



## **Global Observations of Formaldehyde and Glyoxal with spaceborne and ground-based UV/vis Instruments**

**F. Wittrock** (1), A. Richter (1), J.P. Burrows (1), R. Volkamer (2)

(1) University of Bremen, Institute of Environmental Physics, D-28334 Bremen (2) University of California, Dept. Chemistry and Biochemistry (Email: mail@folkard.de/Fax 0049-421-2184555)

The oxidation of volatile organic compounds (VOCs) is an important step in the tropospheric photochemistry and in the formation of photochemical smog. But due to the complex pathways of the oxidation processes, it is difficult to quantify.

Here, the first global measurements of the trace gas glyoxal, an intermediate in VOC oxidation, derived from stray light spectra in the visible region measured by the satellite instrument SCIAMACHY along with ground-based MAX-DOAS instruments are described. The analysis was carried out using the method of the Differential Optical Absorption Spectroscopy (DOAS). The work complementarily presents measurements of the trace gas formaldehyde.

This work offers the opportunity to obtain a better estimate on the sources and sinks of VOCs in the atmosphere and therefore to identify photochemical hot spots. Case studies illustrate the significance of biogenic emissions and of biomass burning for the global distribution of the oxygenated volatile organic compounds.