

## **Abstract**

Climate change of the environmental issues and most important challenges facing the human society is in the current century. Of the consequences of climate change include changes in precipitation and increase in temperature can be mentioned, that's a direct impact on water resources. Thus, because of its economic and social impact that climate change leaves a large number of studies on this phenomenon requires. Amir kabir (karaj) dam is located on the basin karaj, the most important sources of drinking water and agricultural sector is both province Tehran and Alborz. The aim of this study is the investigating effects of climate change in the period 2011-2030 by using three general circulation climate models under three climate scenarios A2, B1 and A1B for basin water resources allocation. Results of Downscaling model LARS-WG in Karaj station shows decrease in rainfall in the months of March and May. In all the months of increasing temperature on all models-Scenarios were obtained. Discharge was used in this study come from several methods and Results of compares them with statistical analysis and graphical shown that Artificial neural network and wavelet hybrid network (ANN-WAVELET) in a simulation of rainfall-runoff relationship provides the best performance. Results of future runoff, shows decrease in the winter and spring runoff toward the observation period. To study the effects of climate change on water allocation from the dam karaj used of Planner and Optimizer model (WEAP) , taking into account the possible conditions and effects of climate change in the form of 7 scenario was developed. WEAP model results indicate that it was important that the early years Scenario 1 (constant growth of drinking and agricultural needs) volume tank is in warning mode. So the apply scenario adapted to the not provided needs of the will not be possible.

**Keywords:** Climate Change, Karaj River Basin, Global Circulation Models, Artificial Intelligence Methods, WEAP, LARS-WG.



University of Zabol  
Graduate school  
Faculty of Engineering  
Department of Civil Engineering

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**Supervisor:**  
Dr. M. Molaienian

**Advisor1:**  
Mr. A. Ajamzadeh

**Advisor2:**  
Mr. M. Salkhorde Haghghi

**By:**  
M. Ghorbanzadeh

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