

11–15 SEPTEMBER 2022 Warsaw, Poland Volunteering for the future – Geospatial excellence for a better living

Structures Using Web-Based Application of Terrestrial LIDAR - Chances and Risks from an Engineering Geodetic Point of View

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DVW e.V. - Working Group "Engineering Geodesy")









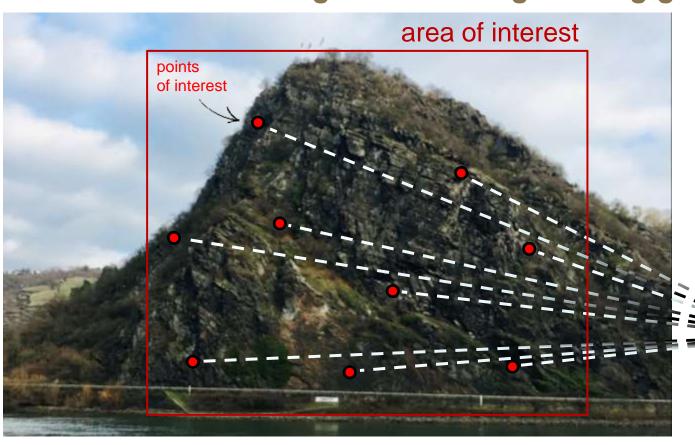




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#### Introduction - Paradigm shift in engineering geodesy



- Discrete points
- Preliminary information is necessary
- Time-consuming and costly installation
- Movements may remain undetected

Source: https://de.cleanpng.com/png-d60gws/









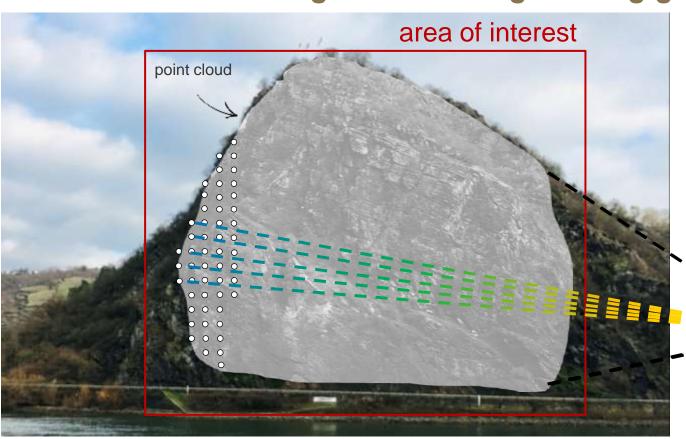




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#### Introduction - Paradigm shift in engineering geodesy



- Increasing use of LiDAR sensors
- No spatial discretization
- Quasi areal meas.
- Reflector less meas. technology

Source: https://kb.unavco.org/kb/article/unavco-summary-of-riegl-vz-2000-820.html













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# PLS Permanent Laser Scanning



CoastScan: TU Delft



SCHISM: University of Innsbruck



HYYTIÄLÄ: FGI









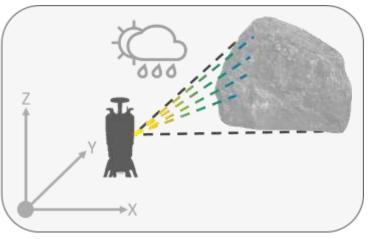




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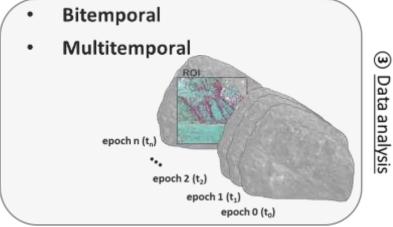
Data acquisition







Power supply Data management Secure Internet connection Data formats and Data storage



Data analysis













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The permanent three-dimensional data acquisition of geotechnical structures using web-based application of terrestrial LIDAR - Chances and risks from an engineering geodetic point of view

Daniel SCHRÖDER, Germany

#### 1. INTRODUCTION

Analysis of mass movements and of geomorphic p prevention of natural hazards and protection of infra are induced by various environmental processes as linked to climate change, therefore posing an in frequency (Huggel et al., 2012). In the context of clurban settlement, e.g. in Alpine regions, the de temporally detailed, datasets as well as the integrat system is increasing.

Basic procedures for measuring geometric changes being a special challenge of laser scanning. A monit to the observed object to significantly detect geomethat spatially discretization of the object must be do Additionally the temporal discretization must be comay occur during a measurement epoch and no mointerval between two measurements. Both in the campaign measurements are preferred for certa disadvantage if I do not know exactly which specif Monitoring high-mountain areas is difficult and opreferable to achieve adequate spatial and tempotechnical advancement of terrestrial laser scanning















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#### Thank you!

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