A B S T R A C T

In the neighbourhood of Dharmapuri and Salem districts, rock types of varied diversity occur; including carbonatites, alkali syenites and several varients of Charnockitic masses. Structurally, the region has undergone several episodes of tectonism.

The UNDP mission conducted an airborne magnetic and radiometric survey in 1968 and these results are made available by Tamil Nadu State Geology Division, for processing and interpretation.

In a selected region, several algorithms have been utilised and geophysical data is processed to provide several patterns of anomalies, and these are now interpreted.

A proposal is made for the existence of a rift system that accounts for the E-W trends of anomalies and this has been super-imposed on the pre-existing NE-SW alignment of the country rocks. This rift system is associated with alkaline magmatic activity and emplacement has taken place in the directions, where the environment is favourable. The software for handling of airborne geophysical sensor data is developed as a viable package.

It is suggested that further studies on all the available data be taken up, in order to integrate the geologic facts with that of geophysical understanding of the subsurface configuration of this region, thus assisting in developing a model for crustal evolution.