

Microphysical evidence of the transition between predominant convective/stratiform rainfall associated to the large-scale variability of precipitation in Southwest Amazon

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The distinction between convective and stratiform precipitation profiles around various precipitating systems existent in tropical regions is very important to the global atmospheric circulation, which is extremely sensitive to vertical latent heating distribution. In South America, the convective activity responds to the Intraseasonal Oscillation (IOS). This work analyzes data from a disdrometer, a radar profiler and a polarimetric radar, installed in the Ji-Paraná airport, RO, Brazil, for the field experiment WETAMC/LBA & TRMM/LBA, in January and February of 1999. The methodology is based on the partition of the precipitation into convective and stratiform, and the classification of hydrometeors by fuzzy logic systems. The microphysical analysis of the periods with the presence or the absence of the South Atlantic Convergence Zone (ZCAS), associated to the IOS, showed a large difference in type, size and microphysical processes of hydrometeor growth in each wind regime: periods without a ZCAS presented more intense convection, leading strong processes of the precipitation growth in both convective and stratiform types; during periods with a well established ZCAS, there were small precipitating systems, with a less convective feature, similar to those from monsoon regions in their active phase.