Evaluation of SEBAL moldel for Evapotranspiration mapping in Iraq using remote sensing and GlS

ABSTRACT

Evapotranspiration is one of the major parameter in the hydrologic cycle. Standard measurements of this parameter is quite complex due to various factors such as variation of precipitation amount, spatial variation by latitude and longitude and changes in environment and specific site conditions. Although of this complexity, various methods were developed to estimate actual and potential Evapotranspiration such as Surface Energy Balance Algorithm for Land (SEBAL) method. SEBAL model calculates heat latent flux mostly from remotely sensed data. This paper aims to evaluate the SEBAL model for actual Evapotranspirationestimation in Al-babil city in Iraq usinga SEBAL toolbox developed for ArcGIS software. The toolbox was evaluated with two reference actual Evapotranspiration datasets from Al-babil metrological stations. Overall accuracy of (폲2=0.86) for the first dataset on March and (폲2=0.85) for the second dataset on September were achieved. The result of this research indicates that the SEBAL model is effective for estimating actual Evapotranspiration in the studied area.

Keyword: Actual Evapotranspiration; GIS; Remote sensing; SEBAL