

Impact of surface remote sensing reflectance assimilation and its associated uncertainties on the forecast for the visibility and water quality indicators in the turbid coastal waters

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Abstract

We demonstrate the value of assimilating spectrally resolved remote sensing reflectance into biogeochemistry model with highly developed bio-optical component, used in the turbid coastal waters environment. We present analysis of how reducing the uncertainty and improving sampling frequency of the reflectance satellite product (achievable through advanced satellite missions) could both lead to (i) improvement of the forecast of visibility and water quality, and (ii) better estimates of the several poorly constrained bio-optical model parameters. We discuss the implication of this work for the North-West European Shelf operational forecast delivered day-to-day to a range of stakeholders.