

# **Paleoproterozoic crystallization and metamorphism and Neoproterozoic shearing of high grade gneisses from the Kandi shear zone in Central-Bénin (Dahomeyides fold belt, West Africa)**

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The Kandi shear zone is a segment of the huge shear zone that extends from the Hoggar mountains (Algeria) to the Atlantic coast in Bénin and continues down to northwest Brazil. In the Savalou area in Central-Bénin, the Kandi shear zone exposes the association of high-grade deformed granulites and amphibolites facies gneisses and migmatites, various types of granitoids, low-grade metavolcanic and sedimentary formations (the Idahou-Mahou basin) and low-temperature tectonites (low-temperature mylonites, ultramylonites and cataclasites) occurring as several kilometric-scale bands.

In order to better understand geodynamic evolution of the western Panafrican Dahomeyides fold belt, radiometric ages (U-Pb) were carried out on zircons from the high grade metamorphic rocks of the Kandi shear zone (granulites and amphibolites facies gneisses). The zircons from the felsic granulites of Savalou yield a Paleoproterozoic age of  $2091 \pm 14$  Ma and  $2057 \pm 8$  Ma interpreted as crystallization and metamorphic recrystallization in granulite facies condition, respectively. The amphibolites facies gneiss gives a Neoproterozoic age of  $606 \pm 5$  Ma that corresponds to the mylonitic deformation associated to the shearing in amphibolites facies metamorphism condition. The Neoproterozoic shearing imprint is marked by a mylonitic foliation that strikes NS and dips steeply to vertical and a sub-horizontal mineral lineation together with the common dextral kinematic indicators in agreement with transcurrent shear zone.

These ages obtained on the granulite and amphibolite gneiss from the Kandi shear zone in Central-Bénin are similar with those obtained on the felsic granulite and mylonitic granodiorite in Cariré region along the Transbrasiliano lineament (da Silva Amaral et al., 2012). This comforts the correlation between the Kandi shear zone and Transbrasiliano lineament.

**Keywords:** Bénin, Savalou-Kandi shear zone, geochronology, Dahomeyides Belt.

## **Reference**

da Silva Amaral, W., dos Santos, T.J.S., Wernick, E., de Araújo Nogueira Neto, J., Dantas, E.L., Matteini, M., 2012. High-pressure granulites from Cariré, Borborema Province, NE Brazil: Tectonic setting, metamorphic conditions and U-Pb, Lu-Hf and Sm-Nd geochronology. *Gondwana Research*, doi: 10.1016/j.gr.2012.02.011.