

JING-YI ZHUO

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EDUCATION

Nanjing University, Nanjing, China

Ph.D. in Atmospheric Science

2017 – 2022

Advisor: Zhe-Min Tan

Nanjing University, Nanjing, China

B.S. in Atmospheric Science

2013 – 2017

ACADEMIC APPOINTMENTS

Princeton University, Princeton, NJ, USA

Postdoc | The High Meadows Environmental Institute

2025.7 – Present

Advisor: Gabriel Vecchi

Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY, USA

Postdoc | Ocean & Climate Physics Division

2023.7 – 2025.6

Advisors: Adam Sobel, Chia-Ying Lee, Suzana Camargo & Richard Seager

PEER-REVIEWED PUBLICATIONS (* DENOTES CORRESPONDING AUTHOR)

- [14] **Zhuo J.-Y.***, Wenchang Yang, G. A. Vecchi, and Emma L. Levin, 2026: Tropical Cyclone Hazards in a Large-Ensemble AI Climate Emulator. *In prep.*
- [13] **Zhuo J.-Y.***, Wenchang Yang, and G. A. Vecchi, 2026: Global Tornado Trends and Related Impacts from Evolving Sea Surface Warming Patterns. *In prep.*
- [12] **Zhuo J.-Y.***, C. Lee, G. A. Vecchi, R. Seager, A. Sobel, and S.J. Camargo, 2026: Eastern Pacific Cooling due to Northern Hemisphere Aerosol Reduction, and the Role of Model Bias. *Resubmitted.*
- [11] **Zhuo J.-Y.***, Lorenzo M. Polvani, and G. A. Vecchi, 2026: Muted eastern Pacific cooling response to stratospheric ozone depletion linked to double-ITCZ bias. *Under review.*
- [10] **Zhuo J.-Y.***, C. Lee, A. Sobel, S. J. Camargo and A. Vecchi, 2026: Impact of Sea Surface Temperature Trend Biases on Tropical Cyclone Activity and Hazard. *GRL, Accepted.*
- [9] K., Jones, **Zhuo J.-Y.***, S. J. Camargo, 2 K. I. Hodges, S. S. Bell, and S. S. Chand, 2026: Re-examining Historical Trends of Tropical Cyclone Frequency. *GRL*, **53**, e2026GL122083.
- [8] X. Zhang*, **Zhuo J.-Y.**, S. Guo, K. Zhu, and Z.-M. Tan, 2026: Integrating Diurnal Pulsing Signatures for AI-Driven Tropical Cyclone Intensity Prediction. *GRL*, **53**, e2025GL119496.
- [7] Liu Y., **J.-Y. Zhuo**, K. Chu*, and Z.-M. Tan, 2026: Detection of eye occurrence in sequential satellite infrared imagery and its application to improve deep learning-based tropical cyclone intensity estimation. *JGR: Machine Learning and Computation*, **3**, e2025JH000816.
- [6] Brizuela. N. G.*, C.-Y. Lee, A. Sobel, R. Seager, S.J. Camargo, and **J.-Y. Zhuo**, 2025: Tropical Thermocline Powers Pacific equatorial Upwelling. *J. Phys. Ocean*, **55**, 2349–2361.
- [5] **Zhuo, J.-Y.***, C. Lee, A. Sobel, R. Seager, S. J. Camargo, Y. Lin, B. Fosu, and K. A. Reed, 2025: A More La Niña–Like Response to Radiative Forcing after Flux Adjustment in CESM2. *J. Climate*, **38**, 1037–1050.
- [4] Lin, J.*, Lee, C. Lee, Camargo, S.J. Camargo, A. Sobel, **J.-Y. Zhuo**, 2025: The response of tropical cyclone hazard to natural and forced patterns of warming. *npj Clim Atmos Sci*. **8**, 109.
- [3] Duong, Q.-P.*, A. Wimmers, D. Herndon, Z.-M. Tan, **J.-Y. Zhuo**, J. Knaff, I. A. Abdulsalam, T.

