

## ***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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Received and published: 2 May 2012

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

1) The authors should change the term “IPCC-AR4 models” to “CMIP3 models”. The term IPCC-AR4 models is misleading. Although the model comparison project CMIP3 was initiated in preparation for IPCC AR4 the results of CMIP3 studies are also discussed in the AR5 assessment report. Thus, the proper term to use is CMIP3 model experiments (Meehl et al. 2007).

Response: Agreed. The revised manuscript will refer to the “CMIP3 models”.

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2) Note that A1B scenario experiments also include other forcings like tropospheric ozone increase, which warms the troposphere, and aerosol forcing. Most of the models that include ozone recovery also include tropospheric ozone changes, which can contribute to the enhanced warming found in the Hu et al results. Therefore, on page 2859, line1, I suggest to change “can be attributed” to “can be attributed to a large degree” or something similar to take into account that there are still some differences between the left and right panels of Figure 1 which can be also related to other forcing factors.

Response: This is a good suggestion which we will follow.

3) Figure 1: I suggest putting the color bar horizontally below the maps. In this way the bar and the numbers can be made bigger and thus are readable.

Response: This change will be made.

Reference : Meehl G.A., C. Covey, T. Delworth, M. Latif, B. McAvaney, J.F.B. Mitchell, R.J. Stouffer and K.E. Taylor, 2007: THE WCRP CMIP3 Multimodel Dataset: A New Era in Climate Change Research, BAMS, 88, 1383-1394, DOI: 10.1175/BAMS-88-9-1383.

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