

## **GEOGRAPHICAL INFORMATION SYSTEM BASED MORPHOMETRIC ANALYSIS OF KRISHNA RIVER BASIN,INDIA**

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### **Abstract**

In this paper, an attempt has been made to study and characterize the drainage morphometry of Krishna River Basin to evaluate the hydro-geological characters where the quantitative outcomes act as one of the constructive input for the water resource management and planing. Remote sensing data is significant for the extraction of river basin and its stream networks through Shuttle Radar Topography Mission (SRTM) DEM. Geographical Information System (GIS) is used in evaluation of Linear, Areal and Relief aspects of the river basin. The drainage area of Krishna River Basin is 2, 58,791 km<sup>2</sup> and shows a dendritic drainage pattern. The stream network of the basin is mainly controlled by slope and geological conditions of the area. The study area is designated as eighth order basin with a drainage density of 0.32km/km<sup>2</sup>. The increase in stream length ratio from lower to higher order shows that the drainage basin has reached a mature geomorphic stage. The study reveals that the basin is elongated in shape. Low order streams are mostly dominating the basin and the calculated mean bifurcation ratio of the entire basin is 1.84 indicating that the river is not much influenced by geological structures. The results observed from this work would be very useful in drainage basin development and management of water resource.

*Keywords:* Morphometric analysis, Krishna River Basin, Drainage density, SRTM (DEM), GIS