Comparison of magmatic and amagmatic rift zone kinematics using full moment tensor inversions of regional earthquakes


**Objective:** To address the question: “How is brittle deformation accommodated in early-stage rifting of cratonic lithosphere?” through moment tensor inversion and decomposition in light of seismicity, tomography, and the geology of the area.

New earthquake datasets from dense seismic arrays in magma-rich and magma-poor areas of the East African Rift are used to study the mechanisms of brittle deformation in early-stage rifting by determining the seismic source.

Earthquakes in magmatic rift zones (top left) have more significant contributions from CLVD and isotropic components, as compared to those from weakly magmatic zones (top right).

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