



DATE: August 6, 2019

TIME: 3:30 - 4:30 pm

LOCATION: NCAR Foothills Laboratory
3450 Mitchell Lane, Building 2
Large Auditorium FL2-1022

Wintertime Aerosols Over the Northeast United States: Results from the 2015 Winter Campaign



Dr. Viral Shah
Harvard University

ABSTRACT

The summer season has traditionally been the focus of air quality research over the eastern U.S. because vigorous sun-driven photochemistry in summer results in the formation of considerable amounts of secondary aerosols and ozone. During winter, lower solar radiation and lower temperatures cause seasonal shifts in oxidant levels, emission sources, and gas and aerosol chemistry, which lead to seasonal changes in the sources and composition of aerosols. The 2015 Wintertime INvestigation of Transport, Emissions, and Reactivity (WINTER) C-130 campaign is one of the very few to probe the wintertime atmospheric chemistry over the eastern U.S. In this talk, I will present the observations and the GEOS-Chem model results of aerosol concentrations and composition during WINTER. The WINTER observations showed that the concentrations of fine aerosols (PM₁) are about 4g/m³ and composed of organic aerosols (38%), sulfate (29%), nitrate (20%) and ammonium (13%). These observations are well-reproduced by GEOS-Chem. Using the WINTER observations and GEOS-Chem, we will investigate the fraction of primary and secondary sources of organic aerosols in winter, and the chemical controls on the wintertime formation of sulfate, nitrate, and ammonium and how they change over time.

SPEAKER BIOGRAPHY

Viral is a postdoctoral fellow at Harvard University in Daniel Jacob's group. His Ph.D. was under the supervision of Lyatt Jaeglé at the University of Washington. His research interest is in using a combination of observations and chemical transport models to study regional and global chemistry of air pollutants. Website: www.viralshah.info.

Live Webcast: <http://ucarconnect.ucar.edu/live>

For more information, contact Melissa Ward: mward@ucar.edu, x8713