



Supplement of

Analysis of recent lower-stratospheric ozone trends in chemistry climate models

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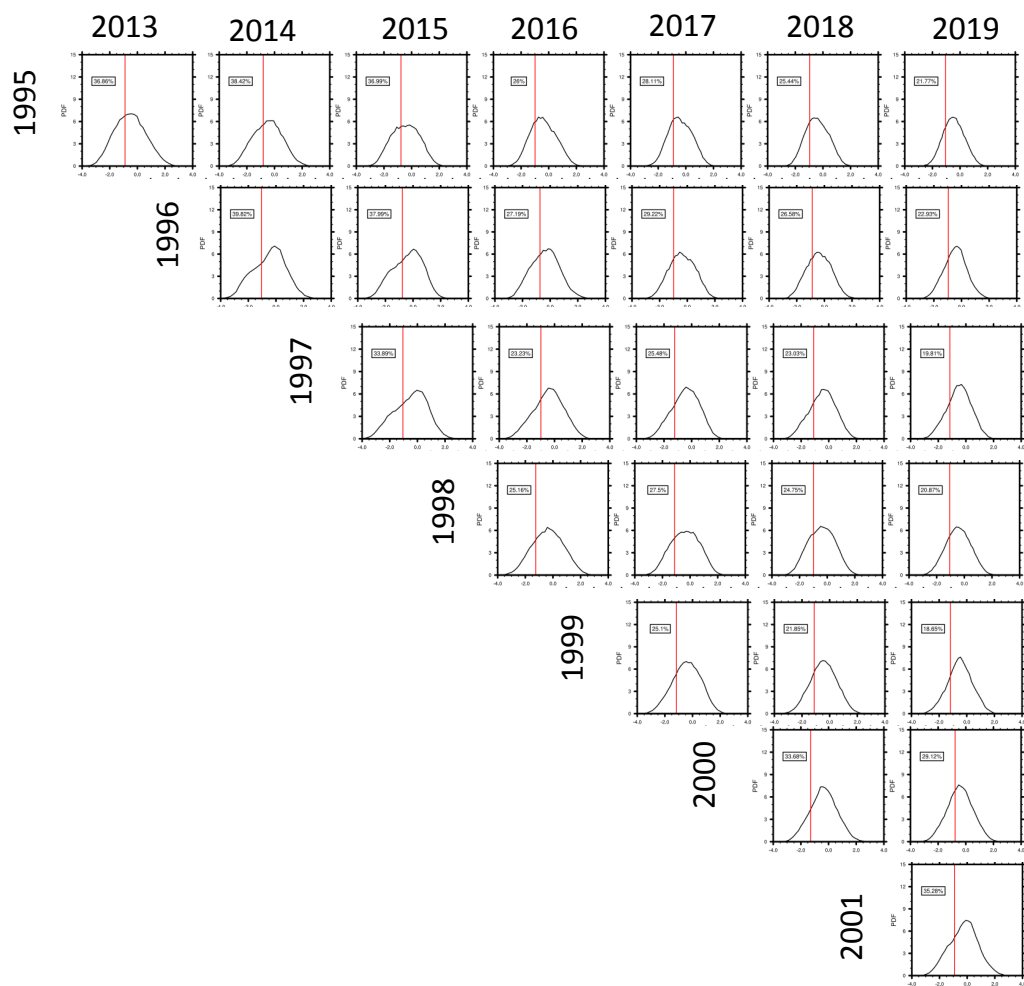


Figure S1. Probability distribution function (PDF) of the models' LS tropical ozone trend (20°S-20°N, 30-100 hPa) as function of different periods. In all panels the x-coordinate denotes the different end years (2013-2019) and the y-coordinate the different start years (1995-2001). The red line indicates the respective observational ozone trend value. Moreover the probability (in %) of the observational trend lying within the models' distribution is given within each panel.

