EMS Annual Meeting Abstracts
Vol. 11, EMS2014-354, 2014
14th EMS / 10th ECAC

Evaluation of ocean forecast system based on the Regional Ocean Modeling System(ROMS) in Korea Meteorological Administration

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Climate of the Korean Peninsula which is surrounded by the sea on three sides is strongly influenced by sea surface temperature. Sea surface temperature affected by the interaction of the atmosphere and the ocean with insolation, radiation, and flux, and it also changes substantially depending on tides and ocean currents. Numerical models are used to understand the currents and temperature distribution in the ocean due to large variability of ocean currents and diffculty of observation. In order to simulate three-dimensional ocean circulation of the northwestern Pacific Ocean including around the Korean Peninsula, Korea Meteorological Administration has been operating ROMS since year 2012 which is developed at Rutgers University in USA. The ROMS configuration consists of 8 km spatial resolution and 20 vertical layers with 115E-150E longitude and 20N-50N latitude to produce the ocean state every 1 hour and 72-hour forecasts once a day. The verification are conducted using Argo observation and the results are presented. The ROMS forecast evaluates against sea temperature and salinity. The mean difference in temperature between forecast and observation shows about 2.0 degrees at 500m and 700m depth. Validation results for spatial distribution will be presented at the conference. The ROMS forecast system need to be improved with data assimilation.