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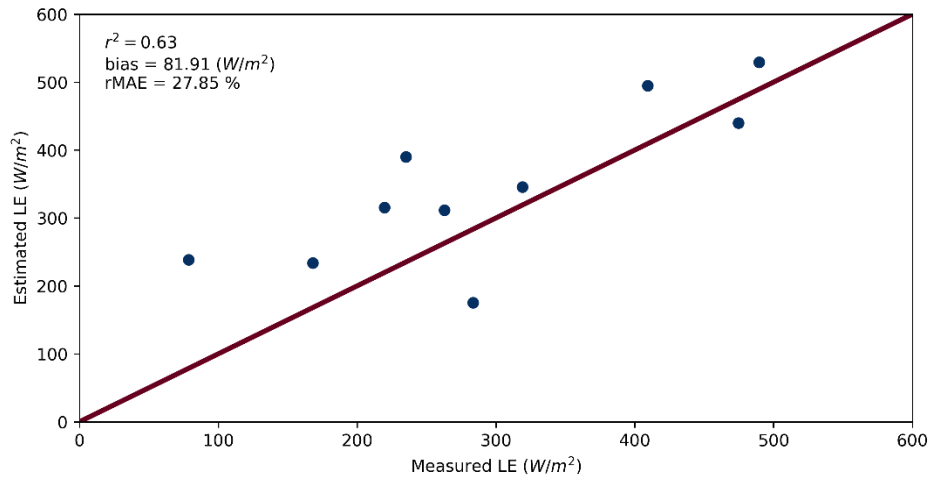
*Supplement of*

## **Mapping groundwater abstractions from irrigated agriculture: big data, inverse modeling, and a satellite–model fusion approach**

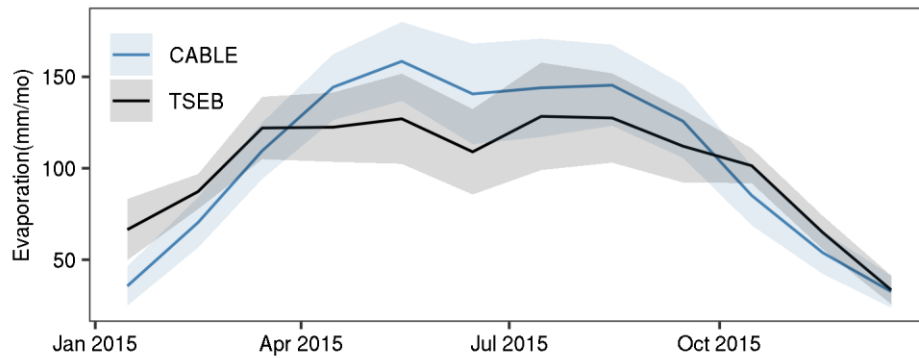
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**Figure S1: Evaluation scatterplot of measured vs. estimated LE fluxes using the series-TSEB model approach over an irrigated maize field (Tawdeehiya farms) in 2016.**



**Figure S2: Comparison of monthly evaporation between the satellite-based estimates (TSEB) and hydrological model runs (CABLE) with irrigation estimated by the model inversion strategy. The line represents the monthly average over all agricultural fields in Al Jawf, while the shaded area shows the average value  $\pm$  the standard deviation.**