

Figure R1 Comparison of the estimated (3T model) and measured ET values in 2011 (daily ET from EC tower and annual ET from water balance equation). The left panel shows ET estimates using Köppen-Geiger climate regimes with 31 subregions at daily (a) and annual (c) scales, respectively, whereas the right panel is the same but with ET estimates using 90-110 subregions.

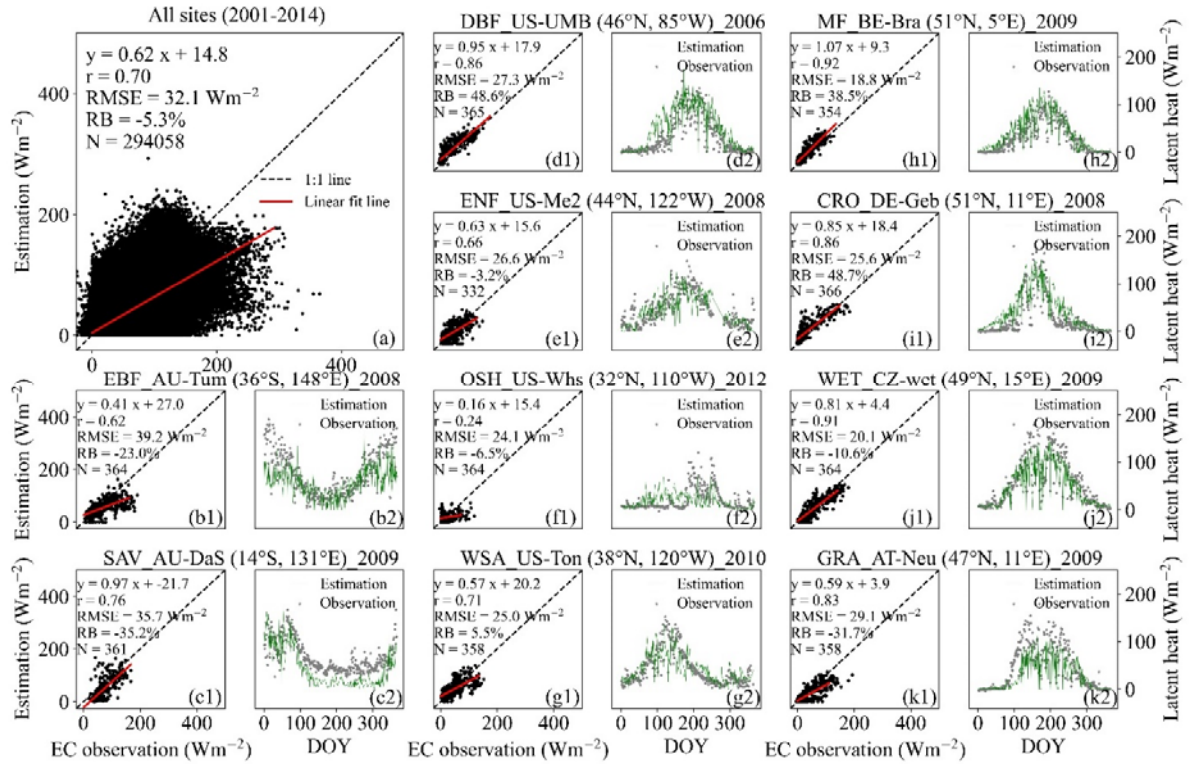


Figure R2. The temporal variations in daily ET estimated from the 3T model (green line) using EC observations (gray dot). The scatter plot between EC observations and ET estimates for one selected year (with RMSE values at average level) at ten EC sites covering various biomes: (a) all 126 sites, (b1-2) EBF_AU-Tum (36°S, 148°E) in 2008, (c1-2) SAV_AU-DaS (14°S, 131°E) in 2009, (d1-2) DBF_US-UMB (46°N, 85°W) in 2006, (e1-2) ENF_US-Me2 (44°N, 122°W) in 2008, (f1-2) OSH_US-Whs (32°N, 110°W) in 2012, (g1-2) WSA_US-Ton (38°N, 120°W) in 2010, (h1-2) MF_BE-Bra (51°N, 5°E) in 2009, (i1-2) CRO_DE-Geb (51°N, 11°E) in 2008, (j1-2) WET_CZ-wet (49°N, 15°E) in 2009, (k1-2) GRA_AT-Neu (47°N, 11°E) in 2009.

