

Analysis of Time Domain Airborne Electromagnetic (TDEM) Data for Evaluating Gold Mineralization Potential of Ilesha Schist Belt, Southwestern Nigeria

The analysis of filtered and enhanced Time Domain airborne Electromagnetic (TDEM) data acquired over Ilesha Schist Belt in southwestern Nigeria with the desire to characterize the subsurface in terms of rock distribution and structural framework for the purpose of evaluating the gold mineralization potential of the region, indicate high amplitude conductive subsurface (60,000 – 120,000 mS/m) in the western part of the study area which is underlain by amphibolites, amphibolites schist, and schist inter-layered with pegmatites, while medium to low amplitude conductivity signatures were recorded east of the study area where porphyritic granites, granite gneiss, migmatites, granulites and quartzites are the dominant rocks. Structural analysis of the enhanced TDEM data amplified salient subsurface pattern that defined the mineralized regional and local structural features hosting the gold deposits. Major conductive (> 2000 mS/m) linear structure which trends NE - SW and traversed the study area, dividing it into two, coincides with the Ifewara - Iwaraja fault system. Other linear and curve-linear conductive features which also trend NE-SW, NNE - SSW, NNW - SSE established the structural framework that controlled mineralization and hosting of the gold deposits.

Primary author: OSINOWO, Olawale Olakunle (University of Ibadan)

Presenter: OSINOWO, Olawale Olakunle (University of Ibadan)

Track Classification: Theme 1. The Earth as a Complex System