

# YI MING

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### 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

**Senior Scientist** (07/19-Present), **Leader of Atmospheric Physics Division** (05/20-Present), **Physical Scientist (Civil Service)** (11/10-Present), **Deputy Leader of Atmospheric Physics Division** (04/18-04/20), **Leader of Atmospheric Physics and Climate Group** (10/12-3/18), **Project Scientist II** (8/05-10/10), **Visiting Scientist** (10/03-07/05), Geophysical Fluid Dynamics Laboratory/NOAA  
**Lecturer**, Program in Atmospheric and Oceanic Sciences (AOS), Department of Geosciences, Princeton University 7/13-Present  
**Postdoctoral Researcher**, Department of Chemistry, University of Delaware 11/02-9/03  
**Research Assistant**, Atmospheric Aerosol Group, Princeton University 09/98-10/02

### Honors

NOAA/OAR Outstanding Scientific Paper Award 11/18  
American Geophysical Union (AGU) Ascent Award 7/18  
American Meteorological Society (AMS) Henry G. Houghton Award 9/14  
Department of Commerce Group Gold Medal for Scientific Achievement 10/12  
World Meteorological Organization (WMO) Norbert Gerbier-MUMM International Award 7/12  
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 9/00-6/03  
First-Grade Prize, National Challenge Cup Science and Technology Competition for College Students 5/97

### Professional Experience

**Editor**, Monsoons and Climate, Current Climate Change Reports  
**Chair**, GFDL 5-10 Year Strategic Science Plan Writing Team  
**Co-lead**, GFDL Cloud-Climate Initiative  
**Co-lead**, NOAA Model Diagnostics Task Force  
**Review Panelist**, NOAA/Atmospheric Composition and Climate (ACC), DOE/Regional and Global Climate Modeling Program, DOE/Atmospheric Science Research (ASR) Program, Lawrence Berkeley National Laboratory (LBNL) Climate Science Focus Area

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Review, Pacific Northwest National Laboratory (PNNL) Climate Science Focus Area Review, SciDAC, NASA/ Atmospheric Composition Modeling and Analysis Program (ACMAP), Romanian National Research Council (declined).

**Grant Reviewer**, European Research Council, 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), Israel Science Foundation (ISF), Research Council of Norway, Swiss National Science Foundation.

**Tenure/Promotion Reviewer** for a number of universities and institutes

**Journal Reviewer** for *Nature*, *Nature Geoscience*, *Nature Climate Change*, *Science*, *Proceedings of the National Academy of Sciences*, *Journal of Geophysical Research – Atmosphere*, *Geophysical Research Letters*, *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*, *Environmental Research Letters*.

**Co-convener**, 2014 2015 2016 2017 2018 2019 AGU Fall Meeting, 2013 AOGS-AGU (WPGM) Joint Assembly, 2016 AMS Annual Meeting, 2018 AOGS Annual Meeting

**Session Chair**, 2012 2013 AMS Annual Meeting, 2012 EGU General Assembly

**Participant**, American Meteorological Society (AMS) Summer Policy Colloquium

**Steering Committee**, Model Development Team (MDT) of GFDL/CM4, Geophysical Fluid Dynamics Laboratory

**Core Member**, Global Atmospheric Model Development Team (GAMDT) of GFDL/CM3, 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**, CLIVAR-GEWEX Working Group on Asian-Australian Monsoon (WG-AAM)

**Member**, NOAA CPO/ESSM Council

**Member**, GFDL Award Nomination Committee

**Member**, GFDL Minority Internship Committee

**Member**, AOS Graduate Work Committee

**Vice President**, GFDL Employee Association (GFDLEA)

### **Teaching Experience**

**Lecturer**, AOS 527 Atmospheric Radiative Transfer, Atmospheric and Oceanic Sciences (AOS) Program, Princeton University

**Lecturer**, GEO 503 Responsible Conduct of Research in Geosciences, Department of Geosciences, Princeton University

**Lecturer**, AOS 580 Special Topics: Aerosol, Climate and Climate Change, Atmospheric and Oceanic Sciences (AOS) Program, Princeton University

