

OCEAN OPTICS XXIV

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Tuesday, October 9

Poster Session 2

10:30–12:30

Poster 170

VALIDATION OF SATELLITE RADIOMETRIC PRODUCTS FROM MULTIPLE MISSIONS: SYNTHESIS AND ANALYSIS

After 20 years of operational global ocean color missions and 16 years of activity by the ocean color component of the Aerosol Robotic Network (AERONET-OC), it is possible to take stock of validation results and draw general conclusions about the behavior of a standard atmospheric correction applied to SeaWiFS, MERIS, MODIS (A/T) and VIIRS. This study makes use of AERONET-OC radiometry data covering a large range of optical properties and collected at 5 coastal sites, in the northern Adriatic, Baltic (2 sites) and western Black (2) seas. For each site and satellite mission, the number of satellite match-ups is numbering tens to hundreds. Across missions and sites, the spectrum of RMS differences between satellite and field values of remote sensing reflectance most often shows a decrease with wavelength, with values in the blue generally between 0.0008 and 0.0025 sr^{-1} . Usually, the distribution of differences shows an approximately normal shape, which allows a statistical interpretation of the associated RMS differences. Average relative differences (in %) display a large variability, with values nearing 10% in the middle range of wavelengths and increasing in a typical horseshoe shape towards the blue and red bands. Differences appear to be well correlated across the spectrum. Furthermore, using match-ups common to several missions, some differences appear significantly correlated across missions, implying that part of the differences is not random. Considering the issue of representativeness and the uncertainties associated with field measurements, the interpretation of the observed differences in terms of uncertainty estimates is discussed.

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