1st Regional Symposium on Landslides in the Adriatic-Balkan Region

3rd Workshop of the Croatian-Japanese Project 'Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia'

Landslide and flood hazard assessment

March 6-9, 2013 / Zagreb / Croatia

BULLETIN

Organizers

International Consortium on Landslides (ICL)

ICL Adriatic-Balkan Network (ICL ABN)

University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering

City of Zagreb, Emergency Management Office

University of Zagreb

University of Rijeka, Faculty of Civil Engineering

Niigata University, Research Institute for Natural Hazards and Disaster Recovery

Kyoto University, Disaster Prevention Research Institute (DPRI)

City of Zagreb, City Office for the Strategic Planning and Development of the City

City of Zagreb, City Office for Physical Planning, Construction of the City, Utility Services and Transport

Project Workshop Institution:

University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering

University of Rijeka, Faculty of Civil Engineering

Niigata University, Research Institute for Natural Hazards and Disaster Recovery

Kyoto University, Disaster Prevention Research Institute (DPRI)

International Consortium on Landslides (ICL)

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Croatian Geological Survey

City of Zagreb, Emergency Management Office

Supported by:

Ministry of Science, Education and Sports of the Republic of Croatia

Japan International Cooperation Agency (JICA)

Japan Science and Technology Agency (JST)

Table of Contents

Message from the Symposium Chairs

On behalf of the Symposium Organizing Committee, we are pleased to welcome you to the 1st Regional Symposium on Landslides in the Adriatic-Balkan Region and the 3rd Workshop of the Croatian-Japanese Project 'Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia'. As this meeting introduces the international Symposium on Landslides in the Adriatic-Balkan Region, we have arranged a memorable technical and social programme that we hope will leave long-lasting positive impressions.

The locations of this meeting in the Upper Town and Downtown in Zagreb are selected by the City Government and the University of Zagreb to welcome members of the international landslide community in some of the most representative places, the City Assembly and University Rectorate.

Our Organizing Committee has prepared a comprehensive programme that includes 77 presentations that will provide regional and international research in landslide and flood characterization, modeling, monitoring and mapping. We trust that our programme will stimulate active discussion and collaborations by scientists and experts from the region, Japan and other countries.

In addition to our technical programme we are pleased to offer a social program and field trip to introduce participants to the culture and cuisine of the City of Zagreb. We hope that you will enjoy your stay in Zagreb and we look forward to welcoming you as our guests.

Snježana Mihalić Arbanas
Željko Arbanas
Chairs, 1st ReSyLAB 2013

Organizing and Technical Committees

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About the Croatian-Japanese Joint Research Project

The project 'Risk identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia' was launched in 2008 when it was selected for the Science and Technology Research Partnership for Sustainable Development (SATREPS), a research program under the auspices of the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA). The Research Center for Natural Hazards and Disaster Recovery at Niigata University, together with the Disaster Prevention Research Institute of Kyoto University (DPRI) and the International Consortium on Landslides (ICL), a non-profit organization, are Japanese partner institutions on the Project. Three Croatian universities, the University of Rijeka (Faculty of Civil Engineering), the University of Zagreb (Faculty of Mining, Geology and Petroleum Engineering and Faculty of Agriculture), the University of Split (Faculty of Civil Engineering, Architecture and Geodesy), and Croatian Geological Survey are Croatian partner institutions in the Project.

The Project involves collaborative research conducted in Japan and Croatia to evaluate hazard and mitigate landslides and flash flood risks in Croatia. Key objectives of the Project are the preparation of hazard maps and development of guidelines for application in urban planning on the basis of risk evaluation. The Project aims to contribute to sustainable development through appropriate land use and crisis management in Croatia. It covers the areas around three cities where three partner universities are located, namely, Zagreb, the capital of Croatia, Rijeka, a port city, and Split, whose historic center is a UNESCO World Heritage Site. Researchers from Japan, together with Croatian researchers carry out the following investigations and analyses: 1) aerial photo and satellite image interpretation, 2) geodetic and geotechnical monitoring of landslides, 3) continuous monitoring of sediment flows in torrents, 4) investigation of physical and mechanical properties of soils and rocks, 5) landslide susceptibility and hazard zonation, 6) establishment of early warning systems, and 7) risk mitigation through the system of urban planning and civil protection. That is a five-year Project involving about 15 researchers from Japan.

