



## SHORT BIO

I am now an assistant professor at Macau University of Science and Technology. I received my PhD at Institute of Geology and Geophysics Chinese Academy of Sciences in 2017.

My research interests include: i) Seismic wave numerical simulation; ii) Underground structure imaging.

My related research has been carried out on high-velocity impact-induced seismic wave numerical simulation. Combining with the actual observation data and related imaging algorithms, my goals are trying to take research on the internal structure of the Moon and the Mars.

Asst. Prof.

**YINGJIE GAO**



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

## KEY PUBLICATIONS *(first author)*

- 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., 2022, Application of the reflectionless discrete perfectly matched layer for acoustic wave simulation. *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*
- Gao, Y., et al., 2015. Unsplit complex frequency shifted perfectly matched layer for second-order wave equation using auxiliary differential equations. *The Journal of the Acoustical Society of America*

## 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
- 04/2019—10/2019** Visiting scholar, Department of Earth and Environmental Sciences, Ludwig Maximilian University Of Munich (LMU), Munich, Germany
- 12/2016—03/2020** Post-doctoral, Key Laboratory of Earth and Planetary Physics, IGGCAS, Beijing, China

## GRANTS

- [1] Funding Scheme for Postdoctoral Researchers of Higher Education Institutions of Macau, Impact-induced seismic wave numerical simulation. Grant No. : 0002/2019/APD, 04/2020-04/2022, **PI**
- [2] Youth Fund Project of China National Natural Science Foundation, Third-order symplectic integration method with inverse time-dispersion transform for global scale long-term simulation. Grant No. : 41704063, 01/2018-12/2020, **PI**
- [3] General Financial Grant of the China Postdoctoral Science Foundation, Staggered grid pseudospectral method with complex frequency shifted perfectly matched layer using auxiliary differential equations. Grant No. : 2017M610980 09/2017-09/2019, **PI**