



## **First results from QUANTIFY: Ozone perturbations from traffic emissions and the chemical state of the atmosphere**

**P. Hoor** (1), D. Caro(2), O. Dessens(3), S. Dalsoren(4), M. Gauss(4), V. Grewe(7), D. Hauglustaine(2), I. Isaksen(4), P. Jöckel(1), J. Lelieveld(1), E. Meijer(6), C. Schnadt Poberaj(5), P. van Velthoven(6)

(1)Department of Atmospheric Chemistry, Max Planck Institute for Chemistry, Mainz, Germany (2)Laboratoire des Sciences du Climat et de l'Environnement (LSCE), Gif-sur-Yvette CEDEX, France, (3)Centre for Atmospheric Science, Department of Chemistry, Cambridge, U.K., (4)Department of Geosciences, University of Oslo, Norway, (5)Institute for Atmospheric and Climate Science, ETH Zürich, Switzerland, (6)Royal Netherlands Meteorological Institute, De Bilt, The Netherlands, (7)Institute for Atmospheric Physics, Deutsches Zentrum für Luft- und Raumfahrt, DLR, Oberpfaffenhofen, Germany

In the framework of QUANTIFY the effect of traffic emissions on the current state of the atmosphere was simulated. The simulation focussed on the year 2003 and involved six models. Traffic emissions were separated into road, ship and aircraft emissions. Non-traffic emissions based on the latest release of the EDGAR database (EDGAR 3.2, Fast Track 2000). To estimate the effect of the different transport sectors, five simulations were performed by each model: The full set of emissions was used for the base case, three simulations with emissions for each respective transport sector reduced by 5 % and a run with all emissions being reduced. We will present first results focussing on the perturbations of ozone from the different transport sectors. The models indicate that in particular road emissions not only affect the northern hemisphere troposphere, but also have an impact on the ozone budget in the UTLS region. The effect is strongest during northern summer and of a similar order of magnitude like the impact of aircraft emissions. The strong effect of road traffic on the summer tropopause region is most likely related to convective transport of NO<sub>x</sub> from road transport in the mid latitudes.