Use of MODIS imagery for the optical characterization of Western Mediterranean waters

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Abstract

MODIS data have been widely used for the study of marine waters and particularly for the estimation of chlorophyll concentration [CHL]. The [CHL] retrieval algorithms which are applied to MODIS imagery show various degrees of accuracy depending on the presence of Case 1 and Case 2 waters (C1W and C2W). The current paper presents the adaptation of a recently proposed algorithm based on Spectral Angle Mapping (SAM) to characterize water types using MODIS data. The algorithm is applied to 26 MODIS images taken over the Western Mediterranean basin from 2003 to 2009. The value of a SAM indicator of proximity to Case 1 waters is first assessed towards *in situ* measurements collected during the same period. The results confirm that the fuzzy categorization into C1-C2W can be used to guide the application of different algorithms. In this way, the accuracy of [CHL] estimation is decidedly enhanced both in oceanic and coastal areas.