



Reassessment of the Atmospheric Response to the Pinatubo eruption using a nudged CCM

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The eruption of the Pinatubo volcano introduced large variations in the behaviour of the stratosphere, with significant temperature and ozone deviations. Ozone concentrations in the lower stratosphere were affected by changes in temperatures, the mean circulation and the extent of heterogeneous activation of ozone-destroying species.

We investigate intra-seasonal deviations in ozone and dynamics using a nudged version of the new UKCA model. The UKCA model combines the Met Office's New Dynamics Unified Model with a new description of chemistry. Nudging constrains the model using the ERA-40 analysis data to reproduce the observed meteorology from 1990 onwards.

The nudging will allow the post-Pinatubo temperature excursion and associated changes in circulation to be reproduced. The effect of these anomalies on the ozone will be studied and compared to observations. The temperature tendencies of the nudged model will also be studied to investigate the model dynamics.