

SST variability in Suruga Bay and its surrounding area due to Kuroshio path variability

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The mouth of Suruga Bay is deep exceeding about 2500-m and wide open to the southward. Outer waters such as Kuroshio and Oyashio water can be, therefore, exchanged from not only surface layers but also intermediate and deep layers. And then the outer waters are mixed by the inner waters in Suruga Bay. This suggests that interactions between the outer and the inner seawaters are very important for understanding the thermohaline structure of Suruga Bay.

For thermohaline structure in Suruga Bay, Nakamura (1977) clarified basic temperature and salinity seasonal variations in the upper 300-m layer of Suruga Bay using observational data from 1964 to 1974. Kimura and Sugimoto (1990) investigated the inflow process of Kuroshio warm water into Kumano and Ensyu Nada. In the results they pointed out that the periodic fluctuations in water temperature around 20 days in this coastal area were associated with the periodic inflow of the warm water separated from the Kuroshio water. Besides, Kutsuwada et al.(2007) showed that long term variabilities of temperature and salinity in the upper 200-m layer in Suruga Bay had relatively high correlations with the Kuroshio path. Relationships between the inner of Suruga Bay and Kuroshio have gradually been clarified from these studies.

However, the time interval of previous studies was monthly, which was too rough to resolve 10-60 days of timescales related to Kuroshio path fluctuations. In this presentation, we focus two Kuroshio large meander paths and Suruga Bay, and analyze the daily time series of Kuroshio's current axes defined by absolute dynamic topography (AVISO) and of daily sea surface temperature fields derived by JMA.

Keywords: Kuroshio, Suruga Bay, SST, absolute dynamic topography