



# **Symposium Program**

23—26 March 2022



# ///// 23 March 2022 // Workshop

Faculty of Civil Engineering, Radmile Matejčić 3, Room G207

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## WORKSHOP PRESENTATIONS

- 13.00 – 13.30     **Josip Peranić**  
*Small-scale physical landslide models under 1g infiltration conditions and the role of hydrological monitoring*
- 13.30 – 14.00     **Nina Čeh**  
*Digital image correlation and the use of high-speed cameras for 3D displacement monitoring in 1g small-scale physical models of landslides*
- 14.00 – 14.30     **Giovanna Capparelli**  
*Physical modelling investigation and integrated analysis of landslides for defining risk scenarios*
- 14.30 – 15.00     **Sabatino Cuomo**  
*Numerical simulations of landslide physical model experimental results*

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15.00 – 15.30     Coffee Break

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Faculty of Civil Engineering, Radmile Matejčić 3, Laboratory of Geotechnics

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15.30 – 17.30     Physical Model Laboratory Test

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# ///// 23 March 2022 // Welcome

Faculty of Civil Engineering, Radmile Matejčić 3, The Aula

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18.00 – 22.00     Welcome Party

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# ///// 23 March 2022 // Exhibition

Faculty of Civil Engineering, Radmile Matejčić 3, The Aula

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19.00                      Opening of the Photo Exhibition *Take a look at the landslide*

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# ///// 24 March 2022 // Registration

Faculty of Civil Engineering, Radmile Matejčić 3, The Aula

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8.00 – 9.00              Participant registration

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# ///// 24 March 2022 // Symposium

Faculty of Civil Engineering, Radmile Matejčić 3, Room G004

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9.00 – 10.00             Symposium Opening Ceremony

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10.00 – 10.30            Coffee Break

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## INVITED LECTURES

Conveners: Snježana Mihalić Arbanas, Matjaž Mikoš

10.30 – 11.00

### **Nicola Casagli**

*The International Consortium on Landslides for disaster risk reduction and sustainable development*

11.00 – 11.30

### **Michel Jaboyedoff**

*Failure hazard of rockfall sources: some aspects of the hazard quantification*

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SYMPOSIUM PRESENTATIONS

Conveners: Biljana Abolmasov, Martin Krkač

**/ Landslide Monitoring /**

- 11.30 – 11.45      **Matteo Del Soldato**, Camilla Medici, Pierluigi Confuorto, Silvia Bianchini  
*Statistical literature analysis of combined GNSS-InSAR landslide investigation*
- 11.45 – 12.00      **Pierluigi Confuorto**, Silvia Bianchini, Matteo Del Soldato, Davide Festa, Federico Raspini, Nicola Casagli  
*Ground deformation monitoring service of Veneto region (NE Italy) by means of Sentinel-1 data*
- 12.00 – 12.15      **Galena Jordanova**, Marko Vrabec, Krištof Oštir, Timotej Verbovšek  
*Monitoring the Slano blato mudflow using InSAR and UAV photogrammetry (preliminary results)*
- 12.15 – 12.30      **Giulia Bossi**, Gianluca Marcato, Filippo Tommaso Catelan  
*Validation of innovative mitigation strategy through long-term landslide and structural monitoring*
- 12.30 – 12.45      **Giulia Bossi**, Alessandro Corsini, Giuseppe Ciccarese, Gianluca Marcato, Marco Mulas, Luca Schenato, David Tonidandel, Volkmar Mair  
*Long-term monitoring of active large-scale landslides based on integrated systems in South Tyrol (SoLoMon project)*
- 12.45 – 13.00      **Mateja Jemec Aučič**, Ela Šegina, Tina Peternel, Matija Zupan, Jernej Jež, Manja Žebre, Polona Kralj, Marjana Zajc, Matjaž Mikoš, Nejc Bezak, Milan Kobal  
*Monitoring of rockfall prone areas in eastern Slovenia*

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13.00 – 15.00      Lunch Break

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INVITED LECTURE

Conveners: Miloš Marjanović, Timotej Vrbovšek

- 15.00 – 15.30      **Snježana Mihalić Arbanas**  
*Landslide evidence and spatial prediction: Application of data and information from landslide maps*
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SYMPOSIUM PRESENTATIONS

