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Weather and climate have fascinated me since childhood, and that interest now shapes both my [research](#) and [science outreach](#). My research focuses on weather and climate extremes, monsoon variability and predictability, and coupled atmosphere–ocean dynamics. Outside research, I communicate weather and climate science to over 28 million followers on social media.

Education & Visits

Fudan University Ph.D. candidate, Atmospheric Science; Advisor: Wen Zhou	Sept. 2023 – Jun. 2027 (expected)
Scripps Institution of Oceanography Visiting Graduate, UC San Diego; Advisor: Shang-Ping Xie	Oct. 2025 – Sept. 2026
University of Bergen Visiting Scholar; Advisor: Noel Keenlyside	Mar. 2025 – Apr. 2025
Fudan University B.S., Atmospheric Science	Sept. 2019 – Jun. 2023

Publications

In preparation & submitted (first-author only):

- **Fu, Z.-H.**, S.-P. Xie, A. Miyamoto, Q. Peng, and W. Zhou, 2026: Highly predictable interannual variability over monsoon Asia during September–October shoulder season. Submitted.
- **Fu, Z.-H.**, S.-P. Xie, W. Zhou, N. Keenlyside, and S. He, 2026: Seasonal responses of tropical rainfall to Antarctic meltwater. In preparation.
- **Fu, Z.-H.**, et al., 2026: Interhemispheric surface salinity contrast driven by Antarctic meltwater-induced coupled dynamics. In preparation.

Peer reviewed:

8. Wang, X., R. Zhang, **Z.-H. Fu**, Z.-Q. Zhou, Y. Zhang, and D. Jin, 2026: Record-breaking summertime terrestrial and marine heat waves in Southeast Asia driven by internal variability during 2020–22, *Journal of Climate*, 39(1), 51–63. [\[Link\]](#)
7. Zhou, W., **Z.-H. Fu**, and R. Zhang, 2026: Emerging teleconnected patterns enhance predictability of East Asian summer extremes, *Journal of Meteorological Research*, 39(6), 1399–1410. [\[Link\]](#)
6. **Fu, Z.-H.**[†], D. Xi[†], S.-P. Xie, W. Zhou, N. Lin, J. Zhao, X. Wang, and J. C. L. Chan, 2025: Shifting hotspot of tropical cyclone clusters in a warming climate, *Nature Climate Change*, 15(8), 850–858. [\[Link\]](#) [\[WMO feature\]](#)
5. **Fu, Z.-H.**, R. Zhan, and W. Zhou, 2025: Spatial diversity of multiple tropical cyclone events over the western North Pacific and associated physical processes, *Journal of Climate*, 38(17), 4445–4461. [\[Link\]](#)
4. **Fu, Z.-H.**, W. Zhou, S.-P. Xie, R. Zhang, and X. Wang, 2024: Dynamic pathway linking Pakistan flooding to East Asian heatwaves, *Science Advances*, 10(17), eadk9250. [\[Link\]](#) [\[Cover\]](#)
3. **Fu, Z.-H.**, R. Zhan, J. Zhao, Y. Yamada, and K. Song, 2023: Future projections of multiple tropical cyclone events in the Northern Hemisphere in the CMIP6-HighResMIP models. *Geophysical Research Letters*, 50(13), e2023GL103064. [\[Link\]](#)
2. Chen, Y., X. Ye, Y. Yao, Z. Lv, **Z.-H. Fu**, C. Huang, R. Wang, and J. Chen, 2023: Characteristics and sources of PM_{2.5}-bound elements in Shanghai during autumn and winter of 2019: Insight into the development of pollution episodes, *Science of the Total Environment*, 881, 163432. [\[Link\]](#)

1. **Fu, Z.-H.**, L. Cheng, X. Ye, Z. Ma, R. Wang, Y. Duan, J. Huo, and J. Chen, 2022: Characteristics of aerosol chemistry and acidity in Shanghai after PM2.5 satisfied national guideline: Insight into future emission control, *Science of the Total Environment*, 827, 154319. [\[Link\]](#)

Selected Presentations

Talks:

AGU25 Annual Meeting, New Orleans, USA	Dec. 2025
Shifting hotspot of tropical cyclone clusters in a warming climate.	
AOGS Annual Meeting, Singapore	Jul. 2025
Shifting hotspot of tropical cyclone clusters in a warming climate.	
Bjerknes Centre for Climate Research, Norway (Invited)	Mar. 2025
Dynamic pathway linking Pakistan flooding to East Asian heatwaves.	
Young Scientist Forum of Earth Science, Xiamen, China	May 2024
Dynamic pathway linking Pakistan flooding to East Asian heatwaves.	
AGU23 Annual Meeting, San Francisco, USA	Dec. 2023
Extreme events interaction: Pakistan flooding and unprecedented East Asian heatwaves.	

Posters:

Polar Winter Climate and Processes Workshop, Cambridge, UK	Apr. 2025
Seasonal impacts of Antarctic freshwater forcing on ITCZ based on SOFIA multi-model ensemble.	
AOGS Annual Meeting, Pyeongchang, South Korea	Jun. 2024
Dynamic pathway linking Pakistan flooding to East Asian heatwaves.	
National Mesoscale Meteorology Forum, Yinchuan, China	Aug. 2023
Future projections of multiple tropical cyclone events in CMIP6-HighResMIP models.	

Invited Outreach Talks:

Peking University, Beijing, China	Mar. 2026
Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China	Apr. 2025
Nanjing University, Nanjing, China	Mar. 2025

Teaching

Autumn 2023 **Teaching Assistant**, Statistical Methods in Meteorology, Fudan University
 Autumn 2023 **Teaching Assistant**, Research Training, Fudan University

Selected Awards and Grants

Principal Investigator, NSFC Doctoral Student Basic Research Grant, RMB 300,000 (~US\$42,000), 2025–2026
 National Scholarship, 2021, 2022, 2024, 2025
 Best Student Poster (BSP) Award, AOGS Annual Meeting 2024
 Outstanding Student Presentation Award (OSPA), AGU Fall Meeting 2023
 The Graduate Star of Fudan University (Highest honor for undergraduates), May 2023

Activities and Service

Peer Review:

Science Advances (3), *Communications Earth & Environment* (1), *Climate Dynamics* (1), *npj Climate and Atmospheric Science* (1), *Scientific Reports* (1), *Theoretical and Applied Climatology* (1), *International Journal of Climatology* (1), *Natural Hazards* (1)

Outreach: ZQA Weather Hub of China, Co-founder [\[Details\]](#)

Skills

Climate models: CESM2, GFDL CM2.1, GFDL AM4/AM2.1, MOM4p1, NeuralGCM, LBM
Programming & computing: Python, MATLAB, NCL, C/C++, Linux, L^AT_EX