High resolution model intercomparison for Convective Events during CHUVA-Santa María

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Abstract:

CHUVA-Santa María took place between November 6 and December 22, 2012. In order to provide high resolution operational forecasts during this period, several institutions designed specific model runs centered around Santa María, Brazil. Besides the interest of providing operational forecasts, the researchers of the participant institutions discussed model settings aimed at generating a high resolution model ensemble for the first time over South America. This ensemble includes 9 members, with varying resolution from 2 km to 48 km grid spacing, though most of them lie in the 4-2 km range. Particular model settings based in the WRF model (e.g. those adopted by UFSM, CPTEC, UBA-UNNE, Argentina SMN) have been chosen in order to analyze the effect of alternative boundary conditions, grid resolution and planetary boundary layer parameterization. In turn, other models (e.g. BRAMS, MESO NH) have also been employed in order to compare different model performance. This work provides an assessment of this intercomparison focused on precipitation forecasts quality during 4 particular events, when organized convection has been observed. Besides subjective comparison of forecasted and observed accumulated precipitation fields; temporal precipitation variability, at each point where disdrometers and/or automated stations are available, will be analyzed and varied performance metrics will be presented.