YI MING

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Biographical Information

Date of Birth: December 19, 1975
Citizenship: US

Education

Ph.D. in Civil and Environmental Engineering
Princeton University 2003
Certificate in Science and Environmental Policy
Woodrow Wilson School of Public and International Affairs, **Princeton University** 2003
B.E. in Chemical Engineering (with a **second B.E.** in Environmental Engineering)
Tsinghua University, Beijing, China 1998

Employment

Physical Scientist, Geophysical Fluid Dynamics Laboratory/NOAA 11/10-Present
Project Scientist II, Geophysical Fluid Dynamics Laboratory/UCAR 8/05-10/10
Visiting Scientist, Geophysical Fluid Dynamics Laboratory/UCAR 10/03-7/05
Postdoctoral Researcher, Department of Chemistry, University of Delaware 11/02-9/03
Research Assistant, Atmospheric Aerosol Group, Princeton University 09/98-10/02

Honors

Presidential Early Career Award for Scientist and Engineers (PECASE) - "*The highest honor bestowed by the U.S. government on outstanding scientists and engineers beginning their independent careers*" 12/08
National Science Foundation (NSF) Science Policy Fellowship 09/00-06/03
First-Grade Prize, National Challenge Cup Science and Technology Competition for College Students 05/97

Professional Experience

Core Member, Global Atmospheric Model Development Team (GAMDT), Geophysical Fluid Dynamics Laboratory
Member, AeroCom working group of aerosol-climate simulation
Member, AeroCom working group of indirect effects
Member, Committee on cloud, chemical and climate interactions, Atmospheric Chemistry and Climate (AC&C) Initiative, WCRP/IGBP
Member, GFDL Award Nomination Committee
Review Panelist, NOAA/Atmospheric Composition and Climate (ACC), DOE/Regional and Global Climate Modeling Program, Lawrence Berkeley National Laboratory Climate Science Focus Area Review, NASA/ Atmospheric Composition Modeling and Analysis Program (ACMAP) (declined), Romanian National Research Council (declined)
Grant Reviewer, DOE/Atmospheric Science Program (ASP),

Atmospheric Radiation Measurement (ARM), Atmospheric System Research (ASR), National Science Foundation (NSF), Canadian Foundation for Climate and Atmospheric Sciences (CFCAS)
Tenure/Promotion Reviewer for a number of universities and institutes
Journal Reviewer for *Nature, Science, Proceedings of the National Academy of Sciences, Journal of Geophysical Research – Atmosphere*，*Geophysical Research Letter, Atmospheric Chemistry and Physics, Tellus, Journal of Atmospheric Sciences, Journal of Climate, Climate Dynamics, Atmospheric Research, Atmospheric Environment, Journal of Applied Meteorology and Climatology, International Journal of Climatology, Theoretical and Applied Meteorology*.
Session Chair, 2012 AMS Annual Meeting
Vice President (a.k.a. Party Planner), GFDL Employee Association (GFDLEA)

Teaching Experience

Co-instructor, AOS 580 Special Topics: Aerosol, Climate and Climate Change, Atmospheric and Oceanic Sciences (AOS) Program, Princeton University
Guest lecturer, AOS 527 Atmospheric Radiative Transfer, Atmospheric and Oceanic Sciences (AOS) Program, Princeton University

