THE MUCAJAÍ ANORTHOSITE-MANGERITE-RAPAKIVI GRANITE (AMG) COMPLEX, NORTH AMAZONIAN CRATON, BRAZIL

Leda Maria Fraga (1), Roberto Dall’Agnol (2), Moacir Macambira (2)
(1) CPRM, Serviço Geológico do Brasil, ledamari@rj.cprm.gov.br; (2) Universidade Federal do Pará

The Mucajaí AMG Complex occupies the central portion of the Roraima State, Brazil. It is situated along the NE-SW Central Guyana Belt, in the northern part of the Amazonian Craton (Guyana Shield). The basement is made of recently characterized foliated A- and C-type granitoids with ages around 1.94 Ga. Subordinate bodies of anorthosites and gabbronorites, in close association with rapakivi granites and mangerites of the Mucajaí Batholith (MB), which is asymmetrically zoned, form the Mucajaí AMG Complex. Fayalite-pyroxene-quartz mangerites (to syenites) are restricted to the southwestern portion of the MB, in contact with the main anorthosite body. Hornblende-biotite granites, corresponding to pyterlites and wiborgites, extend over a large area in the central part of the MB, and non ovoidal porphyritic biotite granites occur to the northeast. The presence of the fayalite+quartz±ilmenite assemblage in the more primitive rocks of MB indicates conditions of low oxygen fugacity. Hornblende and biotite are interstitial to feldspar and quartz and constitute late-crystallized mafic minerals in the MB granitoids. Geochemically these granitoids are metaluminous to slightly peraluminous, showing high contents of $K_2O$, and HFSE as well as high FeO*/FeO*+MgO and Ga/Al ratios, typical of subalcaline A-type granites. U-Pb ages of 1527±7 Ma (baddeleyite) and 1544±42 Ma (zircon) have been reported for the anorthosite and the granites respectively and an age of 1538 ±5 (Pb-Pb zircon evaporation) was obtained for the fayalite-pyroxene-quartz mangerite. Nd isotopic data on the MB granitoids show TDM model ages in the range of 2.07 - 2.01 Ga and $\varepsilon$Nd (T) values between -2.37 and -1.27, suggesting crustal sources separated from
the mantle in the Paleoproterozoic, during the Transamazonian Orogeny. The eNd (T) value of -2.91 obtained for the anorthosite is probably related to crustal contamination. The characterization of the Mucajáí AMG Complex, emplaced along the Central Guyana Belt under anorogenic conditions during the Mesoproterozoic, reinforces previously proposed correlation between Laurentia, Baltica and Amazonia. Mylonitic features related to the K’Mudku Deformational Episode (1.26 Ga), recording brittle-ductile conditions, are locally superposed to the igneous textures of the Mesoproterozoic suites.