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***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**

Anonymous Referee #3

Received and published: 19 March 2012

The authors provide a clear and well written critique of a recent paper by Hu et al. (2012) that suggested that stratospheric ozone recovery would significantly enhance NH tropospheric warming over the next 50 years. Hu et al based this erroneous conclusion on differences in temperature trends between two groups of CMIP3 climate models forced using the A1B emissions scenario, with the first group including ozone recovery and the second group not. Previdi and Polvani analyse the same set of models but used simulations in which CO₂ is prescribed to increase at a constant rate and stratospheric ozone does not change. They find remarkably similar surface temperature trend differences to that found by Hu et al., indicating that the differences found by Hu et al. had nothing to do with stratospheric ozone recovery, and were instead due to

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differences in the responses of the two sets of models to the GHG forcing.

I recommend that this paper be published as is.

Minor Points:

p.2, l.4: This is a very long sentence. Perhaps change the semicolon to a period.

p.3, l.7: Define "DJF".

p.6, l.9: To be clear, add "trend" before "differences for the 1%/year".

Fig.1 caption: state units.

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

ACPD

12, C730–C731, 2012

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