

The Department of Civil and Environmental Engineering at the University of Houston presents...

CIVE 6111 Graduate Seminar

Atmospheric Aerosols and Impacts on Radiation-Cloud-Precipitation and Climate



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Professor

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2:45pm-3:45pm

Classroom Business Building (CBB) – Room 118

Abstract

Atmospheric aerosols play a key role in the Earth's system by interacting with atmospheric chemistry, radiation, clouds, precipitation, and biogeochemistry, thereby affecting air quality, climate, hydrological and biogeochemical cycles. However, current Earth system models are still associated with large aerosol biases. In this talk, I will introduce the National Center for Atmospheric Research Community Earth System Model (CESM), and discuss particularly the new developments of aerosol and aerosol-cloud-precipitation interaction schemes in CESM, which my group has been playing a key role in developing. I will highlight my recent work on (1) aerosol pollution in East Asia since 1970s and impacts on regional and global climate; and (2) dust aerosol transport and lifecycle, and impacts on clouds and precipitation by acting as ice nucleating particles (INPs).

Bio

Professor in the Department of Atmospheric Sciences, Texas A&M University. He was the Endowed "Wyoming Excellence Chair" Professor in Climate Science at the Department of Atmospheric Science, University of Wyoming from 2013 to 2019. He was a Senior Scientist at the Pacific Northwest National Laboratory from 2006 to 2013. He is the co-chair of the NCAR Community Earth System Model (CESM) Chemistry-Climate Working Group, and in the development team of NCAR CESM and DOE's Energy Exascale Earth System Model (E3SM). He conducts research in the fields of aerosol modeling, aerosol-cloud interactions, especially on cold cirrus and mixed-phase clouds, and climate modeling. He has received awards and honors, including "*Highly Cited Researcher*" in 2014, 2015, 2016, 2017 and 2018 by [Thomson-Reuters](#) (now Clarivate Analytics), *World Meteorology Organization Young Scientist Award* in 2001, *100-Talent Plan* of Chinese Academy of Sciences in 1997-1999, and *Alexander von Humboldt Research Fellow* in 1996-1997. He has published ~180 referred articles. He is an editor of the journal "Atmospheric Chemistry and Physics" and "Journal of Meteorological Research", and an associate editor of the "Journal of Geophysical Research – Atmosphere".