



Calcite Deformation Twins: From Crystal Plasticity to Applications in Geosciences

Guest Editor:

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Message from the Guest Editor

E-twinning is a common plastic deformation mechanism in calcite. Experimental work allowed significant progress in the understanding of the initiation and growth of calcite twins and their controlling factors. Coevally, inversion techniques allow for the determination of principal stress orientations and differential stress magnitudes from naturally deformed calcite-bearing rocks. Calcite twinning has implications and applications in many fields of Geosciences, such as mineralogy, rheology, petrophysics, tectonics and reservoir studies. This Special Issue aims at gathering high-quality, up-to-date papers dealing with every types of investigations on, or using, calcite twins : experimental or modeling work on twinning from synthetic or natural single grains and aggregates; relative contribution and timing of calcite twinning during progressive deformation under various P-T-stress-strain rate conditions; contribution of twinning to the petrophysical and mechanical evolution of rocks; calcite twins as paleothermometer; calcite twins as paleostress/strain gauges and markers of tectonic regimes; comparison with other paleopiezometers in the brittle and ductile fields.





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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.

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