

Geochemistry of metamafic rocks of the Paulistana Complex, Riacho do Pontal Fold Belt, NE-Brazil

WAGNER S. AMARAL^{1*}, EVILARDE C. UCHÔA FILHO²,
FELIPE H. SANTOS¹, DANIEL F. MARTINS SOUSA¹ AND
MARCELA P. PERPÉTUO¹

¹University of Campinas-UNICAMP, Institute of Geosciences,
Campinas-SP, Brazil (*wamaral@ige.unicamp.br)

²CPRM-Geological Survey of Brazil, Teresina-PI, Brazil

The Paulistana Complex, located in the Internal Domain of the Neoproterozoic Riacho do Pontal Fold Belt, corresponds to a metaplutono/volcanic-sedimentary sequence composed of metamorphic rocks at greenschist to amphibolite facies.

Geochemical analyses revealed the predominancy of alkali-basaltic and high Fe tholeiitic composition for the amphibolites, and alkaline to sub-alkaline for the metagabbros. The Rare-Earth Elements (REE) and the multi-elementary diagrams for the volcanic samples show enrichment in both LREE and HREE, positive anomalies of Ba, Ta, Nb, P and discrete negative anomalies of Th, K and Sr. Amphibolite display decrease in LREE and HREE, with compositions closer to the primitive mantle, with negative anomalies of K, La and Ce. The chemical analyses of the metagabbros reveal an enrichment in LREE and HREE and positive anomalies of Ba, Th and P with discrete negative anomalies of Rb and K.

The results presented in this study combined with available data in the literature [1] suggest that the mafic rocks of the Paulistana Complex were formed in extensional setting related with Tonian (ca. 890 Ma) mantle plumes. Additionally, preliminary isotope data and field evidence indicate that part of these rocks could have been generated in an intra-plate or back-arc environment during the collision of the Riacho do Pontal Fold Belt with the São Francisco Craton at ca. 620 Ma.

[1] Caxito, F.A., *et al.*, 2014. Neoproterozoic oceanic crust remnants in northeast Brazil. *Geology* **42**, 387-390.