

Recent developments in atmospheric multiphase chemistry

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In this presentation an overview on recent developments in atmospheric multiphase chemistry will be given. After motivating this area of work the contribution will be divided into four sections: (i) The connection of particle phase and aqueous phase chemistry with the gas phase: Phase transfer and the role of the surface, (ii) Laboratory investigations of bulk aqueous phase aqueous phase radical chemistry (iii) related multiphase modelling with our CAPRAM and SPACCIM package and, (iv) recent realistic lab experiments.

In section (i) Phase transfer is being discussed in view of the classical treatment with the resistance model, more advanced recent looks and an overview on surface reactions which have been studied. In section (ii) mainly methods and results mainly from the IfT aqueous phase laboratory are presented together with recent results from the literature. In (ii) The IfT CAPRAM and SPACCIM models are described to show how at current multiphase chemistry finds its way into process models. An outlook on higher scale modelling is given. Finally, in (iv), a fog chamber and the LEAK aerosol chamber are described for the study of multiphase chemistry under realistic physical condition, i.e. with real aqueous droplets and deliquescent aerosols.

The contribution will be concluded by a discussion on perspectives of developments in the field.