## Contents

### Part I  Landslide Scenarios Accounting for Climatic, Geomorphological and Geotechnical Context

Introduction by Luciano Picarelli and Vit Vilímek

<table>
<thead>
<tr>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock Glacier Degradation and Instabilities in the European Alps: A Characterisation and Monitoring Experiment in the Turtmanntal, CH</td>
<td>5</td>
</tr>
<tr>
<td>Sarah M. Springman, Yuko Yamamoto, Thomas Buchli, Marian Hertrich, Hansruedi Maurer, Kaspar Merz, Isabelle Gärtner-Roer, and Linda Seward</td>
<td></td>
</tr>
<tr>
<td>Potential Effects of Climate Change on Slope Stability in Unsaturated Pyroclastic Soils</td>
<td>15</td>
</tr>
<tr>
<td>Emilia Damiano and Paola Mercogliano</td>
<td></td>
</tr>
<tr>
<td>Recent Mass Movements in the Tramuntana Range (Majorca, Spain)</td>
<td>27</td>
</tr>
<tr>
<td>Rosa María Mateos, Inmaculada García-Moreno, Gerardo Herrera, and Joaquín Mulas</td>
<td></td>
</tr>
<tr>
<td>Climate Variability and Landslide Occurrence in Apulia (Southern Italy)</td>
<td>37</td>
</tr>
<tr>
<td>Maurizio Polemio and Teresa Lonigro</td>
<td></td>
</tr>
<tr>
<td>Geotechnical and Mineralogical Characterisation of Soils from Landslide Scars and Inferred Sliding Mechanism: Case of Limbe, SW Cameroon</td>
<td>43</td>
</tr>
<tr>
<td>Vivian Bih Che, Philippe Trefois, Matthieu Kervyn, Gerald G.J. Ernst, Eric Van Ranst, Jean-Claude Verbrugge, Christian Schroeder, Patric Jacobs, and Cheo Emmanuel Suh</td>
<td></td>
</tr>
<tr>
<td>Large Reactivated Earth Flows in the Northern Apennines (Italy): An Overview</td>
<td>51</td>
</tr>
<tr>
<td>Giovanni Bertolini and Chiara Fioroni</td>
<td></td>
</tr>
<tr>
<td>The Impact of Climatic Changes on the Behaviour of Active Landslides in Clay</td>
<td>59</td>
</tr>
<tr>
<td>Luca Comegna, Paolo Tommasi, Luciano Picarelli, Edoardo Bucchignani, and Paola Mercogliano</td>
<td></td>
</tr>
<tr>
<td>Research on Chuni Landslide Geological Evolution Process</td>
<td>69</td>
</tr>
<tr>
<td>Junfeng Wu, Yunsheng Wang, and Simeng Dong</td>
<td></td>
</tr>
<tr>
<td>A Geotechnical Explanation for the Transition from Creep to Slides in the Alpine Foreland</td>
<td>75</td>
</tr>
<tr>
<td>Philip Leopold, Erich Draganits, Gerhard Heiss, and Ede Kovacs</td>
<td></td>
</tr>
<tr>
<td>Pore Pressure Fluctuations Within Quasi-Stable Slopes in South-Western Estonia and Their Influence on Slope Stability</td>
<td>79</td>
</tr>
<tr>
<td>Marko Kohv and Tiit Hang</td>
<td></td>
</tr>
<tr>
<td>Triggering Factors of Landslides and Determination of Rainfall Threshold: A Case Study from North East India</td>
<td>87</td>
</tr>
<tr>
<td>Kuntala Bhusan and Dulal C. Goswami</td>
<td></td>
</tr>
</tbody>
</table>
### Part III Wildfires and Slope Instability

Introduction by Jerome De Graff, Susan Cannon, Pieter Van Lierop, and Mario Parise

1. **Limiting the Immediate and Subsequent Hazards Associated with Wildfires**
   Jerome V. DeGraff, Susan H. Cannon, and Mario Parise
   199

   Jess Clark
   211

3. **Rockfall and Debris Flow Hazards After Summer Wildfires in Cerreto Sannita, Benevento, Italy**
   Guido U. Guasti, Alberto Caprinali, and Lucia Majorca
   217

4. **Flexible Debris Flow Barriers in Fire Burned Areas**
   Erik Rorem, Corinna Wendeler, and Andrea Roth
   227

---

### Part IV Landslides and Extreme Weather

Introduction by Hiroshi Fukuoka and Gabriele Scarascia Mugnozza

1. **Recommending Regional Rainfall Threshold Values for Early Warning of Landslides in the Asian Region**
   Udeni P. Nawagamuwa, Rajinder K. Bhasin, Oddvar Kjekstad, and N.M.S.I. Arambepola
   235

2. **Flood and Slope Processes in the Scura Valley (Reatini Mts., Central Apennines, Italy). Meteo-climatic Analysis and Geomorphological Evolution**
   Paolo Maria Guarino, Riccardo Massimiliano Menotti, Guido Motteran, and Roberto Serafini
   243

3. **Snowmelt Modelling for Improving the Forecasts of Rainfall Threshold-Based Landslide Triggering**
   Gianluca Martelloni, Samuele Segoni, Filippo Catani, and Riccardo Fanti
   249

4. **Defining Rainfall Thresholds for Early Warning of Rainfall-Triggered Landslides: The Case of North-East Sicily**
   David Johnny Peres and Antonino Cancelliere
   257

