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EDITED AND REVIEWED BY
Jeroen Van Hunen,
Durham University, United Kingdom

*CORRESPONDENCE
Giovanni Martinelli,
✉ giovanni.martinelli15@gmail.com

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Editorial: Crust–mantle interactions of the India–Eurasia–Pacific convergence system

Giovanni Martinelli^{1*}, Rui Gao², Zhao Junmeng³, Xiaoyu Guo² and Xiao Xu²

¹National Institute of Geophysics and Volcanology, Section of Palermo, Palermo, Italy, ²Sun Yat-sen University, Guangzhou, Guangdong, China, ³State Key Laboratory of Tibetan Plateau Earth System, Environment and Resources, Institute of Tibetan Plateau Research, Chinese Academy of Sciences (CAS), Beijing, China

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Editorial on the Research Topic

[Crust–mantle interactions of the India–Eurasia–Pacific convergence system](#)

Introduction

Orogenic belts, encompassing both accretionary and collisional types, serve as a geological archive of protracted convergence events between ocean–continent and continent–continent tectonic plates. The extensive tectonic history of orogenic belts, such as the western Pacific and Himalayan orogens, has served as a source of inspiration for numerous novel tectonic concepts and geodynamic models that are currently at the forefront of contemporary solid-earth science. Despite the incorporation of recent advancements such as observations and models, there are still unresolved inquiries pertaining to the variety of subduction and collisional regions and the underlying processes involved in subduction and collision. The investigations pertaining to intricate lithospheric structures, interactions between the crust and mantle, and processes of melting have received limited recognition. The objective of this Research Topic issue is to consolidate contemporary studies on the interactions between the Earth's crust and mantle in the India–Eurasia convergence system and the Pacific–Eurasia convergence system. This task has been achieved through the analysis and characterization of the lithospheric architecture of these regions, with the aim of gaining a deeper understanding of the underlying geodynamic processes in Southeastern Asia. The present Research Topic volume falls within the realm of geophysics and geodynamics, encompassing various specific themes that include:

- Crust–mantle interactions of the India–Eurasia and Pacific–Eurasia convergence systems

- Identification of the lithospheric architecture of the India–Eurasia and Pacific–Eurasia convergence systems
- Tectonic interactions of the India–Eurasia and Pacific–Eurasia convergence systems
- Numerical modeling on tectonic interactions

In particular, in the present Research Topic, we present the current state-of-the-art research on crust–mantle interactions of the India–Eurasia–Pacific convergence system. Remarkable results have been achieved by [Yang et al.](#), [Wang et al.](#), [Zhang et al.](#), [Xiao et al.](#), [Deng et al.](#), [Liang et al.](#), and [Cheng et al.](#)

Conclusion

This Research Topic has brought together state-of-the-art studies on crust–mantle interactions of the India–Eurasia and Pacific–Eurasia convergence systems and sheds new light on the deep geodynamics of Southeastern Asia. It is our belief that a thorough and unbiased evaluation of the proposed methodologies, in conjunction with the latest advancements and innovative findings, could potentially shed light on the most favorable ways for future research.

Author contributions

GM: Conceptualization, Data curation, Formal Analysis, Visualization, Writing–original draft. RG: Conceptualization,

Data curation, Formal Analysis, Resources, Writing–review and editing. ZJ: Conceptualization, Data curation, Formal Analysis, Visualization, Writing–review and editing. XG: Conceptualization, Data curation, Formal Analysis, Visualization, Writing–review and editing. XX: Conceptualization, Data curation, Formal Analysis, Resources, Writing–review and editing.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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