

# MONITORING MOUNTAIN ROCKSLIDES USING MULTI-TEMPORAL POINT CLOUDS

## UAS in the Mountains



Alpine areas challenge the ingeniousness of humans in designing and performing airborne surveys. There is little space for navigation and poor reception of GNSS signals, while steep slopes cause large differences of scale in the imagery obtained. Winds may be strong and unpredictable and temperatures are often below zero, plus rapid fluctuations in altitude can complicate matters further. The authors show that UAS technology based on a multicopter enables a rockslide to be monitored at an altitude of 2,900m.

Mountains are highly dynamic areas where landslides, rockfalls, debris flows and avalanches can be frequent occurrences. If such natural hazards threaten human lives or infrastructure, risk assessments and the implementation of safety measures – such as developing early warning systems – are essential. The underlying studies require up-to-

date, detailed and accurate data on topography in the form of a digital surface model (DSM) and orthoimagery. These can be captured by UAS less expensively compared to conventional airborne surveys. Furthermore, unlike traditional land surveying, UAS enables data capture without the need to enter dangerous or restricted areas on foot.

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