

SH lower stratospheric temperature and ozone climatologies and trends

September 10, 2020

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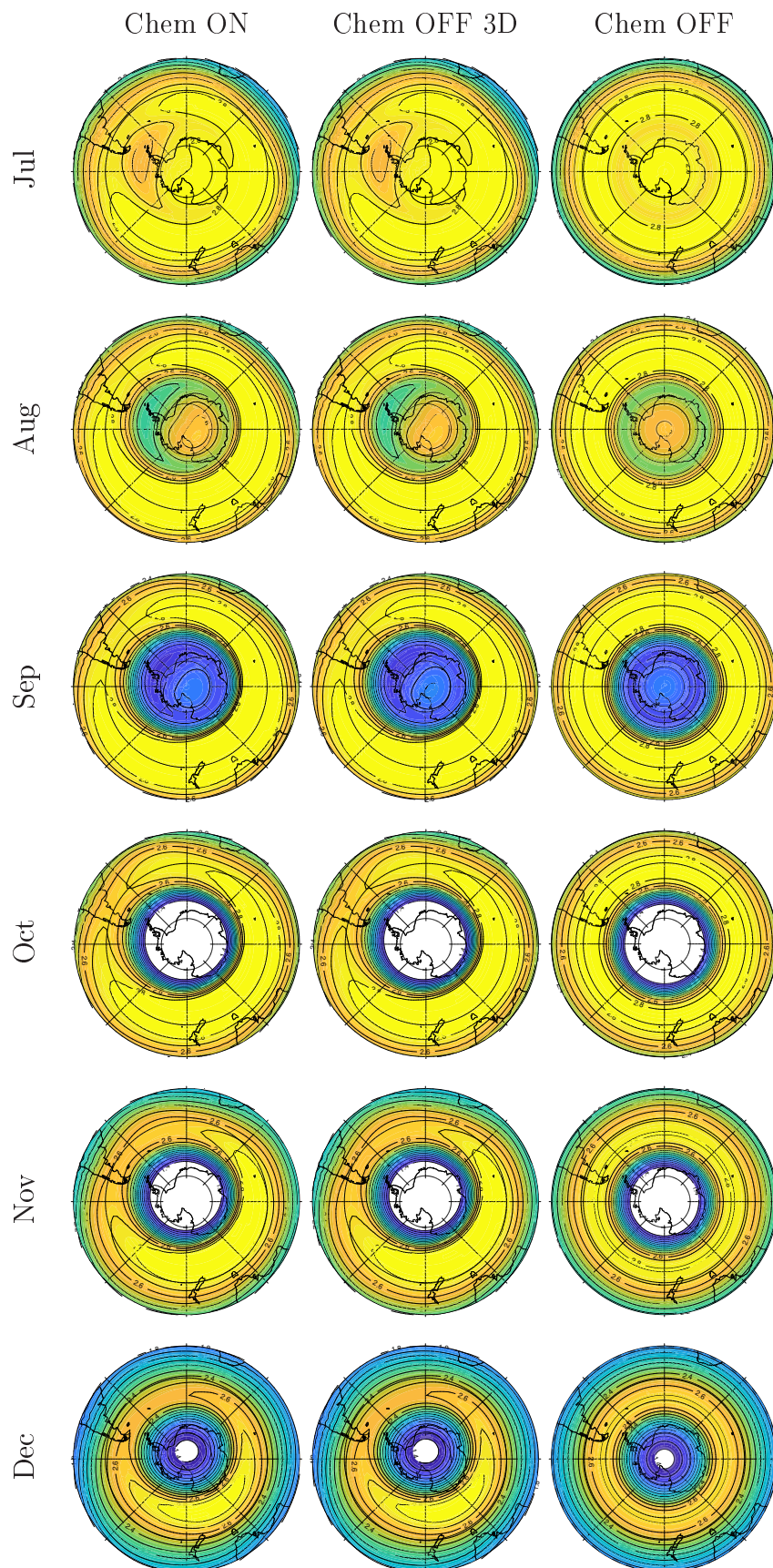
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This PDF includes figures of temperature and ozone trends at 50 hPa in CESM1-WACCM with interactive chemistry (Chem ON), and specified chemistry using SC-WACCM as the atmosphere component with zonal mean forcing (Chem OFF) and zonally asymmetric forcing for the ozone concentrations (Chem OFF 3D), respectively.

