Abstract

   The flood events observed during last years in the urban areas are subject of main interest for quantification of the hydro-climatic risks and climatic change to the regional scales. Through the establishment of a statistical relationship between the intensities of intense rains and the recurrence of these events allows us to determine the dimensions of the works according to a previously defined level of risk. They constitute today, a leading tool for various users. This work concerns the study of the extreme rains, recorded at 49 stations in the northern Algeria. The objective of this work is to determine the estimators who are the curves Intensity-Duration-Frequency and to extract from this whole of information the b Montana climatic parameter used to calculate the river flow for the dimensioning of the networks of cleansing in the event of insufficiency of data in order to regionalized. Different durations going from 15 min to 24 hours, are studied. We utilised the collocated co-kriging as multivariate estimation method for interpolation in order to yield the space distribution maps of b Montana climatic parameter, with the benefit of using spatially correlated secondary variables, such as the digital elevation model and the distance from the coastline, that are known at any localisation. All features leaded to choose the digital elevation model as covariate for interpolating b Montana values, yielding a better regionalisation of the studied climatic parameter. The geostatistical handling of b Montana values strictly related to auxiliary variables that constitute physical factors, overcome the data shortage in planning, managing and preventing the rain flood risk.

Key words: IDF; b Montana; Collocated co-kriging; Extreme rains; Climatic parameter.