



## **The present and future near real-time 1/12 degree Atlantic hycom nowcast/forecast system**

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The near real-time 1/12 degree Atlantic Ocean nowcast/forecast system has been running since the Fall of 2002. The daily Modular Ocean Data Assimilation System (MODAS) sea surface height analysis of available satellite altimeter data is assimilated into the model. The sea surface temperature (SST) is relaxed to the daily MODAS SST analysis of available Multi-channel Sea Surface Temperature (MCSST) observations. The surface information is projected in the vertical using the Cooper and Haines (JGR, 1996) technique. A 10 day hindcast and a 14 day forecast is performed every Wednesday. The results from the system can be seen on the HYCOM Consortium web page at <http://hycom.rsmas.miami.edu/> and the output from the model is available via the Miami Live Access Server (LAS), <http://hycom.rsmas.miami.edu/las>. The latest results from the system will be discussed, including the comparison to independent measurements of the transport in the Florida Straits at 27N. This system is the first step toward a global 1/12 degree nowcast/forecast system based on HYCOM that is planned for transition to the Naval Oceanographic Office in 2007. The prediction system will provide boundary conditions for higher resolution coastal models. An accurate representation of the oceanographic fields at the open boundaries of a coastal model is important for a successful coastal ocean prediction system.

As an upgrade to the present assimilation scheme, the NRL Coupled Ocean Data Assimilation (NCODA) system has been implemented in HYCOM. NCODA is a multivariate optimal interpolation (MVOI) scheme. The ocean analysis variables in NCODA are temperature, salinity geopotential (dynamic height) and velocity. The

horizontal correlations are multivariate in geopotential and velocity thereby permitting adjustments to the mass field to be correlated with the adjustments to the flow field. The MVOI assimilates the satellite track data, available MCSST and in situ observations, including profile data from BT's and ARGO floats. NCODA is currently being tested in a 1/12 degree Gulf of Mexico configuration.