

Interactive comment on “On the Future Role of the most Parsimonious Climate Module in Integrated Assessment” by Mohammad M. Khabbazan and Hermann Held

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Dear Editor,

We have carefully studied the two referee reports on our ms “On the Future Role of the most Parsimonious Climate Module in Integrated Assessment”. We found these reports extremely helpful as they triggered further analyses of ours that will lead to a considerable upgrade of the ms in case we were invited on a new version. This new version would differ from the previous one in four major aspects:

1) We apparently undersold the climate module PH99 that is the subject of our analysis.

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Once re-calibrated in the way we suggest, PH99 can emulate an AOGCM for any of the four RCPs, sticking to that very re-calibration. Hence PH99 is more physical than expected.

2) We explain the discrepancy observed by a physical mechanism, as we can reproduce that very discrepancy by the move from a 2-box model to a 1-box model.

3) The first, very critical reviewers misperceived the scope of our ms. It is not about how to aggregate spatially inhomogeneous forcings into a global forcing, but it is rather how to get from a global total forcing to global mean temperature.

4) The new version would be prepared much more carefully on the technical level, absorbing the innumerable technical comments by referee #2.

In total, we are the more convinced that our ms is a timely addition to the literature on how to represent a complex system like the climate system by a simplest-possible approach. We would be delighted if the Editor gave us the chance to present our arguments in a new version.

Sincerely,

Khabbazan and Held

Interactive comment on Earth Syst. Dynam. Discuss., <https://doi.org/10.5194/esd-2017-40>, 2017.

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