

Interactive comment on “Thermal acclimation of leaf photosynthetic traits in an evergreen woodland, consistent with the co-ordination hypothesis” by Henrique Fürstenau Togashi et al.

Anonymous Referee #2

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General comments

The authors have performed a suite of gas exchange measurements and leaf biochemical analyses in a suite of species across two seasons. The novel angle to the paper is to present this data in the light of the coordination hypothesis. The work is well done and interesting.

Specific comments

My main comment is that the discussion is very thin. It could use more substance and less reiterating the results. What do you make of the considerable spread in the data? Why do many species in Figure 6 not show the expected response, even if the pooled

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data does? There's a lot more here to discuss than is currently covered.

There are a number of studies that have measured V_{cmax} and J_{max} at multiple times across a season in the literature (Baldocchi has a few, for example). These should be acknowledged in the intro. Similarly, there should be a citation to Way and Yamori 2013 who found no change in $V_{\text{cmax}25}$ in a meta-analysis of plants grown at different temperatures.

Why was R_{dark} measured after only 5 mins in the dark? This is usually measured after at least 20 and often 30 minutes of darkness to get a true estimate of dark respiration.

What VPD were the measurements made at? If the summer VPD is higher, g_s will be reduced, which will lower the C_i/C_a ratio, but this isn't necessarily a temperature effect per se.

Figure 2 - why were the fits forced through the origin and how does this affect the slopes? Is it a minimal effect?

Lastly, while I appreciate the use of the log-transformed data to get linear slopes, I'd like to see the "real" data, at least in the SI. This makes it much easier to see the values measured and compare the data with the majority of other studies that report V_{cmax} and J_{max} values against leaf temperature.

Technical comments

Page 2, Line 13 - please clarify what "these" refers to - V_{cmax} and J_{max} , yes?

Page 9, Line 7 - the relationship between C_i/C_a and photosynthetic capacity could also be because higher photosynthetic capacity (at a constant g_s) reduces C_i . Cause and effect can't be determined.

If all the gas exchange is determined with a Licor IRGA, how are the parameters being reported in units of electrons and O_2 ? J_{max} and R_{dark} should be in units of CO_2 per area per time.

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