

## *Preface*

This special issue contains some of the contributions presented at the open session entitled “Monitoring, modeling and mapping of mass movements” that was held during the 27th General Assembly of the European Geophysical Society in Nice, France from 22–26 April 2002. The symposium offered a chance to scientists working in the three fields of monitoring, modeling and mapping of mass movements to present their recent advancements, discuss each other needs and set forth future research requirements. Some of the contributions presented at the meeting have been here collected to provide a publication of the advancements obtained by the authors in their respective fields of research.

Each of the three research fields mentioned in the title of the open session, that is monitoring, modelling and mapping, needs improvement and depends, to achieve them, on improvements in the other two fields.

Performances of the existing monitoring devices and the methodology of their implementation need to be improved. The types of these devices increased the capacity to monitor various type of mass movements. This allow also carrying out measurements in different field conditions.

Improving measurement and documentation procedures would provide better identification of important processes and ideas for new and more accurate models. This in turn would allow to better focus on what to measure, observe and map in the field.

Measurement procedures, both for real-time and post-event data collection, also need improvement, standardiza-

tion and validation to provide uniform sets of data that can be used for model calibration, hazard mapping purposes and correct choice of designing criteria for mitigating measures. This systematic collection of field data, gathered in a common data base, would provide a common testing ground for scientists all over the world. The identification of the best mitigation solutions according to different types of situations would be facilitated by a sharing of data. A program of systematic observations on mitigated sites could then be set up and help identifying possible shortcomings testing the efficiency of the interventions. Guidelines for the mitigation of risk will derive and expert guidance could be offered to State agencies, Insurance Companies and policy-makers. This increase of knowledge will insure a sustainable development in many area.

Most of the papers contained in this issue deal with numerical modeling of debris flow and landslides (Arattano and Franzi; Hergarten and Neugabauer; Iovine et al.; Crosta et al.; Guzzetti et al.). Landslide monitoring is instead the main topic of the papers by Kolesnikov and Seleznev and Cencetti and Conversini. Although no paper exclusively dealing with the mapping of mass movements is included in this issue, mapping is relevant in some of published papers as an important outcome of mathematical modeling for hazard assessment, while historical maps of mass movements are used as a basic tool for the comparison of model results.

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