



Experimental Evidences for the Formation of Organic Films

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We investigated the formation of ozonolysis products of monoterpenes (MT) in the presence of aqueous ammonium bisulphate and ammonium sulphate seed aerosols. The experiments were performed in the large Aerosol Chamber in Jülich. The MTs studied were α -Pinene, Limonene, Myrcene and Sabinene as well as an equimolar mixture of these four. The MTs and gas-phase products were measured by PTRMS (Proton Transfer Mass Spectrometry). The condensation of oxidation products onto the particles was measured by AMS (Aerosol Mass Spectrometry). Indication for the formation of surface films on the seed aerosols stems from three major observations. First the heterogeneous reaction of N_2O_5 on the particles was retarded in the presence of the ozonolysis products. The reduction of N_2O_5 hydrolysis by factors of 2-4 can not be explained if the organic component is distributed over the whole aerosol volume. Second in the presence of the organic component the AMS measured much higher particle water contents which is explained as an effect of the organic films. Further more the size distributions of the organic and sulfate particle component as measured by AMS show a size dependence which is explained by condensation of the MT ozonolysis products on the surface of seed aerosols.

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