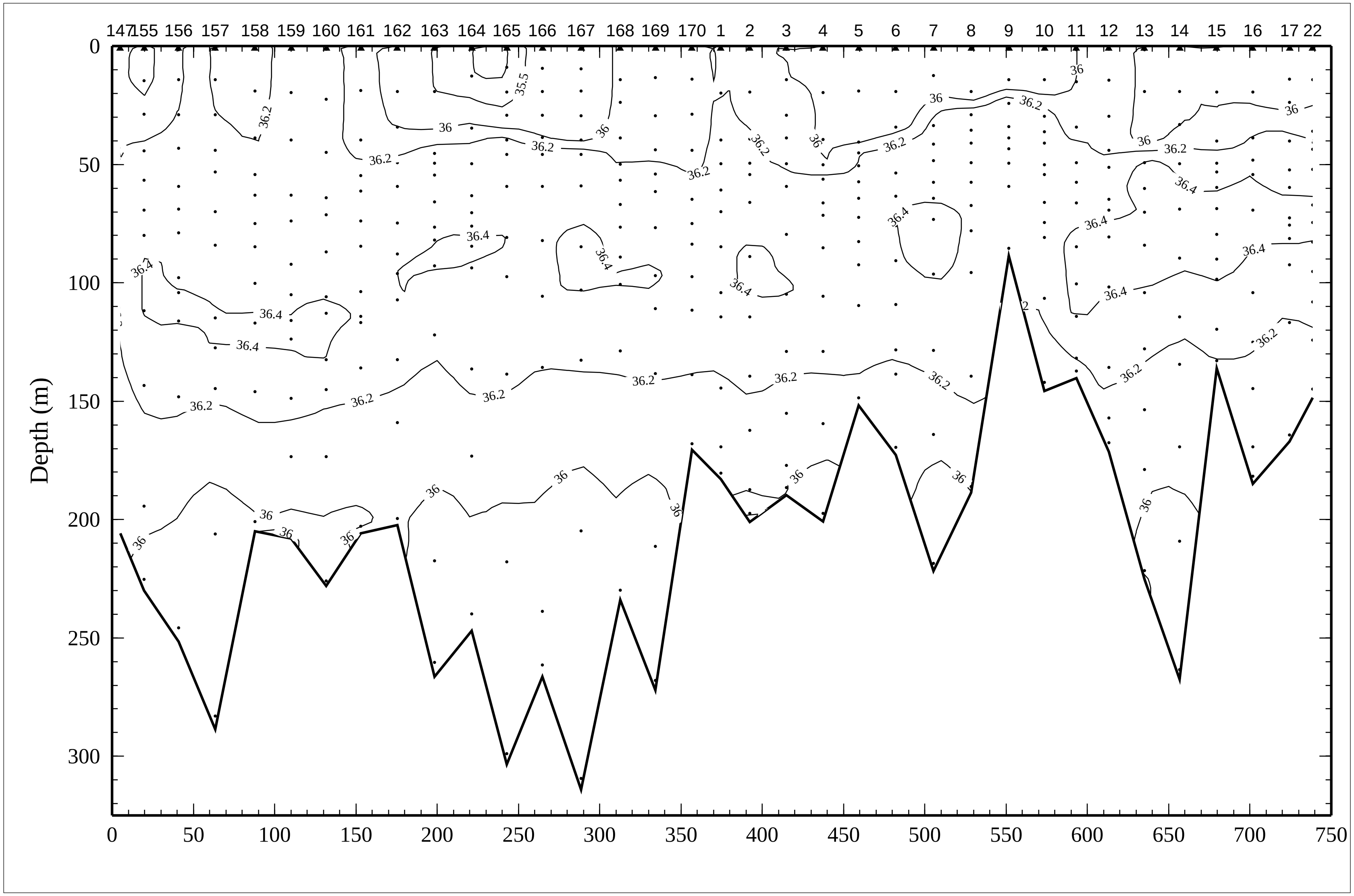

Figure 10.9.8. Bottle salinity on line 9 of LATEX A survey H10, 2-14 November 1994.

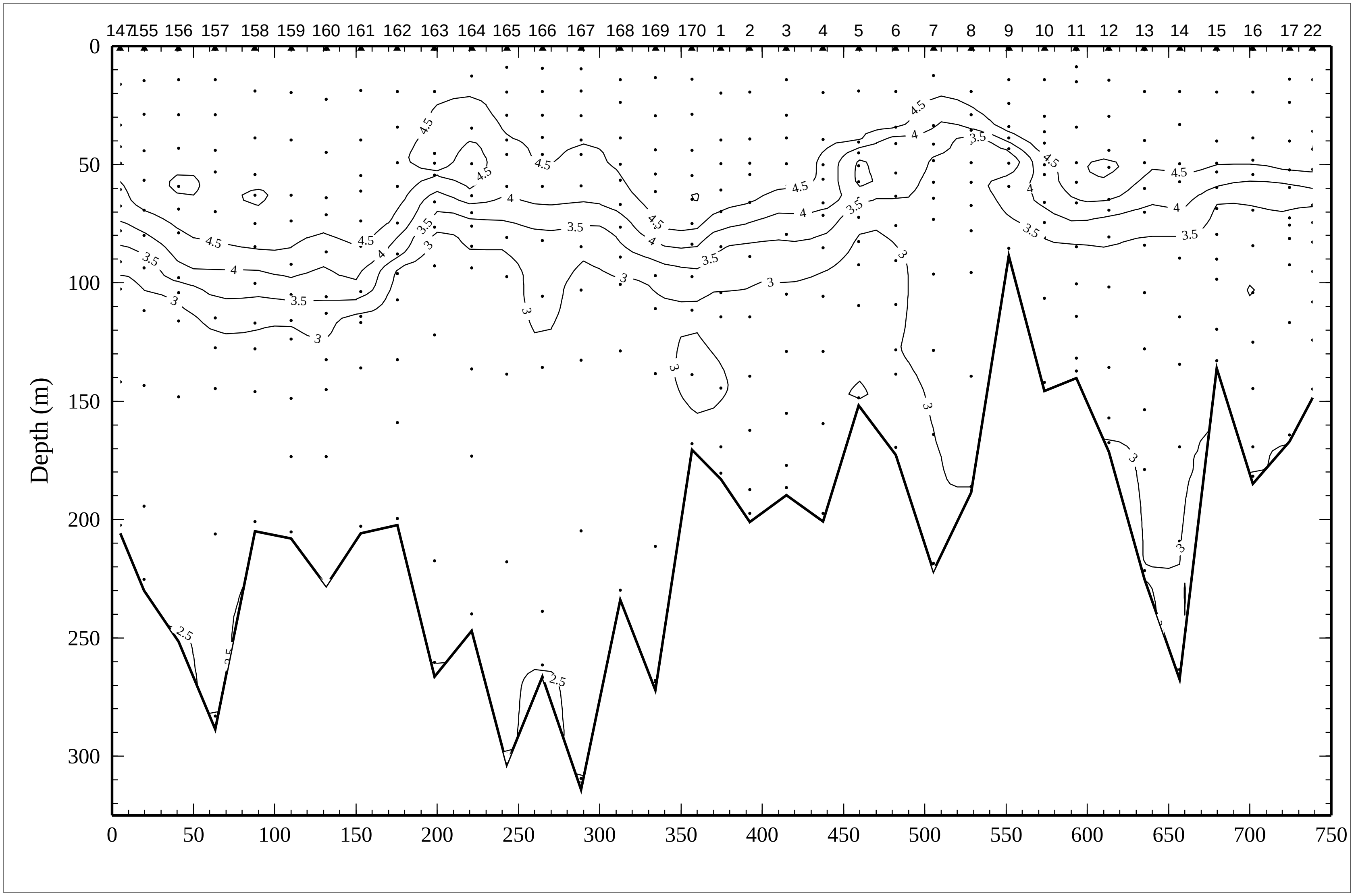

Figure 10.9.9. Dissolved oxygen (ml·l^{-1}) on line 9 of LATEX A survey H10, 2-14 November 1994.

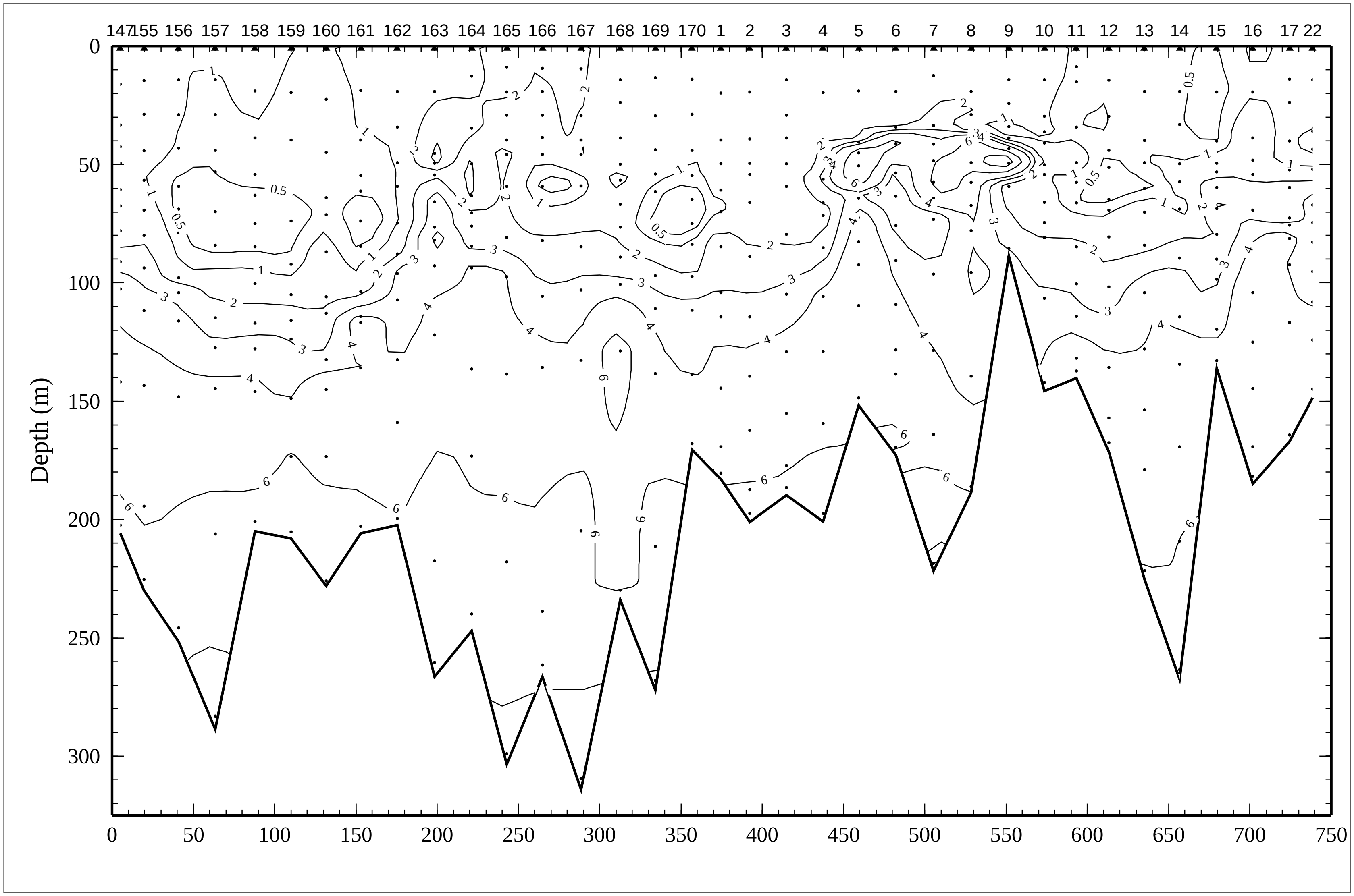

Figure 10.9.10. Silicate (μmol·l^{-1}) on line 9 of LATEX A survey H10, 2-14 November 1994.

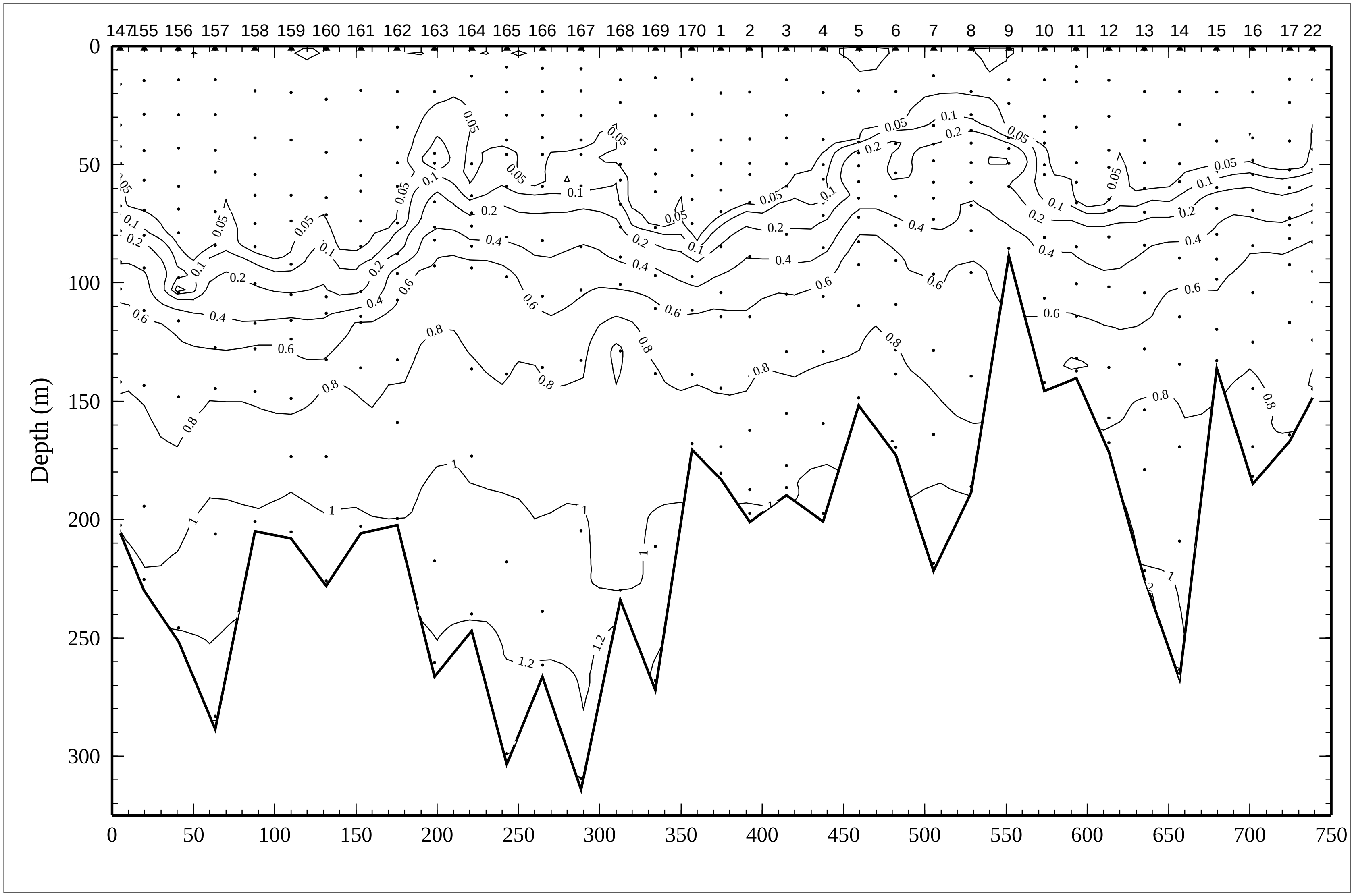

Figure 10.9.11. Phosphate (μmol·l^{-1}) on line 9 of LATEX A survey H10, 2-14 November 1994.

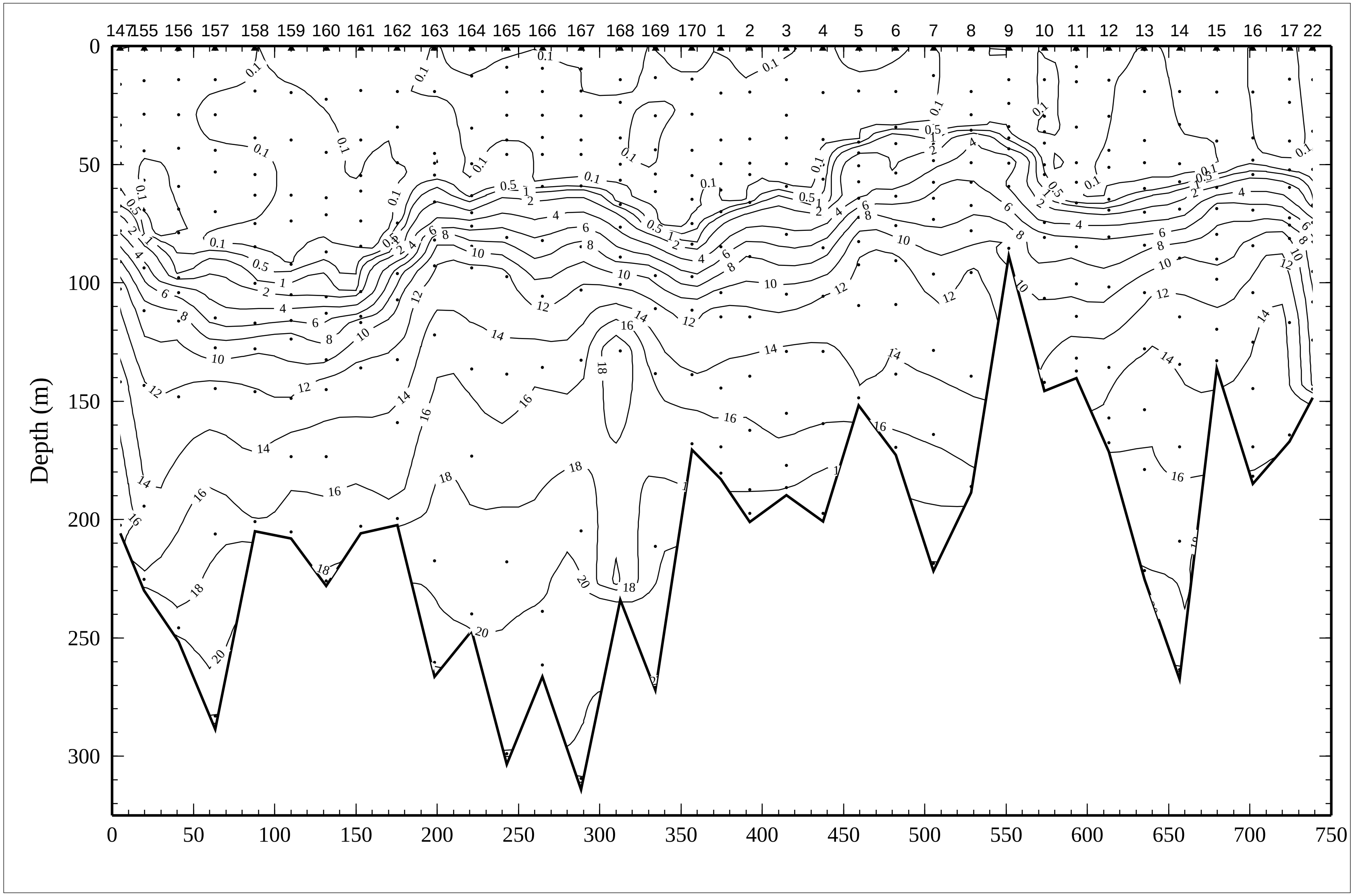

Figure 10.9.12. Nitrate (μmol·l-1) on line 9 of LATEX A survey H10, 2-14 November 1994.

J150

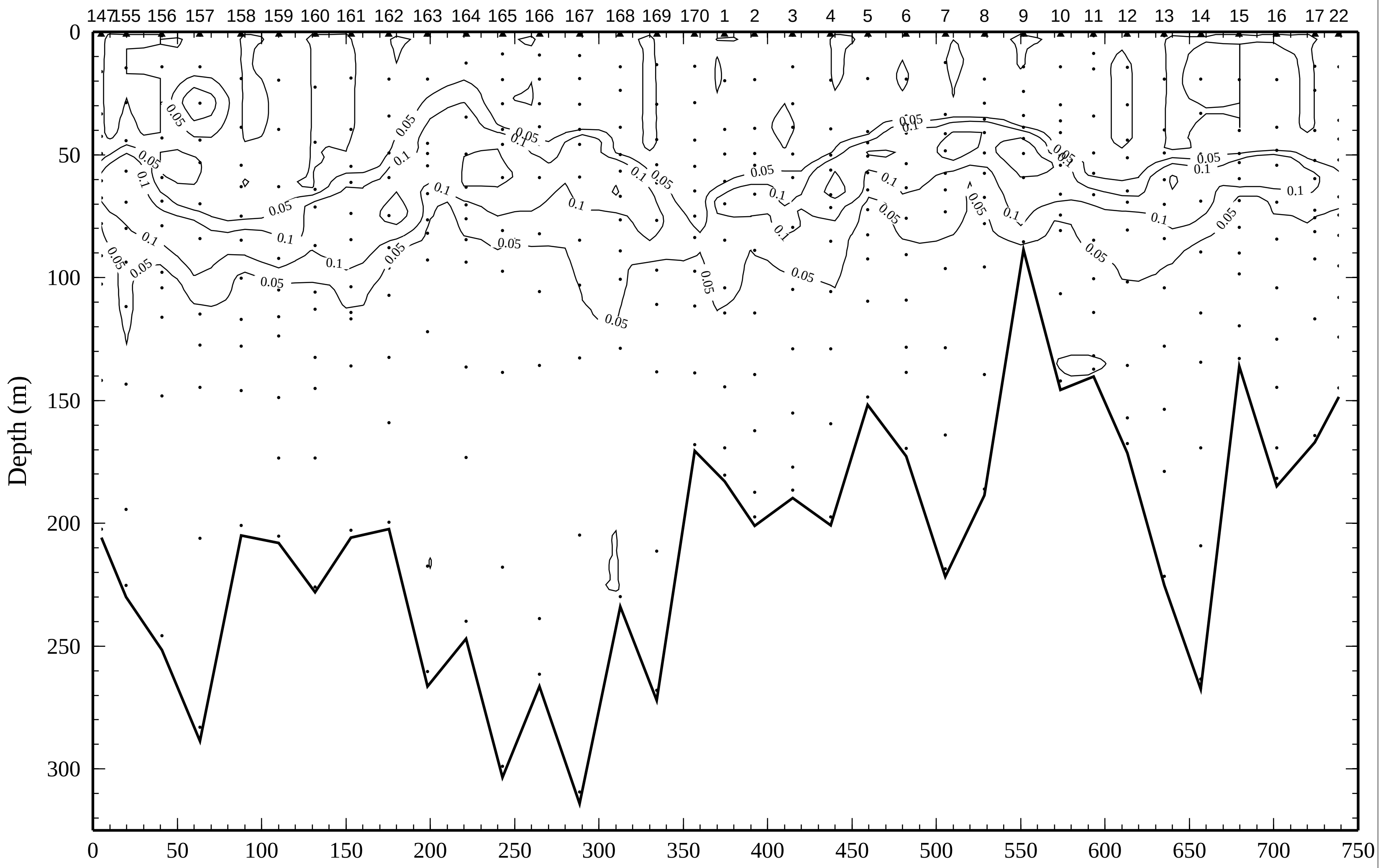

Figure 10.9.13. Nitrite (µmol·l^{-1}) on line 9 of LATEX A survey H10, 2-14 November 1994.

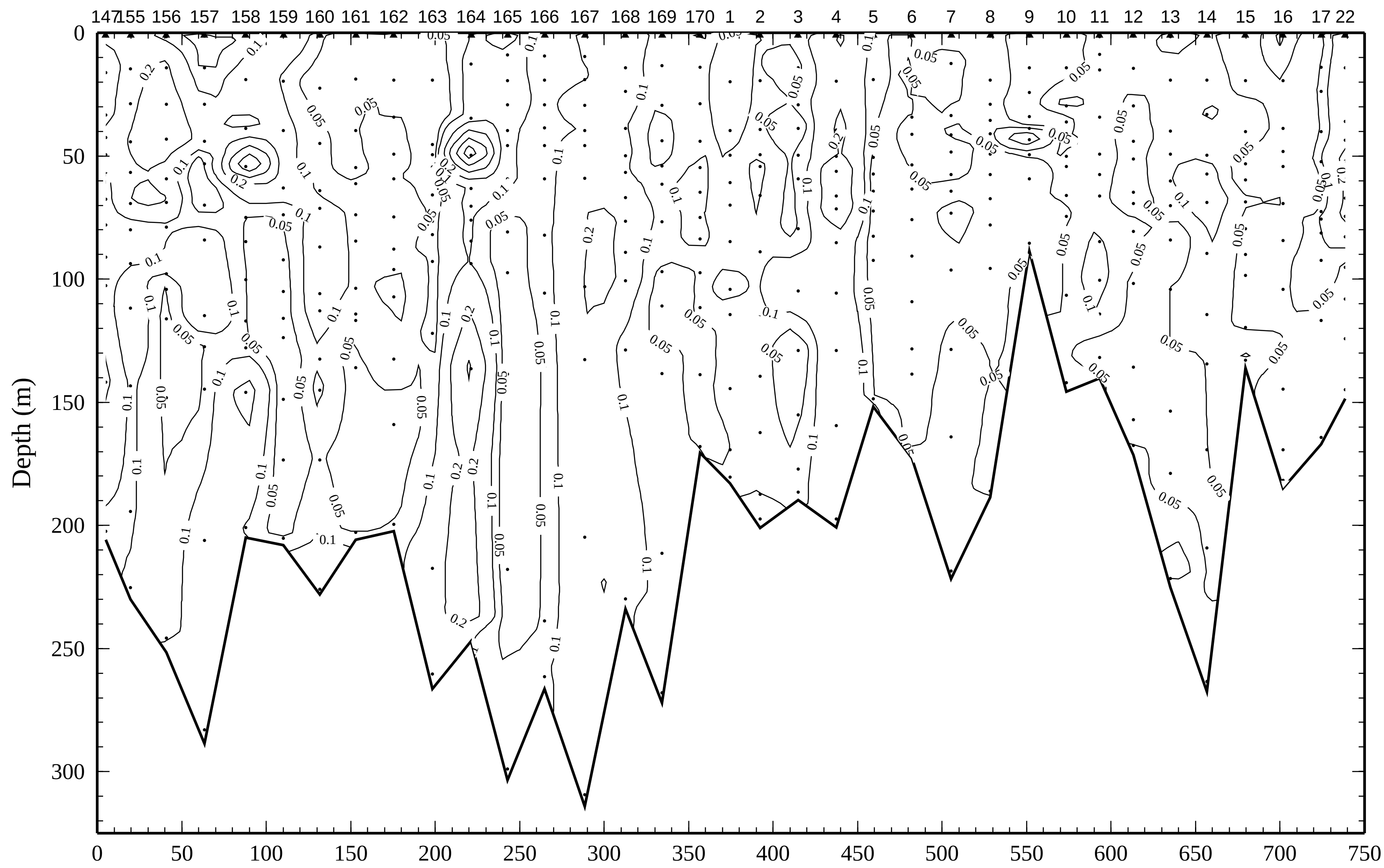

Figure 10.9.14. Ammonium (μmol·l⁻¹) on line 9 of LATEX A survey H10, 2-14 November 1994.

