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Integrated Remote Sensing and GIS in Lineament Mapping for Geothermal Potential Resources – A Case Study in the Ulu Slim, Perak

MOHAMAD ABD MANAP

Technical Services Section, Minerals and Geoscience Department Malaysia

Automatic and manual extraction methods were utilized in this study to delineate lineaments from the digital terrain model (DTM) and satellite images covering the study area of Ulu Slim, Perak. Enhanced topographic illumination under varied light directions enables interpretation of lineaments from DTMs effectively. For the automatic lineament extraction, eight shaded relief images were generated using the DTM and subsequently compressed into two resultant images with multi-directional light. The automatic lineament extraction process was carried out with LINE module of PCI Geomatica V9.1 based on automatic detection algorithms. Several image enhancement techniques such as filtering and colour composites were respectively employed in manual extraction of lineaments from Inferometric Synthetic Aperture Radar (IFSAR) image of the study area. The comparison of the automatic and manual lineament extraction with the published fault maps of the area in terms of total length, number of lineaments and directions.

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