

YAN FENG

Climate Research Section
Environmental Science Division
Argonne National Laboratory

Education:

Ph.D. University of Michigan, Ann Arbor, Atmospheric Science, 2005
M.S. University of Michigan, Ann Arbor, Computer Science and Engineering, 2002
B.S. Peking University (in China), Atmospheric Science, 1997

Professional Experience:

2010-Present Assistant Computational Atmospheric Modeler, Environmental Science
Division, Argonne National Laboratory

Investigating aerosols and cloud processes in the high-resolution global climate models combined with surface, aircraft, and satellite aerosol and cloud data sets; improving and developing cloud microphysical schemes; modeling aerosol radiative effect on the atmospheric heating rates and impact on the hydrological cycle, focusing on the S. Asia, E. Asia and N. America; and investigating the bio-available iron deposition to the ocean from mineral dust and combustion sources.

Summary of Previous Experience:

2005-2010 Postdoctoral research fellow (PI: Dr. V. Ramanathan), Center for Clouds,
Chemistry and Climate, Scripps Institute of Oceanography, University of
California, San Diego, La Jolla, CA

Investigating aerosol-cloud interactions, using global chemical transport model (IMPACT) and cloud microphysics model combined with ground-based, aircraft, and satellite measurements; investigating aerosol mixing states, and optical properties; estimating aerosol direct and indirect radiative forcings with Monte-Carlo radiative transfer model; analyzing historical emissions of sulfur, black carbon and organic aerosols from different sources; analyzing satellite aerosol and cloud data products (MODIS, CERES, and SSM/I), and ECMWF re-analyses meteorological data sets.

2001-2001 Visiting graduate student research fellow (with Dr. Andrew Lacis),
Goddard Institute for Space Studies (GISS), National Aeronautics and
Space Administration (NASA), New York, NY

Studying aerosol relative humidity growth in the GISS radiative transfer model

1997-2004 Graduate student research assistant (Advisor: Prof. Joyce Penner), Department of Atmospheric, Oceanic and Space Sciences, University of Michigan, Ann Arbor, Ann Arbor, MI

Studying tropospheric gas-phase chemistry, and heterogeneous chemistry in aerosols using box thermodynamic model and global chemical transport model (Umich/IMPACT); modeling nitrate and ammonium aerosols in chemical transport model, and estimating direct aerosol forcing; modeling cloud radiative effects on photochemistry in a global photochemical model; contributor to the 2001 IPCC report, Chapter 5, about the inter-comparison of aerosol optical depth between global models and satellite measurements.

Research Interests:

- Aerosol direct and indirect radiative effects
- Aerosol-cloud interactions
- Climate change and climate impact due to aerosols especially black carbon
- Atmospheric chemistry and transport

Professional Activities:

- Key personnel of the research project “Black Carbon and the Regional Climate of California” funded by the California Air Resource Board (2009-2011)
- Co-investigator of the research project “Investigation of Cloud-Climate Feedbacks due to Extra-Tropical Cloud Systems” funded by National Science Foundation (2007-2010)
- Co-investigator in the NCAR Pacific Dust Experiment (PACDEX) funded by National Science Foundation (2007)
- Reviewers for Atmospheric Chemistry and Physics (2010), Atmospheric Environment (2006, 2010), Journal of Geophysical Research-Atmosphere (2009)

Publications:

Author or co-author of 16 peer-reviewed publications (14 journal papers and two book chapters), and 20+ presentations (conference presentations, posters, and invited seminars). Recent publications include “Warming influenced by the ratio of black carbon to sulfate and black carbon source” in *Nature Geophysics* (2010), “Investigation of aerosol-cloud interactions using a chemical transport model constrained by satellite observations” in *Tellus B* (2010), and “On avoiding dangerous anthropogenic interference with the climate system: formidable challenges ahead” in *Proceedings of the National Academy of Sciences* (2008).