

## ***Interactive comment on “A quantitative analysis of grid-related systematic errors in oxidising capacity and ozone production rates in chemistry transport models” by J. G. Esler et al.***

**R. MacKenzie (Editor)**

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Dear Gavin and co-authors,

The interactive discussion of your paper

MS-NR: acpd-2004-0021 Title: A quantitative analysis of grid-related systematic errors in oxidising capacity and ozone production rates in chemistry transport models Authors: J. G. Esler et al.

is now closed. Thank you for your authors' response, addressing the concerns of the referees and contributor. I would like you now to submit a revised manuscript in the light of the interactive discussion, and taking into account my points, below. This

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revised manuscript, and the final authors' response accompanying it, will then form the basis of the decision for publication in ACP.

1. Your response to referee 1's comment about emission database resolution misses the point, I think. The referee is talking about comparisons of model results with data. A discussion along the lines suggested by the referee should be included in intro or conclusions.

2. Your comments about the difficulties of doing experiments with changed vertical resolution should be included in the Manuscript.

3. You are right to take Prather's comments on "true transport error" seriously. Please carefully check the text for phrases which are ambiguous or appear to imply that you have quantified true transport error (e.g. the sentence in the abstract beginning "The degree to which ..."). See also the sentence in the intro beginning "It is to be emphasised ...".

4. Like Prather, I also wonder if the ECHAM4 results add anything substantive to the paper. Certainly the implications of the model comparison should appear in the abstract.

5. The link between section 3 and the model results should be made more explicit. Percentage changes between model runs are (obviously!) not calculated in the same way as the percentage changes shown in Figure 4.

6. Figure 3 should contain an explicit statement that the TOMCAT fields are for a pressure-height at the bottom of the height range shown in figure 3a - to save the reader from doing the calculation if s/he doesn't have a standard atmosphere look-up table in their head.

I look forward to seeing the revised manuscript and your final response. You have until 5 August to reply. I will be on holiday from 1 August until 21 August, so please reply before that if you want a quick decision! Sincerely, Rob

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Interactive comment on Atmos. Chem. Phys. Discuss., 4, 2533, 2004.

**ACPD**

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