Regional cooperation has been initiated by organizing the 1st Project Workshop entitled 'International Experience', which was held in Dubrovnik (Croatia) in November 2010.

The workshop addressed a range of topics in the fields of investigation of the Japanese and Croatian Project members and regional guest experts from eight universities, two geological surveys and four institutes. Guest scientists from Bosnia and Herzegovina, Bulgaria, Macedonia, Serbia and Slovenia participated. General concept of the organization of regional scientific network was discussed at the 2nd Project Workshop entitled 'Monitoring and analyses for disaster mitigation of landslides, debris flow and floods' in Rijeka (Croatia) in December 2011. This workshop hosted Japanese and Croatian project participants and also guest scientists and experts from Albania, Bosnia and Herzegovina, Bulgaria, Italy, Japan, Kosovo, Macedonia, Serbia and Slovenia. Regional cooperation among Croatia, Slovenia, Serbia and Albania was formalized in the frame of regional ICL Adriatic-Balkan Network in January in Kyoto 2012.

A Regional Symposium on Landslides in the Adriatic-Balkan Region is intended for the purpose of sustainability of the Project results, during and after Project period. Knowledge transfer in the wider region will be performed by conducting regional cooperative research and capacity building on landslide risk mitigation for the benefit of society and the environment in the entire Adriatic-Balkan Region.

Project Members

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www.geobrugg.com

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Sachsova 2, Zagreb, Croatia
http://www.hgi-cgs.hr

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Faculty of Civil and Geodetic Engineering

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Albania
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Croatia
Croatian Geological Survey, Zagreb

Serbia
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Slovenia
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Municipality of Mošćenička Draga
Municipality of Vinodol
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City of Omiš
City of Rijeka, Department of Local Government and Self-Government
City of Rijeka, City Department for the Enforcement of Urban Planning and Building Documents
City of Rijeka, City Department of Urban Development, Environment and Asset Management
City of Samobor
City of Zagreb, Emergency Management Office
City of Zagreb, City Office for Physical Planning, Construction of the City, Utility Services and Transport
City of Zagreb, City Office for the Strategic Planning and Development of the City
City of Zagreb, City Office for Cadastre and Geodetic Activities
City of Zagreb, City Office for Energetics, Environment Protection and Sustainable Development
City of Zagreb, City Service for Self-Government
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Primorsko-Goranska County, County Ruler Office
Primorsko-Goranska County, County Roads Authority
Primorsko-Goranska County, Department for Construction and Environmental Protection
Primorsko-Goranska County, Institute for Physical Planning
Croatian Waters
Croatian Roads
National Protection and Rescue Directorate
National Protection and Rescue Directorate, PUZS, Rijeka
National Protection and Rescue Directorate, PUZS, Zagreb
Ministry of Environmental and Nature Protection
Ministry of Construction and Physical Planning
Nature Park Medvednica

Social Program

In addition to the comprehensive technical program, 1st ReSyLAB will provide opportunities for delegates and their guests to meet, mingle and get to know their professional colleagues in a relaxed setting, outside of the technical and business streams.

The social program includes the following:

Opening Welcome Reception

Wednesday, 6 March 2013, 17:00-19:00
(Faculty of Mining, Geology and Petroleum Engineering)

Come and meet up with old acquaintances, or introduce yourselves to new colleagues from across the region and other parts of the world, as we join together for a complimentary 'drinks and nibbles' cocktail reception in the Faculty Council Hall.

Sightseeing Tour through the Upper Town

Thursday, 7 March 2013, 13:00-13:45 (Upper Town)

As we have a very tight schedule on Thursday, we will use lunch-break to have a guided sightseeing tour in the Upper Town, also known as Gradec (Funicular - Lotrščak Tower - St. Catherine's Square - St. Mark's Square - Stone Gate - Bloody Bridge). Duration of the tour will be 45 minutes.

