

**Environmental controls on cloud populations in Madden-Julian Oscillation during
AMIE/DYNAMO.**

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Analysis of radar reflectivity data collected by Spol-Ka-Pol, SMART-R and KaZR revealed that cloud populations evolving from isolated shallow clouds, to deep convective cores, to wide convective cores and finally to broad stratiform regions during the passage of each of the two Madden-Julian Oscillation episodes observed during AMIE/DYNAMO field campaign. We used cloud permitting regional model simulations, which correctly capture the salient features of these episodes, to examine the large-scale environmental processes that determine the timing of these transitions. Specifically we test ‘stretched building block hypothesis’ on the organization of convection by the large-scale environment and the role of environmental wind shear and cold-pool dynamics.