Jian Guan

Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology
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Education

Massachusetts Institute of Technology, Cambridge, MA Sep 2022 – May 2027 (expected)
Ph.D. candidate in Climate Science
Advisor: Susan Solomon

Renmin University of China, Beijing, China Sep 2018 – May 2022
B.S. in Environmental Engineering

Publications

9. **Jian Guan**, Benjamin D. Santer, Peidong Wang, Qiang Fu, Rolando R. Garcia, Yaowei Li, Kane Stone, Douglas Kinnison, Jun Zhang, Gabriel Chiodo, Jean-Francois Lamarque, and Susan Solomon. (2025). Human Influence on the Ozone Layer Detectable by the 1960s. *Proceedings of the National Academy of Sciences (Under review)*

8. **Jian Guan**, Susan Solomon, Daniel M. Murphy, Kane Stone, Pengfei Yu, Douglas Kinnison,Gregory P. Schill, Simone Tilmes, and Michael J. Lawler. (2025). Using the Stratosphere to Understand Organic Aerosol Photolysis. *Journal of Advances in Modeling Earth Systems (Under review)* [Link]

7. Qindan Zhu, Nicole Neumann, Arlene M. Fiore, Robert Pincus, **Jian Guan**, George Milly, Clare Singer, Brian Medeiros, and Paolo Giani. (2025). Uncertain Natural Emissions Modulate the Response of Hydroxyl Radical (OH) to Idealized Surface Warming *Journal of Advances in Modeling Earth Systems (Under review)*

6. Kane Stone , Susan Solomon , Pengfei Yu , Daniel M. Murphy, Douglas Kinnison , and **Jian Guan**. (2025). Two-years of stratospheric chemistry perturbations from the 2019/2020 Australian wildfire smoke. *Atmospheric Chemistry and Physics*, 25(14), 7683–7697. [Link]

5. Jun Zhang, Peidong Wang, Douglas Kinnison, Susan Solomon, **Jian Guan**, Kane Stone, and Yunqian Zhu. (2024). Stratospheric chlorine processing after the unprecedented Hunga Tonga eruption. *Geophysical Research Letters*, 51(17), e2024GL108649. [Link]

4. **Jian Guan**, Susan Solomon, Sasha Madronich, and Douglas Kinnison. (2023). Inferring the photolysis rate of NO_2 in the stratosphere based on satellite observations. *Atmospheric Chemistry and Physics*, 23(18), 10413-10422. [Link]

3. Lei Wang, **Jian Guan** (co-first author), Hao Han, Mingyue Yao, Jian Kang, Meng Peng, Desheng Wang, Jiayu Xu, and Jiming Hao. (2022). Enhanced photocatalytic removal of ozone by a new chlorine-radical-mediated strategy. *Applied Catalysis B: Environmental*, 306, 121130. [Link]

2. **Jian Guan**, Zeqing Long, Qiangang Li, Jinchi Han, Hongbiao Du, Pengfei Wang, and Guangming Zhang. (2021). Citric acid modulated preparation of CdS photocatalyst for efficient removal of Cr (VI) and methyl orange. *Optical Materials*, 121, 111604. [Link]

1. **Jian Guan**, Bohan Jin, Yizhe Ding, Wen Wang, Guoxiang Li, and Pubu Ciren. (2021). Global surface HCHO distribution derived from satellite observations with neural networks technique. *Remote Sensing*, 13(20), 4055. [Link]

Presentations and Conferences

5. Quadrennial Ozone Symposium, Boulder, Colorado. 2024.
4. American Meteorological Society Conference on Middle Atmosphere, Burlington, Vermont. 2024.
3. Cloud Feedback Model Intercomparison Project, Boston, Massachusetts. 2024.
2. American Geophysical Union Fall Meeting, San Francisco, California. 2023.
1. American Geophysical Union Fall Meeting, Chicago, Illinois. 2022.

Selected Honors and Awards

Praecis Presidential Fellow, MIT 2022 – 2023
Jule Charney Prize, MIT 2022

Journal Review

Atmospheric Chemistry and Physics