



Photoinduced reaction of ozone on HULIS aerosols

A.Jammoul(1), B. D'anna(1), Ch. George(1), K. Stemmler(2), S. Fahrni(2) and M. Ammann(2)

(1) CNRS, UMR5256, Institut de recherches sur la catalyse et l'environnement de Lyon, Villeurbanne; F-69626, France (2) Laboratory of Radio-and Environmental Chemistry, Paul Scherrer Institute, Villigen, Switzerland (adla.jammoul@ircelyon.univ-lyon1.fr / FAX: +33 472448438)

Humic-like substances in submicron aerosols in the Troposphere may potentially affect the troposphere ozone budget. The interactions of ozone with submicron particles and films of humic acids have been investigated under different light conditions using aerosol and coated flow tubes systems. The uptake coefficients have been evaluated at ambient pressure and temperature in dark and light conditions.

Under simulated atmospheric conditions with respect to the irradiance, relative humidity and O₃-concentration, the reactive uptake coefficients ranged between $\gamma < 10^{-6}$ (in the dark) to $\gamma \sim 10^{-5}$ (UV- lights) and decreased with increasing O₃ volume mixing ratio in the range 25-250 ppb. All experiments showed dependence on the relative humidity: in the irradiated experiment, the ozone uptake coefficient decreased at high humidity (<65 % RH) while in dark conditions the uptake showed a slight increase. Reactive uptake was investigated as a function of the pH in the range 4.5-9.5 and showed higher values in a basic environment