

Associate Editor comments:

Thank you kindly for your excellent responses and patience. I was able to confirm that reviewer 1 has approved your changes. The reviewer asked to make one minor comment: "In the ORCHIDEE-COS version, the decrease of light availability is represented only within the canopy. It does not compute the variables that would be required to represent a vertically varying VPD." Please review this with reference to lines L153-155 in the updated manuscript and advise if you will make any minor adjustment. Otherwise, I am happy to inform you the manuscript will be accepted for publication.

Author response:

We thank reviewer #1 and the associate editor for the swift turnaround time. We thank reviewer #1 for clarifying that the ORCHIDEE model does not represent the vertical within-canopy VPD profile and that our statement was thus incorrect. We have reformulated l. 153-156 to: "In this comparison it should be noted that ORCHIDEE integrates LRU over the depth of the plant canopy. PAR availability, together with VPD the major driver of short-term variability in LRU, typically decrease with canopy depth and since LRU is negatively related to PAR (e.g. Kooijmans et al., 2019; Kohonen et al., 2022), canopy-integrated LRU is expected to be larger than leaf-scale LRU at the top of the canopy (Sun et al., 2022)."

No other changes have been made to the manuscript.

On behalf of all co-authors,

Georg Wohlfahrt