UP 7: Poster: Satellitengestützte Messungen

Zeit: Dienstag 16:30–19:00 Raum: Poster B1

UP 7.1 Di 16:30 Poster B1

Satellite Observations of NO2 Export from South Africa — •Andreas Richter, Andreas Heckel, Joana Leitão Alexandre, and John P. Burrows — Institute of Environmental Physics, University of Bremen, Bremen, Germany

The Highvelt industrial area in South Africa is the largest single NO_x source in the Southern Hemisphere. Its signature is prominent in satellite measurements of tropospheric NO_2, and individual events of long range transport of NO_x from this source have been identified and discussed in earlier studies.

In this work, we use data from the new GOME-2 instrument to quantify the amount of NO_x exported from this source. This is facilitated by the nearly daily coverage of GOME-2 in combination with trajectory calculations. The results show that long-range transport of NO_x from South Africa occurs on a regular basis and that the impact can be detected several thousand kilometres downwind.

UP 7.2 Di 16:30 Poster B1

Effect of Horizontal Gradients in Limb Measurements of Scattered Sunlight — •Janis Puķīte[1], Sven Kühl[1], Tim Deutschmann[2], Ulrich Platt[2], and Thomas Wagner[1] — [1]Max-Planck-Institut für Chemie, Mainz, Germany — [2]Institut für Umweltphysik, University of Heidelberg, Germany

Limb measurements provided by the SCanning Imaging Absorption spectrometer for Atmospheric CHartographY (SCIAMACHY) on the ENVISAT satellite allow retrieving stratospheric profiles of various trace gases on a global scale. We use a two step method for the retrieval in the UV/VIS spectral region: First, DOAS is applied on the spectra, yielding slant column densities (SCDs) of the respective trace gases. Second, the SCDs are converted into vertical concentration profiles applying radiative transfer modeling. An important point is the effect of horizontal gradients on the profile retrieval. This is of special interest in Polar Regions, where photochemistry can highly vary along the long absorption paths. We investigate the influence of horizontal gradients by applying 3-dimensional radiative transfer modeling.