5. **Mechanisms of the Recent Catastrophic Landslides in the Mountainous Range of Rio de Janeiro, Brazil**
   André S. Avelar, Ana L. Coelho Netto, Willy A. Lacerda, Leonardo B. Becker, and Marcos B. Mendonça
   265

6. **A Regional Real Time Landslide Warning System Based on Spatially Variable Rainfall Thresholds**
   Samuele Segoni, Ascanio Rosi, Alessandro Battistini, Guglielmo Rossi, and Filippo Catani
   271

7. **GIS Analysis of Debris Volume Mobilized by Heavy Rainstorm in North-Eastern Sicily**
   Nathalie Morey, Giuseppe Tito Aronica, Gabriele Leone, and Claudio Puglisi
   277

8. **Space-Time Hazard Assessment of Rainfall-Induced Shallow Landslides**
   Lorella Montrasio, Roberto Valentino, Gian Luca Losi, Angela Corina, Lauro Rossi, and Roberto Rudari
   283

9. **Tertiary Creep Reproduction by Back-Pressure-Controlled Test in DPRI-7**
   Atitkagna Dok and Hiroshi Fukuoka
   295
Part V  Session L13: Landslides as Sediment Sources
    Introduction by Giovanni Crosta, Matjaž Mikoš, and Ziaaoddin Shoaei

Landslide-Related Sediment Yield Rate in a Large Apenninic Catchment  . . .  307
Alessandro Simoni, Alessio Ponza, Vincenzo Picotti, and Matteo Berti

Landslide Mobility and Landslide Sediment Transfer in Val di Sole, Eastern
Central Alps ................................................... 315
Francesco Brardinoni, Giovanni B. Crosta, Samuel Cucchiari, Elena Valbuzzi,
and Paolo Frattini

A Quantitative Assessment of the Sedimentology and Geomorphology
of Rock Avalanche Deposits ........................................ 321
Dan H. Shugar, John J. Clague, and Marco Giardino

Part VI  Advances in the Understanding of Cold Region Landslides
    Introduction by Marten Geertsema, Marta Chiarle, and Wei Shan

Landslides in Cold Regions: Making a Science that can be put into Practice . . 329
Stephan Gruber

Large, Topography-Constrained Rockslide Complexes in the Karakoram
Himalaya, Northern Pakistan ................................................ 335
Kenneth Hewitt

Did Radiative Cooling Trigger New Zealand’s 2007 Young River Landslide? . . 347
Mauri McSaveney and Chris Massey

Soil Sliding in Continuous Permafrost Terrain of Siberia: The Case Study
of Soil Respiration and Soil Microbial Activity Dynamics During Ecosystem
Re-establishment .................................................. 355
Oxana Masyagina, Svetlana Evgrafova, Stanislav Prokushkin, and Anatolii Prokushkin

Detecting Potential Climate Signals in Large Slope Failures in Cold Mountain
Regions ............................................................. 361
Christian Huggel, Simon Allen, John J. Clague, Luzia Fischer, Oliver Korup,
and Demian Schneider

Landslides Characteristic of Northwest Lesser Khingan Range China ........ 369
Wei Shan, Hua Jiang, Ying Guo, Zhaoguang Hu, and Chunjiao Wang

Landslides and Moisture-Temperature for Cutting Slope Soil in Freeze-Thaw
Cycles ............................................................... 377
Ying Guo, Wei Shan, Chengcheng Zhang, and Yuying Sun

Temporal Characteristics of Different Cryosphere-Related Slope Movements
in High Mountains ............................................... 383
Vanessa Wirz, Jan Beutel, Bernhard Buchli, Stephan Gruber, and Philippe Limpach

Test of a Procedure to Assess the Stability of Permafrost Rock Walls:
The Case of the Pellaud Basin, Rhémes Valley (Aosta Valley, Italy) ........ 391
M. Curtaz, A.M. Ferrero, G. Forlani, M. Migliazza, R. Roncella, and M. Vagliasindi

Permafrost Degradation and Destabilization of Alpine Rockwalls:
A Very Close Link in the Mont Blanc Massif ................................ 397
Ludovic Ravanel and Philip Deline
The December 2008 Crammont Rock Avalanche, Mont Blanc Massif Area, Italy ................................................................. 403 Philip Deline, Massimo Broccolato, Jeannette Noetzli, Ludovic Ravanel, and Andrea Tamburini

GALLIUS: GeomorphohydrologicAl Model for LandsLide Initiation Under Snowmelting .................................................. 409 Maria Cristina Rulli, Federica Gobattoni, and Monia Santini

DSGSDs Induced by Post-Glacial Decompression in Central Apennine (Italy) . . . 417 Domenico Aringoli, Bernardino Gentili, Marco Materazzi, Gilberto Pambianchi, and Nicola Sciarra

Climatic and Structural Controls to Slope Instabilities in Val Veny (Italy) . . . 425 Marco Giardino, Luigi Perotti, Marco Bacenetti, and Paolo Zamparutti
Landslide Science and Practice
Volume 4: Global Environmental Change
Margottini, C.; Canuti, P.; Sassa, K. (Eds.)
2013, XVII, 431 p. 392 illus., 350 illus. in color.,
Hardcover
ISBN: 978-3-642-31336-3