

Poster.8: . **First assessment of long-term RegCM4 convection permitting simulations over the center-southeast of South America**

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**Abstract**

New developments in the Regional Climate Model version have been implemented in the last three years allowing the model to solve the processes in the scale of convection. In the context of the CORDEX FPS-SESA initiative (Flagship Pilot Studies-Southeastern South America) that established a collaborative network to study extreme precipitation events and its impacts, a long-term simulation for impact studies on agriculture and hydrology was required. In this study we analyze a long-term simulation, from June 2018 to 2020, using RegCM4 at convective permitting resolution (4 km of horizontal grid spacing). The simulation domain covers from center to southeast (~ 15o to 35oS) of South America and it was forced by ERA5 reanalysis. In this first assessment we compare the simulated monthly climatology with both fine resolution gridded data (MSWEP with 0.1o) and with selected local stations. Additionally, we assess the ability of long-term convective permitting simulation to capture long dry and wet periods since these kinds of events have great impacts in both hydrology and agriculture.