

PEIDONG WANG

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(Updated: 2025/06/05)

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

Sep 2019 – May 2025

Ph.D. in Climate Science

Advisor: Dr. Susan Solomon

Thesis: Understanding Drivers of Stratospheric Ozone Change and Fingerprinting its Recovery

University of Wisconsin-Madison, Madison, WI

Sep 2015 – May 2019

B.S. in Atmospheric & Oceanic Sciences

B.S. in Applied Mathematics

Certificate (Minor) in Computer Science

Advisor: Dr. Tracey Holloway

PROFESSIONAL EXPERIENCE

Stanford University, Palo Alto, CA

Aug 2025 –

Stanford Science Fellow

Advisor: Dr. Noah Diffenbaugh

Massachusetts Institute of Technology, Cambridge, MA

Sep 2019 – May 2025

Graduate Research Assistant

Advisor: Dr. Susan Solomon

Woods Hole Oceanographic Institution, Falmouth, MA

May 2018 – Aug 2018

Summer Student Fellow

Advisor: Dr. Caroline Ummenhofer

University of Wisconsin-Madison, Madison, WI

Sep 2016 – May 2019

Undergraduate Research Assistant

Advisor: Tracey Holloway

PUBLICATIONS

- [12] Peidong Wang, Susan Solomon, Benjamin D. Santer, Douglas E. Kinnison, Qiang Fu, Kane A. Stone, Jun Zhang, Gloria L. Manney, Luis F. Millán. **Fingerprinting the Recovery of Antarctic Ozone.** *Nature*, 639(8055), 2025. [Paper Link](#)

- [11] Peidong Wang, Susan Solomon. **Contrasting Chlorine Chemistry on Volcanic and Wildfire Aerosols in the Southern Mid-Latitude Lower Stratosphere.** *Geophysical Research Letters*, 51(18), 2024. [Paper Link](#)

- [10] Jun Zhang, Peidong Wang, Douglas Kinnison, Susan Solomon, Jian Guan, Yunqian Zhu. **Stratospheric chlorine processing after the unprecedented Hunga Tonga eruption.** *Geophysical Research Letters*, 51(17), 2024. Paper Link
- [9] Glenn Liu, Peidong Wang, Young-Oh Kwon. **Physical Insights from the Multidecadal Prediction of North Atlantic Sea Surface Temperature Variability Using Explainable Neural Networks.** *Geophysical Research Letters*, 50(24), 2023. Paper Link
- [8] Peidong Wang, Susan Solomon, Megan Lickley, Jeffery Scott, Ray Weiss, Ronald Prinn. **On the influence of hydroxyl radical changes and ocean sinks on estimated HCFC and HFC emissions and banks.** *Geophysical Research Letters*, 50(18), 2023. Paper Link
- [7] Peidong Wang, Susan Solomon, Kane Stone. **Stratospheric chlorine processing after the 2020 Australian wildfires derived from satellite data.** *Proceedings of the National Academy of Sciences*, 120(11), 2023. Paper Link
- [6] Susan Solomon, Kane Stone, Pengfei Yu, Daniel Murphy, Doug Kinnison, AR Ravishankara, Peidong Wang. **Chemical impacts of wildfire smoke on stratospheric chlorine and ozone depletion.** *Nature*, 615(7951), 2023. Paper Link
- [5] Peidong Wang, Janni Yuval, Paul A. O’Gorman. **Non-local parameterization of atmospheric subgrid processes with neural networks.** *Journal of Advances in Modeling Earth Systems*, 14(10), 2022. Paper Link
- [4] Peidong Wang, Tracey Holloway, Matilyn Bindl, Monica Harkey, Isabelle De Smedt. **Ambient Formaldehyde over the United States from Ground-Based (AQS) and Satellite (OMI) Observations.** *Remote Sensing*, 14(9), 2022. Paper Link
- [3] Glenn Liu, Peidong Wang, Matthew Beveridge, Young-Oh Kwon, Iddo Drori. **Predicting Atlantic Multidecadal Variability.** *NeurIPS 2021 Workshop on Tackling Climate Change with Machine Learning*, 2021. [Awarded with Best Paper: Pathway to Impact]. Paper Link
- [2] Megan Lickley, Susan Solomon, Doug Kinnison, Paul Krummel, Jens Mhle, Simon O’Doherty, Ronald Prinn, Matthew Rigby, Kane A Stone, Peidong Wang, Ray Weiss, Dickon Young. **Quantifying the Imprints of Stratospheric Contributions to Interhemispheric Differences in Tropospheric CFC-11, CFC-12, and N₂O Abundances.** *Geophysical Research Letters*, 48(15), 2021. Paper Link
- [1] Peidong Wang, Jeffery R. Scott, Susan Solomon, John Marshall, Andrew R. Babbin, Megan Lickley, David W. J. Thompson, Timothy DeVries, Qing Liang, Ronald G. Prinn. **On the Effects of the Ocean on Atmospheric CFC-11 Lifetimes And Emissions.** *Proceedings of the National Academy of Sciences*, 118(12), 2021. Paper Link

