The title (العنوان):

Past and future drought in Northwestern Algeria: the Beni Bahdel Dam catchment

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Abstract:

In last decades, the impact of climate change started to appear in the semi-arid regions of the Mediterranean Basin. The severity and frequency of drought events in Northwestern Algeria have affected water resources availability and agriculture. This study aims to evaluate the temporal evolution of drought events characteristics, such as drought duration, frequency and severity, of the Beni Bahdel Dam catchment, Northwestern Algeria. Drought characteristics have been derived from the Standardized precipitation index (SPI) computed for the period from 1941 to 2100 using precipitation data from observations and simulations of the regional climate model RCA4 (Rossby Centre Atmosphere model, version 4). The RCA4 model was forced by the global circulation model MPI-ESM-LR under two Representative Concentration Pathways (RCPs) scenarios. The ability of the model simulations was firstly assessed to reproduce the drought characteristics from observed data (1951–2005). Then, future changes in drought characteristics over the twenty-first century were investigated under the two scenarios (RCP4.5 and RCP8.5). Results show an amplification of drought frequencies and durations in the future under the RCP8.5 scenario.

Key words: Climate change ; Northwestern Algeria ; Beni Bahdel ; Dam catchmen

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