Fluorometer Calibration Notes

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2005-04 JOIS

Data had not been calibrated.

**2013-05-21:**

Chlorophyll Data Set calibrated using routine ***cal\_fluorometer\_2005v2.m***

***add\_lag.m***

***out\_finish\_data\_200504\_justChl.m***

Fit using all bottle data, first using w/in chlorophyll range 0.025 to 10mg/m3 but then reran to match the final decision to use 0.025 to 0.6mg/m3. For the fit, a STD of 2.5 was used to remove outliers. The low value criteria excludes those below the CTD Flr sensitivity and the high cut off value excludes calibration points in the chlorophyll peak that can be mismatched w/ CTD due to such sharp gradients.

Also, no alignment had been applied so data were calibrated as is with no alignment (lag) but then re calibrated after applying a 3second lag and plucking out new CTD values from upcast. The raw data show 4db on average separation btw down and upcast but wire speed was inconsistent in the upper 300m ranging from 0.7 to 1 m/s. A 3 second lag appeared to match the data better than a 4 second lag.

Typically, the uncalibrated CTD fluro is close to a 1:1 relationship with the combined chlorophyll plus phaeophytin values, however that is not the case for this data set. Uncalibrated CTD flr values are less than chlorophyll alone.

Chlorophyll and Phaeophytin however are approximately 1:1 as is typically seen on JOIS.

CTD flr has frequent dropouts to 0. All values below 0.001 were set to the neighboring CTD flr values as the first processing step followed by the lag adjustment, pulling data for the chem file and then applying calibration.

Fit results:

Range 0.025 to 0.6 with 4 second lag

78 out of 95 observations used, STD 0.023

Slope = 1.3392, Bias = 0.0035