### **Current Students/Postdocs Supervised**

Ph.D. students:

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Michelle Frazer (Princeton, advisor, expected to graduate in 2021)

Jane Smyth (Princeton, advisor, expected to graduate in 2021)

Postdocs:

Wenhao Dong (Princeton)

### **Past Students/Postdocs Supervised**

Ph.D. students:

Geeta Persad (Princeton, advisor, graduated in 2016 with Ph.D., Assistant Professor at the University of Texas at Austin)

Spencer Hill (Princeton, advisor, graduated in 2016 with Ph.D., Postdoc at Lamont-Doherty Earth Observatory/Columbia University)

Zhaoyi Shen (Princeton, advisor, graduated in 2018 with Ph.D., Postdoc at Caltech)

Xin Rong Chua (Princeton, advisor, graduated in 2019 with Ph.D., Research Scientist at Centre for Climate Research Singapore)

Spencer Clark (Princeton, advisor, graduated in 2019 with Ph.D., Data Scientist at Vulcan)

Postdocs:

Massimo Bollasina (Senior Lecturer at the University of Edinburgh, the recipient of the 2013 AGU James R. Holton Junior Scientist Award)

Pu Lin (Associate Research Scholar, Princeton)

Yuxing Yun

Angel Adames (Assistant Professor at the University of Michigan, the recipient of the 2018 AGU James R. Holton Junior Scientist Award)

Summer interns:

Geeta Persad (Stanford)

Spencer Hill (UCLA)

Pranay Nadella (West Windsor-Plainsboro High School South)

Colin Morgan (Cornell)

Michelle Frazer (Cedarville)

Lei Yin (UT-Austin)

Patrick Brown (Duke)

Jane Smyth (Yale)

Bridgette Befort (University of Kansas)

Visiting students:

Yongkun Xie (Lanzhou University)

Zhen Liu (Chinese University of Hong Kong)

### **Ph.D. Thesis Committee**

Ilissa Ocko (Princeton)

Claire Radley (Princeton)

Patrick Brown (Duke)

Jiaxi Hu (Texas A&M)

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Xiaoyuan Li (Princeton)

Jenny Chang (Princeton)

Shiv Priyam Raghuraman (Princeton)

Veeshan Narinesingh (The City University of New York)

### 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 Radiative 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.

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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: Two Opposing Effects of Absorbing Aerosols on Global-mean Precipitation. *Geophysical Research Letters*, 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 Letters*, 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, 2012: Tropical Tropospheric-only Responses to Absorbing Aerosols. *Journal of Climate*, 25(7), doi:10.1175/JCLI-D-11-00122.1.
28. Bollasina\*, M.A., and **Y. Ming**, 2012: Precipitation Bias over the Western Indian Ocean in an Atmospheric GCM: Role of the Meridional SST Gradient. *Climate Dynamics*, doi:10.1007/s00382-012-1347-7.
29. Hill\*, S., and **Y. Ming**, 2012: Nonlinear climate response to regional brightening of

