

عنوان مقاله:

Studying the time lag response of stable isotopes in Middle East precipitation to variations of climatic teleconnection indices

محل انتشار:

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خلاصه مقاله:

Middle East is located in semi-arid and arid region in south -west Asia. Middle East faces water shortage crisis from the early times and therefore studying water resources with accurate methods such as stable isotope technique has great importance. Studying precipitation as important part of the water cycle with stable isotopes technique shows that in addition to the local parameters, regional factors (climatic teleconnection indices) also influence stable isotopes in Middle East precipitation. $\delta^{18}\text{O}$ content in precipitation of Ankara and Antalya in Turkey shows meaningful correlation with SOI and QBO indices, while $\delta^{18}\text{O}$ in Bahrain and Tehran have meaningful correlation with SOI and BEST indices, respectively. Finally studying the time lag response of $\delta^{18}\text{O}$ in precipitation with teleconnection indices using the cross correlation matrix (CCF) showvery long response time between $\delta^{18}\text{O}$ in precipitation of Ankara with QBO indices (23 month), $\delta^{18}\text{O}$ in precipitation of Antalya with SOI indices (23 month), and $\delta^{18}\text{O}$ in precipitation of Tehran (and BEST indices (26 month).

کلمات کلیدی:

isotope, precipitation, Middle East, climatic teleconnection, CCF analysis

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