



Trends of stratospheric trace gases derived from ground-based FTIR measurements in Kiruna (Sweden)

S. Mikuteit (1), T. Blumenstock (1), F. Hase (1), I. Kramer (1), U. Raffalski (2)

(1) Institute of Meteorology and Climate Research (IMK), Forschungszentrum Karlsruhe, Germany, (2) Institute of Space Physics (IRF), Kiruna, Sweden (sabine.mikuteit@imk.fzk.de / Fax: +49 7247-4742 / Phone: +49 7247-826222)

Within the framework of the NDSC (Network for the Detection of Stratospheric Change) the IMK operates together with the IRF and the University of Nagoya a ground-based Fourier-Transform Infrared Spectrometer (FTIR) in Kiruna (Sweden, 68°N, 20°E, 420m NN). Due to the short polar night in Kiruna, chemical processes as chlorine activation, denitrification and ozone loss can be observed.

Absorption spectra are recorded in the infrared spectral region using the sun as natural source of radiation. From these spectra profiles and column amounts of several stratospheric species such as O₃, HCl, HNO₃, ClONO₂, ClO and HF are retrieved, which are relevant for ozone chemistry.

The evaluated time series cover the years 1996 to 2004. Therefore about 900 days of measurement have been evaluated. Objectives are to study processes and variability during arctic winters, comparison with models and the determination of trends.

This poster will focus on trend estimation of stratospheric gases. Especially chlorine species are of particular interest to check the efficiency of the Montreal Protocol.