

Ensemble downscaling of diurnal convection in the Maritime Continent associated with MJO during Pre-PMC 2015

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The diurnal convection and its amplitude around the Maritime Continent associated with MJO activity were investigated with the global ensemble forecast data. In the Pre-PMC period, the diurnal migration of clouds over the Sumatra Island toward the Indian Ocean is frequently observed, and the amplitude of diurnal cycle was associated with the particular MJO phase as reported in the previous studies. To investigate the relationship between diurnal amplitude and MJO activity statistically in the specific environmental fields in the Pre-PMC, we performed the dynamical downscaling with the data of global ensemble forecasts by NCEP. For the diurnal convection in regional scale, it is necessary to downscale these data to capture the interaction between the environmental field by MJO and the diurnal convections. The downscaled convections and precipitation tend to have large amplitude of diurnal cycle when the MJO activity was classified as strong by the MJO index. We will show the difference of diurnal structure that varies with the MJO's environmental fields.

Keywords: Diurnal variation, MJO, Downscaling