# Geochronological constraints on the diagenesis of the Mbuji-Mayi Supergroup, Democratic Republic of Congo (DRC)

C. FRANÇOIS[1*], B. K. BALUDIKAY[1], J. Y.STORME[1], D. BAUDET[2] AND E. J. JAVAUX[1]

[1]PPP, Department of Geology, B18, University of Liege, 4000 Liège, Belgium
([*]correspondence: c.francois@ulg.ac.be)
[2]Earth Sciences Department, Royal Museum for Central Africa, Tervuren, Belgium.

The Sankuru-Mbuji-Mayi-Lomami-Lovoy (SMLL) basin, DRC, located between the Archean-Paleoproterozoic Kasai Craton and the Mesoproterozoic Kibaran Belt, includes the Mbuji-Mayi Supergroup, a sedimentary sequence unaffected by regional metamorphism and containing a large diversity of well-preserved acritarchs [1]. Lithostratigraphically, this Supergroup is composed of two distinct successions (i) a lower siliciclastic sequence of BI Group (*ca*. 1175 Myr to *ca*. *ca*. 1050 Myr, certainly older than 885 Myr [2-4]) unconformably overlying the northern *ca*. 3.0-2.6 Gyr granitoid Dibaya Complex [5] and overlain by (ii) a poorly constrained upper carbonate sequence with sparse shales of the BII Group. Basaltic pillow lavas overlying the Mbuji-Mayi Supergroup were dated at 948 ± 20 Ma [6] [7].

To better constraint the age of this Supergroup, we are combining different *in situ* geochronological methods, in particular on diagenetic minerals such as monazite [8]. Preliminary results of U-Th-Pb datings of well-crystallized diagenetic monazites with Electron MicroProbe (Camparis, Paris) provide a new age around 1155 ± 15 Myr for the base of the BI Group. These results are consistent with new data on chemostratigraphy and biostratigraphy [9] and support the occurrence of worldwide changes at the Neoproterozoic / Mesoproterozoic boundary.

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