Yifei Jiao

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ABOUT ME

I am currently a PhD student at Laboratory of AstroDynamics, Tsinghua University, and also a visiting student at Lunar & Planetary Laboratory, University of Arizona. My research interests are focused on **asteroid exploration & deflection dynamics**, as well as **the collisional & dynamical evolution of small planetary bodies** in the solar system. I am also engaged in the exploration of numerical simulations and optimization algorithms in planetary science.

EDUCATION

Lunar & Planetary Laboratory, University of Arizona Tucson, AZ, USA
Visiting Student *2024 – Present*

Tsinghua University Beijing, China
PhD Student *2020 – Present*

Tsinghua University Beijing, China
Bachelor *2016 – 2020*

GRANTS

National Natural Science Foundation of China (PhD student) *2024 – 2025*

SCHOLARSHIPS AND AWARDS

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*

2nd Place, China Trajectory Optimization Competition, China *2020*

4th Place, Air Cargo Challenge, Germany *2019*

SELECTED PUBLICATIONS

1. **Y. Jiao**, B. Cheng, Y. Huang, E. Asphaug, B. Gladman, R. Malhotra, P. Michel, Y. Yu, H. Baoyin. *Asteroid (469219) Kamoʻoalewa's Intriguing Journey from Lunar Crater Giordano Bruno to Earth 1:1 Resonance. Nature Astronomy (in press, 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)*

4. **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)*

5. **Y. Jiao**, B. Cheng, H. Baoyin. *Optimal Kinetic-Impact Geometry for Asteroid Deflection Exploiting Delta-V Hodograph. Journal of Guidance, Control, and Dynamics (2022)*

6. 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)*

7. 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)*

SOFTWARE

1. **SPHSOL**: A SPH Solver for High-Velocity Impact Simulations in Planetary Science.

2. **Handoff**: A Transition Framework from SPH Fragments to DEM Clumps.