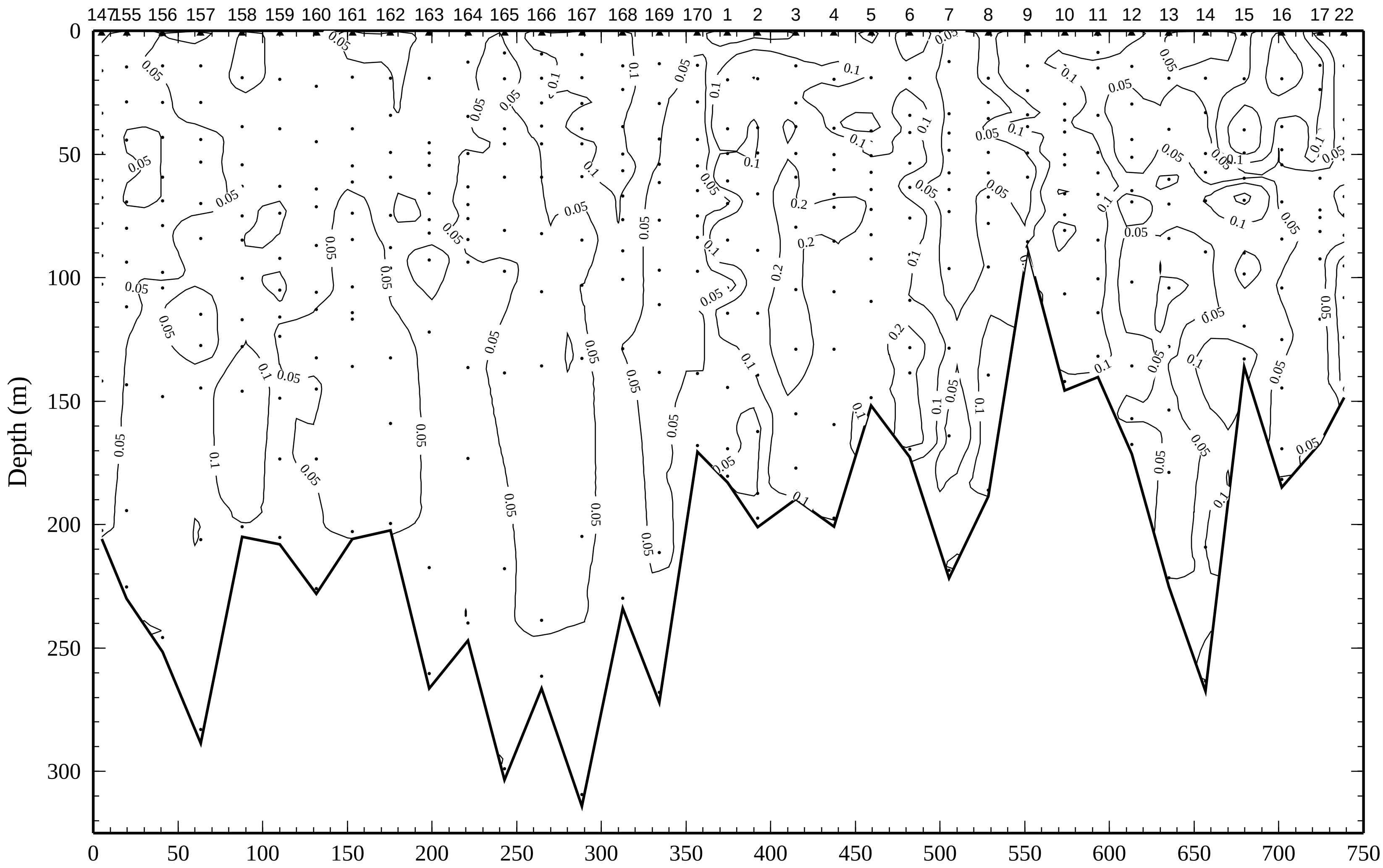

Figure 10.9.15. Urea (μmol·l^{-1}) on line 9 of LATEX A survey H10, 2-14 November 1994.

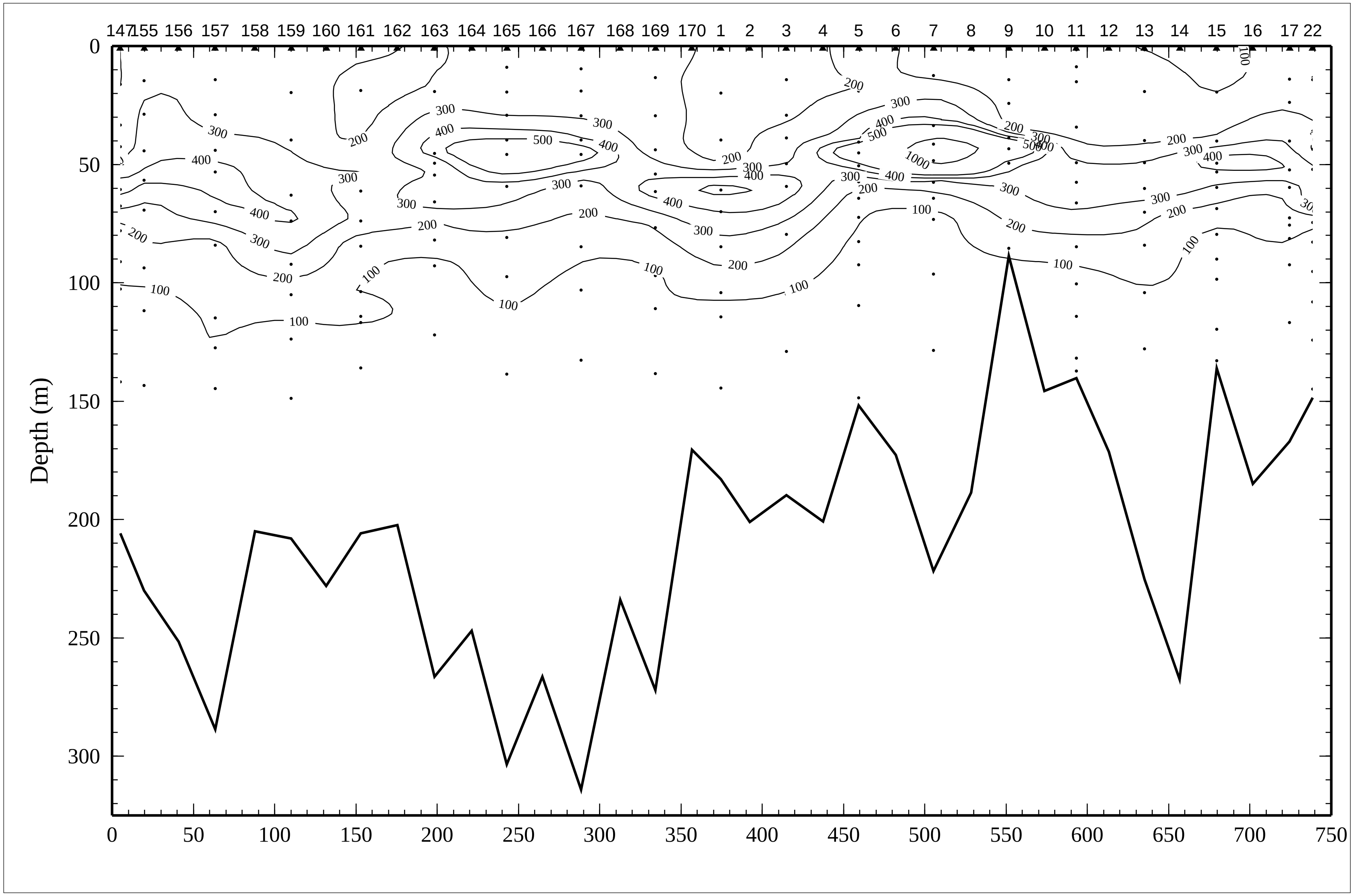

Figure 10.9.16. Chlorophyll a ($ng \cdot l^{-1}$) on line 9 of LATEX A survey H10, 2-14 November 1994.

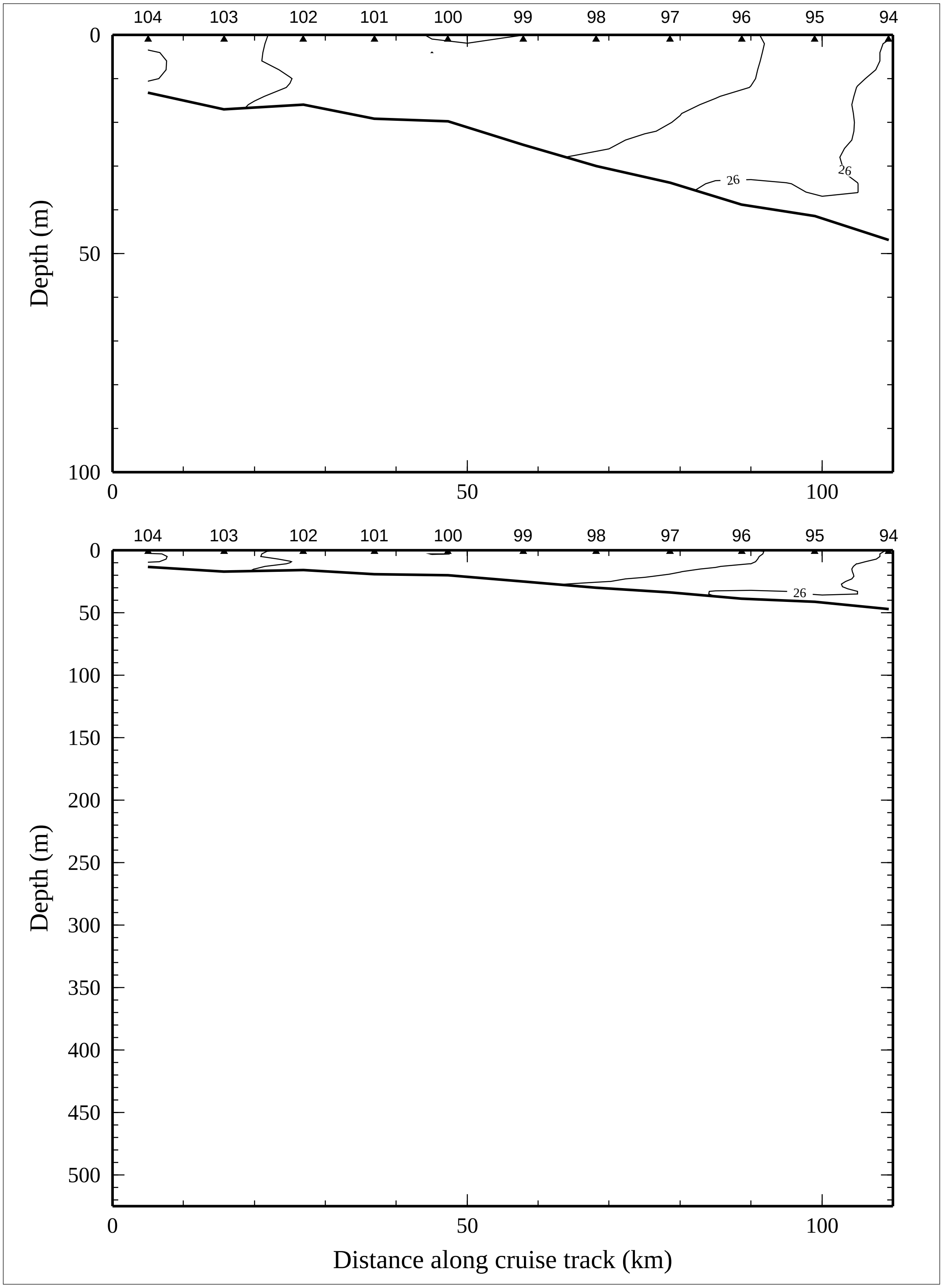

Figure 10.11.1. Potential temperature (˚C) on line 11 of LATEX A survey H10, 2-14 November 1994.

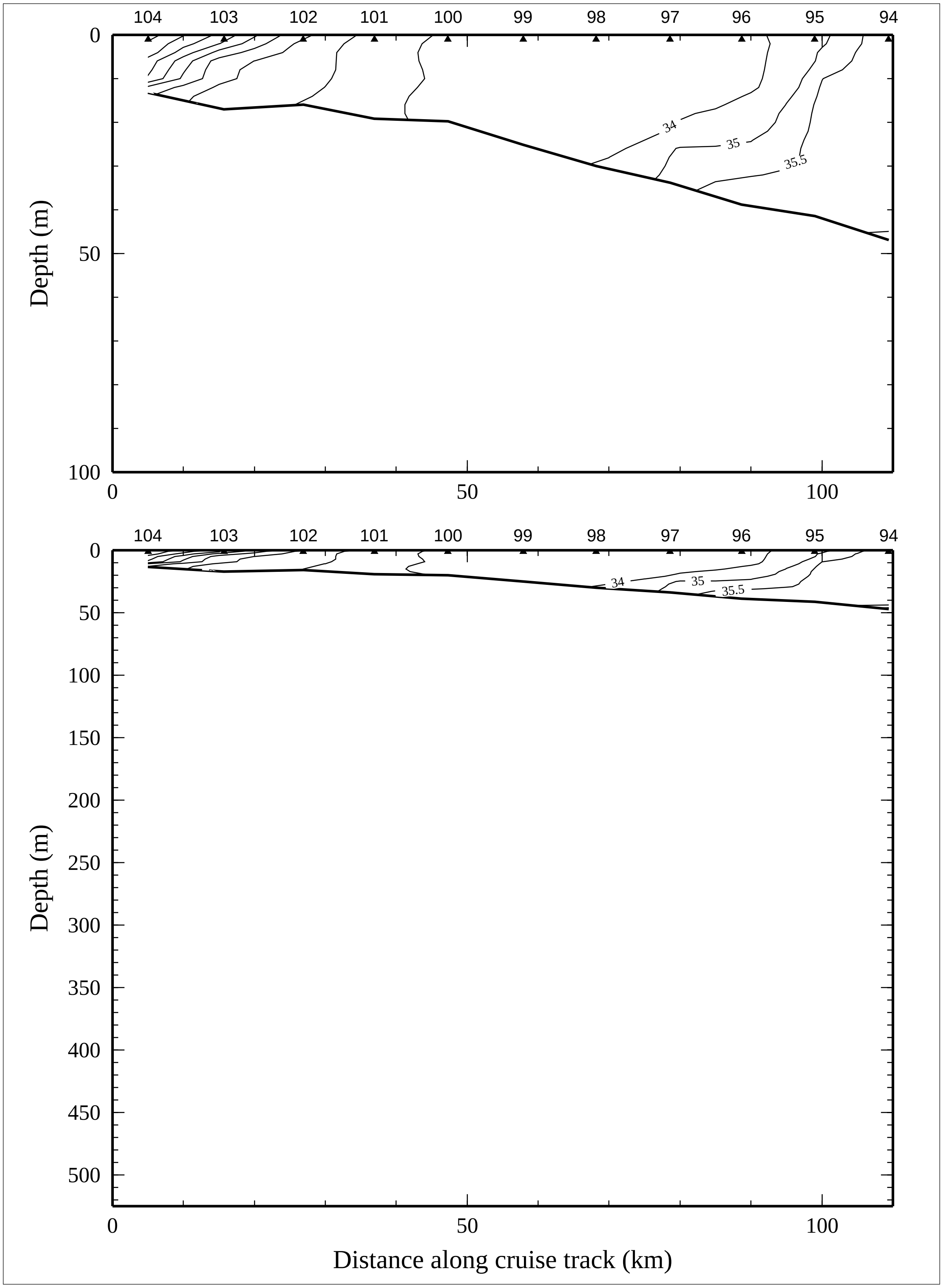

Figure 10.11.2. Salinity, derived from CTD data, on line 11 of LATEX A survey H10, 2-14 November 1994.

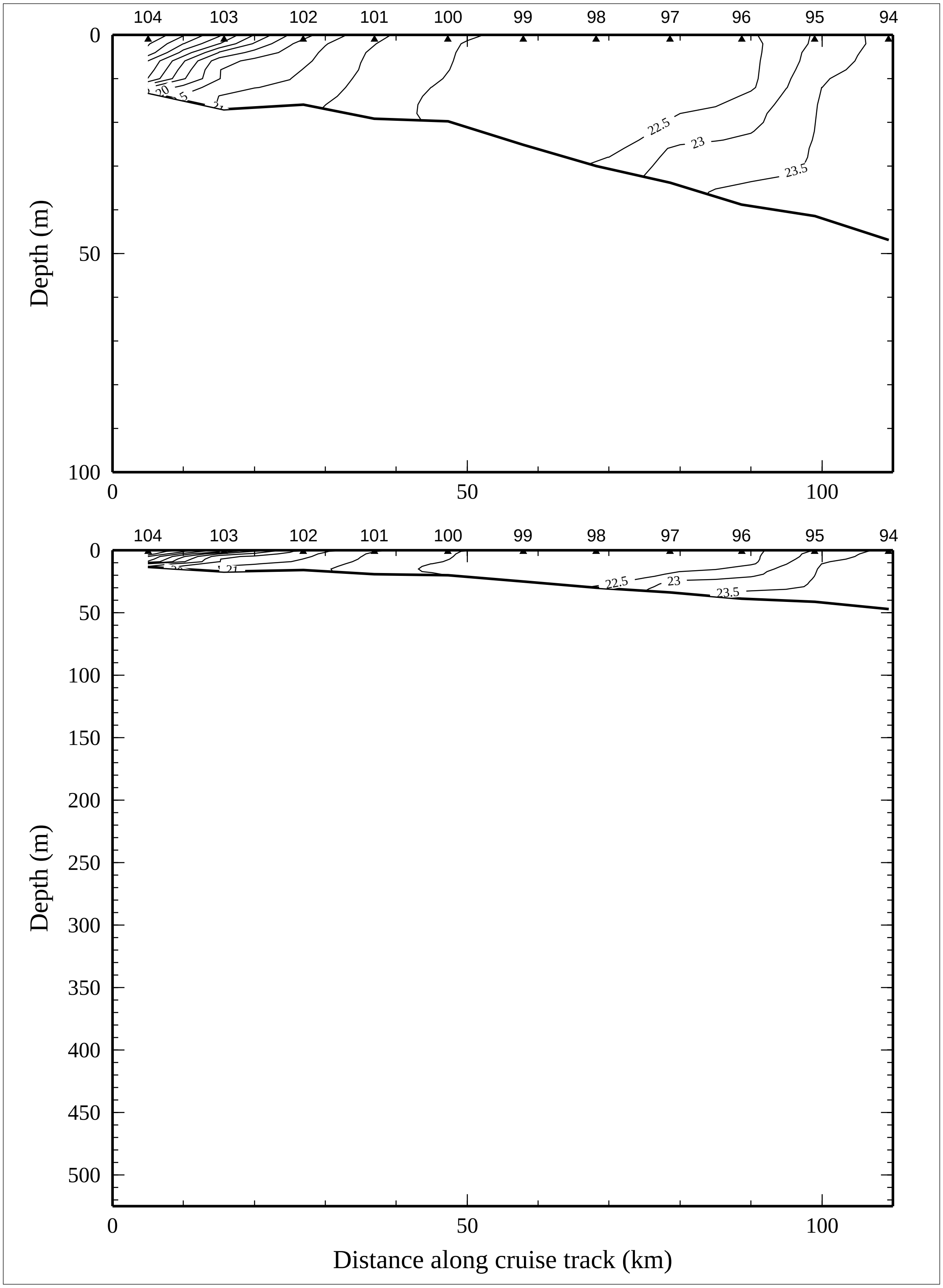

Figure 10.11.3. Density anomaly (σ_θ in kg·m^{-3}) on line 11 of LATEX A survey H10, 2-14 November 1994.

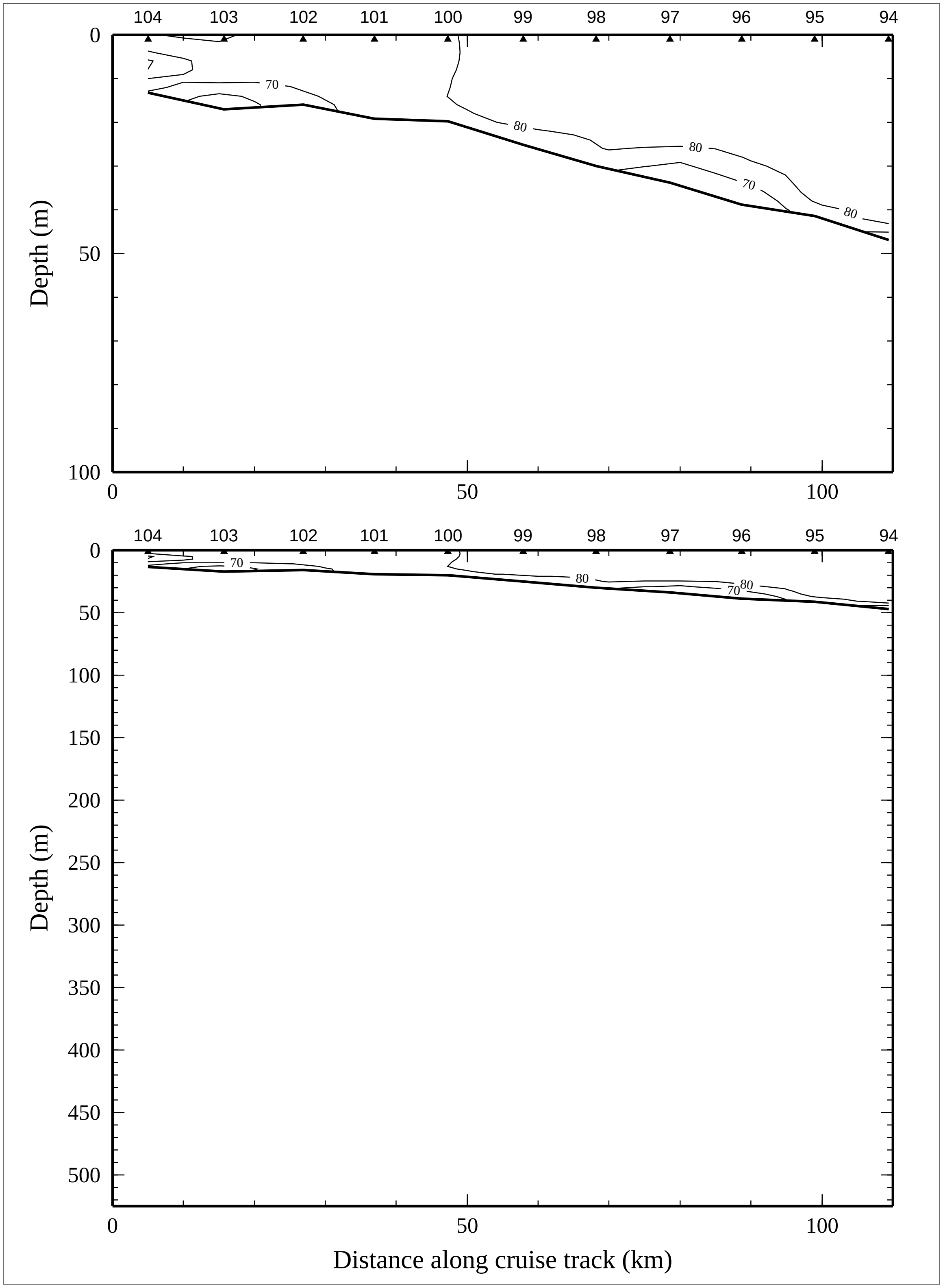

Figure 10.11.4. Percent transmission (660 nm wave length; 25-cm path length) on line 11 of LATEX A survey H10, 2-14 November 1994.

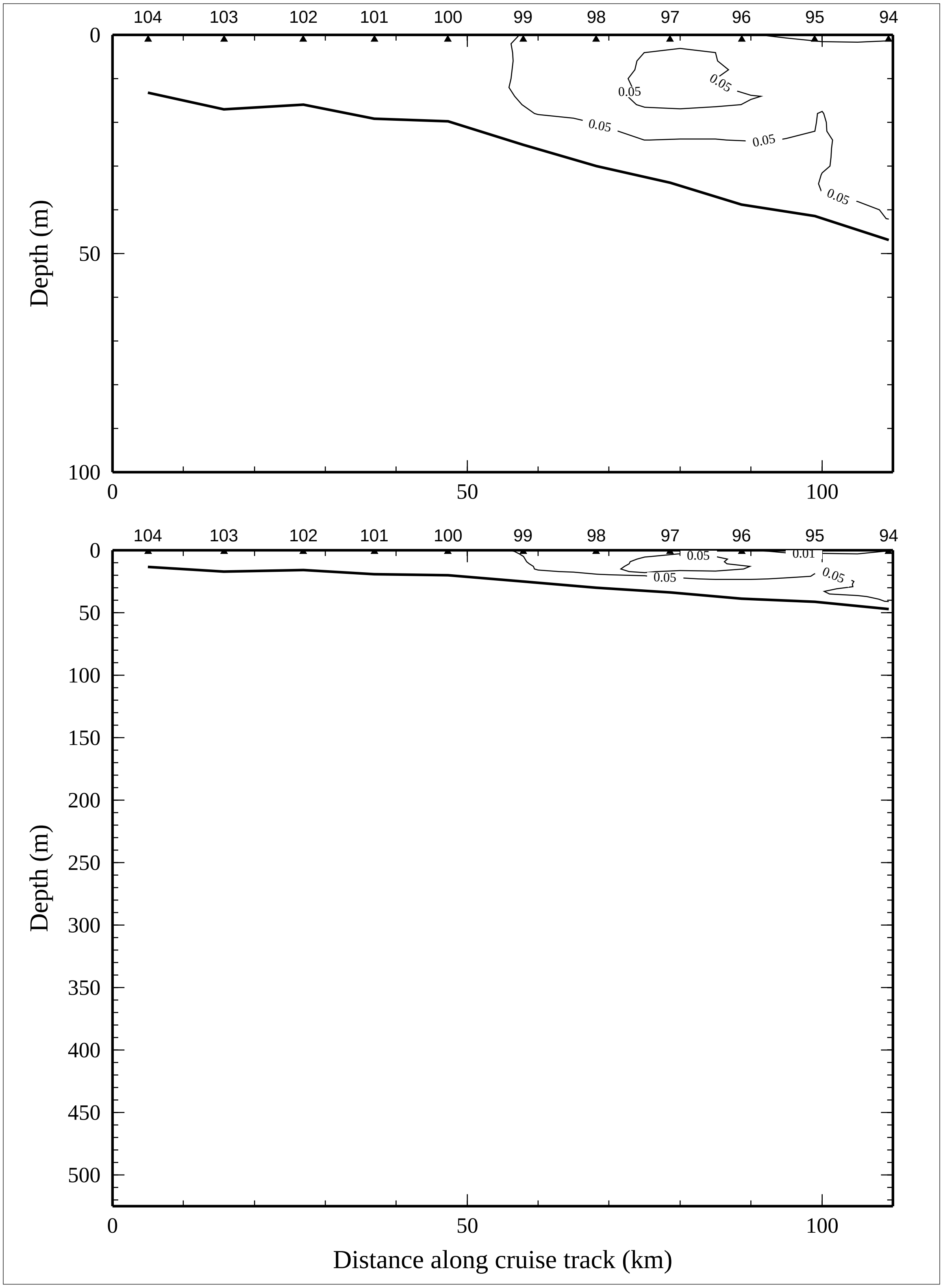

Figure 10.11.5. Optical backscatterance (voltage) on line 11 of LATEX A survey H10, 2-14 November 1994.

