Abstract

Earth consists of hard rock layers where water is restricted to secondary permeability, and thus to fractures and the weather zones. Structural geology studies, geologic lineaments and their pattern information are essential for better planning and execution of projects to avoid any natural hazards. Satellite images, aerial photographs and digital elevation models will give lineament information. Recent advances in digital image processing allow such lineament extraction to be accomplished in semi-automatic to fully automatic approaches. The accuracy of extracting lineaments depends strongly on the spatial resolution of the imagery, higher resolution imagery result in a higher quality of lineament map. In this paper, an attempt has been made for Mapping of lineaments and knowledge base preparation using geomatics techniques for part of the Godavari and Tapi Basins, India. A methodology for lineament extraction and the design of a knowledge-based lineament identification system has been proposed for geological aspects of any developmental activity. This methodology might potentially be adopted for the identification of several features of geological or anthropogenic origin. The study results of lineaments and the rose diagrams of the extracted lineaments can be applied to structural geology studies and their applications such as ore- forming systems,
mineral exploration, petroleum, nuclear energy facility sittings and water resource investigations, groundwater studies and also for finding suitable sites for dams and reservoirs.

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Index Terms

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