

# Jie CHEN

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## Professional experience

- 2024.06-now      Postdoc Researcher, École Normale Supérieure (ENS), Université PSL  
Topic: ANR project MUSH-OCEAN  
Supervisor: Jean-Arthur Olive
- 2022.08-2024.05      Postdoc Researcher, Institut de Physique du Globe de Paris (IPGP),  
Université Paris Cité  
Topic: Numerical thermal modelling of the global mid-ocean ridge  
Supervisor: Mathilde Cannat and Jean-Arthur Olive
- 2022.01-2022.07      Research Assistant, Second Institute of Oceanography, MNR  
Topic: Microseismicity at the Gakkel Ridge (JASMinE cruise)  
Collaborator: Jiabiao Li and Tao Zhang

## Education

- 2018.09-2021.12      Ph.D, Marine geophysics, IPGP, Université Paris Cité  
Thesis title: The impact of melt supply on fault distribution, volcanism,  
and the thermal regime at slow spreading ridges  
(<https://www.theses.fr/2021UNIP7226>)  
Supervisor: Mathilde Cannat. Co-supervisors: Wayne C. Crawford and  
Jean-Arthur Olive
- 2015.07-2018.08      M. E, Marine geophysics, Second Institute of Oceanography, MNR  
Thesis title: Segmentation and melt supply along the ultraslow spreading  
Southwest Indian Ridge 46-53°E.  
Supervisor: Chunhui Tao. Co-supervisors: Tao Zhang and Huaiming Li
- 2011.08-2015.06      B. E, College of Marine Geosciences, Ocean University of China

## Research Interests

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| Mid-Ocean Ridges                    | Hydrothermal system                 |
| Slow and ultraslow spreading ridges | Submarine volcanism                 |
| Magmatic and tectonic processes     | Seismicity                          |
| Autonomous Underwater Vehicle (AUV) | Numerical modelling                 |
| High-resolution bathymetry          | Geographic Information System (GIS) |

## Publications

### 2024

1. Marjanović, M., **Chen, J. (co-first author)**, Escartín, J., Parnell-Turner, R., Wu, J.-N., (2024). Magma-induced tectonics at the East Pacific Rise 9°50'N: Evidence from high-resolution characterization of seafloor and subseafloor. *PNAS*. <https://doi.org/10.1073/pnas.2401440121>.
2. Yan K, **Chen J**, Zhang T, (2024). Teleseismic Indication of Magmatic and Tectonic Activities at Slow- and Ultraslow-Spreading Ridges. *JMSE*. <https://doi.org/10.3390/jmse12040605>.

### 2023

3. **Chen J**, Olive J.A, and Cannat M (2023). Beyond Spreading Rate: Controls on the Thermal Regime of Mid-Ocean Ridges. *PNAS*. <https://www.pnas.org/doi/10.1073/pnas.2306466120>.
4. **Chen J**, Crawford W. C, and Cannat M (2023). Microseismicity and lithosphere thickness at a nearly-amagmatic oceanic detachment fault system. *Nature Communications*. <https://doi.org/10.1038/s41467-023-36169-w>.
5. **Chen J**, Zhang T, Li H, Tao C, Cannat M, and Sauter D (2023). Evolution of enhanced magmatism at the ultraslow spreading Southwest Indian Ridge between 46°E and 53.5°E. *Tectonophysics*. <https://doi.org/10.1016/j.tecto.2023.229903>.
6. **Chen J**, Zhang T, Tominaga M, Escartin J, and Kang R (2023). Ocean Sciences with the Spilhaus Projection: A Seamless Ocean Map for Spatial Data Recognition. *Scientific Data*. <https://doi.org/10.1038/s41597-023-02309-6>.
7. Tao C, Guo Z, Liang J, Ding T, Yang W, Liao S, Chen M, Zhou F, **Chen J**, Wang N, Liu X, Zhou J (2023). Sulfide metallogenic model for the ultraslow-spreading Southwest Indian Ridge. *Science China Earth Sciences*. <https://doi.org/10.1007/s11430-023-1108-7>.

### 2022

8. **Chen J**, Olive J.A, and Cannat M. (2022) Thermal Regime of Slow and Ultraslow Spreading Ridges Controlled by Melt Supply and Modes of Emplacement. *Journal of Geophysical Research: Solid Earth*. <https://doi.org/10.1029/2021JB023715>.

