

# JIHENG HU

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## EXPERIENCE

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| <b>University of Michigan, Ann Arbor, MI, USA</b><br>Climate and Space Sciences and Engineering<br>Postdoctoral Research Fellow                 | <i>Nov 2023 - Present</i> |
| <b>University of Science and Technology of China, Hefei, Anhui, China</b><br>School of Earth and Space Sciences<br>Postdoctoral Research Fellow | <i>Jul 2023- Oct 2023</i> |

## EDUCATION

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| <b>University of Science and Technology of China, Hefei, Anhui, China</b><br>Ph.D. in Geophysics<br>Advisor: Prof. Rui Li         | <i>2020 - 2023</i> |
| <b>University of Science and Technology of China, Hefei, Anhui, China</b><br>M.S. in Atmospheric Science<br>Advisor: Prof. Rui Li | <i>2016 - 2019</i> |
| <b>University of Science and Technology of China, Hefei, Anhui, China</b><br>B.S. in Geophysics                                   | <i>2012 - 2016</i> |

## RESEARCH INTEREST

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My research centers on the development of microwave remote sensing techniques to investigate the dynamics of Earth's surface and planetary atmospheres, including applications in:

- **Planetary science:** atmospheric compositions, thermal structure, and planetary lightning activities using mission measurements.
- **Terrestrial ecohydrology:** remote sensing and surface modeling of plant's hydrological dynamics in face of stress and disturbance.
- **Cometary science:** probing coma compositions, nucleus and outgassing activities.

## ARTICLES IN PEER-REVIEWED JOURNALS

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1. **Hu, J.**, Li, R.\* , Zhang, P., Wang, Y., Wu, S., Letu, H., & Weng, F. (2026). Global retrieval of harmonized microwave land surface emissivity leveraging multi-sensor measurements from GMI, AMSR2 and MWRI. *Remote Sensing of Environment*, 334, 115169. doi:[10.1016/j.rse.2025.115169](https://doi.org/10.1016/j.rse.2025.115169)
2. **Hu, J.**, Fu, Y., Zhang, P., Min, Q., Gao, Z., Wu, S., & Li, R.\* (2021). Satellite retrieval of microwave land surface emissivity under clear and cloudy skies in China using AMSR-E and MODIS observations. *Remote Sensing*, 13(19), 3980. doi:[10.3390/rs13193980](https://doi.org/10.3390/rs13193980)
3. Li, R., **Hu, J.**, Wu, S., Zhang, P.\* , Letu, H., Wang, Y., Wang, X., Fu, Y., Zhou, R., & Sun, L. (2022). Spatiotemporal variations of microwave land surface emissivity (MLSE) over China derived from four-year recalibrated Fengyun-3B MWRI data. *Advances in Atmospheric Sciences*, 39(9), 1536–1560. doi:[10.1007/s00376-022-1314-0](https://doi.org/10.1007/s00376-022-1314-0)

4. Liu, Q.<sup>#</sup>, **Hu, J.<sup>#</sup>**, Zhang, P., Liu, Y., & Li, R.\* (2025). Global microwave land surface emissivity under all weather conditions derived from Fengyun-3D satellite observations. *Journal of Geophysical Research: Atmospheres*, 130(11). doi:[10.1029/2024jd043282](https://doi.org/10.1029/2024jd043282)
5. Duan, J., **Hu, J.**, Fu, Y., Liu, Q., Li, R.\*, & Wang, Y. (2025). Estimation of fire counts and fire radiative power using satellite optical and microwave vegetation indices with random forest method. *Journal of Geophysical Research: Atmospheres*, 130(3), e2024JD041680. doi:[10.1029/2024jd041680](https://doi.org/10.1029/2024jd041680)
6. Song, B.<sup>#</sup>, Liu, Q.<sup>#</sup>, **Hu, J.**, Wang, Y., Zhang, P., Chen, L., Wu, S., & Li, R.\* (2025). Global gross primary productivity estimation using passive microwave observations from China's Fengyun-3D satellite. *Journal of Geophysical Research: Atmospheres*, 130(24), e2025JD044385. doi:[10.1029/2025JD044385](https://doi.org/10.1029/2025JD044385)
7. Song, B., **Hu, J.**, Wang, Y., Li, D., Zhang, P., Wang, Y., Zhong, L., & Li, R.\* (2025). Regional gross primary productivity estimation using passive microwave observations from China's Fengyun-3B satellite. *Journal of Geophysical Research: Atmospheres*, 130(8). doi:[10.1029/2024jd041425](https://doi.org/10.1029/2024jd041425)
8. Wang, Y., **Hu, J.**, Li, R.\*, Zhang, P., Song, B., & Liu, Q. (2025). Monitoring daily all-sky evapotranspiration over East Asia using multi-channel passive microwave measurements from Fengyun-3B. *Journal of Geophysical Research: Atmospheres*, 130(10), e2025JD043317. doi:[10.1029/2025JD043317](https://doi.org/10.1029/2025JD043317)
9. Fu, Y., **Hu, J.**, Duan, J., Liu, Q., Song, W., & Li, R.\* (2024). Satellite microwave measurements complementary to fire weather improve the assessment of fires among different biomes in Southeast Asia. *Environment International*, 184, 108439. doi:[10.1016/j.envint.2024.108439](https://doi.org/10.1016/j.envint.2024.108439)
10. Wang, Y., **Hu, J.**, Li, R.\*, Song, B., Hailemariam, M., Fu, Y., & Duan, J. (2023). Increasing cloud coverage deteriorates evapotranspiration estimation accuracy from satellite, reanalysis, and land surface models over East Asia. *Geophysical Research Letters*, 50(8), e2022GL102706. doi:[10.1029/2022GL102706](https://doi.org/10.1029/2022GL102706)
11. Fu, Y., **Hu, J.**, Song, W., Cheng, Y., & Li, R.\* (2023). Satellite-observed response of fire dynamics to vegetation water content and weather conditions in Southeast Asia. *ISPRS Journal of Photogrammetry and Remote Sensing*, 202, 230–245. doi:[10.1016/j.isprsjprs.2023.06.007](https://doi.org/10.1016/j.isprsjprs.2023.06.007)

## MANUSCRIPTS IN PREPARATION

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1. J. Hu, C. Li, and Juno MWR Team. Juno Microwave Radiometer Reveals Tropical-like Conditions in Jupiter's Polar Atmosphere. under review in ApJ.
2. J. Hu, C. Li, and Juno MWR Team. Intense Lightning Activity in Jupiter's Polar Cyclones Revealed by the Juno Microwave Radiometer. in preparation.
3. J. Hu, C. Li, and Juno MWR Team. Jupiter's Polar Vortices as Disruptions in Atmospheric Thermal and Composition Structures. in preparation.

## SELECTED AWARDS

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| <b>USTC Excellent Graduate</b><br><i>University of Science and Technology of China</i>           | 2023       |
| <b>Outstanding Student Scholarship</b><br><i>University of Science and Technology of China</i>   | 2015, 2013 |
| <b>Zeng Xianzi Scholarship for Excellent Students</b><br><i>Zeng Xianzi Education Foundation</i> | 2013       |

## MENTORING

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- Microwave remote sensing applications, Qingyang Liu, Ph.D. student at University of Science and Technology of China (USTC), 2022-2023.
- Surface microwave properties modeling, Haoyu Xu, Ph.D. student at USTC, 2023.
- Atmospheric latent heating retrievals, Chen Huang, Ph.D. student at USTC, 2018-2022.

## PRESENTATIONS

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1. **Hu, J.**, Li, C., et al. (2025). Lightning activity mapping in Jupiter's north pole observed by the Juno Microwave Radiometer at 600 MHz. *AGU Fall Meeting 2025*, New Orleans, LA, USA. (Oral)
2. **Hu, J.**, Li, C., et al. (2025). Vertical atmospheric structure of Jupiter's north pole revealed by the Juno Microwave Radiometer. *AGU Fall Meeting 2025*, New Orleans, LA, USA. (Oral)
3. **Hu, J.**, Li, R., et al. (2025). Global harmonized microwave land surface emissivity retrieved from GMI, AMSR2, and MWRI observations. *AGU Fall Meeting 2025*, New Orleans, LA, USA. (Poster)
4. **Hu, J.**, Li, C., et al. (2024). Vertical structures of Jupiter circumpolar cyclones retrieved from Juno/MWR polar observations. *AGU Fall Meeting 2024*, Washington, DC, USA. (Poster)
5. **Hu, J.**, Li, C., et al. (2024). Vertical structures of Jupiter circumpolar cyclones retrieved from Juno/MWR polar observations. *AOGS Annual Meeting 2024*, PyeongChang, South Korea. (Oral)
6. **Hu, J.**, Li, R. (2021). Satellite retrieval of microwave land surface emissivity and its applications in vegetation remote sensing. *Congress of the International Research Network on Cold Forests*, Hefei, China. (Oral)
7. **Hu, J.**, Li, R. (2021). Retrieval of land surface microwave emissivity by combining visible, infrared, and microwave observations from multisource satellites. *7th Young Scientist Forum of Earth Science*, Guiyang, China. (Oral)
8. **Hu, J.**, Li, R. (2019). Applications of multichannel microwave emissivity difference vegetation index in vegetation remote sensing. *6th Young Scientist Forum of Earth Science*, Xining, China. (Oral)
9. **Hu, J.**, Li, R. (2018). Improvement of surface microwave emissivity retrieval algorithms using multisource satellite observations. *35th Annual Meeting of the Chinese Meteorological Society*, Hefei, China. (Oral)
10. **Hu, J.**, Li, R. (2018). A microwave land surface emissivity database for China. *AGU Fall Meeting 2018*, Washington, DC, USA. (Poster)