- tropical marine stratocumulus. *Geophysical Research Letters*, doi:10.1029/2012GL052064.
30. Zhou, C., J. E. Penner, **Y. Ming**, and X. Huang, 2012: Aerosol Forcing Based on CAM5 and AM3 Meteorological Fields. *Atmospheric Chemistry and Physics Discussion*, 12, 10679-10727, doi:10.5194/acpd-12-10679-2012.
  31. Huang, X., H. Chuang, A. Dessler, X. Chen, K. Minschwaner, V. Ramaswamy, and **Y. Ming**, 2012: A radiative-convective equilibrium perspective of the weakening of tropical Walker circulation in response to global warming. *Journal of Climate*, doi:10.1175/JCLI-D-12-00288.1.
  32. Ocko, I., V. Ramaswamy, P. Ginoux, **Y. Ming**, and L. Horowitz, 2012: Sensitivity of the aerosol direct radiative forcing balance to physical climate factors. *Journal of Geophysical Research*, 117, doi:10.1029/2012JD018019.
  33. **Ming, Y.**, and V. Ramaswamy, 2012: Nonlocal component of radiative flux perturbation. *Geophysical Research Letters*, 39, doi:1029/2012GL054050.
  34. S. Fan, J. P. Schwarz, J. Liu, D.W. Fahey, P. Ginoux, L. W. Horowitz, H. Levy II, **Y. Ming**, J. R. Spackman, 2012: Inferring ice formation processes from global-scale black carbon profiles observed in the remote atmosphere and model simulations. *Journal of Geophysical Research*, 117, doi:10.1029/2012JD018126.
  35. Bollasina\*, M.A., and **Y. Ming**, 2012: The role of land-surface processes in modulating the Indian monsoon annual cycle. *Climate Dynamics*, doi:10.1007/s00382-012-1634-3.
  36. Lin, Y., M. Zhao, V. Ramaswamy, **Y. Ming**, J.-C. Golaz, L.J. Donner, S.A. Klein, S. Xie, and M. Deng, 2013: Impact of cumulus and cloudiness parameterization on Tropical cloud, radiation and precipitation in GFDL AM2. *Journal of Climate*, doi:10.1175/JCLI-D-12-00442.1.
  37. Levy II, H., L.W. Horowitz, M.D. Schwarzkopf, **Y. Ming**, J.-C Golaz, V. Naik, and V. Ramaswamy, 2013: The Roles of Aerosol Effects, both Direct and Indirect, in Past and Future Climate Change. *Journal of Geophysical Research*, doi:10.1002/jgrd.50192.
  38. Zhang, R., T.L. Delworth, R. Sutton, D.L.R. Hodson, K.W. Dixon, I.M. Held, Y. Kushnir, J. Marshall, Y. Ming, and coauthors, 2013: Have Aerosols Caused the Observed Atlantic Multidecadal Variability? *Journal of Atmospheric Sciences*, doi:10.1175/JAS-D-12-0331.1.
  39. Lin, Y., M. Zhao, **Y. Ming**, J.-C. Golaz, L.J. Donner, S.A. Klein, V. Ramaswamy, and S. Xie, 2013: Precipitation Partitioning, Tropical Clouds and Intraseasonal Variability in GFDL AM2. *Journal of Climate*, 26(15), doi:10.1175/JCLI-D-12-00442.1.
  40. Huang, X., H. Chuang, **Y. Ming**, and G.L. Potter, 2013: A Constraint for Ice Cloud Feedback over the Tropical Pacific in Future Climate Change. Submitted to *Nature Climate Change*.
  41. Bollasina\*, M.A., **Y. Ming**, and V. Ramaswamy, 2013: Earlier onset of the Indian Monsoon in the late 20th century: The role of anthropogenic aerosols. *Geophysical Research Letter*, doi: 10.1002/grl.50719.
  42. Bollasina\*, M.A., **Y. Ming**, V. Ramaswamy, D. Schwarzkopf, and V. Naik, 2013: Contribution of Local and Remote Anthropogenic Aerosols to the 20th Century Weakening of the South Asian Monsoon. *Geophysical Research Letters*, 41, 680–

