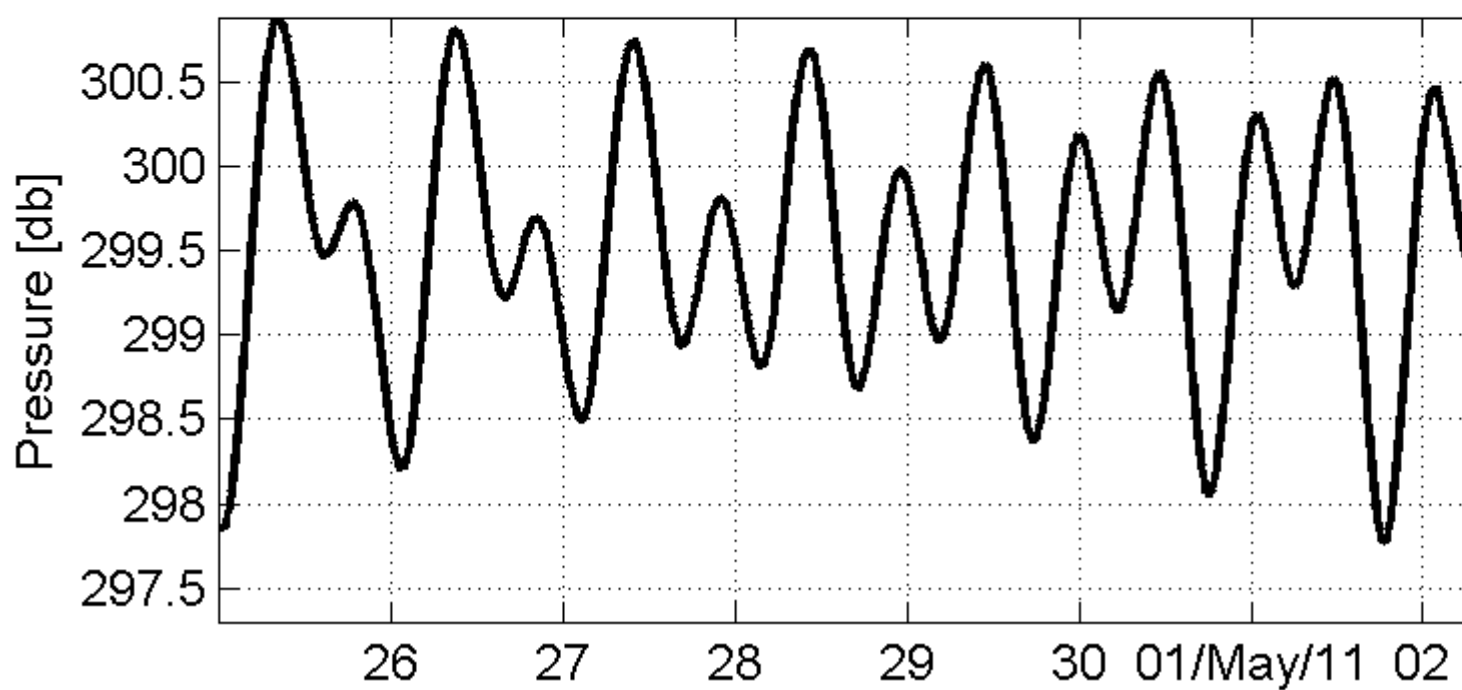
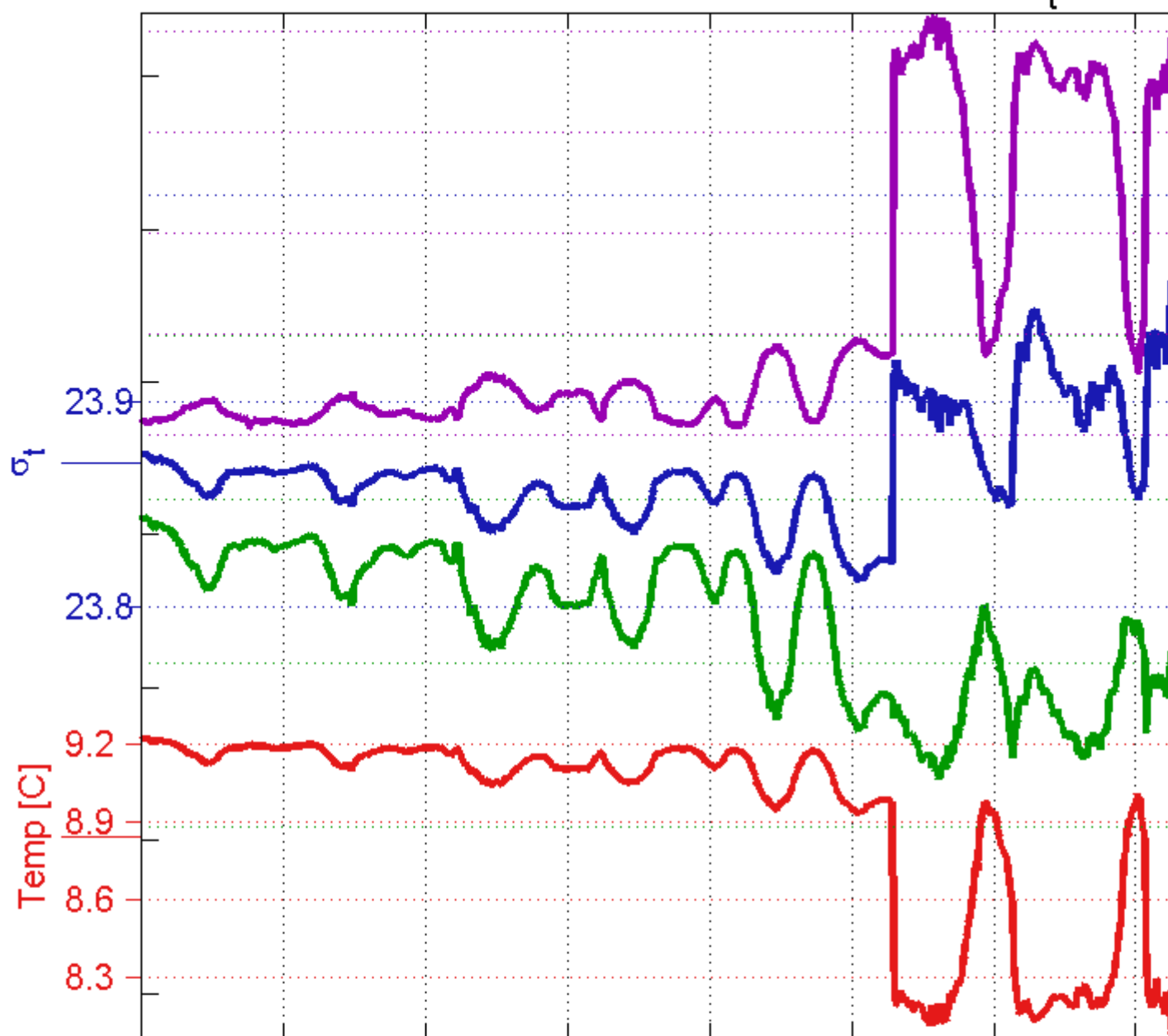


