5 November 2017

Prof. J. Hargreaves
BlueSkiesResearch.org.uk
The Old Chapel, Albert Hill
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Dear Prof. Hargreaves,

Please find the manuscript, "Propagation of Error and the Reliability of Global Air Temperature Projections," for submission to Geoscientific Model Development.

This study analyzes GCM physical error. It does not concern climate modeling as such or the physics of climate. The first propagation of error through GCM global surface air temperature projections is reported.

Propagation of error is standard in science to evaluate the predictive reliability of a physical model. However, until now, GCMs have never been so evaluated. The fundamental distinction of accuracy from precision is central to this understanding.

New critical results include the following demonstrations:

1. That GCM global surface air temperature projections are linear extrapolations of greenhouse gas forcing.
2. That error in simulated global cloud cover is highly pair-wise correlated among CMIP5 GCMs, implying a common systematic theory-bias.
3. That average annual CMIP5 long-wave cloud forcing (LWCF) error is ±114 times larger than the average annual 0.035 Wm^{-2} increase in CO_2 forcing.
4. That GCM linearity means that systematic LWCF error propagates through air temperature projections as the root-sum-square.
5. That propagated LWCF error produces a centennial uncertainty of ±15 C in global averaged surface air temperature projections.

While the error analysis is very straightforward, these results are clearly controversial. Therefore the Supplementary Material provides extensive confirmatory data and analysis.

The conclusion is that even CMIP5 climate models are unable to resolve the impact of greenhouse gases on global averaged surface air temperature.

Unfortunately, it is necessary to draw to your attention the very clear professional conflict of interest for any potential reviewer reliant on climate models for research. The same caution applies to a reviewer whose research is invested in the consensus position concerning the climatological impact of CO_2 emissions.

Therefore, it is requested that the choice of reviewers be among scientists who do not suffer such conflicts.

I do understand that this study presents a severe test of professional integrity. Nevertheless I have confidence in your commitment to the full rigor of science.

Expert reviewers might include:
Prof. Yong-Sang Choi, EW University, Seoul: ysc@ewha.ac.kr
Prof. Anastasios Tsonis, University of Wisconsin: aatsonis@uwm.edu
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Prof. Carl Wunsch, MIT, cwunsch@mit.edu

Although my professional affiliation is with SLAC National Accelerator Laboratory, Stanford University, this work has been carried out on my own time and was not funded by any external agency or third-party donor.

Finally, thank-you very much for your consideration, and I await your reply.

Yours sincerely,

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