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Geoscientific
Model Development
Discussions

Interactive comment on "A community diagnostic tool for Chemistry Climate Model Validation" *by* A. Gettelman et al.

A. Gettelman et al.

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REVIEWS and REPLIES:

We thank the two reviewers for their comments. We have made the minor changes suggested by the reviewers. The major changes in response to the reviewers' comments are:

1.Revised figure 2 with common vertical scale and revised caption. 2.While quantitative performance metrics can be calculated by the tool, they are not a major part of the tool. Accordingly, we have de-emphasized quantitative performance metrics in the revised text by: (a) removal of mention from the abstract, (b) reorganization and reduction of discussion in section 3.4, and (c) shortened discussion with further caveats in section

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4.3

We thank the reviewers for their careful consideration of this manuscript, and think that the changes have improved it.

Anonymous Referee #1 Received and published: 5 July 2012

The manuscript provides an overview of an analysis and plotting package that has developed within the CCMVal project to aid in the analysis of data submitted from a large number of models, including producing comparisons between models and of models with observations, and is based on freely available software packages. The diagnostic package is tailored to analysis of stratospheric chemistry climate models, understand- able given its origins, but can equally ingest CF-compliant netCDF files produced by other Model Intercomparison Projects such as CMIP5.

The manscript provides a well written and organized overview of the structure of the package and its capabilities and I only have a few minor comments to make. There are several places through the text where the netCDF conventions expected by the analysis package are not simply referred to as CF-compliant, but as âĂŽCF NetCDF CCMVal-2 formatâĂŽ or similar wording. I think it would be very helpful to the reader if there were a few sentences included that explain how the CF-CCMVal-2 convention differs from the more widely-recognized CF-netCDF convention. Is it just that the CCMVal-2 data request specified standard variable names that are not accepted CF- standard names? In any case, a brief outline of the differences would help the reader to understand what is particular about the CCMVal-2 data.

» A few sentences on the differences have been added to section 2.2. The CCMVal-2 format is 'CF compliant', with standard variable names (added to CF lists by the CCMVal project). The CCMVal-2 format has some extra meta-data specifications for additional time and date arrays.

Page 1240, Lines 10-11, the statement âĂŽ"Difference plots interpolate and regrid for

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comparison purposesâĂŽ” makes me wonder how exactly the regridding is done. Can a common grid, a standard lat-lon grid, for example, be specified by the user or is one dataset interpolated on to the grid of the other? Again, just a few words to give the reader an idea of the process.

» [Actually page 1239, lines 10-11] an extra sentence has been added. Basically the first model (or observation set) in the namelist is used as the reference grid.

I realize it is only for illustrative purposes, but Figure 2 uses a very different range along the vertical axis for the two models and the ERA-40 data. The very different patterns between the models and observations invite the reader to take a second, longer look. Is it possible to plot up the ERA40 data with the same vertical range as the models, or somehow standardize the vertical domain?

» Figure 2 has been replotted on a standard grid. There is a flag in this plotting code that sets the top level, and this was not set correctly.

Please also note the supplement to this comment:
http://www.geosci-model-dev-discuss.net/5/C423/2012/gmdd-5-C423-2012-supplement.pdf

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Interactive comment on Geosci. Model Dev. Discuss., 5, 1229, 2012.