

Reviewer 1 comment:

The authors use additional vegetation/leaf level measurements of photosynthesis and conductance to strengthen their assertions of flux dynamics, although the discussion of these results feels rather like a tangential addition. These findings could be more strongly incorporated into the discussion of differences in fluxes from old and young leaves and into the discussion of the influence of diurnal cycles and hysteresis on seasonal trends.

Response:

We will add more discussion and citations in the discussion.

Reviewer 1 comment:

The work of A. Griebel on anisohydricity induced by mistletoes in these ecosystems could be drawn upon in greater detail during the discussion of leaf specific measurements and trends in seasonal response to moisture availability as it is likely as highly relevant to ecosystem carbon dynamics as it is to water dynamics.

Response:

Thank you for this suggestion. We would like to include discussion of the effects of biotic disturbance by mistletoe at our site, but these data are not yet publicly available. Including more detailed leaf-level results is beyond the scope of this manuscript.

Reviewer 1 comment:

The authors conclude that diurnal patterns of NEE, GPP, and ER have central roles in determining the seasonal carbon source/sink dynamics, but a stronger analysis would significantly bolster this claim – a wavelet coherence analysis of the time series could be an informative addition that would support this conclusion more thoroughly.

Response:

Thank you for this suggestion. We will conduct a wavelet coherence analysis to assess the coherence between GPP and D during the manuscript revision process. We will include this figure if it provides additional insights into the processes regulating these fluxes. We need to make sure to avoid circularity of reasoning between other drivers such as temperature and NEE or ER because temperature was used as a driver in the gap-filling process.

Reviewer 1 comment:

A more complete discussion of the old and young leaf-level data would likewise improve support for the conclusion that GPP was limited by leaf age in the summer. Following these additions, strong conclusions regarding the influence of global climate change on the future carbon exchange in these forests can be drawn.

Response:

Thank you for this suggestion. We are in the process of retrieving relevant leaf-level gas exchange data that accounts for differences in leaf age. If successful, this data will allow us to make stronger inferences about the mechanisms limiting GPP at the site.

Reviewer 1 comment:

Lastly, while this paper makes a significant contribution without it, an analysis of GPP in comparison to solar induced fluorescence (SIF) which has been recently shown as a better proxy for GPP than NDVI may prove very interesting.

Response:

Thank you for this suggestion. At present, this analysis is beyond the scope of our work, but it will be considered for future analyses.

Reviewer 1 comment:

L243: Were leaves actually measured at 1.5km height as this sentence suggests? From what light environment were measured leaves collected?

Response:

Thank you for pointing out the typo, it has been corrected.