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CrowdSlide – a mobile web application for building a database of gravitational mass movements using volunteer field reports

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Gravitational mass movements like rockfalls or landslides pose a sincere threat to human population and infrastructure in particular in densely populated alpine regions such as the European Alps. Comprehensive identification of such events is challenging since they may occur spontaneously and at previously unknown places in remote areas. Small mass movements in remote areas may even completely evade our attention. Remote sensing surveys may also miss small-scale events in unfavorable conditions such as e.g. high-altitude rocky landscapes. However, comprehensive knowledge and reliable event data are of particular importance for the assessment of hazards imposed by rapid gravitational mass movements.

Consequently it is highly desired to expand our event databases and be open to new ways of data collection. We suggest that hikers and other enthusiasts can contribute to building a scientific database of gravitational mass movements by reporting events they witness or discover in the field. We developed a prototype of a mobile web application that allows anyone to report mass movements and to attach photographs and crucial event information such as location and time. Additional features may be implemented in the future, such as retrieving event information from social media posts. Future versions may also teach enthusiasts to characterize mass movements (e.g. type, volume) so they can contribute valuable information themselves. Ultimately, we are envisioning to form a citizen science community of interested enthusiasts that jointly create a valuable scientific database.

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