Peer-reviewed Publications

*First-authored by students or postdocs supervised

1. **Ming, Y.**, and L.M. Russell, 2001: Predicted Hygroscopic Growth of Sea Salt Aerosol. *Journal of Geophysical Research -Atmosphere*, 106, 28259-28274.
2. Prenni, A.J., P.J. DeMott, S.M. Kreidenweis, D.E. Sherman, L.M. Russell and **Y. Ming**, 2001: The Effect of Low Molecular Weight Dicarboxylic Acids on Cloud Formation, *Journal of Physical Chemistry A*, 105, 11240-11248.
3. **Ming, Y.**, and L.M. Russell, 2002: Thermodynamic Equilibrium of Aqueous Solutions of Organic-Electrolyte Mixtures in Aerosol Particles. *AIChE Journal,* 48, 1331.
4. Russell, L.M., and **Y. Ming**, 2002: Deliquescence of Small Particles, *Journal of Chemical Physics*, 116, 311-321.
5. **Ming, Y.**, and L.M. Russell, 2004: Organic Aerosol Effects on Fog Droplet Spectra, *Journal of Geophysical Research –Atmosphere,* 109, 10.1029/2003JD004427.
6. **Ming, Y.**, G. Lai, C. Tong, R.W. Wood, and D.J. Doren, 2004: Free Energy Perturbation Study of Water Dimer Dissociation Kinetics, *Journal of Chemical Physics,* 121, 773-777.
7. **Ming, Y.**, L.M. Russell, and D.F. Bradford, 2005: Health and Climate Policy Impacts on Sulfur Emission Control, *Review of Geophysics,* 43, doi:10.1029/2004RG000167.
8. **Ming, Y.**, V. Ramaswamy, P.A. Ginoux and L.W. Horowitz, 2005: Geophysical Fluid Dynamics Laboratory General Circulation Model Investigation of the Indirect Radiative Effects of Anthropogenic Sulfate Aerosol, *Journal of Geophysical Research - Atmosphere,* 110, doi:10.1029/2005JD006161.
9. **Ming, Y.**, V. Ramaswamy, P.A. Ginoux and L.W. Horowitz, 2005: Direct Raditive Forcing of Anthropogenic Organic Aerosols, *Journal of Geophysical Research - Atmosphere,* 110, doi:10.1029/2004JD005573.

10. **Ming, Y.**, V. Ramasway, L.J. Donner, and V.T.J. Phillips, 2006: A New Parameterization of Cloud Droplet Activation Applicable to General Circulation Models, *Journal of the Atmospheric Sciences,* 63, 1348-1356.
11. **Ming, Y.**, V. Ramaswamy, L.J. Donner, V.T.J. Phillips, S.A. Klein, P.A. Ginoux, and L.W. Horowitz, 2007: Modeling the Interactions between Aerosols and Liquid Water Clouds with a Self-consistent Cloud Scheme in a General Circulation Model, *Journal of the Atmospheric Sciences,* 64, 1189-1209.
12. Lee, S. S., L. J. Donner, V. T. J. Phillips, and **Y. Ming**, 2008: Examination of aerosol effects on precipitation in deep convective clouds during the 1997 ARM summer experiment. *Quarterly Journal of the Royal Meteorological Society*, 134, 1201-1220.
13. Lee, S.S., L.J. Donner, V.T.J. Phillips, and **Y. Ming**, 2008: The dependence of aerosol effects on clouds and precipitation on cloud-system organization, shear and stability. *Journal of Geophysical Research*, 113, doi:10.1029/2007JD009224.
14. **Ming, Y.**, and V. Ramaswamy, 2009: Nonlinear Climate and Hydrological Responses to Aerosol Effects. *Journal of Climate*, 22, 1329-1339.
15. Magi, B. I., P. A. Ginoux, V. Ramaswamy, and **Y. Ming**, 2009: Evaluation of Tropical and Extratropical Southern Hemisphere African Aerosol Properties Simulated by a Climate Model. *Journal of Geophysical Research – Atmosphere*, 114, doi:10.1029/2008JD011128.
16. Quaas, J., **Y. Ming**, and coauthors, 2009: Aerosol Indirect Effects – General Circulation Model Intercomparison and Evaluation with Satellite Data. *Atmospheric Chemistry and Physics*, 9, 8697-8717.
17. **Ming, Y.**, V. Ramaswamy, and G. Persad, 2010: Opposing Effects of Absorbing Aerosols on Global-mean Precipitation. *Geophysical Research Letter*, 37, doi:10.1029/2010GL042895.
18. Salzmann, M, **Y. Ming,** J.-C. Golaz, P.A. Ginoux, H. Morrison, A. Gettelman, M. Krämer, and L.J. Donner, 2010: Two-moment Bulk Stratiform Cloud Microphysics in the GFDL AM3 GCM: Description, Evaluation, and Sensitivity Tests. *Atmospheric Chemistry and Physics*, 10, 8037-8064.
19. Shindell, D., M. Schulz, **Y. Ming,** T. Takemura, G. Faluvegi, and V. Ramaswamy, 2010: Spatial Scales of Climate Response to Inhomogeneous Radiative Forcing. *Journal of Geophysical Research – Atmosphere*, 115, doi:10.1029/2010JD014108.
20. Chen, G., **Y. Ming**, N. Singer, and J. Lu, 2010: Aerosol-induced Changes in Mean and Extreme Precipitation. *Geophysical Research Letter*, 38, doi:10.1029/2010GL046435.
21. Donner, L.J., B. Wyman, R.S. Hemler, L.W. Horowitz, **Y. Ming**, and coauthors, 2010: The Dynamical Core, Physical Parameterizations, and Basic Simulation Characteristics of the Atmospheric Component of the GFDL Global Coupled Model CM3. *Journal of Climate*, 24, doi:10.1175/2011JCLI3955.1.
22. Golaz, J.-C., M. Salzmann, L.J. Donner, L.W. Horowitz, **Y. Ming**, and M. Zhao, 2010: Sensitivity of the Aerosol Indirect Effect to Subgrid Variability in the Cloud Parameterization of the GFDL Atmosphere General Circulation Model AM3. *Journal of Climate*, 24, doi:10.1175/2010JCLI3945.1.
23. **Ming, Y.**, and V. Ramaswamy, 2011: A Model Investigation of Aerosol-induced Changes in Tropical Circulation. *Journal of Climate*, doi:10.1175/2011JCLI4108.1.
24. **Ming, Y.**, V. Ramaswamy, and G. Chen, 2011: A Model Investigation of Aerosol-

