

From: Patrick Frank pfrank830@earthlink.net  
Subject: For Prof. Ghan  
Date: May 4, 2014 at 7:08 PM  
To: jgr-atmospheres@agu.org



Dear Prof. Ghan,

In the past weeks, I have spent time in the Stanford Earth Sciences library examining advanced climatology and climate modeling texts, looking for mention of linear response theory (LRT) to remove systematic model error by differencing against a simulated base-state climate. Nothing turned up.

I have also searched Web of Science and Google scholar for any empirical validation of error removal by differencing. Empirical validation involves testing the prediction of linear model errors against the true model errors derived by comparison with climate observables.

I did find several papers on derivation and elaboration of LRT, such as Dymnikov & Gritsoun (2001) Nonlin. Processes Geophys. 8, 201-209, Palmer (2001) Quart. J. Roy. Meteorol. Soc. 127, 279-304, and Majda & Wang (2010) Commun. Math. Sci. 8, 145-172, etc.

However, there appears to be no body of literature describing empirical tests using observations to evaluate removal of model projection error through differencing against a base-state, or application of LRT to this process.

In the AR5 of the IPCC, WG1 Chapter 9, "Evaluation of Climate Models," and the Technical Summary are also completely silent on removal of model systematic error by differencing against a base-state climate.

Please recall the only remaining major reviewer concern to JGR-A submission 2013JD021338 was that all model error is already present in an 1850 base-state simulation, and this error could be removed from subsequent projected states by differencing.

This concern is resolved by the lack of any prior substantiating literature basis.

I respectfully ask your permission, then, to again submit previous JGR-A submission 2013JD021338 "Propagation of error..." to JGR-A for consideration of publication.

Thank-you very much for your consideration,

Yours sincerely,

Pat Frank

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These things are, we conjecture, like the truth;  
But as for certain truth, no one has known it.

Xenophanes, 570-500 BCE

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