Curriculum Vitae

Chenxia Cai
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EDUCATION

Ph.D Department of Earth and Atmospheric Sciences, State University of New York at Albany, USA 09/00-12/05
M.S Department of Atmospheric Sciences, Nanjing University, P.R.China 09/97-07/00
B.S Department of Atmospheric Sciences, Nanjing University, P.R.China 09/93-07/97

PROFESSIONAL EXPERIENCE

Postdoctoral Research Associate: Atmospheric Sciences Research Center, Univerity at Albany 01/06-present

Research Assistant: Atmospheric Sciences Research Center, University at Albany 09/00-12/05

Research work:

- Developed, implemented and monitored an operational 3-D Air Quality Forecast Modeling System (AQFMS), which is run daily to provide experimental forecasts of both gas phase and particulate matter air pollutants for the Northeast United States. http://aqfms.asrc.cestm.albany.edu/forecast.html. The main components of the AQFMS are ETA meteorology model, SMOKE emission model and CAMx chemistry transportation model. The experimental forecasts are in part envisioned to provide assistance in planning operational deployments and overall data analysis in the PM2.5 Technology Assessment and Characterization Study-New York (PMTACS-NY) Supersite Summer 2001 and Winter 2004 Field Intensive.
- Evaluated the capabilities of the AQFMS in predicting ozone, particulate Matter and the precursor species for different seasons. Analyzed the uncertainties of the meteorology prediction and the emission inventory and their effects on the air quality prediction.
- Studied the HO_x chemistry for an urban site in New York City using both model and observation data to investigate the chemical mechanisms that contribute to the oxidizing capacity of the atmosphere during summer and winter and the uncertainties therein.
- Integrated the surface heterogeneous reactions for HONO formation in the 3-D AQFMS and analyzed their impacts on the HONO concentrations and the concentrations of HO_x and O_3 as well.
- Participated in the project of regional scale modeling of particle nucleation in the lower atmosphere over the Eastern United States.

Research Assistant: Department of Atmospheric Sciences, Nanjing University 09/97-07/00

Research work:

- Simulated the photochemical processes in the boundary layer of an urban area and studied the roles of biogenic and anthropogenic emission sources in ozone production.
- Analyzed the composition and sources of dust-storms using source apportion model.

CONFERENCE AND PUBLICATIONS

Cai, C., C. Hogrefe and K.L.Demerjian A Particulate Matter Air Quality Forecast Modeling System for the Northeast U.S. –Comparisons with PMTACS-NY Field Measurement Campaigns and PM Network DATA. Presented in International Specialty Conference on

Particulate Matter Supersites Program and Related Studies, American Association for Aerosol Research, Atlanta, GA, Feb 7-11 2005

Yu, Fangqun, Chenxia Cai, Kenneth L. Demerjian New Particle Formation Associated with SO2 Emission from Power Plants: 3-Dimensional Modeling, Presented in International Specialty Conference on Particulate Matter Supersites Program and Related Studies, American Association for Aerosol Research, Atlanta, GA, Feb 7-11 2005

Cai, C., C. Hogrefe, K.L.Demerjian A Particulate Matter Air Quality Forecast Modeling System for the Northeast U.S. Comparisons with July 2001 and January-February 2004 EPA Supersite Field Intensive Data presented in AGU 2004 fall meeting, San Francisco, CA Dec 13-17,2004

Yu, F., C. Cai, K. L. Demerjian Regional scale modeling of particle nucleation in the lower atmosphere over the Eastern United States presented in AGU 2004 fall meeting, San Francisco, CA Dec 13-17 2004

Cai, C., C. Hogrefe, J. Biswas, S.T. Rao, N. Seaman, A. Gibbs, G. Kallos, P. Katsafados, C. Walcek, An Experimental Air Quality Forecast Modeling System (AQFMS) For the Northeast United States: A Demonstration Study presented in 82nd AMS annual meeting, Orlando, FL, Jan 13-17 2002

Cai, C., W. Jiang, S. Huang, L. Li, Z. Xu Chemical Characteristics and the Sources of two Dust-storms in the Southeastern Coastal Area of China, Plateau Meteorology, vol 19, No.2 p179-186, 2000

ACTIVITIES:

Member of American Geophysical Union
Member of American Meteorology Society
Member of Air and Waste Management Association

HONORS AND AWARDS:

Scholarship for outstanding Master students, Nanjing University, China 2000
People's scholarship, Nanjing University, China, received award every year from 1993 to1997
Guoshisheng scholarship for outstanding undergraduate students, Zhejiang, China, received award every year from 1993 to 1997

SKILLS:

Numerical models: CAMx, SAQM, CMAQ, UAM, ETA, MM5, SMOKE
OPERATING Systems: Window and UNIX
Programming and Software: FORTRAN, NCAR Graphics, Splus, Pave, Igor, MS Office, C-Shell, Bourne-Shell