UOR Data

Introduction

A UOR, including a CTD, fluorometer and light meter, was towed between stations on OMEX RV Professor Shtokman (ST0898) and RV Thalassa (TH1099) cruises. The instrument returned no data from the first cruise. The data from the second cruise are included as time series files on the OMEX II CD-ROM. Dr. Antonio Bode from IEO, who was the principal scientist on the cruise, supplied the data.

Data Location

The data files may be found in the UOR directory, with one file per tow. The filenames are of the form b0*nnnnnn*.lst, where *nnnnnn* is a 6-digit reference known as the BODC Series Reference. The metadata for these files is summarised in the following table:

Series Reference	Start Time	End Time	Start Latitude	Start Longitude	End Latitude	End Longitude	Sampling Interval (s)
529940	14/10/1999 18:01	15/10/1999 05:19	42 09.0 N	10 00.0 W	42 09.0 N	8 57.0 W	4
529884	16/10/1999 08:31	16/10/1999 14:21	42 08.9 N	9 08.4 W	42 39.8 N	9 59.6 W	2
529896	17/10/1999 22:10	18/10/1999 02:28	42 40.0 N	9 10.8 W	42 40.0 N	9 59.9 W	4
529903	18/10/1999 02:28	18/10/1999 06:44	42 40.0 N	9 59.9 W	42 40.1 N	9 13.2 W	4
529915	18 Oct 1999 0845	18 Oct 1999 1337	42 40.6 N	9 13.3 W	42 59.9 N	10 00.6 W	4
529927	18/10/1999 22:45	19/10/1999 01:35	43 00.2 N	9 31.2 W	43 00.0 N	10 00.5 W	4
529939	19/10/1999 01:35	19/10/1999 04:21	43 00.0 N	10 00.5 W	42 59.8 N	9 30.6 W	4

Data Format

The data are formatted in a simple ASCII format known as BODC Request Format. BODC standard dictionary parameter codes are used to identify the contents of each data channel.

Instrumentation

The towed instrument was a standard Chelsea Instruments fish equipped with an Aquapak CTD, an Aquatracka fluorometer and a PAR sensor.

Data Processing

The data were supplied to BODC as ASCII files with pressure, temperature, salinity and chlorophyll calibrated into engineering units together with the PAR sensor output as a voltage. The standard manufacturer's calibrations had been applied from a calibration file dated October 1996. Navigation had been added by linear interpolation between the positions at the start and the end of each tow.

The data were converted into BODC internal format (PXF) and screened on a graphics workstation. Spikes in the data were flagged as suspect. In addition, 'B' and 'E' flags (beginning and end) were applied to the pressure channel to delimit the individual up and down cast profiles.

No attempt has been made to intercalibrate the UOR data with sample data or with data from other instruments. The absolute accuracy of the data is therefore unknown.

Parameter Code Definitions

The following parameter codes are used in the UOR data set:

ALATZZ01 Latitude north
Unspecified method
Degrees

ALONZZ01 Longitude east
Unspecified method
Degrees

CPHLPR01 In-situ fluorometer chlorophyll
Calibrated in-situ fluorometer
Milligrams/cubic metre

LVLTPD01 2-pi PAR light meter voltage from downwelling irradiance
Output voltage sampled by analogue to digital converter
Volts

PRESPR01 Sea pressure (profile)
Profiling pressure sensor (e.g. CTD)
Decibars

PSALST01 Practical salinity (CTD)
CTD conductivity measurement
Practical Salinity Units

TEMPST01 Sea temperature (CTD/STD)
CTD or STD measurement
Degrees Centigrade

BODC Request Format
Version 1.0

This is a generalised output format to handle most types of data held in the BODC National Oceanographic Database.

