NCAR

Atmospheric Chemistry Observations & Modeling Laboratory

SEMINAR

New Insights into Volatile Organic Compounds from Urban and Biomass Burning Sources

Joost de Gouw

University of Colorado Cooperative Institute for Research in Environmental Sciences

Abstract

Volatile organic compounds (VOCs) in the atmosphere can react to form important pollutants such as ozone and secondary organic aerosol, and can also have direct effects on human health. In this seminar, I will present several new insights into the sources and chemistry of VOCs in urban air and in biomass burning emissions. New analyses of VOC measurements in the Los Angeles basin made during the NOAA CalNex study will be presented with a focus on separating the effects of emissions and chemical transformations. Output from the 3-D chemistry-transport model WRF-Chem is used to evaluate our methods for data analysis. Emissions of several compounds were higher than explained by motor vehicle sources, and are attributed to emissions from the use of volatile chemical products, such as cleaners, glues, coatings, solvents and personal care products. These fugitive sources are now estimated to be one of the largest sources of reactive VOCs in urban air.

Measurements of VOCs in biomass burning emissions were made at the Fire Sciences Laboratory in Missoula, MT during the NOAA FIREX study. It will be shown how different processes such as distillation, and high- and low-temperature pyrolysis can explain the composition of VOC emissions for different fuels and phases of a burn.

Finally, I will briefly discuss the development and characterization of new instrumentation for VOC measurements that have led to a new discovery phase in our science.

Date: **Monday, February 5, 2018**
Time: **Refreshments 3:15pm, Seminar 3:30pm**
NCAR Foothills Laboratory: 3450 Mitchell Lane, Boulder, CO 80301
FL2-1022, Large Auditorium
Live webcast: http://ucarconnect.ucar.edu/live

For more information, please contact Bonnie Slagel: bonnie@ucar.edu or 303-497-8318