Reception by the Mayor of the City of Zagreb

Thursday, 7 March 2013, 19:30-21:00 (Dverce Palace)

Thursday night is reserved for the jewel of the historical architecture of Zagreb, Dverce Palace. The Mayor of the City of Zagreb, Mr. Milan Bandić, invites you to the cocktail reception in Dverce Palace. Come and enjoy yourselves in salons and halls of Dverce, which reflects social scenes from the 18th, 19th and beginning of 20th century in Zagreb.

1stReSyLAB 2013 Poster Reception

Friday, 8 March 2013, 17:30-18:30 (University of Zagreb)

Our technical poster presenters are keen to meet you and to tell you about their projects. Please, join us in the poster area to view the posters and to share a drink with new colleagues and friends that you made on the previous day.

ICL ABN Photo Exhibition and Book Promotion

Friday, 8 March 2013, 20:00-21:00 (ZgForum)

ICL Adriatic-Balkan Network and ZgForum will bring landslide scenarios to the public through Photo Exhibition 'Living with Landslide', which will be open from 8 March to 15 March 2013. The Head of the Office of the Strategic Planning and Development of the City of Zagreb, Ms. Jadranka Veselić Bruvo, invites you to the Exhibition Opening Ceremony. That evening, ZgForum will also host the ceremony for the promotion of the book 'Landslides: Global Risk Preparedness' edited by distinguished Professor Kyoji Sassa, the technical director of the International Consortium on Landslides (ICL), and co-editors Dr. Badaoui Rouhban, Dr. Sálvano Briceño, Dr. Mauri McSaveney and Dr. Bin He. We are looking forward to meeting the winners of the Photo Award for the best 3 landslide photographers of our Symposium. These merry events will be followed by an opportunity to share impressions of landslides from the region and around the world, from the photos taken by our colleagues, landslide scientist and professionals.

Side-Events

1st Round table: Application of Croatian-Japanese Project Results in the Systems of Land-Use Planning, Construction and Civil Protection in Croatia

Thursday, 7 March 2013, 18:00-19:00 (City Assembly, Hall A)

This is an exceptional opportunity to gather the representatives of local and national government of the Republic of Croatia and the scientist involved in landslides and floods. Our Round table discussion, organized in collaboration with the City of Zagreb and Primorsko-Goranska County, will be introduced by the Head of the City Office of Emergency Management Dr. Pavle Kalinić. The aim of the Round table discussion is to debate, with a wide audience, about priorities for future practical application of scientific results gained in the frame of the Croatian-Japanese project 'Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia'. Core topics of the discussion are: landslide maps (landslide inventory map and landslide hazard and risk prognostic maps), flood maps (hazard and risk prognostic maps), landslide and flash flood monitoring and early warning systems, landslide modeling and flash flood propagation with different hazardous scenarios testing. Discussion among governmental representatives and scientist will be directed towards finding answers to the questions related to current and eligible use of this kind of geoenvironmental data and information in the system of land-use planning, construction and civil protection, as well as the development of related necessary legislative documentation (e.g., guidelines, laws).

2nd Round table: Discussion and Endorsement in the Course of the ICL Adriatic-Balkan Network Activities

Friday, 8 March 2013, 18:30-19:30 (University of Zagreb, The Aula)

2nd Round Table will be an opportunity to discuss one of the regional ICL network greatest challenges: how to plan and deliver activities of the ICL Adriatic-Balkan Network (ICL ABN) successfully. So far, invited panelists include landslide scientist from Albania, Croatia, Serbia and Slovenia. Strengths, weaknesses, opportunities, and threats of the current status of landslide research and landslide risk management in the region will be discussed as a basis for development of the ICL ABN action plan. We strongly encourage ICL ABN members to come along to what should be valuable and interesting activities for the following period 2013-2015 and a chance for potential ICL ABN members to take part in planning regional landslide research community plans.

