Characterisation and geodynamic context of the granite intrusions in the Karagwe-Ankole belt in Rwanda

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The Karagwe Ankole belt (KAB) is an orogenic belt that occurs in the Great lakes area in Central Africa. It separates the Archean-Paleoproterozoic Congo craton from the Tanzania blocks and consists of Paleo- and Mesoproterozoic metasedimentary and -volcanic rocks intruded by at least two magmatic events, one at ~1375Ma (G1-3 granites) and another at ~1000Ma (G4 granites). The KAB is well-known for the abundant pegmatite and quartz vein-hosted Sn, W, Nb, Ta and REE deposits that are associated with the youngest G4 granites [1]. The formation conditions of the granite-related mineralization has been relatively well-studied [2], but knowledge on the geochemistry, magmatic evolution and geodynamic setting of the parental granitoids is largely missing. Two main hypotheses are currently considered for the KAB: 1) an intracratonic setting with an extension at ~1375Ma followed by a compressional event at 1000Ma [3] and 2) the formation of an active continental margin with a continent-continent collision at 1000Ma [4]. The aim of our study is, therefore, to characterize the parental felsic magmatism, associated with pegmatite-hosted mineralization in the Gitarama area in Rwanda, which can be considered as representative for this type of geological setting [5]. Geochemical analysis has been performed on whole rock, as well on apatite grains of these granites. In addition, LA-ICP-MS U-Pb data has also been obtained on both apatite and zircon mineral separates. These results have been used to update the geodynamic model of the KAB in the Great Lakes area.

[1]Pohl, W. (1994) *Ore Geology Reviews* 9, 105-130.
[2]Hulsbosch,N., Hertogen, J., Dewaele, S., André, L., Muchez, P. (2014) *Geochimica et Cosmochimica acta 132*, 349-374.
[3]Tack, L., Wingate, M.T.D., De Waele, B., Meert, J., Belousova, E., Griffin, B., Tahon, A. & Fernandez-Alonso, M. (2010), *Precambrium Research* 180, 63-84.
[4] Debruyne, D., Hulsbosch, N., Van Wilderode, J., Balcaen, L., Vanhaecke, F. & Muchez, P. (2015), *Precambrium Research* 264, 82-97.
[5]Dewaele, S., Henjes-Kunst, F., Melcher, F., Sitnikova, M., Burges, R., Gerdes, A., Fernandez-Alonso, M., De Clercq, F., Muchez, P. & Lehmann, B. (2011), *Journal of African Earth Sciences* 61, 1-26.