IV. Post-Processing/Data Analysis

In order to provide science groups with preliminary data while still in the field, some real-time data analysis can be done on the vessel during the cruise. However, this will only provide preliminary results as final results must await post-cruise sensor calibrations and configuration optimization.

The following commands can be run on any PC with the SEASOFT software installed and the data files located in that directory. From the C:\SEASOFT> prompt, these commands will create .CNV files (converted data files), which will be converted to ASCII format for easier processing of the data.

Command	Description
`datcnv`	Converts the data from SEASOFT raw binary data (.DAT).
`alignctd`	Aligns temperature, conductivity, and oxygen measurements in time relative to pressure. Eliminates any lags in data (from secondary sensors and oxygen).
`wildedit`	Eliminates any wild data points. The 911plus CTD unit should take care of this on its own, but running the command is a good backup.
`celltm`	Conductivity cell thermal mass correction.
`filter`	Simple filter to make data smoother (pressure resolution).
`loopedit`	Corrects when the CTD package is moving less than the minimum velocity or traveling backwards due to ship roll.
`derive`	Gives values for oxygen. The file will save as derive.cfg; rename this file to derox.cfg to avoid confusion with next *derive* configuration.
`binavg`	Averages data into the desired pressure bins (e.g., every meter). This reduces noise and smoothes data. Reduces the size of the file.
`derive`	Derives salinity, temperature, density, and other parameters. The file will save as derive.cfg. Rename this file to derts.cfg to avoid writing over other *derive* configurations.
`rossum`	Takes the averaged data at each bottle trip and prints pressure, bottle number, and other values in a .ROS file. This should be saved in a public folder for easy access by researchers who sample bottles. It should also be printed and placed in the log book.
`asciiout`	Converts all info from binary to ASCII format in an .ASC file. This should be kept in a public space as well.

The LTER group has created a batch file in order to make processing this data easier. See the computer technician on board to revise this batch file for your particular cruise.

- The batch file needs to be run from the C:\SEASOFT> directory. The batch file is located on the P:\ drive. Copy the batch file to the C:\SEASOFT> directory at the beginning of the cruise. At the C:\SEASOFT> prompt , type
  postproc.bat <3 digit cast number> <scans to skip>
  and press <**Enter**>.
- The batch file will run the SEASOFT commands as listed above, and output an ASCII file (.ASC) and a rosette file (.ROS) to P:\CTD\ASCII and P:\CTD\bottle, respectively.
- The LTER group also has a MATLAB script which will plot temperature and salinity for a particular station. This script is also found in P:\CTD.

For more elementary manual processing, the only commands that need to be run are **datcnv**, **binavg, derive, rossum**, and **asciiout**.