Zijin Zhang

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Education

Ph.D. **University of California, Los Angeles**, Planetary Science — 2022 – present
- Thesis: Kinetic-scale solar wind current sheets: statistical characteristics and their role in energetic particle transport

B.Sc. **University of Science and Technology of China**, Space Physics — 2018 – 2022
- Thesis: Kinetic simulation of the interaction between the Moon's magnetic anomalies and the solar wind (DOI: 10.13140/RG.2.2.15841.68968)
- Advisor: Prof. Xin Tao

University Corporation for Atmospheric Research, NASA's Living with a Star Heliophysics Summer School — 2024

Research Interests

- Heliophysics: Solar wind current sheets and energetic particle transport
- Magnetosphere-ionosphere coupling: energetic particle precipitation
- Computational plasma physics and space physics environment data analysis

Publications

Quantification of ion scattering by solar-wind current sheets: Pitch-angle diffusion rates — 2025
Zhang, Z., Artemyev, A. V., Angelopoulos, V.
10.1103/pkzv-k5t3 (Physical Review E)

Solar wind discontinuities in the outer heliosphere: Spatial distribution between 1 and 5 AU — 2025
Zhang, Z., Artemyev, A. V., Angelopoulos, V., Vasko, I.
10.1029/2025JA034039 (Journal of Geophysical Research: Space Physics)

Relativistic Electron Flux Decay and Recovery: Relative Roles of EMIC Waves, Chorus Waves, and Electron Injections — 2024
Zhang, Z., Artemyev, A., Mourenas, D., Angelopoulos, V., Zhang, X.-J., et al.
10.1029/2024JA033174 (Journal of Geophysical Research: Space Physics)

A search for technosignatures around 11680 stars with the green bank telescope at 1.15–1.73 GHz — 2023
Margot, J.-L., Li, M. G., Pinchuk, P., … **Zhang, Z.**
10.3847/1538-3881/acfda4 (Astronomical Journal)

Software

SPEDAS.jl: Julia-based space physics environment data analysis software (DOI: 10.5281/zenodo.15181866)

PlasmaBO.jl: Efficient plasma electromagnetic dispersion-relation solver (DOI: 10.5281/zenodo.18058843)

Other Research Experience

Artificial Intelligence of Things Lab, Undergraduate Research Assistant — 2021 – 2022
- Implemented a distributed system to monitor edge devices and automate IT deployment and management