

Performance of the Northern Levantine Circulation Model (NLEV), sea-level calibration and applications

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The Northern Levantine (NLEV) forecast model domain covers the Turkish Mediterranean coast (35.12-36.93°N, 28.15-36.25°E) with fine scale horizontal grid resolution of 1.35 km in both directions, and making use of the Mediterranean Forecasting System (MFS) to provide initial and boundary conditions and atmospheric fields to drive the system. The NLEV model includes the effects of river sources in the northern Levantine Sea. Coupled simulations with an ecosystem model have been added and have been so far used to test climate scenarios.

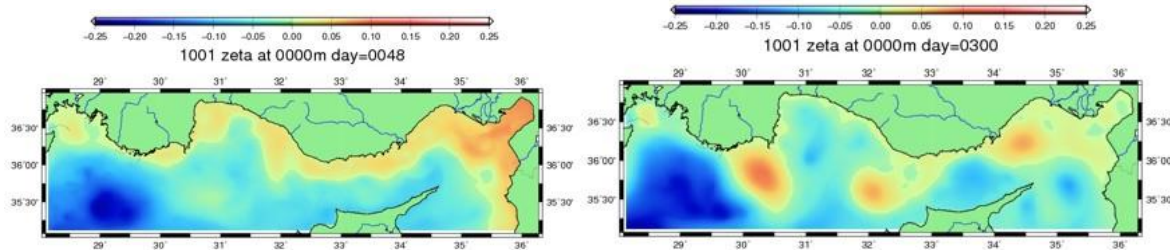


Figure 1. Sea surface height in (a) March 2009 and (b) November 2009 based on the NLEV model forecast.

The sea level variations in Fig. 5 shows the Asia Minor current sweeping by the coast, the influence of the Rhodes cyclonic gyre in the western part, and the evolution of well developed anti-cyclonic eddies and jets along the Asia Minor current, through coastal interactions.

Coastal sea level measurements at various locations are used to test performance and calibrate the model. Improvements in the MFS model hierarchy is reflected in the improved quality of sea level forecasts.