Special Issue

Chemistry of Aqueous Surfaces in the Atmospheric Context

Message from the Guest Editors

The air–water interface in atmospheric water films of aerosols and hydrometeors (fog, mist, ice, rain, and snow) presents an important surface for the adsorption and reaction of many organic trace gases and gaseous reactive oxidants. Knowledge of air–water interface partitioning is necessary for understanding the significance of the interface in atmospheric fate and transport processes. To do this, various methods of assessing both experimental and theoretical values of the thermodynamic partition constant and adsorption isotherm are required. Further, it is necessary to evaluate the interfacial reactivity of trace gases and oxidants. Oxidation will likely result in water-soluble compounds that serve as precursors for secondary organic aerosols (SOAs). The estimation of heterogeneous photooxidation rates in water films and solid films, and comparison with homogeneous gas-phase reactions are necessary to make progress in atmospheric modeling with the inclusion of interfacial processes. These parameters obtained through various methods can be mutually verified by combining field sampling results with related chemical transport models and chemical box models.

Guest Editors

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Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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