



Characterizing rainfall in the Tenerife island

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In many locations, rainfall data are collected through networks of meteorological stations. The data collection process is nowadays automated in many places, leading to the development of big databases of rainfall data covering extensive areas of territory. However, managers, decision makers and engineering consultants tend not to extract most of the information contained in these databases due to the lack of specific software tools for their exploitation.

Here we present the modeling and development effort put in place in the Tenerife island in order to develop MENSEI-L, a software tool capable of automatically analyzing a complete rainfall database to simplify the extraction of information from observations. MENSEI-L makes use of weather type information derived from atmospheric conditions to separate the complete time series into homogeneous groups where statistical distributions are fitted. Normal and extreme regimes are obtained in this manner. MENSEI-L is also able to complete missing data in the time series and to generate synthetic stations by using Kriging techniques. These techniques also serve to generate the spatial regimes of precipitation, both normal and extreme ones.

MENSEI-L makes use of weather type information to also provide a stochastic three-day probability forecast for rainfall.