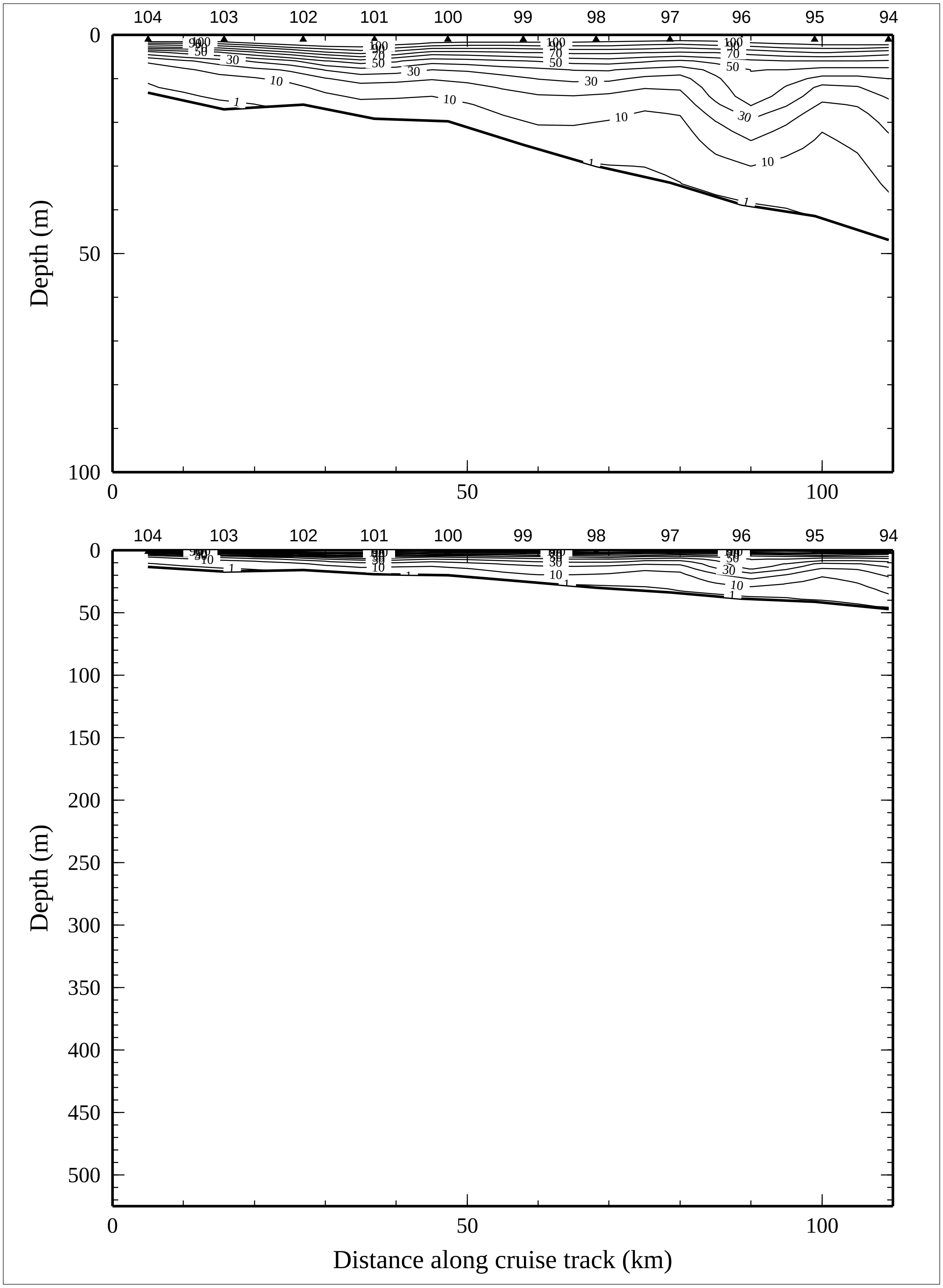

Figure 10.11.6. Downwelling irradiance as percent of surface irradiance on line 11 of LATEX A survey H10, 2-14 November 1994.

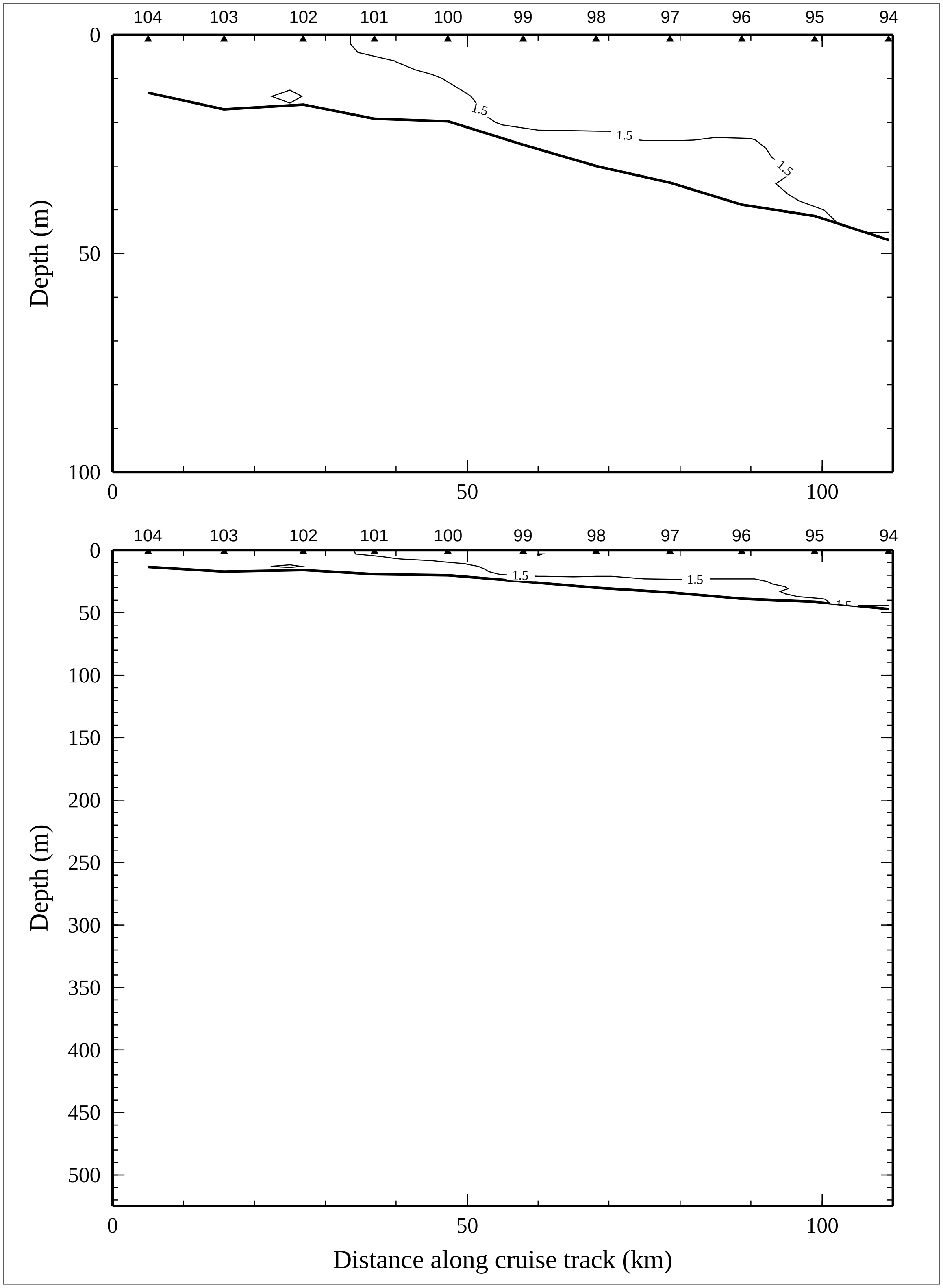

Figure 10.11.7. Relative fluorescence on line 11 of LATEX A survey H10, 2-14 November 1994.

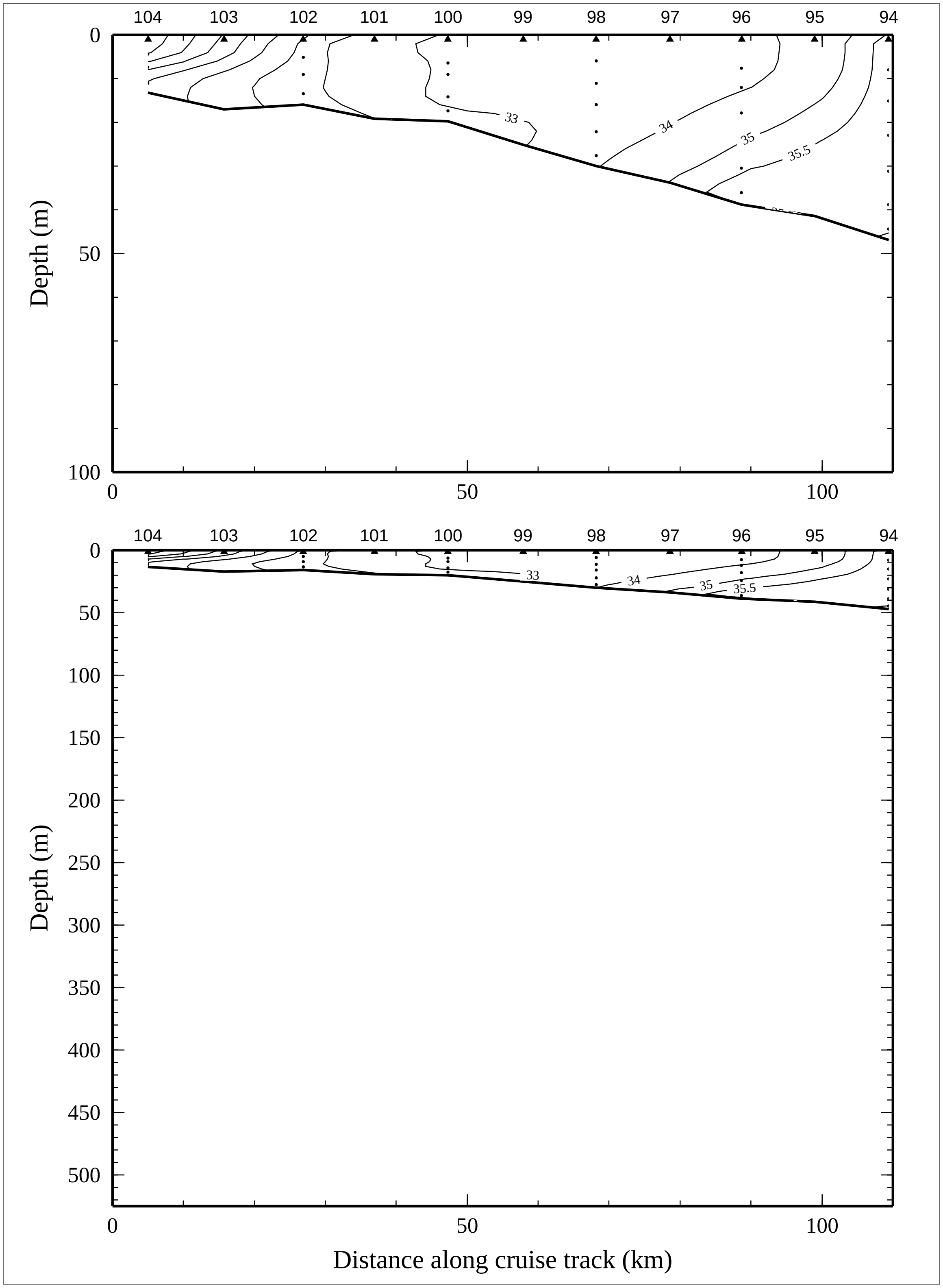

Figure 10.11.8. Bottle salinity on line 11 of LATEX A survey H10, 2-14 November 1994.

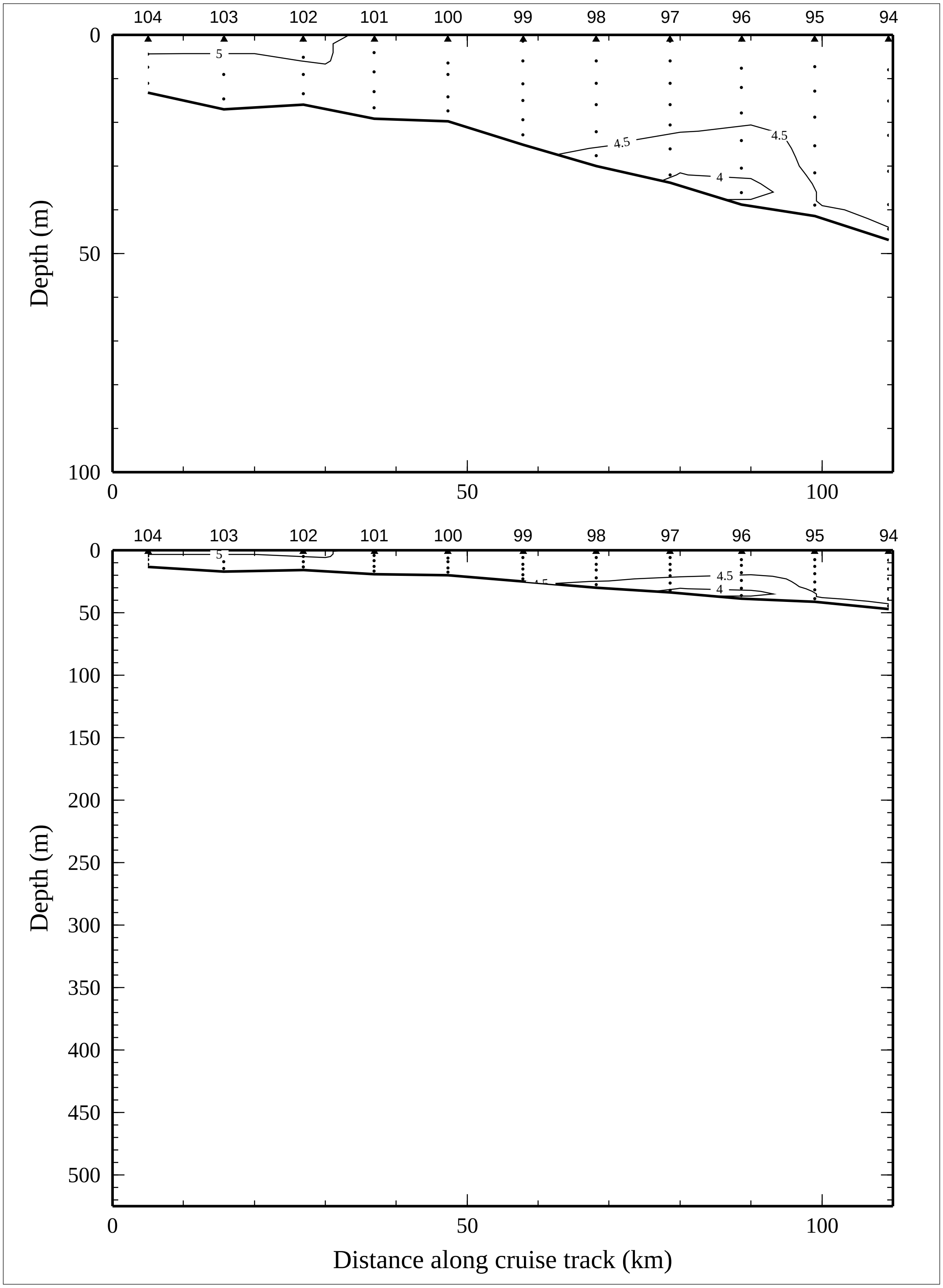

Figure 10.11.9. Dissolved oxygen (ml·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

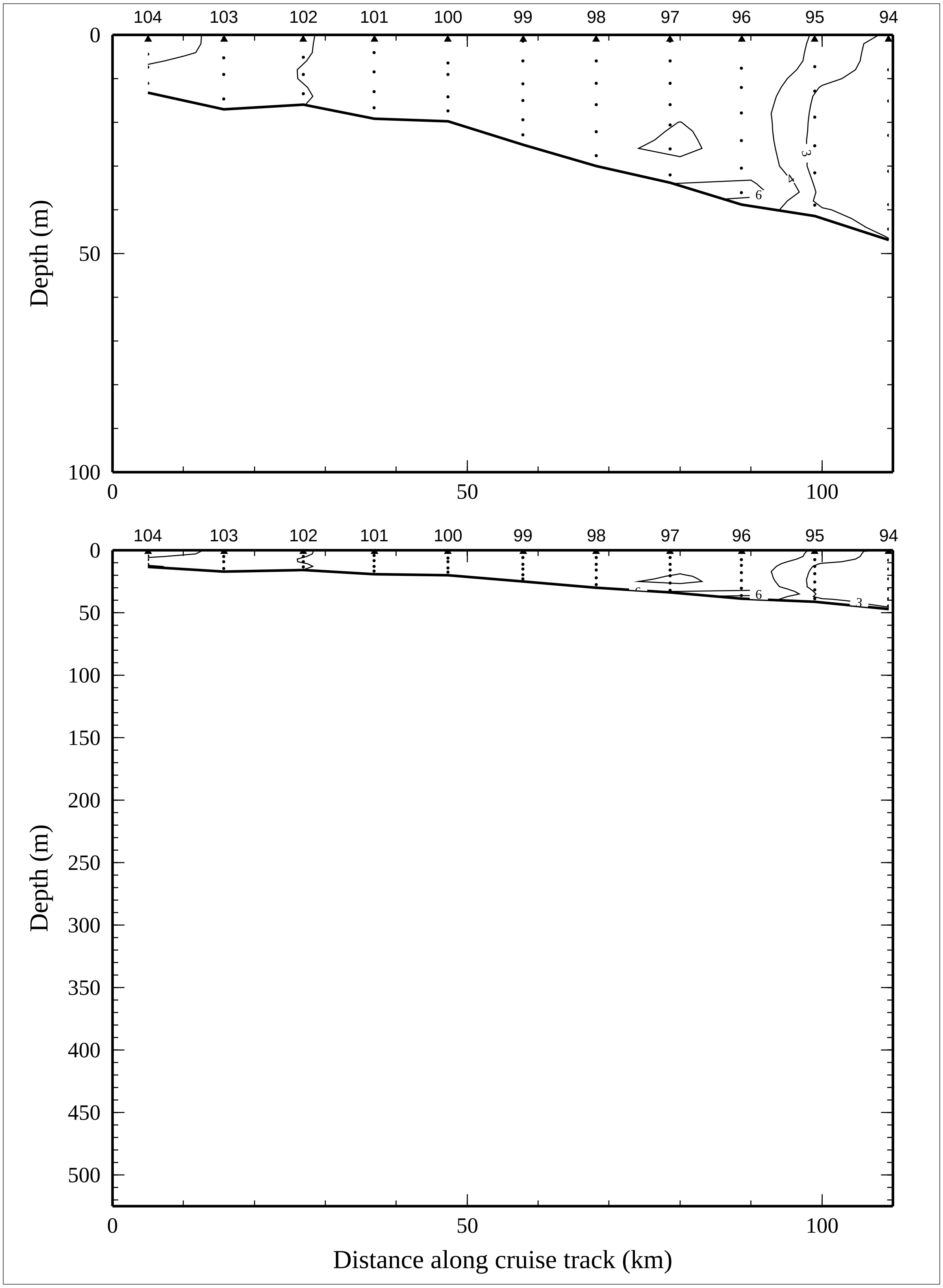

Figure 10.11.10. Silicate (μmol·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

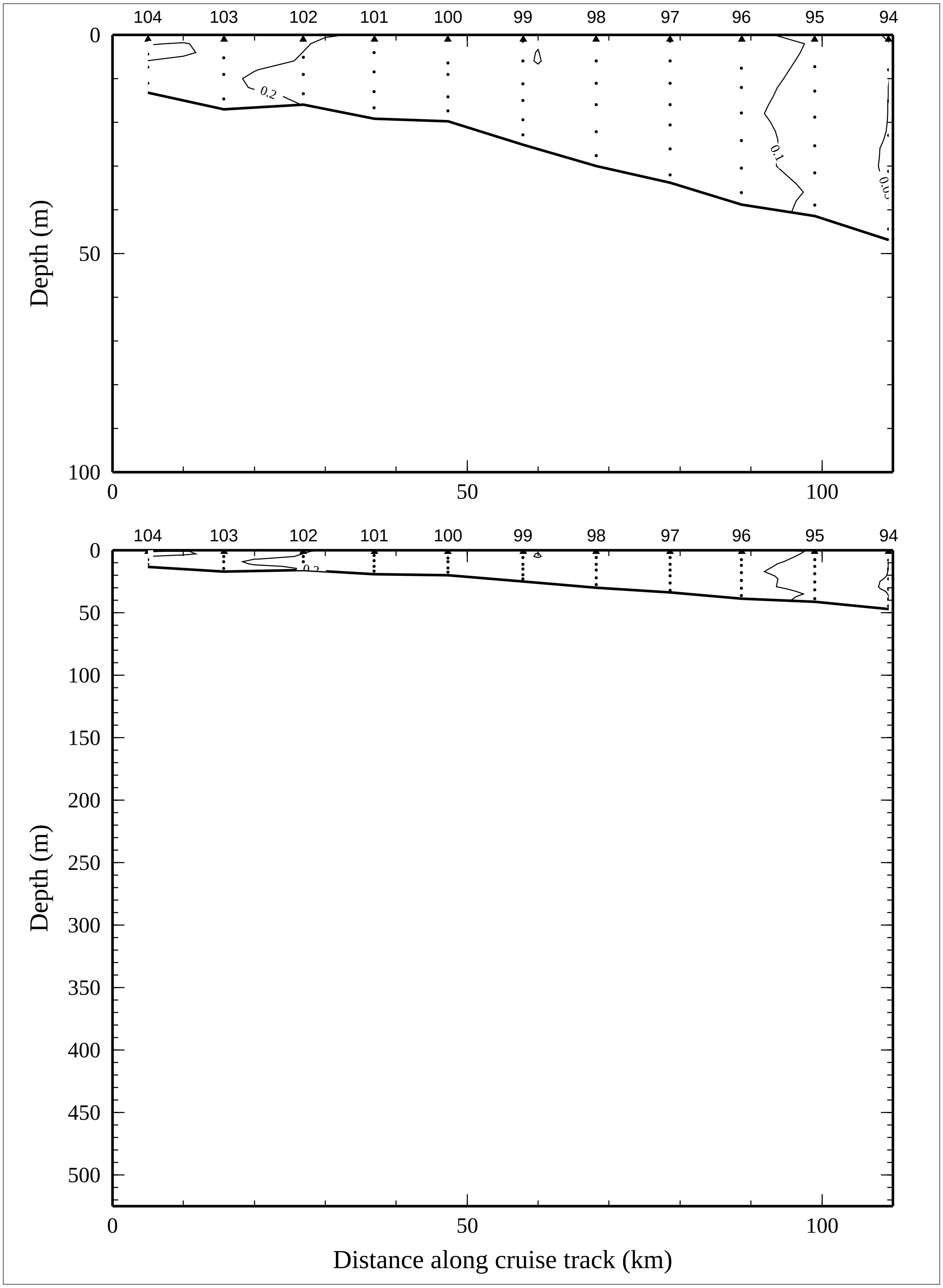

Figure 10.11.11. Phosphate (μmol·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

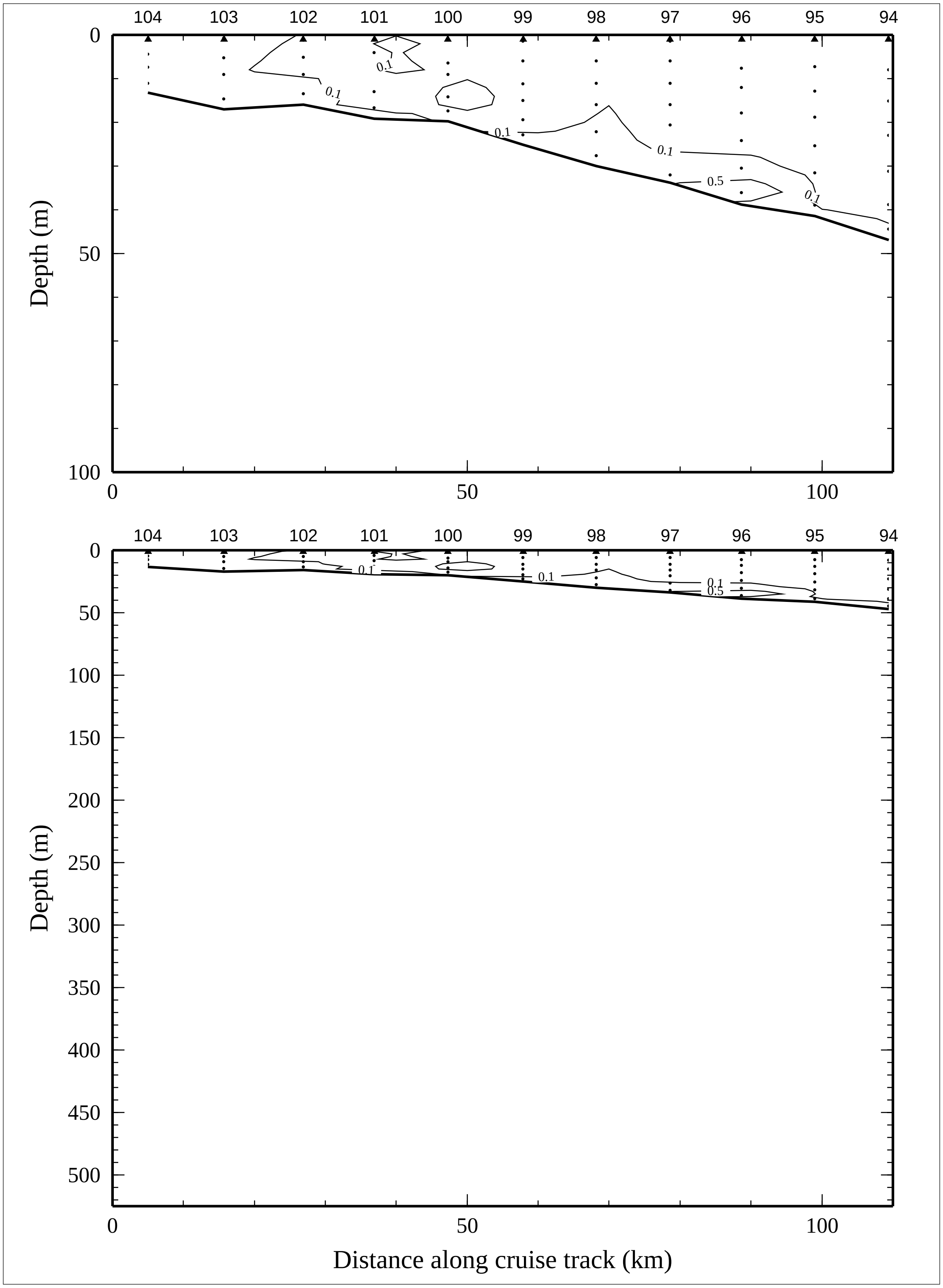

Figure 10.11.12. Nitrate (μmol·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

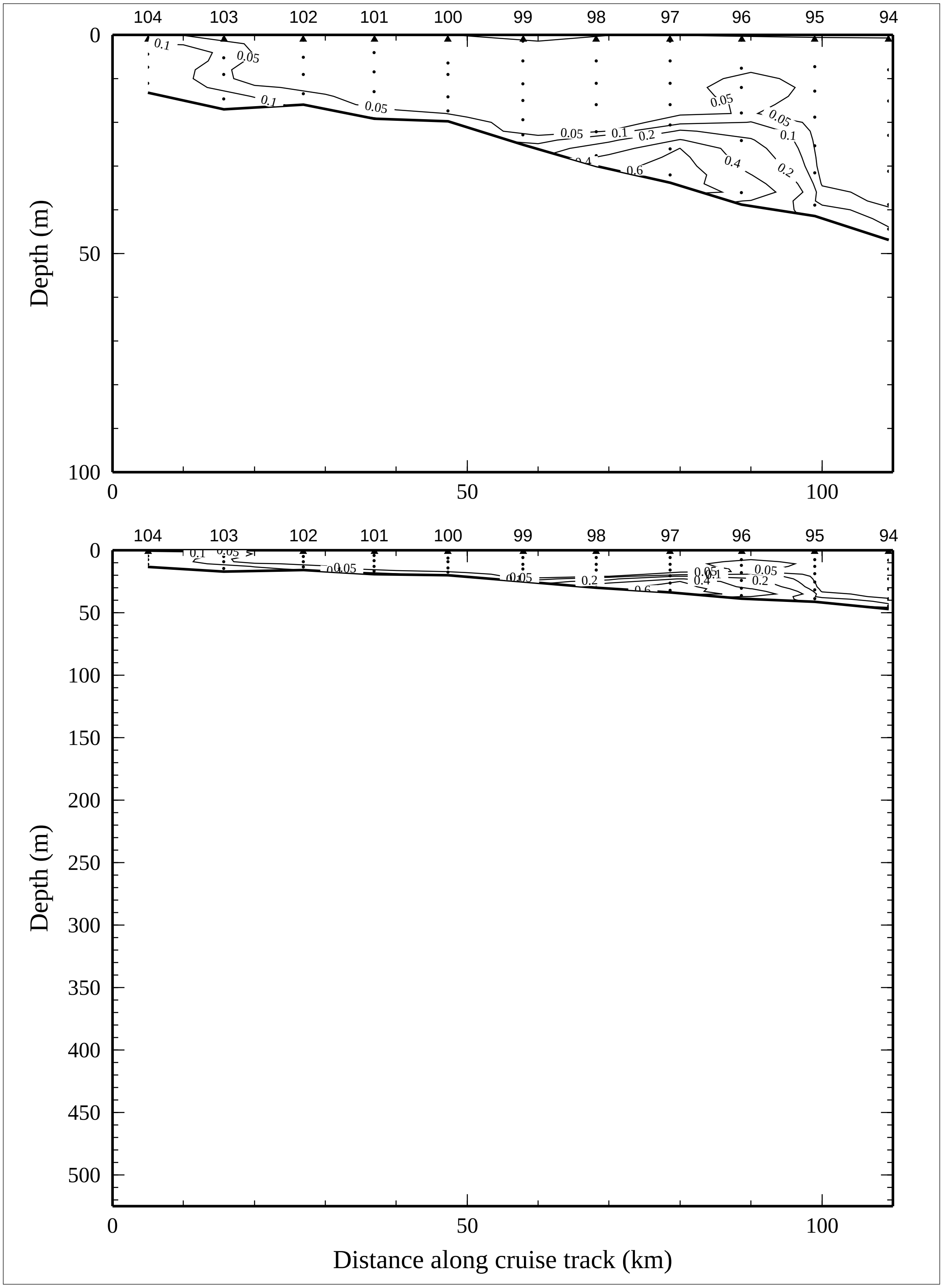

Figure 10.11.13. Nitrite (μmol·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

