

OCEAN OPTICS XXIV

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Monday, October 8

Poster Session 1

16:00–18:00

Poster 157

A SATELLITE VIEW OF THE PARTICULATE ORGANIC CARBON AND ITS ALGAL AND NON-ALGAL CARBON POOLS

A recent inter-comparison exercise of different ocean colour algorithms for estimating particulate organic carbon (POC) over open ocean waters have shown that the algorithms proposed by Loisel et al. (2002), based on the particulate backscattering coefficient, bbp , and the one documented by Stramski et al. (1998), based on the blue to green reflectance ratio, provided the best performances (Evers-King, et al., 2017). The recent inverse model by Loisel et al. (2018) for estimating bbp from OCR has been applied over a large match-up dataset to re-assess the POC vs. bbp relationship used in Loisel et al. (2002). The chlorophyll-a concentration, $Chla$, is specifically considered in this model to account for the impact of the trophic regime on the bbp to POC dependency. Further, the conceptual model by Sathyendranath et al. (2009) used to infer phytoplankton carbon, C_{phy} , as a function of $Chla$ has been revisited based on a large in situ data set of POC and $Chla$. These different algorithms have been then applied to ocean color satellite data to map, over open ocean waters, the bulk POC, as well as the particulate carbon pool associated with algal, C_{phy} , and non-algal, C_{NAC} , components. The spatio-temporal patterns of the later parameters (as well as of the $C_{phy}/Chla$ ratio) are analyzed and discussed.

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