SEMINAR SERIES 2020 - 2021

SOUTHERN ONTARIO CENTRE FOR ATMOSPHERIC AEROSOL RESEARCH

UNIVERSITY OF TORONTO

Leveraging Non-Targeted Tandem Mass Spectrometry to Track the Evolution of Complex Multiphase Mixtures in the Atmosphere

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Secondary organic aerosol (SOA) has well-known effects on human health and climate. Understanding the processes that produce and transform SOA is critical to mitigating its impacts. However, this chemical system is difficult to characterize, due to the dynamic relationship between precursor emissions and competing atmospheric transformations. Combined, these processes can yield extremely complex mixtures of organic compounds across a wide range of volatility and polarity. Understanding and predicting human and environmental exposure to this mixture of compounds can therefore be challenging. This talk will explore how non-targeted tandem mass spectrometry (MS/MS) can be used to investigate molecular-level composition and structure of functionalized organic compounds within these complex mixtures. With offline gas- and particle-phase sampling and MS/MS analysis, we tracked the evolution of multifunctional oxygen-, nitrogen-, and sulfur-containing species at a range of ambient sites. I will discuss two case studies that used organic functional groups to examine the formation pathways and products observed, (1) in aging urban outflow from the metropolitan East Coast U.S., and (2) in aging boreal wildfire smoke during downwind transport.

Wednesday, November 4, 2020 3:00 - 4:00PM

Microsoft Teams Meeting - Click here to join the meeting

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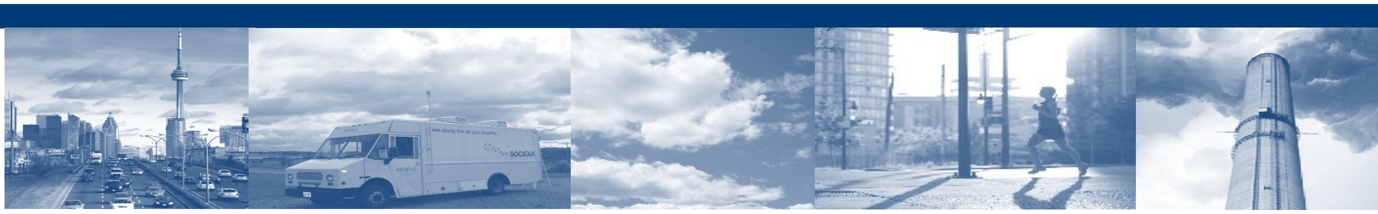
Conference ID: 186 419 598



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