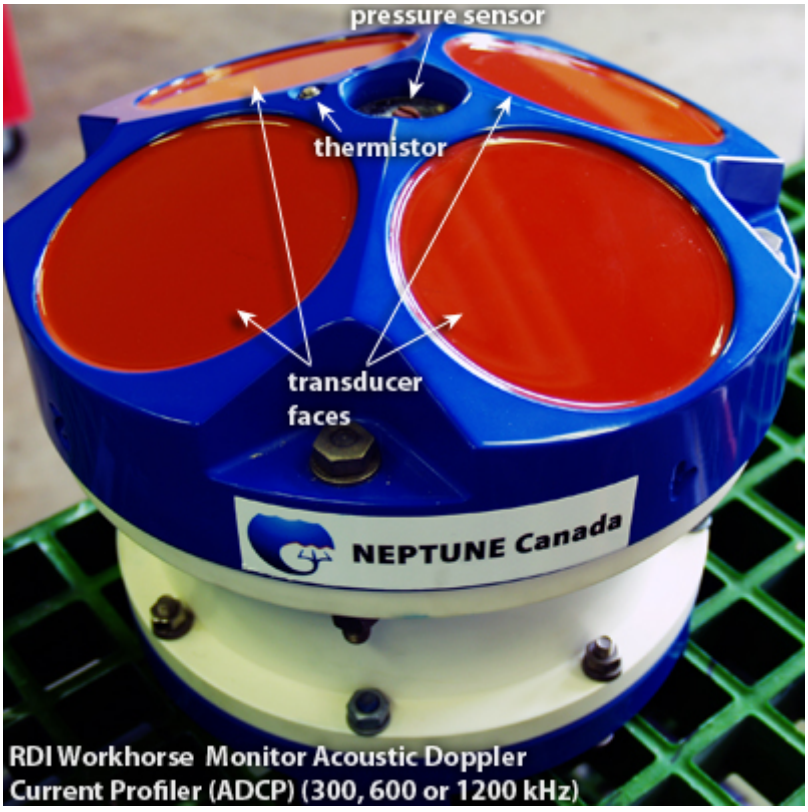
Measuring Currents [1]

Submitted by Dwight Owens Mon, 2012-10-15 00:00

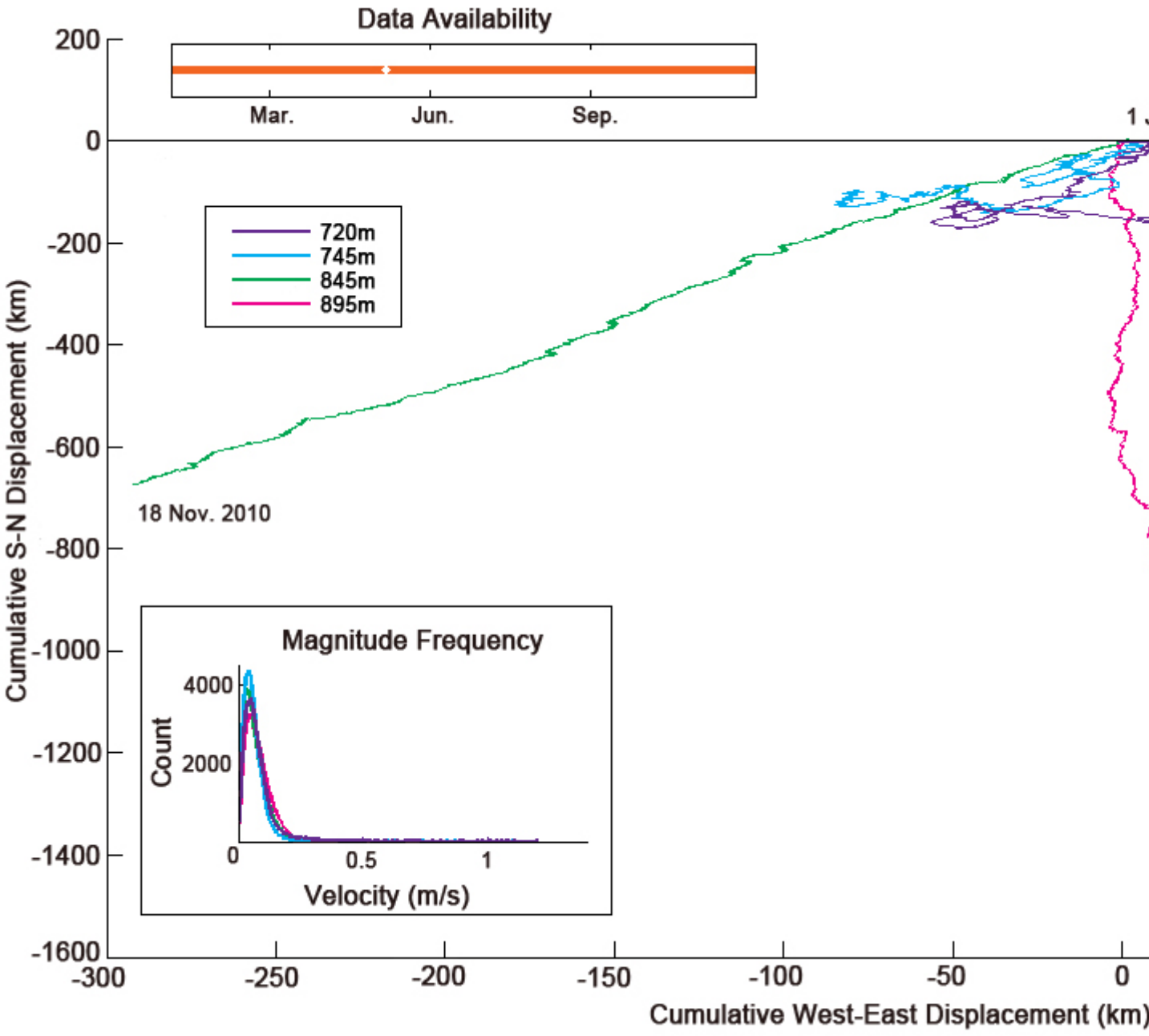
Two major currents on British Columbia?s west coast, the California Current and Alaskan Current, carry water south and southwest respectively. Within NEPTUNE observatory, currents are measured using ADCPs and acoustic current meters. Each location needs to be examined independently since local bathymetry and geological features can affect the water flow.



[2]

Progressive vector diagrams use a selection of depths to visualize the large scale, general trends of current directions. Distance is not measured in this type of plot, but it is inferred from the velocity and direction of the current as well as the time interval measured. Each current vector is added onto the previous vector, starting from the (0,0) origin on a Cartesian co-ordinate grid where the instrument is located. The data are averaged over 15 minute intervals with velocities measured in m/s then converted to distance (km) on the x-y axis. The plotted

line approximates the trajectory an individual water parcel might follow through time.



[3]

Magnitude frequency plots (small inset graphs) count the number of times a particular velocity magnitude occurs, at intervals of 0.01 m/s. The higher the count, the more frequently a velocity magnitude occurred. Data availability bars indicate data presence and gaps over the time period of the plot. Data gaps were ignored for the progressive vector diagrams in this report.

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