

Abstract

Today the world is being faced by the Climate-change Phenomenon as a serious problem. It seems that the ecosystems are vulnerable to these changes specifically. Hence, studying of long-term climate change trends are important in climatic investigating and future forecasting. Precipitation phenomenon is a function of many factors that its forecast with usual statistical methods has low accuracy. There is several techniques to simulation of future climate periods that usage of General Circulation model data (GCM) is the most reliable of them. GCM Models are able to simulate the data in large surfaces, alone. Therefore, Downscaling GCM data in stationary level by means of different techniques is necessary for using of this data. In this study, by Using of HadCM3 model outputs under A2 scenario, SDSM downscaling models and artificial neural network, the precipitation has been predicted for three periods: (2010-2039), (2040-2069) and (2070-2099). Then, the results of the two models were evaluated and compared according to statistical criteria. Results indicate that the artificial neural network model has higher performance in most stations and annual rainfall of the Kerman province is being declined until 2100.

Keyword: Annual rainfall forecasting, Artificial neural network, Multiple linear regression, Kerman province.



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**Comparison of annual rainfall forecasting in
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models**

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