

Processing methodology for VERTIGO KM0414 CTD and Niskin bottle data.

Contributed: June 2005 by Damien Kunz (ICESS) damk2000@icess.ucsb.edu

DMO note: [original](#) CTD data processed by Damien Kunz (ICESS) damk2000@icess.ucsb.edu was downloaded on 06 July 2005

The VERTIGO KM0414 CTD and Niskin bottle data were processed with a standard set of Seabird utilities. The processing steps are reflected in the header records of the final downtrace CTD data files.

CTD 003 downtrace header record: [ctd003bin.hdr](#)

(.CNV) files, not binned (all files processed through Sea-Bird Data Processing)

1. Convert *.dat* files to *.cnv* files using ->Run->Data Conversion.

Settings:

- a. Output: ASCII
- b. Convert Data From: Upcast and Downcast
- c. Create File Types: Create both data and bottle file
- d. Select Output Variables:
 - Pressure, db
 - Salinity
 - Oxygen, SBE 43 (umol/kg)
 - Density (sigma-theta, kg/m³)
 - Fluorescence, Seapoint
 - OBS, Seapoint Turbidity
 - Voltage 5 (*Beam Attenuation*)
 - Scan Count

Notes: In order to account for the pressure difference, the files were converted using a configuration file with (-2.6) offset to pressure

2. Correct the O₂ time mismatch using ->Run->Align CTD.

Settings:

- a. Variance value for O₂ = +6
- b. Variance for All others = 0

3. Despike OBS, Fluorescence, and Beam Attenuation using ->Run->Window Filter

Settings:

- a. Specify Window Filters->Filter type: Median
Parameters: 13

Binned .CNV Files

1. (same as 1. above)
2. (same as 2. above)
3. Data put into vertical bins using -> Run -> Bin Average

Settings:

- a. Bin Type: Pressure
 - b. Bin Size: 1
 - c. Scans to skip over: (In order to start the data input from the top of the downcast, each file was converted separately, skipping all scans taken before the cast.)
 - d. Cast to Process: Downcast
4. (same as 3. above)

.BTL files

In part 1c of the .cnv file conversion, bottle files were created with file type .ros. These files are to be used for the following file conversion.

1. Convert .ros files to .btl files in order to create bottle trip logs, using ->Run->Bottle Summary

Settings:

- a. Select Averaged Variables->Select All

Additional processing done by the OCB DMO for CTD and Niskin bottle data:

Some parameters were calculated using MATLAB Physical Properties of Seawater Toolbox:

Depth [[sw_dpth.m](#)]

Z=sw_dpth(P,LAT);

Potential Temperature [[sw_ptmp.m](#)]

potemp=sw_ptmp(S,T90,P,0);

(note that CTD temp (ITS-90) was used to derive potemp ITS-90)