

Interactive comment on “Stratospheric variability and trends in IPCC model simulations” by E. C. Cordero and P. M. de F. Forster

Anonymous Referee #2

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Review of Cordero and Forster

I have already reviewed an earlier version of this paper for another journal. I think this is a thorough, well-presented analysis of temperature trends through the depth of the atmosphere in the IPCC AR4 ensemble. As in my previous review, I think the paper deserves to be published with only minor revisions. Many of the points raised in my previous review have been addressed in this revision.

Specific comments

Pg 7659, ln 26: Use caps for ‘Arctic Oscillation’.

Pg 7661, ln2: Do the authors really only compare nineteen simulations, or do they compare nineteen ensembles of simulations? If they only use a single simulation from

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each model, why not use the whole ensemble?

Pg 7662, In 18-20: I am surprised by the claim that there were no significant differences between the NCEP reanalysis and ERA-40 trends for the regions considered in this study. My impression was that the NCEP reanalysis trends in the stratosphere are unreliable, even for the satellite period.

Pg 7663, In 16-18: The right panel of figure two shows a larger standard deviation in the stratosphere, not in the troposphere as the authors claim.

Pg 7663, In 20-21: The models also underestimate the temperature in the troposphere, in fact the difference is most apparent here.

Pg 7664, In 1-4: Say what level you are referring to here.

Pg 7664, In 16: 'Cooling' should be 'cold'.

Pg 7664, In 18: 'by biases' -> 'from biases'

Pg 7664, In 19-21: Say what level you are referring to.

Pg 7665, In 29: 'observation' -> 'observations'

Pg 7667, In 6-12: It is perhaps not surprising that many of the models underestimate the observed cooling, given that many of them lack ozone forcing. The models which do have trends close to that observed all have ozone depletion. This should be commented on.

Pg 7667, In 10: Insert 'Trends in' before 'The two simulations'.

Pg 7669, In 8: How was the 2-sigma uncertainty in the trends calculated? Was autocorrelation taken into account?

Pg 7673, In 24: I think the super-recovery in global ozone is a model-dependent result. Insert 'in some models' at the end of the sentence.

Pg 7667, In 22-23: But the authors haven't shown any evidence that variability at lower levels is affected (they could easily check this).

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 7657, 2006.