Variation of the Mindanao Current Transport During 1997-2000 Estimated From TOPEX/Poseidon Data and an OGCM

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The Mindanao Current (MC) plays an important role in the tropical-subtropical exchange in the North Pacific. This study investigates its transport variation during 1997-2000 using a product generated by assimilating TOPEX/Poseidon-derived sea level data into a near-global OGCM. Sea level data imply a stronger surface flow along the MC in 1997 than in 1998-2000. The estimated annual-mean MC transport at 10^oN decreases from 22 to 12 Sv (1 Sv $= 10^6$ m^3/s) from 1997 to 1998, and remain to be smaller than that in 1997 through the years of 1999 and 2000. This is found to be caused by a similar interannual variation in the transport of the North Equatorial Current (NEC) in the western part of the basin. This change in NEC transport is consistent with the variation of wind stress curl as a result of the meridional shift of the Inter-tropical Convergence Zone associated with the 1997-2000 ENSO event. Effects of the interannual variation of the MC transport on the equatorial Pacific and tropical Indian Ocean are also highlighted.