

V04: Linking Precise Dates to Accurate Ages in Continental Tectonics

Sponsor: Volcanology, Geochemistry, and Petrology

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Description: Our understanding of continental tectonics is fundamentally linked to our ability to precisely and accurately date geologic events and processes. As geochronological methods become more precise, it is increasingly important to ask: "What are we dating?" A geochronometer or thermochronometer "dates" only part of an event or cycle, particularly in regions of continental crust that record protracted or multiple episodes of deposition, burial, pluton emplacement, metamorphism, deformation, fluid flow, and/or exhumation. Although improved precision allows tectonic histories to be unravelled with unprecedented resolution, it requires a comprehensive understanding of the reactions and processes responsible for growth, dissolution, reprecipitation, and alteration of minerals, such as zircon, monazite, xenotime, titanite, rutile, apatite, hornblende, and muscovite. We invite contributions that seek to establish direct links between specific reactions/processes and the ages of high- to low-T geochronometers and thermochronometers. We especially encourage contributions from studies of natural or experimental systems that use emerging techniques to constrain temporal aspects of continental tectonics, or present innovative approaches and interpretations of accessory mineral chronology.