

Curriculum Vitae: Dr Xin Zhou

Associate Professor of Atmospheric Sciences, Chengdu University of Information Technology

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Date of birth: 13th January 1990

Scientific Career

- **July 2018 - Now.** Lecturer (2018), and now Associate Professor (2021), School of Atmospheric Sciences, Chengdu University of Information Technology.
- **Dec 2021 – Dec 2023.** Visiting research Fellow at School of Earth and Environment, University of Leeds

Education

- June 2018. Awarded PhD in Atmospheric Sciences at Institute of Atmospheric Physics, University of Chinese Academy of Sciences, China
- June 2013, BA Natural Sciences, School of Atmospheric Sciences, Nanjing University, China

Prizes and Fellowships

- 2013. University of Chinese Academy of Sciences 1st class honours
- 2014 Postgraduate Chinese Global Change Forum 1st Prize
- 2018 Chu Kochen Forum Excellent Paper Award
- 2021-2023 China Scholarship Council (CSC) Advanced Overseas Research Fellowship
- 2021-2023 University of Leeds Visiting Research Fellow.
- 2022 UK national earth observation best oral presentation in Session 2A: Fusion of Satellite Data and Models for Understanding Environmental Change

Research Students

I currently supervise (or co-supervise) 8 MS students, including Wenhui Zhang (3rd year), Guiping Zhang (3rd year), Liting Jia (2nd year), Haoran Zhou (2nd year), Jie Jin (2nd year), Ruihan Gao (2nd year), Yiming Wang (1st year), and Yu Pen (1st year).

Research Funding

Since 2018 I have received over ¥1.3M funding for research from bodies including NSFC, MOST, NSFSP.

- PI on 3 National Natural Science Foundation of China (NSFC) research grants. Co-I on a further 4.
- PI on 1 Natural Science Foundation of Sichuan Province (NSFSP) grant. Co-I on a

further 1.

- Co-I on 1 Ministry of Science and Technology of the People's Republic of China (MOST) grant

Awards & Accolades

- Invited speaker, European Geosciences Union (EGU) 2024 General Assembly, “Impact of Hunga Tonga-Hunga Ha’apai water vapour on polar vortex dehydration and ozone depletion: Antarctic 2023 and Arctic 2024” (Abstract EGU24-8370), Vienna, Austria
- Best Oral Presentation in Session 2A of UK Earth Observation (UKEO) 2023, “Decreasing tropical stratospheric water vapour entry in the past four decades linked with Indo-Pacific Warm Pool Warming”, Leicester, UK
- Outstanding Oral presentation Award, 2018 Academic Symposium on Atmospheric Sciences in Universities Across the Taiwan Strait (Zhu Kezhen Forum), “The impacts of Indo-Pacific Warm Pool on the stratosphere”, Chengdu, China

Selected Publications

- Xin Zhou**, Sandip S. Dhomse, Wuhu Feng, Graham Mann, Saffron Heddell, Hugh Pumphrey, Brian J. Kerridge, Barry Latter, Richard Siddans, Lucy Ventress, Richard Querel, Penny Smale, Elizabeth Asher, Emrys G. Hall, Slimane Bekki, and Martyn P. Chipperfield, Antarctic vortex dehydration in 2023 as a substantial removal pathway for Hunga Tonga-Hunga Ha’apai water vapor, *Geophysical Research Letters*, 2024, <https://doi.org/10.1029/2023GL107630>
- Xin Zhou**, Graham W. Mann, Wuhu Feng, Sandip S. Dhomse, Martyn P. Chipperfield, The influence of internal climate variability on stratospheric water vapor increases after large-magnitude explosive tropical volcanic eruptions. *Geophysical Research Letters*, 2023, <https://doi.org/10.1029/2023GL103076>
- Xin Zhou**, Quanliang Chen*, Yang Li, Yong Zhao, Yuqi Lin, Yangjie Jiang, Impacts of the Indo-Pacific warm pool on lower stratospheric water vapor: Seasonality and hemispheric contrasts, *Journal of Geophysical Research*, 2021, doi: 10.1029/2020JD034363
- Xin Zhou**, Quanliang Chen*, Yang Li, Yawei Yang, Shaobo Zhang, Yong Zhao, Yulei Qi, and Jingtao Zhou, The North American spring coldness response to the persistent weak stratospheric vortex induced by extreme El Niño events, *Frontiers in Earth Science*, 2021, doi: 10.3389/feart.2021.626244
- Xin Zhou**, Quanliang Chen*, Zhenglin Wang, Mian Xu, Sen Zhao, Zhigang Cheng, Fan Feng, Longer duration of the weak stratospheric vortex during extreme El Niño events linked to spring Eurasian coldness, *Journal of Geophysical Research*, 2020, 123, 3071-3086, doi:10.1175/JCLI-D-17-0575.1
- Yujing Liao, Quanliang Chen*, and **Xin Zhou**, 2019. Seasonal evolution of the effects of the El Niño—Southern Oscillation on lower stratospheric water vapor: Delayed effects in late winter and early spring, *Earth and Planetary Physics*, 2019, 3(6): 489-500
- Xin Zhou**, Quanliang Chen*, Fei Xie, Jianping Li, Minggang Li, Ruiqiang Ding, Yanjie Li, Xin Xia, Zhigang Cheng, Nonlinear response of Northern Hemisphere stratospheric polar vortex to the Indo Pacific warm pool (IPWP) Nino, *Scientific Reports*, 2019, 9:13719
- Quanliang Chen*, Guolu Gao, Yang Li, Hongke Cai, **Xin Zhou**, and Zhenglin Wang, Main Detrainment Height of Deep Convection Systems over the Tibetan Plateau and Its Southern Slope, *Advances in Atmospheric Sciences*, 2019, 36(10): 1078-1088
- Bing Zuo, Jianping Li*, Chen Sun, and **Xin Zhou**, A new statistical method for detecting trend

