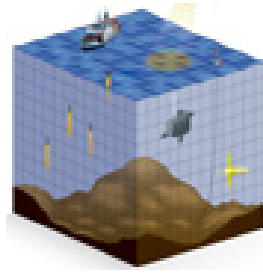


Joint ECMWF/OceanPredict workshop on Advances in Ocean Data Assimilation



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Regional Analysis of Indian Ocean (RAIN)

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Title: Regional Analysis of Indian Ocean (RAIN)

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Abstract:

RAIN (Regional Analysis of Indian Ocean) is a data assimilation system developed in INCOIS wherein ROMS (Regional Ocean Modeling System), which is an ocean general circulation model suited for regional basins and is used as a forecast model for Indian Ocean by INCOIS, is interfaced with the data assimilation scheme of Local Ensemble Transform Kalman Filter (LETKF). This system assimilates in-situ temperature and salinity profiles and satellite track data of sea-surface temperature (SST). The ensemble members of assimilation systems are initialized with different model coefficients like diffusion and viscosity parameters and with different atmospheric forcing. In addition, the ensemble members also respond to two different mixing schemes –K profile parameterization and Mellor-Yamada. This strategy aids in exploiting the benefits of varied mixing parameterizations and aids in arresting the filter divergence. The assimilation system is validated extensively against multiple observations ranging from RAMA moorings to ADCP observations and satellite observations across both dependent variables like temperature and salinity and independent variables like sea-level anomaly and ocean currents. The assimilated system simulates the ocean state better than the previous operational ROMS setup. Improvement permeates to all vertical levels with better correlation with respect to observations and reduced root-mean-squared error.

Which theme does your abstract refer to?

Development and assessment of data assimilation in forecasting applications (global and regional)

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Presenter: BADURU, Balaji (Indian National Centre for Ocean Information Services)

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