

EINLADUNG

zum Vortrag von

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Turbulent transport, chemistry and growth of secondary aerosol in a coniferous forest

am Dienstag, 2. Juni 2015, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract

The environmental impact of the atmospheric aerosol depends on concentrations, sizes, the chemical composition and the spatial distribution of particles in the atmosphere. Close to the ground, number and mass concentrations and the spatial distribution of the atmospheric aerosol are determined to a large extent by turbulent exchange between the atmosphere and the surface. Also, new particulate matter is frequently produced by secondary aerosol formation. For example, coniferous forests emit large amounts of volatile organic compounds into the atmosphere. Chemical reactions of these biogenic compounds may lead to oxidation products which partition into the particle phase. This can be an important source of new aerosols and may contribute to condensational particle growth. Subsequently, dry deposition quickly removes a large fraction of these freshly formed particles from the atmosphere. However, aerosol emission bursts and bi-directional aerosol fluxes, i.e. simultaneous emission of small particles and deposition of larger particles, have also been observed in forests.

The interplay of biogenic volatile organic compound emission fluxes, gas-to-particle conversion processes, and the turbulent transport of aerosol particles in a Norway spruce forest will be discussed, and time scales of the underlying chemical reactions and the physical transport processes will be compared.

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