

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. Despiking 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)