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DETERMINAÇÃO DE TERRAS RARAS E OUTROS ELEMENTOS INCOMPATÍVEIS EM DIQUES DA ILHA DE SANTA CATARINA POR ATIVAÇÃO NEUTRÔNICA

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ABSTRACT

The mesozoic dykes investigated in this study belong to Florianópolis Swarm, which is related to the final stages of the igneous manifestation of Paraná Magmatic Province. The swarm is located in Santa Catarina Island and adjacent coastal area. The objective of this work is to determine the concentrations of rare earth and other incompatible trace elements in order to investigate the origin and evolution of the magmas that generate the high-Ti (TiO_2 > 3 wt%) dykes of the swarm. The analytical technique used was thermal and epithermal neutron activation analysis, followed by high resolution gamma-ray spectrometry. Analyzes of the reference material BE-N (IWG-GIT), by using the geological reference materials GS-N (ANRT), BCR-1 (USGS) and JB-1 (GSJ) as standards, indicate that the analytical procedure provides results with relative errors and relative standard deviations better than 10% for most of the analyzed elements, showing the precision and accuracy of the method. The chondrite-normalized abundance patterns of the rare earth elements (REE) are enriched in light REE, presenting $(La/Yb)_n$ ratios varying from 7.9 to 12.5. Most of the investigated dykes have abundance patterns very similar to those of the high-Ti basaltic flows (Urubici type) from Southern Paraná Province, and the remaining dykes have the same REE characteristics of the high-Ti flows (Pitanga type) from Northern Paraná. Most of the dykes do not have Eu anomalies and considerable number of samples presents positive anomalies. Dykes presenting negative Eu anomalies are rare.