

Zhaoyi Shen

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Research Interests

Climate dynamics, regional hydroclimate variability and change, climate sensitivity, aerosol-climate interactions, long-range transport of air pollution, atmospheric modeling

Education

Princeton University, Princeton, NJ

Ph.D., Atmospheric and Oceanic Sciences, expected September 2018

Advisor: Dr. Yi Ming

Committee members: Drs. Isaac M. Held, Larry W. Horowitz, and V. Ramaswamy

Peking University, Beijing, China

B.S., Environmental Science, July 2013

B.A., Economics, July 2013

Publications

Peer-reviewed

Zhao, M. and coauthors, 2018: The GFDL global atmosphere and land model AM4.0/LM4.0: 2. Model description, sensitivity studies, and tuning strategies. *Journal of Advances in Modeling Earth Systems*, 10. <https://doi.org/10.1002/2017MS001209>.

Zhao, M. and coauthors, 2018: The GFDL global atmosphere and land model AM4.0/LM4.0: 1. Simulation characteristics with prescribed SSTs. *Journal of Advances in Modeling Earth Systems*, 10. <https://doi.org/10.1002/2017MS001208>.

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), 4429–4441, doi:10.1175/JCLI-D-16-0580.1.

Shen, Z., J. Liu, L. W. Horowitz, D. K. Henze, S. Fan, H. Levy II, D. L. Mauzerall, J. T. Lin, and S. Tao, 2014: Analysis of transpacific transport of black carbon during HIPPO-3: Implications for black carbon aging. *Atmospheric Chemistry and Physics*, 14 (12), 6315–6327, doi:10.5194/acp-14-6315-2014.

Shen, Z., Z. Chen, Z. Hou, T. Li, and X. Lu., 2015: Ecotoxicological effect of zinc oxide nanoparticles on soil microorganisms. *Frontiers of Environmental Science & Engineering*, 9 (5), 912-918, doi: 10.1007/s11783-015-0789-7.

Submitted/in preparation

Shen, Z., Y. Ming, and I. M. Held, 2018: Constraining aerosol forcing from land surface air temperature records. In preparation.

Li, Y., Y. Deng, S. Yang, H. Zhang, Y. Ming, and **Z. Shen**, 2018: Multi-Scale Temporospatial Variability of the East Asian Summer Monsoon Frontal System: Observation versus its Representation in the GFDL HiRAM. *Submitted to Climate Dynamics*.

Shen, Z. and Y. Ming, 2018: The influence of aerosol absorption on the extratropical circulation. *Journal of climate*, in revision.

Persad, G. G., Y. Ming, **Z. Shen** and V. Ramaswamy, 2018: Spatially similar surface energy flux perturbations due to greenhouse gases and aerosols. *Nature Communications*, in revision.

Research Experience

Graduate Research Assistant 2013-Present

Program in Atmospheric and Oceanic Sciences, Princeton University

Advisor: Dr. Yi Ming

Analyzing the impacts of anthropogenic aerosols on the large-scale circulation and regional climate.

Undergraduate Research Assistant 2012-2013

Key Laboratory for Earth Surface Processes, Peking University

Advisor: Dr. Junfeng Liu

Analyzed the source and transpacific transport of black carbon during HIPPO campaigns.

Honors and Awards

NASA JPL Center for Climate Sciences Summer School participant 2016

King Peh Kwoh Fellowship, Princeton University 2013-2014

Outstanding graduate of Beijing 2013

Outstanding thesis for Undergraduate Research & Training Program, Peking University 2013

Zeng Xianzi Scholarship for Excellent Students, Peking University 2009-2012

First Prize, National Olympiad in Informatics in Provinces 2007, 2008

Professional Service

Organizer, Princeton AOS Workshop: Tropical Dynamics 2016

Organizer, Princeton AOS Student/Postdoc Seminar Series 2015-2016

Reviewer for *Geophysical Research Letters*, *Journal of Geophysical Research*, and *Atmospheric Research*

Teaching Experience

Assistant in Instruction Fall 2015

Princeton University, GEO102, "Climate: Past, Present, and Future"

Instructor: Dr. Daniel M. Sigman

Community Outreach

Monmouth Junction Elementary School 12th Annual Science Fair. Visiting Scientist. Brooks Crossing Elementary School, Monmouth Junction, NJ. (2/2018)

Selected Presentations

“Constraining aerosol forcing from the land surface temperature record”. Oral. *98th AMS Annual Meeting*, Austin, TX (1/2018)

“Constraining aerosol forcing from the land surface temperature record”. Oral. *AGU 2017 Fall Meeting*, New Orleans, LA (12/2017)

“The influence of aerosol absorption on the extratropical circulation”. Poster. *Gordon Research Conference on Radiation and Climate*, Lewiston, ME. (7/2017)

“The influence of aerosol absorption on the extratropical circulation”. Poster. *AGU 2016 Fall Meeting*, San Francisco, CA. (12/2016)

“Factors controlling the seasonal cycle of Arctic black carbon”. Poster. *AGU 2015 Fall Meeting*, San Francisco, CA. (12/2015)

“Factors controlling the seasonal cycle of Arctic black carbon”. Poster. *Gordon Research Conference on Radiation and Climate*, Lewiston, ME. (7/2015)

“Analysis of transpacific transport of black carbon during HIPPO-3: implications for black carbon aging”. Oral. *Princeton AOS Student/Postdoc Seminar Series*, Princeton, NJ. (7/2015)

“Analysis of transpacific transport of black carbon during HIPPO-3: implications for black carbon aging”. Poster. *AGU 2013 Fall Meeting*, San Francisco, CA. (12/2013)