Conveners: Miloš Marjanović, Timotej Vrbovšek

**/ Landslide Mapping /**

15.30 – 15.45      **Martin Krkač**, Sanja Bernat Gazibara, Marko Sinčić, Hrvoje Lukačić, Snježana Mihalić Arbanas  
*Landslide inventory mapping based on LiDAR data: Case study from Hrvatsko Zagorje (Croatia)*

15.45 – 16.00      **Ela Šegina**, Gorazd Žibret  
*Slope gradient anomalies as indicators of potential slope instabilities*

**/ Landslide Susceptibility /**

16.00 – 16.15      Sanja Bernat Gazibara, Snježana Mihalić Arbanas, **Marko Sinčić**, Martin Krkač, Hrvoje Lukačić, Petra Jagodnik, Željko Arbanas  
*LandSlidePlan – Scientific research project on landslide susceptibility assessment in large scale*

16.15 – 16.30      **Natasha Nedelkovska**, Igor Peshevski, Milorad Jovanovski, Jovan Papić, Ivan Radevski, Svemir Gorin  
*Shallow landslide susceptibility assessment for the Polog region (R.N. Macedonia)*

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16.30 - 17.30      Coffee Break

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SYMPOSIUM PRESENTATIONS

Conveners: Uroš Đurić, Sanja Bernat Gazibara

**/ Landslide Susceptibility /**

17.30 - 17.45      **Tina Peternel**, Jasna Šinigoj, Mateja Jemec Auflič, Špela Kumelj, Matija Krivic  
*MASPREM – Slovenian landslide forecasting and warning system*

17.45 - 18.00      **Julijana Bojadjeva**, Vlatko Sheshov, Kemal Edip, Radmila Shalic, Marta Stojmanovska, Roberta Apostolska, Stavroula Fotopoulou, Dimitris Pitilakis, Neritan Shkodrani, Markel Babaleku, Francesca Bozzoni, Antonella di Meo  
*Harmonized approach for mapping the earthquake-induced landslide hazard at the cross-border region between North Macedonia, Greece and Albania*



18.00 - 18.15

**Matjaž Mikoš**, Mateja Jemec Auflič, Jernej Jež, Nejc Bezak  
*Rock frost weathering and rockfall activity assessment in Slovenia*

18.15 - 18.30

**Miloš Marjanović**, Biljana Abolmasov, Uroš Đurić, Jelka Krušič, Snežana Bogdanović  
*Regional rockfall exposure assessment, experience from Serbia*

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## ///// 24 March 2022 // Posters

Faculty of Civil Engineering, Radmile Matejčič 3, The Aula - 3rd Floor

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16.30 - 17.30

POSTER SESSION

Conveners: Sanja Bernat Gazibara, Tina Peternel, Kemal Edip

T. Peternel, J. Jež, M. Janža, E. Šegina, M. Zupan, A. Markelj, A. Novak, M. Jemec Auflič, J. Logar, M. Maček, N. Bezak, J. Sodnik, M. Mikoš  
*Mountain slopes above Koroška Bela (NW Slovenia) – A landslide prone area*

R. Stanković, N. Vulović, B. Ablomasov, M. Marjanović, U. Đurić  
*A landslides database model for ClIRtheRoads project in Serbia*

M. Sinčić, S. Bernat Gazibara, H. Lukačić, M. Krkač, S. Mihalić Arbanas  
*Qualitative and quantitative assessments of input LiDAR data for landslide inventory mapping*

P. Jagodnik, Ž. Arbanas, S. Bernat Gazibara, S. Mihalić Arbanas  
*High resolution LiDAR DTM reveals new insight on landslide phenomena in the Rječina River Valley*

H. Lukačić, S. Bernat Gazibara, M. Sinčić, M. Krkač, Ž. Arbanas, P. Jagodnik, V. Damjanović, S. Mihalić Arbanas  
*Influence of expert knowledge on completeness and accuracy of landslide inventory maps - Example from Istria, Croatia*



S. Bernat Gazibara, V. Damjanović, M. Krkač, M. Sinčić, H. Lukačić, S. Mihalić Arbanas  
*Landslide susceptibility map of Croatia based on limited data and Fuzzy logic approach*

