

Granitic pluton of Zorgho: Emplacement context and relationship with Markoye Sear Zone (Center of Burkina Faso)

Saga Sawadogo^{*}, Adama Ouédraogo Yameogo, Séta Naba

*Laboratoire Géosciences et Environnement Minier (LGEM), Université Joseph KI-Zerbo, Burkina Faso,
Département des sciences de la Terre, Unité de formation et de recherche en Sciences de la Vie et de la
Terre, 03 BP 7021 Ouaga 03, Burkina Faso*

^{*}E-mail: sawadsaga@gmail.com

The Zorgho biotite granite pluton is essentially intrusive in tonalite, trondhjemite and granodiorite (TTG) type granitoids. Only a small southern portion of this pluton is intrusive in the Birimian metasediments. At the field scale, the difference between Zorgho granite and its TTG shell is clear.

The Zorgho granite is apparently without fabric whereas its TTG shell is often well structured. It contains biotite as the sole ferromagnesian mineral while TTG granitoids contain both biotite and amphibole.

It is in the light of the weak Zorgho granite fabric that we have carried out a total of three hundred thirty six (336) sampling sites that are waiting for Anisotropy Magnetic Susceptibility (ASM) measurements.

The observation of the structures of the TTG casing and the measurements we made there on the compass and the clinometer allow us to distinguish globally three phases of deformation in the study area.

- The deformation phase (D₁) corresponds to a regional schistosity (S₁) oriented N30°E70NW in the west bank of the PGZ and N40E70SE in the eastern or south-west part.

- The second phase of deformation (D₂) corresponds to a crenulation schistosity (S₂) oriented N80°E80°N especially well expressed in the metasedimentary host south of the PGZ whose rheology is favorable.

- Finally the third phase of deformation (D₃) is characterized by tensile slits, with various filling materials. Many veins of pegmatites and milky white quartz enter this phase.

Keywords: Burkina Faso, granitoids, metasediments, anisotropy of magnetic susceptibility, deformation phases