Geophysical Research Abstracts,
Vol. 10, EGU2008-A-01036, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-01036
EGU General Assembly 2008

Three years of SCIAMACHY carbon dioxide and methane column-averaged dry air mole fraction retrievals

O. Schneising, M. Buchwitz, J. P. Burrows, and H. Bovensmann
Institute of Environmental Physics (IUP), University of Bremen FB1, Bremen, Germany

We present three years of global data of the two most important anthropogenic greenhouse gases carbon dioxide (CO_2) and methane (CH_4) retrieved from SCIAMACHY near-infrared nadir satellite observations using the latest version of the scientific retrieval algorithm WFM-DOAS (version 1.0). The time period covers the first three years of ENVISAT (2003-2005). The main data products are the column-averaged dry air mole fractions, computed by dividing the absolute column of the gas of interest by the air column which can be determined by a simultaneously measured gas with less variability, as these are the quantities needed for inverse modelling to get information on the greenhouse gas sources and sinks. The satellite CO_2 data set is compared with ground based Fourier Transform Spectroscopy (FTS) measurements and results from NOAA's global assimilation system CarbonTracker. The satellite CH_4 data set is compared with global model simulations based on the TM5 model optimised versus high-accuracy surface measurements from the NOAA/ESRL network.