Live

Aqueous Organic Chemistry in Atmospheric Aerosols: Impacts on Air Quality and Climate

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Abstract: Over the last decade, it has become clear that aqueous chemical processes occurring in cloud droplets and wet atmospheric particles are an important source of organic atmospheric particulate matter. Reactions of water-soluble volatile (or semi-volatile) organic gases (VOCs or SVOCs) in these aqueous media lead to the formation of highly oxidized organic particulate matter (secondary organic aerosol; SOA) and key tracer species, such as organosulfates. These processes are often driven by a combination of anthropogenic and biogenic emissions, and therefore their accurate representation in models is important for effective air quality management. Despite considerable progress, mechanistic understanding of some key aqueous processes is still lacking, and these pathways are incompletely represented in 3D atmospheric chemistry and air quality models. I will discuss my group's laboratory and modeling work on this topic.

Biography: V. Faye McNeill is an Associate Professor in the Department of Chemical Engineering at Columbia University, where she is the Chair of the Undergraduate Committee. She joined Columbia in 2007 and received tenure in 2014. She received her B.S. in Ch.E. from Caltech in 1999 and her PhD in Ch.E. from MIT in 2005, where she was a NASA Earth System Science Fellow. From 2005-2007 she was a postdoctoral scholar at the University of Washington Department of Atmospheric Sciences. She received the NSF CAREER and the ACS Petroleum Research Fund Doctoral New Investigator awards in 2009. She was the recipient of the Kenneth T. Whitby Award of AAAR in 2015. She is an Associate Editor for ACS Earth and Space Chemistry. She was a co-editor of *Atmospheric Chemistry and Physics* from 2007-2017. She has served in multiple elected officer positions in AIChE, AAAR, and AGU. She is an appointed member of the IUPAC panel on kinetic data evaluation and the ACS Committee on Environmental Improvement.

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