



Changes of extreme precipitation in the Iberian Peninsula from 1951 to 2002

F.S. Rodrigo

Department of Applied Physics, University of Almería, Spain (frodrigo@ual.es)

In addition to the consideration of climate changes concerning the mean value of climate elements, interest has emerged in the probability of occurrence of extreme events, which can have major impacts on society, the economy, and the environment. One approach to examining extreme trends can be to test whether the upper tails of a given variable's probability distribution function (PDF) is changing. In this work, sequences of annual maxima of daily precipitation in 22 sites of the Iberian Peninsula are analysed. Gumbel PDF is fitted to successive 30 year periods from 1951-1980 to 1973-2002, and the trends of the location and scale parameters are examined using the Mann-Kendall test. Spatio-temporal variability is studied using cluster analysis of the parameters. The location parameter shows a clear difference between coastal and inland stations, with higher values corresponding to the stations near the sea. In relation to scale parameters, the analysis shows two groups, Mediterranean and central-western areas, with higher values for Mediterranean stations. Results indicate a negative trend in the location parameters, and no-trend for the scale parameters.