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Interplaying Between Luzon Strait Transport and Indonesian Throughflow

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Basing the results of the island rule and the Simple Ocean Data Assimilation (SODA) products, we analyze the interannual variability of the Indonesian throughflow (ITF) and South China Sea (SCS) throughflow. The relationship between ITF and SCS throughflow (That is, Luzon Strait transport) is out-of-phase at interannual time scale. The wind anomaly in equatorial Pacific is the key factor to this negative co-relationship. The westerly wind bursts during El Niño will induce the Northern Equator Current (NEC) bifurcation shifting northward and NEC become strong. The abnormal increasing of the NEC will result in the variability of the re-distribution between Kuroshio Current (KC) and Mindanao Current (MC) with MC increasing and KC decreasing. The overshooting will occur at the Luzon and Indonesian straits entrances caused by the variability of the KC and MC. The Luzon strait transport from Pacific to SCS will increase with KC decreasing, and ITF from Pacific to Indian Ocean will decrease with MC increasing. The analysis results in this paper show an interplaying process exist between ITF and exchange in SCS, and this interaction are related with the interior ocean circulation adjusting tightly.