# The variation of photorespiration among seven temperate tree species

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Main question ideas:

* How does photorespiration vary across temperate tree species?
* Do temperate tree species vary in the response of photorespiration to temperature?

# Results

*There are multiple things we can do with the data, therefore I have put some of the main ideas for figures, analyses and different directions to take the paper in below.*

* 1. The fundamentals: This will be done either way. Simply showing the breadth of variation in temperate trees across temperatures and making the case for how this has not been done before and how it is not being represented in the literature or ESMs global vegetation models, etc.. This will probably be best represented with the simpler figures of Anet, Rp and phi plots across temperature, as well as the boxplot for extant literature compared to ours. Although, we could add some of the aspects mentioned below. We should also include all of the growth chamber data we have both from the technical training last year and Aghoratm measurements. Having data for crops (beans and peas) would just be beneficial to not only the comparisons of rates but also to strengthen our case that the instrument/our method is not bias (perhaps).
* 2. Light use efficiency and methodological comparison: This can either be incorporated as a small or larger piece. Inclusion of Anet vs ETR calculations of Rp for the species to see how it differ and by plotting ETR and Anet across temp in the same graphic, we can see that relationship between the two will be slightly offset. Thus, depending on which measurement is used for calculating Rp, the rates one gets can be very different, which also may explain some of the differences we see in the literature as there is no consensus on which method most accurately represents Rp. (Imo Anet). Furthermore, the ratio of Anet to ETR can potentially be used to extrapolate and model photorespiration and how it changes with temperature.
* 3. Modelling: This would probably be a separate paper altogether, but it would be a great paper (imo). Using our values and incorporating them into the model (FvCB) to see the effects of the variation we see for the temperate trees. We could model a bunch of stuff, for example: how this variation affects current models, modelling future responses to increases in temperature, modelling scenarios of extreme events/more common heat waves and their impact on photosynthesis.