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# Halogen activation in a proxy for sea salt aerosols from 16 °C to -25 °C: Effect of organics on reactive ozone uptake.

Jacinta Edebeli, Markus Ammann, and Thorsten Bartels-Rausch
Paul Scherrer Institut (PSI), Villigen PSI, Switzerland (thorsten.bartels-rausch@psi.ch)

Ozone is one of the important oxidants involved in the process of halogen activation in warm and cold climates, and in pristine and polluted environments. The importance of multiphase halogen activation on sea-spray aerosol has recently been brought to light.
Here I present new laboratory results of a kinetic study on the oxidation of bromide in aqueous environments. In particular, the organic citric acid was mixed to the samples to mimic organic components of sea-salt aerosol. We will discuss the contribution of the surface and of aqueous bulk processes to the uptake of ozone via reaction with bromide in this aerosol proxy in the dark. Our results indicate that temperature and the composition of the aerosol have implications on the adsorption of ozone on the aerosol on the surface, and the solubility, diffusivity in the bulk, and hence, the reactive uptake of ozone. For this analysis, a model parameterizing reactive surface and bulk uptake has been developed and is presented. The results also indicate that the surface contribution to the uptake of ozone is significant at environmentally relevant ozone concentrations, which is important for high surface area systems such as sea-spray aerosols. The discussion will then widen and link these results on the impact of organics on this multiphase chemistry to recent results from the Ammann group on aqueous systems that showed the role a surface-stabilized BrOOO- complex as intermediate.

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