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The ECMWF ORAS4 ocean re-analysis system

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A new operational ocean reanalysis system (ORAS4) has been implemented at ECMWF. This replaces the previous ORAS3. The new system is based on NEMO/NEMOVAR, and it will be used to initialize the monthly and seasonal forecasting systems. It spans the period 1958 to present day. The implementation of NEMOVAR at ECMWF is based on based on 3DVar-FGAT version, with inner and outer loops. Profiles of temperature and salinity and sea level anomalies from along track altimeter are assimilated in a 10-day assimilation cycle. Several other improvements introduced in ORAS4 will be presented. The NEMOVAR data assimilation system improves the short range forecasts of subsurface variables and the seasonal forecasts of SST. It is the first time at ECWMF that assimilating ocean data improves the forecast skill of the Atlantic SST. It will be shown that the ORAS4 ocean reanalysis is a valuable resource for climate variability studies.