

**COMPUTATIONAL TOOLS FOR ACQUISITION, PROCESSING AND
VISUALIZATION OF PRECIPITATION DATA AND THEIR APPLICATION IN
DETECTION OF EXTREME RAINFALL EVENTS OVER RIO NEGRO BASIN
URUGUAY-BRASIL.**

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Resumo. This work presents the exploratory data analysis to compare periods of extreme rainfall in the Rio Negro region (Uruguay-Brazil) and thus validate the detection capacity of the IMERG satellite mission in this region using data from rain stations. In addition, regression and kriging algorithms are applied to fill in data from rainfall stations. The computational tools used to obtain, process and visualize time series of precipitation data from the study region at different spatial-temporal scales are shown, as well as the results of the detection of extreme rainfall events in the period 2015-2020 using graphs. Finally, some spatial sampling techniques are presented in precipitation data from satellite missions for use in physical and empirical hydrological models. This work is an advance of the doctoral work proposal in physical and empirical hydrological models on the Río Negro basin, with the purpose of conducting studies for short and long-term predictions of this water course, which is of great importance for model water catchment and flood forecasting.