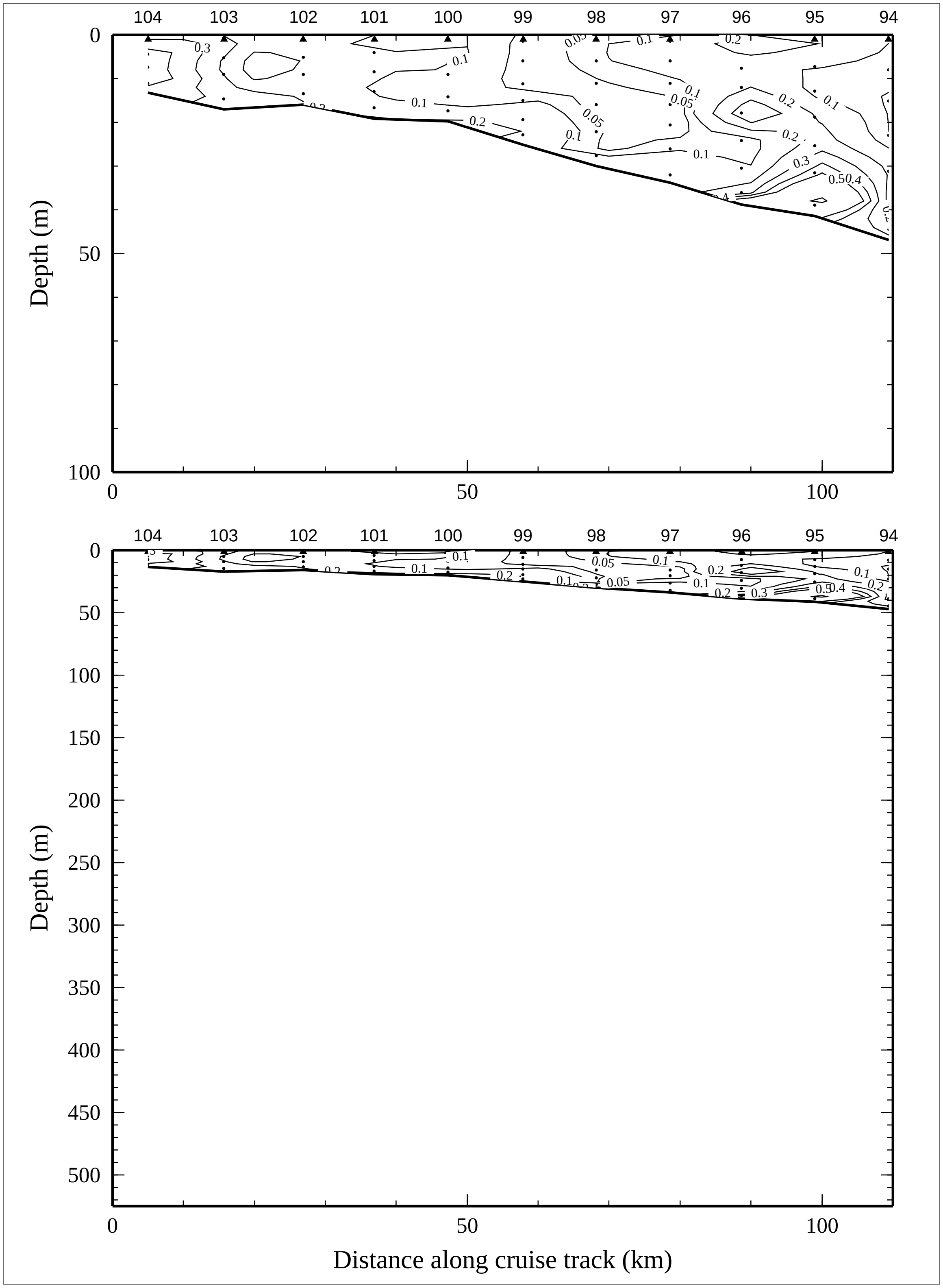

Figure 10.11.14. Ammonium (μmol·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

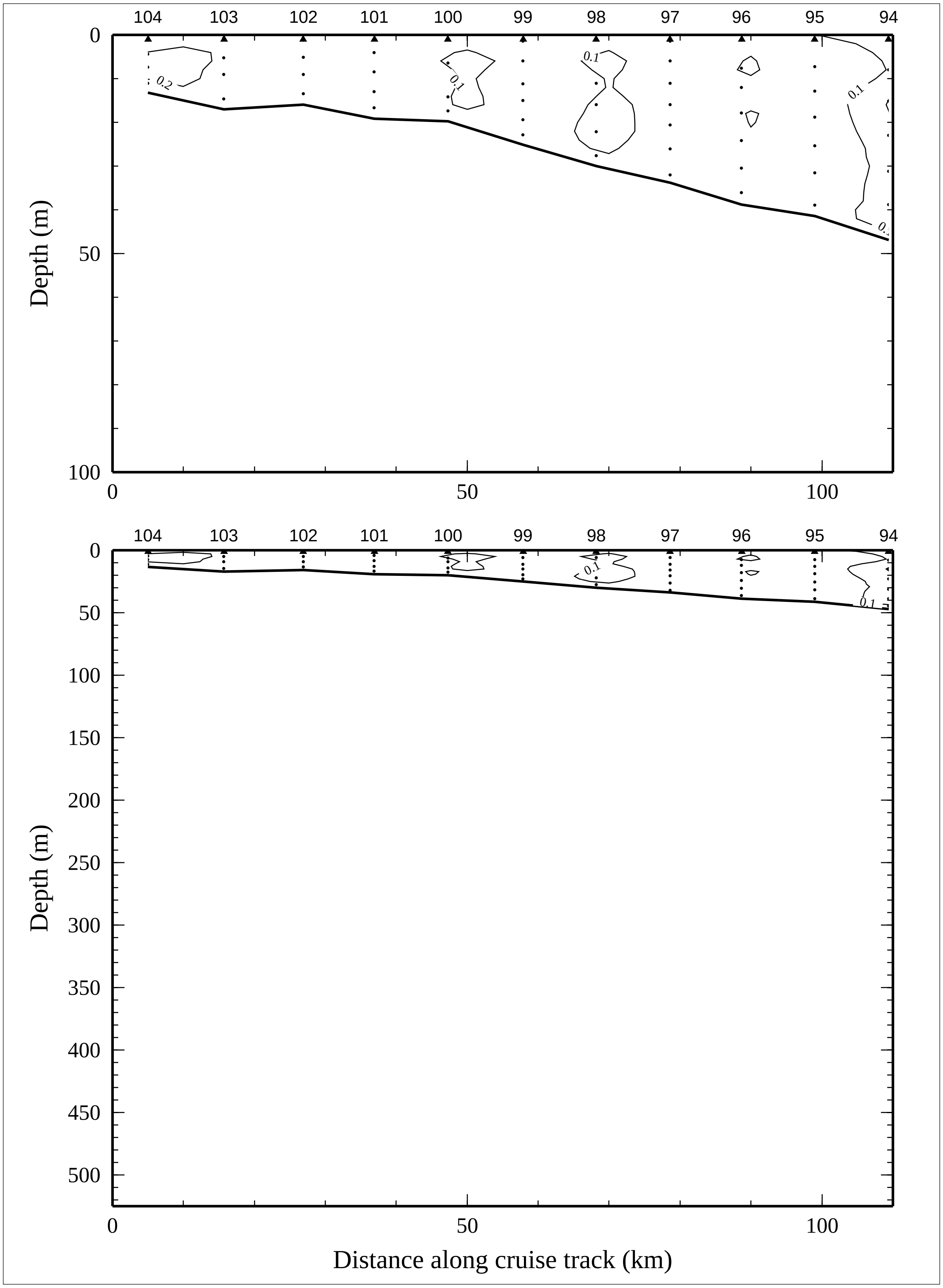

Figure 10.11.15. Urea (μmol·l^{-1}) on line 11 of LATEX A survey H10, 2-14 November 1994.

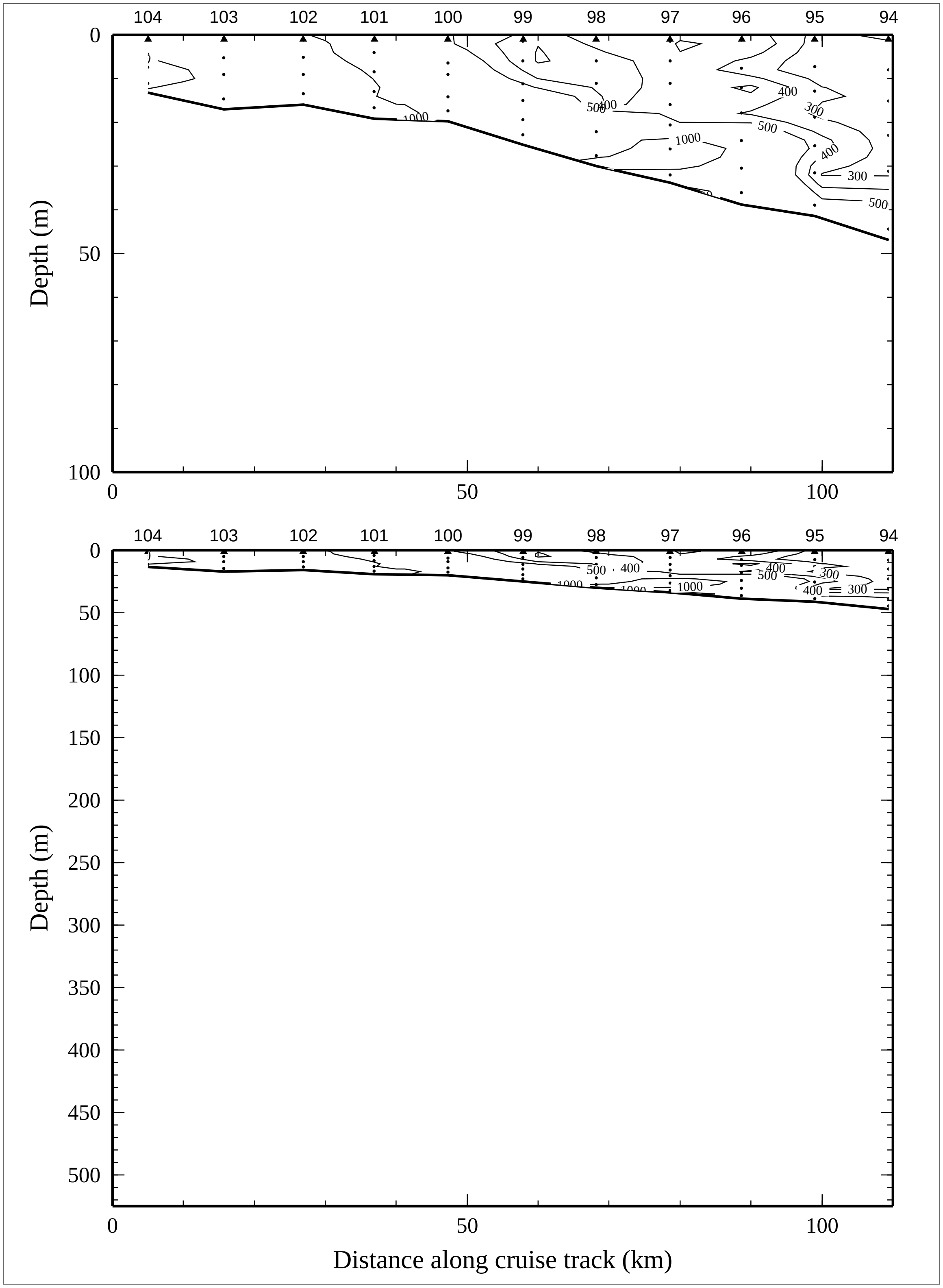

Figure 10.11.16. Chlorophyll a (ng·l-1) on line 11 of LATEX A survey H10, 2-14 November 1994.

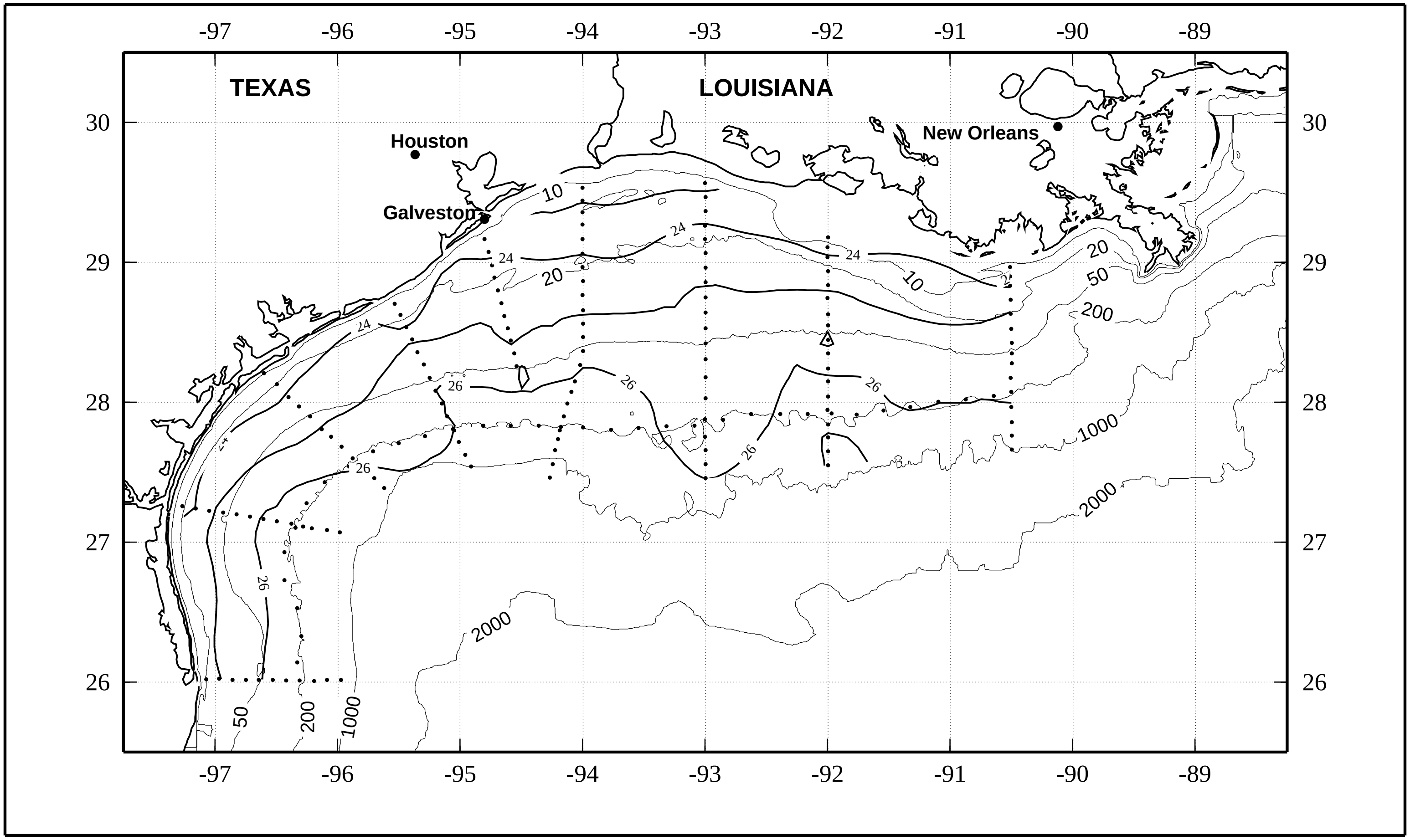

Figure 10.12.1. Potential temperature (˚C) at 3 m on LATEX A survey H10, 2-14 November 1994.

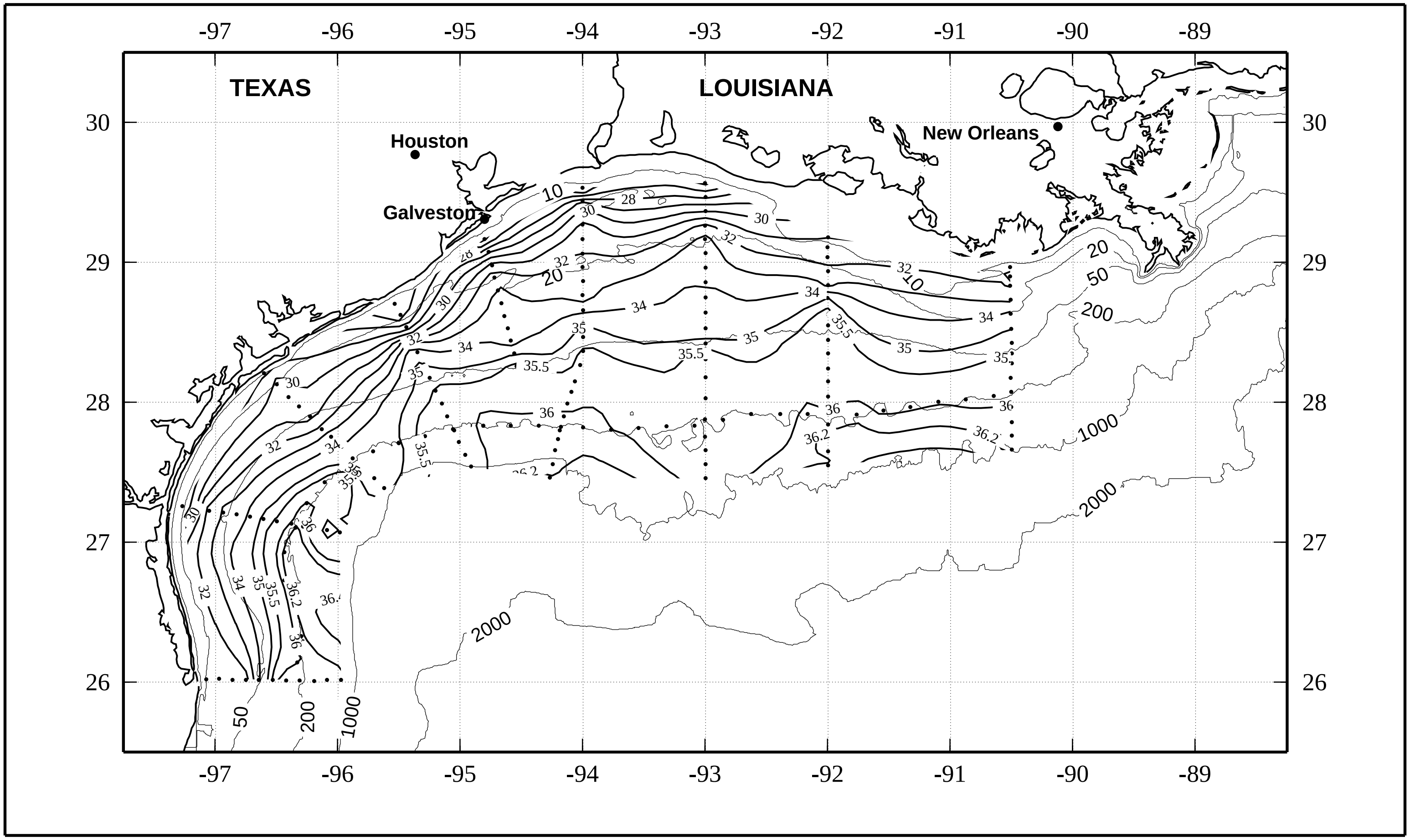

Figure 10.12.2. Salinity, derived from CTD data, at 3 m on LATEX A survey H10, 2-14 November 1994.

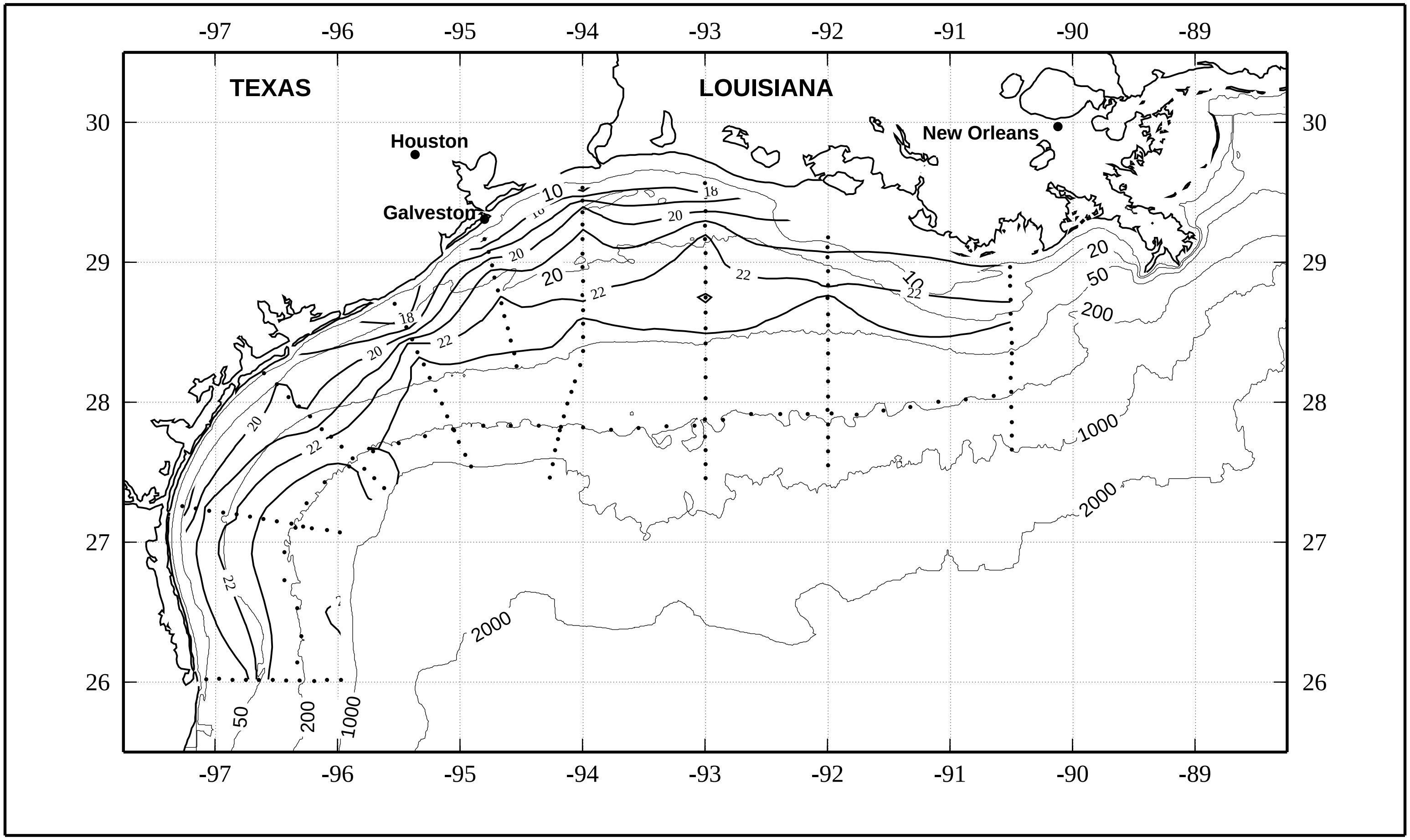

Figure 10.12.3. Density anomaly (σ_θ in $kg \cdot m^{-3}$) at 3 m on LATEX A survey H10, 2-14 November 1994.

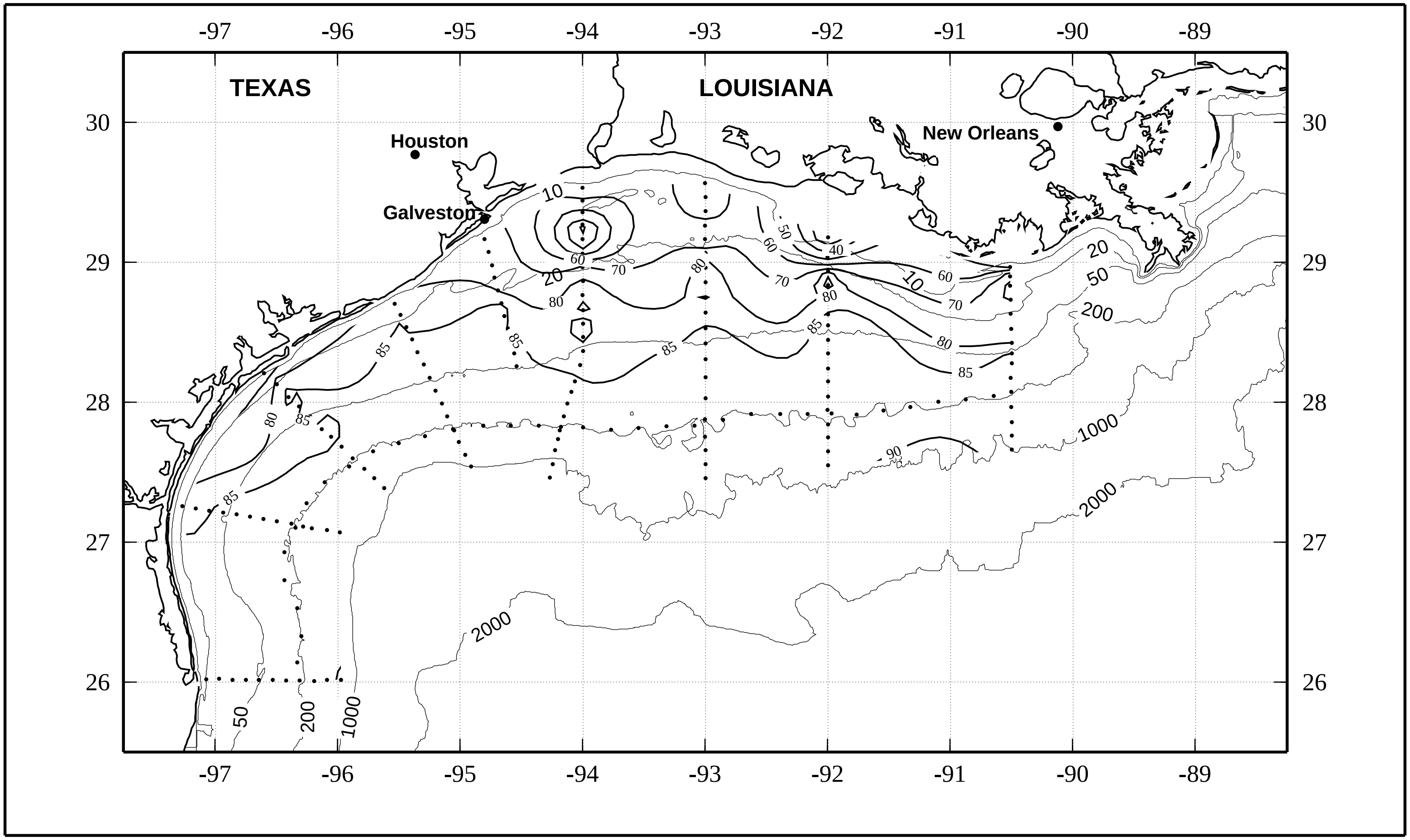

Figure 10.12.4. Percent transmission (660 nm wave length; 25-cm path length) at 3 m on LATEX A survey H10, 2-14 November 1994.

