

# Correlation between convective available potential energy (CAPE) and precipitation during MJO event

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## **Abstract**

*The most important process in the tropics region is deep convection. This process is generally associated with high surface temperature distribution, mainly sea surface temperature (SST), since the ocean dominates the tropical area. The ocean is the mayor source of water vapor that is lifted into the atmosphere and creates the cloud.*

*Recently the scientists are interested to understand the Madden Julian Oscillation (MJO), a large-scale atmospheric disturbance that strongly alters the intensity of precipitation across the global tropic. Its mean that to understand the MJO effect to precipitation process is very important, to improve the forecast of the heavy precipitation.*

*Convective available potential energy (CAPE) is a useful measure of vertical moist instability. It is mean that CAPE is the indicator of the intensity of the convection. But it is has been known, generally, that the relation between CAPE and precipitation is very weak (Sobel et al., 2004).*

*Goal of this study is want to understand which MJO event increase the correlation between CAPE and rainfall, according to the fact that MJO event increase the convection intensity, and generate the heavy rainfall.*

*The result of this study shows that the correlation coefficient CAPE and rainfall in MJO active (mid-November 2007 through mid February 2008) decrease compared to the non MJO period (mid-November 2005 through mid-February 2006).*

**Key word: CAPE, precipitation and MJO**

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