Abstract

Water balance estimating and the amount of inputs and output terms was have important role in planning for quality and quantity management of water resource. Various study in evaporation field was done in world and was developed very model about this term of water balance. Meteorological measurement method based on the spot, not a good estimate of the evaporation and water balance method can't also be great to have a short-term studies to meet the requirements. Therefore, the use of remote sensing technology has been used increasingly in the hands of this technique as an alternative might have been used in this study. SEBS and SEBAL model based on energy balance is taken into consideration. This technique can complete mentioned shortcomings of evaporation estimation previous approaches. Mentioned algorithms for computing compatible with the development and application in water surface in order to calculate the surface turbulent fluxes, designed and was used. The model input data include relative humidity, air temperature and wind speed combined with energy balance parameters obtained from satellite images in infrared bands, visible and thermal. Chahnimeh fresh water resources of Sistan with specific climatic and regional conditions to prove the methodology of this research was chosen as the study area. Evaporation Obtained from models to validation with real values of daily pan evaporation and water balance method were compared. The coefficient of determination (R^2) and the total mean square error for SEBS and SEBAL model, is respectively (89.0 percent and 0.91 mm) and (56.0 percent and 2.95mm). In addition to these criteria, the most consistent trend of daily evaporation and evapotranspiration amounts of SEBS model with actual observations, show the superiority of this model to obtain accurate results. SEBS model with analytical relations based on temperature information to estimate G, results in more accurate estimation of the spatial and temporal flux evaporation provided.

Keywords: Chahnimeh Reservoirs, Evaporation, Remote sensing, Spatial Evaporation, Surface Energy Balance, Water Body

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Evaluation of Remote Sensing Methods in Order to Estimate Evaporation from Water Bodies Surface

(Case Study: Chahnimeh Reservoirs)

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