



Supplement of

Sensitivity of a mechanistic photosynthesis model to tropical Andean species and environments

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Figure S1. Comparison between observed and modeled photosynthesis and modeled diurnal variation of net CO₂ assimilation for montane and lowland species. (A) Relationship between observed and modeled daily carbon assimilation (A_{net}) showing a strong agreement between both estimates. (B) Modeled diurnal variation of photosynthesis for montane species under environmental conditions at the 14°C site (blue) and the 22°C site (red). (C) Modeled diurnal variation of photosynthesis for lowland species under the same environmental conditions (blue = 14°C; red = 22°C).

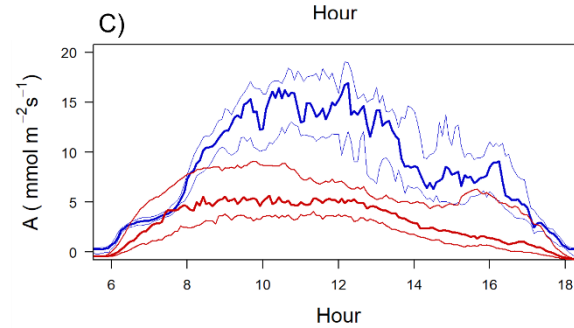
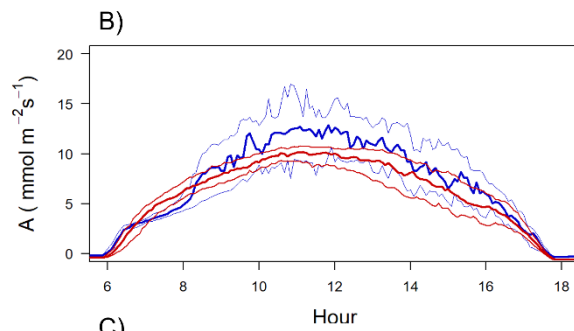
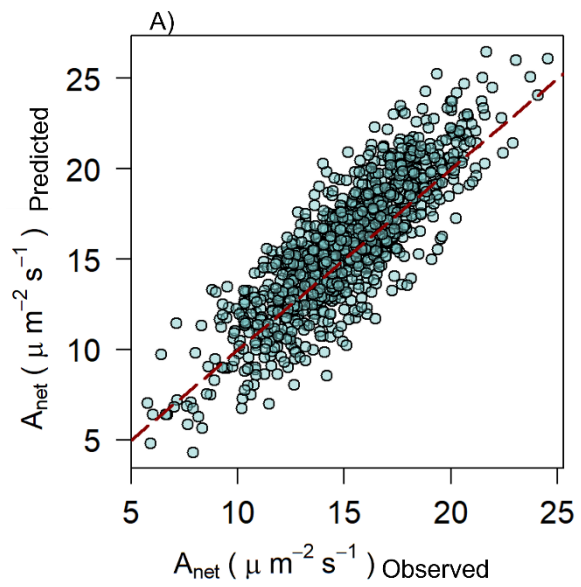


Figure S2. Boxplot of simulated parameter distribution of analysed species for V_{cmax} (a), J_{max} (b) and g_1
30 (b). Blue boxes represent montane species, and red boxes represent lowland species and the 14°C site (1)
and at the 22°C site (2).

