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Variability of sea level anomalies in western Pacific during La Nina events with negative Indian Ocean dipole

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Based on observations and reanalysis dataset during the period 1950-2012, the temporal evolution and spatial characteristics of the sea level anomalies (SLAs) and ocean circulation in western Pacific for La Nina years in company with negative Indian Ocean Dipole (IOD) events have been investigated. The composites of SLAs' evolution in western Pacific delineate significant differences between La Nina events occurring with and without negative IOD events. The positive SLAs in the western Pacific are much weakened and the North Equatorial Current bifurcation latitude migrates northward during La Nina events with negative IOD. In fact, diagnostic results highlight the influence of negative IOD to such weakened SLAs and northern-shifting North Equatorial Current bifurcation. The west wind anomalies caused by negative IOD offset the effect of easterlies from the eastern Pacific, which leads to the breakdown of the pronounced positive SLAs in western Pacific and the northerly bifurcations of North Equatorial Current during La Nina events with negative IOD.