GEOCHEMISTRY AND Sr-Nd-Pb ISOTOPES OF BASALTIC ROCKS FROM NORTHERN PARANÁ MAGMATIC PROVINCE: PRELIMINARY RESULTS

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ABSTRACT

The Paraná Magmatic Province (PMP) covers an area of about 1.200.000 km^2 and comprises 780.000 km^3 of extrusive material. Associated to the volcanic activity there was intrusive magmatism, represented by sills, which outcrop mainly at Eastern and Northeastern Paraná Basin, and dyke swarms (Ponta Grossa, Serra do Mar, and Florianópolis). Although this province has been the aim of many studies, there is much controversy about the processes involved in the basalt genesis, in particular the role of Tristan da Cunha plume.

In order to obtain additional constraints about the PMP basalt genesis, this work presents new Sr, Nd and Pb isotope data of tholeiitic rocks from flows and sills from Northern region, particularly those from Northern São Paulo, Southern Minas Gerais, and Southern Goiás States.

The investigated rocks are chemically represented by tholeiitic basalts, tholeiitic andesi-basalts, lati-basalts e lati-andesites. Their trace element contents and ratios indicate that 13 samples belong to Pitanga, 6 to Paranapanema, and 1 to Urubici magma-type. The results for Pitanga and Paranapanema magma-types are, in general, in agreement with those reported in the literature. The geochemical and isotopic characteristics of the Urubici sample suggest origin in a mantle source similar to that which originated the high-Ti dykes from Espinhaço Swarm, although low-pressure crustal contamination cannot be completely ruled out.

The new geochemical and Sr-Nd-Pb isotopic data of high-Ti rocks from Northern PMP reinforce previous studies, ruling out a significant participation of MORB and/or OIB (Tristan da Cunha) mantle components in their genesis.