Oral.2: **11:30-11:45. Predictability of a supercell using convection-permitting ensemble simulations in Argentina**

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Abstract

Sierras de Córdoba (SDC) is a mountain range located eastward to the Andes range strongly associated with the initiation and further upscale growth of deep moist convection. The location and timing of convective initiation (CI) over this region is strongly forced by the presence of moisture availability and large scale conditions as well as local mesoscale processes.

In order to analyze the predictability of the CI over SDC, six 20-member ensembles with the WRF model at convection-permitting resolution (3 km) were carried out to study a marginal supercell initiated at the SDC foothills. The experiments consisted of 24-h forecasts initialized on 00 UTC October 17, 2017, using 3-h frequency boundary conditions from 2 different global ensemble forecasting systems: the ECMWF model and the GEFS. They were built using 3 different microphysics parameterizations (WSM6, Thompson and Morrison) and 2 planetary boundary layer parameterizations (Yonsei University and Mellor Yamada Janjic). It is shown that the forecasted environment is favorable for supercell formation with the majority of the configurations. CI over the eastward side of SDC is strongly forced by the presence of instability and moisture availability as well as mesoscale circulations providing low level convergence. A strong easterly component of the wind, promoting the convergence of the wind over the mountains is noticeable in all members with convection development.