

Poster.7: . **Analysis of extreme hydrological events in the Uruguay River basin**

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Abstract

During the periods October 2009-March 2010 and October 2015 - March 2016 several extreme precipitation events occurred in southeastern South America and impacted on the Uruguay River streamflow. Within the framework of the Flagship Pilot study in southeastern South America endorsed by CORDEX, statistical and dynamical simulations were performed for these particular periods. These extreme events are analyzed based on precipitation outputs from regional climate models (RCMs) and empirical statistical downscaling (ESD) in comparison to weather station observations within the Uruguay River basin. Model outputs and observations are also used to force the macroscale hydrological Variable Infiltration Capacity (VIC) model to study the impact on river flows. Correlations are significant between observation and model simulated streamflow though with considerable spread. The 85th, 90th and 95th percentiles are calculated to determine the wet events and the 5th, 10th and 15th percentiles for the extremely dry events for each of the models and the observed data. Results indicate differences between the percentile values from model outputs and observations, and also on the date associated with each of the selected events. There are less differences in the dates associated with the 95th percentile in wet extreme cases and in general the degree of coincidence is smaller with RCMs. Streamflow results for extremely high and low percentiles show smaller differences than precipitation.