The study presented here makes use of 41 daily rain gauges of Burkina Faso retrieved from the West Africa daily rainfall database Tapsoba (1991) from 1950 to 1990. These daily rain gauges have been chosen to maximize spatial uniformity of coverage and temporal continuity. The data were examined for continuity and missing records. A spatio-temporal study shows that the decline is uniform on the region.

The return period $T_p = 260$mm corresponds to a return period of 100 000 years!

**Spatial extremes**

A stochastic process $Z(\cdot)$ with continuous paths is called max-stable if

$$\max_k Z_k(\cdot) \equiv \frac{Z_k(\cdot)}{a_k(\cdot)} \stackrel{d}{\rightarrow} \xi,$$

where $\xi$ is the extremal coefficient function.

The extremal coefficient function for a stationary max stable process $\theta_N$ is

$$\theta_N = \frac{1}{\gamma} \log(1 - \frac{1}{\gamma}) = \frac{1}{\gamma} \log(1 - \frac{1}{\gamma})$$

for small $\theta$.

The return level $z_p = 260$mm corresponds to a return period of 29 000 years!

**References**


