

Seminar Series 2015 - 2016

Southern Ontario Centre for Atmospheric Aerosol Research
University of Toronto

Bridging cloud condensation nuclei activity and volatility of oxidized organic aerosol

Shunsuke Nakao
Assistant Professor



*Department of Chemical & Biomolecular Engineering
Clarkson University*

Aging of atmospheric organic aerosol (OA) has been studied in terms of average molecular properties such as elemental ratios (O/C, H/C), volatility, and hygroscopicity. Correlations between O/C and hygroscopicity (or cloud condensation nuclei activity), represented by K_{org} , are a computationally efficient approach to estimate the impact of aerosol aging on cloud formation and climate; however, previously reported correlations between these two variables are largely empirical and vary widely in their slopes and extrapolations to high O/C values. I will present a theoretical framework based on inferred molecular formulas ($C_xH_yO_z$) to constrain the relationships between K_{org} , O/C, volatility, and molecular size. I will use the theoretical framework to analyze previously-reported data for observed K_{org} of highly oxidized OA to extract additional information on physicochemical properties of organic aerosol.

Wednesday, April 6, 2016, 2 – 3 PM

Wallberg Building, 200 College Street, Room 407



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