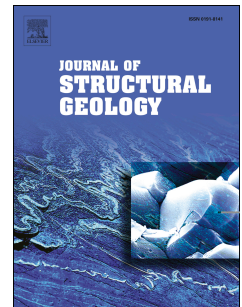


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Kinematic evolution of the Mbakop Pan–African granitoids (Western Cameroon–Domain): an integrated AMS and EBSD approach

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Abstract

This study integrates anisotropy of magnetic susceptibility, microstructural and crystallographic preferred orientation (CPO) data from the Mbakop granitic pluton (MGP; Pan-African age) in order to decipher its kinematic evolution. The MGP lies close to NE-SW branch of Central Cameroon Shear Zone (CCSZ) and is emplaced in gneissic basement. High mean magnetic susceptibility and presence of multi-domain magnetite is recorded. Quartz CPO measured using Electron Backscatter diffraction reveals dominance of rhomb <a>, prism <a> and prism <c> slip in different samples, which is consistent with microstructures developed under upper greenschist/amphibolite facies conditions. Quartz CPO along with other kinematic indicators (feldspar porphyroclasts/mineral fish) indicates non-coaxial deformation was important during tectonic evolution of the MGP. Contrasting sense of shear is recorded implying multi-stage mylonitization in the Western Cameroon Domain. Top-towards-south sense of shear is related to regional D₂ deformation (613–585 Ma), while top-towards-north is related to D₃ (585–540 Ma). The magnetic fabric in MGP records D₃. The

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