Cong Gao

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Education:

- Ph.D. in Physical Oceanography, Shanghai Jiao Tong University 2024
  Thesis Title: Impact of upper ocean heat content variability on the genesis and intensity of tropical cyclones.
- M.Sc. in Physical Oceanography, Shanghai Jiao Tong University 2021
  Thesis Title: Impact of ocean subsurface thermodynamic structure on tropical cyclone genesis over the western Northern Pacific.
- B.Sc. in Oceanography, Tongji University 2018
  Thesis Title: Impact of 2015/16 extreme El Niño on mesoscale eddies in the Southern China Sea.

Research Interests:

- Tropical cyclone genesis under climate change
- Interactions between tropical cyclones and ocean

Research Outputs:

Journal Articles:

1. **Gao, C.**, Zhou, L., Lin, I.-I., Wang, C., Guan, S., Jin, F.-F., & Murtugudde, R. (2024). Crucial role of subsurface ocean variability in tropical cyclone genesis. *Nature Communications,* under review.
2. **Gao, C.**, Zhou, L., Wang, C., Lin, I.-I., & Guan, S. (2024). Marine heatwaves fueling tropical cyclone intensification. *Science Advances,* submitted.

3. **Gao, C**., Zhou, L., Wang, C., Lin, I.-I., & Murtugudde, R. (2022). Unexpected limitation of tropical cyclone genesis by subsurface tropical central-north Pacific during El Niño. *Nature Communications*, 13, 7746.
4. **Gao, C.**, & Zhou, L. (2022). Tropical cyclone genesis over the western North Pacific simulated by Coupled Model Intercomparison Project Phase 6 models. *Acta Oceanologica Sinica*, 41(5), 64–77.
5. Li, B., Zhou, L., Wang, C., **Gao, C.**, Qin, J., & Meng, Z. (2020). Modulation of tropical cyclone genesis in the Bay of Bengal by the central Indian Ocean mode. *Journal of Geophysical Research: Atmospheres*, 125(12), e2020JD032641.

Selected Presentations:

1. Gao, C. (2024). Ocean subsurface variability has significant impacts on tropical cyclone genesis. In *Symposium on Hurricane Risk in a Changing Climate*, Poster.
2. Gao, C. (2024). Significant impacts of ocean subsurface variability on tropical cyclone genesis. In *Asia Oceania Geosciences Society Annual Meeting*, Oral.
3. Gao, C. (2023). Unexpected limitation of tropical cyclone genesis by subsurface tropical central-north Pacific during El Niño. In *American Geophysical Union Fall Meeting*, Poster.
4. Gao, C. (2023). Unexpected limitation of tropical cyclone genesis by subsurface tropical central-north Pacific during El Niño. In *Asia Oceania Geosciences Society Annual Meeting*, Oral.
5. Gao, C. (2022). Suppression of tropical cyclone genesis by subsurface environment in the tropical central North Pacific during El Niño. In *Asia Oceania Geosciences Society Annual Meeting*, Oral.
6. Gao, C. (2019). Projections of tropical cyclones in western North Pacific under climate change: Using a new genesis potential index. In *American Geophysical Union Fall Meeting*, Poster.

Awards & Achievements:

- 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 of China.
- 2018 | Outstanding Graduate, Tongji University.
- 2015 | Second Prize, National College Student Physics Competition of China

Professional Services:

Review Activities:

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

Memberships:

American Geophysical Union (AGU), American Meteorological Society (AMS), Asia Oceania Geosciences Society (AOGS), Institute of Electrical and Electronics Engineers (IEEE)

Technical Skills:

- Programming Languages: R, MATLAB, Python, NCL, Julia, Shell, Markdown
- Professional Software: Climate Data Operators, netCDF Operator, Panoply
- Graphics Software: Adobe Illustrator, Adobe Photoshop, Blender