

THE NEOPROTEROZOIC CALC-ALKALINE GRANITOIDS IN THE EASTERN DOM FELICIANO BELT, SOUTHERNMOST BRAZIL

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The high-k calc-alkaline granitic magmatism in the Eastern Dom Feliciano Belt can be grouped according to the tectonic evolution of the belt. This evolution was established during a tangential regime in a continental collision and a transcurrent regime in an intracontinental environment. Syn-tangential granitoids of the Arroio Solidão Intrusive Suite are similar to those of a continental collision regime. Syn- to post-transcurrence granitoids of the Arroio Moinho, Campinas and Canguçu intrusive suites resemble late- to post-orogenic injections of other orogenic belts. These two groups of granitoids were formed in thick continental crust, as indicated by their major oxides, trace-elements, REE contents and isotopic signature. The geochemistry of the syn-tangential granitoids differs from the syn- to post-transcurrent granitoids in three important ways: highly fractionated FeO, TiO₂, MgO, MnO and Na₂O contents; Rb, Sr, Ba and Zr contents grow during differentiation and lack negative Eu anomaly. The ϵ_{Nd} data of the Arroio Solidão range from -2 to -6, Arroio Moinho from -7.2 to -7.4, Campinas from -8.4 to -13.2 and Canguçu from -5.8 to -6.1. This identifies the systematic involvement of continental crust in the genesis of the granitoids as suggested by the ⁸⁷Sr/⁸⁶Sr initial ratios above 0.706 and by the ¹⁴³Nd/¹⁴⁴Nd between 0.5116 and 0.5123. Wider variations of ϵ_{Nd} values in some suites are compatible with lower uniformity in the source of the granitoids. The granitic magmatism in the Eastern Dom Feliciano Belt resulted from sources with different proportions of mixture between a reworked continental crust and a mantle component.