Technical Tour

Field trip: The Kostanjek Landslide Field Laboratory for Landslide Monitoring

Saturday, 9 March 2013, 9:00-12:30
(Podsused, the Western Suburb of the City of Zagreb)

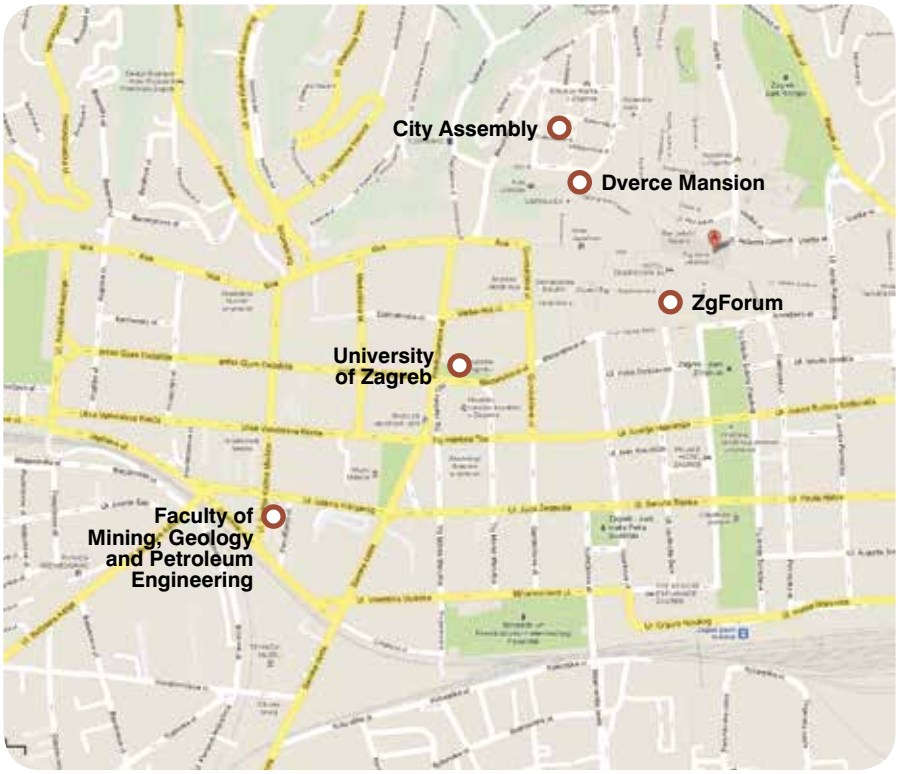
The meeting point for the field trip will be in the front of the Faculty of Mining, Geology and Petroleum Engineering (Pierottijeva 6). Transportation to the main monitoring station at the Kostanjek landslide will be organized by bus. The general design of comprehensive integrated real-time monitoring system of the Kostanjek landslide will be briefly presented at the site.

Based on the joint research in the frame of the Croatian-Japanese project 'Risk Identification and Land-Use Planning for Disaster Mitigation of Landslides and Floods in Croatia', the monitoring system on the Kostanjek Landslide was designed to include a number of different types of instruments communicating in near-real time to a data acquisition-processing center located at the Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb (UNIZG-RGNF). An integrated monitoring system will finally consist of approximately 40 sensors for geodetic and geotechnical monitoring. The equipment for landslide monitoring at the surface and in the underground will include: 15 precise GNSS rovers, 9 long-span and short-span extensometers, vertical inclinometer, 3 pore pressure gauges in boreholes, 3 water level gauges in wells, rain gauge, weather station and 7 accelerometers aimed at monitoring landslide triggering factors. The installation of the system started in November 2011 and will be finished in 2013. The system is meant to improve or contribute to public safety, public education, scientific research, and university education.

