

Cloud microphysical parameterization and Orography influence on extreme rainfall event of Kerala (2018)

Sandeep Pattnaik

The goal is evaluate the ability of these sophisticated CMPs in replicating the event. In addition, efforts are made to provide a new evidence of support from remote synoptic scale events facilitated by orography causing this extreme rainfall event over Kerala (2018). It is found that the choice of CMP has considerable impact on the rainfall forecast characteristics and associated processes. Horizontal moisture flux convergence (MFC) was the major (minor) driver of convection for higher (weaker) threshold of rainfall with WDM6 predicting the most consistent peaks of MFC in comparison with the TRMM rain rate peaks. Hydrometeor analysis suggests that the Milbrandt and Thompson Aerosol Aware schemes (WDM6 and WSM6) were unable (able) to capture the cloud ice realistically which led to large (less) error in the rainfall prediction.