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Poster.2: . **Characterization of the thermodynamic environment of extreme precipitation events in southeastern South America**

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Abstract

Southeastern South America (SESA) is characterized as one of the regions with the highest frequency of occurrence of intense storms associated with deep convection. These events induce extreme precipitation events and produce most of the warm season rainfall generating significant damage (floods, intense winds, hail) and have a high impact on economic and social activities. Considering that the occurrence of extreme events in SESA is associated with the occurrence of certain thermodynamic patterns, in this work we used a set of convection-permitting regional climate models to explore their ability to reproduce the thermodynamic environment that triggers deep convection in SESA. The characterization of the thermodynamic environment was obtained from the simulation outputs of three models (WRF-CIMA, WRF-UCAN, REGCM4-USP) belonging to the Flagship Pilot Study in southeastern South America (FPS-SESA) for two spatial resolutions, 4 and 20 km (Bettolli et. al 2021 and Lavin-Gullon et al 2021). From the data, the spatial distribution of the equivalent potential temperature at the 850 hPa level and the vertical gradient between 850 hPa and 600 hPa were analyzed.