New reference SST and T/S profiles datasets for Class-4 verification and intercomparison of global ocean forecast system

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Abstract

The DFO Service Desk for Operational Oceanography (SeDOO) is supporting real-time monitoring and analysis of the operational ice-ocean prediction systems that run at the ECCC Canadian Centre for Meteorological and Environmental Prediction (CCMEP). The analysis and forecasts of the Global Ice-Ocean Prediction System (GIOPS) are evaluated against reference observations via the calculation of the Class 4 metrics defined by GODAE OceanView (GOV; now Ocean Predict) for Sea Surface Temperature (SST), Sea Level Anomaly (SLA), temperature and salinity (T/S) profiles and sea ice concentration, and compared with other global models that participate in the Ocean Predict international benchmarking.

This validation and intercomparison of operational oceanography systems based on Class4-metrics was initiated in 1998 by the GOV Intercomparison and Validation Task Team (IV-TT) using reference in-situ ocean observation datasets built and provided on best effort by the UK Met Office. Two years ago, a quality control system of the real-time global ocean *in-situ* observations, that are available via the Copernicus Marine Service, was developed and implemented in operation at CCMEP for assimilation of those data in GIOPS operational system. SeDOO elaborated new reference SST (near surface observations) and T/S profiles (ARGO profilers) datasets from this operational (fully 24/7 supported) system to replace the historical datasets and to move towards a more operational approach for ocean Class-4 verification.

This presentation will focus on these new datasets detailing the QC operations performed and comparing them with the old datasets. The new technical approach in place using a collaborative machine on the Canadian Science network will be also summarized.