Tuesday, October 9
Poster Session 2
10:30–12:30

Poster 18

DIRECTIONALITY AND POLARISATION EFFECTS ON IN SITU WATER LEAVING RADIANCE UNCERTAINTY

Ocean Colour satellite missions require System Vicarious Calibration (SVC) and validation to meet accuracy requirements for marine products. In recent years, the scientific community put a considerable effort into accuracy improvement of in situ radiometric data. SI traceability and uncertainty evaluation ensure and justify the quality of the measurement. In the context of SVC of the Copernicus Sentinel3A-B/OLCI missions, a revised uncertainty budget for primary products derived from the BOUSSOLE buoy (NW Mediterranean Sea) radiometric measurements was developed. The methodology followed the Guide to the expression of Uncertainty in Measurement (GUM), in particular, Supplement 1 to the GUM guidelines. Monte Carlo Method (MCM) was used to evaluate uncertainty for remote sensing reflectance data obtained from multispectral radiometers mounted on the buoy. Here we extend the same methodology to hyperspectral instruments that also equip the buoy, with additional uncertainty components related to their own characteristics. Moreover, the Bidirectional Reflectance Distribution Function (BRDF) and polarisation effects are included as they were not addressed in the previous version. The results of this study are used to assess the impact of individual uncertainty components, namely BRDF and polarisation, on the overall uncertainty value of the water-leaving radiances or remote sensing reflectances. This knowledge can be used to prioritise future system improvements or new instrument design, as a function of their potential to reduce measurement uncertainty.

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