

## Sr-Nd isotopic constraints on early Cretaceous mafic intrusions from Uruguay

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The Mesozoic magmatism in Uruguay is a result of the tectomagmatic events related to the South Atlantic Ocean opening and it is part of the Paraná Large Igneous Province. Besides the continental lava flows of tholeiitic affinity it comprises several mafic intrusions (dikes and sills). A selection of 12 samples from the sills have been analyzed for the Sr-Nd system. They are all of tholeiitic nature and correspondent to basalt/gabbro compositions of continental intraplate environment. The Sr-Nd isotopic compositions display a range of values for  $^{143}\text{Nd}/^{144}\text{Nd}$  (0,512246 to 0,512465); for  $^{87}\text{Sr}/^{86}\text{Sr}$  (0.70921 to 0.71067), with  $-3,9 < \epsilon\text{Nd}(0) < -6,6$ . Trace element geochemistry ( $5,4 < \text{Ti}/\text{Zr} < 7,6$ ,  $26,5 < \text{Ti}/\text{Y} < 32,0$ ;  $172 < \text{Sr} < 313$  and  $0,46 < \text{Nb}/\text{La} < 0,57$ ) and Sr – Nd isotopic values ( $^{87}\text{Sr}/^{86}\text{Sr}$  y  $\epsilon\text{Ndi}$ ) allow their discrimination as Gramado magma-type [1]. They are little enriched in LILEs and LREEs, and depleted in HFSEs and HREEs.  $(\text{La}/\text{Yb})\text{N}$  varies from 3.02– 5.38,  $(\text{La}/\text{Lu})\text{N} = 1.52$  s – 2.22;  $\text{Nb}/\text{La} = 0,39914163 - 0,617977528$  and  $\#Mg$  ranges from 21 to 40. Taken into account the geochemical information we can postulate that these mafic intrusions result from an enriched mantle source like EMII. Trace element behavior as well as trace element ratios also indicate AFC processes. This research was financially supported by research grants from ANII-FCE 038 program and PEDECIBA (Uruguay).

[1] Peate, D.W., Hawkesworth, C.J. & Mantovani, .S.M., 1992, *Bulletin of Volcanology* **55**: 119–139.