



Analysis of a CTM multi-annual run for solar induced variability

T. Reddmann, R. Ruhnke, M. Wiehle, R. Uhl, W. Kouker

Institute for Meteorology and Climate Research, Research Center and University of Karlsruhe, Germany (Contact: thomas.reddmann@imk.fzk.de)

Recent analysis of observations of stratospheric polar ozone and a state-of-the-art CTM indicate a tight correlation between solar particle flux and the residuum between observation and model ozone concentration in the middle stratosphere during polar winter (Sinnhuber et al., 2006). Here we analyse the results of a multiannual run with the KASIMA model for possible signatures of solar variability. Whereas the model generally shows a good agreement between ground based and satellite based observations of long-lived tracers and ozone, we find for mid stratospheric ozone at high latitudes generally a good correlation between the model and observations. Only in the years 1994/95 and 2003 observations clearly indicate a ozone deficit compared to the model results. For the year 2003, a model simulation with additional NO_x according MIPAS-observations reduces this disagreement. We speculate that NO_x transported downward in the course of the winter can partially explain the correlation with observation but argue, that also specific transport properties could cause deviations between model and observation adding artificially to this correlation.