Estimation of extreme events from spatial rainfall data*

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Let daily rainfall over the space be represented by a stochastic process, assumed continuous on some compact space S. We discuss estimation of extreme events on the basis of observations of such process. Of special concern are quantities related to the tail probability of the process spatially aggregated, i.e. the tail probability of the integral of the stochastic process over S, like high quantiles or return values. We apply the methodology to daily rainfall data over regions of Portugal. It is a joint work with colleagues from IPMA and Instituto D. Luiz - FCUL.

Key Words: extreme value theory, Pareto distribution, spatial dependence, return values

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