A study of periodicity and trend of the r-largest annual precipitation events in Athens, Greece

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The annual extreme daily precipitation events in Athens province have been studied by many researchers. One of the characteristics of this time series is the lack of trend and periodicity. In this work we study the r-largest annual precipitation events for various values of r, in terms of trend and periodicity. Several theoretical models have been proposed and the results are compared.

The data used, are daily precipitation totals, recorded at the National Observatory of Athens, for a 115-year period (1891-2005). In this work we consider as "r-largest daily precipitation values of a year" the r-maximum values of the daily precipitation totals of this year.