Scale factor and digital elevation analysis for hydrological studies

ABSTRACT

The digital elevation model (DEM) is usually used to express a topographic surface in three dimensions and to imitate essential natural geography. The DEM is a model of the elevation surface, which is subject to errors. The Gurun area in Kedah, Malaysia was chosen for study, and the focus was on terrain analysis and the impacts of DEM resolution on topographic attributes related to hydrological studies. Five DEM resolutions were derived and the impact of different resolutions on the topographical parameters related to hydrological studies was compared. The result demonstrated that a fine DEM resolution revealed more detailed topographic values compared to the coarse DEM.

Keyword: Elevation, Errors, Geography, Hydrologic Models, Hydrology, Terrain Analysis, Topographic effects