

May 22nd, Monday morning

8:00 **Registration**

9:00 **Opening Session**

9:15 Antonio Abellán and Michel Jaboyedoff
Advances in rock slope characterization and monitoring using 3D/4D datasets (LiDAR, drones, Structure-from-Motion photogrammetry)

Session 1

9:45 A. Guerin, L. Ravanel, B. Matasci, M. Jaboyedoff, M.-H. Derron, P. Deline
11 years of ground-based lidar monitoring in the West Face of the Drus (Mont-Blanc Massif, France) after the little rock avalanche of June 2005

10:00 V. De Biagi, M. Barbero, M.L. Napoli, D. Peila
Estimation of rockfall block volume frequency law for risk analysis: an example

10:15 D. Toe, F. Bourrier, L. Dorren, M. Conedera, F. Berger
Enhancing the integration of the protective role of forest in rockfall simulations

10:30 **Coffee break**

Session 2

11:00 M. Fleris, A. Preh, B. Kolenprat
Study of rockfalls in a quarry environment physical and numerical experiments

11:15 C. Noël, M. Jaboyedoff, C. Cloutier, M. Mayers, J. Locat
The effect of slope roughness on 3D rockfall simulation results

11:30 Y. Nishikawa, H. Masuya, Y. Moriguchi
Simulation of rockfall trajectory on mountain slope considering roughness of slope surface

11:45 J. Corominas, N. Lantada, J.A. Gili, R. Ruiz-Carulla, G. Matas, O. Mavrouli, M.A. Núñez-Andrés, J. Moya, F. Buill, A. Abellán, C. Puig, A. Prades, J. Martínez-Bofill, Ll. Saló
The Rockrisk project: rockfall risk quantification and prevention

12:00 J. Moya, R. Copons
Monte Carlo simulation of the volume and number of rockfall fragments using talus deposits

12:15 R. Ruiz-Carulla, J. Corominas
Application of a rockfall fractal fragmentation model to three case studies

12:30 G. Matas, N. Lantada, J. Corominas, J.A. Gili, R. Ruiz-Carulla, A. Prades
Rockfall fragmentation analysis: Vilanova de Banat case study

12:45 L. Dorren, F. Berger, F. Bourrier, C. Moos, T. Planzer, D. Toe
Comparison of Monte-Carlo model simulations and recent deposited blocks to determine realistic rockfall runout zones

13:00 **Lunch break**

May 22nd, Monday afternoon

Session 3

- 14:30 A. Caviezel, M. Christen, Y. Bühler, P. Bartelt
Calibration methods for numerical rockfall models based on experimental data
- 14:45 W. Gerber, A. Caviezel
Diversity of the results from drop weight tests
- 15:00 H. Al-Budairi, Z. Gao, A. Steel, T. Davies, S. Wheeler
Condition monitoring system for rockfall catch fences
- 15:15 C. Abancó, C. Raïmat, J. Pérez-Arcas
Wireless monitoring for cliff stabilization at La Clua (Pre-Pyrenees, Spain)
- 15:30 L. Meier, M. Jacquemart, S. Wahlen, B. Blattmann
Real-time rockfall detection with Doppler radars
- 15:45 D. Toe, A. Mentani, F. Bourrier, L. Govoni, G. Gottardi, S. Lambert
A probabilistic approach to integrate the effect of protection systems into rockfall hazard assessment
- 16:00 C. Moos, M. Fehlmann, D. Trappmann, M. Stoffel, L. Dorren
A method for integrating the effects of forests on rockfalls into quantitative risk analysis - A case study in Switzerland
- 16:15 C. Lefeuvre, F. Noël, M.-H. Derron, M. Jaboyedoff, A. Pedrazzini
Multi-technique approach to assess rockfall propagation: a case study from Les Forges, Jura, Switzerland

16:30 **Coffee break**

Session 4

- 17:00 M. Moelk, B. Rieder
The Austrian approach for rock-fall hazard zoning: experiences, problems and possible solutions for the development of a standardized procedure
- 17:15 S. Melzner
Challenges in rock fall hazard zoning in Austria
- 17:30 C. Castiglia, T. Frenez
Rockfall trajectory analysis for quarry planning and operation
- 17:45 D. Hantz, J-P. Rossetti, D. Valette, F. Bourrier
Quantitative rockfall hazard assessment at the Mont Saint-Eynard (French Alps)
- 18:00 R. Sarro, R.M. Mateos, G. Herrera, I. García-Moreno, P. Reichenbach, I.P. Carralero, J. Naranjo, M. Béjar-Pizarro,
O. Monserrat, L. Solari
A methodology for assessing rockfall hazard within the ambit of civil protection: the SAFETY project

