The Tiébélé granite pluton: new geochronological (U-Pb) data and its capacity to mineralize in Burkina Faso (West-Africa)

HERMANN ILBOUDO[1], DAVID LENTZ[2], CHRISTOPHER MCFARLANE[2]

[1]Université Ouaga I Pr Joseph Ki-ZERBO, Département des Sciences de la Terre, Burkina Faso

[2] Department of Earth Sciences, University of New Brunswick, Fredericton, New Brunswick Canada E3B 5A3 (dlentz@unb.ca)

The Tiébélé pluton (TGP) is newly dated at 2147±12 M, supporting its late emplacement compared to nearby rhyolite of the greenstone belt dated at 2156±7M [1]. The rhyolite hosts Cu-Zn-Pb VMS [2]. Likewise, it is now described as an oxidized I-type granodiorite with the following characteristics: (i) ΣREE ~89-165 ppm, relatively enriched in LREE compared to HREE, (ii) weak Eu anomaly (Eu/Eu*~1), (iii) consistent to the pattern of the average of the Upper Crust (ΣREE ~144ppm) [3] that shows moderate negative anomaly in Eu (Eu/Eu*~ 0.81).

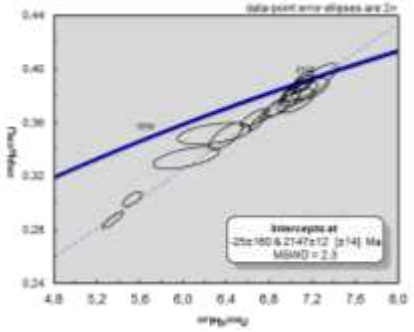

Figure 1: $^{206}Pb/^{238}U$ versus $^{207}Pb/^{235}U$ diagram of the TGP

The TGP was derived from partial melting of basalt and andesite within volcanic arc setting as most rocks in Burkina Faso. This category of granite is important sources for contact metasomatic metallic mineral resources. The occurences around the granite have anomalous metals such as Mo, Cu, Zn, Pb and Au.

[1] Kaboré (2004). Rap. BUMIGEB, 1-4. [2] Ilboudo et al. (2017). Jour.Af.Earth Science, **129**, 792-813. [3] Wedepohl (1995). Geoch et Cosmo Acta, **59**, 1217-1232.