

Dear editor,

Please find enclosed our revised manuscript and supplement. We have tried to improve our original manuscript as much as possible by taking into account all the recommendations. We sincerely hope that you are satisfied with our changes.

Concerning your minor comments on the discussion :

Discussion with referee #1

1. Your reply to the comment on line 15:

I do not think “veinated” is a common word. Can you add a few words for explanation, may be in parentheses?

We agree and we rephrased to “leaves with more and more veins”.

Discussion with referee #2

2. You reply to the comment on title:

I agree to modify the title, but is ‘paleo-traits’ the best word?

As our purpose is to link fossil proxies to the modeled vegetation parameterization, we think that paleo-traits word seems appropriate. Nevertheless, we can propose an alternative if you think that “paleo-traits” is not clear enough : “The Cretaceous physiological adaptation of angiosperms to a declining pCO₂: a modeling approach based on past leaf hydraulic and photosynthetic capacities”

3. You reply to the comment on line 110:

As long as I know, the third term of biochemical photosynthesis model is related to triose phosphate limitation (for substrate transportation). A recent study (Rogers et al., 2021) assessed critically this term, being in line with your decision. Just for your information.

Thank you for this comment, this study is very interesting.

4. Your reply on Figure 3:

In the new Figure 3, ‘bare soil’ is shown by dark green. I think it’s confusing with other forest biomes. Also, ‘C3 grass’ may be ‘(Cretaceous) savannas’, according to your reply to the comment on line 222.

Sorry for the confusing colors between bare soil and forest biomes. Now you can see that we have drawn bare soil in very light yellow.

Figure 3 shows the dominant ORCHIDEE PFT but not biomes as Figure 6 in Sewall et al., (2007) already shows biomes distribution with savannas. To make it clearer we add sentences lines 201-202 in the manuscript : “Figure 3 shows only the dominant PFT, but several PFTs can be present in a pixel. For instance, regions indicated as C3 grass are savannas with a fraction of trees (Table S1)” and we explain our choices in the supplement after Table S1.”

Thank you again for your consideration.

Sincerely yours,

Julia Bres and co-authors.