Monitoring of organic compounds in aerosols and the gas phase during the EUCAARI-IOP campaign at the Cabauw site

R. Holzinger (1), F. Herrmann (2), J. Williams (2), and T. Röckmann (1)

(1) Institute for Marine and Atmospheric research Utrecht (IMAU), Netherlands (r.holzinger@uu.nl), (2) Max Planck Institute for Chemistry, Mainz, Germany

During the EUCAARI-IOP campaign at the Cabauw site, Netherlands, a new instrument has been deployed to monitor the chemical composition of aerosols. The technique is based on impaction aerosol sampling and uses PTR-MS as detector. The chemical compounds are measured in situ in both the gas and the particle phase. A detection limit below 500 pg/m^3 has been realized for many compounds. With some modifications the sensitivity can be easily improved by a factor of \( \sim 10 \). The largest detected signal was attributed to nitrate (several micrograms/m^3) and is in good agreement with other nitrate measurements simultaneously performed at the same site. Besides organic fragments with the chemical structure of formaldehyde, acetaldehyde, methanol and acetone \( \sim 75 \) other compounds have been detected among these are organic nitrogen and organic halogen compounds. Many compounds exhibit distinct daytime/nighttime patterns and their concentrations vary with respect to transport history.