

Interactive comment on “Albedo and heat transport in 3-dimensional model simulations of the early Archean climate” by H. Kienert et al.

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First of all, I would like to thank the reviewers for their insightful reviews of this manuscript, and the authors for their clear and constructive answers.

I recommend the authors to submit a review of their ms, accounting for all the questions raised by the reviewers. The most important points are the following:

1) the authors should clearly state the limitations of the CLIMBER model, as suggested by the first reviewer. There is no doubt that this work represents a major improvement compared to previous 1D modeling or to AGCM studies. For the first time, this contribution accounts for the coupled dynamics of the atmosphere and ocean. But the authors must clearly acknowledge that CLIMBER includes various parameterizations

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that may limit the physical description of the Archean climate. I'm particularly worried about the readability of the ms. Stating that CLIMBER includes a "statistical-dynamical atmospheric model" may be relevant for a climate modeler. But such statement will not really help a geologist interested in the Archean climate who may read your paper. It is important that such reader understands the limitation of your climate modeling study. Maybe a future work section may include a list of things that CLIMBER cannot simulate physically, and which may be improved using a coupled GCM.

2) I agree with rev 2 and 3 that the paper is not well organized, mixing results and discussions. Please, improve it following what you suggest in your answer to the reviewers.

Best regards

Yves Godderis

Interactive comment on Clim. Past Discuss., 9, 525, 2013.

CPD

9, C774–C775, 2013

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