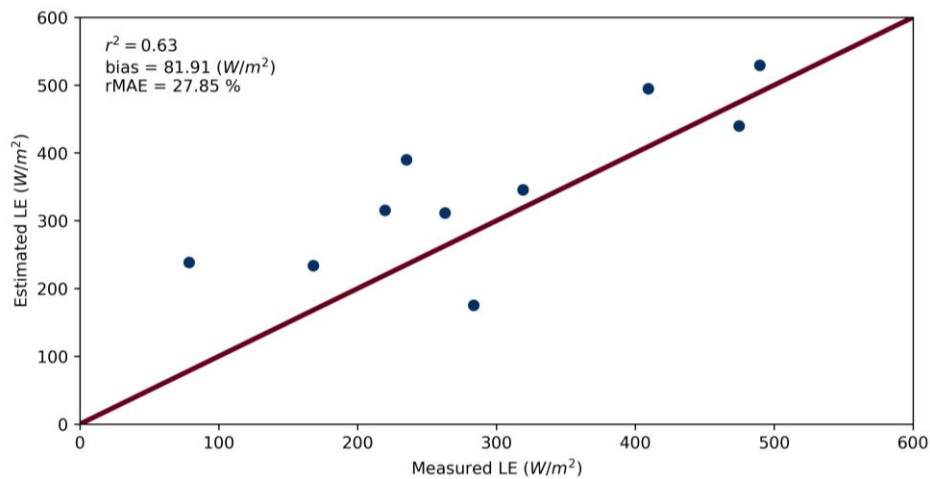


**Figure S1: Comparison of monthly evaporation between the satellite-based estimates (TSEB) and hydrological model runs (CABLE) with irrigation estimated by the model inversion strategy. The line represents the monthly average over all agricultural fields in Al Jawf, while the shaded area shows  $\pm$  the standard deviation.**



**Figure S2: Evaluation scatterplot of measured vs. estimated LE fluxes using the series-TSEB model approach over an irrigated maize field (Tawdeehiya farms) in 2016.**