

## Structural evolution of the Paleoproterozoic formations of the Kédougou-Kéniéba Inlier, Eastern Senegal

Moussa Dabo<sup>1,2,\*</sup>, Tahar Aïfa<sup>2</sup>, Emmanuel Samoura<sup>1</sup>, Ibrahima Gassama<sup>1</sup>, Ibrahima Guingne<sup>1</sup>, Papa Malick Ngom<sup>1</sup>

<sup>1</sup>*Département de Géologie, Faculté des Sciences et Techniques, Université Cheikh Anta Diop de Dakar, BP 5005, Dakar-Fann, Sénégal ;* <sup>2</sup>*Univ Rennes, CNRS, Géosciences Rennes - UMR 6118, Bat.15, Campus de Beaulieu, 35042 Rennes Cedex, France*

\*E-mail: moussadabo@hotmail.com

Our lithologic and structural field data are combined with image data from airborne geophysics and Landsat and Aster satellite as well as with geochemical and geochronological data from the literature to better constrain the geodynamic evolution of the Birimian formations of the Kédougou-Kéniéba Inlier (KKI). The lithological analysis together with the available geochronological and geochemical data indicates a diachronic evolution from west (Mako Supergroup) to east (Dialé-Daléma Supergroup). This evolution started by the emplacement westward of a tholeiitic ophiolitic sequence in a deep oceanic environment. It is followed by an intermediate to felsic calc-alkaline volcanism very developed in the eastern part and emplaced in a shallow environment.

The structural results show a polyphase Eoeburnean to Eburnean deformation. The first deformation phase is tangential tectonics associated to large overturned folds ( $P_1$ ) and localized thrusts. It affects the ophiolitic sequence of the Mako Greenbelt as well as some Dialé-Daléma volcano-sediments and sediments. This phase is Eoeburnean and would have occurred between 2170 Ma and 2140 Ma. It mainly affects the formations of the greenbelt rocks of the Mako Supergroup which constitutes the oldest segment of the KKI (2220-2060Ma). The Eoeburnean  $D_1$  deformation phase is accompanied by the emplacement of granitoids  $\pi_1$  (2213-2160 Ma) characterized by syntectonic ductile structures (folds, planar and linear fabrics). The Eburnean  $D_2$  deformation phase is a transpressive tectonics broadly sinistral which would have occurred between 2130 Ma and 2080 Ma. It involved wide thrust sheared corridors (MTZ, FSM) and a  $P_2$  folding with tilted and curved axis.

The  $D_3$  phase is a dextral transtension which reactivates the former structures and creates extensional zones to various scales associated with normal faults. The Eburnean granitoids  $\pi_2$  (2150-2100 Ma) and  $\pi_3$  (2090-2040 Ma) emplaced during and after these two Eburnean orogenic phases.

**Keywords** : Eoeburnean, Eburnean, Birimian, transpression, transtension, Kédougou-Kéniéba