

Yuan Xie

PhD in China University of Geosciences, Wuhan, China

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EDUCATION

China University of Geosciences , School of Geophysics and Geomatics PhD in <i>Geophysics</i> . GPA: 3.774/4.0	Expected December, 2024 Wuhan, China
ETH Zürich , Department of Earth and Planetary Sciences PhD in <i>Geophysics</i> (Exchange)	2021 - 2024 Zürich, Switzerland
China University of Geosciences , School of Geophysics and Geomatics BS in <i>Geophysics</i> . GPA: 85/100. University Outstanding Dissertation Award. Directly guaranteed a Ph.D. due to excellent grades.	2014 - 2018 Wuhan, China

RESEARCH EXPERIENCES

ETH Zürich Advisors: Prof. Taras Gerya, Dr. Attila Balázs Topic: <i>Lithospheric Delamination and Orogenic Plateau Formation: Insights from the Tibetan and eastern Anatolian Plateaus</i> (part of BECCY project)	2022 - 2024 Zürich, Switzerland
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- Explored lithospheric delamination process through 2D thermo-mechanical simulations (I2VIS).
- Identified that delamination drives surface uplift, topography changes, and magmatism in both regions.
- Validated delamination as a key mechanism for plateau formation with geological and geophysical data.

China University of Geosciences Advisor: Prof. Xiong Xiong Topic: <i>Dynamic mechanisms behind the topography of Longmenshan area</i>	2022 Wuhan, China
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- Investigated the 4 km elevation drop across the Longmenshan fault using seismic data, Moho depth, and lithospheric elasticity to assess crust and mantle contributions.
- Found that lithospheric flexural isostasy, along with lower crustal flow and mantle convection, equally contribute to the elevation difference.
- Identified 2 km of topography from flexural isostasy and 2 km from dynamic crustal and mantle forces.

China University of Geosciences Advisor: Prof. Yadan Mao Topic: <i>Southwestern Australia nearshore surface current revealed by high-frequency radar</i>	2017 Wuhan, China
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- Collected and processed high-frequency radar data in Southwestern Australia.
- Analyzed radar data to map current patterns and dynamics along the coastline.
- Produced visualizations, including videos, to illustrate current movements and their temporal variations.

PUBLICATIONS

PAPERS

1. **Xie Y***, Balázs A., Gerya T., Xiong X. (2024). *Uplift of the Tibetan Plateau driven by mantle delamination from overriding plate*. **Nature Geoscience**. [DOI](#)
2. **Xie Y.**, Li Y-D, Xiong X*. (2020). *Dynamic mechanisms controlling the topography of Longmenshan area*. **Science China Earth Sciences** (Best Chinese Journal). [DOI](#)

PAPERS UNDER REVIEW

3. Zhou W, Shan B*, Xiong X, Guo R, **Xie Y**, Xiao Y, Xuan Y. Lithospheric Thermal and Compositional Structure of Northeast China: Implications for Lithospheric Thinning. Under review in JGR.

PENDING PAPERS

4. **Xie Y***, Balázs A., Gerya T., Xiong X. Delamination in the Eastern Anatolian Plateau. In preparation (expected submission: December, 2024).

OTHERS

5. **Xie Y***, Balázs A. (2024). *The rise of the Tibetan Plateau was controlled by overriding plate mantle delamination. Nature Geoscience.* [DOI](#)

SELECTED PRESENTATIONS

- Delamination of the lithosphere and its surface expressions. *Oral*. Workshop on Tectonics and Geophysics in the east part of Tibetan Plateau, Huanggang, China, 2024. **Selected as Best Student Presentations.**
- Overriding plate drives the uplift of the Tibetan Plateau. *Invited talk*. Institute of Geophysics, China Earthquake Administration, Beijing, China, 2024. (Invited by Prof. Yonghua Li)
- Mantle delamination controls the formation of orogenic plateau and the migration of magmatism. *Invited talk*. GFD Seminar, ETH Zürich, Switzerland, 2023. (Invited by Dr. Diogo Lourenco.)
- Upper plate mantle delamination controls orogenic plateau formation and the migration of magmatism: Insights into the evolution of the Tibetan Plateau. *Oral*. Swiss-German Geodynamics Workshop, Haltern am See, Germany, 2023.
- Lithospheric mantle delamination control on orogenic plateau formation. *Poster*. EGU, Vienna, Austria, 2022. **Selected as Highlight of Public Interests.**
- How subduction dynamics, crustal tectonics and surface processes are reflected in orogenic plateaus. *Poster*. Ada Lovelace Workshop, Héviz, Hungary, 2022.
- Dynamic mechanisms controlling the topography of Longmenshan area. *Oral*. Chinese Geoscience Union, Beijing, China, 2019. **Selected as Best Student Presentations.**

AWARDS

- **First Prize Scholarship** (Top 10%) 2020 & 2023
An academic award that recognizes outstanding achievements during my PhD's studies.
- **National scholarship** (Top 3%) 2019
The highest academic award given by Chinese government to exceptional undergraduate and postgraduate students.
- **First Prize of "Innovation Cup" Geophysical Knowledge Contest for National Students** 2019
The highest level of Chinese geophysics knowledge competition.
- **University Outstanding Dissertation Award** (Top 5%) 2018

SKILLS

- **Programming** (Data processing, analysis and visualizations)
Matlab, Bash Shell, Python [view code samples](#)
- **Softwares**
I2VIS (2D thermo-mechanical modeling), GMT (Geospatial visualization and mapping), LaTeX
- **Languages**
English (Professional proficiency), Mandarin (Native), Hokkien (Native), Cantonese (Fluent)

TEACHING EXPERIENCES

- **China University of Geosciences (Wuhan)** Wuhan, China
Teaching assistant. Geodynamics course. 2019
Assisted in preparing and delivering lectures, providing detailed feedback on problem sets and exams.
- **ETH Zürich** Zürich, Switzerland
Teaching fellow. Gravimetry field course. 2022 & 2023
Taught basic knowledge of gravimeter and gravity measurement. Graded student exams.

LEADERSHIP

- China University of Geosciences (Wuhan)**
President of the Student Union 2018-2019
- Organized academic conferences with over 100 participants, facilitating knowledge exchange and networking.
 - Led public science outreach activities in collaboration with the Hubei Meteorological Station, engaging local communities in scientific topics.
- President of the Volunteer Association* 2016-2017
- Organization and planning of clothing donation for children in poor areas.
 - Organized and planned a charity sale for people affected by the natural disasters.

REFERENCES

- **Prof. Taras Gerya**
Professor
Department of Earth and Planetary Sciences, ETH Zürich
✉ taras.gerya@eaps.ethz.ch
- **Prof. Xiong Xiong**
Professor
School of Geophysics and Geomatics, China University of Geosciences (Wuhan)
✉ xxiong@cug.edu.cn
- **Dr. Attila Balázs**
Senior Scientist
Department of Earth and Planetary Sciences, ETH Zürich
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