

عنوان مقاله:

Investigation of the relationship between Mediterranean ocean atmospheric oscillation and drought in Isfahan province

محل انتشار:

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خلاصه مقاله:

As drought intensity and frequency have increased over recent years in Isfahan province, improving water resources risk management is so essential. Identifying the factors that influence in Isfahan precipitation could progress the water recourses risk management. This study is aimed to determine the potential impact of Mediterranean oscillation on drought events of Isfahan province. The correlations between four Mediterranean oscillation indices including: Western Mediterranean Oscillation (WeMO), Mediterranean Circulation Index (MCI), Mediterranean Oscillation Algiers/Cairo (MOac) and Mediterranean Oscillation-Gibraltar/Israel (MOgi) versus Standard Precipitation Index (SPI) in 3, 6 and 12 months timescale in some synoptic stations in Isfahan for the period of the last 20 years (1989-2008) were analyzed separately. The results showed that Mediterranean oscillations during June are related with droughts in Isfahan non-simultaneously. In seasonal timescale, a significant correlation between WeMO index and spring (April-June) drought was found; and MCI, MOac and MOgi indices are correlated with winter (January-March) drought significantly. Correlation between 6 and 12 months SPI and Mediterranean indices were weak. It seems that the strongest impact of Mediterranean oscillation is received in west and south parts of Isfahan. Since there was a long lag time among Mediterranean oscillation indices and drought periods, Mediterranean oscillation indices could be beneficial for Isfahan drought forecasting and improving water recourses risk management. Also, physical mechanism responsible for co-variability of Mediterranean oscillation and Isfahan rainfall are recommended for further study.

کلمات کلیدی:

Ocean-atmospheric oscillation, Mediterranean, Drought, Isfahan, Water Resources Management

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