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## Influence of the Madden-Julian Oscillation and intraseasonal waves on surface wind and convection of Tropical Atlantic Ocean

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Intraseasonal variability (10-100 day periods) of surface wind and convection in the tropical Atlantic is analyzed using satellite wind, outgoing longwave radiation (OLR), precipitation and ERA-interim reanalysis products for the period of 2000-2008. The analyses focus on assessing the dominant atmospheric convective processes in tropical Atlantic and African Monsoon regions on intraseasonal timescales: the Madden-Julian Oscillation (MJO, which dominates eastward-propagating signals at 20-100-day periods), quasi-biweekly (10-25 days) Kelvin waves, and 10-100-day westward propagating Rossby waves. The results show that contribution from each process varies in different regions of the tropical Atlantic Ocean and African monsoon regions. In general, the eastward-propagating MJO and quasi-biweekly Kelvin wave more frequently dominate strong convective events than Rossby waves in the African monsoon region. The westward-propagating Rossby waves, on the other hand, have larger contributions to convection in the Western Atlantic Ocean. Both the westward- and eastward-propagating signals contribute approximately equally in the Central Atlantic basin. The impacts of intraseasonal signals have evident seasonality. The MJO is stronger during November-April than May-October in all regions. The 20-100-day Rossby waves are stronger during November-April than May-October in the African monsoon region, and are equally strong for the two seasons and dominate the convection variability during May-October in the Western and Central Atlantic basins. Of particular interest is that the MJO originating from the Indo-Pacific Ocean, and the quasi-biweekly Kelvin wave produced by convection in the Amazon region and western Atlantic can be enhanced over the tropical Atlantic Ocean while they propagate eastward, amplifying their impacts on the African monsoon. On the other hand, Rossby waves can be generated either in the Eastern Equatorial Atlantic or West African monsoon region. They can strengthen while propagating westward, producing large effects on the Western Atlantic, Caribbean Sea and Central America regions.