**Tara Polar Circle: CDOM absorption from ACS**

During the Polar Circle expedition, filtered water (0.2 um) absorption measurements were made using both an UltraPath and an ACS. The UltraPath was calibrated before each measurement by running a mixture of HPLC water and baked salts through the instrument. Therefore, the UltraPath provided a precise measurements of CDOM absorption.

Filtered water was pumped through the ACS for 10 minutes out of every hour. The last minute of every 10 minute filtered cycle was median binned and saved. The dissolved spectra were temperature and salinity corrected using temperature and salinity values measured by the TSG. No clean water spectra were collected with the ACS during the expedition. Therefore, the dissolved spectra still contains errors due to instrument drift. To solve this, errors in the instrument were estimated by comparing concurrent ACS and UltraPath measurements. The difference between the two spectra should provide a calibration for the instrument (similar to a clean water spectra).

Calibration spectra were created by matching UltraPath and dissolved ACS measurements that were no more than 25 minutes apart. There were 59 calibration spectra created by matching up ACS and UltraPath measurements. For the remaining dissolved ACS spectra, the nearest calibration spectra (in time), was used to correct the dissolved spectra.

Due to residual temperature and salinity errors in the UltraPath and ACS, the spectra have been truncated to 400-550nm. Headers for the data are as follows:

Date, Lat, Lon, Temperature, Salinity, ag (400:2:550)