Abrupt Hydrographic ?Front? in the Strait of Georgia ^[1]

Submitted by Rory Lattimer Tue, 2011-05-10 00:00

Temperature (Red), Salinity (Green), Sigma_t (Blue)



[2]

On April 30, 2011 an abrupt hydrographic "front" crossed the VENUS Central Strait of Georgia [3] site. The temperature (red) dropped 0.6 degree and the Oxygen concentration (magenta) nearly doubled. The 0.6 C temperature drop occurred between two samples taken one minute apart! This cold front was accompanied by a sharp increase in the dissolved Oxygen concentration, rising from 2.8 ml/l to 4.4 ml/l. There was, rather surprisingly, little salinity (green) change associated with the arrival of this water mass, although the salinity had started dropping slightly on May 29. A density increase (blue line) at the front is attributed entirely to the colder temperatures.

Over the next few days, (May 1-3), there were short excursions into the original warmer/low Oxygen water at the end of the large flood, suggesting that the cold front had approached from the north. By May 5, well into the spring tidal cycle (black), all water properties had returned to near pre-front conditions. In a paper by Diane Masson (Estuarine, Coastal and Shelf Science [2002], vol 54, pp 115-126) she identifies 2 periods when deep water renewals may occur; one in the late summer associated with the incursion of salty dense water, the other in late winter (now!) when cold dense water penetrates the deep regions of the Strait of Georgia.

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