induced Changes in Boreal Winter Extratropical Circulation. *Journal of Climate*, doi:10.1175/2011JCLI4111.1.

25. Ghan, S.J., H. Abdul-Razzak, **Y. Ming**, X. Liu, M. Ovchinnikov, A. Nenes, N. Meskhidze, J. Xu, and X. Shi, 2011: Droplet Nucleation: Physically-Based Parameterization and Validation. *Journal of Advances in Modeling Earth Systems*, doi:10.1029/2011MS000074.
26. Bollasina*, M.A., **Y. Ming**, and V. Ramaswamy, 2011: Anthropogenic Aerosols and the Weakening of the South Asian Monsoon. *Science*, doi:10.1126/science.1204994.
27. Persad*, G., **Y. Ming**, and V. Ramaswamy, 2011: Tropical Tropospheric Response to Absorbing Aerosols. *Journal of Climate*, in press.
28. Lin, Y., M. Zhao, V. Ramaswamy, **Y. Ming**, J.-C. Golaz, L.J. Donner, S.A. Klein, S. Xie, and M. Deng, 2011: Impact of cumulus and cloudiness parameterization on Tropical cloud, radiation and precipitation in GFDL AM2. Submitted to *Journal of Climate*.
29. Bollasina*, M.A., and **Y. Ming**, 2011: Precipitation Bias over the Western Indian Ocean in an Atmospheric GCM: Role of the Meridional SST Gradient. Submitted to *Climate Dynamics*.
30. Huang, X., H. Chuang, **Y. Ming**, and G.L. Potter, 2011: A Constraint for Ice Cloud Feedback over the Tropical Pacific in Future Climate Change. Submitted to *Nature Climate Change*.
31. **Ming, Y.**, 2012: Empirically inferring transient climate sensitivity from historical warming. Submitted.
32. Zhou, C., J. E. Penner, **Y. Ming**, and X. Huang, 2012: Aerosol Forcing Based on CAM5 and AM3 Meteorological Fields. Submitted to *Atmospheric Chemistry and Physics*.
33. Hill*, S., and **Y. Ming**, 2012: Climate Response to a Geoengineered Brightening of Subtropical Marine Stratocumulus Clouds. Submitted to *Geophysical Research Letter*.

Manuscripts in Preparation

1. **Ming, Y.**, V. Ramaswamy, and M.A. Bollasina, 2012: A Model Investigation of Aerosol-induced Changes in Summer Monsoon Circulation. To be submitted to *Journal of Climate*.
2. **Ming, Y.**, and coauthors, 2012: Transport of European Air Pollution Affects Arctic Climate. To be submitted to *Proceedings of the National Academy of Sciences*.
3. **Ming, Y.**, and S. Fan, 2012: A Multi-scale Perspective on the Seasonality of Arctic Aerosols: From Large-scale Circulation to Microphysics. To be submitted to *Proceedings of the National Academy of Sciences*.
4. **Ming, Y.**, Q. Fu, V. Ramaswamy, and R.S. Hemler, 2012: Aerosol Indirect Effects: Forcing or Response? Submitted to *Geophysical Research Letter*.

