**Aerosol-chamber study of the a-pinene/$O_3$ reaction: Influence of particle acidity on aerosol yields and products.**

Olaf Böge, Yoshiteru Iinuma, Thomas Gnauk, Yunkun Miao and Hartmut Herrmann

*Leibniz Institut für Troposphärenforschung, Permoserstraße 15, 04318 Leipzig*

Atmospheric aerosols often contain a substantial fraction of organic matter.
Particulate organic carbon can either be emitted directly (primary OC) or can be formed by gas-to-particle conversion processes (SOA).
The contribution of SOA to the measured organic aerosol concentration remains a controversial issue.
Atmospheric oxidation of biogenic hydrocarbons is believed to be a major source of SOA in the troposphere. However, our knowledge is still limited to understand the amount and the chemical nature of the produced aerosol.
The purpose of the present study is to determine the influence of aerosol aqueous phase chemistry on the aerosol yields and particulate products.
In the case of a-pinene Acidic seed particles enhances the SOA yields.
CE-ESI-MS showed a large increase in the concentration of oligomeric compounds.
This result suggest that particle acidity of atmospheric aerosols plays an important part in the heterogeneous reaction of SOA and may explain an unresolved fraction of organic aerosols in the atmosphere.
In the studies with isoprene one possible route to 2-methyltetrols as particulate oxidation products of isoprene was shown in an aerosol-chamber study.
The rate of this multiphase reaction including phase transfer should be addressed in future research, which would then enable us to estimate the significance of the process in the atmosphere.