- Horinouchi, R. Miyata, and A. Avenas 2023: Objective satellite methods including ai algorithms reviewed for the tenth international workshop on tropical cyclones (ITWC-10). *Tropical Cyclone Research and Review*, **12** (4), 259–266.
- [2] **Zhuo, J.-Y.***, and Z.-M. Tan, 2023: A Deep-Learning Reconstruction of Tropical Cyclone Size Metrics 1981–2017: Examining Trends. *J. Climate*, **36**, 5103–5123.
- [1] **Zhuo, J.-Y.***, and Z.-M. Tan, 2021: Physics-Augmented Deep Learning to Improve Tropical Cyclone Intensity and Size Estimation from Satellite Imagery. *Mon. Wea. Rev.*, **149**, 2097–2113. [Adopted operationally by the China National Satellite Meteorological Center; Citation >100]

PRESENTATIONS (MOST RECENT INVITED & ORAL TALKS)

1. Impact of Sea Surface Temperature Trend Biases on Tropical Cyclone Activity and Hazard. **37th AMS Conference on Hurricanes and Tropical Meteorology**. San Diego, CA, 2026.3 (Oral)
2. Mean-state bias alters SST warming patterns and influences TC activity. **37th AMS Conference on Hurricanes and Tropical Meteorology**. San Diego, CA, 2026.3 (Oral)
3. Eastern Pacific Cooling due to Northern Hemisphere Aerosol Reduction, and the Role of Model Bias. **AGU25 Annual Meeting**. New Orleans, LA, 2025.12 (Invited talk)
4. Mean-State Biases Affect Forced Responses of the Tropical Pacific. **Symposium on Tropical Cyclone Risk in a Changing Climate**, Tampa, FL, 2025.6 (Oral)
5. Mean-State Biases Affect Forced Responses of the Tropical Pacific. **OCP seminar**, Palisades, NY, 2025.4 (Invited talk)
6. A more La Niña-like response to radiative forcing after flux adjustment in CESM2 and why? **Department of Energy: RGMA Climate Extremes Meeting**, Online, 2024.12 (Invited talk)
7. A more La Niña-like response to radiative forcing after flux adjustment in CESM2 and its possible impact on TC activity. **GFDL**, Princeton, NJ, 2024.10 & **Princeton University**, Princeton, NJ, 2024.8 (Invited talks)
8. Tropical Pacific Warming Biases in CESM2 and their impacts on TCs. **TROPICANA Workshop**, Orsay, France, 2024.7 (Oral)
9. Projected Tropical Cyclones in a Coupled Earth System Model: Sensitivity to Changes in Tropical Pacific Mean State Induced by Flux adjustments. **AMS 36th Conference on Hurricanes and Tropical Meteorology**, Long Beach, CA, 2024.5 (Oral)
10. Deep Learning Reconstructs a 37-yr Dataset for Inner- to Outer-core TC Size over the Western North Pacific. **AMS 103rd Annual Meeting**, Denver, CO, 2023.1 (Oral)

MENTORING

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| 1. Kailey Jones (Undergraduate), Columbia University | 2024 – 2025 |
| Senior thesis advising, co-authored one paper, Kailey was admitted to Duke University | |
| Co-supervise with Dr. Suzana Camargo | |
| 2. Abhinav Radhakrishnan (Master student), Columbia University | Fall 2024 |
| APAM Fall semester learning program; Co-supervise with Dr. Adam Sobel | |
| 3. Sherry Ren (Master student), Columbia University | 2023 – 2024 |
| Lamont intern program; Co-supervise with Dr. Suzana Camargo & Dr. Chia-Ying Lee | |
| 4. Yi Liu (Ph.D. student), Schools of Atmospheric Sciences, Nanjing University | 2022 – 2023 |
| Senior thesis advising, co-authored one paper, awarded the NSFC young scientists funding (Ph.D.) | |
| Co-supervise with Dr. Zhe-Min Tan & Dr. Kekuan Chu | |

HONORS AND AWARDS

- National Scholarship for Ph.D. Student (Top 0.2% CHN) 2021
- President's Award Scholarship (Top 1% Nanjing University, i.e., NJU) 2017
- Ph.D. Student National Fellowship (Top 1% NJU) 2018
- Outstanding Undergraduate & Undergraduate Thesis (NJU) 2017 & 2017
- People's Scholarship (NJU) 2014, 2015, 2016

PROFESSIONAL & COMMUNITY SERVICES

Peer Reviewer: Nature Climate Change, Journal of Climate, Journal of Advances in Modeling Earth Systems, Geophysical Research Letters, Journal of Meteorological Research, Environmental Research Letters, Climate Dynamics, Atmosphere.

Chair: 37th AMS Conference on Hurricanes and Tropical Meteorology. Session 5B Climate Variability and Change in the Tropics

Open-Access Data: Real-time estimation of tropical cyclone intensity and size using deep learning (Jul. 2021 - present). Data access: <https://forecast.nju.edu.cn/deeptcnet>

Contributing Author: [1] International Workshop on Tropical Cyclones (IWTC-10) Topic 1.2: Objective Satellite Methods, Bali, Indonesia, Dec. 2022. [2] Ocean Data and Artificial Intelligence (Chinese Textbook).