**Climate
of the Past**

Discussions

Interactive comment on "A generalised approach to reconstructing geographical boundary conditions for palaeoclimate modelling" *by* M. Baatsen et al.

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The authors would like to thank the referees, Dietmar Mueller and Matthew Huber, for their thorough review of the paper. They both point at the fact that the modelling community desires more efforts in making easily accessible, reproducible and comparable boundary conditions. However, some elements of the presented workflow still require some additional information and the required set of files has to be completed. This will be taken care of in the final version, with more files being made available and some more focus on the 38Ma reconstruction.

Question specific responses:

C2774

'am I reviewing the actual reconstruction for 38Ma or am I reviewing the code and data sets and workflow'. The aim of this paper is to present the workflow by discussing a palaeo-geographic reconstruction for 38Ma, while stressing on the ability to use the same methodology for other time periods. In the final version there will be more focus on the 38Ma reconstruction as its presentation is new, but also leaving room for an in-depth discussion of the workflow used.

C2775

'ad hoc corrections mostly derived from raster images'. The changes to the topography are indeed made manually but both the extent and effects of all these changes are based on peer reviewed literature. Where required, additional references will be added to the final version.

'Much of the data and code for doing these steps is not provided' More of the files used in the workflow will be made available, a set of files containing all of the outlines used in GPlates for the 38Ma reconstruction has been added in the author's response above.

'the code itself is only marginally useful to me'. Since the main focus is on the workflow and not the exact code used by the authors, the latter should only serve as an addition to the explanation of all the procedures in the paper. Any other users are free to implement the same methods using different software, as all of the steps are explained and fairly straightforward.

'I am finding it hard to see what is novel or better'. The main addition of this workflow is the direct incorporation of information from a plate- tectonic reconstruction, making it easy to change both the reconstruction framework and the considered time slice. This should allow users to make time slices and different palaeo- geographies for sensitivity studies using numerical climate models.

'Moving objects around in an area preserving way'. This is not an issue since all of the

rotations and movements are carried out using GPlates. Only afterwards, the different fields and masks are projected onto a rectangular grid and processed to make the final palaeogeography. No more changes to the position of any of the features are in this gridded framework.

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C3110