| O10-1 | GRAVITY AND MAGNETIC FEATURES OF YOZGAT AND KESKIN REGION, CENTRAL NORTH TURKEY |
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The study region, confined to Yozgat and Keskin towns in Central Turkey, is situated at the north of the Kýrsehir Massif and surrounded by major tectonic features such as Main Paleo-Tethys and Intra Pontide Sutures. Regional gravity and aeromagnetic maps of Turkey (Ates et al. 1999) show strong anomalies in this region. Surface geology, simplified from 1/2.000.000 geological map of Turkey (Bingol, 1989), shows wide spread sedimentary units, granitoids and small outcrops of gabbroic rocks. Measured density and susceptibility of these rocks (Ozturk, 1997) demonstrate typical literature values. However, sizes of outcropping intrusive rocks do not seem to produce the adequate anomaly amplitudes in both of the gravity and aeromagnetic anomaly maps.

Gravity and aeromagnetic anomaly data grided with 2.5 km intervals were provided by the Mineral Research and Exploration of Turkey (MTA) within context of a TUBITAK research project (Project No: YDABCAG-118; Ates et al. 1998). Gravity data were corrected by MTA for latitude using gravity formula of 1967, free air, Bouguer and topographic corrections assuming a density of 2.40 Mg $m^{-3}$. Aeromagnetic data were surveyed at a mean terrain clearance of 600 m above ground with 1-3 km profile intervals. The grided aeromagnetic data were corrected for the International Geomagnetic Reference Field (IGRF) utilising a computer program supplied by Baldwin and Langel (1993). Contoured gravity anomaly map does not present a good correlation with the surface geology and aeromagnetic anomalies of the region suggesting a deep geological structure rather different than that of surface geology. Prominent gravity anomalies were numbered from 1 to 4. Gravity anomaly no: 1 is situated at the westernmost of the region and there is no causative evidence from the surface geology. A large aeromagnetic anomaly can be seen at the western part of the region. However, shape and apex of the aeromagnetic anomaly has no good fit with the gravity anomaly indicating possibilities of different source bodies. Anomaly no: 2 and 3 were investigated by Bilim (1998); Bilim and Ates (1999) who suggested that gravity and magnetic sources are the same causative bodies, but they have remanent magnetization effected by the anticlockwise rotation of Anatolia (Sanver and Ponat, 1981; Rotstein, 1984).

To provide further control on gravity and aeromagnetic anomalies, the region was divided into two sub areas in west and east. Azimuthally-averaged power spectrum method was applied to the regions in the west and east of study area, respectively. For the region in the west, two major source bodies were estimated from the azimuthally-averaged power spectrum. Tops of the deep and shallow source are 5.5 km and 2 km depth from surface. A Low-pass filtered anomaly map produced using the cut-off wavenumber 0.154 K. The aeromagnetic anomalies were also upward continued to 6 km from surface to simulate the low-pass filtered aeromagnetic anomalies. For the region in the east, a major source body with its top being located at 1.78 km from surface was estimated. A low-pass filtered anomaly map produced using the cut-off wavenumber 0.119 K. The aeromagnetic anomalies also upward continued to 8 km to simulate the low-pass filtered anomalies. Gravity anomalies of the Keskin-Yozgat region were also upward continued to 6 km considering the upward continuation hights of the aeromagnetic anomalies.

## Results

Upward continued aeromagnetic and gravity anomalies suggest that the causative bodies are deep seated. Deep seated magnetic and gravity bodies have no correlation in between implying different source bodies. No immediate correlation can be seen in between the processed anomaly maps and the surface geology suggesting a deep geology not reflected by the surface features.

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