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# Intraseasonal Variability in the Meridional Current within the Equatorial Indian Ocean Simulated in a High-Resolution OGCM

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Spatial distribution and characteristics of intraseasonal variability in the meridional current field within the equatorial Indian Ocean is investigated by use of a high-resolution Ocean General Circulation Model, called as OFES, which is driven by daily-mean QuikScat wind stresses. Spectral analysis for the simulated meridional currents indicates three significant intraseasonal variability; ∼15 days, 25-30 days, and 30-70 days period. The composite analysis for the 15-day variation demonstrates that the horizontal velocity structure of the signal is consistent with that for the mixed Rossby-gravity wave, with the westward phase speed of about 4 to 5 m/s and the typical wavelength of 3000 to 4000km. This variability shows strong association with the meridional component of the wind stresses. In addition, the energy of the waves propagate downward to the bottom of the ocean along the ray-path for the mixed Rossby-gravity wave. Longer time-scale variability of 25- to 70-day period, on the other hand, appears in the deeper layer blow the strong pycnocline, located at the depth of about 120m, in the central and eastern Indian Ocean. The distinct 25 to 30 days variability is associated with the mixed Rossby gravity waves generated by the internal instability of the western boundary current system near the African coast. The energy of the wave again propagates downward along the ray-path, although it is strongly affected by the Maldive Island chain. Another signal at the 30 to 70 days period is related to the southward propagation of eddy-like features originated from the region southeast of Sri Lanka. Comparison with the OFES results forced by climatological wind stress demonstrates that these variability in the deeper layer is nothing to do with the direct wind forcing of the intraseasonal time-scale.