



## **SRTM and ASTER DEM characteristics of two areas from Himalayan region**

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### **Abstract**

*Digital Elevation Model (DEM) is a storehouse of immense information revealing terrain characteristics. A DEM becomes much more imperative when any study is being done in a highly rugged terrain e.g. Himalayas, Alps etc. The advent of remote sensing technology has added a new dimension to generate DEMs with reasonable accuracy and at higher spatial resolutions. Remote Sensing based different types of global DEMs are now available at different spatial resolutions e.g. of Shuttle Radar Topography Mission (SRTM) DEM (at 1000m and 90m) and Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model (GDEM at 30m) covering almost entire globe. In the present study, a statistical comparison has been made between SRTM-DEM (90m) and ASTER-GDEM (30m) of the Mt. Everest and Kathmandu areas which represents highly rugged and relatively less rugged terrains respectively. Topographic maps of these two study areas were also used to compare spots height with corresponding values in both SRTM-DEM and ASTER-GDEM. The statistical comparison between SRTM-DEM and ASTER-GDEM shows that the mean and standard deviation of SRTM-DEM is more close to the mean and standard deviation of spots height of topographic map of Kathmandu area. In case of Everest area, mean and standard deviation values of elevation derived from SRTM-DEM & ASTER-GDEM are very close but have difference with spot heights of topographic map. These comparisons of two different DEMs with spot height values show that ASTER-GDEM is relatively better for highly rugged terrain (i.e. Mt. Everest area), whereas SRTM-DEM have been found relatively more appropriate for less rugged terrain (i.e. Kathmandu area).*

*Keywords: Digital Elevation Model (DEM), SRTM-DEM, ASTER-GDEM*