

GEOPHYSICAL DATA APPLIED TO REGIONAL GEOLOGICAL MAPPING: NORTHWESTERN GOIÁS STATE, BRAZIL

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In an attempt to shed some light on the regional geology, magnetic data of airborne geophysics of the Brazil - Canada Geophysical Project were used. These data were reevaluated, presented as different images and interpreted in the light of the geological knowledge. The studied area is located in the central and northwestern region of the Goiás State, Brazil, encompassing terranes of the Tocantins Structural Province. The application of magnetic sources enhancement techniques (horizontal gradient, amplitude and phase of the analytic signals of first and second orders and terracing), proved to be efficient in the determination of physical discontinuities that could be translated to geological units. The second order analytic signal amplitude showed better results than its equivalent of first order. They revealed the limits of the causative magnetic bodies and aided in the discrimination of the mafic and ultramafic rocks. The application of terracing on the second order analytic signal amplitude allowed placing the anomalous responses over possible sources, helping to better define the magnetic units better with respect to the well-known geology. The analysis of the data gathered from the magnetic interpretation suggests that these structures must be tied up to an event with main tension in the direction approximately E-W.