The following is an example of a file listed in the format:

```
BODC Request Format Std. V1.0           Headers=  15 Data Cycles=   1247 BODC QC (a)
Series:   12050 Inv: CMD  1008           Produced:1993/07/07                     (b)
Id:   048/0           United Kingdom    Scottish Office Agric. & Fisheries Dept. (c)
 57d18.1mN001d54.6mW                     Start:19700831095800 End:19701022075800 (d)
Depth: floor  22.0  sensor  18.0         Nom. sample int.:   3600        secs    (e)
    2 Parameters included:                                                      (f)
Parameter  f  P  Q     Absent Data Value  Minimum Value  Maximum Value     Units
LCDAEL01   Y 30 37                -1.00           0.00         359.70     deg T (g)
Horizontal Current Direction            Eulerian method
LCSAEL01   Y 40 47                -1.00           0.14          72.07    cm/sec
Horizontal Current Speed                Eulerian method
    1 FORTRAN format record:                                                    (h)
(I7,A20,A1,1X,F8.2,A1,1X,F8.2,A1)
  Cycle    Date      Time    LCDAEL01  LCSAEL01                                 (i)
 Number yyyy mm dd hh mi ssf         f         f
      1 1970/08/31 09.58.00    228.26     18.63                                (j)
      2 1970/08/31 10.58.00    209.69     36.14
      3 1970/08/31 11.58.00    206.74     44.23
      4 1970/08/31 12.58.00    204.33     40.06
      5 1970/08/31 13.58.00    207.48     27.95
```

Notes:

(a) The first record contains general information regarding the file. Std. indicates Standard format and V1.0 indicates version 1.0 of the format. Headers and Data Cycles are counts of the number of header records and data cycles in the file. BODC QC indicates that the data has been through BODC quality control procedures; this field is blank if this is not the case.

(b) Record two indicates the BODC series reference number and any inventory reference numbers by which the series is also known (in this case the inventory is the Moored Time Series Inventory that was originally known as the Current Meter Inventory: hence the mnemonic). A reference to a second inventory may occur on this line. If a series has not yet been allocated a BODC reference number this record will start with 'File:' followed by the full BODC file name. This record also indicates the date on which the output was produced (yyyy/mm/dd).

(c) Record three gives the data originator's identifier for the series, the source country and the source laboratory. If this information is not available the record will state 'Series header information not available' and the next two records will be blank.

(d) This record specifies one or two geographic positions; if a second position is given its purpose will be described in the accompanying documentation. Start date and end date (if available) are given in the format yyyymmddhhmiss (24 hour clock and GMT). If time is unavailable hhmiss will be blank.

(e) This record gives the sea floor depth and the sensor depth. If a second (greater) sensor depth is given the two sensor depths specify the range of depths over which measurements were made. The second half of this record gives the nominal sampling interval and units.

(f) This record and the following title record start the parameter section. There are two records per parameter present.

(g) The parameter information record gives the BODC parameter name, whether the channel has been flagged with quality control indicators (Y/N), byte pointers (P and Q) to the start and end of the parameter within each datacycle record, the absent data value, minimum and maximum values of the parameter within the series and parameter storage units. The next record gives the full parameter name and the sampling method.

(h) This line indicates the number of following records that together form the FORTRAN format used to write each data cycle record.

(i) This and the next record are the data cycle title lines. 'f' indicates a flag channel.

(j) Data cycles are listed one per line. The first seven characters are always a data cycle count. One of the following quality control flags may appear against an individual data value (if the remark 'BODC QC' is present in record 1, then a blank flag indicates that the value is good):

Flag	Description
	Unqualified
<	Below detection limit
>	In excess of quoted value
B	Beginning of CTD downcast or undulator turning point
D	Thermometric depth
E	End of CTD downcast or undulator turning point
K	Uncertain/suspect value
L	Improbable value - originator's quality control
M	Improbable value - BODC quality control
N	Null value
P	Trace/calm
Q	Indeterminate
R	Replacement value
S	Estimated value
T	Interpolated value
W	Control value
X	Excessive difference