

Supplement of

Observed Water- and Light-Limitation Across Global Ecosystems

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10 S1. LAI time-series and climatologies

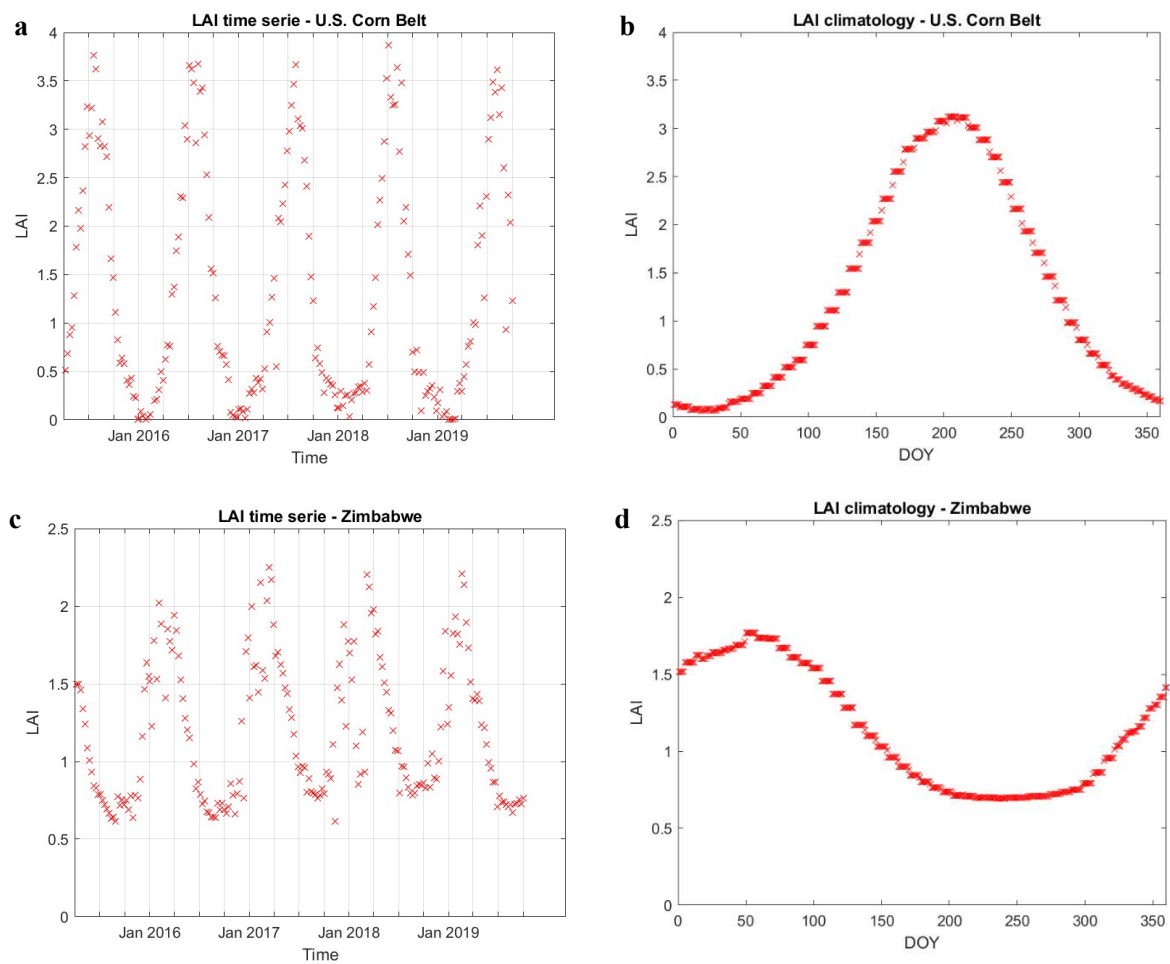
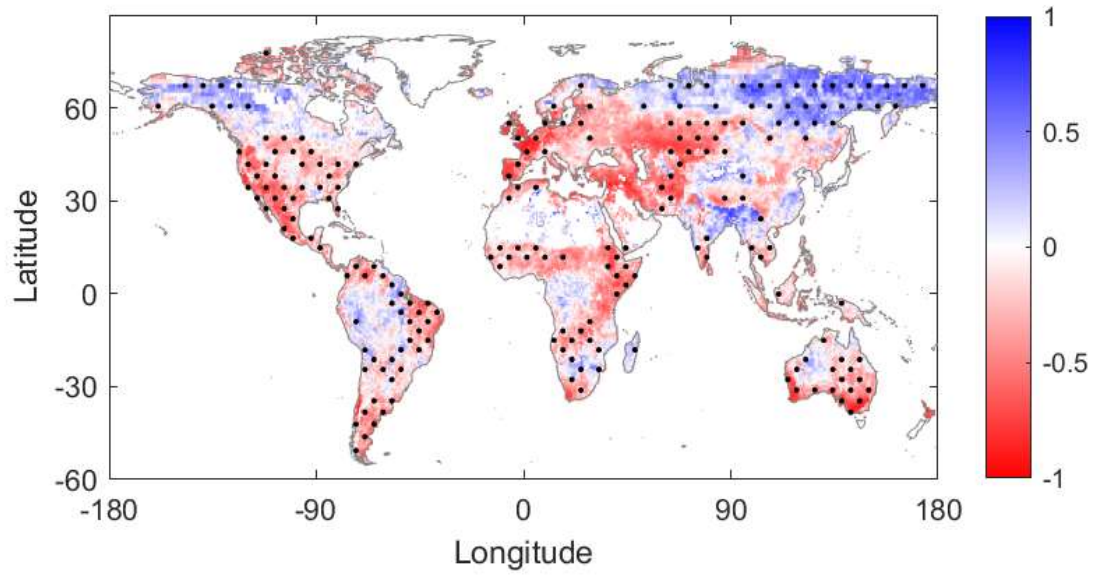


