



Evolution of pre- and post 2000 changes and trends in the vertical distribution of ozone from CCM1 models

Kleareti Tourpali (1), Stergios Misios (2), Sandip Dhomse (3), Martyn Chipperfield (3), Douglas D. Kinnison (4), M.ichaela Hegglin (5), Hideharu Akiyoshi (6), Olaf Morgenstern (7), David Plummer (8), Gianni Pitari (9), Robyn Schofield (10,11), Kevin Stone (10,11,12), Guang Zeng (7), Irina Petropavlovskikh (13), Daan Hubert (15), Sophie Godin-Beekmann (16), Robert Damadeo (17), Birgit Hassler (18), and Viktoria Sofieva (19)

(1) Aristotle University of Thessaloniki, Lab of Atmospheric Physics, Physics Department, Thessaloniki, Greece (tourpali@auth.gr), (2) Clarendon Laboratory, Department of Physics, Oxford University, UK, (3) School of Earth and Environment, University of Leeds, Leeds, LS2 9JT, UK, (4) National Center for Atmospheric Research (NCAR), Boulder, Colorado, USA, (5) Department of Meteorology, University of Reading, Reading, UK, (6) National Institute of Environmental Studies (NIES), Tsukuba, Japan, (7) National Institute of Water and Atmospheric Research (NIWA), Wellington, New Zealand, (8) Climate Research Division, Environment and Climate Change Canada, Montreal, Canada, (9) Department of Physical and Chemical Sciences, Universita dell'Aquila, Italy, (10) School of Earth Sciences, University of Melbourne, Melbourne, Australia, (11) ARC Centre of Excellence for Climate System Science, Sydney, Australia, (12) Massachusetts Institute of Technology (MIT), Boston, Massachusetts, USA, (13) GMD, NOAA/ESRL, Boulder, CO, USA, (15) Royal Belgian Institute for Space Aeronomy, Brussels, Belgium;, (16) Centre National de la Recherche Scientifique (CNRS), Guyancourt, France;, (17) NASA Langley Research Center, Hampton, VA, (18) Zentrum für Luft- und Raumfahrt (DLR), Institut für Physik der Atmosphäre, Oberpfaffenhofen, Germany, (19) Finnish Meteorological Institute, Helsinki, Finland

In this work we examine the evolution of changes in the zonal mean vertical distribution of ozone from a number of models participating in the CCM1 phase 1 project, using ozone data from the REF-C2 series of simulations. Trends are calculated for the pre- and post-2000 periods, in accordance to the regression analysis and tools presented in the LOTUS SPARC Project (and compared to satellite-derived trends for the same period). Results are compared to similar analysis from the fixed-ODS and fixed-GHG simulations pertaining to the same set of CCM1 models in order to disentangle and quantify the confounding influences of decreasing ODSs and GHGs on ozone recovery