

Rainfall regime evolution and drought forecasting in eastern Algeria

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Abstract During the last century, Algeria has been subject to frequent periods of drought, especially since 1975. In this work, we studied drought persistence at annual and seasonal scales in Eastern Algeria on the basis of an analysis of rainfall data observed in 17 rainfall stations (from 1950 to 2005). The stations located west of longitude 5°50'E have a stationarity break in 1975. However, in the eastern areas of Algeria, and more specifically the area east of longitude 5°50'E, no significant break is detected. Drought forecasting has revealed two distinct areas; the first one concerning the region located before longitude 5°50'E. For the first region the probability to have a dry year after a dry or non dry departure year is low and barely exceeds 40%. In the southern high plains of south Constantine the probability is over 50%.

Key words drought; Markov Chain; SPI; eastern Algeria