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Summary

This submission contains XBT data collected in the South Pacific on board of M/V Oden -- a Swedish Icebreaker. Yuan and Stammerjohn (LDEO) planned to investigate ocean-atmosphere-ice (OAI) interactions in the Amundsen-Ross Sea regions during the early austral summer of 2007-08 using hydrographic measurements (CTD and XBT) in conjunction with (1) ship-based observations and satellite-derived estimates of sea ice concentration, and (2) ship-based observations and re-analyses of meteorological variables. The data acquisition system (MK21) was manufactured by Lockheed Martin Sippican, Inc. and used in this cruise. Lockheed-Martin Sippican provided XBT deep blue probes.

The zipped tar file contains a header files (header.xbt) and processed data files for each XBT drop -- the profiles that have passed the data quality control process. XBT profiles are named xbt#(sequence number).dat. In each xbt file, the numbers in the first column represent the depth in meters. The corresponding number in the second column represents the temperature (C) at each given depth. We also include one original XBT profile as an example of raw data. We also include a subdirectory named “Category 2”, which contains data that we cannot decide if they are erroneous profiles or some special oceanic features.

Quality Control Procedures

XBT

In the preliminary QC, all data from original EDF files exported from data acquisition systems were plotted and edited, mostly for readily visible abnormalities such as large spikes or errors. Obviously bad profiles were discarded. All apparently usable temperature data were interpolated into one-meter interval in vertical by a linear interpolation. The header information was stored in a separate file. The header file includes profile’s sequence number, date and time, latitude, and longitude.

Waterfall plot for each xbt section was then generated to further evaluate the quality of these temperature profiles by comparing neighboring profiles. Abnormal profiles were identified and discarded in this process.

Last, we generate contour plot for each section and visually inspect the continuity of water masses. Occasionally we found bad data in this last step, which were discarded too.

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