

## **Study of the Process of Climate Change According to Data Simulation Using LARS-WG Software during 2010-2030: Case Study of Semnan Province**

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**Abstract :** Temperature rise on Earth has had harmful effects on the Earth's surface and has led to change in precipitation patterns all around the world. The present research was aimed to study the process of climate change according to the data simulation in future and compare these parameters with current situation in the studied stations in Semnan province including Garmsar, Shahrood and Semnan. In this regard, LARS-WG software, HADCM<sub>3</sub> model and A<sub>2</sub> scenario were used for the 2010-2030 period. In this model, climatic parameters such as maximum and minimum temperature, precipitation and radiation were used daily. The obtained results indicated that there will be a 4.4% increase in precipitation in Semnan province compared with the observed data, and in general, there will be a 1.9% increase in temperature. This temperature rise has significant impact on precipitation patterns. Most of precipitation will be raining (torrential rains in some cases). According to the results, from west to east, the country will experience more temperature rise and will be warmer.

**Keywords :** climate change, Semnan province, Lars.WG model, climate parameters, HADCM<sub>3</sub> model

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