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Managing landslide monitoring networks with near real time Geo-browsers

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Monitoring applications are an extremely important task for the analysis and understanding geo-hazards, as well as for promptly recognizing and eventually warn about their potential paroxysmal evolution. Nowadays, a wide range of monitoring strategies and instruments can be applied in operative monitoring scenarios, and the technological evolution of last decades has considerably increased the possibility of managing complex multi-parametric networks. The effectiveness of a monitoring network in geo-hazard scenarios is usually directly associated to the type of instruments considered, the suitability and completeness of the monitoring network, and the frequency of acquisition of measurements (revisit time). However, especially during emergency scenarios, another fundamental parameter to consider is the possibility to achieve an easy and clear access to all the available information.
The Geohazard Monitoring Group of CNR IRPI exploited the Google Earth® plugin to organize and present the information obtained d from a monitoring network installed on a landslide scenario in a straightforward fashion. The system restitutes all the available information on the monitored area as different layers, which are superimposed to the base map and digital elevation models provided by Google. The layers include data as raster (ortophotos, shaded relieves, etc.) and point information (position of instruments, monitored targets, etc.), as well as the most recent results obtained from the monitoring network in near real time. The resulting geo-browser is hosted on a dedicated website, where authorized end-users can select between several thematic visualizations. The system has been developed and tested in the Mont de La Saxe landslide scenario, a large instable slope located in the northwestern Italian. This new data exploitation modality has demonstrated to be an efficient tool to support the decision makers in particular during emergency phases.