

Special Issue

Mantle Strain Localization— How Minerals Deform at Deep Plate Interfaces

Message from the Guest Editors

Dear colleagues, The Earth-like behavior of lithospheric plates requires strain to be localized at their interfaces, where large parts of the deforming rocks belong to the uppermost mantle. Strain localization into mantle shear zones is a first-order process that governs the displacement of plates from short (seismic) to long (tectonic) timescales. However, the mechanisms that drive mantle strain localization to occur and persist remain poorly understood. Therefore, this Special Issue will address new advances in the deformation of mantle minerals in shear zones dominated by viscous and/or semi-brittle flow. We invite researchers to provide high-quality articles on this topic with a particular emphasis on microstructures, seismic features, and/or rheological properties. Contributions about the role of fluids in mantle strain localization are also strongly encouraged.

Guest Editors

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Deadline for manuscript submissions

closed (16 July 2021)



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About the Journal

Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.2 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).