

## **Upper mantle velocity structure beneath the Kenya Rift using teleseismic P-wave tomography**

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We re-examined upper mantle structure beneath the eastern branch of the Tanzania rift system using a P-wave tomography computed with the combined data set of the 1985 and 1989 KRISP project and the 2001–2002 Kenya Broadband Seismic Experiment. Relative P-wave residuals have been calculated by a multi-channel cross correlation algorithm, and upper mantle P-wave velocity structure has been imaged using the travel time inversion method of VanDecar. We image a strong low velocity region beneath the Kenya rift, that shifts to the west with depth. Resolution tests indicate that our tomography model has limited vertical but reasonable lateral resolution. In spite of the limited resolution, it is apparent that the thermally perturbed upper mantle structure extends to depths in excess of 300 km, and dips to the west beneath the Tanzania Craton. Our model is consistent with similar tomographic image to the south in Tanzania that has been attributed to a mantle plum head under the eastern side of the Tanzania Craton.

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