

OCEAN OPTICS XXIV

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Monday, October 8

Poster Session 1

16:00–18:00

Poster 189

AMT4SENTINELFRM RADIOMETRIC VALIDATION OF SENTINEL-3A OLCI

The Atlantic Meridional Transect (AMT) program has been one of the most valuable sources of high quality in situ measurements for remote sensing over the past 20 years. The Copernicus Sentinel Atlantic Meridional Transect Fiducial Reference Measurements Campaign (AMT4SentinelFRM) makes use of the AMT platform to provide Fiducial Reference Measurements (FRM) to validate Sentinel ocean colour and sea surface temperature satellite products. In this work we present the results of the validation of Sentinel-3A OLCI (Ocean and Land Colour Instrument) using above-water radiometric in situ data collected during the AMT26 (2016) and AMT27 (2017) field campaigns. We employ pre-and post-cruise calibration to generate post-cruise uncertainty budgets for our optical instruments (HyperSAS and TriOS radiometers), to quantify the overall uncertainty of each FRM and to identify and correct for biases. Quality-control procedures are then defined to ensure FRMs are of accuracy compatible for satellite validation. Finally, we perform a comprehensive accuracy assessment of Sentinel-3 OLCI level 2 remote sensing reflectances over a range of conditions, using a robust match-up procedure that takes into account homogeneity, quality and spatial variability issues. The FRM methodology presented here offers a clear advantage in the number and quality of match-ups over traditional techniques, providing a decisive tool for algorithm development and validation of satellite products for the Sentinel data streams.

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