Geophysical Research Abstracts,
Vol. 10, EGU2008-A-04613, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-04613
EGU General Assembly 2008

Methane and nitrous oxide observations at the high mountain station of Mt. Cimone (2165 m a.s.l.), Northern Apennines, Italy

J. Arduini (1), F. Uguccioni (1), M. Maione (1), P. Bonasoni (2), P. Cristofanelli(2) and A. Marinoni

University of Urbino, Italy (1), CNR-Institute for Atmospheric Sciences and Climate, Bologna, Italy (2) (michela.maione@uniurb.it)

Observations of climate altering gases at the Italian high mountain station of Monte Cimone (Northern Apennines, 2165 m a.s.l.) has been carried out since 2001, where halogenated greenhouse gases are continuously monitored. The location is crucial both for assessing baseline concentrations and for identifying transport events from the polluted areas located in the nearby valleys.Recently –July 2007- a new instrumentation has been set up to include also other important climate controlling compounds: CH4, CO, N2O and SF6. The analytical system consists of a dual channel gas-chromatograph equipped with both FID and ECD detectors; each channel consists of a 10-port 2-position switching valve, a 10 ml sampling loop, a pre- and the analytical column; every 15 minutes an air sample is injected into the GC where the separation takes place isothermically at 60˚C by means of a Unibeads 1S and a Molecular Sieve 5Å column (FID channel) and two Hayesep Q columns (ECD channel). CH4 is directly analyzed by GC-FID, while CO is converted to and analyzed as CH4; N2O and SF6 are detected by GC-ECD. Each real air sample is bracketed with calibrated air sample analysis -working standard-. This results in 2 real sample per hour continuously calibrated. Calibration scale is linked to the AGAGE (Advanced Global Atmospheric Gases Experiment) network calibration scales SIO-98 and UB-98. Preliminary results of the instrument performance will be presented as well as the available time series; also some selected episodes will be shown in relation to the behaviour of the other chemical and physical measurements acquired at the station.