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Interactive comment on "How warm was Greenland during the last interglacial period?" *by* Amaelle Landais et al.

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I find this paper very interesting and I hope to see it published. However, I have a few comments and ideas that I think would improve the quality of the paper and might also give it a slightly greater impact.

The last interglacial is clearly an example of when almost all climate models agree on the sign of the climate change temperature signal but generally underestimate its magnitude with respect to available proxy data. The discussion about this discrepancy is, however, very qualitative as it stands and it would be interesting to see an attempt to bridge the gap between the data and modeling communities. The most obvious way to do that is to improve how model data is used in the analysis.

1: I am somewhat critical to how you use climate model data in the current version

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of the paper. First, all models are to varying degree simplified versions of reality so a perfect match with proxy data is not to be expected. Secondly, comparing proxies with data in a single grid cell is arguably a misuse of climate models as they are designed to give an indication of the average conditions over a large region (the size of the region is dependent on the model complexity and grid resolution but a rule of thumb is to use at least a few grid cells). You should perhaps also comment on the range of models used in Fig. 4; the figure presents data from EMICS to full GCMs, which are worlds apart both in terms of complexity and modeling strategy (e.g. data constrained vs. free running, highly simplified vs. very complex, etc).

2: You mention that the δ^{18}O signal recorded in ice cores can be influenced by changes in transport pathways and precipitation seasonality. The former is a bit tricky to investigate but you can easily perform a similar analysis as in Pausata and Löfverström (2015) (On the enigmatic similarity in Greenland δ18O between the Oldest and Younger Dryas, Geophys. Res. Letters, 42, doi:10.1002/2015GL066042) and quantify the importance of precipitation seasonality and cloud temperature for the implied δ^{18}O signal in the models.

3: I would be careful citing unpublished work or papers in open discussion, except of course if the papers are accepted and about to be released. There is never a guarantee that a paper will be accepted only because it is in review and the methodology and conclusions might change significantly when the paper is finally published.

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