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Atmospheric Aqueous-Phase Chemistry

Guest Editor:

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Deadline for manuscript submissions:
closed (29 February 2020)

Message from the Guest Editor

Liquid water is ubiquitous in the atmosphere. Dissolved species from the soluble aerosol fraction as well as soluble trace gases undergo chemical reactions in the aqueous phase via different mechanisms, usually yielding different products from those in the gas phase. In addition to their different reactivity, the chemical species' solubility determines their fate in the atmosphere, i.e., their involvement in gas-phase or aqueous-phase chemistry. It has been recognized that secondary organic aerosol mass may also be formed via chemical reactions. During atmospheric processing, the primary emitted organic pollutants become more oxidized, less volatile, and more water-soluble. Consequently, within the pollutants' lifetime in the atmosphere, aqueous-phase chemistry becomes more and more important for their aging. In this Special Issue, we welcome manuscripts about atmospheric aqueous-phase chemistry associated with: Kinetic and mechanistic studies of organic and inorganic systems; The unraveling of chemical mechanisms leading to the identification of products in the atmospheric liquid water; and the use of predictive modeling providing insights on the mechanisms unraveled.

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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!

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