

# CC1708SR Underway Data Processing Notes

The raw data files are the files \*.MET. The files come in two versions. All files have the ship's met data. Files 5 to 16 have the added pH/pCO<sub>2</sub> data.

TSG\_Temp (black) is too warm and looks filtered. The most parsimonious explanation is that water flow through TSG system 1 was severely restricted. TSG\_Temp\_2 has some problems. SSTemp is the best record. Was used for the calculation of Pred\_Temp. Still, the comparison with Bottle Temp shows that SSTemp had problems too. TSG\_Sal2 had many problems, use TSG\_Sal. The Chl a Fluorometer did not collect sensible data.

## **The available variables from these files are:**

COG – course over ground (deg)

SOG – ship speed over ground (knots)

USWFlow – measure of water flow through the UW system (varying units).

PARSurf – photosynthetically available radiation measured aboard the ship (uE/Sec/Meter<sup>2</sup>).

LongWaveRad – Long Wave Radiation (W/M<sup>2</sup>, Pyranometer)

ShortWaveRad - Short Wave Radiation (W/M<sup>2</sup>, Pyranometer)

WindSpeed – wind speed (m/sec)

WindDir – wind direction (deg)

AirTemp – air temperature (deg C)

AtmPress – atmospheric pressure (mb)

AtmPress – atmospheric pressure, sea level corrected (mb)

RelHum – relative humidity (% saturation)

SSTemp - Hull Temperature measurement with SBE48 in Transducer Void (degC)

TSG\_Temp – water temperature measured by the Sally Ride's TSG75 unit (deg C).

TSG\_Cond – water conductivity measured by the Sally Ride's TSG75 unit (mS/cm).

TSG\_Sal – water salinity calculated by the Sally Ride's TSG75 unit (PSU).

TSG\_Dens – water density as sigma-t calculated by the Sally Ride's TSG75 unit (PSU).

SoundVel – sound velocity calculated by the Sally Ride's TSG75 unit (m/sec)

TSG\_Temp\_2 – water temperature measured by the Sally Ride's TSG xxx unit (deg C).

TSG\_Cond\_2 – water conductivity measured by the Sally Ride's TSG xxx unit (mS/cm).

TSG\_Sal\_2 – water salinity calculated by the Sally Ride’s TSG xxx unit (PSU).

TSG\_Dens\_2 – water density as sigma-t calculated by the Sally Ride’s TSG xxx unit (PSU).

SoundVel\_2 – sound velocity calculated by the Sally Ride’s TSG xxx unit (m/sec)

Oxygen – oxygen concentrations measured by the Sally Ride’s TSG xxx unit (mL/L).

OxygenSat – oxygen saturation measured by the Sally Ride’s TSG xxx unit (%).

OxygenTemp – temperature of the water oxygen measurements were made on (deg C)

ChlFluor – chlorophyll fluorescence (volt). The instrument must have malfunctioned. No meaningful correlation between ChlFluor and CalCOFI bottle Chl values was observed.

**Derived variables are:**

Pred\_Temp – temperature derived from calibrations of TSG\_Temp vs. CalCOFI 0 to 12 m bottle temperatures (deg C)

Pred\_Sal – salinity derived from calibrations of TSG\_Sal vs. CalCOFI 0 to 12 m bottle salinity (PSU)

Pred\_Ch1 – chlorophyll derived from calibrations of ChlFluor vs. CalCOFI 0 to 12 m bottle Chl a (ug-Chl/L).  
All values are set to NaN.