

Interactive comment on “Do GCM’s predict the climate... or macroweather?” by S. Lovejoy et al.

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Received and published: 14 January 2013

Gavin Schmitt Comments:

I would like to thank Gavin Schmidt for several helpful discussions and comments. These include the following (excerpted from an email, Nov. 23, 2102). These comments will be taken into account in the revised manuscript.

“A few minor comments - first off, the GISS simulations should be referenced to Allegra LeGrande et al (in prep) - not the Schmidt et al (2011;2012) papers, and should be denoted GISS-E2-R.

Note that Gao and Crowley refer to volcanic reconstructions (not solar as stated in the figure caption). The line "We found that the forced GISS-E simulations were strongly clustered" is a little odd since I told you this right at the beginning. A statement along the

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lines of "The simulations are strongly clustered" would be fairer, and a cite to LeGrande (in prep) or personal communication would be more appropriate.

Overall, if you are looking for material to add, I would suggest exploring the uncertainty in the time series you are comparing the models to. Proxy reconstructions have potential issues based on how they are put together - less information at earlier times, plus (usually) a calibration to different modern targets. There are going to be impacts on variance depending on whether reconstructions at hemispheric or global, high latitude vs tropical, land only or land+ocean. So statements relating GCM results to the 'observations' might stand to be more nuanced."

I could also mention that shortly after "the response to Betts" (interactive discussion, Dec. 14, 2012) Gavin brought to my attention the fact that fig. 1 in the Betts response used GISS outputs averaged over land only. This probably explains the higher value of the GISS $S(\Delta t)$ curves when compared to the globally averaged (temperature series $S(\Delta t)$ which includes the more weakly varying ocean (this will nuance some of the responses labeled "Betts 1").

Interactive comment on Earth Syst. Dynam. Discuss., 3, 1259, 2012.

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