Updated 10/13/2021 (Julien)

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| --- | --- | --- | --- |
| Reference | Contact | Data availability | Fitting method |
| (Doughty *et al.*, 2011) | chris.doughty@ouce.ox.ac.uk | Not available | Sharkey 2007 |
| (Sexton *et al.*, 2021) | acousins@wsu.edu | https://zenodo.org/record/4480331#.YBSNFSMrJdh | Sharkey 2007 |
| (Barnes *et al.*, 2017) | mallorybarnes@email.arizona.edu | https://osf.io/zur8e/ | fitaci (plantecophys) |
| (Coast *et al.*, 2019) | owen.atkin@anu.edu.au | (Not relevant directly for Vcmax, but maybe good contact) |  |
| (Dechant *et al.*, 2017) | dechant.benjamin@gmail.com | Not available | DEoptim (A-Ci), manual point selection? |
| (Meacham-Hensold *et al.*, 2019) | Carl.bernacchi@ars.usda.gov | Available in sup mat. Without raw gasex data. | Sharkey 2007 |
| (Yendrek *et al.*, 2017) | lisa.ainsworth@ars.usda.gov | Available in sup mat. Without raw gasex data | Other (hyperbolar function) |
| (Qian *et al.*, 2019) | liuly@radi.ac.cn | Not available | fitaci (plantecophys) |
| (Kothari *et al.*, 2021) | shan.kothari@umontreal.ca | (Not relevant directly for Vcmax, but maybe good contact) |  |
| (Wang *et al.*, 2020) | [kaiyug@illinois.edu](mailto:kaiyug@illinois.edu) shengwang12@gmail.com | Available in sup mat. Without raw gasex data | Other (hyperbolar function) |
| (Khan *et al.*, 2020) | John.Evans@anu.edu.au | Upon request | FvCB model but not detailed |
| (Cheng *et al.*, 2020) | rui.cheng@caltech.edu franken@caltech.edu | (Not relevant directly for Vcmax, but maybe good contact) |  |
| (Fu *et al.*, 2019) | Carl.bernacchi@ars.usda.gov | Available from Meacham et al. 2019 | Sharkey 2007 |
| (Albert *et al.*, 2018) | [lalbert@email.arizona.edu](mailto:lalbert@email.arizona.edu) saleska@email.arizona.edu | On line |  |
| (Wu *et al.*, 2019) |  | On line |  |

Other contacts

Alvaro Sanz-Saez azs0223@auburn.edu

References

**Albert LP, Wu J, Prohaska N, Camargo PB de, Huxman TE, Tribuzy ES, Ivanov VY, Oliveira RS, Garcia S, Smith MN, *et al.*** **2018**. Age-dependent leaf physiology and consequences for crown-scale carbon uptake during the dry season in an Amazon evergreen forest. *New Phytologist* **219**: 870–884.

**Barnes ML, Breshears DD, Law DJ, Leeuwen WJD van, Monson RK, Fojtik AC, Barron-Gafford GA, Moore DJP**. **2017**. Beyond greenness: Detecting temporal changes in photosynthetic capacity with hyperspectral reflectance data. *PLOS ONE* **12**: e0189539.

**Cheng R, Magney TS, Dutta D, Bowling DR, Logan BA, Burns SP, Blanken PD, Grossmann K, Lopez S, Richardson AD, *et al.*** **2020**. Decomposing reflectance spectra to track gross primary production in a subalpine evergreen forest. *Biogeosciences* **17**: 4523–4544.

**Coast O, Shah S, Ivakov A, Gaju O, Wilson PB, Posch BC, Bryant CJ, Negrini ACA, Evans JR, Condon AG, *et al.*** **2019**. Predicting dark respiration rates of wheat leaves from hyperspectral reflectance. *Plant, Cell & Environment* **42**: 2133–2150.

**Dechant B, Cuntz M, Vohland M, Schulz E, Doktor D**. **2017**. Estimation of photosynthesis traits from leaf reflectance spectra: Correlation to nitrogen content as the dominant mechanism. *Remote Sensing of Environment* **196**: 279–292.

**Doughty CE, Asner GP, Martin RE**. **2011**. Predicting tropical plant physiology from leaf and canopy spectroscopy. *Oecologia* **165**: 289–299.

**Fu P, Meacham-Hensold K, Guan K, Bernacchi CJ**. **2019**. Hyperspectral Leaf Reflectance as Proxy for Photosynthetic Capacities: An Ensemble Approach Based on Multiple Machine Learning Algorithms. *Frontiers in Plant Science* **10**.

**Khan HA, Nakamura Y, Furbank RT, Evans JR**. **2020**. Effect of leaf temperature on estimating physiological traits of wheat leaves from hyperspectral reflectance.

**Kothari S, Beauchamp-Rioux R, Laliberté E, Cavender-Bares J**. **2021**. Reflectance spectroscopy allows rapid, accurate, and non-destructive estimates of functional traits from pressed leaves.

**Meacham-Hensold K, Montes CM, Wu J, Guan K, Fu P, Ainsworth EA, Pederson T, Moore CE, Brown KL, Raines C, *et al.*** **2019**. High-throughput field phenotyping using hyperspectral reflectance and partial least squares regression (PLSR) reveals genetic modifications to photosynthetic capacity. *Remote Sensing of Environment* **231**: 111176.

**Qian X, Zhang Y, Liu L, Du S**. **2019**. Exploring the potential of leaf reflectance spectra for retrieving the leaf maximum carboxylation rate. *International Journal of Remote Sensing* **40**: 5411–5428.

**Sexton T, Sankaran S, Cousins AB**. **2021**. Predicting photosynthetic capacity in tobacco using shortwave infrared spectral reflectance (T Lawson, Ed.). *Journal of Experimental Botany* **72**: 4373–4383.

**Wang S, Guan K, Wang Z, Ainsworth EA, Zheng T, Townsend PA, Li K, Moller C, Wu G, Jiang C**. **2020**. Unique contributions of chlorophyll and nitrogen to predict crop photosynthetic capacity from leaf spectroscopy (T Lawson, Ed.). *Journal of Experimental Botany*.

**Wu J, Rogers A, Albert LP, Ely K, Prohaska N, Wolfe BT, Oliveira RC, Saleska SR, Serbin SP**. **2019**. Leaf reflectance spectroscopy captures variation in carboxylation capacity across species, canopy environment and leaf age in lowland moist tropical forests. *New Phytologist* **224**: 663–674.

**Yendrek CR, Tomaz T, Montes CM, Cao Y, Morse AM, Brown PJ, McIntyre LM, Leakey ADB, Ainsworth EA**. **2017**. High-Throughput Phenotyping of Maize Leaf Physiological and Biochemical Traits Using Hyperspectral Reflectance. *Plant Physiology* **173**: 614–626.