

## ***Interactive comment on “Quantitative performance metrics for stratospheric-resolving chemistry-climate models” by D. W. Waugh and V. Eyring***

### **Anonymous Referee #2**

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I recommend that that this manuscript be considered for publication provided that the following comment is addressed:

The authors have overlooked an important scientific issue concerning how such measures may be used. Assigning "weights" to projections made with different models is an attractive idea as there is impetus to develop strategies to better encapsulate the value of multi-model datasets. The underlying premise is that there is a robust relationship between how well models simulate observed features (past and present) and the reliability of future projections. The extent to which is true is unclear - it is a difficult and active area of research. This oversight can be easily rectified provided the

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authors change their discussion on this to be less matter of fact, e.g., to indicate "such metrics could be use to explore the value of weighting model projections based of their performance in simulating the present day climate.

Otherwise (+):

- Using Eyring et al. (2006) as a starting point is entirely appropriate.
- The authors choice of a common metric, although slightly different from earlier works, is sufficiently defensible to warrant publication so that it can be tested against others.
- The discussion of the potential value of quantitative metrics for CCMs is reasonable (with the exception noted above).
- Nice paper! It is conceivable that some experts in CCM development will find this work unsatisfying because condensing model performance information in this way can mask important process level characteristics. If so, it will be important for them to come to understand that this is a new area of research - little has been published on CCM metrics before.

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Interactive comment on Atmos. Chem. Phys. Discuss., 8, 10873, 2008.

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