CTD Data Files

Cruise

There were 50 CTD casts performed aboard the *CCGS Louis S. St-Laurent* during August 2005 (45 casts were from the Canada Basin and 5 from the Canadian Archipelago), using a SBE911+ CTD system with 24 10-L Niskins. XCTDs, vertical net tows for zooplankton, moorings and ice-tethered profilers were also conducted/deployed/recovered during this trip.

Data Summary

The CTD data for down and upcasts are provided in 1-db averaged files (*.cnv), in Seabird's text format with one file per cast and separate files for down and up direction. The files contain all the variables collected but only some of these variables have received processing and calibration. The downcast files are the primary data set however the upcast files are provided because of their usefulness for confirming unusual features seen in the downcast.

Downcast

Filename: d200504_xxx.cnv where xxx is cast number

Standard seabird processing steps were used.
Pressure, primary and secondary temperature and conductivity and oxygen have been calibrated.
Spikes in primary temperature, conductivity and oxygen have been linearly interpolated over.
Derived variables, salinity, potential temperature, sigma-theta and sound velocity, were recalculated.
Transmission, fluorescence and altimetry have not been calibrated.

Upcast

Filename: u200504_xxx.cnv where xxx is cast number

Upcast is supplied as it provides a reference for unusual features seen in the downcast.
Standard seabird processing steps were used.
No spikes have been removed.
Pressure, primary and secondary temperature and conductivity have been calibrated.
Oxygen has been processed with downcast calibration terms however the data are not suitable for use do to pressure hysteresis and sensor drift between down and upcasts.
Derived variables, salinity, potential temperature, sigma-theta and sound velocity, were recalculated.
Transmission, fluorescence and altimetry have not been calibrated.

Problems with data

Spikes were more frequent than usual, likely due to a problem in the electrical connection.

The oxygen sensor membrane had attachment problems during cruise due to assembly error at Seabird. At times, new calibrations for each cast were necessary to fit CTD to bottle data. In addition to drift, the oxygen voltage very frequently dropped to zero, although only for short periods. The zero voltage was linearly interpolated over.

Chemistry

Filename: CHEMData_LSSL2005-04.xls,

Spreadsheets: **2005-04 Chem Rosette Casts**
2005-04 Chem Surface Samples
Cast Event Notes
Pylon Problems
Electronic SAMPLE LOG

All water sample data is presented in a single excel spreadsheet with station location and time, CTD data and water sample results all referenced to a unique sample number.

The bottles were closed on the upcast without stopping the vertical ascent of the rosette. A lag between CTD reading and water in the bottle was determined from examining the CTD and bottle salinity in the high gradient near-surface water (upper 300m). CTD data entered with the water sample data are 1 second averages, lagged by -2.6 seconds to the bottle closure. The CTD oxygen data is from the downcast, matched on pressure not density.

As in 2004, the target depths for the water samples in the upper 400m were chosen from salinity values.

Salinity, oxygen, nutrients, alkalinity, chlorophyll, ammonium and Freon were analysed on board except for a few samples collected near the end of the cruise brought back for analyses in the lab.

Barium, O18, DIC, C13, I129, Cs137 and bacteria were analysed on shore.

Problems with chemistry

Ammonium protocol was being developed during the cruise, however the data are highly questionable and have been removed from the final data set.

Communication errors with the pylon while bottle tripping meant some bottles required two attempts to close the bottle resulting in slightly offset target depths.