- turning, *Theoretical and Applied Climatology*, 2019, doi: 10.1007/s00704-019-02817-9
- Yang Li, Quanliang Chen*, Xiaoran Liu, Jianping Li, Nan Xing, Fei Xie, Juan Feng, **Xin Zhou**, Hongke Cai, Zhenglin Wang, Long-term trend of the tropical Pacific trade winds under global warming and its causes, *Journal of Geophysical Research*, 2019, 124: 2624-2640
- Xin Zhou**, Jianping Li*, Fei Xie, Quanliang Chen, Ruiqiang Ding, Wenxia Zhang, Yang Li, Does extreme El Niño have a different effect on the stratosphere in boreal winter than its moderate counterpart?, *Journal of Geophysical Research*, 2018, 123: 3071-3086
- Fei Xie, **Xin Zhou***, Jianping Li, Chen Sun, Juan Feng and Xuan Ma, The key role of background sea surface temperature over the cold tongue in asymmetric responses of the Arctic stratosphere to El Niño–Southern Oscillation, *Environmental Research Letters*, 2018, 13, doi: 10.1088/1748-9326/aae79b
- Fei Xie*, Jianping Li*, Chen Sun, Ruiqiang Ding, Nan Xing, Yun Yang, **Xin Zhou** and Xuan Ma, Improved Global Surface Temperature Simulation using Stratospheric Ozone Forcing with More Accurate Variability, *Scientific Reports*, 2018, doi:10.1038/s41598-018-32656-z
- Fei Xie, **Xin Zhou***, Jianping Li, Quanliang Chen, Jiankai Zhang, Yang Li, Ruiqiang Ding, Jiaqing Xue, Xuan Ma, Effect of the Indo-Pacific Warm Pool on lower stratospheric water vapor and comparison with the effect of ENSO, *Journal of Climate*, 2017, 31: 929-943
- Fei Xie, Xuan Ma*, Jianping Li, Jinglong Huang, Wenshou Tian, Jiankai Zhang, Yongyun Hu, Chen Sun, **Xin Zhou**, J. Feng, Y. Yang, An advanced impact of Arctic stratospheric ozone changes on spring precipitation in China, *Climate Dynamics*, 2018, doi: 10.1007/s00382-018-4402-1
- Xin Zhou**, Jianping Li, Fei Xie*, Ruiqiang Ding, Yanjie Li, Sen Zhao, Jiankai Zhang, Yang Li, The effects of the Indo-Pacific Warm Pool on the stratosphere, *Climate Dynamics*, 2017, doi:10.1007/s00382-017-3584-2
- Yang Li, Jianping Li*, Wenjun Zhang, Quanliang Chen*, Juan Feng, Fei Zheng, Wei Wang, **Xin Zhou**, Impacts of the tropical Pacific cold tongue mode on ENSO diversity under global warming, *Journal of Geophysical Research*, 2017, 122(11): 8524-8542
- Wenshou Tian, Yuanpu Li, Fei Xie*, Jiankai Zhang, M. P. Chipperfield, Wuhu Feng, Yongyun Hu, Sen Zhao, **Xin Zhou**, Yun Yang, and Xuan Ma, The relationship between lower-stratospheric ozone at southern high latitudes and sea surface temperature in the East Asian marginal seas in austral spring, *Atmospheric Chemistry Physics*, 2017, 17(11), 6705-6722, doi:10.5194/acp-17-6705-2017
- Fei Xie, Jianping Li*, Wenshou Tian, **Xin Zhou**, and Xuan Ma, The Variations in Middle and Upper Stratospheric Water Vapour over the Past Two Decades, *SOLA*, 2016, 12, 127–134, doi:10.2151/sola.2016-028

Ph.D. Dissertation

Zhou, Xin (2018) The effects of the Indo-Pacific Warm Pool on the stratosphere, the potential mechanisms and comparison with ENSO

Skills

Programming & Visualization

Python, NCL, Adobe Illustrator, Linux, Fortran,

Model

CESM, UKCA, MAPS

Languages

Chinese and English