



Supplement of

Implementation and evaluation of the unified stomatal optimization approach in the Functionally Assembled Terrestrial Ecosystem Simulator (FATES)

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Supplementary materials



and (d) T_a for the three model setups: BWB (blue), MED-B (red), and MED-default (black).



Fig. S2. Overall model evaluation results from February to May for (a) net photosynthesis (A_{net}) and (b) stomatal conductance (g_{sw}) , with linear fitting against field measurements for the MED model (blue) and the BWB model (red). Modeled results are the means across the ensemble runs. Observations are means across different species.



Fig. S3. Annual cycle of modeled soil water content (blue lines) and corresponding ERA5 reanalysis data (orange lines) for different soil layers.



Fig. S4. Change of leaf temperature (T_1) to scenarios (a) Radiation, (b) CO₂, (c) *VPD*_a, and (d) T_a for the "MED-B" model setup. Results for "BWB" and "MED-default" were not shown because they were similar to those for "MED-B".



 T_a for the three MED model setups with different g_0 values. g_0 is in μ mol m⁻² s⁻¹.



the three MED model setups with different g_0 values. g_0 is in μ mol m⁻² s⁻¹.



the three MED model setups with different g_0 values. g_0 is in μ mol m⁻² s⁻¹.



Fig. S8. The gross primary productivity (GPP) to scenarios (a) Radiation, (b) CO₂, (c) *VPD*_a, and (d) T_a for the three MED model setups with different g_0 values. g_0 is in μ mol m⁻² s⁻¹.