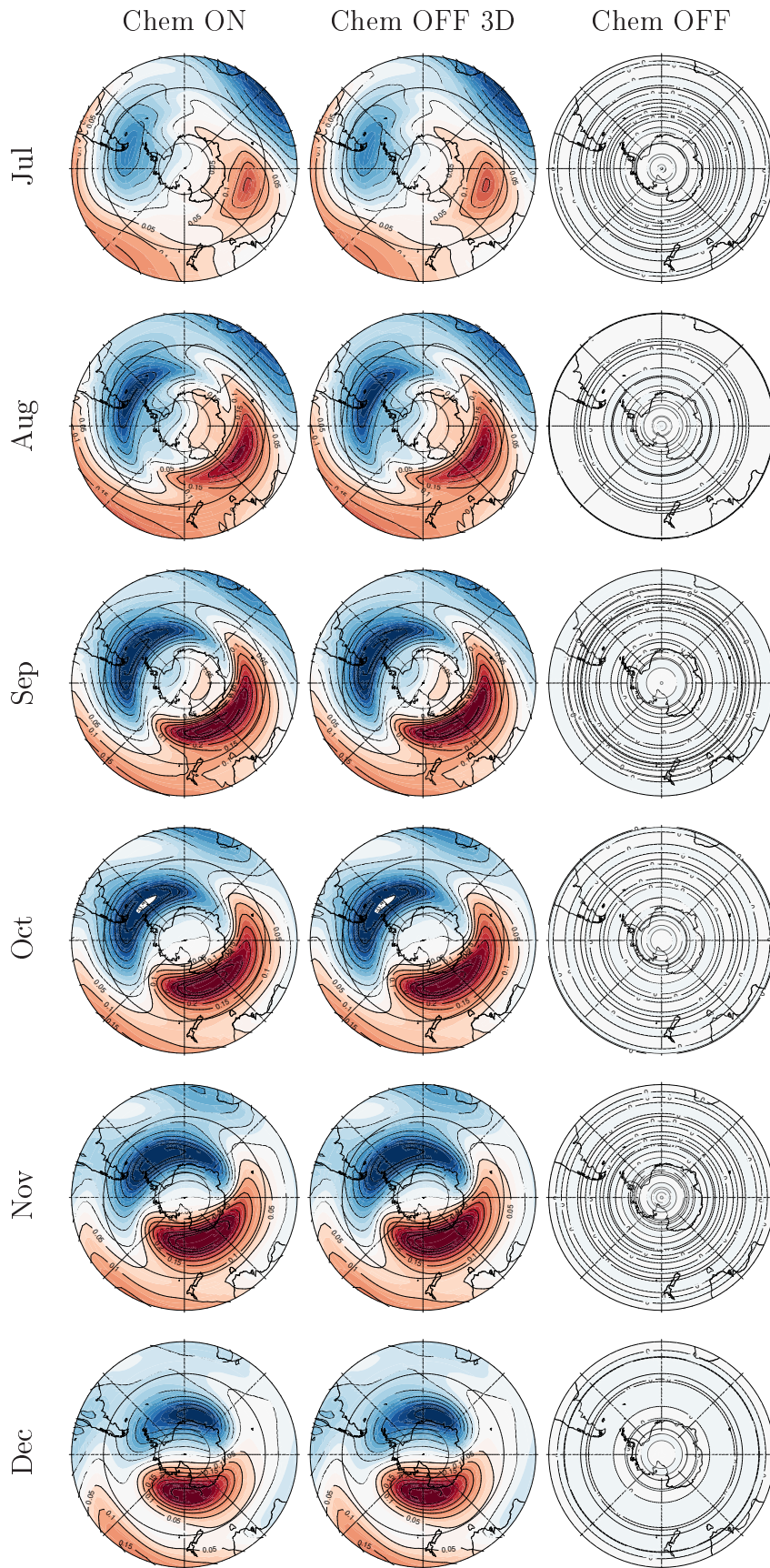
The analysis follows the work by Lin et al. 2009 (their Figures 1 - 4), but uses the 50 hPa level instead of the T4 weighted averages. Contours are included in all figures. Values are given in ppm for ozone and Kelvin for temperature. For areas with missing color, the values were out of range of the colorbar. For the trend plots a significance test was carried out following the Mann-Kandell test procedure for 95% significance. Insignificant areas are hatched. In case there is no hatching at all - the whole trend signal is insignificant.

