

# Chuanyang (Sally) Shen

Homepage: <https://cyshen93.github.io/>

Postdoctoral Researcher, Riverside, California

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## Education & Awards

**Ph.D.: Atmospheric Physics and Atmospheric Environment Peking University 2016-2021**

- Awarded Merit Student, President's Scholarship Recipient, Academic Scholarship Recipient
- Relevant Coursework: Atmospheric Physics and Atmospheric Environment, Environmental Modeling, Atmospheric Chemistry

**Exchange Ph.D. student Massachusetts Institute of Technology 2018-2019**

**Bachelor of Science: Atmospheric Sciences Peking University 2012-2016**

- Awarded Excellent Thesis for Undergraduate Student, Awarded National Second Prize in the 2014 Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM), Freshmen Scholarship Recipient
- Relevant Coursework: Data Structures and Algorithms, Advanced Mathematics, Linear Algebra, Mathematical Methods in Physics

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## Professional Experience

**Postdoctoral Researcher at the University of California, Riverside, CA 2021 to Present**

- Authored 2 scientific papers and co-wrote 1 grant proposal.
- Designed and performed laboratory experiments to investigate volatile organic compounds (VOC) and aerosol chemical oxidation.
- Performed environmental modeling for chamber experiments and field measurements.
- Presented research findings at conferences.

**Research Assistant at Peking University, Beijing, China 2019-2021**

- Co-authored more than 10 research papers and presented at 3 international conferences based on academic findings.
- Took part in 3 field campaigns and was responsible for scientific instrument setup and maintenance.
- Analyzed and interpreted lab and field measurement data.
- Mentored undergraduate students in the research project.

**Research Assistant at Massachusetts Institute of Technology, Boston, MA 2018-2019**

- Co-authored 3 peer-reviewed papers.
- Collaborated with a team of researchers in developing new instruments, conducting field measurements on mixed clouds, and writing research papers.
- Performed statistical, qualitative, and quantitative analysis of experimental and field measurement data to create representative graphs and charts for presentations.

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## Technical Skills

- Proficient in Python and MATLAB programming.
- Proficient in Machine/Deep Learning.
- Expert in GUI development (related program: [https://github.com/cyshen93/-VP\\_prediction](https://github.com/cyshen93/-VP_prediction) ).
- Expert in Data Analysis & Visualization.
- Proficient in Environmental Modeling.
- Experienced in the use of scientific instruments for field and lab research.
- Skilled in Scientific Writing and Presentations.

## Conference Presentations

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### **Oral Presentation at AAAR (American Association for Aerosol Research) Annual Meeting, 2023/10**

Title: Observation-Constrained Molecular Understanding of Isoprene SOA Formation in the Atmosphere.

### **Oral Presentation at AAAR, 2022/10**

Title: Phase State and Relative Humidity Regulate the Heterogeneous Oxidation Kinetics and Pathways of Organic-Inorganic Mixed Aerosols.

### **Poster Presentation at AMS (The American Meteorological Society) Annual Meeting, 2021/01**

Title: Effects of Multi-Charge on Aerosol Hygroscopicity Measurement by HTDMA.

### **Oral Presentation at AGU (The American Geophysical Union) Fall Meeting, 2017/12**

Title: A novel method to estimate supersaturation ratio in the ambient activation process using aerosol and droplet measurement data.

## Selected Publications

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### *Atmospheric Chemistry and Air Quality:*

1. **Shen, C.**, Zhang, H. (2024). Uncertainty Analysis for Kinetic Simulation of  $\alpha$ -Pinene Ozonolysis SOA Formation based on Explored Chemical Processes. In preparation.
2. **Shen, C.**, Yang, X., Thornton, J., Shilling, J., Bi, C., Isaacman-VanWertz, G., and Zhang, H. (2024): Observation-Constrained Kinetic Modelling of Isoprene SOA Formation in the Atmosphere, *Atmospheric Chemistry and Physics*.
3. **Shen, C.**, Zhang, W., Choczynski, J., Davies, J. F., & Zhang, H. (2022). Phase State and Relative Humidity Regulate the Heterogeneous Oxidation Kinetics and Pathways of Organic-Inorganic Mixed Aerosols. *Environmental Science & Technology*.
4. Zhang, W., Zhao, Z., **Shen, C.**, Zhang, H.\* (2023). Unexpectedly efficient aging of organic aerosols mediated by autoxidation, *Environmental Science & Technology*.

### *Aerosol-Cloud Interaction & Climate Effect:*

1. **Shen, C.**, Zhao, C., Ma, N., Tao, J., Zhao, G., Yu, Y., & Kuang, Y. (2018). Method to Estimate Water Vapor Supersaturation in the Ambient Activation Process Using Aerosol and Droplet Measurement Data. *Journal of Geophysical Research: Atmospheres*
2. **Shen, C.**, Zhao, G., Zhao, W., Tian, P., & Zhao, C. (2021). Measurement report: aerosol hygroscopic properties extended to 600 nm in the urban environment. *Atmospheric Chemistry and Physics*.
3. Wolf, M. J., Goodell, M., Dong, E., Dove, L. A., Zhang, C., Franco, L. J., **Shen, C.**, ... & Cziczo, D. J. (2020). A link between the ice nucleation activity and the biogeochemistry of seawater. *Atmospheric Chemistry and Physics*.
4. Su, T., Li, Z., Li, C., Li, J., Han, W., **Shen, C.**, Tan, W., Wei, J., Guo, J. (2020). The significant impact of aerosol vertical structure on lower atmosphere stability and its critical role in aerosol–planetary boundary layer (PBL) interactions. *Atmospheric Chemistry and Physics*.
5. Zhao, G., Tao, J., Kuang, Y., **Shen, C.**, Yu, Y., & Zhao, C. (2019). Role of black carbon mass size distribution in the direct aerosol radiative forcing. *Atmospheric Chemistry and Physics*.

### *Instrument Development and Evaluation:*

1. **Shen, C.**, Zhao, G., & Zhao, C. (2021). Effects of multi-charge on aerosol hygroscopicity measurement by a HTDMA. *Atmospheric Measurement Techniques*.
2. Koolik, L., Roesch, M., Dameto de Espana, C., Rapp, C. N., Franco Deloya, L. J., **Shen, C.**, ... & Cziczo, D. J. (2022). A phase separation inlet for droplets, ice residuals, and interstitial aerosol particles. *Atmospheric Measurement Techniques*.
3. Zhao, G., **Shen, C.**, & Zhao, C. (2020). Technical note: Mismeasurement of the core-shell structure of black carbon-containing ambient aerosols by SP2 measurements. *Atmospheric Environment*.