U. Đurić, B. Ablomasov, M. S. Marjanović, S. Jocković, M. D. Marjanović  
*A proposal for the landslide damage questionnaire in suburban areas*

V. Kocijan, M. Grošić, L. Blažok  
*Slopes of higher protection priority rating using modified Colorado Rockfall Hazard Rating System - Case study*

T. Verbovšek, B. Rožič, P. Žvab Rožič, M. Vrabc, G. Jordanova, M. Dolenc, K. Fifer Bizjak, N. Bezak, M. Mikoš, T. Kuzmanić, K. Kregar, K. Kozmus Trajkovski, D. Žagar  
*An upgrade to the erosion risk assessment method of active flysch cliffs along the Slovenian coast*

S. Pajalić, J. Peranić, V. Jagodnik, M. Vivoda Prodan, Ž. Arbanas  
*A use of similarity laws in landslide physical modelling: preliminary considerations*

K. Edip, V. Sheshov, J. Bojadjieva, A. Bogdanovic  
*Earthquake effects in assessment of an earth dam slope*

M. Sušac, M. Vugrinski, D. Udovič, D. Marušić, Ž. Arbanas  
*Design of rockfall protection at the Špičunak location, Gorski kotar, Croatia*

V. Budimir, H. Lanter, A. Roduner, R. Steinlechner  
*The Ladiser Landslide mitigation project with a flexible high tensile steel mesh protection system*

S. Živaljević, N. Mededović, M. Bujišić, Z. Tomanović  
*Deep landslide in the jointed flysch sediments on the Bar-Boljare Highway, Montenegro*

Ž. Arbanas, V. Damjanović, M. Krkač, J. Peranić, V. Jagodnik, S. Bernat Gazibara, M. Sinčić, S. Mihalić Arbanas  
*Lateral spreading caused by 2020 Petrinja Earthquake 6.4 Mw*

A. Novak, M. Vrabc, T. Popit, A. Šmuc  
*Preliminary results of surface changes monitoring on an ephemerally active alluvial fan (Planica Valley, NW Slovenia)*

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# ////// 25 March 2022 // Symposium

Faculty of Civil Engineering, Radmile Matejčić 3, Room G004

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## INVITED LECTURES

Conveners: Željko Arbanas, Julijana Bojadjjeva

- 9.00 - 9.30      **Binod Tiwari**  
*Physical Modeling of Landslides and Slopes - Advancements and Challenges*
- 9.30 - 10.00    **Nejc Bezak**, Matjaž Mikoš, Mateja Jemec Auflič  
*Rainfall-induced landslides and debris flows under the influence of climate change: review of recent Slovenian studies*
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## SYMPOSIUM PRESENTATIONS

Conveners: Josip Peranić, Michele Calvello

### **/ Laboratory Testing, Physical and Numerical Modelling of Landslides /**

- 10.00 - 10.15    **Sabatino Cuomo**  
*Numerical simulations of landslide physical model experimental results*
- 10.15 - 10.30    **Giovanna Capparelli**, Gennaro Spolverino, Irasema Alcántara-Ayala, Noemi Sharon Ruiz-Cortés  
*Physical modelling investigation and integrated analysis of landslides for defining risk scenarios*
- 10.30 - 10.45    Luca Crescenzo, **Michele Calvello**  
*Role of stratigraphy for rainfall-induced shallow instabilities in volcanic soils: a case study*
- 10.45 - 11.00    **Timotej Jurček**, Matjaž Mikoš, Matej Maček  
*Small-scale physical landslide models under 1g infiltration conditions and the role of hydrological monitoring*
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- 11.00 - 11.30    Coffee Break
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SYMPOSIUM PRESENTATIONS

