

The Fourth Italian Workshop on Landslides

Introduction to the special issue containing the papers presented at  
the 4<sup>th</sup> IWL (November, 23-26, 2015)



Luciano Picarelli<sup>a</sup>, Roberto Greco<sup>a,\*</sup>, Gianfranco Urciuoli<sup>b</sup>

<sup>a</sup>Seconda Università degli Studi di Napoli, Dipartimento di Ingegneria Civile, Design, Edilizia e Ambiente, via Roma 9, 81031 Aversa (CE), Italy

<sup>b</sup>Università degli Studi di Napoli "Federico II", Dipartimento di Ingegneria Civile, Edile e Ambientale, via Claudio 21, 80125 Napoli, Italy

---

**Abstract**

Established in 2009, the Italian Workshop on Landslides is becoming a traditional meeting for scientists from different countries who want to discuss the most recent findings about landslide research. Every time, the workshop involves experts from different disciplines, such as geotechnical engineering, hydrology, geology, structural engineering, hydraulics, and is organized in such a way to leave ample space for open and lively discussions. In this respect, the Fourth Workshop was not an exception. Indeed, to favor focused discussions and interactions, it was structured in three topical sessions: Interaction between Slope Movements and Man-Made Works; Precipitation-Induced Landslides: Long-Term Predisposing Factors and Short-Term Triggers; Landslide Research: Modern Topics and Procedures (this session was reserved to young scientists). The great number of participants, giving presentations of high scientific level, covered three entire days. This book of proceedings collects a great number of the presented results, providing an overview of the various aspects of landslide research that were discussed in the workshop.

© 2016 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of IWL 2015

*Keywords:* Landslide; slope movements; precipitation-induced landslides.

---

**1. Introduction**

After the first edition held in 2009, the Italian Workshop on Landslides (IWL), an international workshop on landslide research held every two years in Napoli (Italy), is becoming a traditional meeting, that many scientists active in landslide research would not miss. All the editions of IWL were characterized by focused topical sessions, attended by scientists from different disciplines, structured in such a way to allow long and thorough open

---

\* Corresponding author. Tel.: +39 0815010207

E-mail address: [roberto.greco@unina2.it](mailto:roberto.greco@unina2.it)

discussion, so that opinions, viewpoints, concepts, results can be effectively exchanged. As landslide research is commonly recognized long since as a multidisciplinary topic, the sessions deal with specific aspects (such as landslide susceptibility, landslide mechanics, landslide hydrology, landslide propagation, early warning, impacts of landslides against structures, design of mitigation measures and similar), to better address the audience towards their preferred field of expertise. In particular, as rainfall-induced landslides are among the most widespread natural hazards, all the editions of IWL included a session on landslide hydrology. Modeling the initiation of precipitation-induced landslides is indeed one of the most intriguing topics in landslide research, involving experts from different disciplines, who develop their models according to a number of different approaches<sup>1,2,3,4,5,6,7</sup> to achieve reliable predictions of landslide triggering and propagation, which are at the basis of evaluation and management of landslide risk.

Along the same line, the Fourth Italian Workshop on Landslides (<http://www.iwl.unina2.it/>), held in Napoli from 23 to 26 November 2015, was structured in four topical sessions. The first one was devoted to the Interaction between Slope Movements and Man-Made Works. As this is an extremely broad topic, depending on either the characteristics of the landslide or on those of the involved structures, it was in turn subdivided into three sub-sessions: Propagation and impacts of flow-like landslides; Vulnerability of buildings to landslides; Interaction between landslides and large infrastructures.

The second session was titled Precipitation-Induced Landslides: Long-Term Predisposing Factors and Short-Term Triggers. As already pointed out, the study of the interaction between hydrological processes and landslide triggering at hillslope scale is the subject of a large body of research. Also in this case, the topic is very wide, as it includes field and laboratory experiments for understanding the hydrological behavior of slopes; the identification of the hydrological processes which lead to slope failure; the definition of user-friendly simplified tools for assessing the probability of landslide initiation, to be implemented in early warning systems. Hence, different aspects of the topic were addressed in four sub-sessions: Modeling of rainfall-induced landslides - laboratory experiments; Modeling of rainfall-induced landslides - field experiments; Hydrological processes and landslides; Forecasting rainfall-induced landslides.

The focus of the third session, called Landslide Research: Modern Topics and Procedures, was on the attendance rather than on the addressed topics. In fact, this session was dedicated to the presentation of the results of researches carried out by scientists at the early stage of their career. The presented studies covered all aspects of landslide research, and were grouped in four sub-sessions: Hydrological controls on landslide triggering; Hydraulic and geotechnical analysis of landslide triggering; Impact of climate change on landslides; Remote sensing and morphometric analyses; Landslide hazard, impact and risk.

With its collection of twenty papers on different arguments, this special issue contains a good overview of the contents of the workshop.

## 2. Interaction between Slope Movements and Man-Made Works

The interaction between slope movements and man/made works is a prominent and intriguing problem that has not yet received due attention. In fact, the design of structural works aimed at either the improvement of safety conditions or at the stabilization of active landslides, is often based on rough or inappropriate computational approaches. In addition, the effects of slope movements on structures and infrastructures located in affected areas, thus subjected to the interaction with the moving soil/rock masses, is usually a completely neglected issue<sup>8,9</sup>.

Fast landslides and slow slope movements pose quite different problems.

In the first case, the focus should be on the assessment of the degree of damage caused by landslides: the design of protection work, on one side, and the analysis of the consequences of impacts on buildings, bridges, roadways and so on, on the other side, are the typical questions which deserve a response from experts.

In the second case, the basic problems concern the evaluation of the time duration over which the serviceability of involved man-made works and facilities will be assured, and the assessment of the cost of the relevant maintenance works. In this case, land managers often oscillate between accepting to live, even though precariously, with slow landslides, and building stabilizing works, that are always expensive and often useless, being unable to completely stop the small essentially steady-state movements of the active soil mass<sup>10</sup>.

Download English Version:

<https://daneshyari.com/en/article/4674629>

Download Persian Version:

<https://daneshyari.com/article/4674629>

[Daneshyari.com](https://daneshyari.com)