GRAVITY AND MAGNETIC INVESTIGATION OF THE VALE DO RIBEIRA ALKALINE INTRUSIVES: JACUPIRANGA, JUQUIÁ AND PARIQUERA-AÇU (SP), BRAZIL

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An integrated study is presented, based on aeromagnetic and detailed terrestrial gravity surveys, covering the area 24 - 25 degrees S and 47 - 48 degrees W, in which outcrop the Jacupiranga, Juquiá and Pariquera-açu mesozoic alkalic rocks, intruded in the granite-gneissic Precambrian basement, the former two with carbonatite associations. Tectonics of the area exhibits a complex structural pattern characterized by two main fault systems, corresponding to the NE-SW Precambrian regional faults and to the N45W Guapiara lineament. Intense positive gravity anomalies evidence clearly the alkaline units as a result of their higher density relative to the host rocks. Steep gravity gradients, generally coincident with the external limits of the alkaline intrusions, imply nearly vertical emplacement of the three bodies. The gravity anomalies decay slowly and reach the regional level at some distance from the external limit of each body, evidencing their large in-depth extension. Small gravity lows are associated with the Jacupiranga and Juquiá carbonatite outcroppings. Magnetic anomalies present a distinct pattern for each alkaline body, as a result of their individual magnetic properties related to morphology, petrography and mineralogical composition. Integration of the geophysical results and a proposed model are presented and discussed in a geologic-structural context.