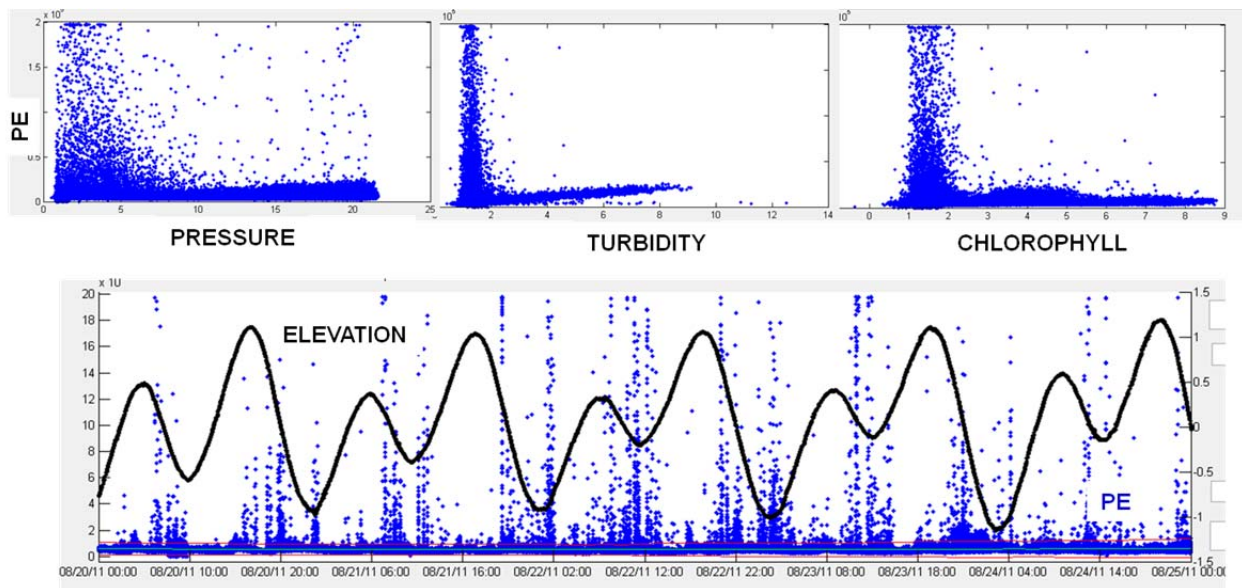


SATURN-01 Phycoerythrin

Filter for sensor noise during latter half of August 2011:

After approximately August 17th, 2011 there are periods of sensor noise that appear to be associated with ebb tides, occurring primarily in the upper water column (pressures < ~5m). There are no associated increases in chlorophyll or turbidity indicating that this signal is likely to be an issue with the phycoerythrin sensor.

When viewing the SATURN-01 data as a time-series rather than as a profile plot, the noise is apparent. The following figure shows the PE data during the period of 5 days between 8/20/11 and 8/25/11. The PE time-series is shown in the bottom plot in blue and elevation from the Hammond tide gauge is overlaid in black. The top three panels show the same PE data vs. pressure, turbidity and chlorophyll.



The noise was flagged using a running mean of 0.005 days (~7 minutes) and data outside of the mean ± 6 standard deviations were flagged as QL4. In a few cases good data that had been inappropriately flagged with this method were identified and re-flagged. Data that were not flagged as QL4 were flagged as QL2 since this method only roughly delimited the noise, and a small percentage of noise remained as un-flagged.

The figure below shows the results of the QC process. The orange data (QL4) in the latter half of the month represent the data that were flagged using the process described above.

