**Influence of magma mingling during the emplacement of the São Vicente-Caicó Massif - Rio Grande do Norte - NE/brazil**

[1]PETTA, R. A.; [2]WERNICK, E.; [3]VERKAEREN, J.; [2]DANTAS, E. L.
[1]Departamento de Geologia UFRN-Natal-RN, Brazil; [2]Instituto de Geociências-UNESP-Rio Claro, Brazil; [3]Institute de Gèologie-Université Catholique-Louvain-la-Neuve,Belgium

This paper present petrographic, mineralogical, geochemical and isotopic data from the Early Proterozoic São Vicente-Caicó Suite (SVCS)-RN/Brazil which includes rocks of gabbroic to granitic compositions, represented by a upper mantle/Archean lower crust-derived magmatic suite. The SCVS is rich on enclaves partly assimilated, containing variable amounts of partially or completely engulfed feldspar megacrysts of the host-rock. Two groups of enclaves are recognized reflecting a long side by side flow of enclaves and host-rocks allowing a partial mechanical mixing (mingling) of both. By the strong deformation the frequent enclaves loose their original identity being transformed in nebulitic flatted darker lenses, suggesting the magmatic mingling during the emplacement. The SVCS is a chemically expanded suite typical for I-type suites, quite similar to Mesozoic/Tertiary calc-alkaline normal-to-high-K I (Cordilleran)-type. In many of the trace element diagrams a typical double evolutional tendency is expressed by the coexistence of two distinct trends, suggesting the coexistence of two different magma compositions or the operation of different processes during the evolution of the magma chamber with individual magma pulses and combination of magma mixing, assimilation and fractional crystallization (MAFCmodel). The model involve processes mainly developed in deep crustal or crustal/mantle boundary levels and the emplacement during the magma ascent route, with local features of magma mixing and mingling.