Wednesday, October 10
Poster Session 3
16:00–18:00

Poster 123

INCLUSION OF VARIABLES IN SEMI-ANALYTICAL MODEL TO RETRIEVE MARINE INHERENT OPTICAL PROPERTIES FROM DEEP WATERS

In optically deep waters, remote sensing reflectance (Rrs) is expressed as the ratio of the backscattering coefficient (bb) and the sum of absorption and backscattering coefficients (a+bb) with a multiplicative model parameter "g". Parameter "g" itself is expressed as function of g0, g1 and u (= bb/ (a+bb)). For oceanic case 1 waters and coastal waters, different constant values for g0 and g1 are proposed owing to varying scattering conditions and particle phase function. In this study, we used g0 and g1 as variables (instead of constants) in the semi-analytical model to retrieve marine Bulk Inherent Optical Properties (IOPs – a and bb) from Rrs. To assess the performance of proposed increase in variables, Rrs values at six SeaWiFS wavelengths 410, 440, 490, 510, 550 and 670 nm are taken from IOCCG Standard dataset (International Ocean Color Coordinating Group) are used as dataset, with Particle Swarm Optimization as the optimization technique for inversion of Rrs. Results show that the Multiplicative Bias values for Bulk IOPs (a – 0.79, bb – 1.37) obtained with model considering g0 and g1 as variables are better than the standard semi-analytical model (a – 0.77, bb – 1.41). We observed similar results using another statistic: Mean Absolute Error, for Individual IOPs and NASA bio-Optical Marine Algorithm Dataset. Hence, We propose to include g_0 and g_1 as variables for retrieval of IOPs from rrs using semi-analytical models.

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