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THE UTILITY OF DEM DATA AS COMPARED TO LANDSAT TM AND OTHER CONVENTIONAL DATA SOURCES IN LINEAMENT ANALYSIS

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ABSTRACT

Considerable scientific literature has been published in the last ten years dealing with the utility of remote sensing and topographic map interpretation in lineament analysis. The value of this analysis in petroleum and minerals exploration, as well as environmental and engineering fields, goes unquestioned.

In recent years digital processing has added a new and powerful dimension to the traditional methods of manual interpretation of aerial photographs and topographic maps.

To date little has been published critically analyzing the relative utility of commercially available, high quality digital data (i.e., digital elevation model data and thematic mapper data) with that of conventional aerial photo and map data.

The purpose of this paper is to discuss/describe research conducted in the Melber area of Western Kentucky. Study area boundaries are delimited by the 7½ minute Melber quadrangle. Lineaments were mapped and quantitatively described and compared from four different media -- (1) standard ASCS black and white aerial photography, (2) a 1:24,000 USGS topographic map, (3) 1:24,000 DEM aspect data, and (4) 30 meter Landsat digital TM data. Examples of each medium will be displayed, and quantitative and qualitative comparisons made.