

Real-time and delayed mode validation for Indian Ocean Forecasting System (INDOFOS)

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ABSTRACT

India has setup the Indian Ocean Forecasting System (INDOFOS) at INCOIS, primarily to provide advisories and forecasts for safe navigation and operations at sea, around India and other Indian Ocean rim countries. The system provides analysis and forecast for wave, swell, wind, surface current, sea surface temperature, mixed layer and thermocline depth and vertical temperature profiles in the Indian Ocean for varying spatial resolution (5km -110 km) with 5 to 7 days lead time and 3 to 6 hourly interval. The analysis and forecast are routinely disseminated through different modes of public access systems and are found to be used by more than 100,000 maritime users. Operational real-time observational systems such as buoy network (moored and wave rider buoys), IRAWS (Incois Real-time Automatic Weather Station mounted on research vessels) and under-ocean wave measuring systems are established for monitoring the sea state as well as for real-time validation of these forecast. Satellite observations in conjunction with insitu data from these observational systems are also being used for a comprehensive and systematic near real-time & delayed mode validation of the forecast. Inter-comparison and validation of meteorological parameters from national and international met agencies, which are used as forcing fields for ocean forecast models, are also being carried out on a regular basis. This is essential for developing the bias correction strategy that has to be applied before using these parameters to force the ocean forecast models. The results are discussed in detail and the future plans as well as recommendations derived from these analyses for improving the forecasting system are suggested.