

Tidal-induced small-scale eddy trains in the southeastern Taiwan

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Interesting small-scale eddy trains are discovered along the coast of the northeastern Taiwan based on observations from sea surface temperature and ocean color satellite imageries acquired with the Moderate Resolution Imaging Spectroradiometer (MODIS) and Sea-viewing Wide Field-of-view Sensor (SeaWiFS). The eddy train is composed of two or three eddies. The eddy is 5-50 km in diameter. The drop of temperature in the eddy is about 1°C and the chlorophyll-a concentration is tenfold than that in the adjust ocean. We hypothesize that the eddy trains are generated by the interaction with the Kuroshio and the tidal forcing in Nan-Wan Bay. The eddy is generated The phenomenon of eddy train is very rare and difficult to monitor in the ocean. We speculate that the eddy train plays an important role for the transport of nutrient and biogenic particles to shelf ecosystems.

Keywords: eddy, Taiwan, Kuroshio