Interactive comment on “Climate simulations and pollen data reveal the distribution and connectivity of temperate tree populations in eastern Asia during the Last Glacial Maximum” by Suzanne Alice Ghislaine Leroy et al.

Anonymous Referee #1

This paper focuses on the past climate estimation for Eurasia for the Last Glacial Maximum (LGM) using climate modeling, and then simulates the potential distribution for the deciduous-boreadleaved trees by combining these estimated climatic limits. Finally, the potential refugia of the deciduous-boreadleaved trees are concluded and assessed by the pollen data. Generally, the manuscript is well organized, I would recommend this manuscript for publication in Climate of The Past. However, it needs to be improved before it can be accepted, and I do have comments and suggestions hereafter.

1) There are many literatures at least few of them published in English about the glacier refugia in East Asia, including that based on modeling, pollen mapping, and phylogenetic data, for instance, biome modeling by Anne Dallmeyer, Jian Ni. In this manuscript, authors cited too few literatures about the previous studies in East Asia. Authors should add and discuss them in this manuscript.
2) The weaker impact of LGM climate on vegetation in East Asia than European should be caused partly by the absence of continental ice sheet. Authors should add discussion about that.
3) Why the authors excluded *Betula*, *Alnus* and *Fagus*? They are quite important summer-green and broadleaf pollen taxa in pollen spectra from East Asia. Authors should explain that. In addition, in the list of pollen names, what is represented by “others”?
4) In this manuscript, there are a lot of results are marked as "(not show)", why not present them as an appendix?
5) There are some sites from the South China behave pollen data during the LGM in the dataset of Cao et al. (2013), why authors presented only few of them?
6) The conclusion is quite long, and some content should belong to the results or discussions parts.