
**UP 14: Poster: Heterogene Prozesse in der Atmosphäre - gemeinsam mit dem Arbeitskreis
Atmosphärenchemie (AKAC) der GDCh**

Time: Tuesday 14:00–15:00

Location: Poster C

UP 14.1 Tue 14:00 Poster C

Light induced uptake of NO₂ on submicron humic acid aerosol — •JÖRG KLEFFMANN¹, MARKUS AMMANN², BIRGER BOHN³, YASIN ELSHORBANY¹, CHRISTIAN GEORGE⁴, MARIEME NDOUR⁴, and KONRAD STEMMLER² — ¹Bergische Universität Wuppertal, Germany — ²Paul Scherrer Institut, Villigen, Switzerland — ³Forschungszentrum Jülich, Germany — ⁴University Claude Bernard, (UCBL-CNRS), Villeurbanne, France

Recent field studies have demonstrated that the contribution of HONO to the OH radical production during daytime has been underestimated and indicated the existence of strong photolytic sources of HONO. A potential source is the light induced heterogeneous conversion of NO₂ into HONO on humic acid surfaces, which was recently investigated

on bulk surfaces. In the present laboratory study, we extended these studies to humic acid aerosols, which were generated by a nebulizer. The aerosol was transferred into a flow reactor and irradiated (300-700 nm) under controlled atmospheric conditions (humidity, NO₂ concentration, etc.). HONO was detected using a selective and sensitive instrument (LOPAP), while the particle surface was quantified by a SMPS and an electrostatic precipitator. Similar to our recent study on bulk surfaces, a clearly photoinduced formation of HONO was observed, which was linear correlated with the aerosol surface and the reaction time. The experimental results are compared with the bulk study and a mechanism is presented to explain the experimental observations. In addition, the contribution to the primary production of OH radicals in the atmosphere is estimated.