Iran Temperatures in 2019 and 2020

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Short Report

Keywords: Spatial and temporal Analysis, Temperature, Satellite, Iran

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Iran Temperatures in 2019 and 2020

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Abstract

In this study, the temperature of Iran based on satellite observations during 2019 and 2020 has been investigated. In 2019, the western, southwestern and southeastern regions are warmer than other regions. The maximum average annual temperature of Iran will reach 30 degrees Celsius and the minimum average annual temperature will reach 4 degrees Celsius in 2019. The central regions of Iran have an average temperature of 18 degrees Celsius in 2020. The western, southwestern regions are about 1 degree Celsius warmer in 2020 than in 2019. The eastern regions of Iran in 2020 are about -1.5 degrees Celsius colder than in 2019.

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Introduction

Temperature record-breaking is becoming commonplace in Iran and around the world. In recent years, different parts of the country have experienced new and warmer climates. July of 2020 was the hottest spot in the country at Shush station in Khuzestan province with 53.1 degrees Celsius, while the highest long-term temperature in the country during July of the previous year was 52.4 degrees Celsius was recorded. Temperatures have broken records in many parts of Iran in recent months and years. It is low and the summers are dominated by the air system, which leads to an increase in temperature. That's why record-breaking temperatures are a natural occurrence, but records have shifted rapidly in recent years, an issue to which we can attribute climate change and global warming [1-2]. Because of global warming in general, this phenomenon leads to long-term changes. Geodetic studies and tools with deep learning methods can help in this field [3-11].

In this study, the temperature of Iran based on satellite observations during 2019 and 2020 has been investigated.

Results

Figure 1 shows the average temperature of Iran based on satellite observations in 2019. The maximum average annual temperature of Iran will reach 30 degrees Celsius and the minimum average annual temperature will reach 4 degrees Celsius in 2019. In 2019, the western, southwestern and southeastern regions are warmer than other regions.

Figure 1 Average temperature of Iran based on satellite observations in 2019

Figure 2 shows the average temperature of Iran based on satellite observations in 2020. In 2020, the western, southwestern and southeastern regions will be warmer than other regions. The central regions of Iran have an average temperature of 18 degrees Celsius in 2020.

Figure 2 Average temperature of Iran based on satellite observations in 2020

Figure 3 shows the average temperature difference between Iran based on satellite observations between 2019 and 2020. The western, southwestern regions are about 1 degree Celsius warmer in 2020 than in 2019. The eastern regions of Iran in 2020 are about -1.5 degrees Celsius colder than in 2019.

Figure 3 Iranian average temperature difference based on satellite observations between 2019 and 2020

Conclusion

In this study, the temperature of Iran based on satellite observations during 2019 and 2020 has been investigated. In 2019, the western, southwestern and southeastern regions are warmer than other regions. The maximum average annual temperature of Iran will reach 30 degrees Celsius and the minimum average annual temperature will reach 4 degrees Celsius in 2019. The central regions of Iran have an average temperature of 18 degrees Celsius in 2020. The western, southwestern regions are about 1 degree Celsius warmer in 2020 than in 2019.

Competing interests:

The authors declare no competing interests.

References

- [1] Doulabian S, Golian S, Toosi AS, Murphy C. Evaluating the effects of climate change on precipitation and temperature for Iran using RCP scenarios. *Journal of Water and Climate Change*. 2021 Feb;12(1):166-84.
- [2] Mohammadi B, Barnameh S, Matzarakis A. Temporal and spatial analysis of thermal stress and its trend in Iran. *Meteorological Applications*. 2021 Jan;28(1):e1977.
- [3] Memarian Sorkhabi O, Asgari J, Amiri-Simkooei A. Wavelet decomposition and deep learning of altimetry waveform retracking for Lake Urmia water level survey. *Marine Georesources & Geotechnology*. 2021 Mar 10:1-1
- [4] Memarian Sorkhabi O. Geoid determination based on log sigmoid function of artificial neural networks:(a case study: Iran). *Journal of Artificial Intelligence in Electrical Engineering*. 2015 Mar 1;3(12):18-24.
- [5] Sorkhabia OM, DJAMOUR Y. Wavelet Transform Analysis of Ionospheric Electron Content Changes before Large Earthquakes. *Journal of Geomatics Science and Technology*, 2015.
- [6] Sorkhabi OM, Naderi A, Emadi R. Terrain Effect on Geoid Determination Case Study: NW Iran. *Journal of Geomatics Science and Technology*. 2014 Nov 10;4(2):139-48.
- [7] Sorkhabi OM. Deep learning of dynamic sea-level variability to investigate the relationship with the floods in Gothenburg. 2021. DOI: 10.21203/rs.3.rs-422515/v1
- [8] Memarian Sorkhabi O, Asgari J, Amiri-Simkooei A. Monitoring of Caspian Sea-level changes using deep learning-based 3D reconstruction of GRACE signal. *Measurement*. 2021 Apr 1;174:109004.
- [9] Sorkhabia OM, Asgaria J, Amiri-Simkooeia A. Caspian Sea Level Survey with GRACE and GRACE-FO. 2020.
- [10] Memarian Sorkhabi O, Djamour Y. Estimation of Geodetic Virtual Velocity Based On Back Propagation Artificial Neural Networks (Case Study: NW Iran). *Journal of Geoscience*. 2015 Jun 1;24(95):69-76.
- [11] Memarian Sorkhabi O, Asgari J, Amiri Simkooei A. Analysis of Greenland mass changes based on GRACE four-dimensional wavelet decomposition. *Remote Sensing Letters*. 2021 May 4;12(5):499-509.

Figures

Figure 1

Average temperature of Iran based on satellite observations in 2019

Figure 2

Average temperature of Iran based on satellite observations in 2020

Figure 3

Iranian average temperature difference based on satellite observations between 2019 and 2020