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Evaluation of Climate Change Impacts on Potential Evapotranspiration in the West Azerbaijan Province

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Abstract

Greenhouse gases cause damage on the equilibrium of the climatic system which makes a very necessary investigation on climate change impact on the hydrological parameters such as evapotranspiration; on the other hand, in the future decade climatic forecast would play a major role to make a planning. LARS-WG is one of the most famous stochastic weather generators, and the generated data is simulated by the collection of the atmospheric data which can be used for the investigation of weather parameters. At this research, the observed data including precipitation, maximum and minimum temperatures, sunshine duration at the base time and by using climatic fluctuations caused by the general circulation model, HadCM3, under

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emission scenarios A1B, A2 and B1 are used for the evaluation of potential evapotranspiration in the West Azerbaijan province. The results from LARS-WG model indicated that at this region according to (2046 - 2065) toward to the time frame (2011 - 2030) statistics generated for the variables mean annual temperature and mean annual potential evapotranspiration, total annual rainfall, respectively are by A1B scenario, 50.40 mm, 2.13 °C would increase, and 113.89 mm per year will be reduced, and by the scenario A2, 30.82 mm and 1.57 °C increase, and 4.81 mm per year will be reduced. The statistics generated by the scenario B1 are 32.49 mm, 1.25 °C and 33.07 mm per year will increase. According to the results, under the A2 and A1B scenarios for (2011 - 2030) and (2046 - 2065) are the most critical forecasting for the future status respectively.

Keywords: Climate Change, Potential Evapotranspiration, West Azerbaijan Province, LARS–WG model.

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