

Abstract

Evapotranspiration is an important component of the water balance is difficult to measure the actual amount and method of determination is limited. common methods for estimating evapotranspiration generally point and maximum farm covers, if you plan to manage irrigation and water management in agriculture, estimation of actual evapotranspiration in irrigation systems and irrigation management is dependent on the plant is necessary. The use of estimating actual evapotranspiration due to the point of considering the lack of water stress and environmental and meteorological data accuracy is poor. Today, with advances in satellite technology and spatial variability of meteorological parameters and consequently due to evapotranspiration, using methods such as Remote Sensing based methods that consider the changes are more desirable. In this today, data from meteorological stations and station Birjand Mansoor Abad and enjoying the algorithm in the surface energy balance, energy balance components and evapotranspiration to determine the actual and potential Mansour Abad basin were estimate using Landsat 7 ETM⁺ satellite images and then processing the data, the reflection coefficient of land use, land cover and vegetation indices radiation factor NDVI and SAVI, LAI and land surface temperatures were calculated and map the spatial distribution of actual daily evapotranspiration at the regional level was achieved. By comparing the result obtained through remote sensing evapotranspiration with two methods for estimating evapotranspiration (Hargreaves and Penman-Monteith) per year was observed that the results of remote sensing, with an average absolute error 0.22 experimental Hargreaves and Penman-Monteith 0.27 for the experimental method, good match with products derived from empirical methods that indicate the possibility of using remote sensing for estimating evapotranspiration place at different levels basin. In general, estimates of the amount of water needed (evapotranspiration) in different parts of the basin can be compared to the distribution of water and improve irrigation management actions that affect the management of water in the basin.

Key word: Evapotranspiration, Remote sensing, Landsat 7 ETM⁺



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