

Utilization of fisherman-logging data for enhancement of the coastal ocean monitoring network in Japan

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An operational ocean observing system around Japan is mainly composed of satellite observation, ARGO floats, and repeated section surveys by central and local governmental research agencies. The data from the observing system are conveyed to operational ocean forecast systems based on data-assimilative ocean general circulation models in near real-time basis. Here we examine impacts of fisherman-logging Conductivity, Temperature, Depth sensor (FCTD) data on the ocean observing system using an operational ocean forecasting system JCOPE2. Additional assimilation of the FCTD data provided from Miyazaki prefectural fisheries research institute is effective for modifying representation of oceanic conditions for a period from April to August 2016 in nearshore region southeast of the Kyushu Island. The Kuroshio front position averaged for the period moves to nearshore side as observed by the additional assimilation. In particular, the FCTD assimilation leads to finer representation of a subsurface warm water tongue varying with a few days time scale, which is never detected by the satellite remote sensing and existing in-situ monitoring data, demonstrating a potential key role of FCTD for enhancement of the coastal ocean monitoring network in Japan.

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