Unorganized and organized convection regimes and their evolution on 1-2 day time scales as viewed from observations and a Multi-scale Modeling Framework (MMF) Gregory Elsaesser⁺; Christian Kummerow

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Through use of a combined multi-sensor (TRMM, CMORPH, QuikSCAT and radiosondes) and reanalysis (MERRA) approach, unorganized and organized convection regimes are investigated. The spectrum of cloud types observed in various regimes is quantified, and the extent to which various regimes are in quasi-equilibrium with the environment over short time scales and 100-200 km spatial extents is assessed. Convection regimes as derived from observations will also be compared to those found in a multi-scale modeling framework where an embedded cloud resolving model takes the place of traditional convective parameterization. A relationship between water vapor, convective inhibition, mesoscale wind variability related to cold pool activity and the degree to which a convection regime is organized will be described.