Geophysical Research Abstracts
Vol. 14, EGU2012-11939, 2012
EGU General Assembly 2012

Retrieval of atmospheric CO_2 from satellite near-infrared nadir spectra: inter-comparison of different algorithms

M. Reuter, M. Buchwitz, O. Schneising, J. Heymann, H. Bovensmann, and J.P. Burrows
University of Bremen, Germany (reuterm@loz.de)

Carbon dioxide is the most important anthropogenic greenhouse gas. Its global increasing concentration in the Earth's atmosphere is the main driver for global warming. However, in spite of its importance, there are still large uncertainties on its global sources and sinks. Satellite measurements, if accurate and precise enough, have the potential to reduce these surface flux uncertainties. At present, there are only two satellite instruments orbiting the Earth which are able to measure the CO_2 mixing ratio (XCO_2) with large sensitivity also in the boundary layer. These are SCIAMACHY (launched in 2002) and GOSAT (launched in 2009). Worldwide, several teams of scientists are developing algorithms aiming to meet the challenging user requirements. The majority of these groups take part in ESA's climate change initiative (CCI) on greenhouse gases (GHG) where there algorithms stand into competition. Within the presentation, recent inter-comparison results will be shown focusing on global SCIAMACHY nadir observations.