

## عنوان مقاله:

Modeling, Monitoring and Prediction of Drought in Iran

## محل انتشار:

فصلنامه انرژی و محیط زیست ایران، دوره 10، شماره 3 (سال: 1398)

تعداد صفحات اصل مقاله: 9

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## خلاصه مقاله:

The drought phenomenon is not specific to the region and it affects different parts of the world. One of these areas is Iran in Southwest Asia, which suffered from this phenomenon in recent years. The purpose of this study is to model, analyze and predict the drought in Iran. To do this, climatic parameters (precipitation, temperature, sunshine, minimum relative humidity and wind speed) were used at 30 stations in the period of 29 years (1990-2018). For modeling of TIBI fuzzy index, first, four indicators (SET, SPI, SEB, MCZI) were fuzzy in Matlab software. Then the indices were compared and Topsis model were used for prioritizing areas involved with drought. Finally, Anfis adaptive artificial neural network model was used to predict. Results showed that the new fuzzy index TIBI for classifying drought reflected four of the above indicators with high accuracy. Among these five climatic parameters used in this study, the temperature and precipitation parameters had the most influential effect on the fluctuation of drought severity. The severity of drought was more based on a 6-month scale modeling than 12 months. The highest percentage of drought occurrence was at Bandar Abbas station with a value of 24.3 on a 12-month scale and the lowest was in Shahrekord station with a percentage of 0.36% on a six-month scale. Based on Anfis model and TIBI fuzzy index, Bandar Abbas, Bushehr and Zahedan stations were more exposed to drought due to the TIBI index of 0.62, 0.96 and 0.97, respectively. According to the results in both 6 and 12 months scale, the southern regions of Iran were more severely affected by drought, which requires suitable water management in these areas.

## کلمات کلیدی:

Anfis Model, Drought, Fuzzy, Statistical Evaluation, TIBI Index

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