Thursday, October 11
Poster Session 4
10:30–12:00

Poster 108
EVALUATION OF THE PERFORMANCE OF INVERSION ALGORITHMS TO ASSESS PHYTOPLANKTON AND COLORED DETRITAL MATTER ABSORPTION COEFFICIENTS FROM OLCI/SENTINEL-3 OBSERVATIONS.

In the frame of the EUMETSAT project aiming to derive IOPs from Remote Sensing Reflectance (Rrs) from OLCI/Sentinel-3 observations, this study tested a two-steps algorithm approach. The first step used Loisel & Stranski (2018) algorithm (LS2) to obtain total absorption and total backscattering from Rrs. The second step focusses on the estimation of the absorption coefficient of phytoplankton (aphy) and colored detrital matter (acdm) from non-water absorption coefficient (anw). For this purpose, different approaches are tested against synthetic (not subject to measurement errors) and in situ datasets. The algorithms tested for this second step are: Zhang et al., 2015, Zheng et al., 2015 and Bricaud & Ciotti 2012. The synthetic dataset developed as part of the International Ocean Colour Coordinating Group (IOCCG) Working Group (IOCCG, 2006), where IOPs are mainly driven by the chlorophyll concentration, and the one developed in the frame of CoastColour Round Robin for coastal waters (Nechad et al., 2015), are used for that purpose. The in situ datasets covers a broad range of oceanic and coastal marine environments, as well as inland environments. The algorithms performance is evaluated by using the initial constraints and by testing different band combinations. An uncertainty analysis is also performed for the proposed algorithms, adding a standard normal distribution noise with different weights to anw. This analysis aims to test the robustness of the latter algorithms to uncertainty propagation. Lastly, the algorithms are implemented on a OLCI image over the global ocean, to assess the noise on aphy and acdm estimates.

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