1 Climatology 1979-2007

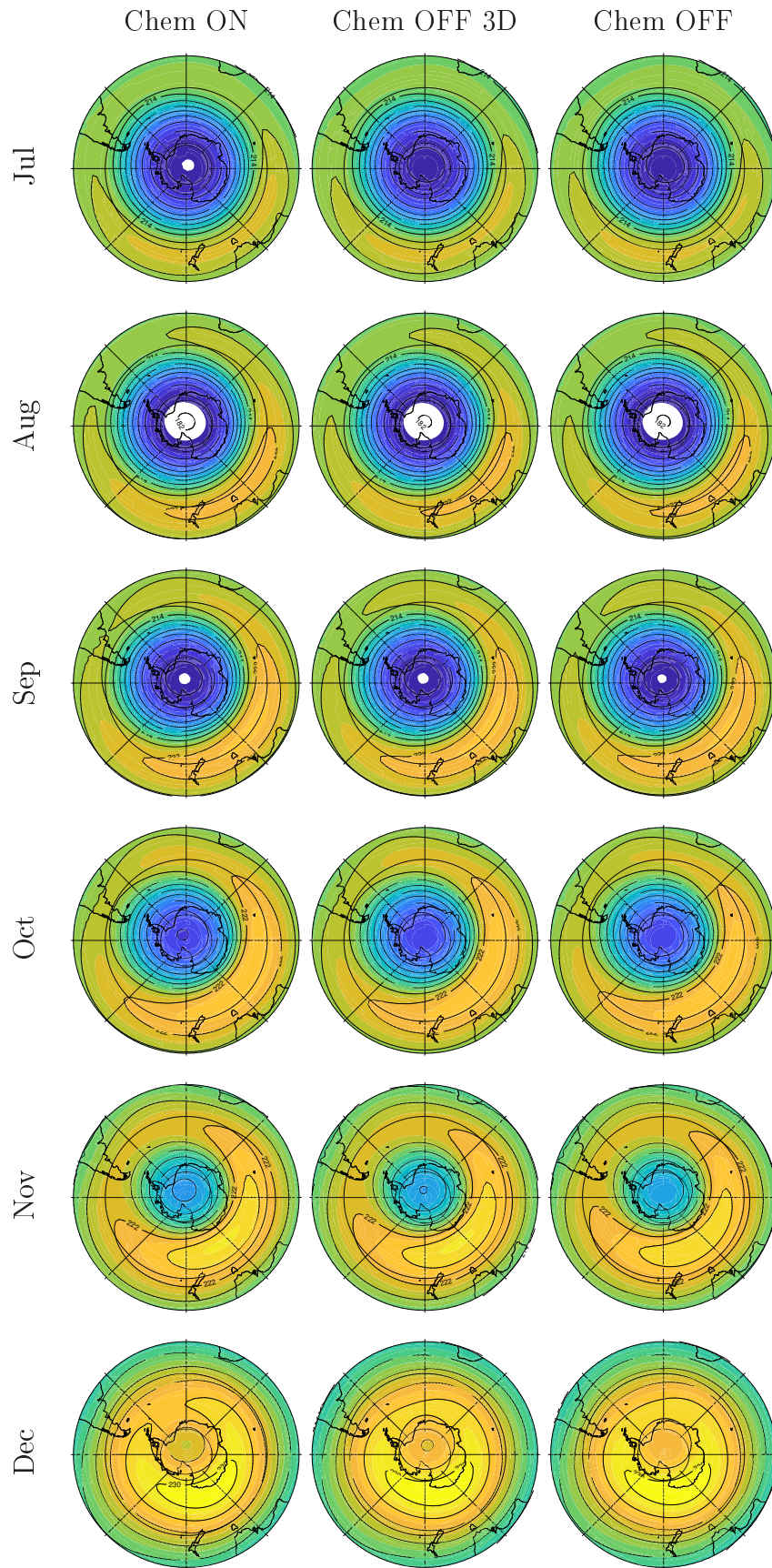
1.1 Ozone at 50 hPa - total field



