

## Seasonal and interannual variations in coastal tidal level of Suruga Bay

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Seasonal and interannual variations in coastal tidal level of Suruga Bay on the southern coast of Honshu, which faces the Pacific Ocean, were investigated for the purpose of understanding influence of the Kuroshio path variation to oceanographic conditions in the bay. In the present study, we analyzed tidal level data during the period of 2003 to 2018 at six stations in the bay (Irozaki, Tago, Uchiura, Shimizuminato, Yaizu, and Omaezaki) and absolute dynamic topography south of Japan. Seasonal variation in the monthly averaged tidal level was characterized by a minimum value in February and a maximum one in August, and such seasonal variation tended to be regularly repeated during the entire period. In 2005, 2012, and 2017, however, the seasonal variation was modulated, that is, the months of minimum or maximum were shifted. On the other hand, interannual variation of the yearly averaged tidal level showed a local maximum in 2004 and minimum in 2006, which was accompanied by increasing in amplitude of temporal variations with a period of about 3 years. During this time, transition from the large meander path to the non-large meander one of the Kuroshio occurred off southern coast of Japan. These results suggest that the interannual variation in the tidal level inside Suruga Bay is associated with the Kuroshio path variation south of Japan.

Keywords: seasonal variation, interannual variation, coastal tidal level, Kuroshio path, Suruga Bay