

Hydrological parameter retrieval and validation from Cartosat-I stereo data

Ritesh Agrawal, Anjum Mahtab, P. Jayaprasad, Nadeem Ahmad, S.K. Pathan, Ajai, #D.K. Singh and #A.K Singh
Forestry, Landuse Planning and Photogrammetry Group
Space Applications Centre, Indian Space Research Organisation, Ahmedabad-380 015
#Water Technology Centre,
Indian Agricultural Research Institute, New Delhi 110 012.
ritesh_agrawal@sac.isro.gov.in

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Abstract: Hydrological parameters have vital role in civil engineering, infrastructure planning and natural resource management. During last one and half-decade vast experience has been gained in techniques of processing stereo data acquired from space and their applications in areas such as cartographic and topographic mapping. This paper deals with the extraction and validation of hydrological parameters such as DEM, drainage, slope and aspect from CARTOSAT-1 stereo data. In this paper two sub-watersheds, one in Chamoli district, Uttarakhand and other in Shimla district, Himachal Pradesh were selected. A detailed morphometric analysis of the derived drainage network from various sources and using various algorithms has been carried out. The parameters like stream order, stream length, bifurcation ratio, length ratio etc., have been used for comparison purpose.

Keywords: Cartosat-1, DEM, Orthoimage, Morphometric analysis