

Poster.4: . **The CORDEX FPS-SESA Ensemble convection-permitting simulations: Achievements, challenges and future developments**

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**Abstract**

With focus on extreme rainfall events in Southeastern South America (SESA), the FPS-SESA initiative seeks (1) to promote inter-institutional collaboration and further networking to study multi-scale processes and interactions that result in extreme precipitation events and (2) to develop actionable climate information from statistical and dynamical downscaling based on co-production with the impact and user community. During the first phase of the CORDEX FPS, short-term event-based simulations and 6-months simulations were performed with four convection permitting models following a protocol specifically designed for the preliminary ensemble. The results from this preliminary ensemble allowed identifying the benefits of convection-permitting simulations. However, discussions among members of the FPS dedicated to assessing the impact of extreme events on agriculture and on the hydrology of the Uruguay basin, revealed the need of enlarging both the domain and the temporal span of the simulations. This will allow to evaluate the extent to which driving the impact models with outputs from convection permitting models allows capturing the impact of wet and dry conditions on crop production over southeastern Brazil and on the runoff variability of the Uruguay river basin. Therefore, a new version of the ensemble convection permitting modelling protocol was designed. The presentation will focus on the latest results from this new convection permitting ensemble.