

T-S water mass structure in Suruga Bay in 2002-2020

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The purpose of this study is to clarify the seasonal and interannual variations of the temperature-salinity structure (T-S curve) in Suruga Bay. We, therefore, used the CTD observation data of "Shizuoka Prefectural Research Institute of Fisheries and Ocean" for the past 19 years (2002-2020).

Monthly frequency distribution maps of T-S curves by CTD observations from 2002 to 2020 show a similar seasonal fluctuation as reported by Nakamura (1982). That is, there is a maximum temperature in September (~28 degC), then, clearly lowering in October and a minimum in February and March (~18 degC). This time, we have newly found that the core water mass which does not change little throughout for 19 years can be identified between 25.3-26.7 sigma-theta, which is showing very high frequency. This suggests that almost all seasonal variability occurs in the layer above this core. We also found that TS curves of the upper layer in September are clearly distinguished by differences of salinity on isopycnals. It is considered that this not only represents the year-to-year time variations for 19 years but also represents the difference in the space in the east-west direction of the salinity field. The high-salinity and high-temperature waters which appear on the T-S curve are considered to be the water mass affected by the Kuroshio Water system.

We, therefore, need to discuss spatial and temporal variability. At the time of our presentation, we plan to also discuss the difference in the T-S curve between the Kuroshio Large Meandering period and the non-Large Meandering period after 2002.

Keywords: Suruga Bay, T-S curve, Water mass