



Effects of microphysics schemes on passive microwave measurements of extreme rain events

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Current physically-based rainfall algorithms rely on a cloud model for a-priori knowledge. Major uncertainties in the a-priori knowledge are associated with the assumptions on the microphysical properties and distributions of hydrometeors. In order to evaluate the impact of cloud microphysics schemes on rainfall estimations, various a-priori databases for rainfall inversions are constructed using the Weather Research and Forecasting (WRF) model with four different microphysics schemes. Rainfalls for extreme rain events are retrieved using a simple Bayesian technique. It shows that the estimates are highly sensitive to the parameterizations of hydrometeors. This study will be extended to understand the roles of cloud model and its bulk microphysical schemes in microwave remote sensing of rainfall.