WenHai: An End-to-End AI-Based Global Eddy-Resolving Ocean Forecast System

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Mesoscale eddies are ubiquitous in the global ocean and dominate the ocean variability from daily to weekly time scales. Their presence causes great scientific challenges and computational burdens in accurately forecasting the short-term evolution of the ocean states via conventional numerical global ocean forecast systems (GOFSs). Here, we present WenHai, an end-to-end AI-based GOFS that replaces the entire pipeline of numerical GOFSs at deployment time and makes eddy-resolving global ocean forecast directly from multi-source heterogeneous ocean observations.