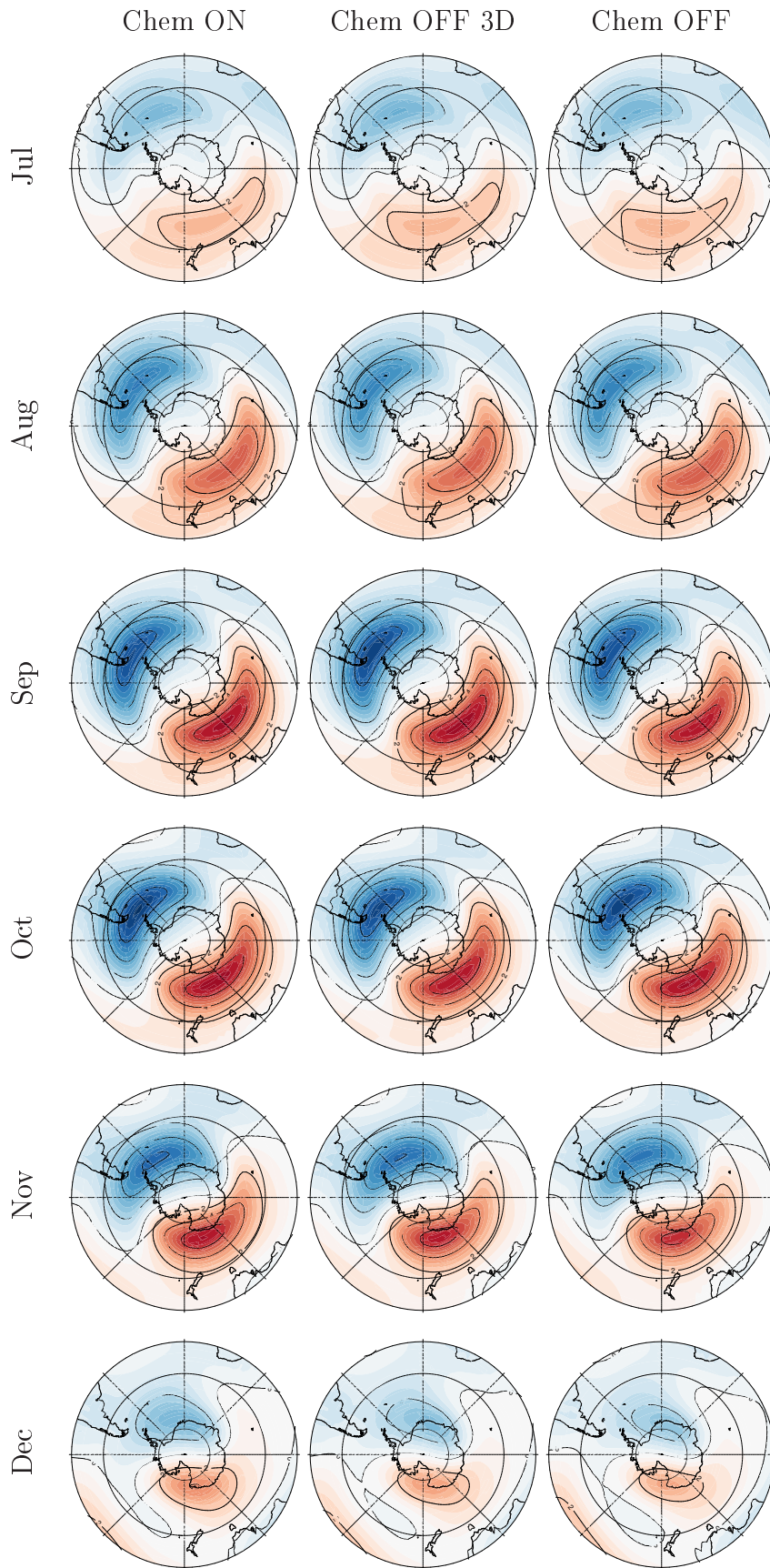
1.2 Ozone at 50 hPa - eddy field



1.3 Temperature at 50 hPa - total field

