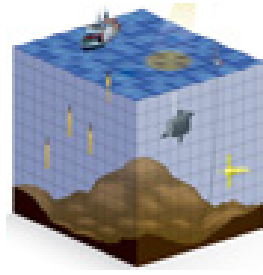


Joint ECMWF/OceanPredict workshop on Advances in Ocean Data Assimilation



Contribution ID: 25

Type: **Oral presentation**

Investigating the impact of satellite total surface current velocities assimilation in global ocean forecasting systems

Tuesday, 18 May 2021 14:40 (20 minutes)

Prediction of ocean surface velocities remains a challenging and crucial aspect of operational ocean forecasting systems. Accurate surface velocities are important for coupled ocean/atmosphere/sea-ice/wave forecasting and for application such as search and rescue, offshore oil and gas operations and shipping. Surface velocities are not routinely assimilated in global forecasting systems, largely due to the very limited number of ocean velocity observations. New opportunities for assimilation of surface velocities into these systems should be provided by proposed satellite missions designed to observe ocean surface velocities, such as Sea surface Kinematics Multiscale monitoring (SKIM).

The ESA Assimilation of Total Surface Current Velocity (A-TSCV) project focuses on the design, implementation and reporting on the impact of synthetic SKIM total surface current velocity assimilation. The project will use observing system simulation experiments (OSSEs) to test the assimilation methodology and provide feedback on the observation requirements for future satellite missions. Synthetic observations are being generated from a high-resolution nature run for all standard data types (sea surface temperature, sea-ice concentration, sea level anomaly and profiles of temperature and salinity) as well as the new observations expected from SKIM-like satellite missions. Two operational global ocean forecasting systems are being developed to assimilate these data in a set of coordinated OSSEs: the FOAM system run at the Met Office and the Mercator Ocean system. We will present an overview of the project, the design of the experiments and the data assimilation developments being made to effectively assimilate the surface velocity data into these systems.

Which theme does your abstract refer to?

Assimilation of novel observations (i.e. under-utilized observations and upcoming missions)

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Session Classification: Theme 6: Assimilation of novel observations

Track Classification: Assimilation of novel observations