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# Role of ENSO-Indian Ocean coupling on ENSO variability

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A feedback process of the Indian ocean SST on ENSO is investigated by using observed data and atmospheric GCM. We demonstrate here that warming in the Indian Ocean produces easterly wind stress anomalies over Indonesia and the western edge of the Pacific during the mature phase of El Niño. We also demonstrate that the anomalous easterly wind in the western Pacific during El Niño helps a rapid termination of El Nino and a fast transition to La Niña by generating upwelling Kelvin waves. Thus warming in the Indian Ocean, which is a part of the El Niño signal, operates as a negative feedback mechanism to ENSO. This Indian Ocean feedback appears to operate mostly for strong El Niño s and results in La-Niña one year after the mature phase of the El Niño. This one-year period of phase transition implies a possible role of Indian ocean-ENSO coupling in the biennial tendency of the ENSO.Atmospheric GCM experiments show that Indian Ocean SST forcing is mostly responsible for the easterly wind anomalies in the Western Pacific.