Simulation and Prediction Experiments for MJOs Observed during DYNAMO using the NCAM CAM3

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Abstract

Two MJOs were observed during DYNAMO. To understand the interaction among convection, SST and MJO, we carried out a series of prediction experiments using the NCAR CAM3. These include predictions using both climatological SST and real-time observed SST, and nudging experiments. To determine the roles of temperature, moisture and momentum fields in MJO simulation, the ECMWF reanalysis data are used to nudge each of these fields, one at a time, during the simulations. The nudging tendencies are analyzed to understand the deficiencies in physical parameterizations. It is found that SST plays an important role in realistic MJO prediction. In the nudging experiments, it is found that nudging of moisture field has the largest effect on MJO simulation, followed by momentum nudging, while temperature nudging has the smallest effect. Details will be presented at the workshop.