Prediction of shallow rapid slope movements within the PREVIEW Project

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The present work is a contribution to PREVIEW, the European Commission FP6 Integrated Project aimed at developing, at a European level, new geo-information services for atmospheric, geophysical and man made risks. The landslides platform of the geophysical cluster focuses on providing tools for the prevention and forecasting of landslides; this work describes the service devoted to the prediction of shallow rapid slope movements (SRSM). The SRSM service is an innovative contribution to civil protection procedures. The overall objective is to define an integrated procedure for forecasting and warning against distributed shallow landsliding capable of responding to the needs expressed by the end-users involved in the project. The service will blend advanced techniques in different fields: meteorological, hydrologic and geologic modelling, remote sensing and GIS techniques. It will also provide maps for the implementation of the hydro-geological models on the study area based on the combined use of satellite products, geologic modelling and a probabilistic downscaled short term forecast over large geographical areas and probabilistic soil slip activation maps based on hydro-geological modelling outcomes. Moreover it will provide a nowcast of the system evolution in the very short term (less than 6 hours) on smaller targeted geographical areas by means of meteorological radar outputs and innovative nowcasting techniques. Study area: Ceriana basin in the Liguria region.