

# Debris flow breccia in Katanga Supergroup: Lithostratigraphy, tectonic and Cu ore deposit.

M.P. Mambwe <sup>(1,2,3)</sup>, M.L. Kipata <sup>(1)</sup>, M. Chabu <sup>(1)</sup>, Ph. Muchez <sup>(3)</sup>, R. T. Lubala <sup>(1)</sup>, M. Jébrak <sup>(4)</sup> & D. Delvaux <sup>(5)</sup>

(1) Department of Geology, University of Lubumbashi, B.P.1825, Lubumbashi, Democratic Republic of Congo

(2) Department of Geology exploration, Tenke Fungurume Mining S.A.R.L, Route Aéroport, Lubumbashi, Democratic Republic of Congo

(3) Geodynamics and Geofluids Research Group, Department of Earth and Environmental Sciences, KU Leuven, Celestijnenlaan 200E, B-3001 Leuven, Belgium

(4) Department of Earth Science and Atmosphere, University of Quebec, Montreal (Canada)

(5) Department of Geology and Mineralogy, Royal Museum of Central Africa (RMCA), Leuvensesteenweg 13, 3080 Tervuren, Belgium

**E-mail: p.mambwe@sciencesunilu.ac.cd**

The Shangoluwe copper deposit in the Kambove mining district is located along the M'sesa fault, together with other deposits such as the Kamfundwa, Kazibizi and M'sesa. It partly consists of a multilayered sedimentary breccia made of Roan fragments. The breccia occurs in rocks of the Kundelungu Group. Both the host rock and the breccia are mineralized. Three types of breccia can be identified, from bottom to top: a ferruginous breccia, a dolomitic breccia and a siliceous breccia.

Structural data indicate that the sedimentary breccia and the Kundelungu rocks are affected by the same style of deformation consisting of SW verging folding and back-thrusting. Several reverse thrust and strike-slip faults are observed in the Kundelungu rocks, associated with uncemented tectonic breccia. In the dolomitic and ferruginous sedimentary breccia, we observe intense dissolution and collapse structures with Cu mineral precipitates. These breccia, which are interpreted as of sedimentary and dissolution origin, have three distinct horizons, suggesting that they were deposited sequentially. Turbidity features are marked by a laminar matrix, interlayer argillaceous sandy shale, dolomitic shale, shale, dolomite and pseudo-stratification. A graded-bedding is observed in the dolomitic and ferruginous breccia. These breccia are regarded as contemporaneous to the Kundelungu Formation, both affected by the Lufilian orogeny whereas the siliceous breccia is post-orogenic with respect to the presence of both the erosion and angular unconformities. The siliceous breccia is a new unit at the top of the Katanga Supergroup and we propose to define it as a new Shangoluwe formation (Ku 3.2).

**Kipata et al. (2013):** Brittle tectonic and stress field evolution in the Pan-African Lufilian arc and its foreland (Katanga, DRC): from orogenic compression to extensional collapse, transpressional inversion and transition to rift. *Geologica Belgica*, 16, 1-17.

**Van Langedonck (2013):** Petrographic and mineralogical study of the sediment-hosted Cu-Co ore deposit at Kambove West in the central part of the Katanga Copperbelt (DRC). *Geologica Belgica*, 16(1-2), 91-104.