

***Interactive comment on* “Comment on
“Tropospheric temperature response to
stratospheric ozone recovery in the 21st century”
by Hu et al. (2011)” by C. McLandress et al.**

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Reply to Reviewer 2

We thank the reviewer for his or her comments, which are repeated below in italics.

This manuscript offers a well argued retort to a severely flawed paper by Hu et al, which (somehow) appeared in ACP earlier this year. It is very much worth publishing.

I offer some suggestions for improving the manuscript: none of these are essential or
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require large amounts of labor. I leave it to the authors to decide which ones they may wish implement in the final version of the manuscript.

1. Figure 1 panel f: it is really difficult to see the line style (and hence the sign) of the minuscule contour in the bottom-right corner of the bottom right panel, or to see its statistical significance. Unfortunately this "tiny thing in the corner" is the whole point of the figure. That being the case, the authors may consider using, e.g., red-blue color contours with dotting or hashing for stat-sig. As it stands, one really needs to squint to see things, and the squinting doesn't help much.

We have replotted this figure using filled colour contours to denote the trends. Regions that are not statistically significant are left white.

2. Figure 2, rightmost column: again, one key point of the figure (that the error bars on the red lines in the right panels - at low levels - do not cross the zero line) is very hard to see. Why now blow up the axes for those two panels to make the point clear?

The tropospheric portion of the red curves in the right panels has been blown up.

3. Figure 3: I am not sure why we need to see both the 200 and the 300 hPa trends. I was, perhaps, reading the paper a little too fast, but it was not clear from the text. Maybe the need for this can be made more explicit.

Following a suggestion from Reviewer 3, this figure has been deleted.

4. Figure 4: as in Figure 1. Again, quite difficult to see things, as the line style for the negative-valued contours is murky. Would strongly encourage using color, unless it is

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prohibitively expensive.

We have replotted this figure using colour. However, unlike Figure 1 where only the statistically significant trends are plotted, here we plot trend magnitudes exceeding 0.05 K/decade and use hatching to denote the regions that are statistically significant.

5. Figure 6: this is a really nice demonstration which, again, could be much improved with a color figure. Needless to say, one would want to use identical color palettes for Figures 1 and 6.

Replotted in colour, as in Figure 1.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 32993, 2011.

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