

MAX-DOAS Measurements during MCMA-2006

R. Sinreich¹, T. Wagner,^{1,2} S. Beirle,^{1,2} A. Merten,¹ U. Platt,¹ L.T. Molina^{3,4}, and R. Volkamer^{3,5}

- 1) Institute of Environmental Physics, University of Heidelberg, Heidelberg, Germany
- 2) now at Max Planck Institute for Chemistry, Mainz, Germany
- 3) Earth, Atmospheric, and Planetary Sciences, MIT, Cambridge, MA 02139
- 4) Molina Center for Energy and the Environment, La Jolla, CA 92037
- 5) Department of Chemistry and Biochemistry, UC San Diego, La Jolla, CA 92093

Roman Sinreich, University of Heidelberg, sinreich@iup.uni-heidelberg.de

Multiple Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) measurements were performed in different locations throughout the Mexico City Metropolitan Area. MAX-DOAS instruments observe scattered sunlight from a variety of viewing directions to derive slant column densities (integrated concentration of different trace gases along the light path). Networks of MAX-DOAS setups gain information on the horizontal and vertical distribution of atmospheric trace gases.

The measurements were conducted at T0, T1, T2 (quasi-lagrangian setup), Pico Tres Padres, Tenango del Aire and Cerro Chiquevite. One instrument stayed permanently at T0 and pointed simultaneously in 3 azimuth directions, while the others were changed between sites during the measurement period. Slant column densities of NO₂, HCHO, CHOCHO, HONO, O₄ and SO₂ were retrieved to constrain transport and photochemical processes within the MCMA.

We present preliminary results of NO₂ and CHOCHO time series and compare them with active DOAS measurements as well as observations from the satellite instrument SCIAMACHY. Furthermore, we show a retrieval of HONO, which to our knowledge is the first example of HONO detection by passive DOAS in the atmosphere.