

Wednesday, October 10

Poster Session 3

16:00–18:00

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Poster 47

EVALUATION OF DERIVED TOTAL SUSPENDED MATTER PRODUCTS FROM OCEAN AND LAND COLOUR INSTRUMENT IMAGERY (OLCI) IN THE INNER AND MID-SHELF OF BUENOS AIRES PROVINCE (ARGENTINA)

The Ocean and Land Colour Instrument Imagery (OLCI) sensor provides moderate spatial and temporal resolution of marine data, becoming a promising tool for monitoring environmental changes in coastal waters. Therefore, it is fundamental to test and validate the resulting products from diverse algorithms to ensure the quality of the data. The complex waters of southern Buenos Aires Province inner and mid-shelf, characterized by the presence of estuaries and river inputs, are highly influenced by total suspended matter (TSM) variability. In this study, we evaluate the performance of four TSM products in different waters (estuarine, coastal and mid-shelf waters) with in situ data. Three products were obtained using neural networks (NN), i.e. OLCI L2 ESA standard product (TSM_NN), Case 2 Regional Coast Colour processing chain using a standard (C2RCC_STD) and a new NN (C2RCC_NEW); and one product using the combination of an alternative Baseline Residual Atmospheric Correction approach and the Nechad 2010 TSM algorithm (BLR_NCHD). In general, TSM match-up results indicate that the OLCI TSM_NN and CR2CC_STD products are acceptable (R^2 of 0.87, $n=20$, RMSE= 23-28 mg/L). Better correlation results were obtained for C2RCC_NEW ($R^2= 0.9$) although error is relatively higher (RMSE= 51 mg/L), tending to overestimate TSM in estuarine waters. The best results were obtained for BLR_NCHD product ($r^2=0.89$, RMSE=6.43 mg/L). Future efforts needed to improve TSM retrieval involves the evaluation of the conversion factor between backscattering to TSM for the NN approaches and the evaluation of the atmospheric correction using in situ water reflectance measurements.

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