



## **Homogeneity of monthly precipitation series from 1932 to 2010 in the Souss Massa Region-Morocco**

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Water resources are vulnerable to precipitation fluctuations, especially in arid area such as the Souss-Massa region. Therefore, the analysis and the simulation of the regional rainfall characteristics at decadal scale are of great importance. The availability of long-term time series is often limited by their quality. A network of local meteorological stations recording monthly precipitations from 1932 to 2010 is provided by the Hydraulic basin of Souss Massa Agency. A dataset of 19 selected stations is undergoing an interactive process of quality control and homogeneity assessment using ProclimDB/Anclim and Homer softwares. Suspicious monthly data are identified with a combination of criterions. We analyse the standardized precipitation index to better distinguish real climate events from erroneous data in the analyzed series. Statistically significant annual change-points are detected with both absolute and relative methods by using a criterion of validation. The temporal distribution of outliers shows an annual cycle and a decrease of their occurrence since the eighties. We also assess the year of 1973 as a change point related to climate in Western High Atlas Mountains stations.