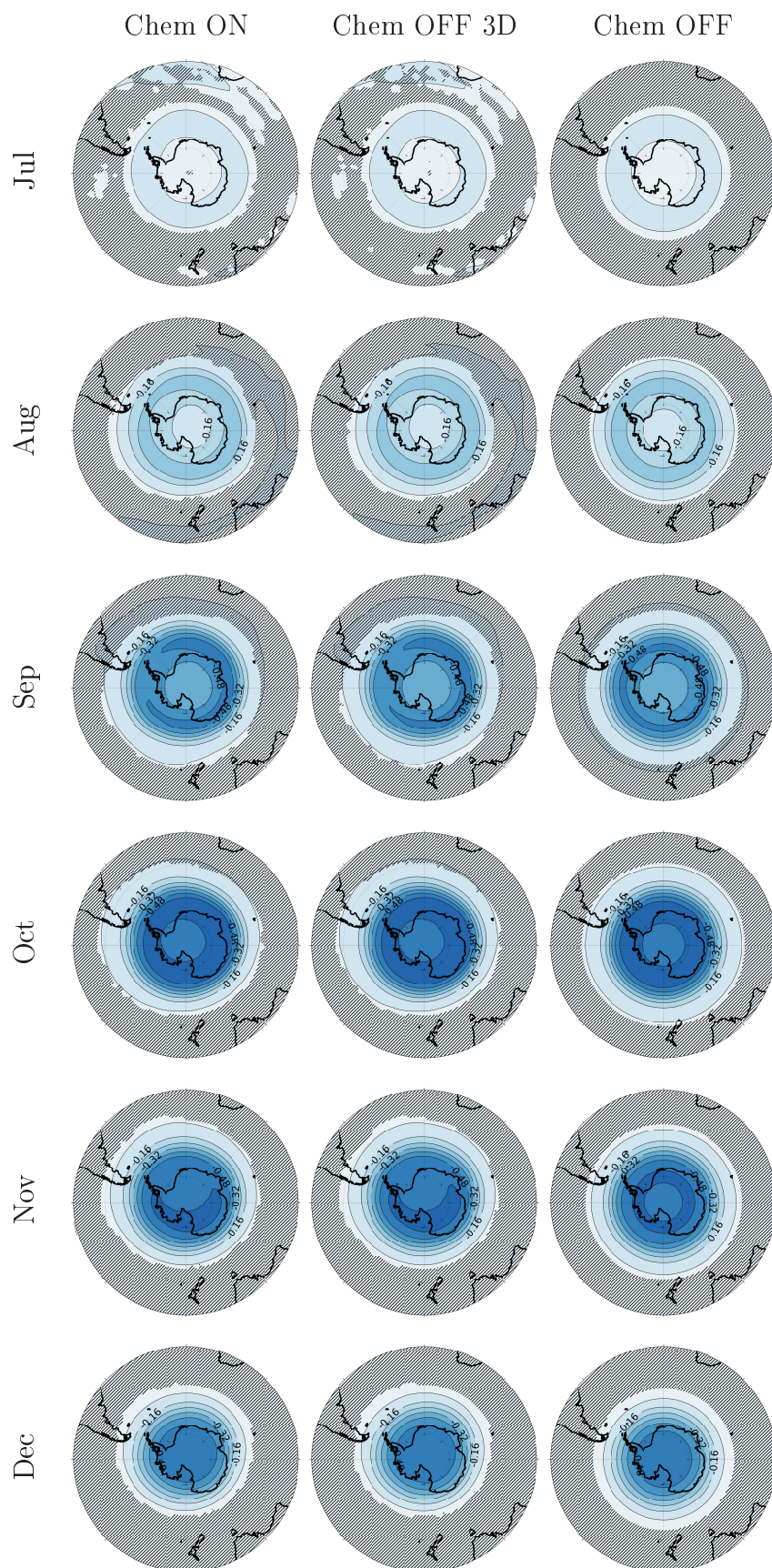


1.4 Temperature at 50 hPa - eddy field

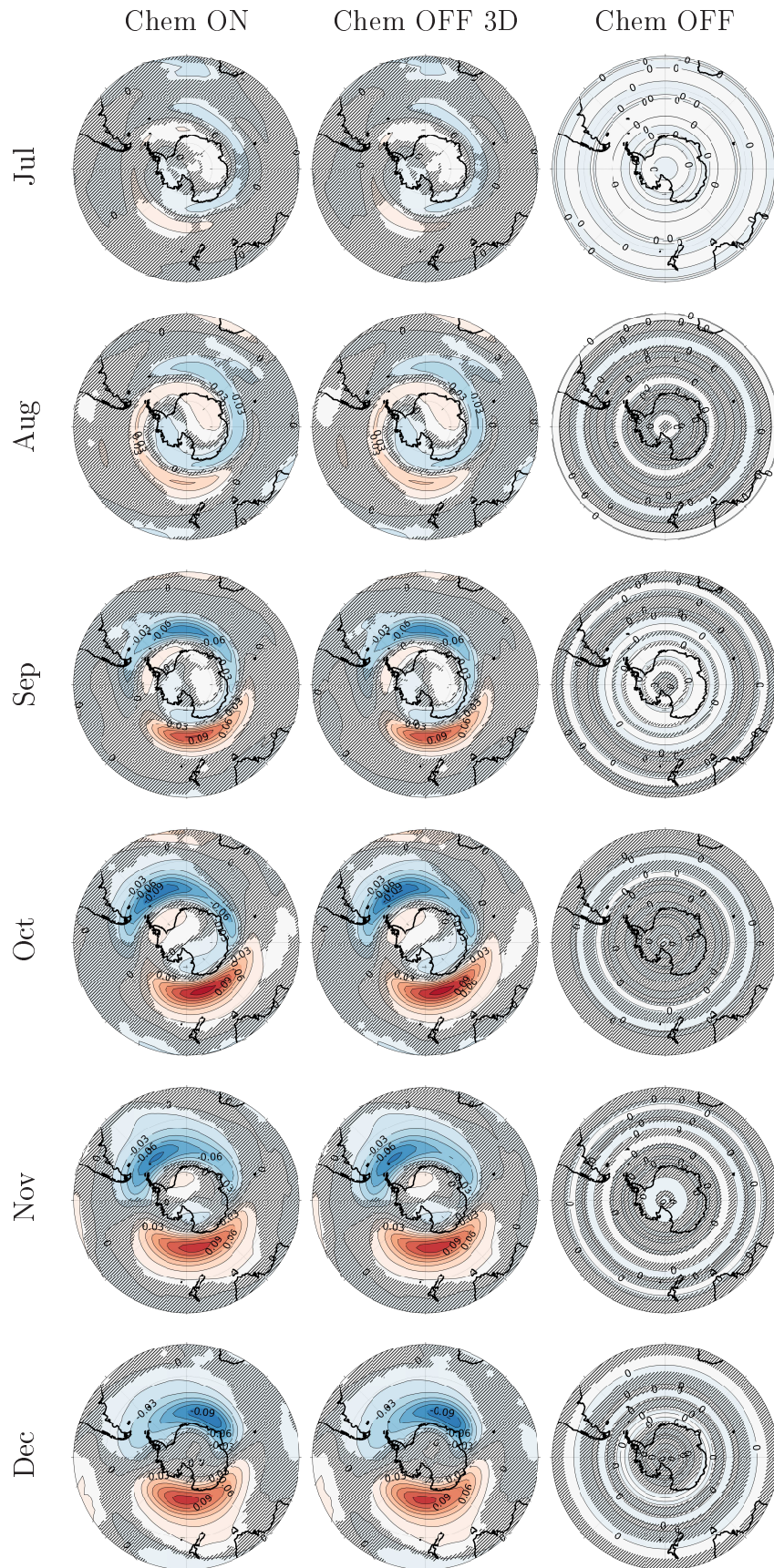


