Секция «Геофизические методы исследования Земной коры»

Processing of airborne magnetic data: Two case studies in the eastern part of the Gulf of Suez and the Eastern Desert, Egypt

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Delineate the airborne magnetic resonance method. One of the most important steps to achieve this goal. In this study, we give you an airborne magnetic data. Of magnetic objective of The data processing is to the remove the magnetic field the following components: earth's core-derived View main magnetic field, diurnal VARIATION of due to time and location The, Field from errors The data acquisition system and Man-made features. The following components are removed by the following sequence of steps:

1.   Diurnal Correction,
2.   Heading Correction ,
3.   Parallax / Lag Correction , and
4.   Data Levelling and Micro levelling application.

The commonly used quality standard is that enhanced images of levelled data should reveal a minimum of artefacts attributable to the data gathering or reduction processes. It is still not possible to guarantee that an image without appreciable artefacts can be produced without seriously affecting the integrity of the data [1].

The processing sequence is applied to two sets of raw data. The first area is located in the eastern part of the Gulf of Suez of Egypt, and the second area is located in the Eastern Desert of Egypt. The heading correction values used are ±10 for primary Line and ±6 for tie lines), while the resulting parallax/lag error calculated was 0.6 second. Due to the inclination of the earth's magnetic field, most magnetic anomalies show both positive and negative counterparts; therefore Reduced to pole (RTP) map is created from total magnetic intensity map to remove this effect. The levelling technique that has been used to attain an acceptably leveled dataset is:

1.   Statistical levelling for tie lines,
2.   Microlevelling for tie lines,
3.   Spline levelling for traverse lines using the microlevelled tie lines,
4.   Microlevelling for traverse lines, and
5.   Spline levelling for IGRF corrected tie lines using traverse lines.

Источники и литература

1) (1) Luyendykl, A. P. J. (1997): Processing of airborne magnetic data. AGSO lournal of Australian Geology & Geophysics, 17(2): 31-38.