Uncertainties of Sentinel-3-OLCI Ocean ColoUr Products: Simulation based on APEX Acquisitions

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In this poster we simulate Sentinel-3 Ocean and Land Colour Instrument (OLCI) observations from hyperspectral data and estimate the uncertainties of derived inherent optical properties (IOPs). Hyperspectral data were obtained from APEX (Airborne Prism Experiment) acquisitions over the Dutch Wadden Sea. APEX data are atmospherically corrected using MODTRAN computations and verified with in-situ measurements. The resulting values of water leaving reflectance from APEX are then convolved with the spectral response function of OLCI, aggregated to its spatial resolution and propagated to the top of atmosphere (TOA). On this simulated TOA OLCI data set we apply commonly used atmospheric correction and retrieval schemes. We suggest and evaluate a model for OLCI to estimate the uncertainties of derived IOPs. Finally, we verify the resulting uncertainties using in-situ measurements matching the time of APEX flight-lines and discuss the accuracy of OLCI products of IOPs in light of the used atmospheric correction and retrieval schemes.

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