

Spatio-temporal variation of water pressure on the sea bottom in the Kuroshio region south of Kii Peninsula

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Profiles of water mass and horizontal current-velocity were observed from the sea surface down to the bottom on the 13 points of the Dense Ocean floor Network system for Earthquakes and Tsunamis (DONET) arranged south of Kii Peninsula, in the cruise of the R/V Shinsei-maru conducted in October 10-21, 2018. The cruise also conducted one-day continuous profiling on the two DONET points. The main purposes of this cruise were to elucidate the spatio-temporal variation of water pressure on the sea bottom associated with the mesoscale eddies and sub-mesoscale frontal disturbances in the Kuroshio region, and to validate the accuracy of detecting several oceanic events followed by fluctuation of the Kuroshio current-path by DONET from the ocean floor, as part of the observational campaigns. In the cruise period, the Kuroshio has taken a large meander path for the first time in twelve years. Therefore, the Kuroshio flowed far away from Kii Peninsula and all the DONET points were covered with the slope waters. We will discuss the capability of DONET to detect relatively calm events in the slope waters on the northern side of the Kuroshio front as an exceptionally rare case.

Keywords: Kuroshio, DONET, water pressure, Kuroshio large meander