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

Poster 256

SENSITIVITY OF INHERENT OPTICAL PROPERTIES FROM OCEAN REFLECTANCE INVERSION MODELS TO SATELLITE INSTRUMENT WAVELENGTH SUITES

The community seeks to develop CDRs/ECVs from satellite measurements of ocean color, the continuous data record from which now exceeds twenty years. Space agencies will launch additional instruments in the coming decade that will continue this data record, including the NASA Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) spectrometer. Semi-analytical algorithms (SAAs) provide one mechanism for estimating IOPs from satellite measurements of ocean color. SAAs use contrasting optical signatures for absorbing and scattering components within the spectral bands detected by the satellite to determine IOP magnitudes. Their performance, therefore, depends on the spectral resolution of radiometric measurement used as input, which is driven by the spectral resolution of the satellite radiometer. SAAs refinement and IOP time-series continue, but few studies have explored differences in derived products that stem simply from the use of different suites of input radiometric measurements. A CDR/ECV spanning SeaWiFS, MODIS, OLCI, and PACE, for example, would include IOPs derived using varied wavelength suites if all available wavelengths were considered. Different combinations of input radiometry conceivably yield differences in IOPs that exceed the magnitude of observable environmental change in a CDR. We quantified the magnitude of change in derived IOPs associated with the use of different suites of satellite radiometry. The implication of ignoring such an analysis is a prolonged inability to distinguish between algorithmic and environmental contributions to trends and anomalies in the IOP time-series. A secondary benefit is the quantification of improvement in IOP retrievals realized using the increased spectral resolution to be provided by PACE.

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