Assessment Report

Contributing author, *Climate Projections Based on Emissions Scenarios for Long-Lived and Short-Lived Radiatively Active Gases and Aerosols*. A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. H. Levy II, D.T. Shindell, A. Gilliland, M.D. Schwarzkopf, L.W. Horowitz, (eds.). Department of

Commerce, NOAA's National Climatic Data Center, Washington, D.C., USA.

Book Chapter

Aerosols. The Encyclopedia of Climate and Weather 2nd Edition. S.H. Schneider, (eds.). University of Oxford Press, New York, N.Y., USA.

Lectures, Seminars and Conference Presentations

*Invited
*AOGS-AGU (WPGM) Joint Assembly, Singapore (08/12)
*EGU General Assembly, Vienna, Austria (04/12)
*Jet Propulsion Laboratory, California Institute of Technology (04/12)
*Department of Atmospheric Sciences, University of California at Los Angeles (02/12)
*Department of Atmospheric Sciences, University of Illinois (01/12)
*AMS Annual Meeting, New Orleans (01/12)
*AGU Fall Meeting, San Francisco (12/11)
*GFDL Climate Modeling and Research Symposium (10/11)
AeroCom Meeting, Fukuoka, Japan (10/11)
*Summer Institute, Program on Climate Change, University of Washington (09/11)
*NOAA OAR Senior Management Meeting, Princeton (08/11)
Goldschmidt Meeting, Prague, Czech Republic (08/11)
HTAP Meeting, Milan, Italy (06/11)
*Center for Land-Ocean-Atmosphere Studies (COLA) (05/11)
*School of Marine and Atmospheric Sciences, Stony Brook University (03/11)
*School of Atmospheric Physics, Nanjing University of Information Science and Technology (01/11)
*Department of Atmospheric, Oceanic, and Space Sciences, University of Michigan (10/10)
EGU General Assembly, Vienna, Austria (5/10)
MOCA-09, Montreal, Canada (07/09)
*Gordon Research Conference on Radiation and Climate (07/09)
HTAP Meeting, Paris, France (06/09)
*Department of Chemical Engineering and School of Environment, Tsinghua University (05/09)
*Institute of Atmospheric Physics, Chinese Academy of Science (05/09)
The 11th International Conference on Atmospheric Sciences and Applications to Air Quality *(*ASAAQ*),* Jinan, China (05/09)
*NOAA Central Library Brown Bag Seminar Series, Silver Spring (04/09)
*Climate and Radiation Branch Seminar, NASA Goddard Space Flight Center (02/09)
AGU Fall Meeting, San Francisco (12/08)
ARM Fall Meeting, Princeton (11/08)
The 10th Scientific Conference of the IGAC Project, Annecy, France (09/08)
HTAP/ACC Joint Workshop, Washington D.C. (06/08)
A-Train Symposium, Lille, France (10/07)
AGU Fall Meeting, San Francisco (12/06)
AeroCom Workship, Virginia Beach (10/06)
NASA Goddard Space Flight Center (05/06)

*Rosenstiel School of Marine and Atmospheric Science, University of Miami (06/05)
International Young Scientist Network for Earth System Science, Breckenridge (06/05)
AeroCom Workshop, New York (12/04)
AAAR Annual Conference, Anaheim (03)
*University of Delaware (02)
*Rutgers University (02)
AGU Fall Meeting, San Francisco (01)
AIChE Annual Conference, Los Angeles (00)
AAAR Annual Conference, St. Louis (00)

Students/Postdocs Supervised

Summer interns: Geeta Persad (Stanford), Spencer Hill (UCLA)
Research assistant: Geeta Persad (GFDL)
Postdoc: Massimo Bollasina (Princeton)
Graduate students: Geeta Persad (Princeton, advisor), Spencer Hill (Princeton, advisor), Ilissa Ocko (Princeton, committee), Claire Radley (Princeton, committee)