UNIVERSITÄT BERN

Institute of Geological Sciences Kolloquium Seminar

Monday, 27th April 2026

at 16:15 Studer Auditorium, 2 OG

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On the application of InSAR in civil-, geo-engineering and natural hazard projects opportunities, obstacles and recommendations

Ground deformations caused by natural hazards or construction activities can pose risks to people, infrastructure, and the economy. To assess these risks, it's essential to monitor the extent, magnitude, direction, and change over time of these deformations. Traditional methods involve in-situ tests and terrestrial monitoring, but over the last 40 years, a new technique, Interferometric Synthetic Aperture Radar (InSAR), has emerged. This satellite-based radar method has proven effective in detecting surface deformations, particularly relevant for civil-, geo-engineering,
and natural hazard projects.
This presentation will first explain the basics of InSAR. Then, real case studies of InSAR applications in geo-engineering projects will be presented.
The aim of this presentation is to provide geologists with an understanding of InSAR's advantages and limitations so that they can use it effectively in future projects and research.