

Estimation of Spatially Distributed Evapotranspiration (ET) Using Remotely Sensed Data

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Abstract

Freshwater resources are becoming increasingly limited day by day and policy makers are in demand for new and effective tools for the monitoring of water consumption rates. Remotely sensed thermal-infrared imagery collected by earth resources mapping satellites provides estimates of land-surface temperature that allow mapping of evapotranspiration (ET) at the spatial scales at which water is being used. General estimation methods using land-surface temperature in mapping the surface energy balance for ET used for this study is surface energy balance algorithm for land (SEBAL). Application of SEBAL at a regional scale was performed using Landsat 7 ETM+ and Landsat 8 imagery at the Lucknow region for 2000 and 2017. This study evaluated the potential of using the SEBAL as a means for estimating ET for local and regional scales in Lucknow (Uttar Pradesh). The main objective is to acknowledge the ET change with the changing land use land cover (LULC) in the Lucknow city.

Keywords: Landsat 8, Evapotranspiration, Energy fluxes, SEBAL.