The system is designed to measure changes in conditions that affect the possibility to reactivate sliding from slope cuts of abandoned open pit mine in Podsused and its vicinity, and to provide early warning of extreme conditions to authorities responsible for emergency preparedness. The public education role involves raising the level of

awareness of the general public regarding natural hazards and their potential impacts. The scientific research role of the system is to provide long-term monitoring data that can be used to gain a better understanding of the mechanisms associated with landslide in hard soil-soft rock (Pannonian and Sarmatian marl), and to advance the development of technology in landslide monitoring. Finally, a monitoring system that is located at the UNIZG-RGNF has the potential to increase educational potential of the University of Zagreb, and therefore increase national educational capacities.

Location Map



Thursday, 7 March 2013

9:00 - 19:00
City Assembly (Hall A)
St. Ćiril and Metod St. 5, Upper Town

19:30 - 21:00
Dverce Palace
Katarina Square 6, Upper Town

Friday, 8 March 2013

9:00 - 19:30
University of Zagreb (The Aula)
Marshal Tito Square 14

20:00 - 21:00
ZgForum
Gajeva St. 27

Symposium and Workshop Program

Wednesday and Thursday

Wednesday, 6 March 2013

University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering
Pierottijeva 6, Faculty Council Chamber

17:00 - 19:00	Welcome reception

Thursday, 7 March 2013

City Assembly, St. Ćiril and Metod St. 5, Upper Town, Hall A

8:00 - 9:00	Participant registration
9:00 - 9:50	Symposium and Workshop opening
10:20 - 12:30	Workshop sessions (WG1) - Oral presentations

Upper Town, Gradec

13:00 - 13:45	Sightseeing tour (Upper Town)

City Assembly, St. Ćiril and Metod St. 5, Upper Town, Hall A

14:00 - 17:40	Workshop sessions (WG3, WG2) - Oral presentations
18:00 - 19:00	1st Round table: Application of Croatian-Japanese Project Results in the System of Land-Use Planning, Construction and Civil Protection

Dverce Palace, Katarina Square 6, Upper Town

19:30 - 21:00	Cocktail reception

Symposium Program

Friday and Saturday

Friday, 8 March 2013

University of Zagreb, Marshal Tito Square 14

The Aula

9:00 - 17:30	Symposium sessions S1, S2, S3 - Oral presentations
17:30 - 18:30	Symposium poster session (S1, S2)
18:30 - 19:30	2nd Round table: Discussion and Endorsement in the Course of the ICL Adriatic-Balkan Network Activities

ZgForum, Gajeva St. 27

20:00 - 21:00	• Symposium and Workshop closing • Opening of the ICL ABN Photo Exhibition 'Living with landslides' • Promotion of the book 'Landslide: Global Risk Preparedness', K. Sassa et al. (eds) • Best photo award • Cocktail

Saturday, 9 March 2013

The Kostanjek Landslide

Main monitoring station of the Kostanjek Landslide Field Laboratory

9:00 - 12:30	Field visit
12:30 - 14:00	Lunch

Technical Program, Thursday, 7 March 2013

Oral Presentations, City Assembly, St. Ćiril and Metod Street 5, Upper Town, Hall A

