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Ocean Science Discussions

Interactive comment on "Comparison of SeaWiFS and MODIS time series of inherent optical properties for the Adriatic Sea" *by* F. Mélin

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The manuscript by F. Mélin describes the comparison between SeaWiFS and MODIS inherent optical properties over the Adriatic Sea from 2002 to 2007. IOPs were derived from the QAA bio-optical algorithm. In his analysis, the author considered the total absorption, the absorption due to phytoplankton main pigment (chlorophyll-a), that due to detrital materials, which include colored dissolved organic matter and non-pigmented materials, and the particle backscattering. The comparison between SeaWiFS- and MODIS-derived absorption and backscattering coefficients was performed over the matching or closest wavelengths between the two sensors, using a set of standard statistical metrics. The comparison takes account of both the space and time variability, as well as of the optical signature of different water masses, classified as Class 1 and 2. The overall conclusion of this study is that SeaWiFS and MODIS IOP time series are biased by a non-negligible amount, and that these biases do vary in space and

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time, and not always coherently. The author points to a series of possible causes, each of them, it is stated, being unable (alone) to explain the observed biases. A valuable information would be added if the author could link the geophysical meaning of these quantities and their space-time variability to the way the QAA algorithm retrieve them, in order to individuate the most reasonable sources of such discrepancy. Despite every single element of the discussion seems correctly addressed, the general feeling is that the conclusion does not add any already well-known (IOCCG, 2006) element to explain such differences, nor a research strategy that should be undertaken to investigate this issue. Being aware of the difficulties linked to properly address the uncertainty propagation through fairly complex systems such as the atmospheric correction and the QAA bio-optical algorithm, one would nonetheless expect the author to suggest the most plausible sources (as he partly did) and especially their interaction that could in turn explain such differences.

Interactive comment on Ocean Sci. Discuss., 8, 85, 2011.