TEACHING EXPERIENCE

Teaching assistant

Fall 2021

12.003 Introduction to Atmosphere, Ocean, and Climate Dynamics

Department of Earth, Atmospheric and Planetary Sciences, MIT

Teaching assistant

Fall 2017

CS200 Programming I

Department of Computer Sciences, UW-Madison

Teaching assistant

Spring 2017

CS302 Introduction to Programming

Department of Computer Sciences, UW-Madison

SELECTED HONORS AND AWARDS

2025–2028	Stanford Science Fellowship, Stanford University
2025	Carl-Gustaf Rossby Award for the Best PhD Thesis, PAOC, MIT
2024–2025	Jule Charney Fellowship, PAOC, MIT
2023	Chinese Government Award for Outstanding Self-Financed Students Abroad (extraordinary prize for the top 20 students)
2022	7th SPARC General Assembly Early Career Presentation award
2021–2022	Norman C. Rasmussen Fellowship, EAPS, MIT
2020–2021	John H. Carlson Fellowship, EAPS, MIT
2019	Jule Charney Prize, PAOC, MIT
2019–2020	MIT Presidential Fellowship, MIT
2019	Herfurth-Kubly Awards for Comprehensive Undergraduate Excellence, UW-Madison
2019	University Book Store Excellence Award, UW-Madison
2018	Lyle Horn Scholarship Award, AOS, UW-Madison
2018	Woods Hole Oceanographic Institution Summer Student Fellowship
2017–2018	Wisconsin Hildale Undergraduate/Faculty Research Fellowship, UW-Madison

SELECTED PRESENTATIONS

- [11] *Fingerprinting the Recovery of Antarctic Ozone*. Oral. Atmosphere Model, Chemistry Climate, Earth System Prediction, Climate Variability & Change, and Whole Atmosphere Working Group Meeting 2025, Boulder, Colorado, Feb 2025.
- [10] *Assessing HCFC-22 loss to the ocean from observations and high-resolution modeling*. Poster. Quadrennial Ozone Symposium, Boulder, Colorado, Jul 2024.
- [9] *Contrasting Stratospheric Chlorine Processes on Volcanic and Wildfire Aerosols in the Mid-latitudes*. Oral. EGU general assembly, Vienna, Austria, Apr 2024.
- [8] *On the influence of hydroxyl radical changes and ocean sinks on estimated HCFC and HFC emissions and banks*. Oral. 68th Meeting of AGAGE Scientists and Cooperating Networks, Boston, Massachusetts, Oct 2023.
- [7] *Stratosphere chlorine processing after a major volcanic eruption or wildfire event*. Poster. VolImpact Summer School, Greifswald, Germany, Sep 2023.

- [6] *Chlorine processing after the 2020 Australian wildfire*. Oral. Stratosphere-troposphere Processes And their Role in Climate (SPARC) 7th General Assembly, Boulder, Colorado, Oct 2022.
- [5] *Predicting Atlantic Multidecadal Variability*. Spotlight talk. NeurIPS 2021 Workshop on Tackling Climate Change with Machine Learning, virtual, Dec 2021.
- [4] *On the effects of the ocean on atmospheric CFCs lifetimes and emissions*. Poster. Quadrennial Ozone Symposium, virtual, Oct 2021.
- [3] *Synthesis of Tree-Ring Records and Coupled Climate Model Simulations to Understand North Atlantic Hydroclimate Responses to Volcanic Eruptions in the Last Millennium*. Poster. American Geophysical Union Fall Meeting, Washington D.C., Dec 2018.
- [2] *The Role of Volcanic Forcing in the North Atlantic Hydroclimate Over the Last Millennium*. Poster. Understanding and Modeling the Earth's Climate: A Symposium in Honor of Isaac Held, Princeton University, NJ, Oct 2018.
- [1] *Formaldehyde Trend Analysis from OMI Satellite Observations and AQS Ground Measurements*. Poster. NASA Health and Air Quality Applied Sciences Team (HAQAST) 3rd. meeting, Columbia University, NY, Nov 2017.

ACADEMIC SERVICES

Committee member: PAOC Colloquium Committee

Proposal Reviewer: NASA ROSES panelist

Journal Reviewer: *Communications Earth & Environment* | *Environmental Science & Technology* | *Geophysical Research Letters* | *Geoscience Letters* | *Nature Communications* | *Remote Sensing of Environment* | *Science Advances*