



Evolution of Modern and Ancient Orogenic Belts

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Deadline for
manuscript submissions:
31 December 2021

Message from the Guest Editors

Dear Colleagues,

The building of ancient and modern orogenic belts involves crustal thickening and often a journey of the lithosphere into the mantle and subsequent exhumation and uplift. In broad terms, plate tectonic theory has been able to explain the subduction process quite well since the sixties, while exhumation processes are still debated and in some tectonic settings still unclear. Regardless, both parts of the orogenic cycle deserve closer attention and a better understanding.

The architecture of mountain belts, the rheology of the crust, and the velocity of the processes affect the height and the width of the orogenies and their evolution. Localization of deformation and erosion could affect the tectonic history of wide portions of orogens.

In modern orogenic belts, we can observe active ongoing processes mainly at upper structural levels, whereas ancient orogenic belts represent windows into deeper parts of the crust. To formulate new and increasingly more complete models which can explain the whole evolution of orogens, it is therefore necessary to integrate data and observations obtained in both contexts.

This Special Issue aims to integrate data and models from different disciplines. such as structural geology, numerical and physical modeling, isotope geochemistry, geophysics, tectonics, geochronology, petrology, and basin analysis, to better understand the processes and mechanisms governing the tectonic evolution of orogenic belts. Works that integrate different methods are particularly welcome.





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Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherent set of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientifically based political decisions.

We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

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CiteScore 2019 (Scopus): 2.1, which equals rank 79/187 (Q2) in the category 'General Earth and Planetary Sciences'.

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