IJC Round 2 Reviewer #1
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Referee(s)' Comments to Author:

Reviewer: 1

Comments to the Author
I strongly recommend rejection of this paper, which presents an ill-designed analysis based on invalid assumptions and misconceived ideas about climate and climate models. Sorry. There are many aspects which I think are wrong and I think it's impossible to recover the analysis. For starters, the author thinks that a probability distribution function (pdf) only provides information about precision and it cannot give any information about accuracy. This is wrong, and if this were true, the statisticians could resign. He presents a statement about hindcasts in the paper which makes me think that he does not know what he is talking about. Also, a naive and simple linear framework for emulating global climate models (GCMs) is presented, that looks more like a fit to data. It is argued that it is skillfull, but given the initial fit and frocing data as input, this is hardly a tough test. Furthermore, this emulation framework muddles external forcing with feedbacks, and the treatment of errors assumes that each increment is independent of each other. The author looks at zonal means of cloud biases, and does not realise that the latitudinal structure is due to well-known phenomena and circulation patterns - we should not expect a white (or red) noise type stochastic structure of the residuals, because the cloude climate varies with latitude. There is also varying degrees of freedom, as the space 'converges' in the polar regions due to the geometry of a sphere. Also, the effect of clouds vary with latitude both due to the solar inclination and cooler poles. The best way to test the errors of the GCMs is to run numerical experiments to sample the predicted effects of different parameters, which indeed has been done and presentated in the IPCC reports - eg natural versus total forcings. Any analytical or simplified emulation must reproduce these kind of  the results of such experiments - also the error bars. The most obvious indication that the error framework and the emulation framework presented in this manuscript is wrong is that the different GCMs with well-known different cloudiness biases (IPCC)  produce quite similar results, albeit a spread in the climate sensitivities.