

Special Issue

Metamorphic Geology and Phase Equilibrium Modeling in the 21st Century

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Message from the Guest Editor

The application of phase equilibrium modeling is now commonplace in studies of metamorphic interest, whether region- or sample-specific, or process-oriented investigations. Bulk-composition-specific phase diagrams – or pseudosections – may be used to investigate important issues in many areas of geoscience, including thermobarometry, the genesis of precious metals and mineral deposits, hydrothermal alteration and fluid–rock interaction in the lithosphere, anatexis, melt drainage, and crustal differentiation over geological time, and the geochemical cycling of elements from the hydrosphere to the Earth’s deep interior during subduction. Future investigations aim to expand our capability to model wider ranges of rocks and minerals, such as those in the inaccessible deep mantle.

This Special Issue aims to bring together examples of how quantitative phase equilibrium modeling – a truly 21st century technique – can be applied to solve a variety of key geological problems at the micro- to the macro-scale, either theoretical or regionally focused.

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