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Design flood estimation for ungauged or poorly gauged catchments by using GIUH model with the aid of remote sensing and GIS.

Floods are spatially and temporarily distributed problems so it needs to be predicted before time. It is very convenient to predict the flood in gauged basin but the problem arises in ungauged basin where rain fall data availability is scarce. The Geomorphic Instantaneous Unit Hydrograph (GIUH) is developed to predict the flood in ungauged basin. GIUH can be used to find out the unit Hydrograph from the area where the scarcity or no rainfall data is available. In this study Nash model is used and the Nash parameters found through the Geomorphologic Interpolation of the study area. This study is carried out in that catchment where the observed unit hydrograph is available so that results can be calibrated with observed one. For River kurang the DEM of area is interpolated through specially design tools ARC HYDRO in GIS environment. From arc GIS the calculation of maps of river kurang such as streams map, stream order map, area covered by each stream map, flow map and the length maps is made. By using these maps catchment characteristics are interpolated such as stream density of the river kurang basin which is about 0.5315, bifurcation ratios (Rb) is 4.2142, length ratios (Rl) is 2.94 and the area ratios (Ra) is 6.1885. After the careful analysis of the different stream characteristics the Nash Model's parameters n and K are found. After that Nash Model is developed to calculate the unit ordinates for flood. The calculated results are very close to observed one.