



Remote sensing estimation of atmospheric and land surface parameters for evapotranspiration calculation

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Accurate estimates of evapotranspiration are important to simulate the processes in the Earth-Atmosphere system that controls both climate and hydrological processes. Because of land surface heterogeneity, Earth observations constitute the only source of information capable of providing a full spatial prescription of land surface parameters affecting evapotranspiration. In contrast, the availability of representative meteorological data often constraints the calculation of evapotranspiration prediction at larger scale, even in countries like Denmark which has a dense network of weather stations but a large spatial variation in solar irradiation. Now, the availability of new satellite products from the MODIS sensors can be used to resolve the diurnal variation in environmental driving parameters such as incoming solar radiation, surface temperature, air temperature and air humidity. This is possible when data from late morning and afternoon satellite passages are used in combination. The present study demonstrates the novel capability of satellite remote sensing to assess atmospheric and land surface parameters for evapotranspiration modeling.