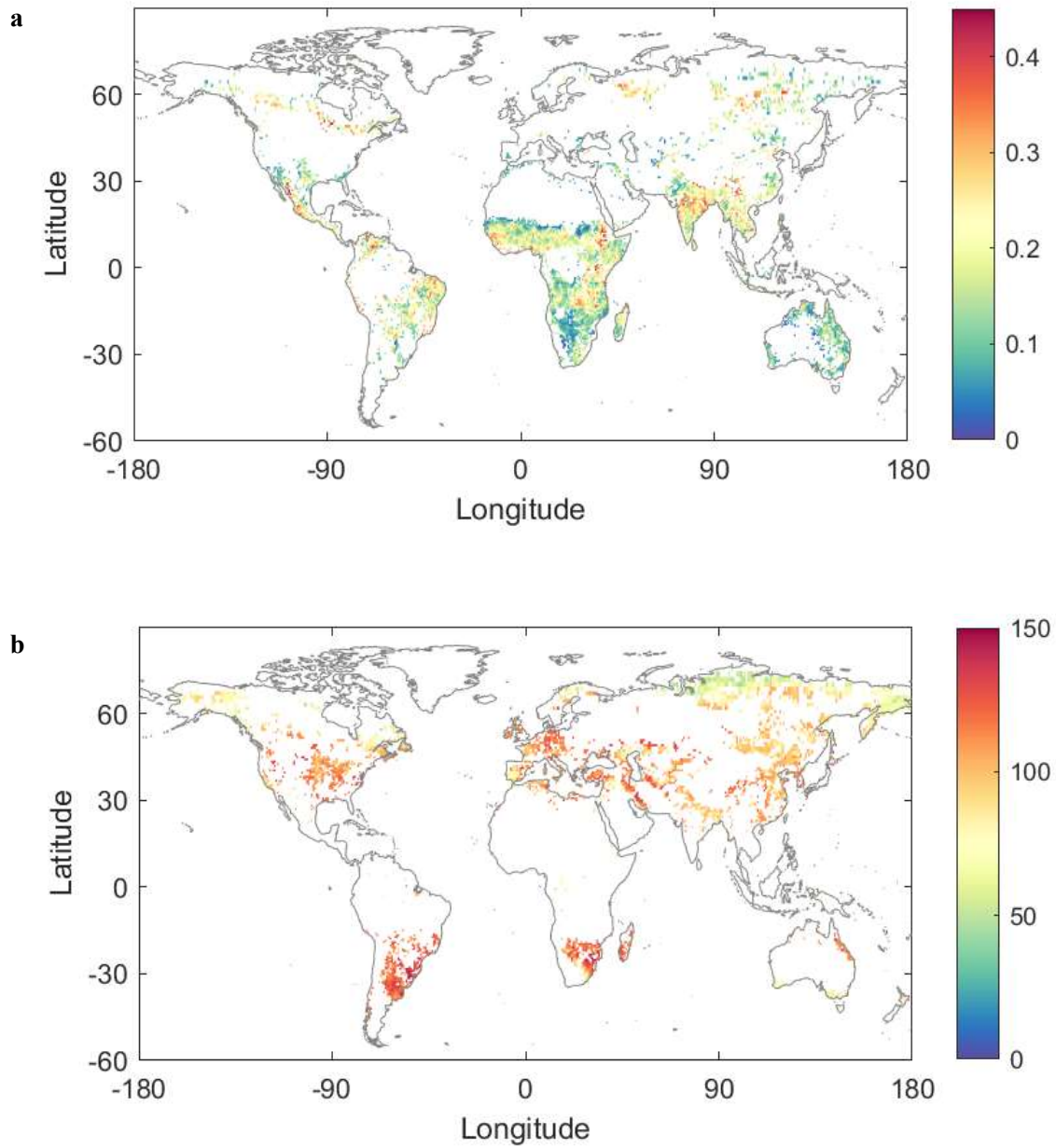
Figure S1: Samples of LAI time-series and climatologies in the U.S. Corn Belt region with a phenological peak on DOY 203 (a,b) and Zimbabwe (Southern Africa) with a phenological peak on DOY 50 (c,d).

S2. Growing season Pearson correlation coefficient



20 **Figure S2: Growing season Pearson correlation coefficient between SMAP soil moisture (SM) and MERRA-2 photosynthetically active radiation (PAR). Regions of statistical significance ($P < 0.05$) are indicated with stippling.**

S3. Spatial distribution of the model threshold



50 Figure S3: Spatial distribution of the model threshold for the (a) SIF-SM [$\text{m}^3 \text{m}^{-3}$] and (b) SIF-PAR [W m^{-2}] relationships. White shading denotes areas where the SIF-SM (or PAR) correlation is not positive—i.e., where SIF is not increasing with SM (or PAR)—or areas where no collocated SIF, SM, and PAR records are available.