Magnetic gradient techniques on digitized aeromagnetic data of Ibadan area, south-western Nigeria

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Abstract

Locations and depths to magnetic contacts were estimated from the total intensity magnetic field using the Horizontal Gradient Magnitude (HGM), Analytic Signal Amplitude (ASA) and Local Wavenumber (LWN) methods. Aeromagnetic data from the Ibadan area, in south-western Nigeria, were analyzed to estimate depths to magnetic sources as well as source locations. The minimum/maximum depth limits of the HGM and LWN are relatively close and comparable, while shallow source depths limits are greater than expected in the ASA method when compared with the HGM and LWN functions.

Keywords

horizontal gradient magnitude analytic signal local wave number source location source depth aeromagnetic data