عنوان مقاله:

Impacts of Climate Change in Urmia Lake Basin Zolachai River

محل انتشار:

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خلاصه مقاله:

Nowadays, assuming stationary patterns in water resources are being challenged and even abolished. It is mainly because of the climate change and the variability brought with it. In this paper, the climate change and impacts on water resources management of Zolachay basin in Northwestern Iran have been comprehensively studied. Expected precipitation and temperature changes in the future are obtained from GCMs results of IPCC AR4 in three emission scenarios of A1B, A2 and B1. To simulate climate change conditions for horizon 2020, LARS-WG, a weather generator has been employed. The results by using the new idea of Kernel density contours, indicate a decrease in precipitation and a temporal change can be expected. This basin is also expected to have a warmer climate. To analyze the impact of climatic changes on surface water resources, Artificial Neural Network and M5 model tree approaches are used to develop the rainfall-runoff model of the basin in a monthly time scale. For a hydrological prediction, different hybrid data driven models and combination of inputs are trained and tested to explore the best model. The operation of multi-purpose Zola reservoir, already built on the main stream, is simulated by using system dynamics approach. Hence, a warmer and drier climate in the future will cause the hydrograph of the basin to have temporal and quantitative changes. In addition to changes in the runoff of the basin, development of the watershed is considered. The results show considerable changes of the reliability and deficiency measures in the operation of Zola reservoir under climate change condition.

کلمات کلیدی: