Chuanpeng Hou PhD

chuanpeng.hou@uni-potsdam.de
https://orcid.org/0000-0001-7205-2449
University of Potsdam, Potsdam, Germany

Education

2024 **PhD degree, Peking University** in Space Physics

2022 – 2024 **Visiting PhD student, IRAP, Toulouse, France** in Space Physics
Research field: *Origin and evolution of Alfvénic switchbacks.*

2019 – 2024 **PhD student, Peking University** in Space Physics
Research field: *Dynamics of the solar atmosphere, Evolution of solar wind, Magnetic connectivity, Waves and turbulence in space plasma.*

2019 **Bachelor's degree, Peking University** in Space Physics

2015 – 2019 **Undergraduate, Peking University** in Space Physics

Fellowships, Awards and Scholarships

Fellowships

2025 **Alexander von Humboldt Research Fellowship**, Alexander von Humboldt-Stiftung

Awards

2024 **Best Student Paper Awards**, National Planetary Science Conference.
2023 **Merit Student**, Peking University.
2022 **Best Student Paper Awards**, Chinese Geoscience Union (CGU).
Best Student Poster Awards, Asia Oceania Geosciences Society (AOGS).
2021 **Graduate Award for Scientific Research**, Peking University.

Scholarships

2023 **Peking University President's Scholarship**, Peking University.
2022 **Chinese Government Scholarship**, China Scholarship Council.

Conference Organization

2026 **Co-convener**, Session ST29: Linking Plasma Dynamics in the Lower Solar Atmosphere to Magnetic Activity, AOGS Annual Meeting

Conference Presentations

Invited talks

2026 The Contribution of Turbulence to Solar Wind Heating in the Inner Heliosphere, 2nd Plasma Astrophysics School and Workshop (PASW26).

Oral presentation

2024 Evolution of Interplanetary Velocity Spikes and Their Contribution to Solar Wind Acceleration and Heating, National Planetary Science Conference.

2023 Possible role of fluctuation excitation in the formation of alfvénic fluctuations originating from interchange magnetic reconnection, European Geosciences Union (EGU).

Poster presentation

Connecting solar wind velocity spikes measured by solar orbiter and coronal bright points imaged by SDO, Solar Wind 16 meeting.

Jet-flow fluctuations and plasma blobs as a mediator between interchange mangetic reconnection in solar corona and Alfvénic velocity spikes in interplanetary space, Asia Oceania Geosciences Society (AOGS).

2022 From magnetic reconnection at chromospheric network boundaries to switchbacks in the inner heliosphere, Asia Oceania Geosciences Society (AOGS).

Research Publications

Journal Articles (†, co-first author)

1. **C. Hou**, H. Yan, and S. Zhao, "Compressible turbulence as a source of particle beams and ion bernstein waves in collisionless plasmas", The Astrophysical Journal **1004**, 64 (2026).
2. **C. Hou**, J. He, A. Rouillard, et al., "Non-adiabatic entropy increase in the solar wind governed by velocity spikes", Nature Astronomy, accepted in principle (2026).
3. **C. Hou**, H. Yan, S. Zhao, and P. Pavaskar, "Energy cascade and damping in fast-mode compressible turbulence", The Astrophysical Journal Letters **992**, L28 (2025).
4. **C. Hou**†, B. Gannouni†, A. P. Rouillard, J. He, and V. Réville, "Fine-scale activity driven by magnetic reconnection within coronal microjets", Astronomy & Astrophysics **697**, A67 (2025).
5. **C. Hou**, J. He, D. Duan, Z. Wu, Y. Chen, D. Verscharen, A. P. Rouillard, H. Li, L. Yang, and S. D. Bale, "The origin of interplanetary switchbacks in reconnection at chromospheric network boundaries", Nature Astronomy **8**, 1246–1256 (2024).
6. **C. Hou**, A. P. Rouillard, J. He, B. Gannouni, V. Réville, P. Louarn, A. Fedorov, L. Přech, C. J. Owen, D. Verscharen, R. D'Amicis, L. Sorriso-Valvo, N. Fargette, J. Coburn, V. Génot, J. M. Raines, R. Bruno, S. Livi, B. Lavraud, N. André, G. Fruit, R. Kieokaew, I. Plotnikov, E. Penou, A. Barthe, D. Kataria, M. Berthomier, F. Allegrini, V. Fortunato, G. Mele, and T. Horbury, "Connecting solar wind velocity spikes measured by solar orbiter and coronal brightenings observed by sdo", The Astrophysical Journal Letters **968**, L28 (2024).

7 **C. Hou**†, X. Zhu†, R. Zhuo†, J. He, D. Verscharen, and D. Duan, "Nature, generation, and dissipation of alfvénic kinks/switchbacks observed by parker solar probe and wind", The Astrophysical Journal **950**, 157 (2023).

8 **C. Hou**, J. He, D. Duan, X. Zhu, W. Li, D. Verscharen, T. Liu, and T. Wang, "Efficient energy conversion through vortex arrays in the turbulent magnetosheath", The Astrophysical Journal **946**, 13 (2023).

9 **C. Hou**, J. He, X. Zhu, and Y. Wang, "Contribution of magnetic reconnection events to energy dissipation in space plasma turbulence", The Astrophysical Journal **908**, 237 (2021).

10 **C. Hou**, J. He, L. Zhang, Y. Wang, and D. Duan, "Dynamics of the charged particles released from a sun-grazing comet in the solar corona", Earth and Planetary Physics **5**, 232–238 (2021).

11 Y. Sun†, J. Zhao†, **C. Hou**†, and W. Jiao, "Highlight advances in planetary physics in the solar system: in situ detection over the past 20 years", Space: Science & Technology **3**, 0007 (2023).

12 L. Yang, **C. Hou**, X. Feng, J. He, M. Xiong, M. Zhang, Y. Zhou, F. Shen, X. Zhao, H. Li, et al., "Global morphology distortion of the 2021 october 9 coronal mass ejection from an ellipsoid to a concave shape", The Astrophysical Journal **942**, 65 (2023).

13 Z. Wu, J. He, **C. Hou**, D. Duan, J. Huang, A. P. Rouillard, D. Verscharen, Y. Chen, R. Zhuo, and T. Chen, "Multiscale magnetic reconnection in the genesis of young slow solar wind", The Astrophysical Journal Supplement Series **282**, 4 (2026).