Monday, October 8
Poster Session 1
16:00–18:00

Poster 17
BENEFITS OF A GEOSTATIONARY SENSOR FOR DAILY SATELLITE PRODUCTS

Nowadays, satellite ocean color observations represent one of the most used tools to study ocean optical, biological, and biogeochemical properties. Generally, satellite products are available at daily, weekly, monthly, seasonal and annual temporal resolutions. Specifically, the daily products are derived from a few passages per day, as captured by the polar satellite sensors, and can be successively optimal interpolated with climatological data (e.g., monthly or seasonal). Our goal is to demonstrate the potential benefits of having high-temporal resolution observations from space to reduce errors in the reconstructed biogeochemical daily products (e.g. surface chlorophyll). To this aim, we developed a method combining model and satellite observations. We first simulated observations by a geostationary satellite using hourly outputs from CMEMS biogeochemical model, in the Baltic Sea. Then cloud masks, as obtained from SEVIRI, are overlapped to the simulations. Finally, the application of the Multi-Channel Singular Spectral Analysis (M-SSA) allowed us to fill the data gaps, generated mostly by clouds, obtaining a gap-filled hourly image. Two cases are discussed: i) a simulation based on synthetic polar sensor with limited passages per day, and ii) a simulation of geostationary sensor with hourly observations from 09.00 to 17.00 in local time. As expected, the results show that the RMSE errors are significantly decreased using hourly observations. Future research work will be to apply the present method to the GOCI data, the solely available ocean colour geostationary satellite sensor.

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