

GRAVITY MODEL OF THE BASIC-ULTRABASIC COMPLEX OF CANA BRAVA, CENTRAL BRAZIL

CARMINATTI, M.G. and MARANGONI, Y.R. Institute of Astronomy and Geophysics - USP, São Paulo, Brazil.

A gravity survey was done to study the basic-ultrabasic complex of Cana Brava, central Brazil. The area of survey is characterized by a smooth regional gravity field that decreases to the southeast at an average rate of 0.7 mGal km⁻¹. Superimposed on this field there is this NS elongated residual positive Bouguer anomaly with an amplitude of +40 mGal centered over the geological mapped intrusion. A similar result had already been obtained at Niquelândia and Barro Alto basic complexes, both located south of Cana Brava. The three bodies form a discontinuous north trending chain through the Brazilian Shield. Tectonically, they are part of a Paleoproterozoic rift system still preserved. Cana Brava, measuring 14 by 40 km, is composed of metagabbros, metanorites, amphibolites, metapyroxenes and serpentinites. It has been interpreted as an anarogenic layered complex crystallized at circa 2.0 Ga with two important metamorphic episodes, at 1.3 Ga and 0.77 Ga. A gravity model for the Cana Brava complex, showing its possible form and extent in subsurface, was derived using the Gravmag 2 ½ D modeling program. Density contrast, +0.29 g cm⁻³, was chosen based on values used at the two other complexes of the chain. Preliminary results show the body dips to the west extending 33 km from the western surface contact, and reaches a maximum thickness of 5.5 km beneath the outcrop. The modeled body, like the models obtained for the other complexes, shows a flat base that may be a tectonic contact of an eastward thrusting. Financial support: FAPESP.