



Validation of CMEMS gridded products through spectral coherence approach

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The Copernicus Marine Environment Monitoring Service (CMEMS) delivers near-real time and delayed time products of essential climate variables such as the ocean sea level (SLA) and surface currents. As part of the CMEMS data producers, the Sea Level Thematic Data Assembly Center process data acquired from satellite ground segments. To validate and verify the quality and improvement of new product releases, a diagnostic based on a spectral coherence approach has been developed to estimate the effective resolutions of the maps distributed in the CMEMS catalogue. We here propose to present the diagnostic tool and show the impact of existing and future satellite observation systems on the estimation of the ocean state. We show that the actual resolution capability of the gridded SLA products ranges between ~ 800 km wavelength at the Equator to ~ 100 km at high latitude. Additionally, we show by means of Observing System Simulation Experiment (OSSE) that the introduction of future instrumental systems based on large-swath altimeter (such as Surface Ocean and Water Topography (SWOT)) in the mapping process leads to resolve finer structures compared to classical nadir altimeter.