

Kolloquium des Institutes für Landschaftsökologie WS 16/17

Dienstags 18 Uhr c.t.
Hörsaal Heisenbergstr. 2

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Overview of Chemical, Physical, Optical and Radiative Measurements of Biomass-burning Aerosol and related pollutants during the Seven South East Asian Studies (7-SEAS) Spring Campaigns

Biomass burning is recognized as one of the major factors affecting the global carbon cycle and regional-to-global weather and climate. It routinely occurs during the spring seasons over northern Southeast Asia (SEA), i.e. the Indochina Peninsula. The Seven South East Asian Studies (7-SEAS) program has been promoted to perform interdisciplinary studies of the interaction of aerosols with meteorology and climate. Field experiments have been conducted in SE Asia during boreal spring. The main goals of these 7-SEAS spring campaigns are (1) to characterize the chemical, physical, optical and radiative properties of biomass-burning aerosols in northern SEA, and (2) to assess the impact of biomass burning on clouds, atmospheric radiation, the hydrological cycle, and regional climate. A monitoring network includes stations from northern Thailand and central Vietnam to Taiwan measuring the compositions of $PM_{2.5}$ and PM_{10} (some for TSP) including water-soluble ions, metal elements, black carbon (BC) and organic carbon (OC), Hg and dioxins. Continuous measurements of air quality and aerosol physical and optical properties and vertical profiles were conducted at supersites. The experiments provide a relatively complete and first dataset of aerosol chemistry and physical observations in the source and sink regions of biomass burning aerosols in the marine boundary layer and lower free troposphere. The presentation will overview the 2010-2015 7-SEAS field studies and discuss their results, particularly for the characterization of biomass-burning aerosol at source regions in northern Thailand and northern Vietnam, and receptor stations in Dongsha Island and Taiwan.