負のインド洋ダイポール現象発生時における表層の低塩分シグナルと亜表層の高塩分水
Low salinity signal on the high salinity subsurface water during negative Indian Ocean Dipole

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The Indian Ocean Dipole (IOD) is a seasonal to interannual ocean-atmosphere phenomenon occurring in the tropical Indian Ocean. During the negative phase of the IOD (nIOD), the eastern Indian Ocean is characterized by warmer-than-normal sea surface temperature (SST), enhanced atmospheric convection, and high-salinity anomalies advected from the west. In this study, we investigated ocean temperature and salinity data in the south eastern Indian Ocean to understand a possible role of the salinity variation on the development of nIOD. We used ocean temperature and salinity data from Argo floats and mooring buoy. We also used satellite SST and precipitation data from the Tropical Rainfall Measuring Mission satellite. During the development phase of the 2010 nIOD (July-August-September), eastward surface currents induced by westerly wind anomalies produced high salinity anomalies in the central-eastern equatorial Indian Ocean. Observation data also showed relatively low salinity signal around 0-10m depth together with relatively shallow mixed layer in the south-eastern Indian Ocean. Our analysis indicated that the low salinity signal was associated with enhanced local precipitation that eventually formed vertical salinity gradient on the high salinity anomalies. The upper-layer stratification due to the salinity variation could affect ocean-atmosphere interaction during the nIOD by changing the mixed layer depth. A possible contribution of the salinity variation to the mixed layer heat balance and hence an effect on SST will be discussed.

キーワード：インド洋ダイポール現象、降水、バリアレイヤー
Keywords: Indian Ocean Dipole, Precipitation, Barrier Layer

