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Cong Gao

Postdoctoral Research Associate

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Education:

Ph.D. in Physical Oceanography, Shanghai Jiao Tong University	2024
M.S. in Physical Oceanography, Shanghai Jiao Tong University	2021
B.S. in Oceanography, Tongji University	2018

Professional Positions:

2025–Present Postdoctoral Research Associate, CEE, Princeton University

Research Interests:

How does the environment affect tropical cyclones (TCs)?

How can the TC-environment relationship be applied to hazard and risk analysis?

What policies should be developed to improve TCs preparedness?

Research Outputs:

Journal Articles:

1. **Gao, Cong**, Ning Lin. “PepC-Global: A Basin-Tuned Probabilistic Tropical Cyclone Model with Enhanced Out-of-Sample Skill and Climate-Sensitive Over-Land Decay”. Submitted to Journal of Advances in Modeling Earth Systems (JAMES), under review.

2. **Gao, Cong**, Lei Zhou, I-I. Lin, Chunzai Wang, Shoude Guan, Fei-Fei Jin, and Raghu Murtugudde. "Crucial role of subsurface ocean variability in tropical cyclone genesis." *Nature Communications* 16, no. 1 (2025): 1050.
3. **Gao, Cong**, Lei Zhou, Chunzai Wang, I-I. Lin, and Raghu Murtugudde. "Unexpected limitation of tropical cyclone genesis by subsurface tropical central-north Pacific during El Niño." *Nature Communications* 13, no. 1 (2022): 7746.
4. **Gao, Cong**, and Lei Zhou. "Tropical cyclone genesis over the western North Pacific simulated by Coupled Model Intercomparison Project Phase 6 models." *Acta Oceanologica Sinica* 41, no. 5 (2022): 64–77.
5. Li, Baosheng, Lei Zhou, Chunzai Wang, **Cong Gao**, Jianhuang Qin, and Ze Meng. "Modulation of tropical cyclone genesis in the Bay of Bengal by the central Indian Ocean mode." *Journal of Geophysical Research: Atmospheres* 125, no. 12 (2020): e2020JD032641.

Selected Presentations:

1. AGU 2025 Annual Meeting, New Orleans, USA: "PepC-Global: A Basin-Tuned, Environment-Dependent Probabilistic Tropical Cyclone Model". Oral presentation, December 2025.
2. The AMS 24th Conference on Air-Sea Interaction at the 105th AMS Annual Meeting, New Orleans, USA: "Crucial role of subsurface ocean variability in tropical cyclone genesis". Oral presentation, January 2025.
3. 2024 Symposium on Hurricane Risk in a Changing Climate, Honolulu, USA: "Ocean subsurface variability has significant impacts on tropical cyclone genesis". Poster, June 2024.
4. Asia Oceania Geosciences Society (AOGS) 21st Annual Meeting, Pyeongchang, South Korea: "Significant impacts of ocean subsurface variability on tropical cyclone genesis". Oral presentation, June 2024.
5. AGU 2023 Annual Meeting, San Francisco, USA: "Unexpected limitation of tropical cyclone genesis by subsurface tropical central-north Pacific during El Niño". Poster, December 2023.
6. Asia Oceania Geosciences Society (AOGS) 20th Annual Meeting, Singapore: "Unexpected limitation of tropical cyclone genesis by subsurface tropical central-north Pacific during El Niño". Oral presentation, July to August 2023.
7. Asia Oceania Geosciences Society (AOGS) 19th Annual Meeting, Online: "Suppression of tropical cyclone genesis by subsurface environment in the tropical central North Pacific during El Niño". Oral presentation, August 2022.

8. AGU 2019 Fall Meeting, San Francisco, USA: “Projections of tropical cyclones in western North Pacific under climate change: Using a new genesis potential index”. Poster, December 2019.

Professional Services:

Research Leadership:

Lead, Hurricane Analysis: Predictability and Environmental Drivers, Megalopolitan Coastal Transformation Hub (MACH) [[link](#)]

Review Activities:

Journals: Journal of Climate, Journal of Geophysical Research: Oceans, Climate Dynamics, Environmental Research Letters, Environmental Research Communications, Machine Learning: Science and Technology, Acta Oceanologica Sinica, npj Climate and Atmospheric Science

Professional Affiliations:

American Geophysical Union (AGU)

American Meteorological Society (AMS)

Asia Oceania Geosciences Society (AOGS)

Institute of Electrical and Electronics Engineers (IEEE)

Environmental Policy Associate, Center for Policy Research on Energy and the Environment (C-PREE), Princeton University [[link](#)]

Honors and Awards:

2025 | Postdoctoral Fellowship, Gordon and Betty Moore Foundation

2025 | IOP Outstanding Reviewer Award (2024)

2024 | Poster Award (Science Originality), Symposium on Hurricane Risk in a Changing Climate

2023 | National Scholarship, Ministry of Education of the People’s Republic of China

2021 | Outstanding Graduate, Shanghai Jiao Tong University

2020 | National Scholarship, Ministry of Education of the People's Republic of China

2019 | Second Prize, National Graduate Student Mathematical Contest in Modeling
(China)

2018 | Outstanding Graduate, Tongji University

2015 | Second Prize, National College Student Physics Competition (China)