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Evaluating the performance of real-time forecast models of the NW European shelf seas

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As a component of the National Centre for Ocean Forecasting (www.ncof.gov.uk), the Met Office Ocean Forecasting Research and Development group run an operational 3-D circulation model of the NW European shelf seas (40°N to 65°N and 20°W to 13°E). The model uses POLCOMS (Proudman Oceanographic Laboratory Coastal Ocean Modelling System) implemented at 12 km resolution, providing a daily nowcast and 5-day forecast. Inside this model are nested regional models of the Irish Sea region (1 nm resolution) and the Medium Resolution Continental Shelf (MRCS) domain covering the NW European Shelf to the 200 m contour (6km resolution). The MRCS model includes a basic representation of sediment transport. A coupled hydrodynamic-ecological model on the MRCS domain using the POLCOMS-ERSEM system (developed by POL and PML) is expected to be implemented operationally by early 2007. We briefly introduce the models but focus on assessing model performance in the context of our users and their requirements. We emphasize the importance of accurate process representation and discuss which metrics may be useful in future to evaluate our operational models, including both scientific metrics, that have recently been evaluated at POL and PML, and applied metrics, that might allow us to determine if the models are fit for purpose for our users.