Conveners: Vedran Jagodnik, Vlatko Sheshov

**/ Laboratory Testing, Physical and Numerical Modelling of Landslides /**

- 11.30 – 11.45      **Josip Peranić**, Vedran Jagodnik, Nina Čeh, Martina Vivoda Prodan, Sara Pajalić, Željko Arbanas  
*Small-scale physical landslide models under 1g infiltration conditions and the role of hydrological monitoring*
- 11.45 – 12.00      **Nina Čeh**, Josip Peranić, Vedran Jagodnik, Sara Pajalić, Martina Vivoda Prodan and Željko Arbanas  
*Digital image correlation and the use of high-speed cameras for 3D displacement monitoring in 1g small-scale physical models of landslides*
- 12.00 – 12.15      **Martina Vivoda Prodan**, Josip Peranić, Sara Pajalić, Vedran Jagodnik, Nina Čeh, Željko Arbanas  
*Mechanism of rainfall induced landslides in small-scale models built of different materials*
- 12.15 – 12.30      **Željko Arbanas**; Josip Peranić; Vedran Jagodnik; Martina Vivoda Prodan; Nina Čeh, Sara Pajalić; Davor Plazonić  
*Impact of gravity retaining wall on the stability of a sandy slope in small-scale physical model*
- 12.30 – 12.45      **Vedran Jagodnik**, Martina Turković, Željko Arbanas  
*Preliminary results on cyclic behaviour of uniform sand under undrain condition at low confining stress*

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12.45 – 14.45      Lunch Break

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SYMPOSIUM PRESENTATIONS

Conveners: Jošt Sodnik, Martina Vivioda Prodan

**/ Landslide Case Studies /**

- 14.45 – 15.00     **Jošt Sodnik**, Matjaž Mikoš  
*The Krvavec bottom cabin lift station protection against torrential hazards by a new slit check dam and a series of flexible net barriers*
- 15.00 – 15.15     **Biljana Abolmasov**, Marinos Skempas, Svetozar Milenković, Janko Radovanović, Miloš Marjanović  
*Highway construction in fossil landslides zones – lessons learned from the Grdelica Gorge, Serbia*
- 15.15 – 15.30     Mirko Grošič, **Ivan Volf**, Ivana Blagdan  
*Remediation Measures of Landslides on State Roads in the Republic of Croatia – Presentation of Case Studies*

**/ Landslide Investigation /**

- 15.30 – 15.45     Giuseppe Ciccacese, **Marco Mulas**, Francesco Ronchetti, Marco Aleotti, Alessandro Corsini  
*Recent large-scale gravitational collapses in the Madonna di Puianello mud-volcanoes field calderas (Northern Apennines, Modena, Italy)*
- 15.45 – 16.00     **Giuseppe Ciccacese**, Marco Mulas, Francesco Ronchetti, Marco Aleotti, Alessandro Corsini  
*Paroxysmal reactivation of a large-scale earth flow documented by multitemporal UAV photo surveys and Robotic Total Station*
- 16.00 – 16.15     **Nemanja Babović**, Aleksandar Miladinović, Dajana Biorac  
*Field Investigation of the Landslide that Occurred During the Construction of the Dam "Svračkovo"*
- 16.15 – 16.30     **Vincenzo Critelli**, Alessandro Corsini, Matteo Berti, Anna Rita Bernardi, Matteo Bernardi, Giuseppe Caputo, Giuseppe Ciccacese, Gianluigi Di Paola, Marco Mulas, Francesco Ronchetti  
*Probabilistic modelling of HVSR results for 3D mapping of rock-slides*
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# ///// 25 March 2022 // Round table

Faculty of Civil Engineering, Radmile Matejčić 3, Room G207

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## ROUND TABLE DISCUSSION

Moderators: Paola Reichenbach, Snježana Mihalić Arbanas

10.00 – 10.10	Opening – Introducing the participants
10.10 – 10.25	<b>Mauro Rossi</b> , CNR-IRPI, Italy <i>Introductory speech „A review of statistical landslide susceptibility modelling“</i>
10.25 – 10.40	<b>Sanja Bernat Gazibara</b> , UNIZG-RGNF, Croatia <i>Introductory speech „Geo-environmental information for landslide susceptibility modelling – Availability of data in Croatia“</i>
10.40 – 11.55	<b>Igor Peshevski</b> , Ss. Cyril and Methodius University in Skopje, North Macedonia <i>Introductory speech „Experiences on regional landslide modeling in N. Macedonia“</i>
11.55 – 12.45	Discussion of all participants

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# ///// 26 March 2022 // Field trip

9.00 – 13.00	Field Trip
13.00 – 14.30	Lunch
14.30 – 16.00	Transfer to University

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