Geophysical Research Abstracts,
Vol. 11, EGU2009-3790-1, 2009
EGU General Assembly 2009

Carbon monoxide from biomass burning

P.B. Hooghiemstra (1,2), M.C. Krol (1,2,3), S. Houweling (1), and J. de Laat (4)

(1) Netherlands Institute for Space Research (SRON), Utrecht, The Netherlands, p.b.hooghiemstra@uu.nl, (2) Institute of Marine and Atmospheric research Utrecht (IMAU), Utrecht University, Utrecht, The Netherlands, (3) Wageningen University (WUR), Wageningen, The Netherlands, (4) The Royal Netherlands Meteorological Institute (KNMI), de Bilt, The Netherlands

Biomass burning perturbs the atmospheric composition on both regional and global scales. Amongst others, carbon monoxide (CO) is emitted by fires, which is detectable globally by satellites and therefore suited to investigate the impact of biomass burning on the atmospheric composition.

We intend to estimate the magnitude, trend and variability of biomass burning CO using an inverse modeling framework, with measurements from both surface stations and satellite observations. Measurements from two satellite instruments will be used to optimize the CO sources: the MOPITT instrument, sensitive to CO in the middle troposphere, and SCIAMACHY, which is more sensitive close to the Earth's surface where the emissions take place.

A first step is to simulate the CO concentrations with a global atmospheric chemistry transport model (TM5) forward in time, given an inventory of CO emissions. The concentration fields are compared to the observed fields from SCIAMACHY and MOPITT.