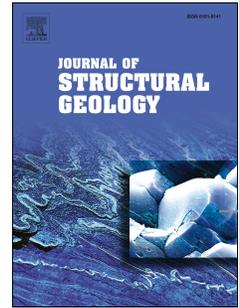


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Kinematic evolution of the Mbakop Pan–African granitoids (western Cameroon–Domain): An integrated AMS and EBSD approach

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

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19
20 **Abstract**

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

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