Geophysical Research Abstracts
Vol. 13, EGU2011-13967, 2011
EGU General Assembly 2011

New TCCON compliant measurements at Ile de La Réunion

Martine De Mazière (1), Filip Desmet (1), Christian Hermans (1), Alexis Merlaud (1), Francis Scolas (1), Pierre Gérard (1), Cindy Senten (1), Jean-Luc Baray (2), Valentin Duflot (2), and Jean-Marc Metzger (2)

(1) Belgian Institute for Space Aeronomy, Brussels, Belgium (martine@oma.be), (2) Laboratoire de l'Atmosphère et des Cyclones, Université de La Réunion, St Denis, La Réunion

Since 2002, ground-based Fourier transform solar absorption measurements with a Bruker 120M spectrometer have been carried out at St Denis, Ile de La Réunion. These measurements contribute to the database of atmospheric trace gas concentrations of the Network for the Detection of Atmospheric Composition Change (NDACC). Ile de La Réunion is an island situated in the southern hemisphere subtropics (21°S, 55°E) in the Indian Ocean, east of Madagascar. It undergoes strong influences of the biomass burning in Madagascar and Africa in the months September to December. St Denis is situated at low altitude ($\sim$ 50 masl), close to the ocean.

In 2011, we will start the operation of a Bruker 125HR spectrometer at the same site, for making high precision measurements of greenhouse gases (CO2, CH4, N2O) that are compliant with the requirements of the Total Carbon Column Observing Network (TCCON). At start, the Bruker 125HR and the Bruker120M will be operated in parallel. From 2012 onwards, with the opening of the new NDACC infrastructure at the mountain site Maido ($\sim$ 2100 masl), we will install a second Bruker 125HR at this high mountain site, for the continuation of regular NDACC measurements and for performing differential measurements on a campaign basis.

Both experiments will be carried out using BARCOS, the Bruker Automatic and Remote Control System (Neefs et al., 2007), in a collaboration between the Belgian Institute for Space Aeronomy (BIRA-IASB) and the Laboratoire de l'Atmosphère et des Cyclones (LACy) de l'Université de La Réunion. In situ surface concentration measurements of greenhouse gases will be performed with a PICARRO instrument which is already operational at the site.