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## **GMDD**

Interactive comment

## Interactive comment on "TransEBM v. 1.0: Description, tuning, and validation of a transient model of the Earth's energy balance in two dimensions" by Elisa Ziegler and Kira Rehfeld

Colin Zhuang (Referee)

zhuang.uta@gmail.com

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Dear Editors, As the leading author of the Zhuang et. al. (2017), I am very pleased to see further advancement of the EBMs; The authors of the draft significantly promote the model from static to transient. I strongly recommend that this high-quality manuscript be published after some minor technical corrections. Here are some minor improvements with comments: 1) L12, Abstract, Buhler et. al., better followed by ",in prep" or a footnote to show it is unpublished; 2) L13 I would prefer to combine the two simple sentences together, such as "We find that the EBM lacks internal climatic variability mostly due to its reduced descriptions of heat transport and the hydrologi-

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cal cycle." 3) L18, "fill gaps" should be changed into "fill in gaps"; 4) L23, "state" into "states"; 5) L60, with regard to hysteresis explored by the EBMs, I would suggest the authors add another publication. Zhuang et al., 2014, Hysteresis of Glaciations in the Permo-Carboniferous, Journal of Geophysical Research ATMOSPHERES. Sincerely, Kelin Zhuang

Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2020-237, 2020.

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