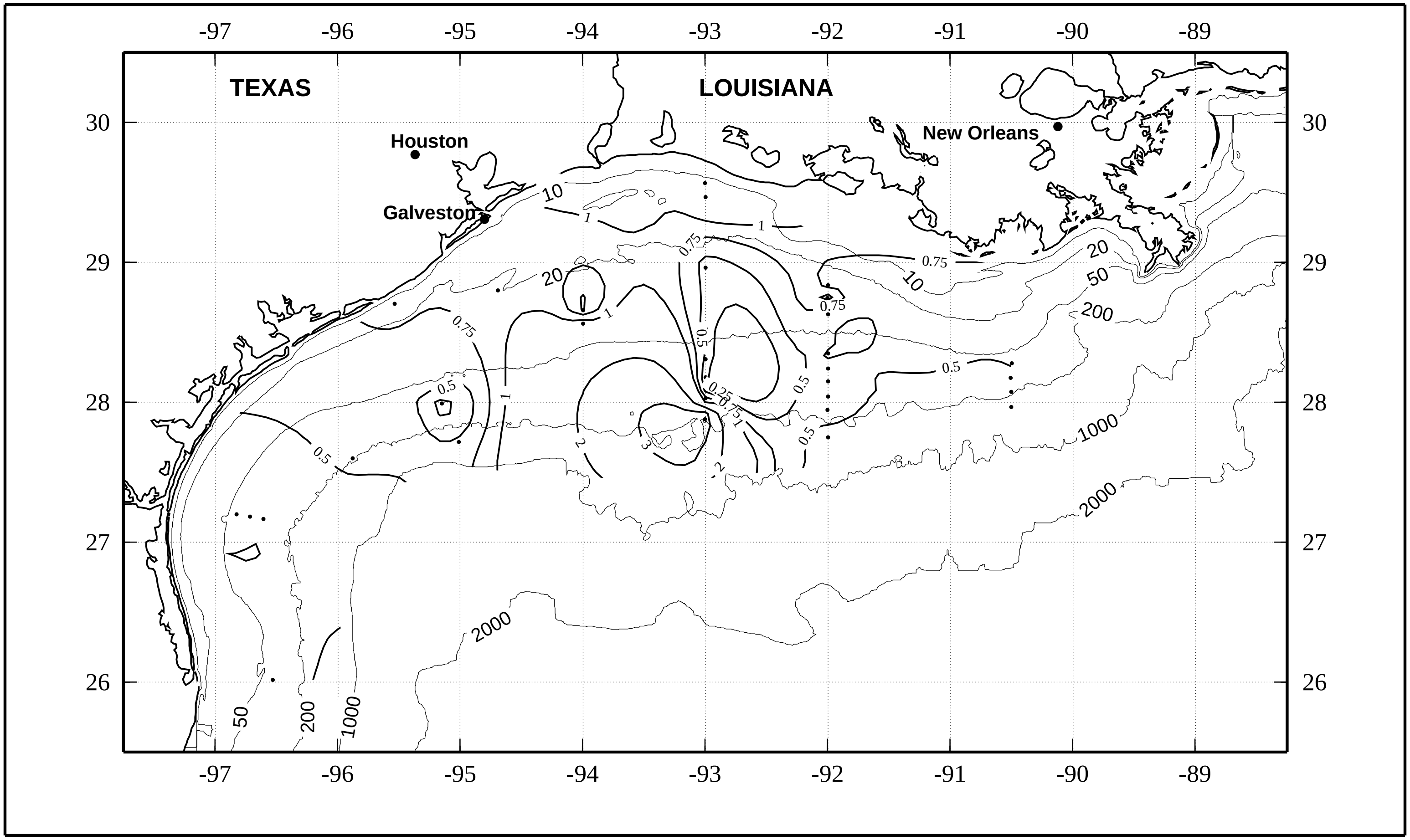

Figure 10.12.5. Suspended particulate material (mg·l^{-1}) at 3 m on LATEX A survey H10, 2-14 November 1994.

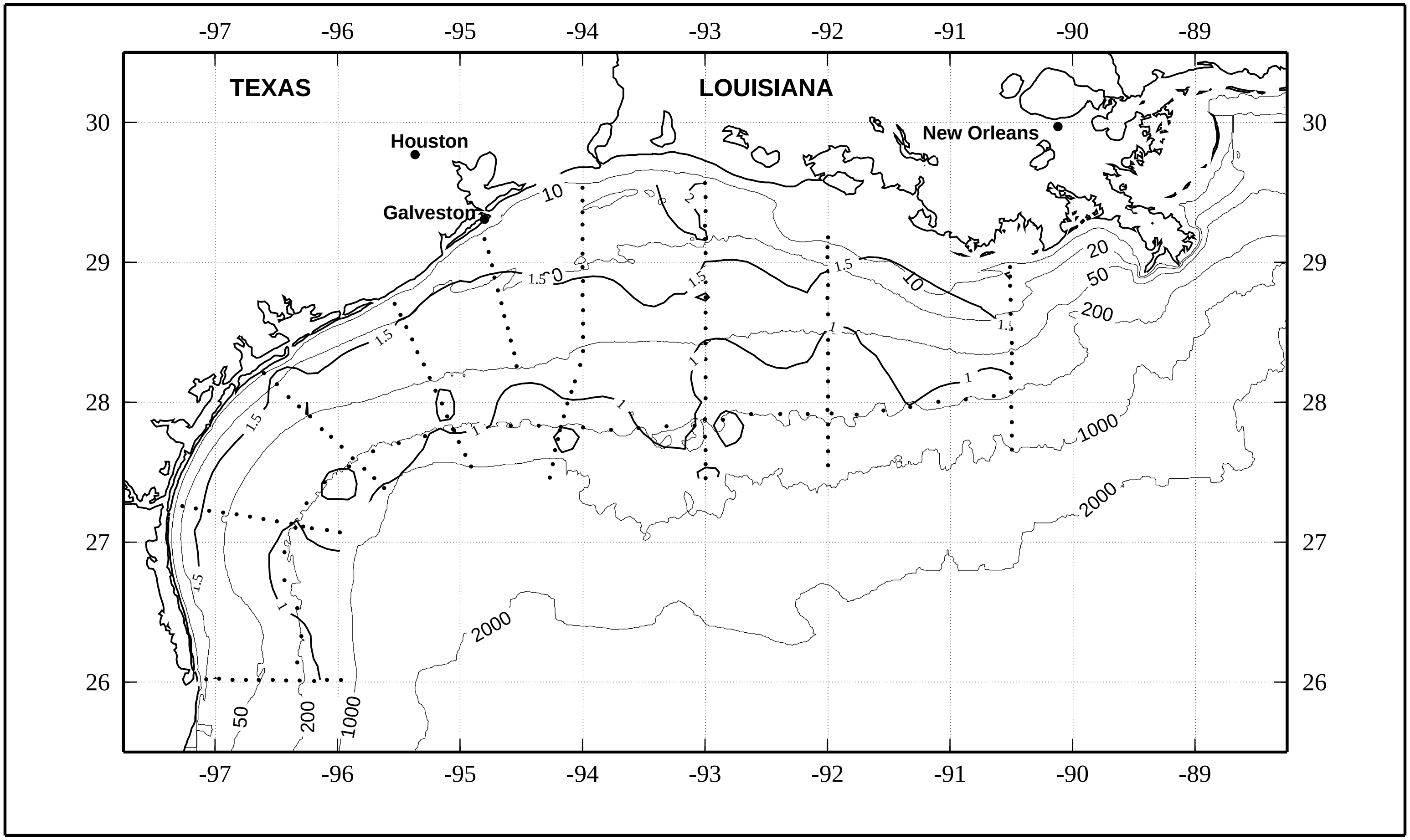

Figure 10.12.7. Relative fluorescence at 3 m on LATEX A survey H10, 2-14 November 1994.

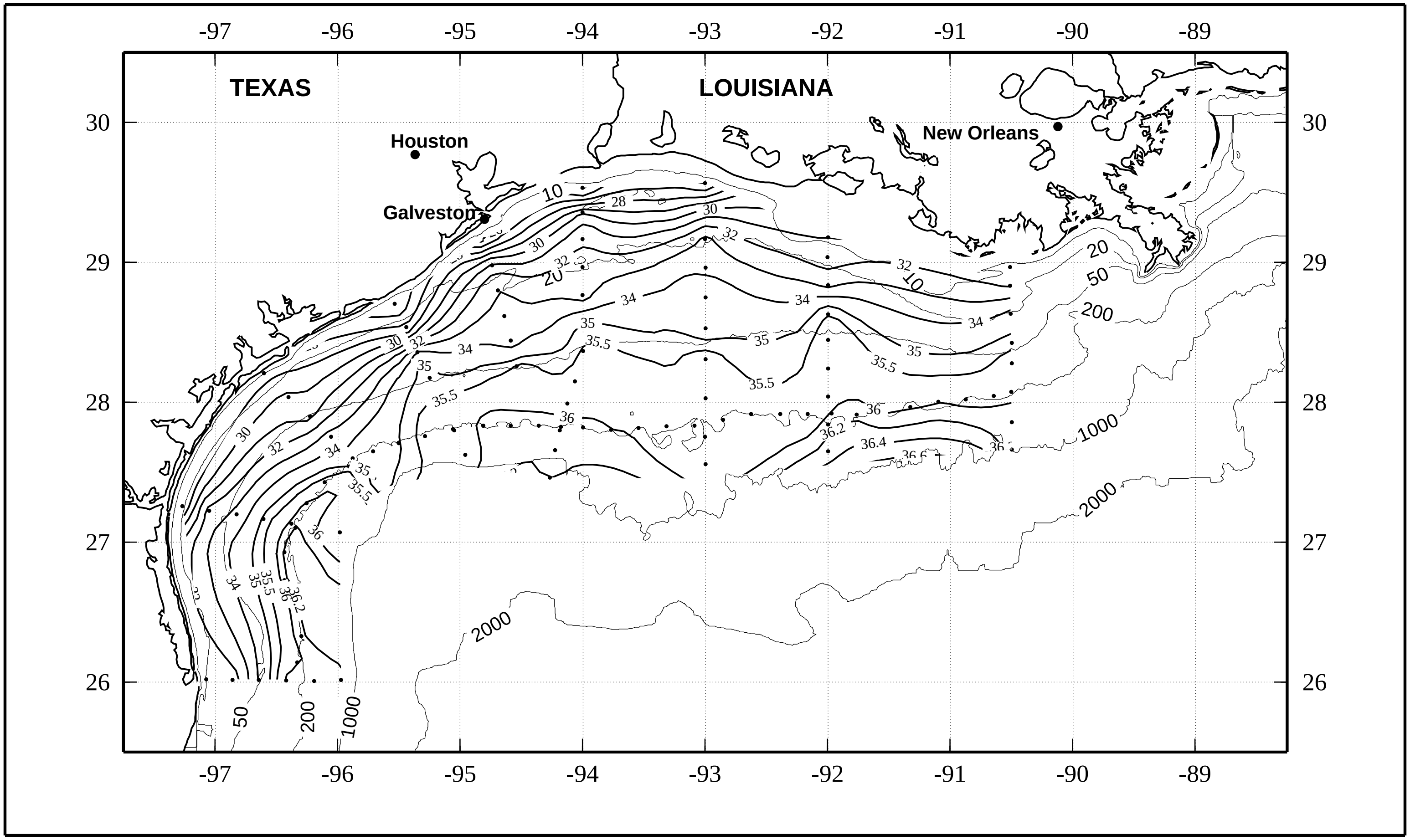

Figure 10.12.8. Bottle salinity at 3 m on LATEX A survey H10, 2-14 November 1994.

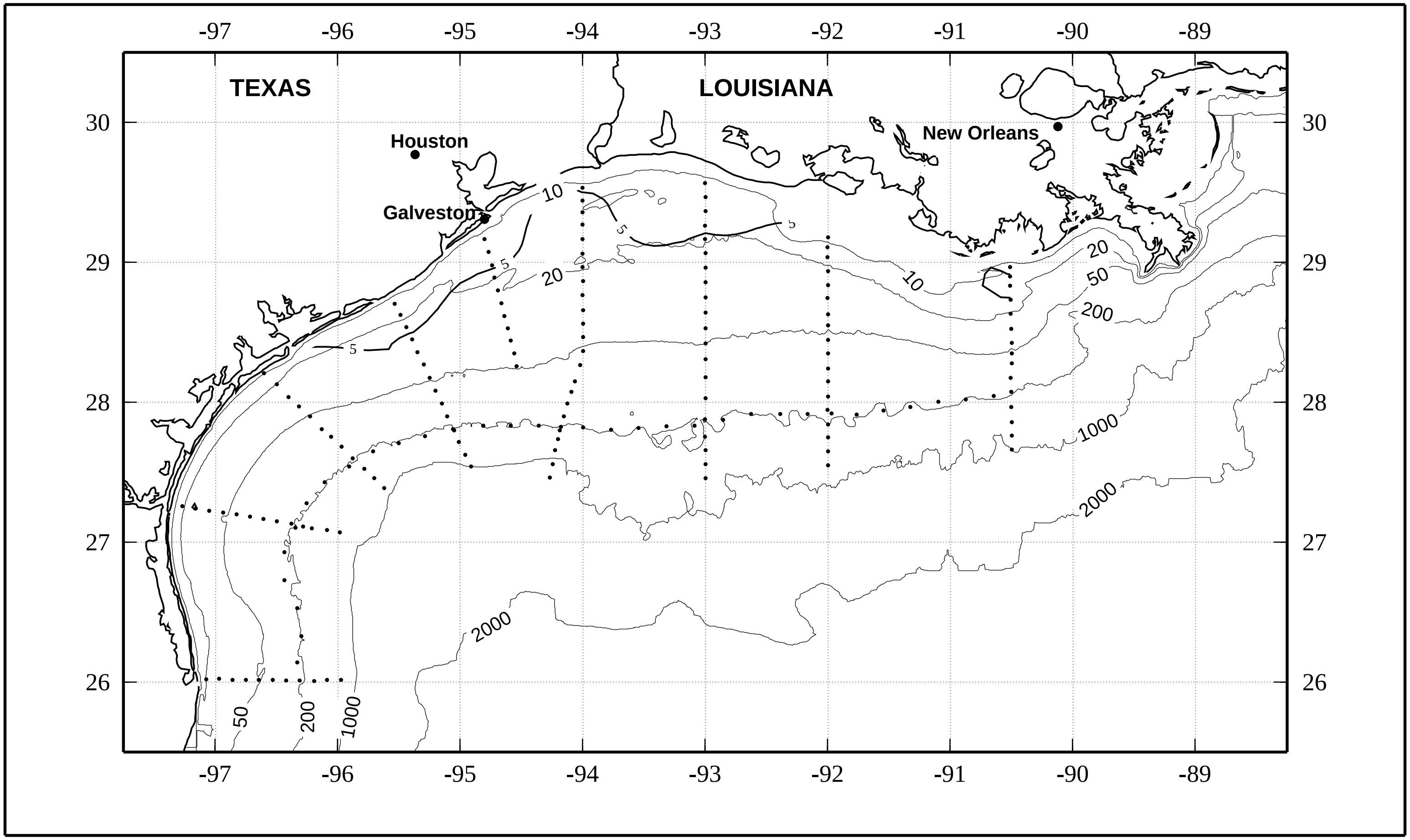

Figure 10.12.9. Dissolved oxygen ($ml \cdot l^{-1}$) at 3 m on LATEX A survey H10, 2-14 November 1994.

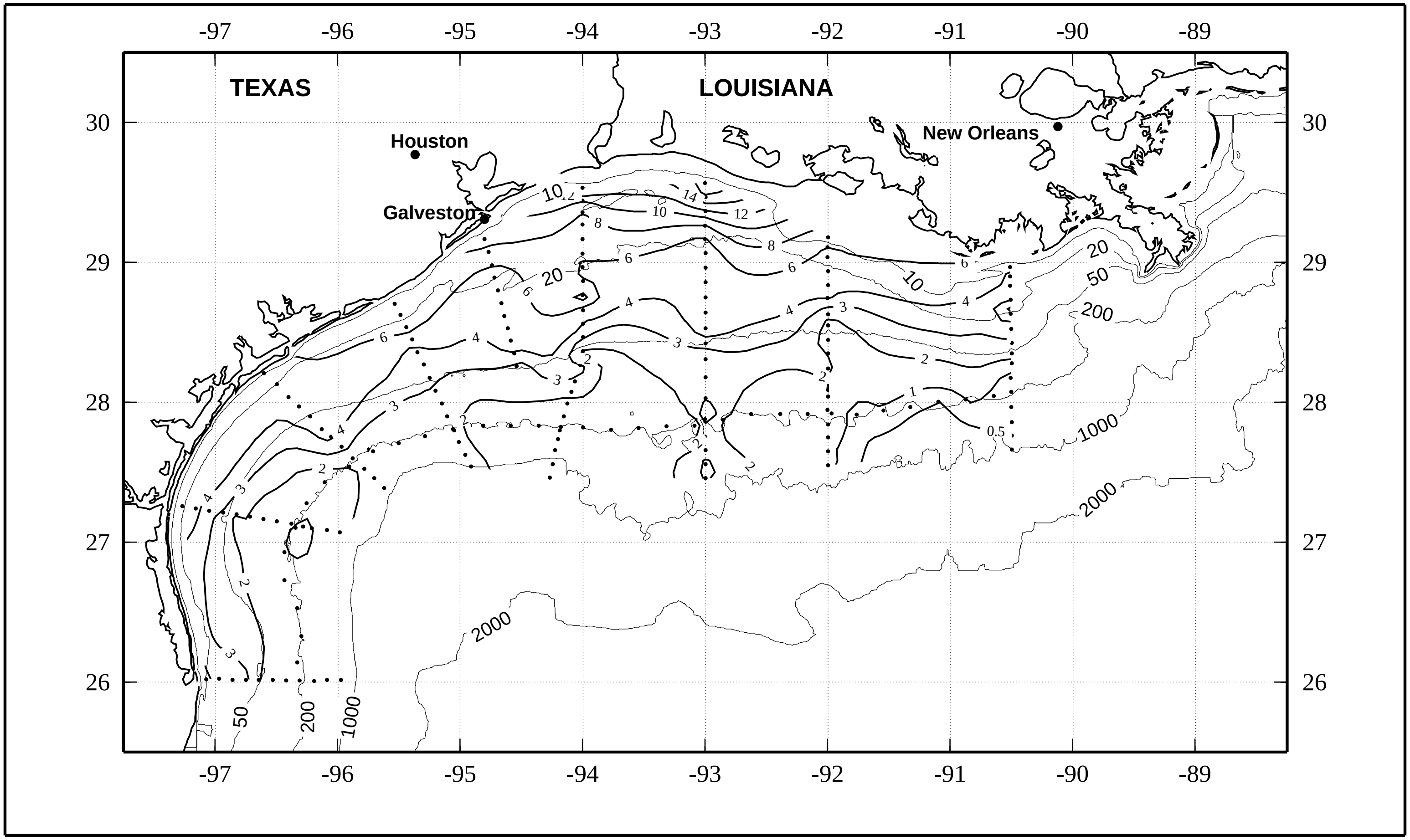

Figure 10.12.10. Silicate ($\mu mol \cdot l^{-1}$) at 3 m on LATEX A survey H10, 2-14 November 1994.

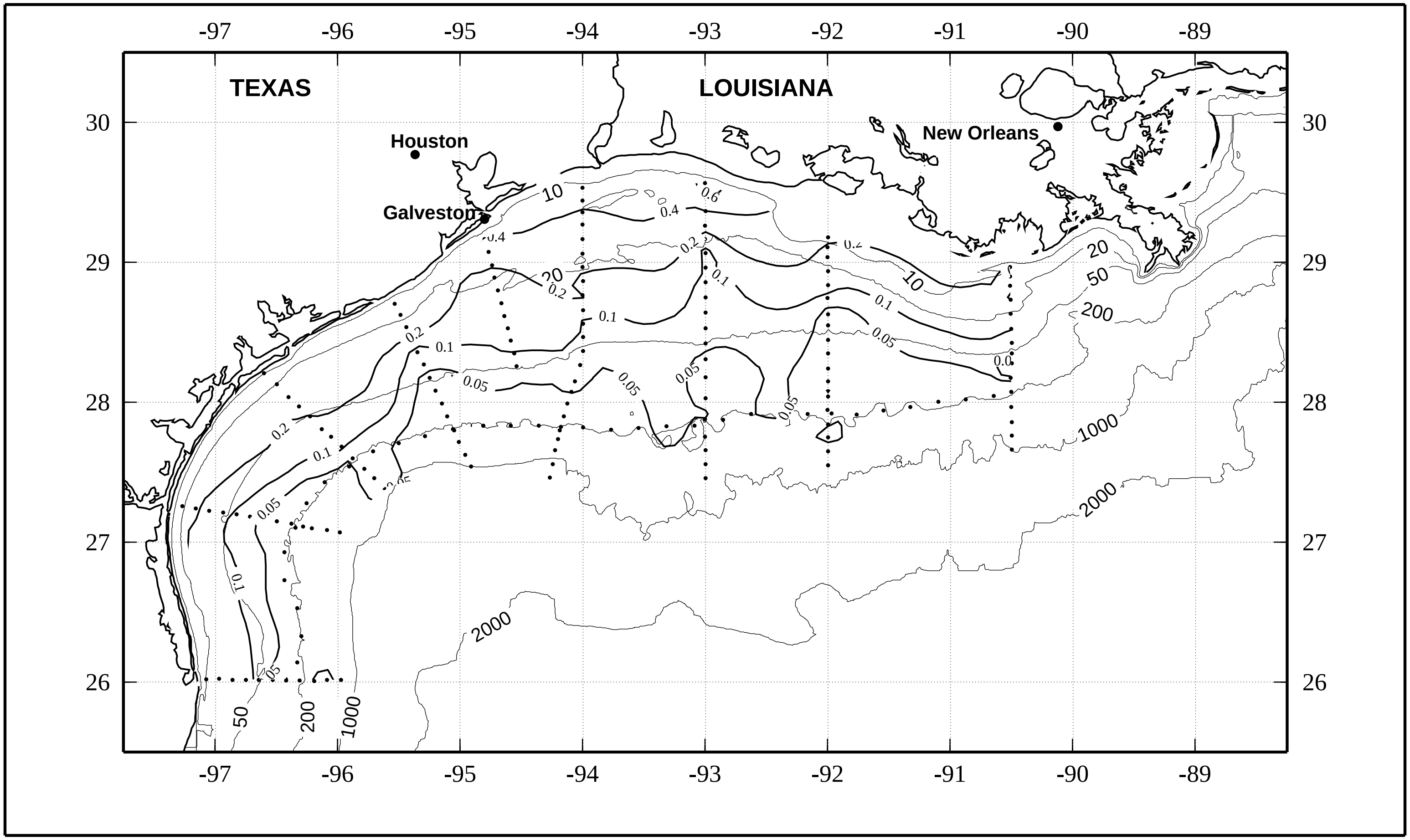

Figure 10.12.11. Phosphate (µmol·l^{-1}) at 3 m on LATEX A survey H10, 2-14 November 1994.

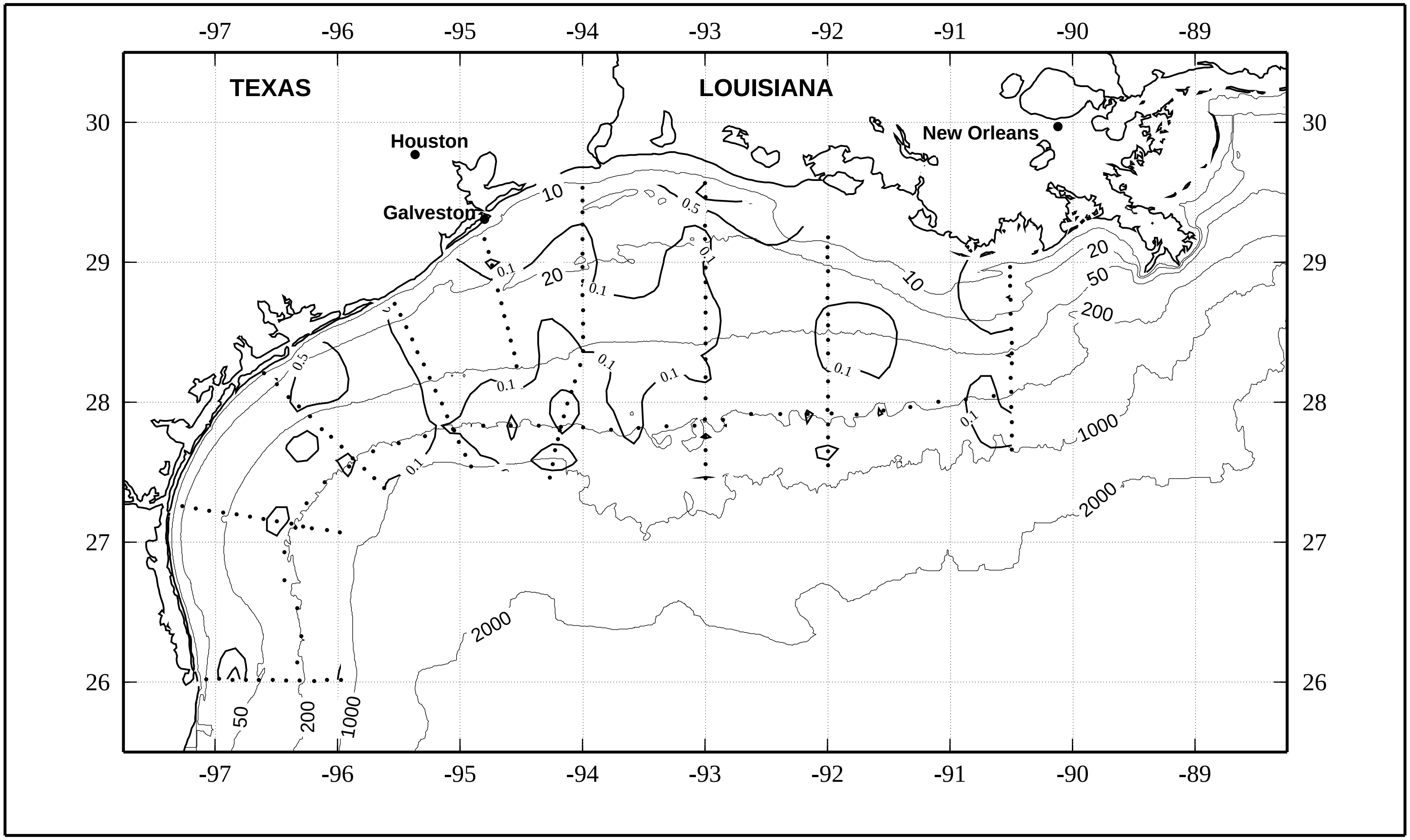

Figure 10.12.12. Nitrate (µmol·l^{-1}) at 3 m on LATEX A survey H10, 2-14 November 1994.

