

## Tracking slow-moving landslides with InSAR in Hindukush

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The slow-moving landslides can lead to catastrophic failures. Monitoring, assessing, and mapping of such landslides in the rugged mountainous terrain of Hindukush is challenging, costly and time-consuming. Recently, satellite-based synthetic aperture radar interferometry (InSAR) has been used to estimate millimeter-scale detection of ground surface deformation which can provide key information for the detection of landslide-susceptible areas. We have used the sentinel-1 data in two sets (Ascending and Descending) in time series to assess slow-moving landslides in the Chitral area of the Hindukush. Our study has led to the discovery of several slow-moving landslides in the region with an average velocity of 25 - 80 mm/yr, reflecting a worrying situation for Karimabad, Reshun and Breshgram villages. The results have also been compared with possible causative factors such as geology, seismicity, precipitation, temperature, which reveals that the area is experiencing a varied deformation due to the combination of several causative factors acting together, predominantly, topography/steep slopes, freezing and thawing of snow and seismic events.

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