

Analytical Seminar

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Comprehensive Characterization of Atmospheric Organic Carbon



Organic species in the Earth's atmosphere play a central role in many key processes of environmental importance: they directly impact human and ecosystem health by serving as pollutants or nutrients, they influence atmospheric oxidant levels, and their oxidation products include secondary pollutants such as ozone and secondary organic aerosol. However our understanding of the identity and lifecycle of atmospheric organics are generally limited by their wide diversity in chemical structure, properties, and reactivity, all of which pose major challenges in detection and quantification. This talk will focus on a new a multi-instrument approach to measuring atmospheric carbon, combining measurements from multiple state-of-the-art mass spectrometric instruments to provide a comprehensive picture of the chemical composition of the entire organic mixture. From these combined measurements, the organic species can be described not only in terms of organic carbon mass but also in terms of distributions of key ensemble properties (such as oxidation state and volatility) that can be used in atmospheric model frameworks. Application of this general measurement both to field data (providing information on ambient organic species) and to laboratory studies, (providing insight on oxidative transformations of organics) will be discussed.

Thursday
September 24

12:15 p.m.
1315 Chemistry

Coffee & cookies
at 12 p.m.



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