

Multiphase Chemistry Contributions to SOA Formation

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In the first part results from the Leipzig Aerosol Chamber (LEAK) and select field investigations will be presented and discussed dealing with the formation of highly oxidized molecules (HOMs) from terpenes and their transfer into the particle phase. Here, investigations of ozone and OH initiation will be discussed with emphasis on uptake and particle phase analytics. Molecular mechanisms will be outlined and the potential impact of HOMs transfer on particle oxidant levels will be studied by CAPRAM modelling.

In the second part, the Hill-Cap Cloud Thuringia (HCCT-2010) will be described and results will be presented to characterize chemical aerosol-cloud interaction resulting in changing processed particle composition both with regards to inorganic and organic constituents. The results suggest that additionally formed organic mass during cloud processing is related to both anthropogenic emissions and the intensity of solar radiation under the campaign conditions.

A summary addressing possible impacts and an outlook will be given.