9:00 - 9:30	Marui H., Ožanić N., Mihalić Arbanas S., Sassa K., Arbanas Ž.	Welcome speeches: **Prof. Nevenka Ožanić**, Croatian-Japanese Project Manager, Vice Rector of the University of Rijeka **Prof. Aleksa Bjeliš** (Rector of the University of Zagreb) **Prof. Saša Zelenika**, Assistant Minister, Ministry of Science, Education and Sports of the Republic of Croatia **H.E. Masaru Tsuji**, Japan Ambassador to the Republic of Croatia **Mr. Milan Bandić**, Mayor of the City of Zagreb
9:30 - 9:40		**Prof. Hideaki Marui** (Project Leader): Intermediate outputs of the Croatia-Japan joint research project on "Risk Identification and Land-use Planning for Disaster Mitigation of Landslides and Floods in Croatia"
9:40 - 9:50		**Prof. Kyoji Sassa** (Executive Director of ICL): About ICL and regional cooperation in the Adriatic-Balkan Region
9:50 - 10:20	Coffee break	
10:20 - 10:30	Working group 1: **Landslides** Moderators: Sassa K. and Arbanas Ž.	**M. Oštrić**, K. Sassa, K. Ljutić, M. Vivoda, B. He, K. Takara: *Manual of Transportable Ring Shear Apparatus, ICL-1*
10:30 - 10:40		**B. He**, K. Sassa, O. Nagai, K. Takara: *Manual of LS-RAPID Numerical Simulation Model for Landslide Teaching and Research*
10:40 - 10:50		**K. Gradiški**, K. Sassa, B. He, M. Krkač, S. Mihalić Arbanas, Ž. Arbanas, M. Oštrić, P. Kvasnička: *Application of integrated landslide simulation model using LS-Rapid software to the Kostanjek Landslide, Zagreb, Croatia*
10:50 - 11:00		**J. Martinčević**, S. Mihalić Arbanas, M. Krkač, S. Bernat, Ž. Miklin, L. Podolszki: *Mineralogical composition of the Kostanjek landslide sediments and its possible influence on the sliding and swelling processes*
11:00 - 11:10		S. Yamamoto, **N. Watanabe**, M. Krkač, G. Furuya, C. Wang, S. Mihalić Arbanas: *Geochemical constraints on the origins of groundwater from the Kostanjek landslide in the western part of Zagreb, Croatia*
11:10 - 11:20		**M. Krkač**, J. Rubinić: *Analysis of water fluctuation dynamics in the wider area of Kostanjek landslide*
11:20 - 11:30		**M. Krkač**, S. Mihalić Arbanas, O. Nagai, Ž. Arbanas: *The Kostanjek landslide - Monitoring system development and sensor network*
11:30 - 11:40		**M. Baučić**, S. Mihalić Arbanas, M. Krkač: *Geographic information system of landslide Kostanjek: Integration of real-time GNSS monitoring data with other sensor data*

Technical Program, Thursday, 7 March 2013

Oral Presentations, City Assembly, St. Ćiril and Metod Street 5, Upper Town, Hall A

11:40 - 11:50		**N. Watanabe**, K. Asai, G. Furuya, C. Wang, Ž. Arbanas: *Residence-time of groundwater from flysch formation at the Grohovo Landslide in the Rječina valley, Croatia*
11:50 - 12:00		**Ž. Arbanas**, V. Jagodnik, K. Ljutić, M. Vivoda, S. Dugonjić: *Remote monitoring of a landslide using an integration of GPS, TPS and conventional geotechnical monitoring methods*
12:00 - 12:10		K. Ljutić, V. Jagodnik, M. Vivoda, S. Dugonjić Jovančević, **Ž. Arbanas**: *The Grohovo Landslide Monitoring System - Experiences from 18 months period of monitoring system operating*
12:10 - 12:20		**I. Žižić**, B. Kordić, G. Vlastelica: *Terrestrial laser scanning and slope movement monitoring, Croatian experiences*
12:20 - 12:30		**G. Vlastelica**, P. Miščević: *Rockfall monitoring by terrestrial laser scanning - Case study of the rock cliff at Duće, Croatia*
12:30 - 14:00	Lunch break	
14:00 - 14:10	Working group 3: **Hazard Mapping** Moderators: Marui H. and Mihalić Arbanas S.	**L. Podolszki**, S. Mihalić Arbanas, Ž. Arbanas, Ž. Miklin, J. Martinčević: *Overview of historical landslide inventories in the Podsljeme area, Zagreb*
14:10 - 14:20		**N. Belić**, S. Mihalić Arbanas, D. Gajski, D. Šiško: *Derivation of historical Land Cover Map based on digital orthophoto images of the Zagreb area*
14:20 - 14:30		**C. Wang**, G. Furuya, H. Marui, N. Watanabe, S. Mihalić Arbanas: *Shallow landslides susceptibility mapping using SINMAP in Zagreb mountainous region, Croatia*
14:30 - 14:40		**C. Wang**, N. Watanabe, H. Marui, G. Furuya: *Use of a GIS-based 3D deterministic slope stability predicting tool for landslide hazard assessment in Zagreb mountainous region, Croatia*
14:50 - 15:00		**S. Dugonjić Jovančević**, O. Nagai, K. Sassa, Ž. Arbanas: *Deterministic landslide susceptibility analyses using LS-Rapid software*
15:00 - 15:10		**M. Vivoda**, S. Dugonjić Jovančević, Ž. Arbanas: *Landslide occurrence prediction in the Rječina River Valley as a base for an early warning system*
15:10 - 15:20		**S. Knezić**, I. Andrić, G. Vlastelica, P. Miščević, O. Bonacci, S. Antunović: *Hazard assessment methodology for pilot sites in Split area*
15:20 - 15:30		**S. Mihalić Arbanas**, S. Fabijanović, D. Perković, Ž. Arbanas, S. Bernat: *Development of landslide data base conceptual model on the basis of historical landslide data from the City of Zagreb and Primorsko-Goranska County*

