

Interactive comment on “An updated analysis of the attribution of stratospheric ozone and temperature changes to changes in ozone-depleting substances and well-mixed greenhouse gases” by A. I. Jonsson et al.

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Thank you for the review and the suggested improvements to our paper. We have addressed your concerns point-by point below.

* “The paper is somewhat technical in nature, focussing of numerical details of the radiation scheme used by the CMAM, and a few other, models, and on a more robust way of attribution. As a publication format a technical note in ACP may be appropriate, but this is for the authors and the editor to decide.”

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While we agree that the correction of our radiation scheme is technical in nature, we think that the paper also communicates some important new scientific results — in particular, the realization that the CO₂ effect on heating rates over multi-decadal time scales is significantly nonlinear, and that unless this is treated correctly (as we show) the attribution of stratospheric temperature trends will have significant errors. We would like to draw the attention of the community to this new result, as traditionally a linear relation between temperature and CO₂ has been assumed in attribution analysis. In our opinion this is not simply a technical issue, and so we would prefer to see the paper published as regular paper rather than as a technical note.

To better reflect the scientific contribution of our paper we would suggest changing the title to: “The effect of nonlinearity in CO₂ heating rates on the attribution of stratospheric ozone and temperature changes”.

* “Affiliation: T. Shepherd is also at U. Toronto, not at “3” which is unspecified”.

Thanks for spotting this. We have corrected it.

* “Abstract: Usually abstracts are just one paragraph. I would consider shortening the abstract, especially since the remainder of the paper is also fairly short”.

We agree that it was too long. We have shortened it. It has also been reworded so as to focus more clearly on the new results.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 14857, 2009.

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