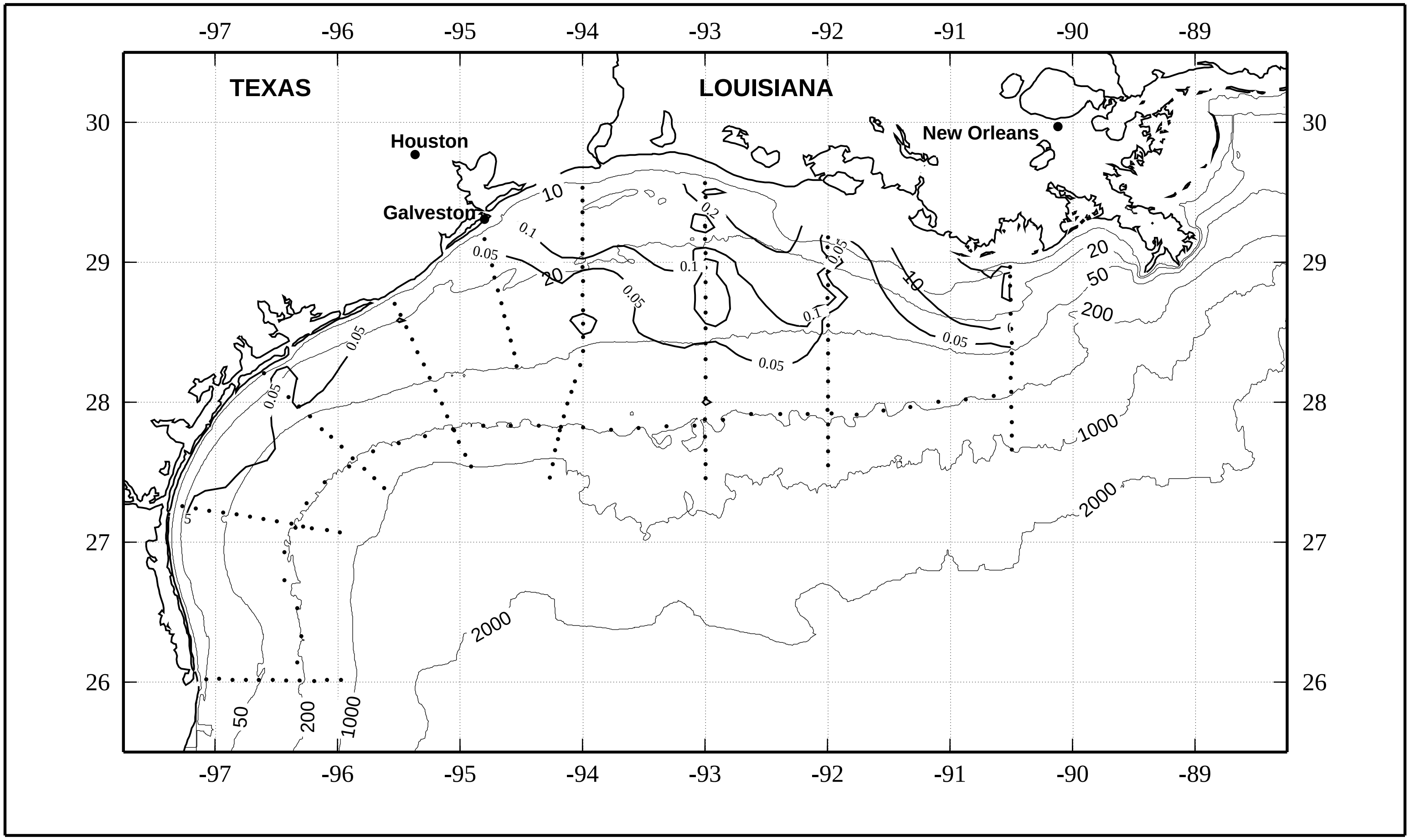

Figure 10.12.13. Nitrite (μmol·l^{-1}) at 3 m on LATEX A survey H10, 2-14 November 1994.

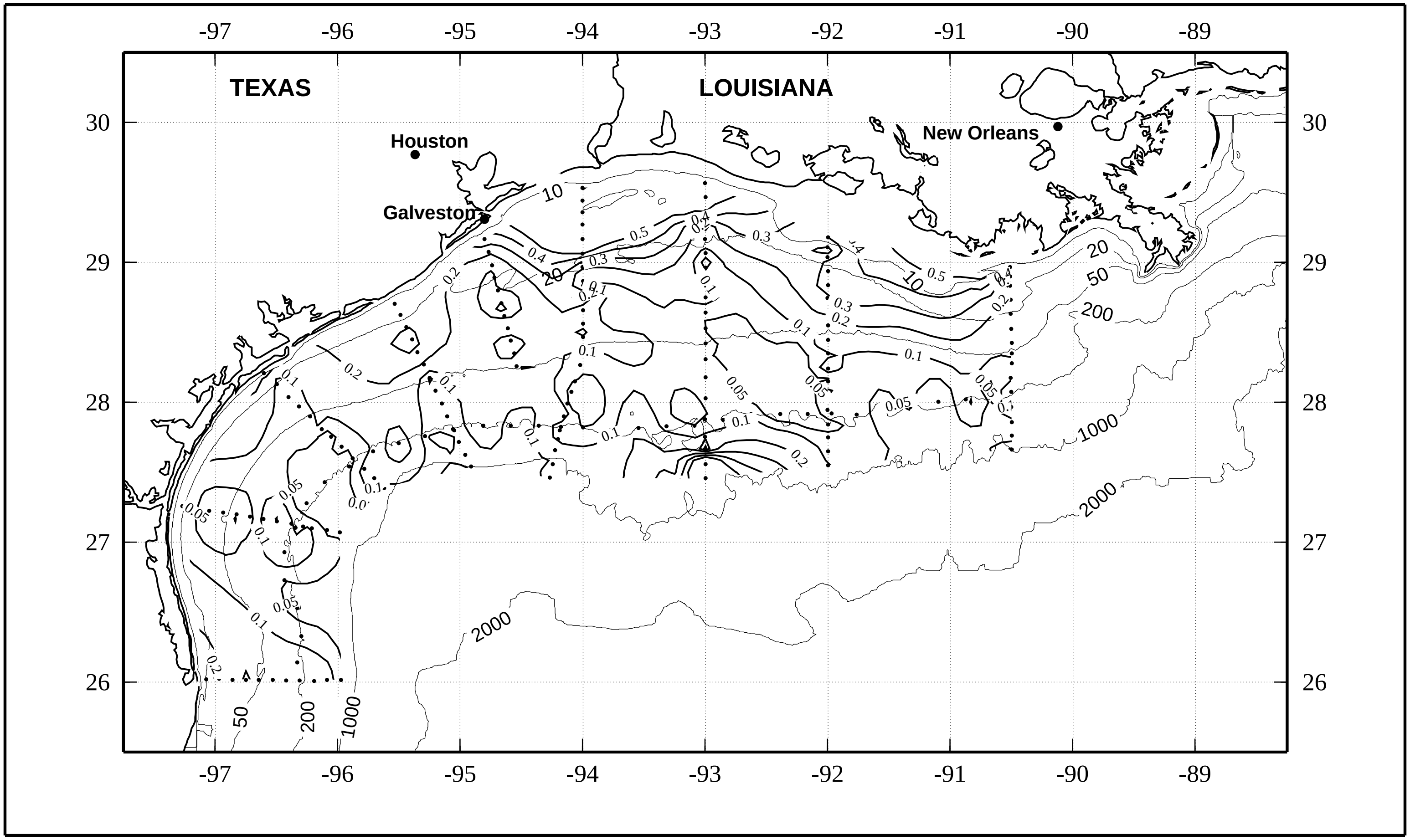

Figure 10.12.14. Ammonium (μmol·l^{-1}) at 3 m on LATEX A survey H10, 2-14 November 1994.

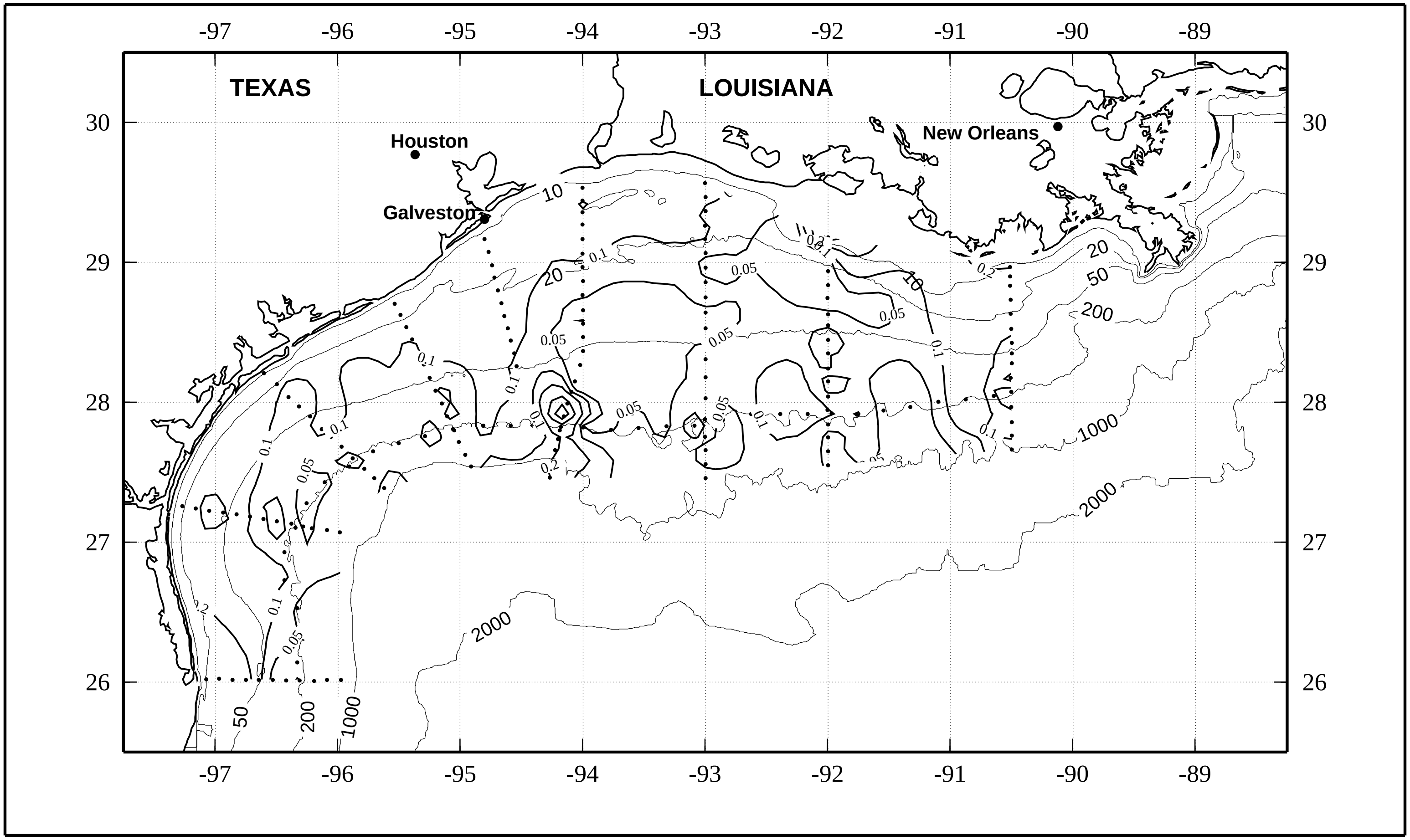

Figure 10.12.15. Urea (μmol·l^{-1}) on LATEX A survey H10, 2-14 November 1994.

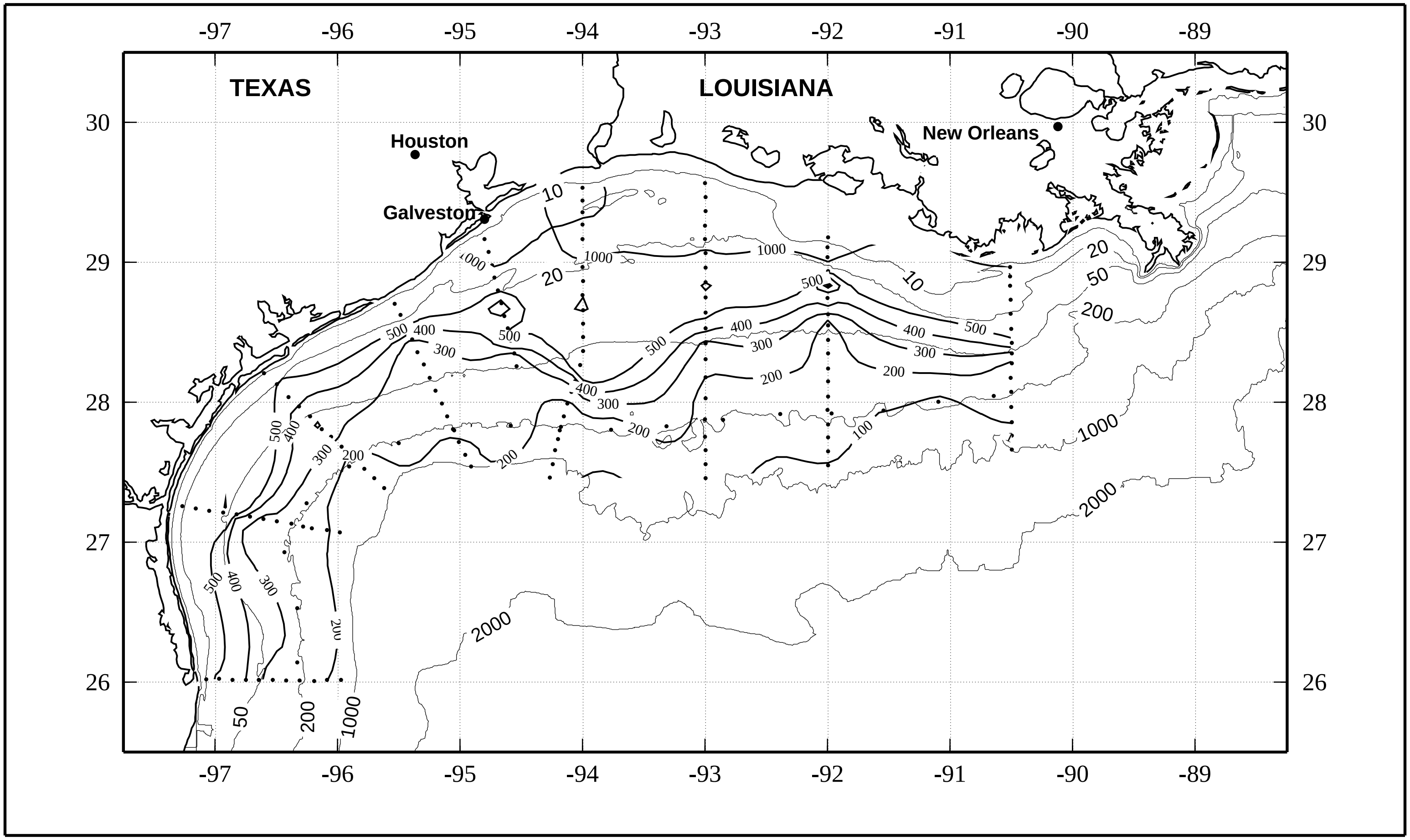

Figure 10.12.16. Chlorophyll a (ng·l^{-1}) at maximum on LATEX A survey H10, 2-14 November 1994.

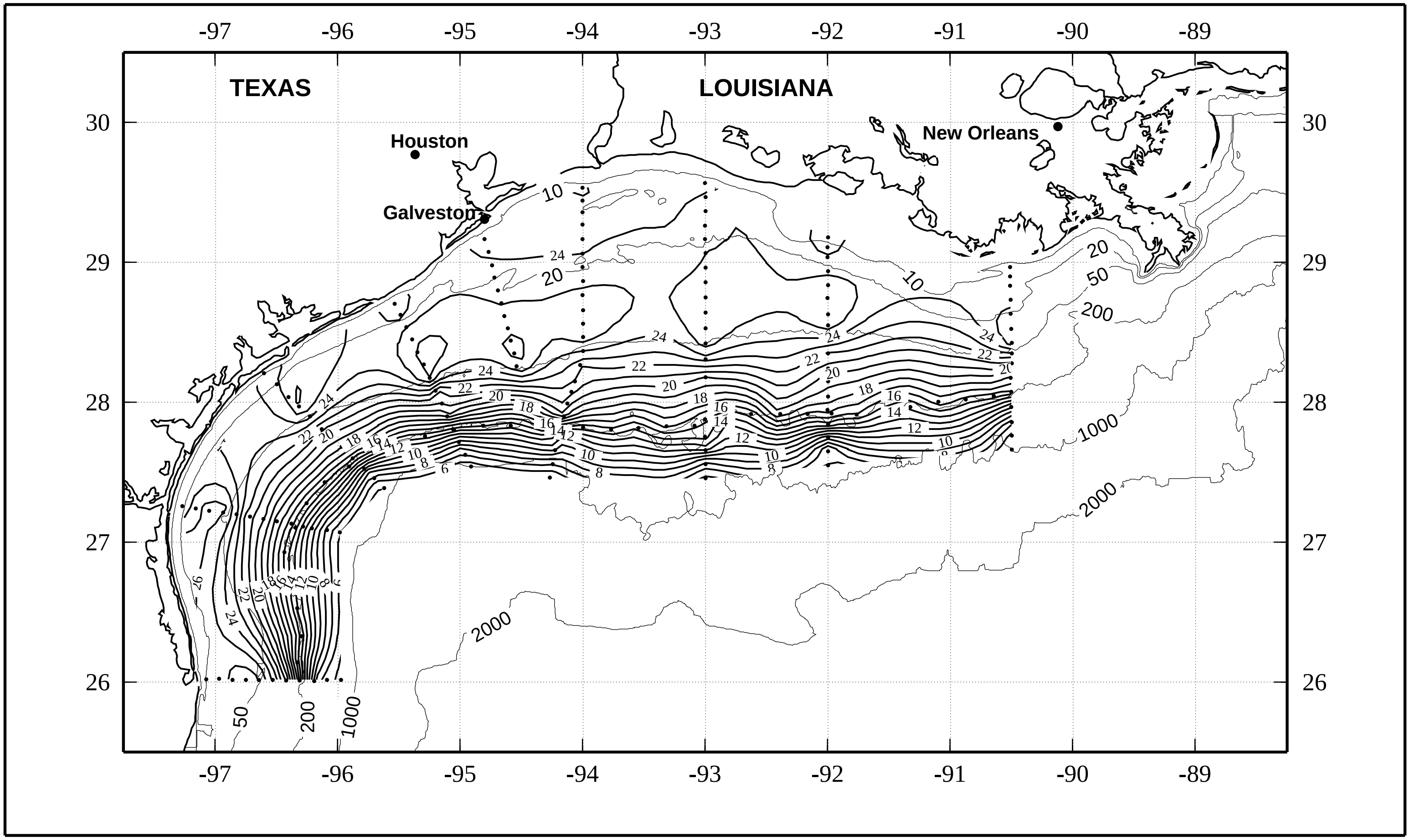

Figure 10.13.1. Potential temperature (˚C) near bottom on LATEX A survey H10, 2-14 November 1994.

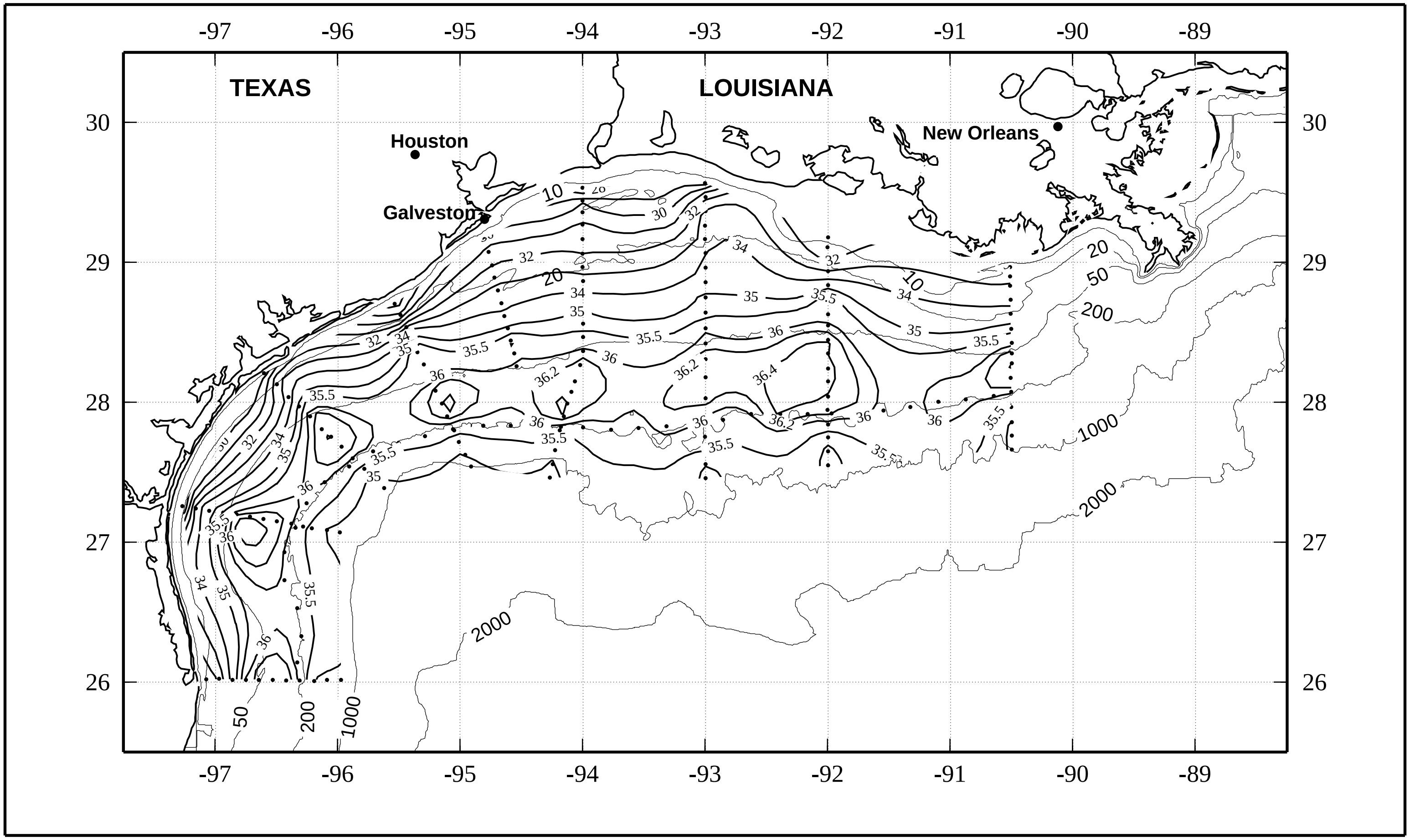

Figure 10.13.2. Salinity, derived from CTD data, near bottom on LATEX A survey H10, 2-14 November 1994.

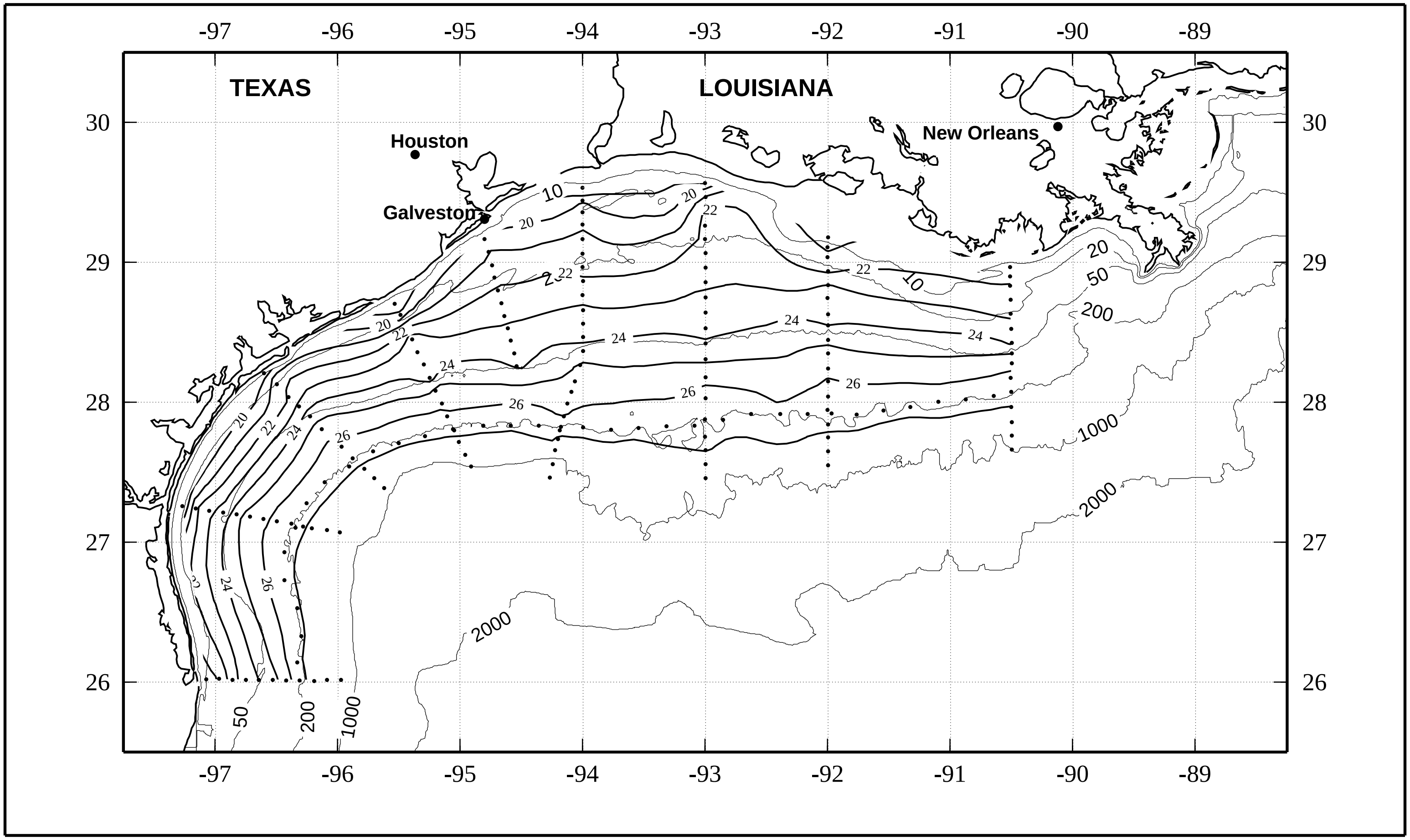

Figure 10.13.3. Density anomaly (σ_θ in kg·m^{-3}) near bottom on LATEX A survey H10, 2-14 November 1994.

