

# Dr. Yang Hu (胡扬)

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## Education

<b>Tsinghua University (THU)</b> Ph.D., Atmospheric Science, Advisor: Prof. Yanluan Lin	<b>2020/09-2024/06</b>
<b>Beijing Normal University (BNU)</b> M.S., Global Environmental Change, Advisor: Prof. Daoyi Gong and Prof. Rui Mao	<b>2012/09-2015/06</b>
<b>Nanjing University of Information Science and Technology (NUIST)</b> B.S., Atmospheric Science	<b>2012/09-2015/06</b>

## Professional Experience

<b>Institute of Heavy Rain (IHR), China Meteorological Administration (CMA), Wuhan</b> Associate Research Scientist	<b>2015/07-Present</b>
<b>Earth System Modeling and Prediction Center (CEMC), CMA</b> Senior Visiting Scholar, Advisor: Dr. Qifeng Lu, Dr. Qiying Chen and Dr. Jianglin Hu	<b>2022/09-2023/09</b>
<b>Georgia Institute of Technology (GT)</b> Visiting Scholar, Advisor: Prof. Yi Deng	<b>2019/12-2020/07</b>

## 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

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### Journal reviewer

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