



## **Upper mantle structure of the Congo Craton and the East African Rift from broadband ambient noise**

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The relationship between lithospheric structure, mantle flow, and continental rifting in Africa is the subject of ongoing discussion. Distinct regions within the African continent have been seismically imaged individually following the deployment of several temporary regional arrays, especially throughout South Africa and sections of the East African Rift System. However, many questions remain regarding the basic structure of the upper mantle beneath some regions where seismic coverage is sparse. We use the temporal overlap of several temporary and permanent seismic arrays located throughout Africa and the surrounding regions in order to better image the upper mantle beneath portions of sub-Saharan Africa where regional seismic arrays have not yet been placed. We do this by seismic ambient noise tomography using the recently developed frequency-time normalization (FTN) method to extract empirical Green's functions (EGFs) over a broad frequency range. We cross correlate the normalized continuous records and stack the cross correlations to obtain EGFs for each temporally coincident station-station pair. We invert EGFs using recently developed full-waveform inversion methods in order to obtain the upper mantle structure of several regions within sub-Saharan Africa, in particular the Congo Craton and key regions beneath the East African Rift. We will present results from preliminary inversions that highlight these regions of focus.