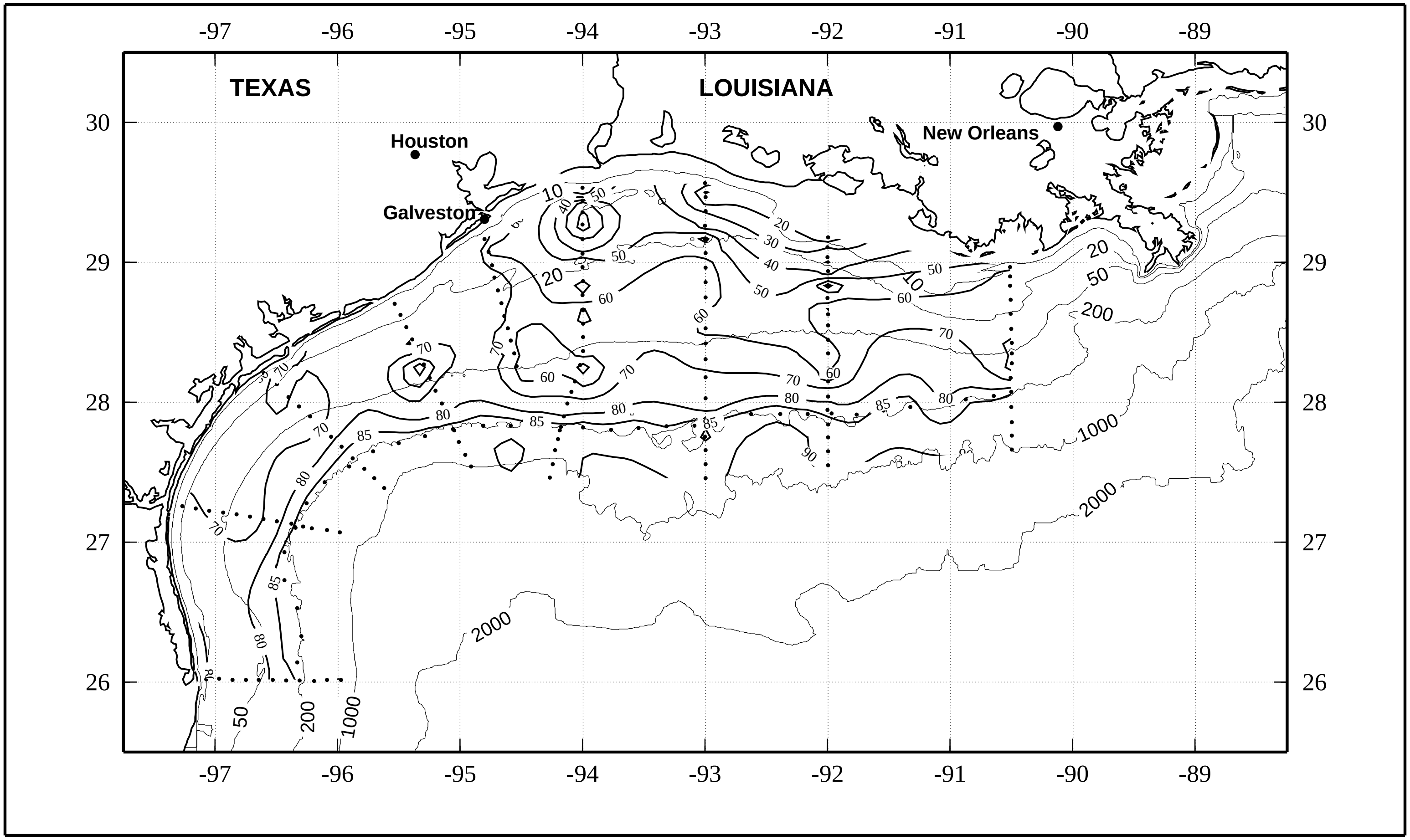

Figure 10.13.4. Percent transmission (660 nm wave length; 25-cm path length) near bottom on LATEX A survey H10, 2-14 November 1994.

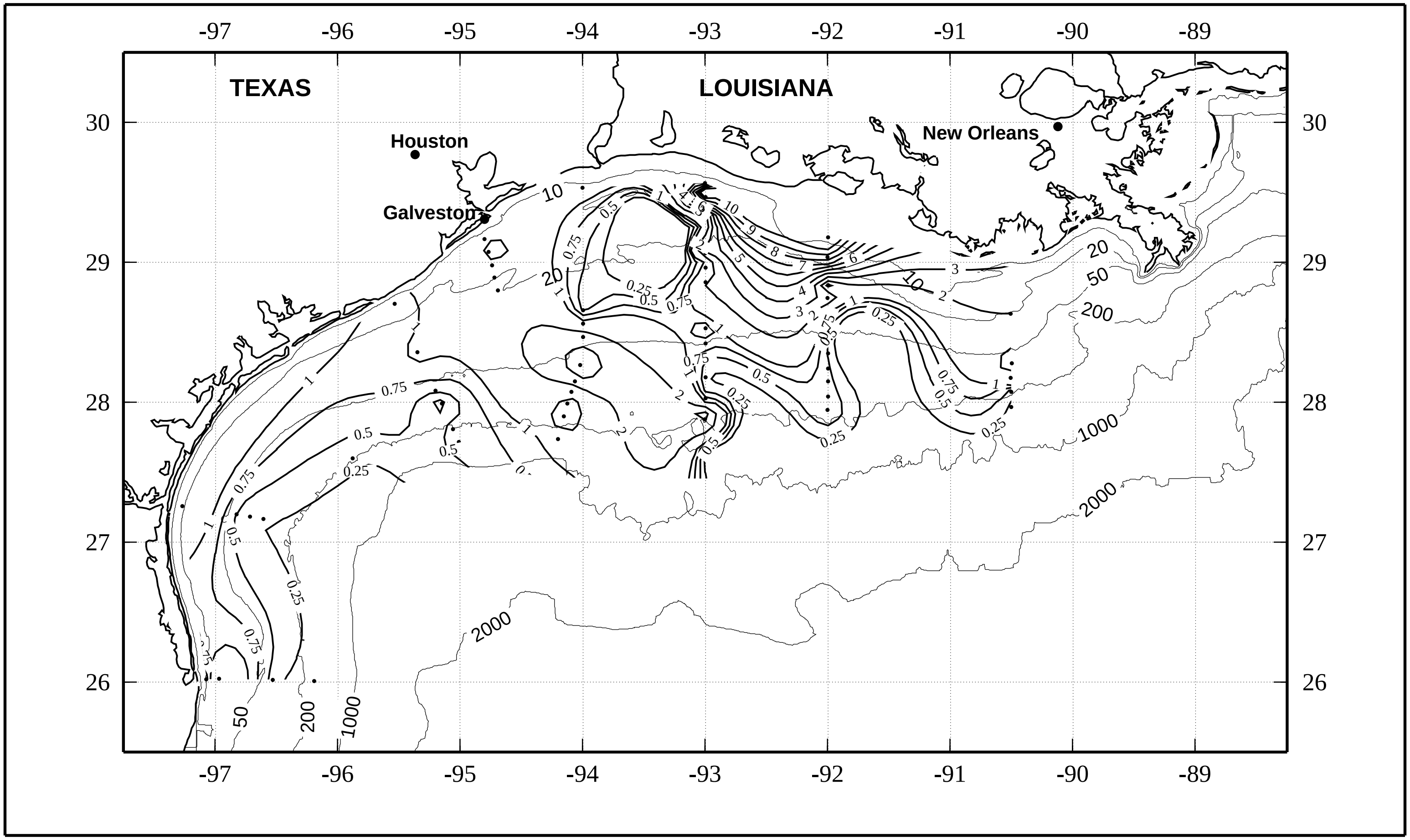

Figure 10.13.5. Suspended particulate material ($mg \cdot l^{-1}$) near bottom on LATEX A survey H10, 2-14 November 1994.

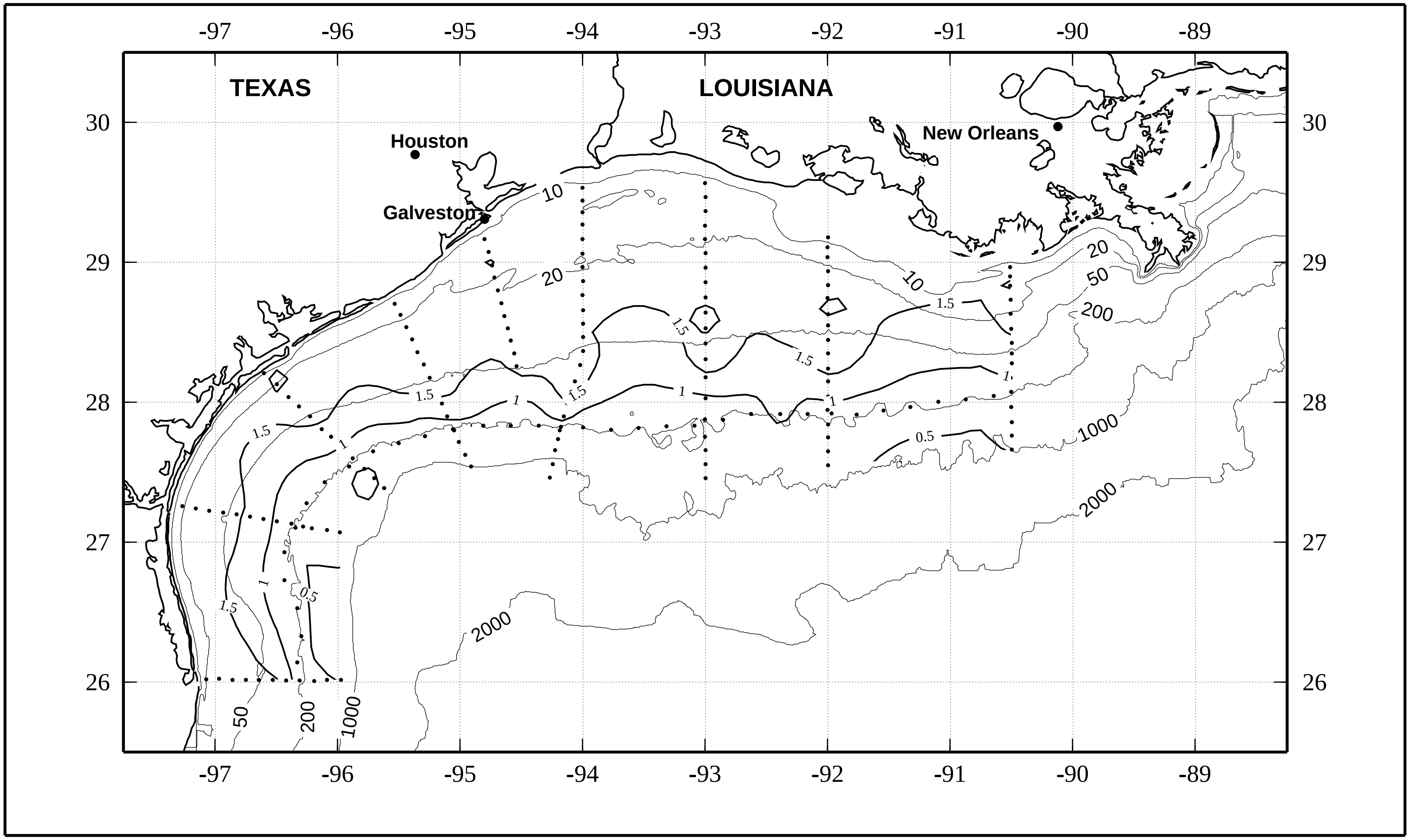

Figure 10.13.7. Relative fluorescence near bottom on LATEX A survey H10, 2-14 November 1994.

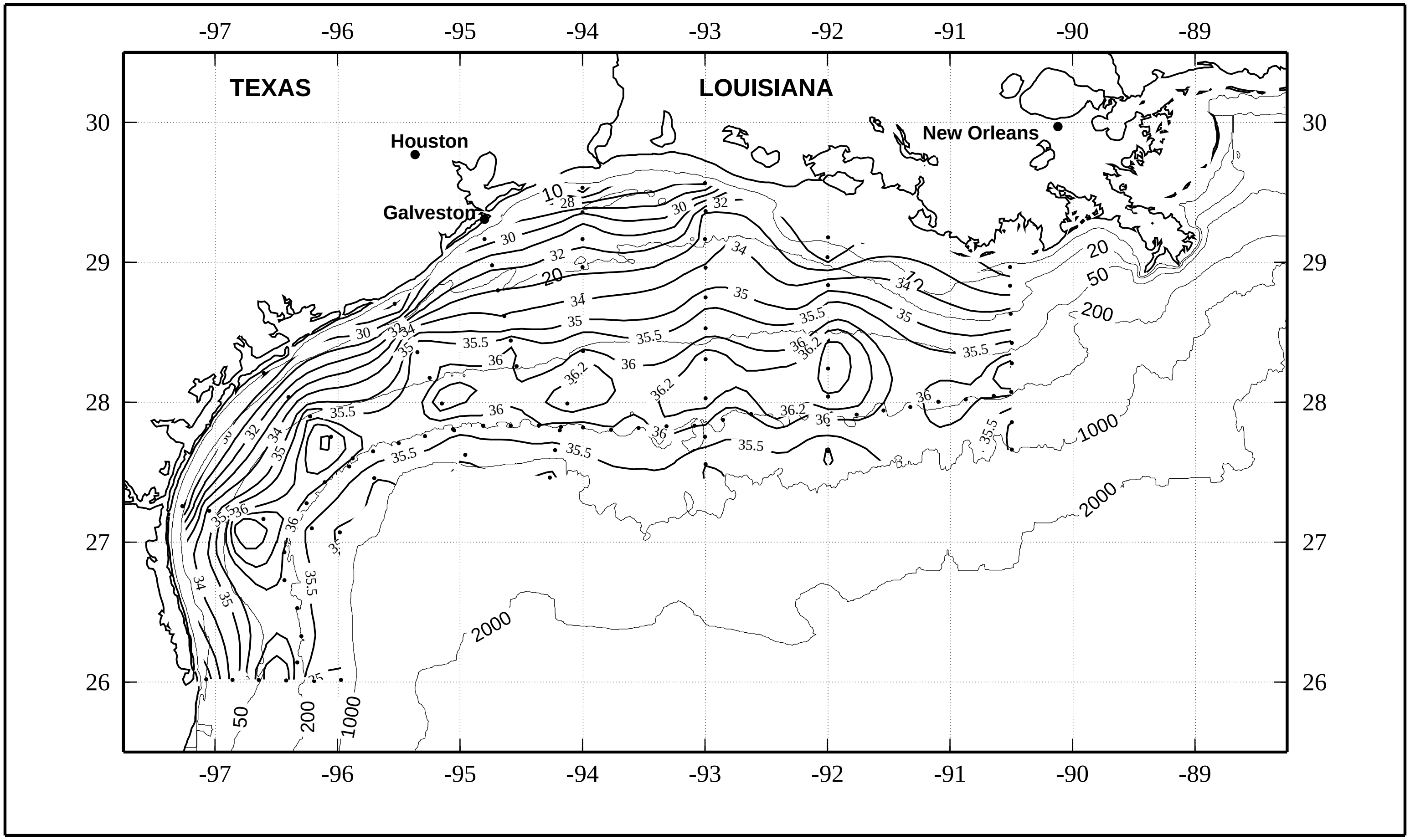

Figure 10.13.8. Bottle salinity near bottom on LATEX A survey H10, 2-14 November 1994.

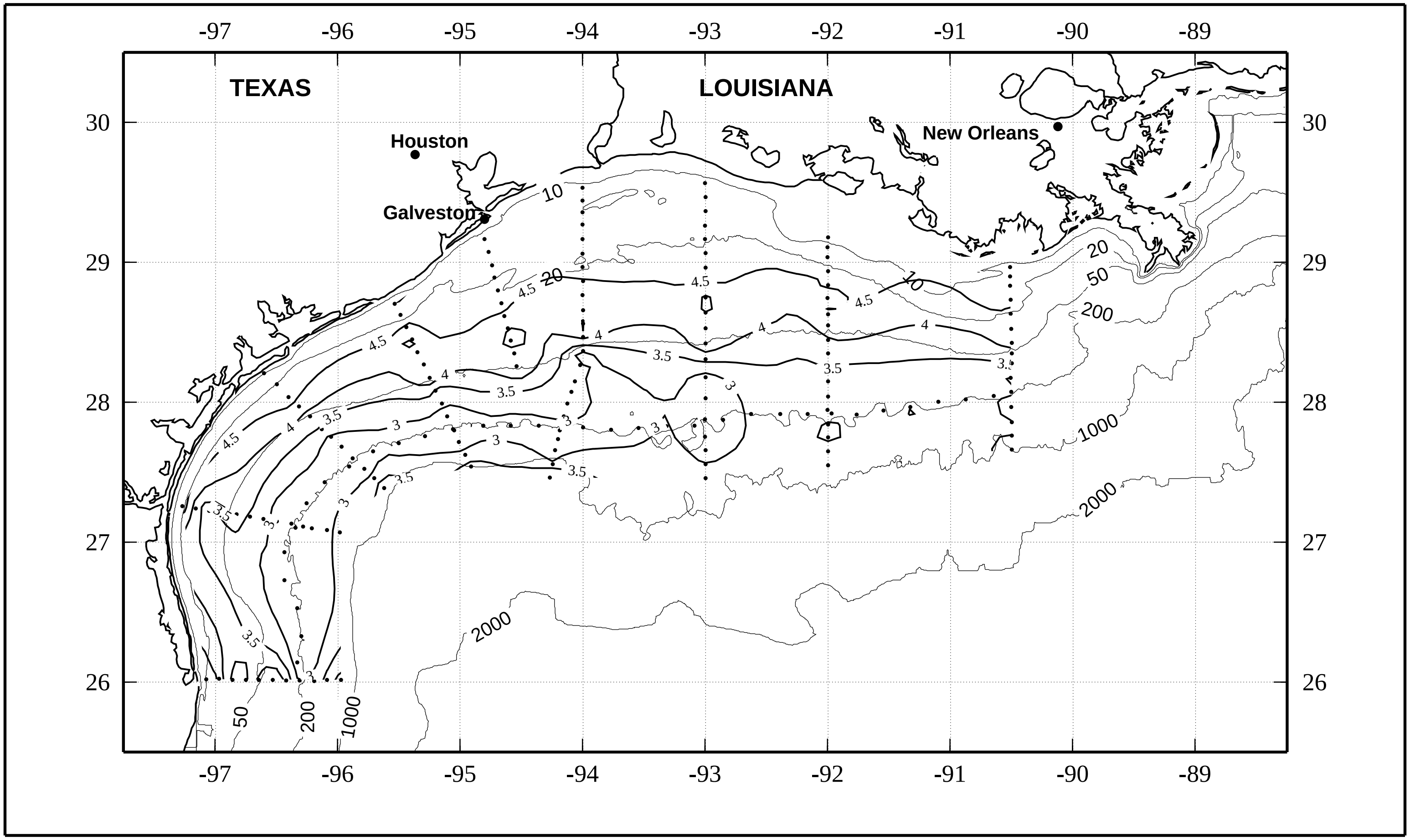

Figure 10.13.9. Dissolved oxygen (ml·l^{-1}) near bottom on LATEX A survey H10, 2-14 November 1994.

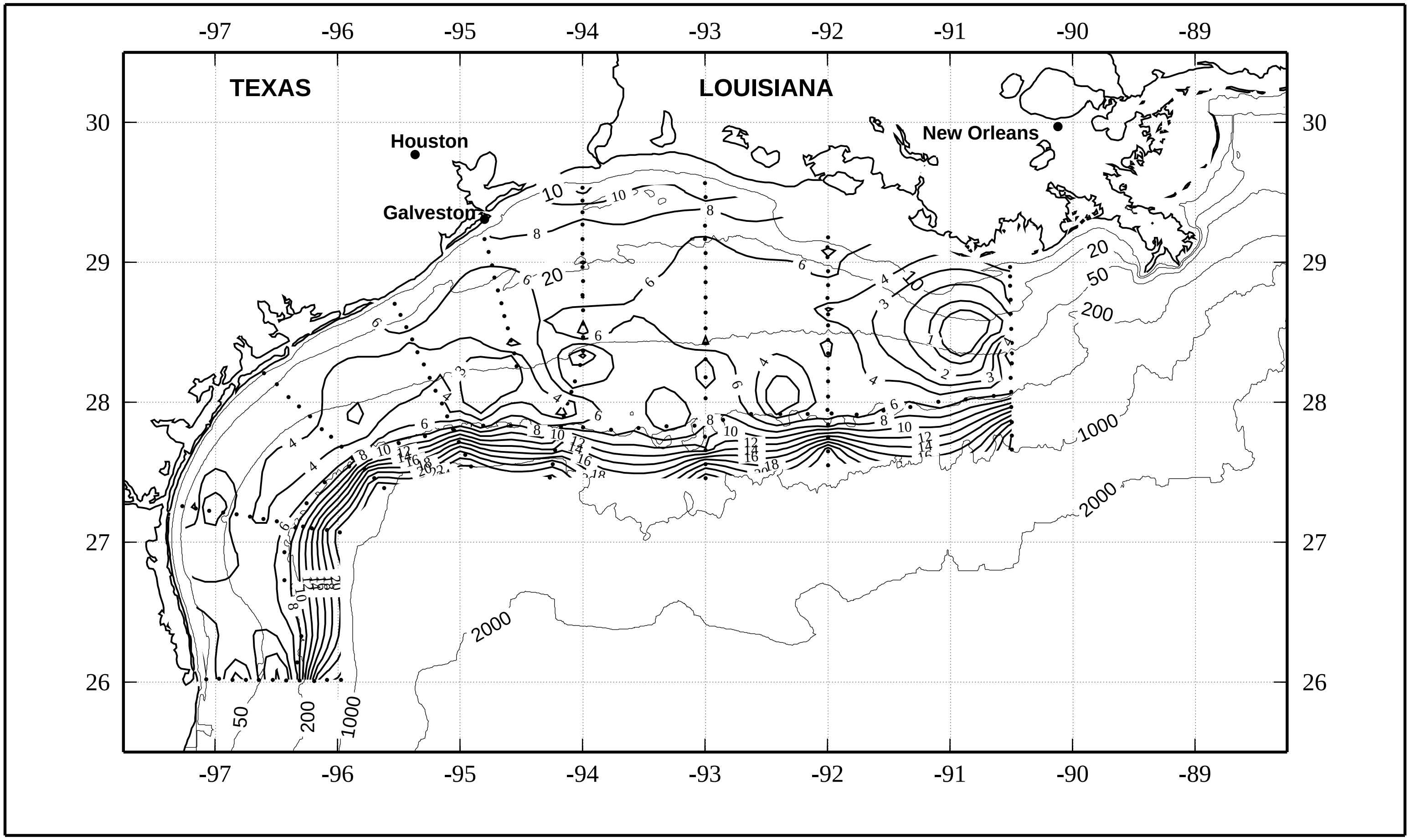

Figure 10.13.10. Silicate (μmol·l^{-1}) near bottom on LATEX A survey H10, 2-14 November 1994.

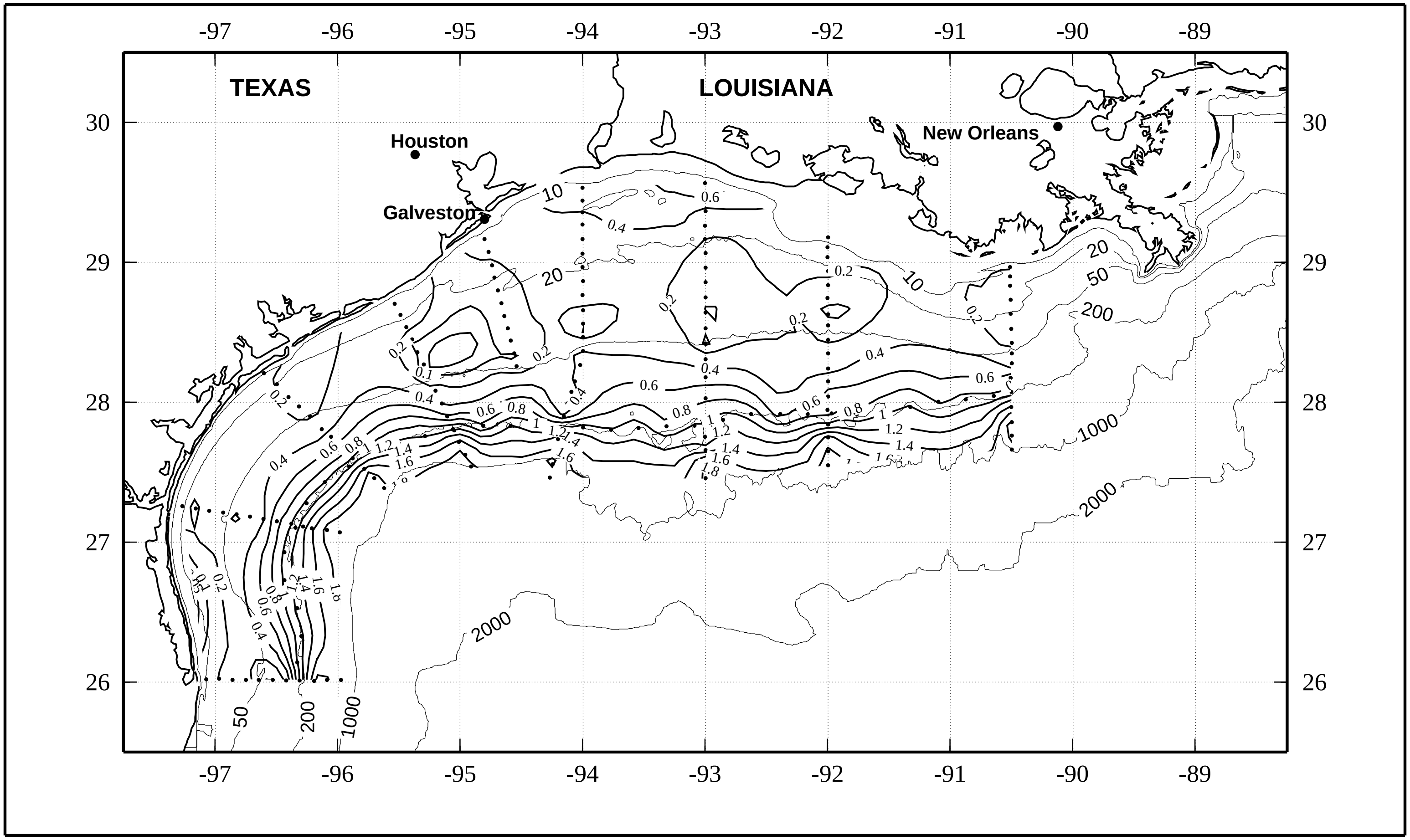

Figure 10.13.11. Phosphate (µmol·l-1) near bottom on LATEX A survey H10, 2-14 November 1994.

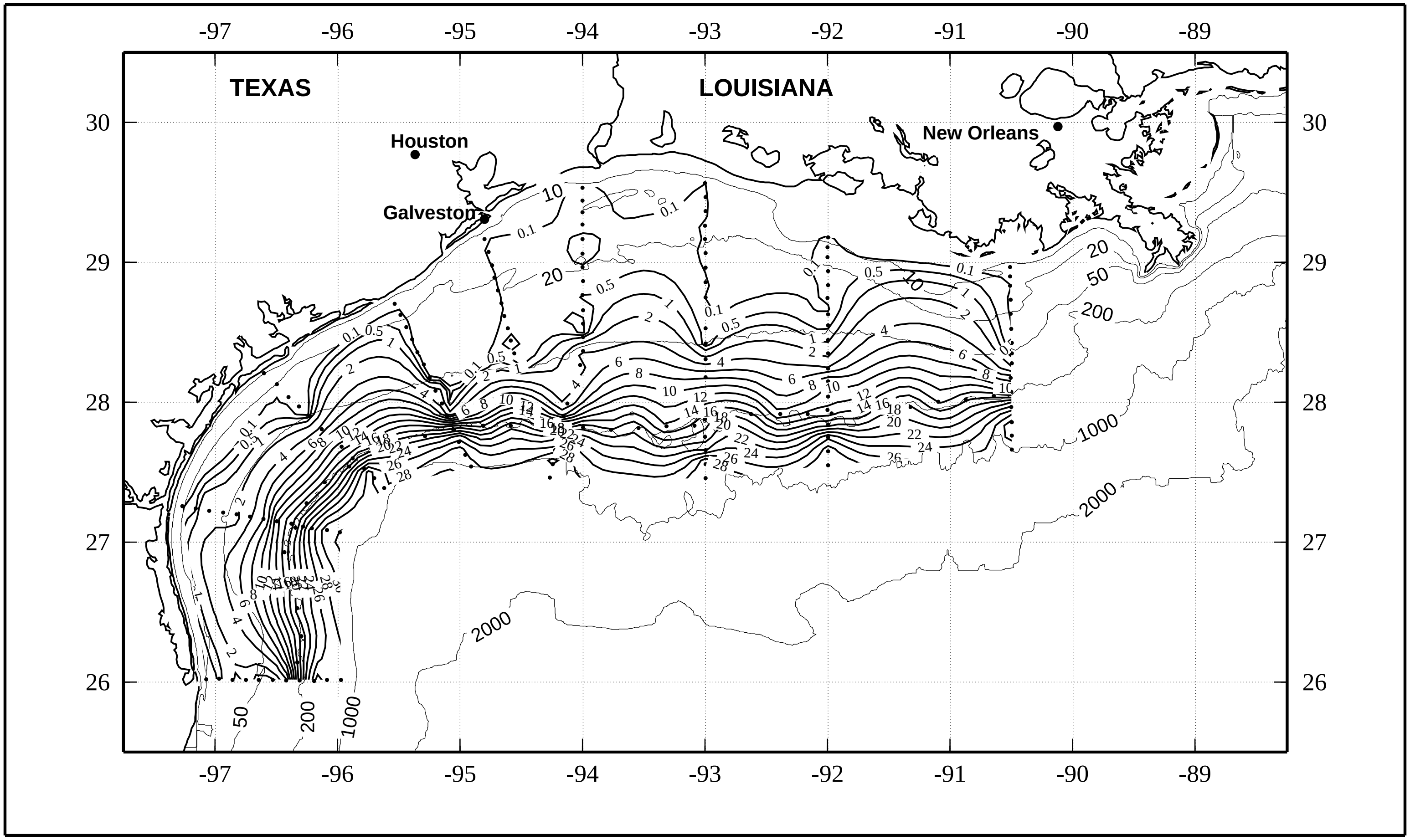

Figure 10.13.12. Nitrate (μmol·l^{-1}) near bottom on LATEX A survey H10, 2-14 November 1994.

