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Rainfall features over the Indonesian Maritime Continent under the different MJO phases

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Modulation of convective activity associated with the MJO over the Indonesian Maritime Continent is still mystery, and it results in the difficulty of precise simulation of precipitation over this region. In this study, we analyzed satellite data and Radiosonde sounding data to examine the relationship between convective activity and the MJO phase.

When the convective peak of the MJO arrives over the MC (phase 4), precipitation area bifurcates into north/south and results in the weak of precipitation over the MC in general. Rather strong convection is found when their peak is located in the eastern Indian Ocean (phase 3). However, strong local precipitation area is found around Pontianak, south-west of Kalimantan Island in phase 4, but it becomes weak in phases 6-7 (when the MJO convective peaks move to the central Pacific). Similar feature is found around Makassar, south-west of Sulawesi Island, but it is interesting because its phase is lagged in quadrature to Pontianak case. The former may relate to the enhanced wind field resembling s-called Borneo vortex. Further relationship is discussed sing sounding data.