Geophysical Research Abstracts,
Vol. 11, EGU2009-7679, 2009
EGU General Assembly 2009

Quantifying volcanic SO_2 emissions using GOME-2 measurements

A. Richter, F. Wittrock, A. Schönhardt, and J. P. Burrows

University of Bremen, Institute of Environmental Physics (IUP), Bremen, Germany
(andreas.richter@iup.physik.uni-bremen.de, +49-(0)421-2184555)

Volcanic activity is a large source of emission of trace gases and aerosols into the atmosphere, both during explosive eruptions and through degassing. In particular volcanic eruptions can produce large plumes of SO_2 that, depending on injection altitude, can be transported over large distances.

Using the strong UV absorption bands of SO_2, it can be detected in satellite measurements of the scattered solar flux. Using the well known DOAS technique, SO_2 emissions from several volcanic eruptions in 2007 and 2008 have been investigated using measurements from the GOME-2 instrument on board of MetOp. The emphasis is on estimating the total amount of SO_2 emitted and evaluating the uncertainties of the method.