

HENG QUAN (权衡)

Princeton University, Atmospheric and Oceanic Sciences Program, US

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EDUCATION & WORK EXPERIENCE

Princeton University

Sep. 2022 – Jul. 2026 (expected)

PhD in Atmospheric and Oceanic Sciences Program (Advisor: Stephan Fueglistaler)

Woods Hole Oceanographic Institution

June. 2025 – Aug. 2025

Geophysical Fluid Dynamics Fellow

Peking University

Sep. 2018 - Jul. 2022

Bachelor of Atmospheric Sciences (School of Physics)

- Overall GPA: 3.85/4.00 or 91/100
- Ranking: 9/176, top 5% (physics school) or 1/14 (atmospheric sciences department)

PUBLICATIONS

Quan, H., Zhang, Y., Dagan, G., & Fueglistaler, S. Transition to periodic precipitation in a warmer climate due to stronger convectively-coupled waves. (submitted)

Quan, H., Yang, D., Ge, H., Zeng, Y., & KleinStern, C. Vapor buoyancy slows the African easterly jet. (manuscript in preparation)

Quan, H., Zhang, Y., & Fueglistaler, S. (2025). Weakening of tropical free tropospheric temperature gradients with global warming. *Journal of the Atmospheric Sciences*, 82(1): 31-43.

Quan, H., Fueglistaler, S., Zhang, B., & Wang, C. (2025). The Sea Surface Temperature Pattern Effect on Outgoing Longwave Radiation: The Role of Large-scale Convective Aggregation. *Geophysical Research Letters*, 52(11).

Quan, H., Koll, D., Lutsko, N., & Yuval, J. (2025). Optimal Solar Geoengineering Strategies Based on Reinforcement Learning. *Journal of Geophysical Research: Atmospheres*, 130(23).

Quan, H., Fueglistaler, S., Zhang, B., & Wang, C. (2024). Non-linear radiative response to patterned global warming due to convection aggregation and non-linear tropical dynamics. *Journal of Climate*, 37(21): 5675-5686.

Quan, H., Zhang, B., Bourguet, S., Linz, M., & Chen, G. (2023). How Do Different Processes Shape Temperature Probability Distributions? A Percentile-averaged Temperature Tendency Decomposition. *Journal of Climate*, 36(15): 5179-5196.

Quan, H., Chai, W., & Fu, Z. (2022). Asymmetry of daily mean temperature series over China and its frontal mechanism. *International Journal of Climatology*, 42(3), 1828-1840.

Chai, W., Huang, Y., Yang, L., **Quan, H.**, & Fu, Z. (2021). Evaluation of re-analyses over China based on the temporal asymmetry of daily temperature variability. *Theoretical and Applied Climatology*, 1-13.

TALKS

AOFD 2026, Houston

Periodic extreme rainfall in a warmer climate due to stronger convectively-coupled waves

AGU 2025, New Orleans

The equatorial jet direction depends on the damping process

AGU 2025, New Orleans

Periodic extreme rainfall in a warmer climate due to stronger convectively-coupled waves

AGU 2024, Washington D.C.

Weakening of tropical free tropospheric temperature gradients with global warming

ICDM Workshop 2024, Nanjing

Weaker temperature gradient in a warmer climate

AOFD 2024, Burlington

Weaker temperature gradient in a warmer climate

CFMIP 2024, Boston

SST pattern effect on OLR: The role of convection aggregation

AGU 2023, San Francisco

Non-linear radiative response to patterned global warming due to convection aggregation

POSTERS

AOFD 2026, Houston

The equatorial jet direction depends on the damping process

AGU 2024, Washington D.C.

Weakening of tropical free tropospheric temperature gradients with global warming

Gordon Research Conference on Radiation and Climate 2023, Maine

Non-linear radiative response to patterned global warming due to convection aggregation

CFMIP-GASS 2023, Paris

Non-linear radiative response to patterned global warming due to convection aggregation

AWARDS & HONORS

PhD (2022-now):

Geophysical Fluid Dynamics Fellow, Woods Hole Oceanographic Institution, 2025

Best Student Oral Presentation Award in the 2024 ICDM workshop

Accepted by the 2024 Rossbypalooza summer school at University of Chicago

Undergraduate (2018-2022):

National Scholarship (**top 1%** among 176 students, 2021)

Merit Student Pacesetter (2021)

POSCO Asia Scholarship (**top 3%** among ~180 students, **awarded three times** in 2019, 2020 and 2021)

Outstanding bachelor student in Beijing (**10** among 176 students, 2022)

Weiming bachelor student (7 among 176 students, 2022)

SERVICE

Organizer of the 2025-2026 “climate chedann” weekly climate dynamics seminar among ~500 Chinese scholars

EXTRACURRICULAR ACTIVITIES

Was the **leader of Peking University GO Chess Team** for 2 years, and won **2 champions** in Beijing GO Chess University League, 2019-2021

Was the **president of Peking University GO Chess Club** for 2 years, and organized weekly club activities and the annual PKU GO Chess Cup, 2019-2021