

Geosci. Model Dev. Discuss., referee comment RC1
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Comment on gmd-2021-290

Anonymous Referee #1

Referee comment on "Analyzing the PMIP4-CMIP6 ensemble: a workflow and tool (pmip_p2fvar_analyzer v1)" by Anni Zhao et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2021-290-RC1>, 2021

Review comments on "Analyzing the PMIP4-CMIP6 ensemble: a workflow and tool" by A. Zhao et al.

This manuscript describes the workflow for the analyses of multi-model ensemble data from the Paleo Model Intercomparison Project (PMIP). It exemplifies the workflow by describing the process of obtaining data, post-process and plot output from the PMIP4 midHolocene and lig127 experiments. It also discusses the specific situation, where paleo data may need an adjustment of the calendar.

The authors discuss their tools and provide a set of scripts and recommendations so that readers can repeat the analyses or apply the toolbox to other experiments. The workflow consists of data-file management, post-processing and analyses, and plotting software. The software is stored in github directories and can be easily accessed. In addition, they provide an application in the "Docker" system.

The manuscript is an interesting contribution. Not often is the workflow from model output to manuscript figures described in a way that other researchers can benefit from. As multi-model analyses become extremely useful with the advent of extensive data repositories like CMIP6, it is a good move to share experience and software to make the process handier. It is also a contribution to make the procedures more transparent.

The authors provide an adequate description of the processes involved (but see some critical comments below). The link to the software allows readers to directly try out the methods, for example, by means of Jupyter notebooks.

Overall however, the text should be improved in a revised version. At some places it could be clearer and often it is not really obvious that the information given is necessary or not (see below). Since I have no objection on the general content and methodology, I would rate the reviewer's request as "minor revisions".

So, I suggest another iteration, where the authors address the following issues:

General:

I am not sure if Fig. 2 is needed. It takes quite some place, but could also be put in a few words. I would have expected at that place a schematic on the workflow described in the paper.

Minor issues:

Ln 33: I doubt that many readers outside PMIP know what "past2future" means.

Ln 37: purposes

Ln 49: here it should be piControl, not DECK

Ln 73: the the

Ln 82ff: I wonder if the discussion of the IPCC atlas is needed here in such detail. A short cautionary note would be sufficient.

Ln 99 and 104: international == internal

Ln 103-105: it is not clear if you describe the original CVDP or your paleo version

Ln 110: The sentence "Additionally ..." is not clear, what is "although referring to? Or do you mean it was NOT used in the publication?

Ln 125: again not clear how relevant this is; are you just discussing the AR6 or your tools?

Ln 134: This sounds a bit odd. Of course, the model data are not derived from pollen. I assume you mean that pollen data are often shown as coldest/warmest months and therefore you need to adapt the model output accordingly.

Section 4: It is a bit confusing where NCL and where python is recommended; can the user chose whatever he/she/they like or are specific steps only possible with one or the other?

Ln 165: to be passed to them.

Section 4.3: I would start here with a general introduction what systems like Docker do. I assume many readers don't know anything.

Ln 191: users

Ln 264: In figure 6 I recommend to use the same y-scale for figs a) and b)

Ln 269: "is the length.."?