



Characteristic and mechanism of upwelling northwest off the Hainan Island in summer

Fangfang Kuang, Aijun Pan, Junpeng Zhang, and Kai Li

Third Institute of Oceanography, Ministry of Natural Resources, Xiamen, China (kuangfangfang@tio.org.cn)

A rarely seen upwelling phenomena northwest off the Hainan Island (UNWHI) is witnessed by the in situ observation during July, 2015. Model simulation suggest that (1) the UNWHI is not a stationary phenomenon because it is the extension of upwelling west off the Hainan Island (UWHI) and located in the wake zone of the circling upwelling around the Hainan Island, (2) the generation mechanism for the UNWHI is tidal mixing and the favorable winds, where tidal mixing is the basic driving force and the local southwestly winds is the necessary condition for the UNWHI's occurrence, (3) net heat flux has limited effect on UNWHI, (4) variation of water temperature in UNWHI and in WHI are highly correlated.