



The fate and effects of organics at atmospheric interfaces

J. A. Thornton (1), V. F. McNeill (1), G. M. Wolfe (2), R. Wood (1)

1. Department of Atmospheric Sciences, University of Washington, Seattle, USA, (2)
Department of Chemistry, University of Washington, Seattle, USA
(thornton@atmos.washington.edu / Fax: 01-206-543-4010 / Phone 01-206-543-4010)

It is now clear that heterogeneous chemical processes play a key role in the chemistry of the atmosphere. While much progress has been made in elucidating the importance of particular processes, we are still finding new, previously unconsidered processes, and learning how old ones may need to be reconsidered. The fate and effects of organics at the interface between gaseous and condensed phases in the atmosphere is a clear example. I will present results from fundamental laboratory and modeling experiments on the heterogeneous oxidation of aerosol-bound organics and the effects of surfactants on heterogeneous reaction rates and gas-aerosol mass transfer. I will connect these results to recent work in the literature in which condensed-phase atmospheric organic matter is a focus to illustrate new processes and the need to reconsider some of the classics. I will summarize open problems that require future effort to improve our molecular-level understanding of the effects organics have on atmospheric composition.