P-T conditions of metamorphism in the Wami River granulite complex, central coastal Tanzania: Implications for Pan-African geotectonics in the Mozambique Belt of eastern Africa

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Abstract
Solid-solution equilibria for gamet-clinopyroxene pairs in the early Pan-African Wami River granulite complex of central coastal Tanzania indicate metamorphic recrystallization at a temperature of about 700°C and a pressure of 8–9 kb, corresponding to metamorphism at a depth of 30–40 km. This suggests that granulite formation was preceded by an anomalous regional crustal thickening, similar to the crustal doubling that accompanies Phanerozoic continent-continent collisions of the Himalaya type. The analogy prompts the interpretation of the Wami River granulite complex, and possibly the rest of the granulite complexes in the Mozambique Belt, as slices of the underthrusted plate, which were accreted to the present day African plate following a continent-continent collision during early Pan-African time.