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Investigating Climate Change Trend Based on Data Simulation and IPCC Scenario during 2010-2030 AD: Case Study of Fars Province

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Abstract : The development of industrial activities, increase in fossil fuel consumption, vehicles, destruction of forests and grasslands, changes in land use, and population growth have caused to increase the amount of greenhouse gases especially CO₂ in the atmosphere in recent decades. This has led to global warming and climate change. In the present paper, we have investigated the trend of climate change according to the data simulation during the time interval of 2010-2030 in the Fars province. In this research, the daily climatic parameters such as maximum and minimum temperature, precipitation and number of sunny hours during the 1977-2008 time interval for synoptic stations of Shiraz and Abadeh and during 1995-2008 for Lar stations and also the output of HADCM₃ model in 2010-2030 time interval have been used based on the A₂ propagation scenario. The results of the model show that the average temperature will increase by about 1 degree centigrade and the amount of precipitation will increase by 23.9% compared to the observational data. In conclusion, according to the temperature increase in this province, the amount of precipitation in the form of snow will be reduced and precipitations often will occur in the form of rain. This 1-degree centigrade increase during the season will reduce production by 6 to 10% because of shortening the growing period of wheat.

Keywords : climate change, Lars WG, HADCM3, Gillan province, climatic parameters, A2 scenario
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