### 2021

9. **Chen J**, Cannat M, Tao C, Sauter D, and Munschy M. (2021). 780 thousand years of upper-crustal construction at a melt-rich segment of the ultraslow spreading Southwest Indian Ridge 50°28'E. *Journal of Geophysical Research: Solid Earth*. <https://doi.org/10.1029/2021JB022152>.
10. Ding T, Wang J, Tao C, Dias Á.A, Liang J, Wang Y, **Chen J**. et al. (2021). Trace-element compositions of sulfides from inactive Tianzuo hydrothermal field, Southwest Indian Ridge: Implications for ultramafic rocks hosting mineralization. *Ore Geology Reviews*. <https://doi.org/10.1016/j.oregeorev.2021.104421>.
11. Ding T, Tao C, Dias Á.A, Liang J, **Chen J**. et al. (2021). Sulfur isotopic compositions of sulfides along the Southwest Indian Ridge: implications for mineralization in ultramafic rocks. *Mineralium Deposita*. <https://doi.org/10.1007/s00126-020-01025-0>.

### Before 2020

12. Li, H, Tao, C, Yue, X, Baker, E.T, Deng, X, Zhou, J, Wang, Y, Zhang, G, **Chen, J**. et al. (2020). Enhanced hydrothermal activity on an ultraslow-spreading supersegment with a seismically

detected melting anomaly. *Marine Geology*. <https://doi.org/10.1016/j.margeo.2020.106335>.

13. **Chen J**, Tao C, Liang J, et al, (2018). Newly discovered hydrothermal fields along the ultraslow-spreading Southwest Indian Ridge around 63°E. *Acta Oceanologica Sinica*. <https://doi.org/10.1007/s13131-018-1333-y>.

### Conferences Abstract

1. **Chen J**, Leroy S, Watremez L, and Robinson A. Three-dimensional crustal velocity structure of the north-eastern Gulf of Aden continental margin. EGU, 2024.
2. Cannat M, **Chen J**, and Escartin J. Fault scarps and tectonic strain in young seafloor. EGU, 2024.
3. Marjanović, M., **Chen, J.**, Escartín, J., Parnell-Turner, R., Wu, J.-N Magma-induced tectonics at the East Pacific Rise 9°50'N: Evidence from high-resolution characterization of seafloor and subseafloor. EGU, 2024.
4. **Chen J**, Cannat M, and Olive JA. Beyond Spreading Rate: Controls on the Thermal Regime of Mid-Ocean Ridges. Ocean Floor Symposium, 2022.
5. **Chen J**, Li J, Zhang T, Niu X, Ding W, and the Jasmine team. OBS-Recorded Microseismicity at the Slowest Spreading Gakkel Ridge 85°E, Arctic Ocean. AGU, 2022.
6. Cannat M, **Chen J**, and Olive JA. Beyond Spreading Rate: Controls on the Thermal Regime of Mid-Ocean Ridges. AGU, 2022.
7. Cannat M, **Chen J**, and JA Olive. The thermal regime of mid-ocean ridges: geological perspectives and numerical modelling. EGU, 2022.
8. **Chen J**, Crawford W C, and Cannat M. Microseismicity constraints on brittle lithosphere thickness at a nearly amagmatic spreading corridor of the ultraslow Southwest Indian Ridge. AGU, 2020.
9. **Chen J**, Cannat M, and Tao C. 780-thousand years of volcanic seafloor accretion at a melt-rich segment of the ultraslow-spreading Southwest Indian Ridge 50°28'E. AGU, 2019.
10. **Chen J**, Li H, Zhang T, et al, Characteristics and mechanisms of magma supply along Southwest Indian Ridge between 46°E and 52.3°E. CGU, 2017.

### Invited Presentations

2024.06	MGF online
2023.11	Interridge-France workshop
2023.08	Academic seminar of Chinese students and scholars in Germany-France-Ireland
2022.06	Second Institute of Oceanography, MNR
2021.09	Southern University of Science and Technology
2021.06	Institut de Physique du Globe de Paris, Université Paris Cité

### Sea-going Experience

Pourquoi Pas? Momarsat19 at Mid-Atlantic Ridge, June 10-July 4, 2019  
XueLong icebreaker, Trial in the Pacific Ocean, July 7-14, 2017

### Funding

2018.09-2021.10 China Scholarship Council (CSC)

### Supervising and mentoring

Daixin Su Master student (2022.01-2022.12, Second Institute of Oceanography)

Kaixuan Yan      Master student (2022.01-2024.06, Second Institute of Oceanography)

### **Relevant Skills & Others**

Computer Skills: GMT, Global Mapper, MATLAB, ArcGIS, Bash shell, Python, SEISAN, Cloud computation, Obspy, Seismic Unix

Language: English (fluent), French (beginner), and Chinese (native)

Hobby: Chinese Kungfu - Meihuazhuang