



Parameter	MODIS Product	Spatial Resolution
Land surface temperature/emissivity	MOD/MYD 11A1	500 m
Surface reflectance/sun elevation angle	MOD/MYD 09GA	1000 m
Normalized difference vegetation index	MOD/MYD 13Q1	250 m
Leaf area index	MOD/MYD 15A2	1000 m
Land cover	CD 12Q1	500 m

Comparisons of Four Methods for Evapotranspiration Estimates in Jordan

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MODIS 16 ET Product

The third method was based on the 1-km land surface ET product from MODIS, which was calculated using MODISobserved land cover and photosynthetically active radiation. Data was processed using an modified version of the ArcGIS MODIS Toolbox developed by UT Austin.

The fourth method was based on the SWAT model, which combines the Penman-Monteith equation and vegetation growth to estimate daily ET at the watershed scale.

The results show substantial differences in both magnitude and spatiotemporal patterns of ET estimates across Jordan from the four methods. Such differences were particularly evident in the Highlands region, where irrigation plays a critical role in local water balance. Results also suggest that data of land cover and land surface temperature are among major sources of uncertainty in estimating ET rates. Although it is difficult to conclude which method was more reliable due to the limited availability of validation data, the results suggest caution in developing and interpreting ET estimates in this arid environment.

- heterogeneous region

- ground observations

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Preliminary Results

Future Work

Estimation of land surface temp in cloud-covered areas Methods for identifying hot/cold pixels in climatically

Inclusion of night ET to improve 24-hour ET estimates Inclusion of district-level cropping and rotation schemes Spatial validation of satellite-based ET estimates against

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