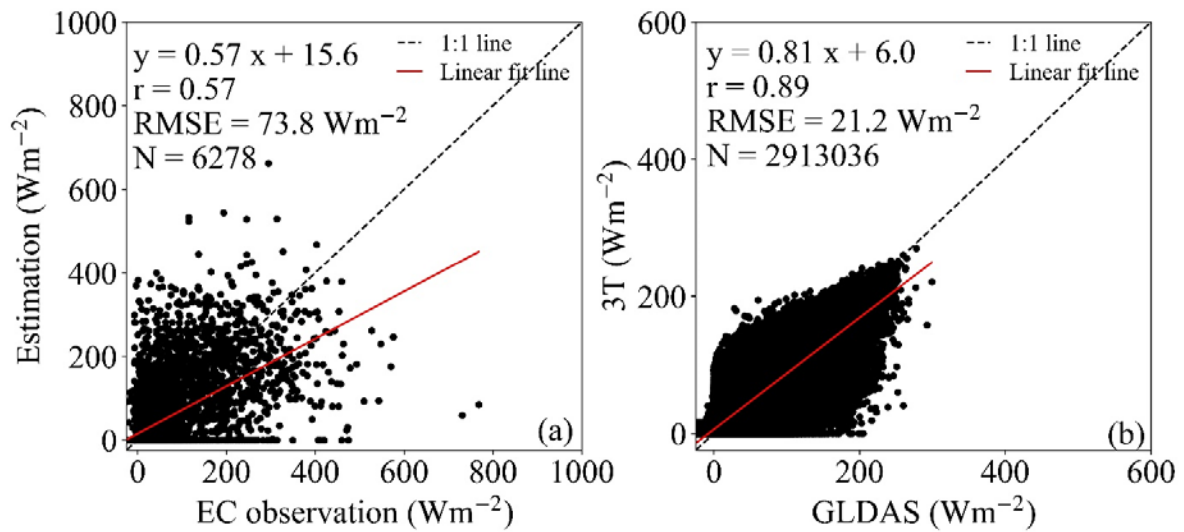


Figure R3. Validation of the 3T model-based ET estimates at 3-hour temporal scale: (a) comparison with the EC observation and (b) comparison with GLDAS ET. Data were selected from the 15th day of each month in 2011.

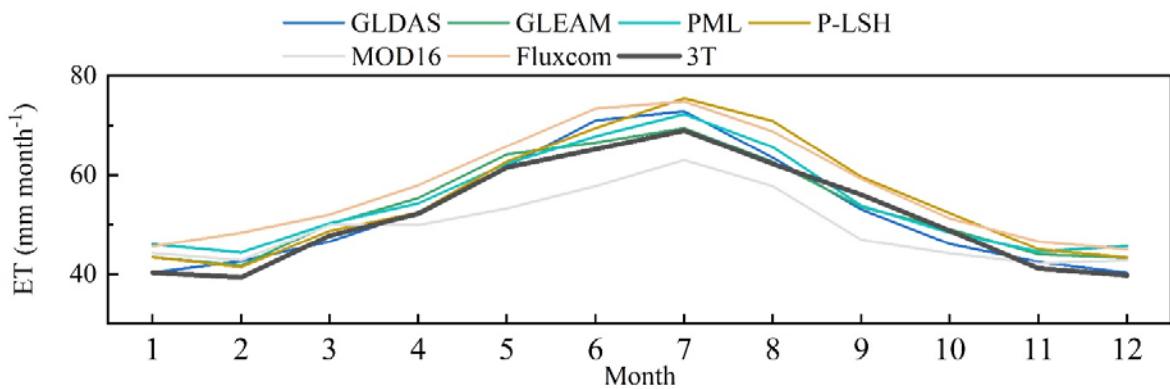


Figure R4. Monthly variation of the multi-year (2003–2013) mean ET estimated with the 3T model (black line) and 6 ET products in vegetated areas (mainly excluding Greenland, Antarctica and desert areas, according to Jung et al. (2019)).