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- 687, doi:10.1002/2013GL058183.
43. Hill\*, S., **Y. Ming**, and I.M. Held, 2014: Mechanisms of forced tropical meridional energy flux change. *Journal of Climate*, doi:10.1175/JCLI-D-14-00165.1.
  44. Persad\*, G., **Y. Ming**, and V. Ramaswamy, 2014: The Role of Aerosol Absorption in Driving Solar Dimming. *Journal of Geophysical Research*, 27(14), doi:10.1175/JCLI-D-13-00401.1.
  45. Brown, P.T., L. Li, W. Li and **Y. Ming**, 2014: Unforced Top-of-Atmosphere Net Radiation Variability and its Relationship with Global Mean Surface Temperature, *Geophysical Research Letter*, 41(14), doi:10.1002/2014GL060625.
  46. Ocko, I., V. Ramaswamy, **Y. Ming**, 2013: Contrasting climate responses to the scattering and absorbing features of anthropogenic aerosol forcings. *Journal of Climate*, 27(14), doi:10.1175/JCLI-D-13-00401.1.
  47. Ban-Weiss, G.A., L. Jin, S. Bauer, R. Bennartz, X. Liu, K. Zhang, **Y. Ming** and J. Jiang, 2014: Evaluating clouds, aerosols, and their interactions in three global climate models using COSP and satellite observations, *Journal of Geophysical Research*, 119(18), doi:10.1002/2014JD021722.
  48. Rotstayn, L.D., E.L. Plymin, M.A. Collier, J.-J. Luo, O. Boucher, J.-L. Dufresne, M.-A. Foujols, L.W. Horowitz, S.J. Jeffrey, **Y. Ming** and K. von Salzen, 2014, Declining aerosols in CMIP5 projections: effects on atmospheric temperature structure and midlatitude jets, *Journal of Climate*, 27(18), doi:10.1175/JCLI-D-14-00258.1.
  49. Lin\*, P., **Y. Ming** and V. Ramaswamy, 2015: Tropical climate change control of the lower stratospheric circulation, *Geophysical Research Letter*, 42(3), doi:10.1002/2014GL062823.
  50. Li, Z., et al., 2016: Aerosol and Monsoon Climate Interactions over Asia. *Reviews of Geophysics*, 54(4), doi:10.1002/2015RG000500 .
  51. Zhao, M., J.-C. Golaz, I.M. Held, V. Ramaswamy, S.-J. Lin, **Y. Ming**, P.A. Ginoux, B. Wyman, L.J. Donner, D.J. Paynter, and H. Guo, 2015: Uncertainty in model climate sensitivity traced to representations of cumulus precipitation microphysics, *Journal of Climate*, doi:10.1175/JCLI-D-15-0191.1.
  52. Dong, W., Y. Lin, J.S. Wright, **Y. Ming**, and coauthors, 2016: Summer rainfall over the southwestern Tibetan Plateau controlled by deep convection over the Indian subcontinent. *Nature Communications*, 7, doi:10.1038/ncomms10925.
  53. Lin\*, P., D.J. Paynter, **Y. Ming** and V. Ramaswamy, 2017: Changes of the tropical tropopause layer under global warming. 30(4), *Journal of Climate*, doi:10.1175/JCLI-D-16-0457.1.
  54. Lin\*, P, D.J Paynter, L.M. Polvani, G. Correa, **Y. Ming**, and V. Ramaswamy, 2017: Dependence of model-simulated response to ozone depletion on stratospheric polar vortex climatology. *Geophysical Research Letters*, 44(12), doi:10.1002/2017GL073862 .
  55. Shen\*, Z., **Y. Ming**, L.W. Horowitz, V. Ramaswamy, and M. Lin, 2017: On the Seasonality of Arctic Black Carbon. *Journal of Climate*, 30(12), doi:10.1175/JCLI-D-16-0580.1.
  56. Pan, F., X. Huang, S.S. Leroy, P. Lin, L.L. Strow, **Y. Ming** and V. Ramaswamy, 2017: The stratospheric changes inferred from 10 years of AIRS and AMSU-A radiances. *Journal of Climate*, 30(15), doi:10.1175/JCLI-D-17-0037.1.
  57. Lee, J.E., A. Shen, B. Fox-Kemper, and **Y. Ming**: Hemispheric sea ice distribution

