Wednesday, October 10
Poster Session 3
16:00–18:00

Poster 43

DIURNAL VARIABILITY IN MARINE BIOGEOCHEMISTRY WITH THE GEOSTATIONARY OCEAN COLOR INSTRUMENT USING SEADAS/L2GEN

Short-term temporal variability in marine biogeochemistry at the surface is not well understood at a synoptic scale because current polar-orbiting Ocean Color sensors lack temporal resolution to adequately to resolve short-term variability (~hourly to multiple days). However, geostationary satellite sensors provide the capability to quantify these changes. The Geostationary Ocean Color Instrument (GOCI), launched in 2010 by the Republic of Korea, is a pioneer in the study of these marine processes since it is the only Ocean Color sensor to date able to capture multiple images of a single location per day. In this study, we analyzed the diurnal variability of the biogeochemistry in the coastal waters adjacent to the Republic of Korea using GOCI. GOCI data were processed to level 2 using the SeaDAS/l2gen package using an updated vicarious calibration. The ocean color products retrieved were chromophoric dissolved organic matter (CDOM) absorption at 412 nm, chlorophyll-a concentration, and particulate organic carbon (POC). The CDOM absorption retrieval developed by Mannino et al. (2014) for the northeast U.S. coast was evaluated, validated, and optimized for the region of study. An estimation of uncertainties in the remote sensing reflectances was included as well. In situ data from AERONET-OC were used for the validation of the atmospheric correction scheme, and ship-based observations from the KORUS-OC field campaign were used for the validation of the GOCI ocean color products.

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