Processing Notes

SS 10/2004

10:00 02 October 2004 Brisbane - 20:30 26 October 2004 Nuku'alofa

(Local times)
Data processing completed by
Bernadette Heaney, November 2004

Wind Speed and Direction re-corrected by
Bernadette Heaney, June 2006

1. Summary

These notes relate to the production of quality controlled (QC-ed), position, depth and metero-logical and thermosalinograph data from RV Southern Surveyor voyage 10/2004.
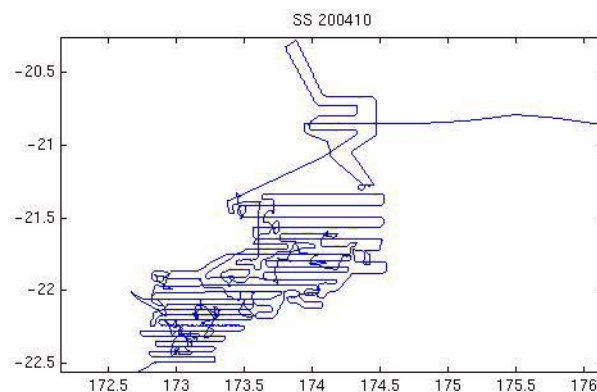
Position data was acquired using the Seapath 200 position and motion reference unit. Depth data was acquired with the Simrad EA500. The Divisional Data Librarian can assist with information regarding all other sensors.

2. Voyage details

"Hot Subduction - Recycling of Oceanic Crust in a Dynamic West Pacific Setting"

2.1 Principal Investigators

Dr Leonid Danyushevsky

University of Tasmania

3. Processing Notes

3.1 Background Information

Thermosalinograph raw files were modified to interpolate across spikes in temperature values. The spiking seemed to have stopped on 06-Oct-2004 05:31.

A combined underway file for the entire voyage, consisting of 10 second values of position, depth, meterological and thermosalinograph variables was remade on 3 November 2004 - by reading data from hourly files returned from the voyage and modified .tsr files. (Time range 00:11:10 02-Oct-2004 - 13:17:40 25-Oct-2004).

Processing Notes

The water depth was "repicked" using echoview software. The depth data was interpolated to 10 second values. The new depths were read back into the netcdf file. Some data was flagged as suspect where the bottom was not well defined

The meteorological data consists of air temperature, humidity, light, atmospheric pressure, wind speed and direction and maximum wind gust.

It was noticed in January 2006 that the uwyLogger progam had not been correcting the wind speed and wind direction data for ships motion. The wind speed and wind direction data were recorrected in June 2006; the data was flagged good, manually adjusted (48). MaxWindGust was set to NaN, and flagged as bad data.

The thermosalinograph data consists of water temperature and water salinity. Salinity and water temperature data for 22:59 16-Oct-2004 - 03:23 17-Oct-2004 was rejected as the thermosalinograph pump had been accidently turned off. Spikes greater than 0.2 were filtered out of the salinity data.

Pamela Brodie found that there was an offset of 0.0372 in the salinity by comparing the salinity data against the CTD primary conductivity readings. An offset of 0.04 has been added to the thermosalinograph salinity values.

4. Other

It was decided that differential correction was not required for this voyage. The voyage was expected to be outside the normal Australian footprint and there would have been extra costs for differential. But corrections were received intermittently from the Australian(?) footprint. Some of these corrections were as old as 59 seconds. The position data switches between differentially corrected, not differentially corrected and dead reckoning. An example of a "jump" in position can be seen on 11-Oct-2004 at 07:35:50.

The navigation, depth, meteorological and thermosalinograph data will be entered into the data warehouse. Position, depth and meteorological and thermosalinograph data extracted from the underway file is available online.

5. References

Pender, L., 2000: Data Quality Control Flags. http://www.csiro.marine.au/datacentre/ext_docs/DataQualityControlFlags.pdf

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