18:15 **End of session**

21:00 **Gala dinner**

May 23rd, Tuesday morning

8:00 **Registration**

Invited lectures

9:00 John Duffy
A brief history of rockfall barrier testing

9:30 Axel Volkwein and Werner Gerber
Measuring rockfall dynamics: challenges and opportunities

Session 1

10:00 S. Lambert, B. Kister, B. Loup
Evaluating existing rockfall protection embankments based on the current state of knowledge

10:15 D. WYllie, T. Shevlin, J. Glover, C. Wendeler
Development of design method for rock fall attenuators

10:30 H. Al-Budairi, Z. Gao, A. Steel, S. Wheeler, T. Davies
Improving the design of low energy lightweight rockfall catch fences

10:45 J. Arnaud, M. Huteau, P. Robit, N. Villard
Unusual prefabricated rockfall gallery using wire mesh and geosynthetics

11:00 **Coffee break**

Session 2

11:30 A. Pol, F. Gabrieli, K. Thoeni, N. Mazzon
Discrete element modelling of punch tests with a double-twist hexagonal wire mesh

11:45 N. Kishi, M. Komuro, Y. Kurihashi, H. Mikami
Upgrading impact resistant capacity applying FRP near surface mounting method

12:00 B. Kister, S. Lambert, B. Loup
Impact tests on small scale embankments with rockery – lessons learned

12:15 F. Yamasawa, H. Konno, H. Nishi, N. Kishi, M. Komuro, Y. Kurihashi
An examination on the influence of certain parameters on three-dimensional dynamic frame analysis for a rockfall protection gallery

12:30 J. Irazábal, F. Salazar, M. A. Celigueta, S. Latorre, E. Oñate
Design and validation of rockfall protection systems by numerical modeling with discrete elements

12:45 S. Tahmasbi, A. Giacomini, O. Buzzi, C. Wendeler
Numerical modeling of chain-link mesh

13:00 **Lunch break**

May 23rd, Tuesday afternoon

Session 3

- 14:30 J. B. Coulibaly, M-A Chanut, C. Galandrin, I. Olmedo, S. Lambert, F. Nicot
Generic modeling of flexible rockfall barriers: from components characterization to full-scale numerical simulations
- 14:45 Y. Kurihashi, M. Komuro, N. Kishi, K. Schellenberg, T. Kawarai
Predictions and conclusions of FE-simulations for Fullscale impact test on protection gallery
- 15:00 A. Preh, M. Illeditsch, M. Schmidt, P. Pamminger
Impact of rock falls and rock slides on protective barriers: Comparative calculations using the Distinct Element Method (DEM)
- 15:15 I. Olmedo, P. Robit, D. Bertrand, C. Galandrin, J. Coulibaly, M-A. Chanut
Extended experimental studies on rockfall flexible fences
- 15:30 M. Komuro, H. Nishi, H. Konno
Numerical simulation on impact resistant behavior of full-scale pocket-type rockfall protection nets
- 15:45 A. Mentani, L. Govoni, A. Giacomini, O. Buzzi, G. Gottardi
Calibration of an equivalent shell model for a chain-link mesh
- 16:00 R. Poisel, N. Hoedlmoser, B. Grasemann
The cost-effectiveness of measures mitigating the risk caused by the former quarry of Spitz (Austria)
- 16:15 G. Kohlmaier
CE marking of falling rock protection kits based on the Construction Products Regulation (EU) No 305/2011
- 16:30 **Coffee break**

Session 4

- 17:00 A. Luciani, D. Peila
Maintenance of rockfall net fences
- 17:15 A. Schober, R. Delleske, I. Hartmeyer, M. Keuschnig
Using unmanned aerial systems (UAS) for the monitoring of protective constructions in steep, inaccessible terrain, Pass Lueg, Austria
- 17:30 J.M. Rius, R. Aguiló
Surveillance of rockfall protection systems on the roads of Serra de Tramuntana range in Mallorca
- 17:45 W. Ashwood, P. Schlotfeldt
Integrating design approaches to mitigate rockfall from a mine highwall
- 18:00 **Closure**

May 24th, Wednesday morning: field trip

- 8:30 -
18:30 Rockfall risk management in the Montserrat massif