

Crustal growth and reworking in the Tcholliré-Banyo shear zone at Mbé – Sassa-Mbersi area (Central African Pan-African Belt, Cameroon)

ALLIANCE NICAISE SAHA FOUOTSA¹, RIGOBERT
TCHAMENI² AND OLIVIER VANDERHAEGHE³

¹University of Maroua

²University of Ngaoundéré

³GET-UPS

Presenting Author: nicsaha@yahoo.fr

The Precambrian basement of the Mbé – Sassa-Mbersi region, located at the northern wedge of the central part of the Central African Pan-African Belt (CAPB) and along the Tcholliré-Banyo shear zone (TBSZ), oriented N50, has been the subject of petrological and geochronological studies. From petrographic observations, it appears that this basement is composed of: (1) metamorphic rocks including mafic to ultramafic rocks, orthogneiss and paragneiss; and (2) \pm deformed TTG and granites. According to geochemical data, mafic to ultramafic rocks derive from various sources (fusion of the overlying mantle border during subduction and crustal material) influenced by extensive and convergent plate tectonics. The protoliths of the paragneisses would have been set up in a context of convergence (subduction and collision). The chemical characteristics of the plutonites suggest that the tonalites result from the partial melting of the submergent oceanic crust in the context of active continental margin, while the trondhjemites and granodiorites reflect a thickened lower crust origin. As for the granites they would be of mixed origin (crust and mantle). The U / Pb - Lu / Hf isotopic and Sm - Nd whole rock data reveal two episodes of crustal growth with a small contribution of pre – existing crust at Mesoarchean (3.4 - 3.2 Ga) and Neoarchean (2.9 - 2.7 Ga) and two events of intense crustal reworking marked by a low contribution of juvenile material at Paleoproterozoic (2.2 - 1.7 Ga) and Neoproterozoic (700 and 600 Ma).