False Topographic Perception Phenomena and it’s correction

Mohammed Zia, Indian Institute of Technology, Roorkee, India

SUMMARY
None
Abstract

The images of a rugged terrain taken from Sun-synchronous satellite always suffer from false topographic perception in which ridges appear valleys and vice versa, for example images of Himalayas, Alps etc. This illusion generally occurs when the position of illumination is south east with respect to the observer’s position. This phenomenon can be easily observed on the earth but do not have any information regarding moon. There are many factors which include Sun azimuth, topographic diversity, observer’s position with respect to illumination etc. which are dependently or independently responsible for this. As satellites like Landset, IRS etc. also observe this phenomenon, their position may also be one of the factor. Correction can be done by either rotating the image by 180 degree or by inverting the colour. If any how we are able to fix Sun azimuth and source of illumination, we cannot fix observer’s position and therefore threat of this phenomenon always remains. The presentation would be on the images of moon and earth. The main focus would be to show whether this happens on moon or not. One more method is there in which if we simply flip the image along the width by 180 degree, we will get the rectified image.