

Geological Interpretation of Aeromagnetic Data over Abakaliki Area.

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Abstract:

Data on two aeromagnetic sheets, 303 and 304, of Abakaliki and Bansara area of the Lower Benue Valley of Nigeria have been interpreted geologically. The interpretation has two aspects: (i) Mapping of boundaries between sedimentary and igneous metamorphic rock units, and (ii) Quantitative interpretation of individual anomalies, suggesting possible source rocks and giving their plan locations, depths, sizes and orientations.

Three lithologic boundaries have been mapped aeromagnetically - one for Basement Complex and two for basalts. The Basement Complex boundary thus determined confirms the boundary given on the existing geological map of the area. The two basalt boundaries, however, are substantially different from those shown on the geological map and cover considerably larger areas. It is possible that in the geological past, the two basalt bodies were one and what we see today are the remnants of weathering and denudation of a vastly more extensive basalt formation that came up as extrusive and/or intrusive sills. Five individual magnetic anomalies have been identified and interpreted quantitatively.

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