

MODEL CALCULATIONS OF TROPOSPHERIC MULTIPHASE CHEMISTRY

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Tropospheric multiphase chemistry is described with a box model including gas phase chemistry (RACM) and aqueous phase chemistry (CAPRAM2.4). Compared to former calculations the organic chemistry in the mechanism is extended with reactions of oxalic acid /oxalate and glyoxal. In the study the concentration levels of radicals and the most important sink and source reactions in both phases are discussed. The importance of the aqueous phase chemistry leading to enhanced or reduced concentration levels of gas phase species, respectively, will be also clarified for several selected systems. Sinks and sources are discussed for OH, NO₃, halogen-containing radicals and small organic peroxy radicals. The main sources for particulate sulfate according to the mechanism presented here are also discussed. Some reactions of halogen containing species were added to the basis mechanism (CAPRAM2.3+Marine) explaining effects of the halogen activation under marine conditions. The reaction pathways of the halogen containing species in both phases explain the chlorine activation caused by processes within the droplet.

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