FIELD, LABORATORY AND MODELING STUDIES OF TROPOSPHERIC PARTICLE CHEMISTRY

H. Herrmann, B. Ervens, J. Hesper, P. Barzaghi, D. Hofmann and C. Neusüß
Institut für Troposphärenforschung, Permoserstr. 15, 04318 Leipzig

Tropospheric multiphase chemistry is studied in field measurements, laboratory and modelling studies. Examples from recent aerosol and cloud characterisation field experiments will be presented.
Laboratory studies are discussed which have been performed to gain better information on chemical conversions in clouds and the wet tropospheric aerosol. Examples are presented for reactions of OH and NO_3. In the latter case laser photolysis and time-resolve radical measurements have been coupled to HPLC product studies for reactions with phenols. Based on individual laboratory experiments, classes of reactions are discriminated and reactivity correlations are outlined, the use of which for extending chemical multiphase mechanism schemes for tropospheric chemistry is discussed.
Model development for tropospheric chemistry will be shortly reviewed and recent results on the aqueous phase chemistry scheme CAPRAM2.4 in its extended as well as in a recent condensed version will be described. Finally, an outlook on upcoming research issues in tropospheric multiphase chemistry will be given.