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## The recent turnaround in stratospheric ozone over northern middle latitudes: a dynamical modelling approach

P. Hadjinicolaou (1), J.A. Pyle (1,2), N.R. Harris (1,3)

(1) Centre for Atmospheric Science, University of Cambridge, UK, (2) Atmospheric Chemistry Modelling Support Unit, NCAS, University of Cambridge, UK, (3) European Ozone Research Coordinating Unit, University of Cambridge, UK

The past trends in stratospheric ozone are studied using chemical-transport model (CTM) simulations and statistical trend analysis. The SLIMCAT CTM is forced by the ERA-40 ECMWF analyses in decadal integrations using a simplified stratospheric chemistry scheme in order to separate the meteorological effect on ozone. The year-to-year model ozone variations compare well with the merged TOMS and SBUV measurements from 1979 to present in the Northern Hemisphere (NH) and the long-term model ozone anomalies, relative to 1980, capture a large part of the observed changes, especially the strong positive tendency after the mid-1990s. A linear regression analysis of the total ozone time-series shows that around one-third of the observed downward trend during 1979-1993 and most of the observed upward trend from 1994 to 2003 are reproduced by the model which is forced only by transport changes. This highlights the potentially important role of dynamics in the attribution of the future ozone recovery.