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Gravity Interpretation of the Cameroon Mountain (West Central Africa) Based on the New and Existing Data

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ABSTRACT

A new gravity survey of the Mount Cameroon area has enabled the definition of four major gravimetric domains, which coincide with the recognized structural units. In order to determine the nature of superficial and deep structures in this mountainous zone, new gravity data have been processed. These new gravity data was integrated to existing gravity data to propose the new complete Bouguer anomaly map of the region, and then to show major characteristics of the Bouguer gravity of this area. The interpretation of gravity patterns (bouguer maps) in terms of geological data, shows that the Mount Cameroon zone belongs to a wide positive anomaly; these anomalies display complex gravity domains, which seem to be similar to that due to major structural units in the region and volcanic activity of the mountain. In the mountain active zone in particular (between 2000 and 3800 m of altitude), the new anomalies map shows high gravity anomalies (from 11 to 60 mgal), coupled with low gravity at some stations (in the summit, 4060 m) where gravity anomaly is about −30 mgal. The steep WNW-ESE gravity gradients observed on the gravity maps mark the transition between positive in the south and negative anomalies.

KEYWORDS

Mount Cameroon, CVL, Gravity Anomalies, Bouguer Anomalies

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