

## **DROUGHT AND SPATIALIZATION OF THE PRECIPITATIONS IN The NORTH-WEST Of ALGERIA**

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### **Abstract:**

To detect possible changes in the pluviometric regime, we used the statistical tests of Pettit, the statistics of Lee Héghinian and the segmentation of Hubert on ten long-term stations. The upshot of majority of stations, a rupture (reduction in annual pluviometry) in the studied series appears between 1970 and 1980. This fall caused a depth of runoff reduction from 61% to 71% on an annual scale in the extreme west, for the remainder of the studied area, the reduction is about 40 %. On the level of the Beni Bahdel dam, the total deficit is about 842 mm for 37 years on 60. The average deficit is 22.8 mm with an average intensity of 18 deficit expressed as a annual average percentage. The analysis of this series (1877/78-1997/98) reveals that the most severe period of the deficit is spread over a dozen years, 1977/78 to 1988/89 with a light surplus during the year 1979/80 and a maximum deficit (-In order to establish a typology of the drynesses, we retained the station of Oran (west of Algeria) which has a long series and we applied a simple method expressing the pluviometric 213,6 mm) recorded during 1922/23. Over the studied period (120 years), we records 62 deficit years, including 21 having been affected by a moderate dryness and 11 being able to be regarded as dry (according to the criterion defined above). The deficit recorded during 1922/23 (-213,6 mm) has return period of 244 years, the deficits of 1944/45 (- 212.3 mm) and 1982/83 (-208.9 mm) corresponding respectively to recurrence times of 81 years and 44 years.

Always for the same station but, for the reference period (1950/51-1997/98), the maximum deficit is -203.5 mm, recorded during 1982/83. On the totality of the series, 25 years are deficit (52 %), 10 years are regarded as moderately dry and 3 years like dry. The year of 1982/1983 is characterized by a return period of 98 years; it is followed by the 1981/82 which has a recurrence of 33 years.

The spatialization of the precipitations irregularities can be approached by the coefficient of variation. This coefficient allows a comparison between the stations. The distribution of variability is not random. Three elements structure the annual fluctuations of the rains, the latitude; the longitude and the altitude of the studied zone. By the established chart, we tried to show the interannual variability of the rains. The interannual variability of the rains increases when we approach to the arid areas. That was checked. We observe the Increase in variability with an increase in longitude and latitude reduction. Altitude attenuates this increase.