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- sets the glacial tempo. *Geophysical Research Letters*, 44(2), doi:10.1002/2016GL071307.
58. Hill\*, S., **Y. Ming**, I.M. Held and M. Zhao, 2017: A moist static energy budget-based analysis of the Sahel rainfall response to uniform oceanic warming. *Journal of Climate*, 30(15), doi:10.1175/JCLI-D-16-0785.1.
  59. Persad\*, G., D.J. Paynter, **Y. Ming**, and V. Ramaswamy, 2017: Competing Atmospheric and Surface-Driven Impacts of Absorbing Aerosols on the East Asian Summertime Climate. *Journal of Climate*, 30(22), doi:10.1175/JCLI-D-16-0860.1.
  60. Brown\*, P.T., **Y. Ming**, W. Li and S.A. Hill, 2017: Change in the magnitude and mechanisms of unforced low-frequency surface temperature variability in a warmer climate. *Nature Climate Change*, 7, doi:10.1038/nclimate3381.
  61. Wang, Y., Y. Xie, W. Dong, and **Y. Ming**, J. Wang and L. Shen, 2017: Adverse Effects of Increasing Drought on Air Quality via Natural Processes. *Atmospheric Chemistry and Physics Discussions*, doi:10.5194/acp-2017-234.
  62. Shin\*, H., **Y. Ming**, M. Zhao, J.-C. Golaz, B. Xiang and H. Guo, 2018: Evaluation of Planetary Boundary Layer Simulation in GFDL Atmospheric General Circulation Models. *Journal of Climate*. 31(13), DOI:10.1175/JCLI-D-17-0543.1.
  63. Xiang, B., M. Zhao, **Y. Ming**, W. Yu and S. Kang, 2018: Contrasting Impacts of radiative forcing in the Southern Ocean versus Southern Tropics on ITCZ position and energy transport in one GFDL climate model. *Journal of Climate*. 31(14), DOI:10.1175/JCLI-D-17-0566.1.
  64. Adames\*, A., and **Y. Ming**, 2018: Moisture and moist static energy budgets of South Asian monsoon low pressure systems in GFDL AM4.0. *Journal of Atmospheric Sciences*. 75(6), DOI:10.1175/JAS-D-17-0309.1.
  65. Adames\*, A., and **Y. Ming**, 2018: Interactions between water vapor and potential vorticity in synoptic-scale monsoonal disturbances: Moisture vortex instability. *Journal of Atmospheric Sciences*. 75(6), DOI:10.1175/JAS-D-17-0310.1.
  66. Zhao, M., and coauthors, 2018: The GFDL Global Atmosphere and Land Model AM4.0/LM4.0 - Part I: Simulation Characteristics with Prescribed SSTs. *Journal of Advances in Modeling Earth Systems*. 10(3), DOI:10.1002/2017MS001208.
  67. Zhao, M., and coauthors, 2018: The GFDL Global Atmosphere and Land Model AM4.0/LM4.0 - Part II: Model Description, Sensitivity Studies, and Tuning Strategies. *Journal of Advances in Modeling Earth Systems*. 10(3), DOI:10.1002/2017MS001209.
  68. Clark\*, S.K., **Y. Ming** and I.M. Held, 2018: The role of the water vapor feedback in the ITCZ response to hemispherically asymmetric forcings. *Journal of Climate*, 31(9), DOI:10.1175/JCLI-D-17-0723.1.
  69. Shen\*, Z., and **Y. Ming**, 2018: The Influence of Aerosol Absorption on the Extratropical Circulation. *Journal of Climate*. 31(15), DOI:10.1175/JCLI-D-17-0839.1.
  70. Undorf, S., D. Polson, M.A. Bollasina, **Y. Ming**, A. Schurer and G.C. Hegerl, 2018: Detectable impact of local and remote anthropogenic aerosols on the 20th century changes of West African and South Asian monsoon precipitation. *Journal of Geophysical Research –Atmosphere*. 123, 4871-4889.
  71. Persad\*, G., **Y. Ming**, and V. Ramaswamy, 2018: Spatially similar surface energy flux perturbations by greenhouse gases and aerosols, *Nature Communications*, 9,



