Geophysical Research Abstracts
Vol. 21, EGU2019-4637, 2019
EGU General Assembly 2019

The Interannual Variability of North Equatorial Undercurrent observed in the western Pacific Ocean

Dongchull Jeon (1,2) and Fuad Azminuddin (1,2)

(1) Korea Institute of Ocean Science & Technology, Ocean Circulation & Climate Research Center, Busan, Korea, Republic of (dcjeon@kiost.ac.kr), (2) University of Science & Technology (UST), Korea, Republic of (fuad.azminuddin@kiost.ac.kr)

The Interannual Variability of North Equatorial Undercurrent observed in the Northwestern Pacific Ocean

Dongchull Jeon and Fuad Azminuddin
(dcjeon@kiost.ac.kr)

The variability of North Equatorial Undercurrent (NEUC) in the northwestern Pacific Ocean is analyzed, which had been firstly measured at the 3 moored data buoys along 135oE for up to 8 years between 2007 and 2014 (POSEIDON, 2014). It has the vertical range from 300m to 2,000m with the temporal range from 1 to 4 months in its normal years, but might be abnormally persistent (or disappeared) for longer than a year during the extremely-weak (or extremely-strong) period of NEC. The strength of core depths and the meridional migration of NEUC seem to be resultant from the interaction with the surface currents NEC (North Equatorial Current) and STCC (Subtropical Countercurrent). The maximum strength of NEUC cores shows its time lag of about 8 months behind NEC in their interannual variabilities. When NEC becomes abnormally weak, NEUC and STCC are merged together and flow eastward throughout the whole water column from sea surface down to about 2,000 meters. If NEC recovers its strength again, NEUC is supressed down to deeper depths and is separated from STCC. The dynamics of the eastward-flowing STCC is also examined, in association with meso-scale eddy activities and wind-stress curl in the northwestern Pacific Ocean.