Yifei Jiao

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About Me

I am currently a PhD student at Laboratory of AstroDynamics, Tsinghua University. My PhD studies are focused on asteroid exploration and deflection dynamics, as well as the collisional and dynamical evolution of small planetary bodies. In my future academic career, I would enjoy exploring any unsolved and exciting questions of our solar system with theoretical and numerical methods.

Education

Tsinghua University, Beijing, China 2020–2025
PhD student with Prof. Hexi Baoyin

LPL, University of Arizona, Tucson, AZ, USA 2024 Jan-Jun
Visiting Student with Prof. Erik Asphaug

Tsinghua University, Beijing, China 2016–2020
Bachelor

Experience

Teaching Assistant for Theoretical Mechanics, Tsinghua University 2020, 2021

Grants

National Natural Science Foundation of China (PhD Student PI) 2024–2025
Impact dynamics and collisional evolution of highly porous asteroids

Youth Talent Support Program of China Association for Science and Technology (PhD) 2025

Publications

1. **Y. Jiao**, B. Cheng, Y. Huang, E. Asphaug, B. Gladman, R. Malhotra, P. Michel, Y. Yu, H. Baoyin. *Asteroid (469219) Kamo'oalewa's journey from the lunar Giordano Bruno crater to Earth 1:1 resonance. Nature Astronomy (2024)*
2. **Y. Jiao**, X. Yan, B. Cheng, H. Baoyin. *SPH-DEM modeling of hypervelocity impacts on rubble-pile asteroids. Monthly Notices of the Royal Astronomical Society (2023)*
3. **Y. Jiao**, B. Cheng, H. Baoyin. *Optimal kinetic-impact geometry for asteroid deflection exploiting Delta-V hodograph. Journal of Guidance, Control, and Dynamics (2022)*
4. X. Yan, P. Michel, Y. Liu, R. Ni, **Y. Jiao**, J. Li. *Material Point Method (MPM) in simulating hypervelocity impact on asteroids. Icarus (submitted, 2024)*
5. N. Zhang, Z. Zhang, **Y. Jiao**, H. Baoyin. *Multi-trajectory combination for multiple ground target observation by maneuvering on-orbit satellites. IEEE Transactions on Aerospace and Electronic Systems (2023)*
6. Z. Zhang, N. Zhang, **Y. Jiao**, H. Baoyin, J. Li. *Multitree search for multisatellite responsiveness scheduling considering orbital maneuvering. IEEE Transactions on Aerospace and Electronic Systems (2021)*

Last updated: January, 2025

Conferences

1. **Y. Jiao**, E. Asphaug, B. Cheng, H. Baoyin. *Effect of giant cratering impacts on the slow rotation of asteroid Mathilde. Europlanet Science Congress (2024)*
2. **Y. Jiao**, et al. *Dynamical constraints linking Earth co-Orbital asteroid Kamoʻoalewa to the lunar Giordano Bruno impact. Lunar and Planetary Science Conference (2024)*
3. **Y. Jiao**, et al. *Exploring asteroid (469219) Kamoʻoalewa's possible origin from lunar crater Giordano Bruno. Asteroids, Comets, Meteors Conference (2023)*

Software

1. **Y. Jiao**, et al. The SPHSOL code, which is a parallel smoothed particle hydrodynamics C++ solver for simulating the impact process in planetary science. https://sphsol-tutorial.readthedocs.io

Scholarships and Awards

China National Scholarship, China	2024
Tsinghua Top Grade Scholarship (10 best graduates per year), Tsinghua University	2024
The First/Second Prize Scholarship, Tsinghua University	2022, 2023
Excellent Academic Scholarship, Tsinghua University	2017, 2018, 2019
Excellent Paper Award, Young Scientist Forum of Planetary Science, China	2023
China Trajectory Optimization Competition, 2nd Place, China	2020
Air Cargo Challenge, 4th Place, Germany	2019