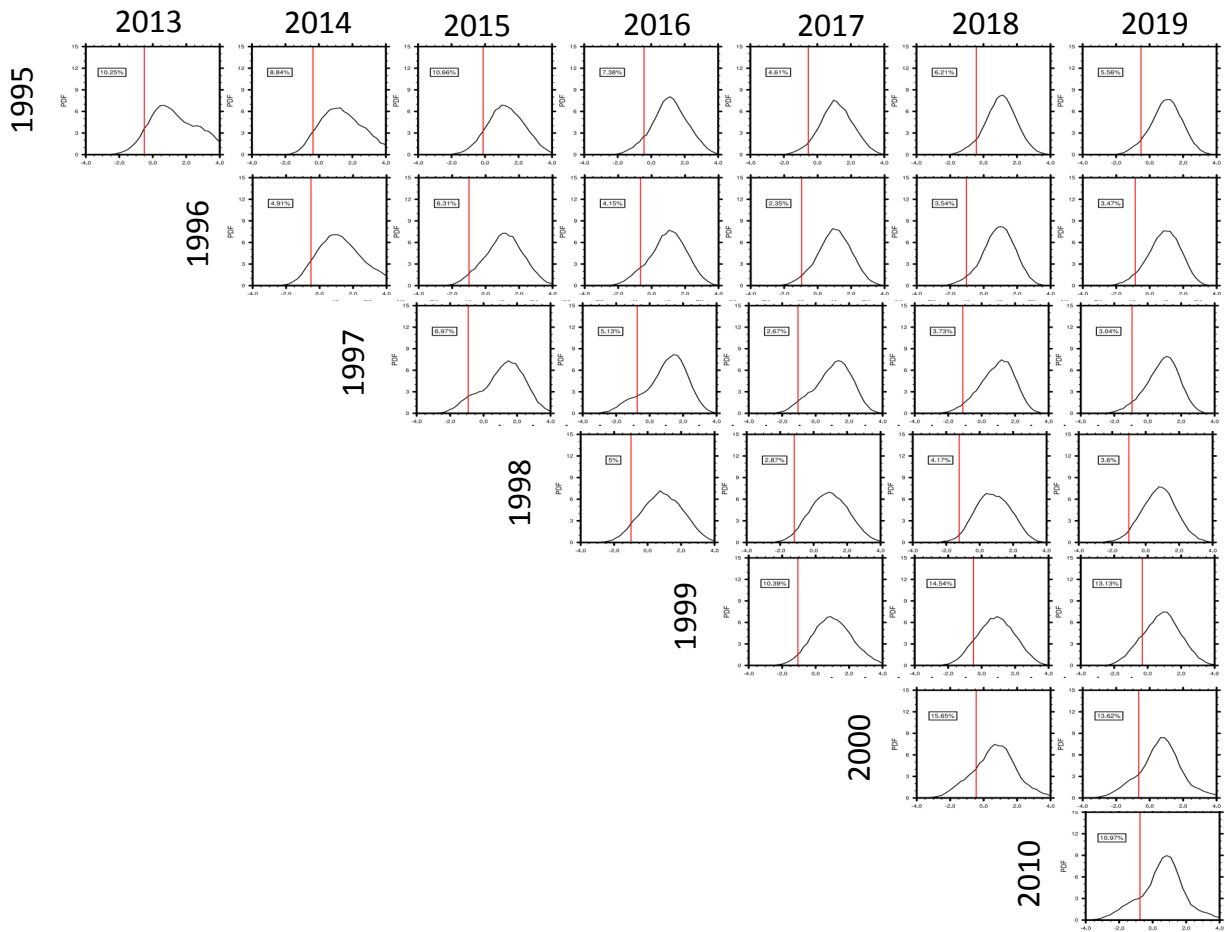


Figure S2. Same as Fig. S1, but PDFs for the models' LS northern mid-latitudes ozone trend (30°N-50°N, 30-150 hPa).

Table S1. MMM ozone trends and their 1-sigma standard deviations [DU/dec] in the lower stratosphere (LS, 30-100/150 hPa) and in the upper stratosphere (US, 1-10 hPa) for the tropical and northern mid-latitudes. Trends are given for the REF-C2 simulation, as well as for the sensitivity simulations with fixed GHG and fixed ODS concentrations (fGHG and fODS). Trends are calculated over the period 1998-2018 and 1998-2040.

MMM trop. O3 trend	LS	US
REF-C2 (1998-2018)	-0.71±0.40	0.68±0.41
REF-C2 (1998-2040)	-0.55±0.38	0.71±0.25
fGHG (1998-2018)	-0.35±0.41	0.64±0.26
fGHG (1998-2040)	0.03±0.06	0.61±0.07
fODS (1998-2018)	-1.09±0.59	0.51±0.27
fODS (1998-2040)	-0.85±0.48	0.44±0.12
MMM NH mid-lat. O3 trend	LS	US
REF-C2 (1998-2018)	0.76±1.12	0.64±0.34
REF-C2 (1998-2040)	0.79±0.60	0.75±0.20
fGHG (1998-2018)	0.62±1.11	0.43±0.25
fGHG (1998-2040)	0.68±0.22	0.58±0.16
fODS (1998-2018)	-0.18±0.84	0.41±0.39
fODS (1998-2040)	0.04±0.40	0.43±0.15