

Ocean color remote sensing of Chromophoric Dissolved Organic Materials (CDOM) for Second-generation GLocal Imager (SGLI) onboard the Global Change Observation Mission-Climate satellite (GCOM-C)

*Takafumi Hirata¹

1. Faculty of Environmental Earth Science, Hokkaido University

Ocean is a large reservoir of the dissolved organic carbon on the Earth, storing approximately 38,000 PgC. Satellite observation methodologies have been developed by various researchers and space agencies and been offering a synoptic view of an optical proxy of the colored dissolved organic materials (CDOM) in the surface ocean on various temporal and spatial scales (e.g. from local and daily to global inter-annual scales). Second generation GLocal Imager (SGLI) onboard Global Change Observation Mission –Climate satellite (GCOM-C), to be launched by Japan Aerospace eXploration Agency (JAXA), also intends to measure CDOM in the surface ocean over the next several years, and a satellite algorithm for the new sensor was developed. The algorithm was based on a coupling of ocean colour inversions. One of the challenges in such inversion procedure has been to separate optically similar signals between CDOM and other detrital materials. Two empirical separations of these materials, different in terms of the degree of complexity in the algorithm, was tested. It was shown that a moderate complexity, rather than most simple nor complex, might give the best retrieval of CDOM under a current limitation in our ability to model every bio-optical processes.

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