Distribution of CDOM in Surface Water and Sub-surface Chlorophyll Maxima Depth around the Gulf of Thailand

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Abstract

Color Dissolved Organic Matter (CDOM), which diminishes light penetrating in marine waters, is essential for understanding biogeochemical processes and ecosystems in marine waters. In this study, water samples were collected at the surface and sub-surface chlorophyll maximum (SCM) around the Gulf of Thailand within 73 stations during M.V.SEAFDEC2 cruise between August and October 2018. The absorption coefficients of CDOM at 440 nm was used to characterize the CDOM concentration due to its strong absorption in the blue and its application to ocean color remote sensing. The CDOM concentration varied in the ranges of 0.02 – 0.27 m^{-1} and 0.05 – 0.20 m^{-1} at the surface and SCM layer, respectively. High CDOM (>0.2 m^{-1}) of both depths appeared in the upper and southern part along the coast of Surat Thani Province. The CDOM maximum at both depths was in the upper GoT. Meanwhile, the CDOM gradually decreased towards the offshore. Although CDOM data can be retrieved from ocean color satellite, its accuracy remain a challenging task for this area. Therefore, the satellite match-up validation should be perform to evaluate and compare the distribution of CDOM in this area.

Keywords: CDOM, Gulf of Thailand, Spatial distribution

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