Geophysical Research Abstracts
Vol. 16, EGU2014-14891, 2014
EGU General Assembly 2014

Ground-based Fourier transform infrared spectroscopy in central Mexico

Eddy Plaza (1), Wolfgang Stremme (1), Alejandro Bezanilla (1), Jorge Baylon (1), Michel Grutter (1), Thomas Blumenstock (2), and Frank Hase (2)

(1) Centro de Ciencias de la Atmosfera, Universidad Nacional Autonoma de Mexico, Mexico City (francis@atmosfera.unam.mx), (2) Karlsruhe Institute for Technology, Institute for Meterology and Climate Research, Germany

Altzomoni is a high altitude station in central Mexico (19.12 N, 98.65 W, 4000 m a.s.l.) for continuous measurements of various atmospheric parameters. It is located within the Izta-Popo National Park and is operated remotely from the UNAM campus. Since May 2012, high resolution solar absorption spectra have been recorded from this site using a FTIR from Bruker (HR120/5) equipped with MCT, InSb and InGaAs detectors and various optical filters. In this contribution we present a detailed description of the measurement site and the instrumental set-up including a record of the instrumental line-shapes (modulation efficiency and phase error) obtained from cell measurements and analyzed with the LINEFIT code.
A preliminary analysis of almost two years of spectra recorded at the Altzomoni site resulting in profile retrievals of four NDACC gases O_3, CO, HF and HCl is presented. The retrieval code PROFFIT is used and the Averaging Kernels and an error analysis are used to describe the quality of the measurements. The annual cycles in the time series of O_3 and CO are presented and discussed, as well as some examples of anomalies due to volcanic gas emissions of HF and HCl are shown. The presented work is part of an effort to certify this station as part of the NDACC international network.