Dr. Yang Hu (胡 扬)

Institute of Heavy Rain, China Meteorological Administration, Wuhan

2nd Jinronggang Road, Wuhan, Hubei Province, China, 430205

(+86)-138-0712-3001 | huyang@whihr.com.cn | https://yang-hu-121.github.io/

Education

Tsinghua University (THU) **2020/09-2024/06**

Ph.D., Atmospheric Science, Advisor: Prof. Yanluan Lin

Beijing Normal University (BNU) **2012/09-2015/06**

M.S., Global Environmental Change, Advisor: Prof. Daoyi Gong and Prof. Rui Mao

Nanjing University of Information Science and Technology (NUIST) **2012/09-2015/06**

B.S., Atmospheric Science

Professional Experience

Institute of Heavy Rain (IHR), China Meteorological Administration (CMA), Wuhan **2015/07-Present**

Associate Research Scientist

Earth System Modeling and Prediction Center (CEMC), CMA **2022/09-2023/09**

Senior Visiting Scholar, Advisor: Dr. Qifeng Lu, Dr. Qiying Chen and Dr. Jianglin Hu

Georgia Institute of Technology (GT) **2019/12-2020/07**

Visiting Scholar, Advisor: Prof. Yi Deng

Research Interests

- Extreme Precipitation
- Mei-yu Fronts; Frontal-cyclones
- Climate Dynamics

Projects

- National Natural Science Foundation of China (41905071)
- Natural Science Foundation of Hubei Province (2024AFD217)

Publications

1) Hu Y., Y. Lin, Y. Deng, J. Bao. (2023). Summer extreme rainfall over the middle and lower reaches of Yangtze River: Role of synoptic patterns in historical changes and future projections. Journal of Geophysical Research: Atmospheres, 128(24). https://doi.org/10.1029/2023JD039608

2) Hu Y., Y. Deng, Y. Lin, Z. Zhou, C. Cui, C. Li, X. Dong. (2022). Indirect effect of diabatic heating on Mei-yu frontogenesis. Climate Dynamics, 59, 851-868. https://doi.org/10.1007/s00382-022-06159-7

3) Hu Y., Y. Deng, Y. Lin, Z. Zhou, C. Cui, X. Dong. (2021). Dynamics of the spatiotemporal morphology of Mei-yu fronts: an initial survey. Climate Dynamics, 56, 2715-2728. https://doi.org/10.1007/s00382-020-05619-2

4) Hu Y., Y. Deng, Z. Zhou, H. Li, C. Cui, X. Dong. (2019). A synoptic assessment of the summer extreme rainfall over the middle reaches of Yangtze River in CMIP5 models. Climate Dynamics, 53(3), 2133-2146. https://doi.org/10.1007/s00382-019-04803-3

5) Hu Y., Y. Deng, Z. Zhou, C. Cui, X. Dong. (2019). A statistical and dynamical characterization of large-scale circulation patterns associated with summer extreme precipitation over the middle reaches of Yangtze River. Climate Dynamics, 52(9), 6213-6228. https://doi.org/10.1007/s00382-018-4501-z

6) Hu Y., X. Zhang, R. Mao, D. Gong, H. Liu, J. Yang. (2015). Modeled responses of summer climate to realistic land use/cover changes from the 1980s to the 2000s over eastern China. Journal of Geophysical Research: Atmospheres, 120(1), 167-179. https://doi.org/10.1002/2014JD022288

7) Zhou Z., Y. Hu*, B. Wang, J. Yin, Y. Guo, Z. Kang, Y. Sun. (2023). Effect of Different Microphysical Parameterizations on the Simulations of a South China Heavy Rainfall. Journal of Tropical Meteorology, 29(1).

8) Zhou Z., M. Du, Y. Hu, Z. Kang, R. Yu, Y. Guo. (2024). An Evaluation and Improvement of Microphysical Parameterization for a Heavy Rainfall Process during the Meiyu Season. Remote Sensing, 16, 1636. https://doi.org/10.3390/rs16091636

9) Zhao D., W. Dong, Y. Lin, Y. Hu, D. Cao. (2022). Diurnal variation of precipitation over the high mountain Asia: Spatial distribution and its seasonality. Journal of Hydrometeorology, 23(12), 1945-1959, https://doi.org/10.1175/JHM-D-21-0243.1

10) Wang X., R. Zhou, Y. Deng, C. Cui, Y. Hu, J. Wang, H. Liu. (2021). Symbiotic Relationship between Meiyu Rainfall and the Morphology of Meiyu Front. Journal of Hydrometeorology, 23(1), 87-100, https://doi.org/10.1175/JHM-D-21-0068.1

11) Liu L., C. Cui, Y. Deng, Z. Zhou, Y. Hu et al. (2020). Localization and Invigoration of Mei‐yu Front Rainfall due to Aerosol‐Cloud Interactions: A Preliminary Assessment Based on WRF Simulations and IMFRE 2018 Field Observations. Journal of Geophysical Research: Atmospheres, 125(13), e2019JD031952, https://doi.org/10.1029/2019JD031952

12) Li S., X. Wang, J. Sun, Z. Ma, Y. Zhang, Y. Gao, Y. Hu, W. Zhang. (2024). Statistical Characteristics and Synoptic Patterns of Convection Initiation over the Middle Reaches of the Yangtze River Basin as Observed Using the Fengyun-4A Satellite. Journal of Hydrometeorology, 25(3), 445-463. https://doi.org/10.1175/JHM-D-23-0157.1

13) Li C., Y. Li, S. Fu, X. Jiang, X. Wang, S. Li, C. Cui, Y. Hu, W. Cui. (2022). A New Perspective on the Orographic Effect of the Windward Slope on the Multi-Scale Eastward-Moving Southwest Vortex systems. Atmospheric Research, 279, 106365, https://doi.org/10.1016/j.atmosres.2022.106365

14) Zhou Z., Y. Deng, Y. Hu, Z. Kang. (2020). Simulating heavy meiyu rainfall: A note on the choice of the model microphysics scheme. Advances in Meteorology, 2020(1), 8827071. https://doi.org/10.1155/2020/8827071

15) Li H., Y. Hu, Z. Zhou, et al. (2018). Characteristic features of the evolution of a Meiyu frontal rainstorm with Doppler radar data assimilation. Advances in Meteorology, 2018(1), 9802360. https://doi.org/10.1155/2018/9802360

16) Li H., X. Xu, Y. Hu, et al. (2018). Assimilation of Doppler radar data and its impact on prediction of a heavy Meiyu frontal rainfall event. Advances in meteorology, 2018(1), 9482014. https://doi.org/10.1155/2018/9482014

17) Kang Z., Z. Zhou, Y. Sun, Y. Hu, D. He. (2023). The Impact of Autoconversion Parameterizations of Cloud Droplet to Raindrop on Numerical Simulations of a Meiyu Front Heavy Rainfall Event. Atmosphere, 14(6), 1001.

18) Gao X., P. Lu, S. Zhang, Y. Hu, G. Fu, X. Sun, Q. Zhang. (2022). A comparative study on initial developments between explosive and nonexplosive cyclones off the East Asian coast in winter. Frontiers in Earth Science, 10, 968736.

Professional Experience

Journal reviewer

Geophysical Research Letters, Climate Dynamics, Quarterly Journal of the Royal Meteorological Society, International Journal of Climatology, Journal of Mountain Science