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- 3247, DOI:10.1038/s41467-018-05735-y.
72. Dong, W., and coauthors, 2018: Regional disparities in warm season rainfall changes over arid eastern–central Asia. *Scientific Reports*, 8, 13051, DOI:10.1038/s41598-018-31246-3.
73. Smyth\*, J., S.A. Hill and **Y. Ming**, 2018: Simulated response of the African monsoon and zonal-mean tropical precipitation to Holocene orbital forcing. *Geophysical Research Letters*, 45(21), DOI:10.1029/2018GL080494.
74. Shin\*, H., **Y. Ming**, M. Zhao, X. Chen and S.-J. Lin, 2018: Improved surface layer simulation using refined vertical resolution in the GFDL atmospheric general circulation model. *Journal of Advances in Modeling Earth Systems*, 11(4), DOI:10.1029/2018MS001437.
75. Hill\*, S., **Y. Ming** and M. Zhao, 2018: Robust responses of the Sahelian hydrological cycle to global warming. *Journal of Climate*, 31(24), DOI:10.1175/JCLI-D-18-0238.1.
76. **Ming, Y.**, and I.M Held, 2018: Modeling Water Vapor and Clouds as Passive Tracers in an Idealized GCM. *Journal of Climate*, 31(2), DOI:10.1175/JCLI-D-16-0812.1.
77. Naud, C.M., J.F. Booth, J. Jeyaratnam, L.J. Donner, C.J. Seman, M. Zhao, H. Guo, and **Y. Ming**, 2019: Extratropical Cyclone Clouds in the GFDL climate model: diagnosing biases and the associated causes. *Journal of Climate*, 32(20), DOI:10.1175/JCLI-D-19-0421.1.
78. Lin, P., I.M. Held and **Y. Ming**, 2018: The early development of the 2015/2016 Quasi-Biennial Oscillation disruption. *Journal of the Atmospheric Sciences*, 76(3), DOI:10.1175/JAS-D-18-0292.1.
79. Chua\*, X.R., **Y. Ming** and N. Jeevanjee, 2018: Investigating the Fast Response of Precipitation Intensity and Boundary Layer Temperature to Atmospheric Heating Using a Cloud-Resolving Model. *Geophysical Research Letters*, 46(15), DOI:10.1029/2019GL082408.
80. Maloney, E.D. and coauthors, 2018: Process-Oriented Evaluation of Climate and Weather Forecasting Models. *Bulletin of the American Meteorological Society*, 100(9), DOI:10.1175/BAMS-D-18-0042.1.
81. Xie, Y., J. Huang, and **Y. Ming**, 2019: Robust Regional Warming Amplifications Directly Following the Anthropogenic Emission. *Earth's Future*, 7(4), DOI:10.1029/2018EF001068.
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92. Westervelt, D.M., Y. You, X. Li, M. Ting, D. Lee, and **Y. Ming**, 2020: Relative importance of greenhouse gases, sulfate, organic carbon, and black carbon aerosol for South Asian monsoon rainfall changes. *Geophysical Research Letters*, submitted.
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94. \*Dong, W., **Y. Ming**, and V. Ramaswamy, 2020: Future changes in Indian monsoon low pressure systems, *Nature Climate Change*, submitted.
95. \*Shen, Z., **Y. Ming**, and I.M. Held, 2020: Detecting the disparate impacts of anthropogenic aerosols on regional land temperature, *Science Advances*, submitted.
96. \*Chua, X.-R., and **Y. Ming**, 2020: The fast response of tropical cyclones to black carbon. *Journal of Climate*, submitted.
97. \*Chua, X.-R., and **Y. Ming**, 2020: Convective invigoration traced to warm-rain microphysics. *Geophysical Research Letters*, in preparation.
98. \*Frazer, M.E., and **Y. Ming**, 2020: Understanding controls of the extratropical liquid water path feedback in mixed-phase clouds through an idealized GCM. *Journal of Climate*, in preparation.
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### 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.

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## **Book Chapter**

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

## **Lectures, Seminars and Conference Presentations**

\*Invited

\*U.S. Climate Modeling Summit (04/20)

\*Atmospheric Science Seminar, UC Berkeley (04/20)

\*Mechanical Engineering and Applied Mechanics Colloquium, University of Pennsylvania (02/20)

AGU Fall Meeting, Washington D.C. (12/19)

CFMIP Meeting, Mykonos, Greece (09/19)

\*Gordon Research Conference on Atmospheric Chemistry, Newry, Maine (07/19)

\*Imperial College, London, UK (04/19)

AGU Fall Meeting, Washington D.C. (12/18)

