Atmos. Chem. Phys. Discuss., 15, C1668–C1669, 2015
www.atmos-chem-phys-discuss.net/15/C1668/2015/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Nonlinear response of modeled stratospheric ozone to changes in greenhouse gases and ozone depleting substances in the recent past" *by* S. Meul et al.

Anonymous Referee #2

Received and published: 17 April 2015

Review of Meul et al. "Nonlinear response of modeled stratospheric ozone to changes in greenhouse gases and ozone depleting substances in the recent past"

This study examines the interactions between the simultaneous increasing of GHG and ODS concentrations on stratospheric ozone. Focusing on the non-additive impacts which are not modeled in studies in which a single forcing is changed. Maximum impacts on stratospheric ozone occur in the upper stratosphere in the annual mean but important seasonal difference do occur in other regions. The carefully targeted simulations and analysis packages allow for the separation of chemistry and transport impacts. This study is carefully done and clear and well written. I think it would be

interest to the Atmospheric Chemistry and Physics readership and would recommend publication with only a few minor comments and corrections for the authors to consider.

lines 150-151 change "are not included neither" to "are also not included"

line 162 change "as combined" to "as the combined"

lines 177-178 consider changing "model data" to "model output" You might consider reserving the use of the word "data" for observations and use "output" when you refer to that produced by simulations.

lines 192-193 it might be clearer if you move "(blue)" to right after GHGs

line 194 change "counteracts the ODS" to "counteracts some of the ODS"

lines 196-198 Are you able to separate circulation effects from reverse self healing to determine the relative effects?

line 205 change "by -15 %" to "of -15 %"

line 246 midlatitudes is spelled incorrectly

line 262 increasing is spelled incorrectly

lines 324-325 change "by a reduced downwelling" to "by reduced downwelling" or "reduction in downwelling"

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 9253, 2015.