

Figure S1. Calibration of the CTD mounted fluorometer on PS94 to water samples taken and measured onboard. $Fl. = V * 0.1641 - 0.0380$; $R^2 = 0.96$.

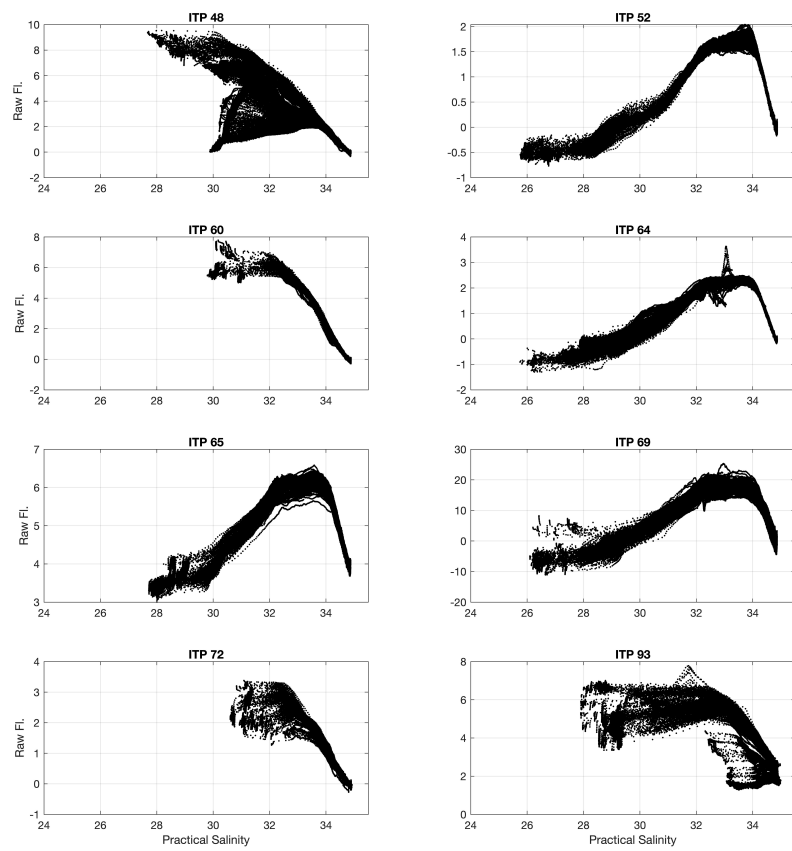


Figure S2. Raw fluorescence signal from the ITPs.

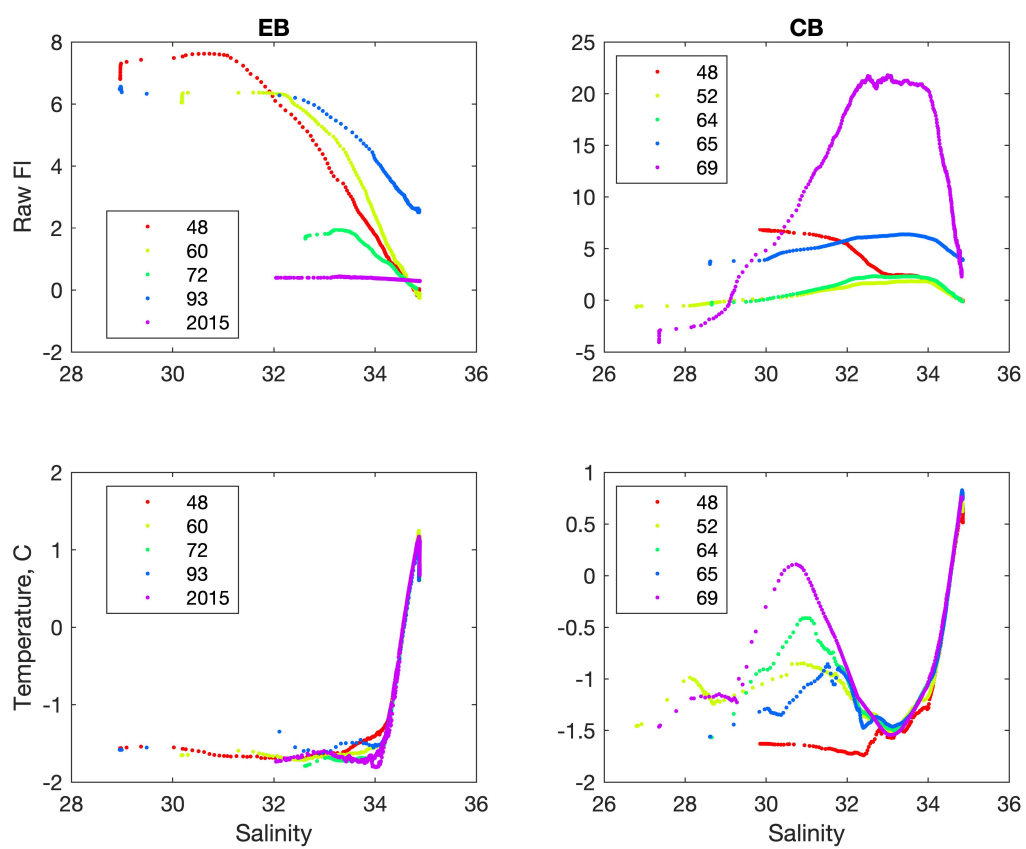


Figure S3. Data from selected profiles for Eurasian (EB) and Canada Basins (CB), where waters with common T-S were sampled and could be used to intercalibrate DOM fluorescence signal.

