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## Lineament Mapping Using Shaded Relief Images Derived from Digital Elevation Model

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### Abstract

Lineament analysis of the area around Salbardi fault and adjoining region of Betul District, Madhya Pradesh and Amravati District of Maharashtra was carried out using shaded relief *i.e.* images derived from digital elevation model (DEM). Arc GIS software (version 10.3) has been used for extracting eight hill-shaded image of Sun angles  $0^{\circ}$ ,  $45^{\circ}$ ,  $90^{\circ}$ ,  $135^{\circ}$  and  $180^{\circ}$ ,  $225^{\circ}$ ,  $270^{\circ}$ ,  $315^{\circ}$ . Shaded images of sun angles were combined as one hill-shaded image. Major lineament trends from earlier study are ENE-WSW and NNE-SSW, while combined lineament image of multi-directional Sun angle ( $180^{\circ}$ ,  $225^{\circ}$ ,  $270^{\circ}$ ,  $315^{\circ}$ ) and multi-directional Sun angle ( $0^{\circ}$ ,  $45^{\circ}$ ,  $90^{\circ}$ ,  $135^{\circ}$ ) are NE-SW and NW-SE. The extracted lineaments were statistically analysed to determine lengths and frequency in order to generate rose diagram and lineament map.

*Keywords:* Lineaments, Shaded relief images, SRTM, DEMs, Salbardi fault, Betul District, Madhya Pradesh, Amravati District Maharashtra.