Special Issue on
'Monitoring, physical and numerical modeling of landslides and debris flows'

In the past two decades substantial advances have been made in the study of geohazards and the development and use of tools for data collection, monitoring and modeling. Especially in the last 5-10 years 2D and 3D analyses of landslides occurring in complex geological and topographical conditions have become possible via a suite of different methods (FEM-ALE, DEM, MPM, SPH). These methods have become increasingly capable of simulating all the temporal stages of a landslide: from the formation of localizations, to the onset of the mass movement, and the dynamic phase of debris flow where a change of phase may occur (from solid like to fluid like material) and when interaction with other fluids, solids or obstacles could become relevant.

The Special issue intends to provide the scientific community a forum to report the current knowledge and recent advances on the ability of numerical methods to realistically model landslides and to what extent they can be trusted as predictive tools.

Validation and verification of the modeling efforts require robust datasets about displacements, velocities, pore pressure or piezometric level histories, just to mention some of the most commonly adopted. As a consequence, the monitoring of landslides assumes a major role in the study of landslides and failures. Monitoring techniques are continuously under development and witnessed a revolution due to the increased availability of satellite imaginary and new or more powerful remote sensing technologies.

Physical and laboratory testing can be also adopted to validate numerical approaches and significant advances occurred in laboratory experimental approaches thanks to the availability of new technology in sensor probes. This resulted in the study of effects of infiltration, seismic action or slope evolution and material flow in time.

Authors of 23 papers presented at the 'International Symposium in Geohazards and geomechancis' held on 10th and 11th September in Warwick have been invited to submit an extended version of their work to this Special Issue. This call for papers is open to all researchers who intend to submit a contribution to this Special Issue with papers related to the topics listed below, being especially welcome:

- recent advances in the numerical modeling of the onset of landslides (e.g. 3D Discrete Element Method analyses, Arbitrary Lagrangian Eulerian method, Material Point Method);

- laboratory experiments (e.g. centrifuge, 1g tests) to investigate the onset of slope failure due to complex conditions (e.g. induced by liquefaction or weathering)

- systems for landslide detection (e.g. early warning systems, remote sensing) and systems for landslide long term monitoring

- recent advances in numerical methods and experimentation to investigate debris flows induced by landslides

- rockfalls

- well documented case studies of landslides, debris flows and rockfalls

Important dates:
November 1, 2015: Online submission for the full papers opens
March 1, 2016: Deadline for full paper submission
1st September 2016: target date for completion of the editorial process (accepted papers start to be published online)
January 1, 2017: Special Issue in print.

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