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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 below.

* “Personally, I would have preferred to see this paper published as a correction to Shepherd and Jonsson (2008) rather than as a stand alone, independent paper. But if the ACP editor is satisfied with this situation, then I provide here a review of the paper as it stands.”

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While we agree that the paper is partly a correction to Shepherd and Jonsson (2008), we think that the paper also communicates some important new scientific results (and moreover is based on a new CMAM data set) — 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 “correction”, and so we would prefer to see the paper published as regular paper rather than as a correction.

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”.

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

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