

SAMARIUM-NEODYMIUM AND RUBIDIUM-STRONTIUM ISOTOPIC SYSTEMATICS AND CRYPT VARIATIONS OF THE RIO JACARE SILL BAHIA - BRAZIL

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The Rio Jacare Sill is a 70km long, 1km thick synvolcanic layered intrusion nested in the Jurema-Travessao Formation, the lowermost unity of the Contendas-Mirante Complex. This Complex occurs between two Archean tectonic blocks, named Jequie and Gaviao, in the northeastern part of the Sao Francisco Craton, Bahia, Brazil. Isotopic data show the sill has a Sm/Nd age of $2,841 \pm 68$ Ma, ($\hat{\epsilon}_{Nd}(T) = -1.3$), (MSWD=6.8), for a 20 points isochron. A four points Rb/Sr isochron yielded an age of $2,757 \pm 187$ Ma, ($R_o = 0.70491 \pm 0.0007$), (MSWD=1.5). The sill is divided into a Lower zone made up of massive medium-medium-grained gabbro, with tholeiitic composition; Upper zone, consisting of modally graded coarse-grained rocks from gabbro to anorthosite with calcalkaline signature. Layered, (transition), zone, composed of compositionally crypt layered cumulates, such as PGE-bearing vanadiferous titanium magnetite seams, pyroxenites, and leuco to melanogabbroic rocks, interpreted as late high iron-enriched mixture of these two magmas. Isotopic systematics show both Lower and Upper zones have almost the same $\hat{\epsilon}_{Nd}(T)$ and $Sr(o)$ that evolved sympathetically to crypt variations, indicating they are magma batches from the same isotopic reservoir that undergone fractional crystallization and host rocks assimilation. However, the Layered zone, corresponds to mixing between an evolved residual from Lower zone and a pristine component from the Upper zone.