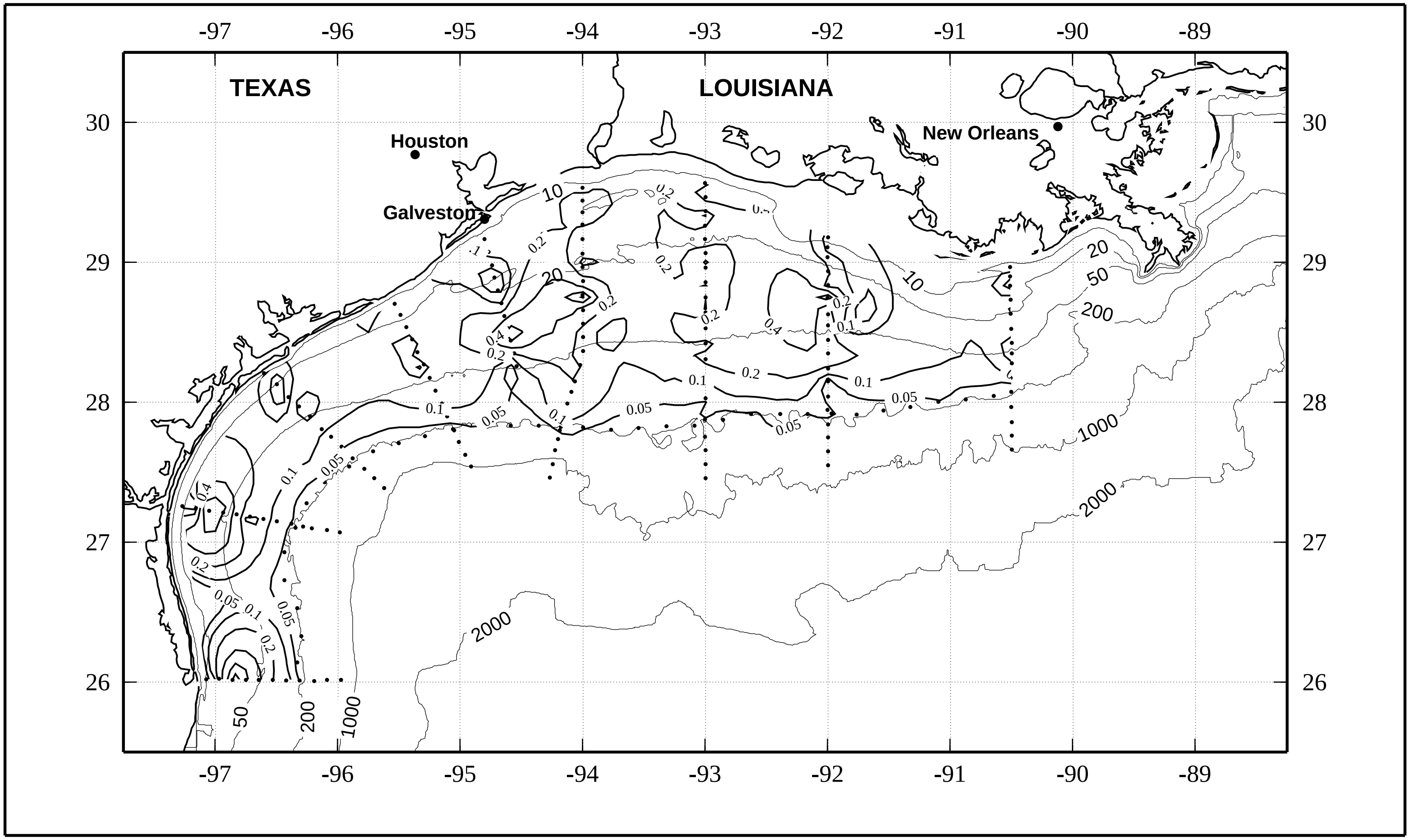

Figure 10.13.13. Nitrite (µmol·l^{-1}) near bottom on LATEX A survey H10, 2-14 November 1994.

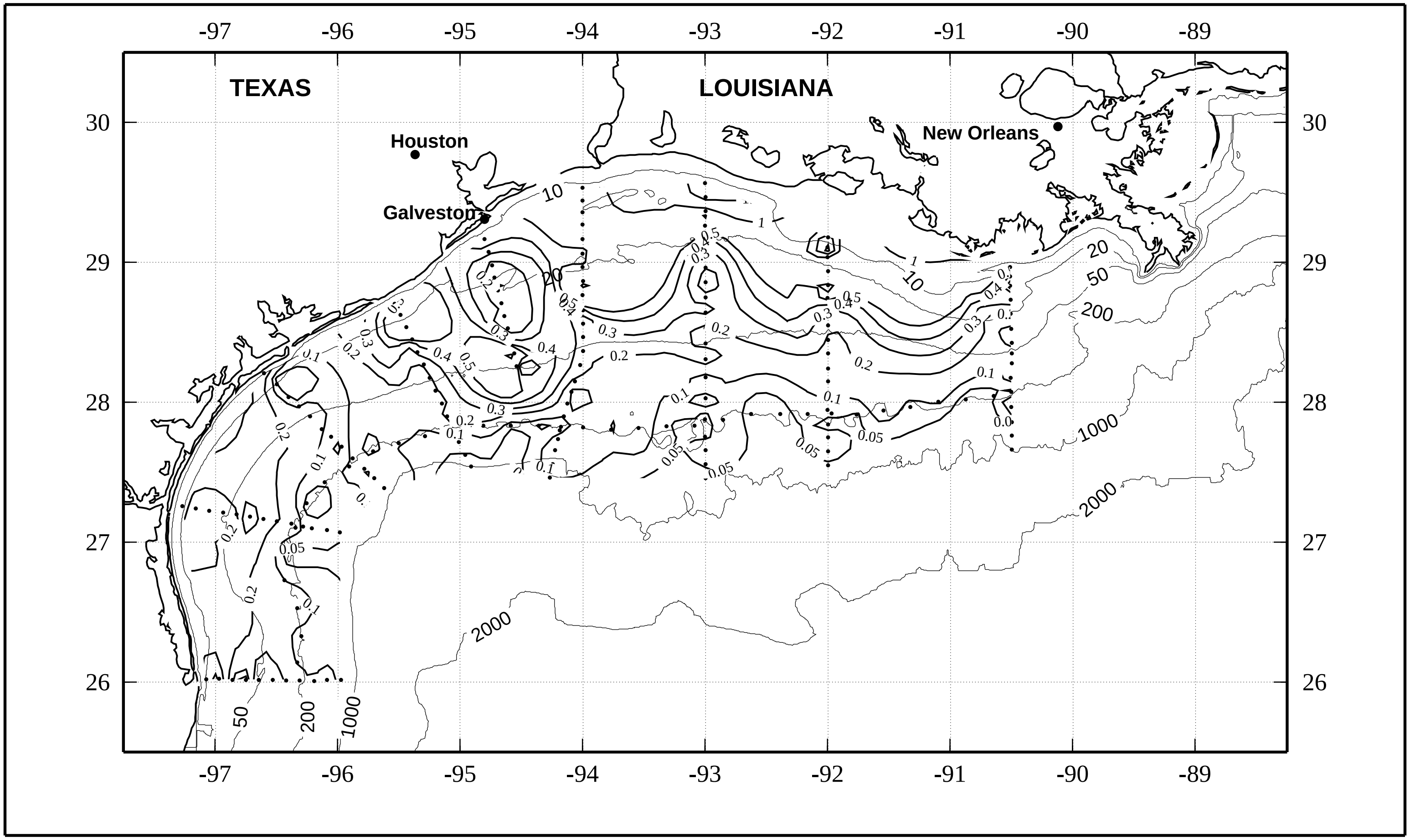

Figure 10.13.14. Ammonium (μmol·l^{-1}) near bottom on LATEX A survey H10, 2-14 November 1994.

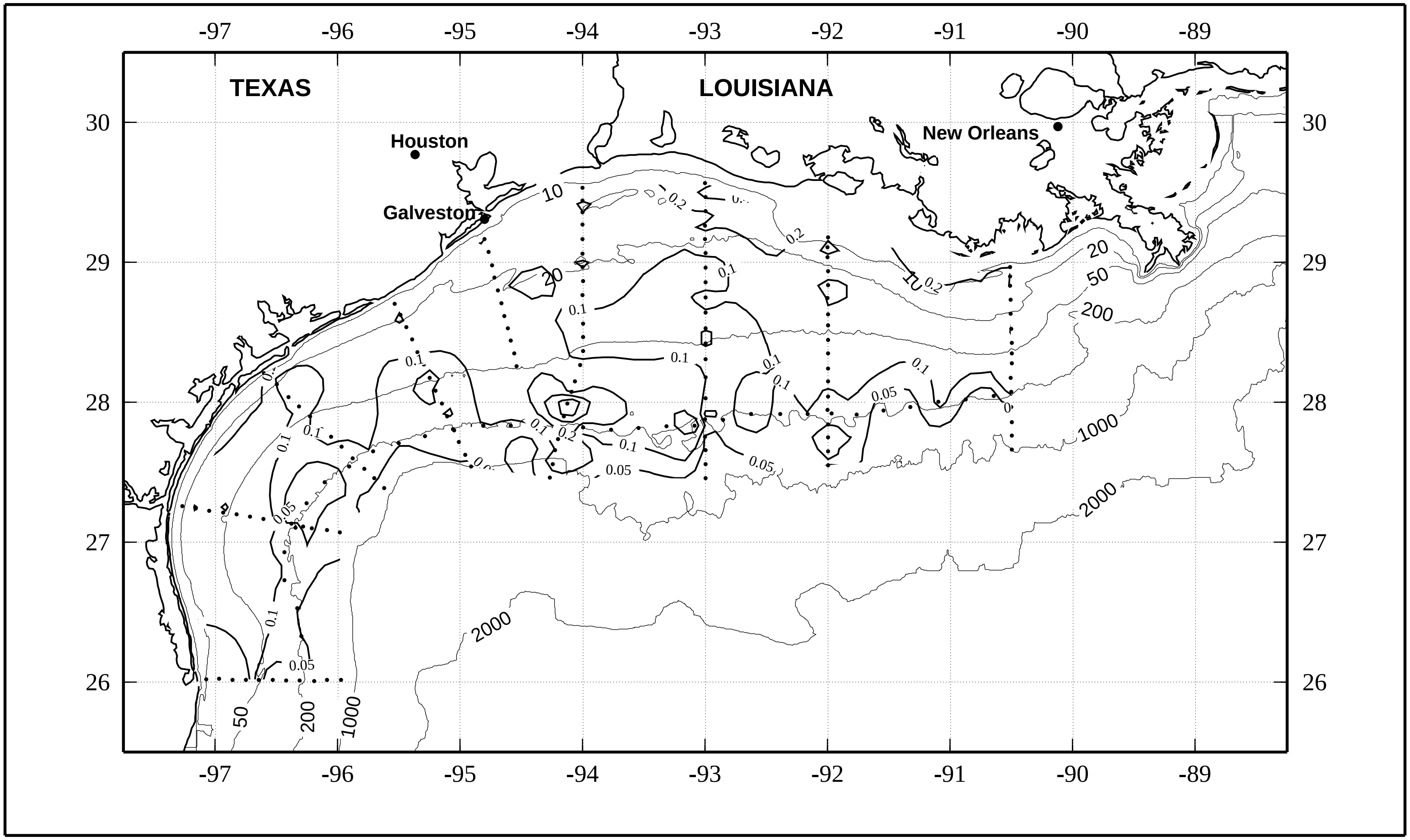

Figure 10.13.15. Urea (μmol·l^{-1}) on LATEX A survey H10, 2-14 November 1994.

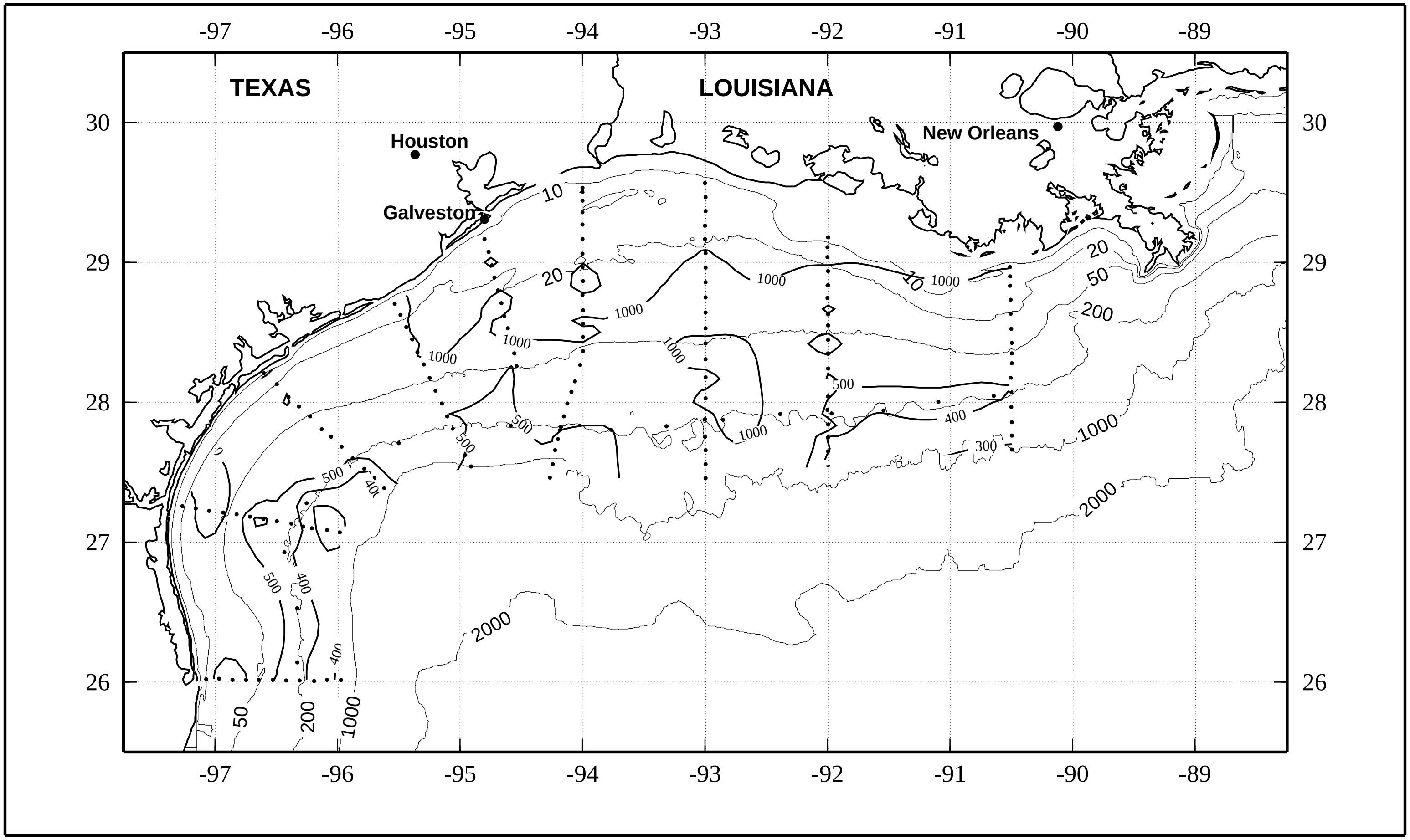

Figure 10.13.16. Chlorophyll a (ng·l^{-1}) at the chlorophyll maximum on LATEX A survey H10, 2-14 November 1994.

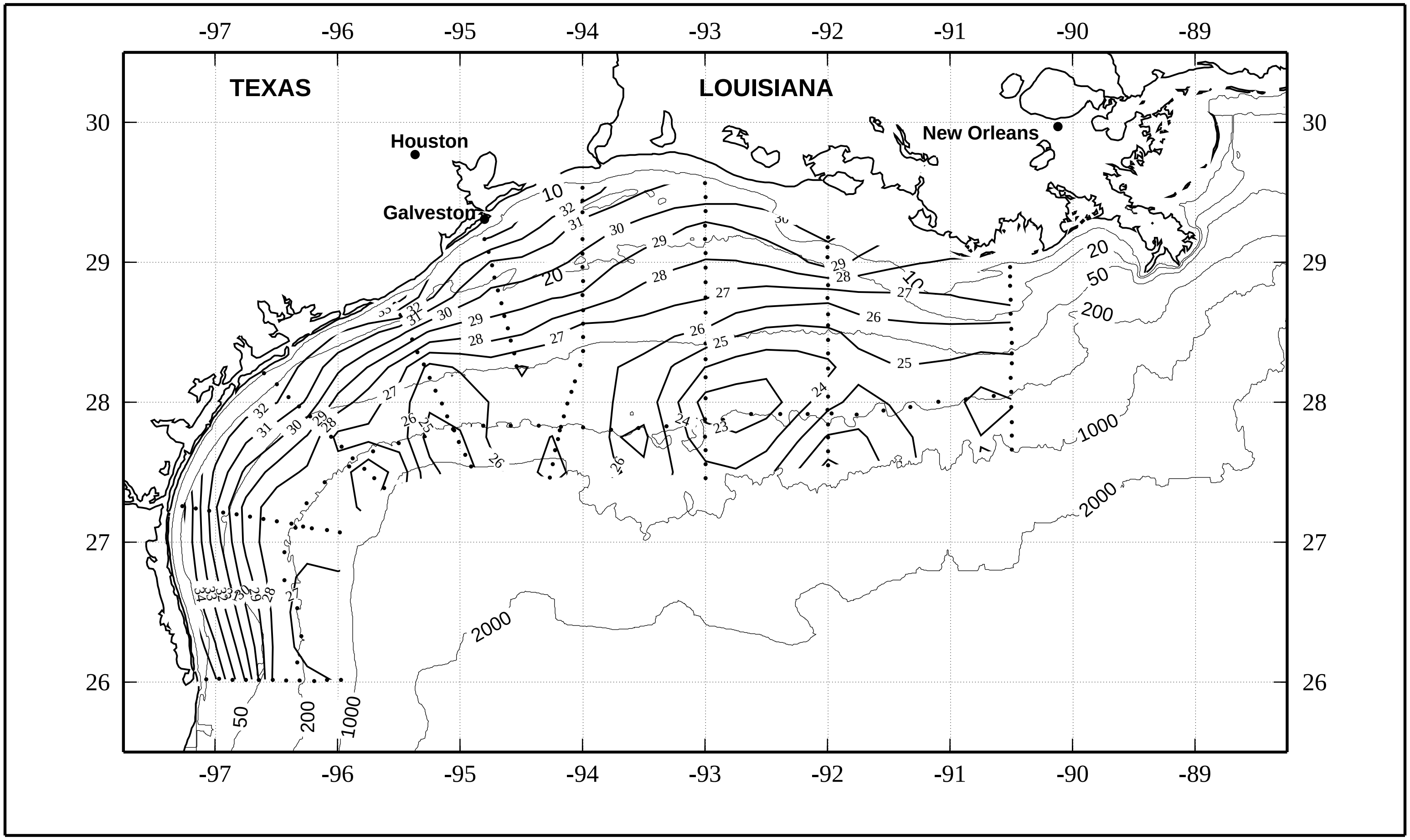

Figure 10.14. Geopotential anomaly of 3db relative to 70db (dyn cm) for LATEX A Hydrographic Survey H10, 2-14 November 1994.

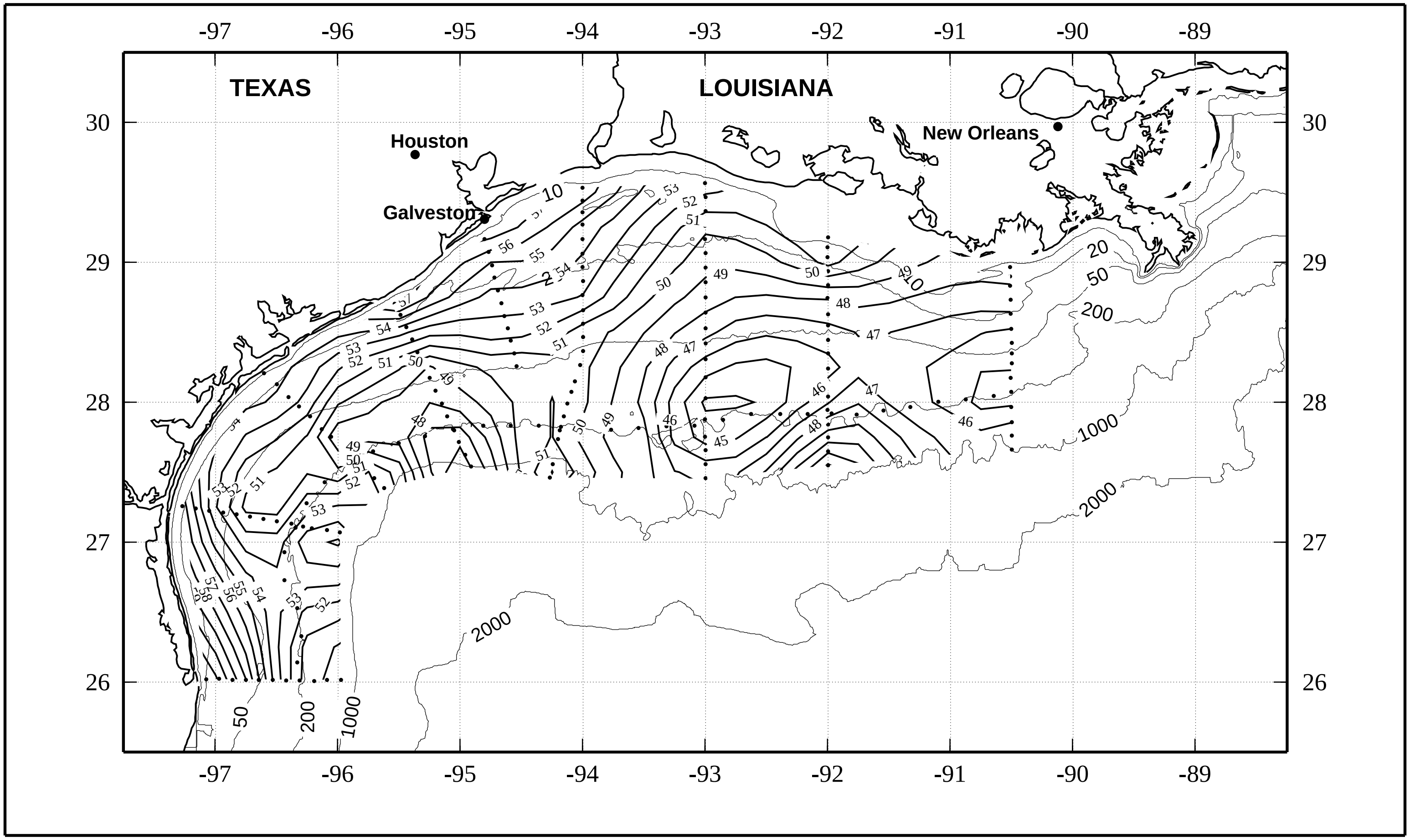

Figure 10.15. Geopotential anomaly of 3db relative to 200db (dyn cm) for LATEX A Hydrographic Survey H10, 2-14 November 1994.

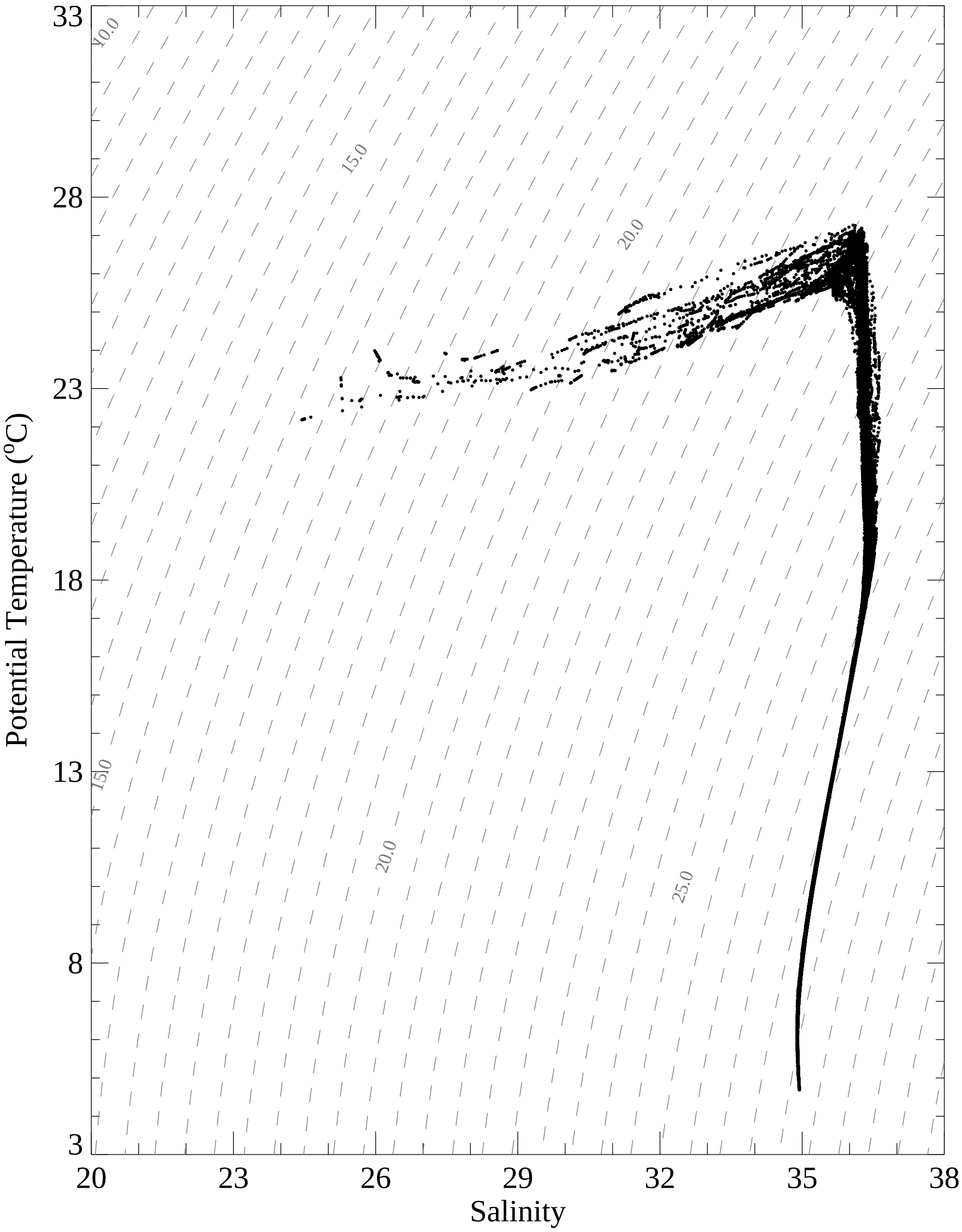

Figure 10.16. Composite potential temperature-salinity diagram for stations from cruise H10, 2 - 14 November 1994.