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**NEW CONSTRAINTS ON THE AGE AND CONDITIONS OF LPHT METAMORPHISM IN THE
SOUTHWESTERN CENTRAL ZONE OF THE DAMARA BELT, NAMIBIA AND IMPLICATIONS FOR
TECTONIC SETTING**

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Abstract

Orthopyroxene-bearing pelitic migmatites and associated anatectic leucogranites from the southwestern Central Zone of the Damara Belt provide revised constraints on the age and grade of LPHT metamorphism and its timing relative to deformation. Pseudosection modelling using THERMOCALC 3.33 indicates a single metamorphic event with peak temperatures of ca. 835 °C and pressures of 4.9 kbar for a garnet-cordierite-biotite-orthopyroxene schist. These temperatures confirm the attainment of true granulite facies conditions in the belt and are higher than previous estimates based on cation-exchange thermobarometry, which are likely to have been affected by retrograde re-equilibration and underestimate peak temperatures for the Central Zone by 50-150 °C. The early growth of sillimanite, consumption of sillimanite to produce cordierite, and the late development of garnet, together with modal isopleths and textural constraints on mineral reactions suggest a near-isobaric heating path for the southwestern Central Zone. Field and petrographic relationships indicate that the metamorphic peak was coeval with non-coaxial D2 deformation that produced orogen-normal, south to SE-verging, km-scale, recumbent folds and late-D2 shear zones

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