عنوان مقاله:

Soil moisture and indices affecting soil drought

محل انتشار:

هشتمین کنگره سالانه بین المللی عمران، معماری و توسعه شهری (سال: 1401)

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نویسندگان:

Sadaf Alavi Soltani - *Master's student in remote sensing Engineering, Graduate University of Advanced Technology, Kerman, Iran*

Mohammad Salehi - *Master's student in remote sensing Engineering, Graduate University of Advanced Technology, Kerman, Iran*

خلاصه مقاله:

Although surface and subsurface monitoring play an important role in drought and waterand soil resource management, there still needs to be a database for some land-baseddrought monitoring. Soil moisture in Iran has been measured in a limited area using datafrom ground measurement stations with a limited spatial distribution. Remote sensing hasproven to be an efficient tool for drought monitoring. In this article, indicators directlyand indirectly related to drought were used to monitor drought and improve themanagement of soil resources, including surface soil moisture, subsurface soil moisture,vegetation evapotranspiration, soil evaporation, and soil temperature. In Iran, soilmoisture was monitored at a depth of ۱۰ cm for ۸ years. The monthly average values ofmaximum and minimum soil moisture respectively were ۲۲.۹۱۹ Kg/m۲ and ۱۰.۲۷۹Kg/m۲. Also, soil temperature values at this depth were ۳۰۶.۷۰۱ °K and ۲۸۰.۱۳۵ °Kmoisture. The maximum increase in the soil moisture trend line in ۲۰۱۷ was ۱۴ kg/m۲,which, reached ۲۲ kg/m۲ to ۸ kg/m۲. Due to the inverse relationship between soilmoisture and temperature, soil temperature was ۶.۵ °K, rising from ۲۹۰.۵ °K to ۲۹۷ °K in۲۰۱۷. The minimum decrease in the soil moisture trend line in ۲۰۱۸ was ۳ kg/m۲, which,reached ۱۷ kg/m۲ to ۱۴ kg/m۲. The increase in soil temperature was ۵ °K, rising from ۲۹۲°K to ۲۹۷ °K in ۲۰۱۸. .The findings of this article have valuable implications for themanagement of soil resources

کلمات کلیدی:

Surface and subsurface soil moisture, Vegetation evapotranspiration, Soil evaporation, Soil temperature, Time series, Remote sensing