

Analysis of Hydro-Climatic Fluctuations in the Context of Climate Change. Case of the Oued Bouregreg Watershed (Morocco)

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Abstract : Morocco, characterized by a semi-arid climate heavily influenced by the Mediterranean, includes regions particularly vulnerable to climatic hazards, notably the Oued Bouregreg watershed. This study examines the fluctuations in precipitation, temperature, and streamflow regimes within the Oued Bouregreg watershed, based on 50 years of data collected from measurement stations. The analysis begins with an assessment of the geographic distribution of the stations and the quality of the data, emphasizing the importance of adequate coverage for accurate analysis. The results reveal significant heterogeneity in annual precipitation, with peaks in 2010 and lows in 1995, as well as marked monthly variability, featuring a wet season from November to April and a dry season from May to October. The relationship between temperature and precipitation indicates an inverse correlation, while streamflow varies significantly from year to year, showing a positive correlation with rainfall. This study highlights the importance of understanding the interactions among these variables for sustainable water resource management and underscores the necessity of regular and precise monitoring of climatic and hydrological data.

Keywords : fluctuations, water resources, rainfall, Morocco

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