

## ***Interactive comment on “Mapping technique of climate fields between GCM’s and ice models” by T. J. Reerink et al.***

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Reerink and co-authors are presenting a complete mapping method to handling the classic problem of to and fro mapping of fields (climatic & topographic) between a coarse grid and a finer. They are deriving their method with application to the transfer of fields between a GCM climate model and an ice-sheet model. This paper is a nice addition to the field, as it provides a clear and comprehensive overview of the steps needed to do so. Though not being a specialist of projections and interpolations methods, the manuscript is relatively easy to follow and rather clear when one dives into the equations described.

On the whole, I recommend its publication in GMD.

C214

I have only minor comments as follow.

1. The paper could be clearer in the justification of the use of an oblique stereographic projection. It is certainly a fine method as far as the results are concerned and sometimes even exact (as discussed in the manuscript) but why the oblique stereographic above all others?
2. Examples are given for some regions of the globe that are quite restricted in extent (apart from Antarctica). Could you comment on the use of such a method on the whole Northern Hemisphere for example?
3. Figure 2: a better figure 2 would comprise two panels: one with the global picture as it is or so, and one with a zoom on the local region of interest, in order to better follow the discussion between P and P' etc. This depends of course of the size of the figure in the final print version and can be discussed with the editor.
4. For figures 7 to 15 the axes are not readable on a A4 page print. Please adjust the size of the text.
5. page 937 *simulations on a course grid* → *simulations on a **coarse** grid*
6. page 938 *an the mapping needs to be fast*: add a point instead of a comma
7. page 939 line 15-16: these lines are not very informative, remove.

C215

8. page 942 *Often the complement angle  $\beta$  or  $\alpha \rightarrow \beta$  is the complement angle here, isn't it? Or just rephrase?*
9. page 942 lines 22-23: *or close to that* Could you explain a little bit more why *close to that* ?
10. page 947, line 6 *projeced* → **projected** ?
11. page 951, line 15 space is missing, end of the line *representsabout*
12. page 951 line 25 *half the the*
13. pages 952 and following. While I think it is quite nice to have some test cases for the results, perhaps it would be better to restrict a bit the number of experiments presented. You could limit your examples to the most representative regions for specific problems. Indeed, some figures are barely described in the manuscript.

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