سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها
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عنوان مقاله:

Rockfall Detection Using Differential Interference Synthetic Radar Technique from Sentinel-1 Satellite Imagery (Case (study: Haraz road

محل انتشار:

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خلاصه مقاله:

Massive material movements are natural geomorphic processes. This process refers to separation anddownward transportation of soil and rock materials under the influence of gravity and causes the transfer of alarge amount of material, such as pebbles. In Iran, the given climate, geology and topography, massivemovements, debris, conditions results in low altitude areas, significant casualties, financial andenvironmental damages. Modeling physical processes of rockfall calls for examining the fracture of rockyelements, dimensional fall or jump, crushing, rotation, or slipping and the final subsidence, regardless of thevolume constraints of rockfall which are defined by their high energy and mobility. Dynamic processes ofrockfalls are overshadowed by spatial and temporal distribution properties, including the disruptionconditions, geometric and mechanical properties of the rock blocks and rocky slopes. One of the mostsuitable methods for identification of rockfall phenomenon is using radar interferometry (D-INSAR)technique. The study examined Haraz road with twelve Sentinel 1 sensor images from March to May 2016.Then, using an interferometry technique of radar with artificial aperture, the rockfall rate of SAR data relatedto Sentinel 1 sensor was measured, obtained in high and low pass modes. In addition, three rockfallsregistered on March 20, 2015, March 31, 2015, and May 10, 2015 were examined in this study. The resultsshowed that the rockfall times in all three pilot maps of displacement have significant changes compared tothe unchanged times in the images. Using radar satellites and .differential interferometry techniques, one candetect the amount of rockfall and its location

کلمات کلیدی:

InSAR, Rockfall, Hezar Road, Sentinel 1, Ascending, Descending

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