Curriculum Vitae

HONGPEI YANG

Ph.D. Candidate
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School of Atmospheric Sciences, Sun Yat-sen University (SYSU)

EDUCATION

Doctor of Philosophy (Ph.D.) in Atmospheric Science 2021–present
Sun Yat-sen University, China
Supervisor: Prof. Yu Du, Thesis title: *Generation of Convective Gravity Waves and Their Impacts on Convection*

Visiting Ph.D. student May–July 2023
Mesoscale and Microscale Meteorology Laboratory, NSF National Center of Atmospheric Research, USA
Host: Dr. Juanzhen (Jenny) Sun

Bachelor of Atmospheric Science, Final grade: rank 13/430 2017–2021
Nanjing University of Information, Science and Technology, China
Supervisor: Dr. Jiaxing Xue and Prof. Jingjia Luo, Thesis title: *Evaluation of Simulated Ningaloo Niño/Niña in CMIP6 Models*

HONORS and AWARDS

- ***China National Scholarship (Ph.D. Student)*** Oct. 2025
- ***President's Scholarship*** (Sun Yat-sen University) Sept. 2025
- ***Best Student Poster Award*** Oct. 2024
  The 16th International Conference on Mesoscale Convective Systems (ICMCS-XVI), Gyeong-Ju, South Korea
- ***Outstanding Student Presentation Award*** May 2023
  The 15th International Conference on Mesoscale Convective Systems (ICMCS-XV), Fort Collins, USA
- ***Best Oral Presentation*** Aug. 2025
  The 7th National Forum on Mesoscale Meteorology, Datong, China
- ***Excellent Student Presentation*** Nov. 2024
  The 6th National Conference on Mesoscale Meteorology, Zhuhai, China
- ***1st Place Oral Presentation Award*** Nov. 2025
  Navier-Stokes PhD Student Forum of Fudan University, Shanghai, China
- ***Outstanding Oral Presentation Award*** Nov. 2022
  Student Forum of Universities in Yangtze River Delta, Nanjing, China

GRANTS

National Natural Science Foundation of China Youth Project (Ph. D. Student): A Comparative Study on the Impact Mechanisms of Two Types of Convection-Triggered Gravity Waves on Severe Convection (424B200063) ***Principal Investigator*** Jan. 2025–Dec. 2027 ¥300000 (~$42000)

National Natural Science Foundation of China General Project: The effects of complex terrain on the activity characteristics of convectively generated gravity waves and their roles in the occurrence and development of convection (42475002) *Participant* Jan. 2025–Dec. 2028 ¥480000 (~$67000)

REFEREED PUBLICATIONS

[1] **Yang, H.**, Y. Du, and J. Wei, 2023: Generation of multiple gravity wave couplets from convection. *J. Atmos. Sci.,* 80, 2323–2343.

[2] **Yang, H.**, and Y. Du, 2024: Difference between upshear- and downshear-propagating waves associated with the development of squall lines. *Mon. Wea. Rev.*, 152, 1399–1420.

[3] **Yang, H.**, Y. Du, Z. Chen, and J. Fang, 2024: Could developing frontal rainfall influence warm-sector rainfall? *Geophys. Res. Lett.*, 51, e2024GL110430.

[4] **Yang H.**, Y. Du and J. Sun. The merger of supercell and squall line in the Great Plains. 1: Initiation of the supercell. *J. Geophys. Res. Atmos.*, 130, e2024JD042393.
[5] **Yang H.**, Y. Du and J. Sun. The merger of supercell and squall line in the Great Plains. 2: Formation of bow echo. *J. Geophys. Res. Atmos.*, 130, e2024JD042394.
[6] Xue, J., **H. Yang**, J. Luo, C. Yuan, B. Wang, and T. Yamagata, 2022: Ningaloo Niño/Niña in CMIP6 models: Characteristics, mechanisms, and climate impacts. *Geophys. Res. Lett.*, 49, e2022GL099781.
[7] Zhou, X., Y. Du, J. Wei, Z. Chen, and **H. Yang**, 2024: Statistical characteristics of wavelike banded convection associated with ducted gravity waves over southern China. *Geophys. Res. Lett.*, 51, e2024GL112027.
[8] Du, Y., R. Rotunno, Z. Chen, and **H. Yang**, 2024: A linear theory for periodic convectively forced gravity waves near a coastline. *J. Atmos. Sci.*, 81, 1271–1288.
[9] Z. Chen, Y. Du, C. Vincent, E. Short and **H. Yang**, 2024. Influence of coastal topography on offshore diurnal rainfall propagation dynamics: A linear gravity wave model approach. *J. Atmos. Sci.*, 82, 1911–1927.
[10] **Yang H.** and Y. Du. Distinct convection initiation near and far ahead of an idealized squall-line. [in revision at *JAS*]
[11] Fu D., Y. Du and **H. Yang**. The interaction between low-level jets and cold pools and their impacts on convection. [in revision at *JAS*]
[12] **Yang H.**, Y. Du, Z. Chen and X. Gao. Convection initiation over mountain slopes in North China: Roles of upslope winds and orographic waves. [in revision at *AAS*]

SELECTED PRESENTATIONS

Yang H. and Y. Du, June 2025: Cold pool and gravity waves drive convection initiation ahead of Squall Line. 21st Conference on Mesoscale Processes, Boise, USA. (Oral)
Yang H. and Y. Du, May 2025: Cold pool and gravity waves drive convection initiation ahead of squall line. EGU General Assembly 2025, Vienna, Austria. (Oral)
Yang H., Y. Du and J. Sun, Oct. 2024: Bow echo resulting from squall Line–supercell merger in the Great Plains of the U. S. The 16th International Conference on Mesoscale Convective Systems, Gyeong-ju, South Korea. (Poster)
Yang H., Y. Du and J. Sun, Jul. 2023: Supercell ahead of the squall line and their merger in the Great Plains. MMM, NCAR, Boulder, CO, USA. (Happy hour seminar)
Yang H., Y. Du and Z. Chen, Jul. 2023: Gravity waves associated with frontal rainfall as a preconditioning mechanism for warm-sector heavy rainfall in South China. The 20th Conference on Mesoscale Processes, Madison, USA. (Oral)
Yang H., Y. Du and Z. Chen, May 2023: Gravity waves associated with frontal rainfall as a preconditioning mechanism for warm-sector heavy rainfall in South China. The 15th International Conference on Mesoscale Convective Systems, Fort Collins, USA. (Poster)
Yang H. and Y. Du, Jan. 2023: The role of gravity waves in the asymmetric development of mesoscale convective systems. The 3rd Symposium on Mesoscale Processes, 103rd AMS Annual Meeting, Denver, USA. (Oral)

ACADEMICS SERVICES

- Manager and editor of WeChat official account "*Weather Watch*" (since Aug. 2024)
  Task: Inviting scientists in meteorology to share their latest research using plain language and editing posts
  Account data: 164 posts, 10445 subscribers (16 Oct. 2025)
- Reviewer of articles for the following journals:
  Nature Communications, Journal of Fluid Mechanics, Journal of Atmospheric Sciences, Monthly Weather Review, Atmospheric Chemistry and Physics, Quarter Journal of Royal Meteorologic Society, Journal of Geophysical Research: Atmospheres, Atmospheric Research, Asia-Pacific Journal of Atmospheric Sciences, Advances in Atmospheric Sciences, npj Climate and Atmospheric Science, Climate Dynamics, Journal of Applied Meteorology and Climatology, Journal of Meteorological Research, Atmospheric Science Letters, Meteorological Applications