\*Understanding and modeling the Earth's climate, A symposium in honor of Isaac Held (10/18)

\*Noble Seminar, University of Toronto (10/18)

\*Division of Ocean and Climate Physics, Lamont-Doherty Earth Observatory, Columbia University (11/17)

\*International Coupled Data Assimilation Symposium, Qingdao, China (11/17)

CFMIP Workshop, University of Tokyo (09/17)

\*School of Earth and Atmospheric Sciences, Georgia Institute of Technology (09/17)

\*Imperial College, London, UK (06/17)

\*GEWEX Aerosol Precipitation (GAP) Workshop, Oxford University (06/17)

\*CERES Science Meeting, NASA Langley (05/17)

\*National Center for Scientific Research "Demokritos", Athens, Greece (04/17)

\*AMS Annual Meeting, Seattle (01/17)

\*CCliCS Workshop on Earth System Modeling, Academia Sinica, Taipei (10/16)

\*Workshop on "Grand Challenges in monsoon modeling: representation of processes in climate models", Trieste, Italy (06/16)

\*Earth and Ocean Science Division, Nicholas School of Environment, Duke University (04/16)

\*Department of Meteorology, University of Hawaii (04/16)

\*Department of Applied Physics and Applied Mathematics, Columbia University (03/16)

\*Department of Chemistry, University of Crete (09/15)

\*School of Atmospheric Science, Nanjing University (09/15)

\*Workshop on "Annual cycle of monsoons and ICTZs in the Holocene and the future", Columbia University (09/15)

\*Workshop on "Monsoon: past, present and future", California Institute of Technology (05/15)

\*Department of Applied Physics and Applied Mathematics, Columbia University (03/15)

AMS Annual Meeting, Phoenix (01/15)

AGU Fall Meeting, San Francisco (12/14)

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- \*Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology (10/14)
- \*Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Science (08/14)
- \*Department of Hydraulic Engineering, Tsinghua University (08/14)
- \*College of Atmospheric Sciences, Lanzhou University (08/14)
- \*College of Global Change and Earth System Science, Beijing Normal University (08/14)
- \*First Institute of Oceanography, State Oceanic Administration, Qingdao (08/14)
- \*National Climate Center, China Meteorological Administration, Beijing (07/14)
- \*Institute of Atmospheric Physics, Chinese Academy of Science (07/14)
- \*Department of Atmospheric and Oceanic Science, Peking University (07/14)
- \*Center for Earth System Science, Tsinghua University (07/14)
- \*Institute for Atmospheric and Climate Science, ETH Zurich (05/14)
- \*EGU General Assembly, Vienna, Austria (04/14)
- \*Department of Atmospheric Sciences, The Hebrew University of Jerusalem (03/14)
- \*Department of Atmospheric Sciences, Texas A&M University (02/14)
- \*Department of Geological Sciences, University of Texas at Austin (02/14)
- AMS Annual Meeting, Atlanta (02/14)
- AGU Fall Meeting, San Francisco (12/13)
- \*Institute of Meteorology, University of Leipzig (10/13)
- \*Center of Excellence for Climate System Science, Australian National University and University of New South Wales (08/13)
- Gordon Research Conference on Radiation and Climate (07/13)
- \*AGU Meeting of the Americans, Cancun, Mexico (05/13)
- \*Department of Global Ecology, Carnegie Institute, Stanford University (04/13)
- AMS Annual Meeting, New Orleans (01/13)
- AGU Fall Meeting, San Francisco (12/12)
- \*Climate Modeling Workshop, Hong Kong University of Science and Technology and Xi'an Jiaotong University (11/12)
- \*Department of Atmospheric and Oceanic Science, University of Maryland (08/12)
- \*AOGS-AGU (WPGM) Joint Assembly, Singapore (08/12)
- \*Division of Environment, Hong Kong University of Science and Technology (08/12)
- \*Department of Atmospheric and Oceanic Sciences, University of McGill (07/12)
- \*GFDL Summer School on Atmospheric Modeling (07/12)
- \*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)

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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 Workshop, 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)