Frequency analysis of the extreme streamflow by the threshold level method in semi-arid region: Case study of Wadi Mekerra catchment in the North-West of Algeria

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Description
Extreme streamflow drought is the direct problem of serious on damaging and on social impacts, so the frequency analysis of hydrological drought is an important work can be done to studying the drought phenomenon in catchments. So the hydrometric data for a river conducts to the establishment of the flow duration curve (*FDC*) as an important index of streamflow drought regime, from this characteristic, a threshold level can be defined for both perennial or intermittent streams. Well, two partial duration series can be derived for each year; the deficit volume and drought duration series. In the catchment of Wadi Mekerra in the North-West of Algeria, the minimum value estimated from the Pareto's annual maximum instantaneous flood population (0.60 $m^3 \cdot s^{-1}$) is considered as the threshold level index where, the largest deficit volume and the largest drought duration occurring in a given year are taken into consideration. Hence, the frequency analysis of the streamflow drought regime of the catchment is analysed with Weibull distribution for both deficit volume and drought duration combined with the probability of occurrence which is determined under some criterion in order to forecasting the streamflow drought in the catchment.