Kubota, H., K. Yoneyama, J.-I. Hamada, P. Wu, A. Sudaryanto, and I. B. Wahyono, 2015: Role of maritime continent convection during the preconditioning stage of the Madden-Julian Oscillation observed in CINDY 2011/DYNAMO. *J. Meteor. Soc. Japan*, **93A**, 101-114.
https://doi.org/10.2151/jmsj.2015-050

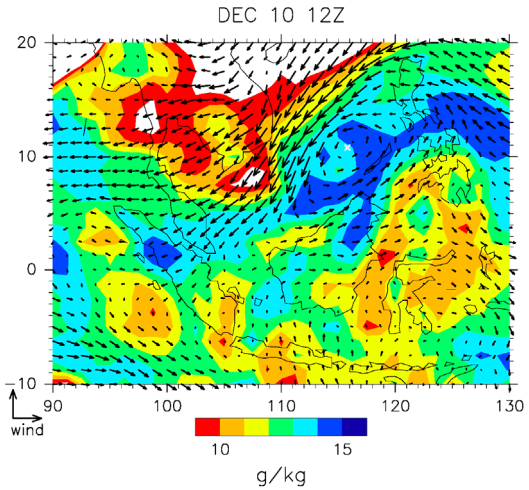

Figure 3 (a). Low-level moisture (contour) and horizontal wind (vector) at 850 hPa at 12Z December 10 2011. Tropical depression centers are marked by white x.

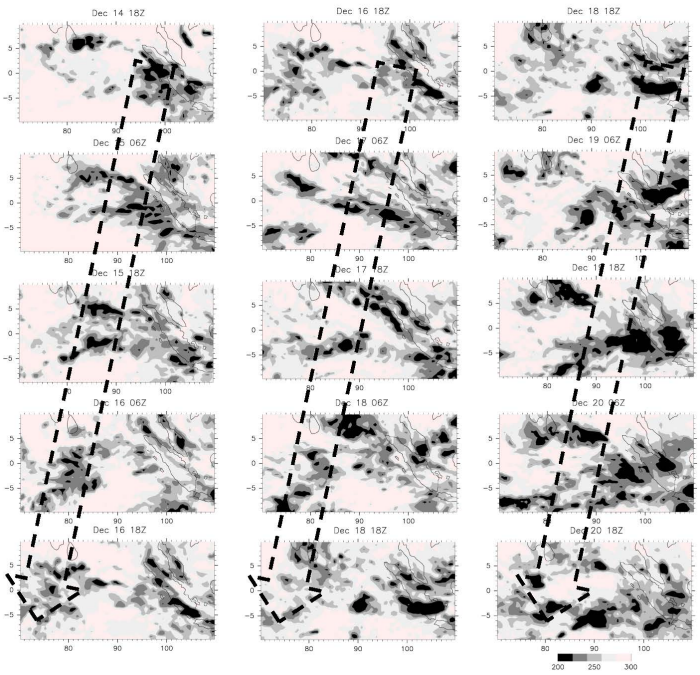

Figure 7. Twelve-hourly infrared blackbody temperature distributions from 18Z December 14 to 18Z December 20 2011. Dashed arrow traces the westward propagating convection.

- The role of Sumatra Island convection over the maritime continent during the preconditioning stage of the Madden-Julian Oscillation (MJO) was investigated using intensive observation data of CINDY2011/DYNAMO and HARIMAU2011.
- Convection was activated over Sumatra Island with diurnal cycle associated with the moist air mass which was originated from a tropical depression generated in South China Sea during the preconditioning stage of the MJO in December 2011 (Fig. 3). Then, two-day period disturbances that propagated westward to the central Indian Ocean were coupled with diurnal cycle of convection over Sumatra Island (Fig. 7).
- When the westward propagating disturbances arrived over the central Indian Ocean, low-level moisture advection was excited associated with westward propagating inertio-gravity waves and moistening was promoted in Gan Island over the central Indian Ocean with a two-day period. After the favorable condition of large-scale convection was established, the MJO was activated in the central Indian Ocean.