Technical Program, Thursday, 7 March 2013

Oral Presentations, City Assembly, St. Ćiril and Metod Street 5, Upper Town, Hall A

15:30 - 16:00	Coffee break	
16:00 - 16:10	Working group 2: **Flash Floods and Debris Flows** Moderators: Yamashiki Y. and Ožanić N.	**E. Žic**, I. Sušanj, I. Ružić, N. Ožanić, Y. Yamashiki: *Hydrologic data analysis in the Grohovo landslide area*
16:10 - 16:20		**I. Sušanj**, N. Ožanić, , Y. Yamashiki: *Analysis of flash flood occurred at Slani potok*
16:20 - 16:30		**I. Andrić**, O. Bonacci, Y. Yamashiki: *The flow characteristics estimation of a karstic ungauged catchment: The Sutina River case study, Croatia*
16:30 - 16:40		**I. Andrić**, B. Skroza, S. Fujiki: *Discharge measurement in natural open stream flow using probability approach*
16:40 - 16:50		**E. Žic**, Y. Yamashiki, N. Ožanić, N. Bićanić: *Triggering model parameters defining the debris flow movement - Laboratory research*
16:50 - 17:00		**Y. Yamashiki**, S. Kurokawa, E. Žic, T. Takahashi, M. Ramy, I. Sušanj, S. Fujiki: *Development of Hydro-Debris 2D and 3D applicable for stony debris flow*
17:00 - 17:10		**I. Ružić**, N. Ožanić, Č. Benac: *Mošćenička Draga Early Warning Systems development using Machine learning*
17:10 - 17:20		**N. Dragičević**, B. Karleuša, N. Ožanić: *Involving the public in flash flood and erosion mitigation*
17:20 - 17:30		**N. Kimura**, Y. Yamashiki, I. Kisić: *Citizens' awareness and preparedness for disasters in Zagreb, Croatia*
17:30 - 17:40		**D. Bilandžija**, Ž. Zgorelec, I. Kisić, M. Mesić, A. Jurišić, I. Šestak: *Seasonal changes of CO_2 emissions in tillage induced agroecosystem*
17:40 - 18:00	Coffee break	
18:00 - 19:00	Moderator: Kalinić P. Facilitators: Žulić S., Mimica N., Fabris N., Šarić G.	**Round table:** **Application of Croatian-Japanese Project Results in the System of Land-Use Planning, Construction and Civil Protection**

