

***Interactive comment on* “Comment on “Tropospheric temperature response to stratospheric ozone recovery in the 21st century” by Hu et al. (2011)” by M. Previdi and L. M. Polvani**

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We thank the referee for reviewing our manuscript. Below are responses to each point that was raised.

1. It would be good to plot vertical profiles of global mean trends between the two model groups of transient simulations, especially tropospheric trend differences.

Response: We respectfully decline to follow this suggestion. Our study analyzed 21 different AR4 models, using data from two different experiments, with many of these models including multiple ensemble members for each experiment. Downloading large three-dimensional temperature files for all of these simulations (several decades in

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length for each simulation) would represent a significant time commitment and data storage burden, and we feel would do little in the end to advance our arguments in the paper.

2. The paper mentioned that “ozone recovery can make circulation changes in the southern hemisphere”. It would be better to give slightly more detailed discussion on how ozone recovery causes atmospheric circulation changes, which would benefit the arguments in the present paper.

Response: In the revised manuscript, we will expand the discussion of the atmospheric circulation effects of ozone recovery.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 2853, 2012.

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