



Research Field: GEOPHYSICS, SEISMOLOGY

Focused Field: SEISMIC WAVE NUMERICAL SIMULATION



SHORT BIO

I am an assistant professor at the State Key Laboratory of Lunar and Planetary Sciences, Macau University of Science and Technology.

My research focuses on seismic wave numerical modeling and seismic imaging. I am particularly interested in numerical modeling of impact-induced seismic waves and their applications to planetary seismology, especially the investigation of the internal structures of the Moon and Mars.

Asst. Prof.

YINGJIE GAO

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PhD: SOLID GEOPHYSICS

University of Chinese Academy of Sciences
Institute of Geology and Geophysics, Chinese Academy of Sciences

Bachelor Degree: GEOPHYSICS

China University of Mining and Technology

SELECTED PUBLICATIONS (Full publication list: [Google Scholar](#) | [ResearchGate](#))

- Gao, Y., et al., 2026, Numerical simulation of impact-induced seismic wave generation and propagation using a coupled approach. *Journal of Geophysical Research: Planets*
- Gao, Y., et al., 2026, Explicit finite-difference method with time-step n -tupling and extended CFL stability limit for acoustic wave simulation. *The Journal of the Acoustical Society of America*
- Gao, Y., et al., 2022, Releasing the time step upper bound of CFL stability condition for the acoustic wave simulation with model-order reduction. *Frontiers in Earth Science*
- Gao, Y., et al., 2019, Extending the stability limit of explicit scheme with spatial filtering for solving wave equations. *Journal of Computational Physics*
- Gao, Y., et al., 2018, Removing the stability limit of the explicit finite-difference scheme with eigenvalue perturbation. *Geophysics*
- Gao, Y., et al., 2017, Comparison of artificial absorbing boundaries for acoustic wave equation modelling. *Exploration Geophysics*
- Gao, Y., et al., 2016, Third-order symplectic integration method with inverse time dispersion transform for long-term simulation. *Journal of Computational Physics*

PROFESSIONAL EXPERIENCE

- 08/2022—Present** Assistant Professor, State Key Laboratory of Lunar and Planetary Sciences, Macau University of Science and Technology (MUST), Macau, China
- 04/2020—07/2022** Post-doctoral, State Key Laboratory of Lunar and Planetary Sciences, Macau University of Science and Technology (MUST), Macau, China
- 12/2016—03/2020** Post-doctoral, Key Laboratory of Earth and Planetary Physics, IGGCAS, Beijing, China

GRANTS

- [1] Basic Research Project, Science and Technology Development Fund of the Macao SAR (FDCT)
Grant No.: 0103/2025/RIA2, 04/2026-04/2029, **PI**
- [2] General Program of the National Natural Science Foundation of China (NSFC)
Grant No.: 42274081, 01/2023-12/2026, **PI**
- [3] Funding Scheme for Innovation and Technology Promotion, Science and Technology Development Fund of the Macao SAR (FDCT) Grant No.: 0034/2023/ITP1, 12/2023-12/2025, **PI**
- [4] Funding Scheme for Postdoctoral Researchers of Higher Education Institutions, Science and Technology Development Fund of the Macao SAR (FDCT) Grant No.: 0002/2019/APD, 04/2020-04/2022, **PI**
- [5] Young Scientists Fund of the National Natural Science Foundation of China (NSFC)
Grant No.: 41704063, 01/2018-12/2020, **PI**
- [6] General Program of the China Postdoctoral Science Foundation (CPSF)
Grant No.: 2017M610980, 09/2017-09/2019, **PI**

