

Interfaces Between Gas Phase Mechanisms and Aqueous Chemistry

**Hartmut Herrmann, Paolo Barzagli, Dirk Hoffmann, Yoshi Iinuma, Olaf Böge
Leibniz-Institut für Troposphärenforschung, Leipzig, Germany**

In this presentation the linking between gas phase VOC chemistry to tropospheric aqueous phase chemistry is being discussed. After motivating this area of work the contribution will be divided into three sections: (i) Laboratory investigations of aqueous phase radical chemistry and phase transfer, (ii) related multiphase modelling with our CAPRAM and SPACCIM package and, (iii) recent results from chamber experiments on the formation of macromolecular compounds.

In section (i) the laser-based experiments available for investigating aqueous solution phase radical reactions are shown together with selected analytical equipment which is applied for product analysis. Recent results on aqueous phase reactions of OH and NO₃ are presented. Section (ii) will describe the current state of modelling applying CAPRAM, the Chemical Aqueous Phase Radical Mechanism and what results are on mainly the oxidation of organics. In section (iii) our chamber experiments with emphasis on the formation of macromolecular compounds following terpene and isoprene oxidation is summarised and recent findings such as the formation of organics sulphate esters are discussed.

The contribution will be concluded by a discussion on perspectives of tropospheric aqueous phase chemistry studies which are thought to be mainly in the construction of real multiphase VOC oxidation mechanisms improving VOC oxidation description beyond pure gas phase schemes and improving our predictive possibilities.