



Regionalization procedures for hydrological drought assessment in Cevennes region, France

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Nowadays, low flow characteristics have been extensively studied for the design of hydrotechnical projects and water resources planning and management. Information on the magnitude and frequency of low flows is very important for hydrological drought analysis at operational level in public water supply systems. In this study, several low flow characteristics are derived and analysed for hydrological drought assessment at 26 watersheds located at Cevennes area, Southern France. The reliability of two statistical regionalisation techniques (the Principal Component Analysis and the L-moment approach) is tested on low flows characteristics for defining homogeneous regions in the study area and application of the methods to ungauged watersheds. The Threshold Level Method (TLM) is applied to estimate duration and deficit of the main hydrological drought events derived from flow duration curves at the study hydrometric stations using daily streamflow data for the period 1988 to 2008. Furthermore, the two regionalisation techniques are also applied in two other low flows indices, the annual minimum 7-days flow and the annual minimum 30-days flow. Finally, a regional analysis is performed in order to understand better the hydrological behavior of each watershed and the possible interactions between the hydrological regime and the descriptive hydrogeomorphologic characteristics.