8 June 2014

Prof. Radan Huth
Editor in Chief, IJC
Charles University
Prague
Czech Republic

Dear Prof. Huth,

Please find the manuscript, "Propagation of Error and the Reliability of Global Air Temperature Projections," for submission to the International Journal of Climatology.

It is a standard of science to evaluate the predictive reliability of a physical model by propagation of error. However General Circulation Models (GCMs) of climate have never been so evaluated. This manuscript develops a method to propagate systematic error through surface air temperature projections made using GCMs, and discusses the consequences pertaining thereto.

The following new results are presented:

1. A simple expression is developed that accurately emulates any GCM global surface air temperature projection.
2. GCM surface air temperature projections are demonstrated to be just linear extrapolations of greenhouse gas forcing.
3. GCM projection uncertainty therefore propagates as the root-sum-square of systematic physical error.
4. The error made by CMIP5 GCMs in total cloud fraction (TCF) is shown to be highly inter-model correlated, implying a common systematic theory-bias.
5. Propagated average CMIP5 TCF systematic forcing error (±4 Wm^{-2}) yields an uncertainty of ±15 C in centennial global surface air temperature projections.

While the error analysis is very straight-forward, these results are clearly controversial. Therefore an Auxiliary Material (AM) document provides further data and analysis that fully demonstrate items 1 and 2. The AM is available to be published electronically, should that eventuality arise.

Transparency requires informing you that prior versions of this manuscript were twice submitted to the Journal of Geophysical Research – Atmospheres and twice rejected.

The rejections chiefly followed from two reviewer objections. First, that an 1850 base-state climate simulation already includes all model error. Therefore differencing against subsequent simulations produces error-free anomalies.

Second, a ±T (C) confidence interval is unphysical because it implies that models rapidly oscillate between ice-house and hot-house climate states.

These reviewer ideas are badly mistaken, and are addressed in manuscript sections 2.4.3 and 3, respectively.

Auxiliary Material Sections 7 through 10 present more detailed discussions of these and other prior reviewer concerns, and should fully defray any criticism of the work on the above or related grounds.

To provide full transparency, all JGR-Atmospheres documents are offered for your consideration, including reviews, responses, and email correspondence with the editor. These can be provided as two zip files that have been scanned and verified virus-free by a fully updated Norton Anti-virus.

A request by email, pfrank830@earthlink.net, will be promptly serviced. Please feel entirely free to share these with any of your reviewers or associate editors. I am confident they fully validate the submitted work.

The five JGR-A reviewers were apparently all climate modelers. From their comments, propagation of error and physical confidence intervals are entirely foreign notions. Therefore, it is respectfully suggested that any scientific reviewers be climate physicists or physical meteorologists, rather than climate modelers.

Climate physicist reviewers might include:
Prof. Yong-Sang Choi, EW University, Seoul: ysc@ewha.ac.kr
Prof. Carl Wunsch; MIT: cwunsch@mit.edu
Prof. Roberto Rondanelli, U Chile: ronda@dgf.uchile.cl
Dr. Hyo-Jong Song, SUNY, Albany: hsong2@albany.edu

Experts in validation of numerical models include:
Prof. Victor Vasquez, U Nevada, Reno: victor.vasquez@unr.edu
Prof. Christopher Roy, Virginia Tech: cjroy@vt.edu
Dr. William Oberkampf, Sandia Labs: wloberk@sandia.gov

The manuscript Figures are in color to assist review. Black-and-white versions can be provided as needed.

This work has been carried out on my own time and was not funded by any external agency.

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

Yours sincerely,
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