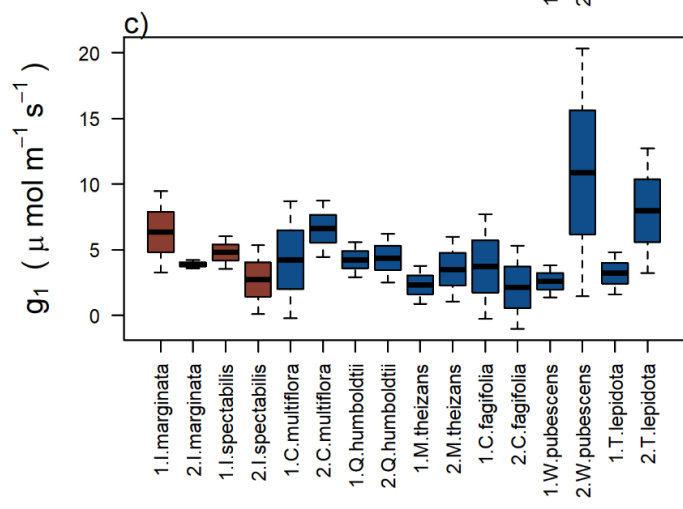
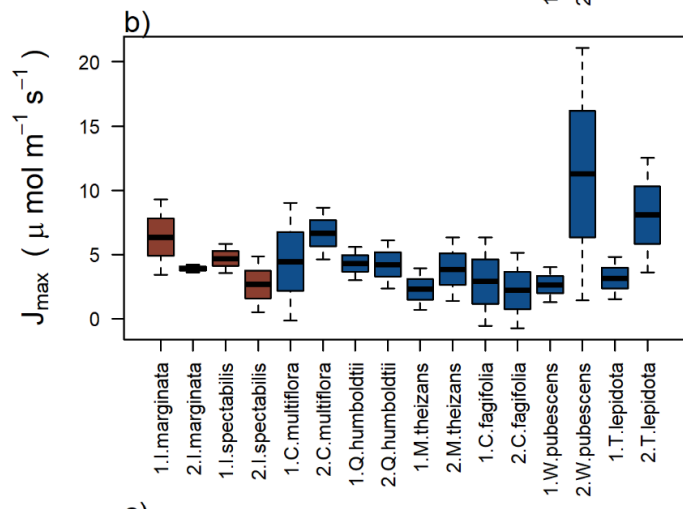
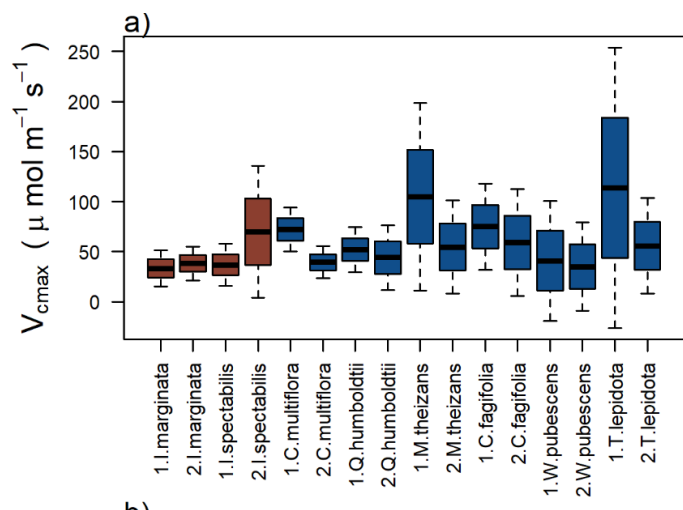
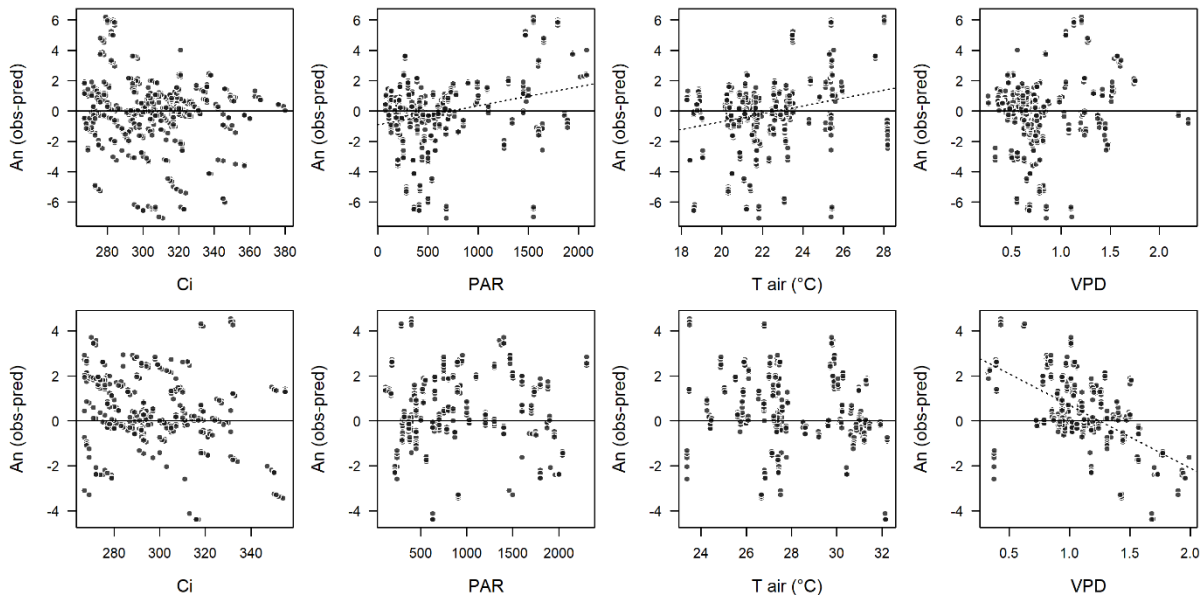


Figure S3. Residuals of observed and predicted leaf-level photosynthesis relative to intercellular CO₂ concentration (C_i), photosynthetic active radiation (PAR), air temperature (T_{air}), and vapor pressure deficit (VPD) for simulations at the 14°C (top row) and 22°C sites (bottom row). The plots also show the range of environmental conditions used in the simulations and sensitivity analyses: C_i = 50–1200 μmol mol⁻¹, PAR = 0–2000 μmol m⁻² s⁻¹, T_{air} = 10–30°C, and VPD = 0.2–2.5 kPa.



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