

ACOM Seminar

Atmospheric Aerosol Chemistry: Climate and Air Quality

Douglas R. Worsnop

Aerodyne Research Inc. and INAR (Physics), University of Helsinki

Date: Thursday, February 1st, 2024, 11:00 am – 12:00 pm (MT)

Link: <https://operations.ucar.edu/live-acom>

ABSTRACT

Despite much effort in the past decades, uncertainties in both climate impacts and health effects of atmospheric aerosols remain large. During the last 25 years, aerosol mass spectrometry (AMS) has shown that sub-micron aerosol chemical composition is roughly 50:50 inorganic and organic worldwide, with secondary highly oxidized organics dominating the latter. Parallel application of chemical ionization mass spectrometry (CIMS) has provided the first observation of molecular cluster ions involved in atmospheric nucleation, including detection of highly oxidized multifunctional (HOM) organics in the gas phase. These results will be discussed in the context of their impact on atmospheric aerosols, air quality and climate; from the boreal forest to Chinese megacities. New results for GC molecular resolution of VOCs and OVOCs will also be presented.

For more information, please contact Qing Ye (qingye@ucar.edu) or Kyle Zarzana (kzarzana@ucar.edu).

The National Center for Atmospheric Research is operated by the University Corporation for Atmospheric Research under the sponsorship of the National Science Foundation