

***Interactive comment on* “The effect of fatty acid surfactants on the uptake of nitric acid to deliquesced NaCl aerosol” by K. Stemmler et al.**

Anonymous Referee #1

Received and published: 3 March 2008

This is a very nice paper describing how the uptake of a simple, hydrolyzable compound (nitric acid) at the interface of aqueous solutions is influenced by the presence of an organic surfactant. It is important, well written and timely. In common with experiments on the transport of acetic acid across similar interfaces, it is found that the presence of close-packed, straight chain insoluble acids ($C \geq 15$) at the surface diminishes the HNO_3 uptake significantly. This has also been reported for the more complex N_2O_5 uptake process, at aqueous and acidic surfaces. Interestingly, in the present work it is found that shorter-chain organics at the interface do not decrease the uptake coefficient. This is possible due to "holes" in the interfacial coating present in the more soluble surfactant films (see Lawrence et al., *J. Phys. Chem. A* 2005, 109, 7449 - not cited here). It is also a nice complement to the results of Clifford et al. (PCCP,

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



2007 - also not cited here), who showed that nitric acid *was* transported through an octanol-coated interface, but that the coating changed the region in which hydrolysis takes place (moving it deeper into the solution).

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 687, 2008.

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper