Extreme Events in the Colombian Pacific and Caribbean Catchment Basins

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Extreme events of precipitation and temperature inside the Pacific and Caribbean Catchment Basins in Colombia, South America, are analyzed. This is done by using several information sources such as observations, reconstructed data, NCEP/NCAR and ERA reanalyses and data from the regional model REMO, developed at the Max-Planck Institute for Meteorology. The extreme value method we use selects the excesses over a nonstationary threshold and adjusts to Generalized Pareto Distribution (GP). The goodness of fit is evaluated with a test that includes the Cramer-von Mises,
Kolmogorov-Smirnov and Anderson-Darling statistics and the p-values generated by parametric bootstrap resampling. The test not only evaluates the goodness of fit but also evaluates the threshold election. The parameters are presented in maps that allow to recognize the characteristics of the extreme behaviour inside the catchment basins and the subregional similarities.
Maps of return periods for the mean excesses, for the maxima and for the extreme events associated with the El Ni~no - Southern Oscillation (ENSO) are presented. Additionally, teleconections with extreme values are infered.