

An Operational Real-Time Eddy-resolving 1/16° Global Ocean Nowcast/Forecast System

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A real-time eddy-resolving global ocean nowcast/forecast system developed at the Naval Research Laboratory (NRL) has been running operationally at the Naval Oceanographic Office (NAVOCEANO) since 27 September 2001. The system uses the NRL Layered Ocean Model (NLOM) with 1/16° resolution and 7 layers in the vertical. Real-time satellite altimeter sea surface height (SSH) from Jason-1, ERS-2 and Geosat-Follow-On provided by NAVOCEANO's Altimeter Data Fusion Center, are assimilated into the model. The assimilation consists of an optimum interpolation deviation analysis of SSH with the model as a first guess, a statistical inference technique for vertical mass field updates, geostrophic balance for the velocity updates outside of the equatorial region and an incremental updating of the model fields to further reduce gravity wave generation. The sea surface temperature (SST) assimilation consists of relaxing the NLOM SST to the daily Modular Ocean Data Assimilation System SST analysis performed at NAVOCEANO. Real-time and archived results from the model can be viewed at the NRL web site <http://www.ocean.nrlssc.navy.mil/global-nlom>. The results show the model has predictive skill of at least one month.