

FINDING GEOPHYSICAL EVIDENCE TO IDENTIFY LITHOSPHERIC BOUNDARIES OF SRI LANKA

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Data on the subsurface geography is critical as it partners varieties in the density and rock types. Gravimetric technology describes the best geological features related to natural hazards, natural resources and tectonic events in the upper Earth's crust to a depth of about 20 km. Compared to most geophysical techniques, gravimetric data acquisition, processing and interpretation are simple and inexpensive. A particularly interesting aspect of gravimetric technology is that the applied instrumentation and the methods of interpretation are largely independent of the scale of examination, so that this technique can be used in various applications. Bouguer anomaly is commonly used by applied geophysicists. The Bouguer anomaly reflects lateral variations in the interior of the Earth. The knowledge of Bouguer anomaly can therefore be used to determine the size and shape of the geological feature that causes it. However, there is no unique model of causative agent for heterogeneity. This is because gravity modelling has an inherent uncertainty. However, knowing the geology of the region and other relevant information can reduce this uncertainty to a reasonable level. The major lithotectonic units of Sri Lanka's Precambrian are Wannai Complex (WC), Highland Complex (HC) and Vijayan Complex (VC). In addition, several other minor units can be identified. All of these lithotectonic units formed by a variety of rock types and show different densities with respect to them. But the boundary between these units is not properly identified. This research focuses to study about the boundary using gravity data. There is a significant Bouguer anomaly variation on either side of the boundary between the complexes. It indicates that there is a gravity variation, otherwise density variation, in the area while delivering an idea of the nature of the complexes. When comparing gravity survey data and modelled data, Gravity survey data can therefore reveal more accurate information.

Keywords: *Geology, Lithospheric boundaries, Lithotectonic units, Gravity, Bouguer anomaly*