

Estimation of origin of dissolved organic matter in Osaka Bay and the visualization of its outflow toward the outer Kii Channel

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Studying the behavior of dissolved organic matter (DOM) in coastal seas would assist environmental water management. In this study, field observations to investigate the biogeochemical cycle of dissolved organic carbon and nitrogen (DOC, DON) were conducted in Osaka Bay in February, May, August and November from 2015 to 2017. A remote sensing of the absorption coefficient of colored dissolved organic matter (aCDOM) obtained from geostationary ocean color images (GOCI) as an index for the distributions of DOM was also conducted. The results for a stable isotope of DOC and the relationship between DOC and DON suggested that DOM is generated around the head of Osaka Bay in summer in addition to those supplied from rivers. The results both from field observation and satellite image showed that DOM spreads from Osaka Bay to outer Kii Channel along the coast of Tokushima Prefecture, while the distributions of DOM in inner Kii Channel vary depending on Kuroshio path.

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