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A study and prediction of annuel temperature in shiraz using ARIMA model

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Abstract

Temperature is one of the most predominant elements having remarkable effects on determining the role and dispersion of other elements. It is also a fundamental indicator of spread and climatic classification. Planning based on temperature trend can be used in various bio-environmental issues such as urban, rural and agricultural systems. In this study, spectral analysis technique and ARIMA model were used in a 55-year time period (1955-2005) to reveal the dominant cycles and temperature modeling in Shiraz respectively. The results show that the cycles of 2.5 and 4 years are predominant on temperature in Shiraz. With modeling the temperature in ARIMA models, ARIMA (1-1-3) was selected as the optimal model. The model predicted 0.20 C° increase in annual temperature in Shiraz.

Keywords: ARIMA model, Annual temperature, Spectral analysis, Shiraz.

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