

JGR-A Submission #2: 2013JD021338

Reviewer comments for JGR-Atmospheres: 2013JD021338 (Ghan)

Reviewer #2 (Comments to Author):

This paper sets out to show that model projections are too error-prone to make meaningful statements on detection and attribution.

The manuscript is not written clearly enough to follow a logical argument through the paper. The author did not address critical points made by previous reviews, but rather tried to pick holes in the review comments so as not to consider their legitimate points. At least two major points make the paper unsuitable to JGR, and I think it should be rejected.

1. The physical model. The author purports to be using a mathematical (non physical) model, and therefore states that they do have to worry about model physics. Yet their model clearly makes assumptions about radiation and cloud physics and their interaction that are never tested and its limitations never discussed.
2. As stated by an earlier review they assume that errors in cloud forcing translate into errors in climate response. They never justify this approach adequately or explain their reasoning on page 20. Saying that  $4\text{Wm}^{-2}$  of error is felt by the climate system is one thing, but then translating this into an annual error in climate response, as they seem to, is totally unjustified. To say that this error indicates that temperatures could hugely cool in response to  $\text{CO}_2$  shows that their model is unphysical