

Photogrammetric change analysis of rock structures in the alpine environment

Background and state-of-the-art

- Gravitational mass movements pose a significant hazard in alpine regions and thus require precise monitoring
- Photogrammetric methods hold the potential to identify and measure these deformations over a wide area with a high level of accuracy

Research questions

- How can statistically significant small-scale changes (a few cm per year) be detected using photogrammetric methods?
- Is it feasible to automatically detect and characterize deformations patterns, and can the spatial resolution be enhanced?
- Can coherently moving regions be segmented, and how can this motion be described?

Research methods

- Photogrammetric 3D reconstruction
- Image-based feature tracking
- Semantic segmentation of natural surfaces/objects

