

Glacier variation since 1960s in Lunana region, Bhutan Himalaya, using declassified satellite imagery (Corona, Hexagon)

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Corona and Hexagon satellite imagery declassified in 1995 are stereo imagery theoretically enables photogrammetry. And it has been used only for qualitative topographic classification. However, complicated distortion of the imagery hamper digital elevation model (DEM) by photogrammetry softwares. Research group of Europa and U.S. have developed method for correcting the complicated distortion of Corona and Hexagon and generated DEM recently.

In this study, we used the correction method to generate DEMs in 1960s in Lunana region, Bhutan Himalaya for evaluating glacier surface elevation change for long time period. We also use carrier-phased differential GPS data for calibrating and validating generated DEMs.

Keywords: Glacier, Himalaya, DEM, Declassified satellite, Photogrammetry