DETECTION OF SHALLOW LANDSLIDES, TRIGGERED BY EXCEPTIONAL METEOROLOGICAL EVENTS, BY MEANS OF HIGH RESOLUTION MULTISPECTRAL REMOTE SENSING: EXAMPLES BASED ON OPEN DATA FROM WESTERN AUSTRIA.

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In recent years a series of extreme precipitation events triggered mass movements in many parts of Austria which caused major economic loss, infrastructure´s damage and threat to the life of the affected local population. In such cases a rapid mapping and localisation of the hit areas could be fundamental in order to offer a comprehensive overview of the hazard extension to the disaster management authorities.

However often in case of a catastrophe the adverse meteorological conditions and the incomplete visualisation of the whole hazard area offered by the aerial photos scenes, impose severe limitations to the complete identification of the landslides.

On the other hand, the use of satellite based semi-automatic mass movement detection methods could improve the completeness of landslide inventory which lead to a better understanding of the on-going processes. Thanks to a series of free available data such as TERRA-ASTER and SENTINEL-2, with high temporal resolution, the detection of shallow landslides within a week of a catastrophic event could soon become a reality. Furthermore, the great advantage of hosting in house the GEORIOS archive, which can be used as a validation accuracy tool, offers the opportunity to perform change detection landslide mapping for retrospective studies.

The application of high resolution multispectral remote sensing, by mean of pixel-based classification algorithms, to two well-known catastrophic events such as Bregenzerwald (August 2005) and Sellrain (June 2015) will be presented. The main conclusions will be drawn on the use of event-dependent process data as plausible entities in the context of more realistic landslide susceptibility modelling.