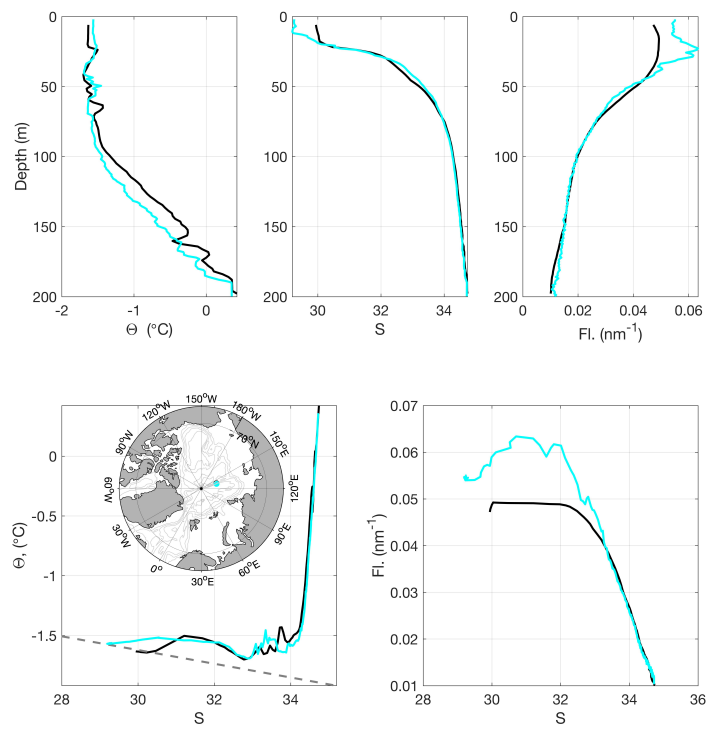


Figure S4. Comparison of PS94 (blue) with ITP93 calibrated using the T-S space approach for a station where ITP93 was deployed and a ship CTD cast was also performed.

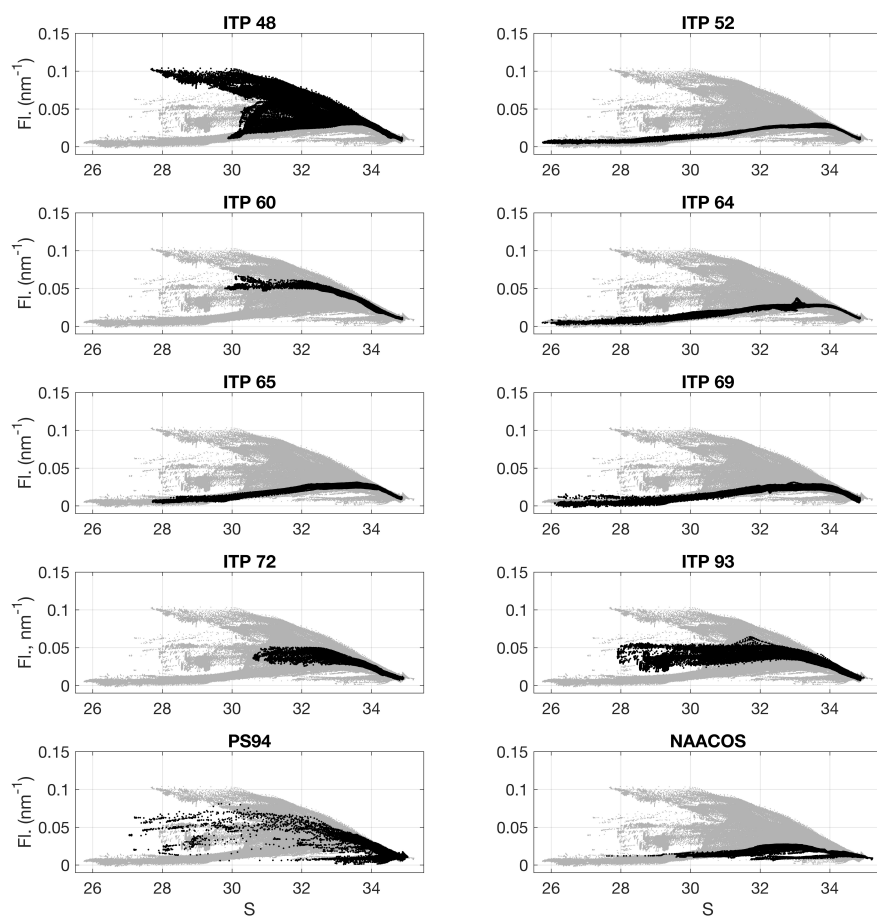


Figure S5: Calibrated organic matter fluorescence against practical salinity. Black data are for each specific ITP or cruise. Grey data points in the background are all data combined.