



## Utility of an Automated Thermal-Based Approach for Monitoring Evapotranspiration

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### Abstract

A very simple remote sensing-based model for water use monitoring is presented. The model acronym DATTUTDUT (Deriving Atmosphere Turbulent Transport Useful To Dummies Using Temperature) is a Dutch word which loosely translates as “it’s unbelievable that it works”. DATTUTDUT is fully automated and only requires a surface temperature map, making it simple to use and providing a rapid estimate of spatially-distributed fluxes. The algorithm is first tested over a range of environmental and land-cover conditions using data from four short-term field experiments and then evaluated over a growing season in an agricultural region. Flux model output is in satisfactory agreement with observations and established remote sensing-based models, except under dry and partial canopy cover conditions. This suggests that DATTUTDUT has utility in identifying relative water use and as an operational tool providing initial estimates of *ET* anomalies in data-poor regions that would be confirmed using more robust modeling techniques.

**Key words:** remote sensing, water use monitoring, temperature index scheme, automated, operational.