2 Trend 1979-2007

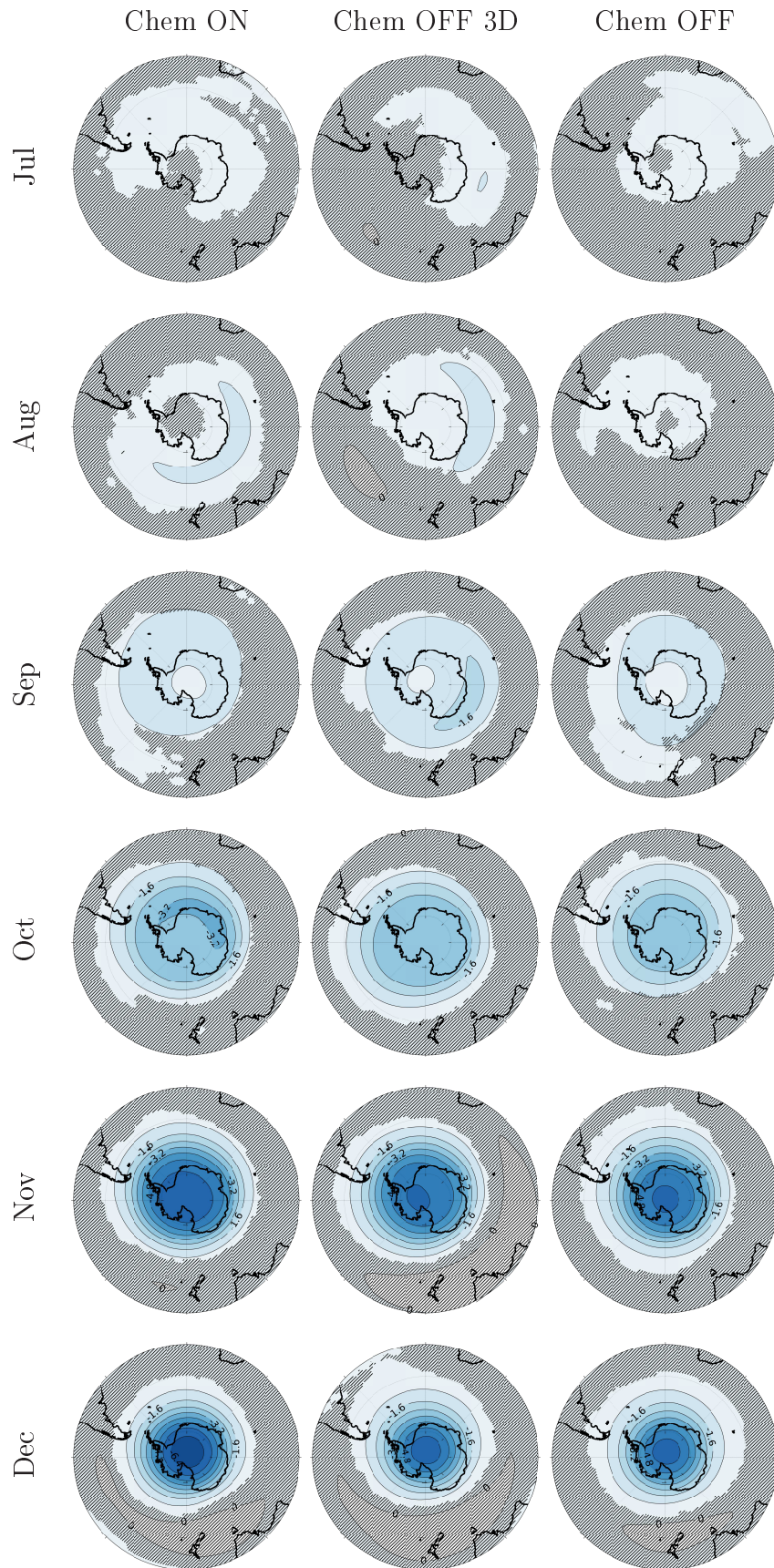
2.1 Ozone at 50 hPa - total field



2.2 Ozone at 50 hPa - eddy field



2.3 Temperature at 50 hPa - total field



2.4 Temperature at 50 hPa - eddy field

