

Albedo estimation using near infrared photography at Glaciar Norte of Citlaltepetl Volcano (Mexico).

Guillermo Ontiveros and Hugo Delgado-Granados

Departamento de Vulcanología, Instituto de Geofísica, Universidad Nacional autónoma de México. Ciudad Universitaria, México, D.F. 04510, México. (dremo@geofisica.unam.mx, hugo@geofisica.unam.mx)

In this work we show preliminary results of the application of the methodology proposed by Corripio (2004) for albedo estimation of a glacial surface using oblique photography. This analysis was performed for the Glaciar Norte of Citlaltepetl volcano (Mexico), using images obtained with a modified digital camera for capturing the portion of the near infrared spectrum starting at 950 nm and a digital elevation model with a grid of 2 m.

The main goal was to obtain a picture of the spatial distribution of albedo on the glacier, in order to find out if there was any morphological evidence of the influence of the glacier energy balance.

Some of the obtained results show a certain spatial distribution with comparatively higher albedo values at the lower parts of the glacier as compared with higher parts. The higher values may correspond to different metamorphism of snow/ice at different heights due to the effects of lower slope.

Corripio, J. G. (2004). Snow surface albedo estimation using terrestrial photography. International journal of remote sensing, 25(24), 5705-5729.