Recent advancements in coastal ocean prediction at the U. S. Naval Research Laboratory

R. Preller (1), R. Arnone (1), D.S. Ko (1), J. Kindle (1), R. Allard (1), P. Martin (1)

(1) Naval Research Laboratory, Stennis Space Center, Ms 39529 (preller@nrlssc.navy.mil)

The Oceanography Division of the Naval Research Laboratory conducts a coordinated program of research and development (R&D) supporting Navy operational ocean nowcast and prediction. This R&D program covers domains from global scales down to local surf zone scales. Included in these efforts are sophisticated ocean circulation models that are combined with observations on global, basin, and regional scales to generate predictions of ocean currents, temperature, salinity, and elevation. These larger scale prediction systems provide initial and boundary conditions to higher resolution, localized models, that in addition to the ocean parameters listed above may predict, tides, waves, surf and local biology. This paper provides an update on current NRL R&D efforts with a focus on regional and local nowcast and prediction capabilities in coastal areas.

Examples showing a recent demonstration of the prediction of ocean circulation, waves and tides off the Portuguese Coast will be discussed. In addition, examples will be presented showing the combination of regional ocean models and satellite derived chlorophyll data from SEAWIFS along the U.S. west coast and the U.S. Gulf coast along with a discussion of the possible future uses of these data.