

Physical-biogeochemical variability in the Sumatra-Java upwelling region

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The south of Sumatra-Java is one of the greatest upwelling regions in the southeastern tropical Indian Ocean (SETIO). The upwelling appear under the monsoonal wind, thus it dominates from September to November in usual. However, action-center of the Indian Ocean Dipole (IOD) events, which has interannual variability, also appears in SETIO. Then the seasonality of the upwelling should be modulated by IOD events. In general, the upwelling bring rich nutrient from deeper ocean to the surface, thus biological primary production becomes large at that time. This kind of biogeochemical response against physical condition should also be modulated by monsoon and IOD activities. Although the physical interpretations of IOD mechanism and ocean responses of the Monsoonal wind have been improved by development of observing system and numerical modeling technique in the past decade, understanding of the biogeochemical responses of that has not been so improved because of lack of in situ observations. At the present, the second international Indian Ocean expedition (IIOE-2) is conducted under the international observation efforts. It is good chance to progress our understanding of the physical and biogeochemical features at the Sumatra-Java upwelling region. In this presentation we will introduce our observational and numerical analysis results for the Sumatra-Java upwelling region, which mostly focused on the sea surface temperature and phytoplankton variability.

キーワード：インド洋、湧昇、国際インド洋調査2、東部インド洋湧昇研究イニシャティブ

Keywords: Indian Ocean, Upwelling, IIOE2, EIOURI