Technical Program, Friday, 8 March 2013

Oral Presentations, University of Zagreb, Marshal Tito Square 14, The Aula

9:00 - 9:10	Session 1: **Landslide Investigation, Modeling, Remediation and Monitoring** Moderators: Sassa K. and Arbanas Ž.	**E. Oltean**, V. Nita, D. Ungureanu, M. Stanescu, C. Calugaru: *Engineering-geological study of landslide instability in quasi-horizontal terrains on Lasi ring-road, Romania*
9:10 - 9:20		S. Željem, **M. Čabraja**, Ž. Sokolić: *Causes of landslide occurrences in Plio-Quarternary sediments of Vukomeričke Gorice*
9:20 - 9:30		**H. Yang**, F. Wang, T. Sonoyama, Y. Mitani: *Investigation of landslides on inner slope of Mt. Aso caldera triggered by heavy rainfall in Northern Kyushu, Japan in July 2012*
9:30 - 9:40		**Y. Muceku**, O. Korini: *The geotechnical analysis of the Poravi landslide in Albania based on new geological investigations*
9:40 - 9:50		**S. Zekan**, N. Suljić: *Sliding causes and triggering mechanisms at the Bogatić landslide*
9:50 - 10:00		**F. Wang**, Y. Mitani, H. Yang, Y. Kuwada, A. Chukwueloka Okeke: *Using microtremor array surveying to evaluate the possibility of piping induced landslide dam failure*
10:00 - 10:10		**Y. Kuwada**, F. Wang, M. Honda, T. Sonoyama: *Experimental study on the motion mechanism of submarine landslides and the impact force on communication cables*
10:10 - 10:20		Lj. Dimitrievski, D. Dimitrievski, B. Bogoevski, **A. Strasheski**, H. Dimitrieski: *FEM modeling and analyses of remediation measures for the reactivated Botun landslide*
10:20 - 10:30		Discussion
10:30 - 11:00	Coffee break	

Technical Program, Friday, 8 March 2013

Oral Presentations, University of Zagreb, Marshal Tito Square 14, The Aula

11:00 - 11:10	Session 1: **Landslide Investigation, Modeling, Remediation and Monitoring** Moderators: Sassa K. and Arbanas Ž.	**M. Grošić**, D. Vidović, D. Udovič, I. Igrec, S. Špehar Kroflin: *Rockfall occurrences along the Croatian railways - Raspadalica location*
11:10 - 11:20		J. Josifovski, S. Gjorgjevski, **B. Susinov**: *Ramina landslide: From a natural hazard to remediation*
11:20 - 11:30		**A. Bytyçi**, Y. Muceku, H. Quela: *Evaluation of landslides and engineering measures on lignite open pit slope in south east Sibovc-Kosovo Coal Basin*
11:30 - 11:40		**K. Anguelov**: *New methods for strengthening of shallow landslides affecting the roads*
11:40 - 11:50		**C. Marunteanu**: *Monitoring and warning tool for landslide risk prevention*
11:50 - 12:00		**B. Abolmasov**, M. Pejić, V. Šušić: *The analysis of Umka landslide dynamics based on automated GNSS monitoring*
12:00 - 12:10		**Q. Khang Dang**, K. Sassa, D. Do Minh, V. Tien Dinh: *Landslides in Vietnam and the JICA - JST joint research project for landslide disaster reduction*
12:10 - 12:30		Discussion
12:30 - 14:00	Lunch break	
14:00 - 14:10	Session 2: **Landslide Hazard Mapping: Inventories, Susceptibility, Hazard and Risk** Moderators: Marui H. and Mihalić Arbanas S.	**O.V. Zerkal**: *Specification of East-European landslide terminology and classification systems*
14:10 - 14:20		P. Lokin, **U. Đurić**, B. Trivić, R. Pavlović: *BeoSLIDE - Belgrade landslide inventory*
14:20 - 14:30		**S. Milenković**, M. Jotić, V. Vujanić, B. Jelisavac, Z. Berisavljević: *Landslide database on the road network in Serbia*
14:30 - 14:40		**C. Sandić**, K. Leka: *Program of the landslide database development of the Republic of Srpska, BIH*
14:40 - 14:50		**I. Peshevski**, M. Jovanovski, B. Markoski, S. Petruseva, B. Susinov: *Landslide Inventory Map of the Republic of Macedonia, statistics and description of main historical landslide events*
14:50 - 15:00		**E. Plaku**, M. Jusufati, M. Lamaj: *Landslide susceptibility maps of Vlora District*
15:00 - 15:10		**E. Milutinovici**, S. Corlateanu, D. Mihailescu, R. Iacobescu: *Landslides hazard maps for Mures County central area, Romania*
15:10 - 15:20		M. Komac, J. Šinigoj, **M. Jemec Auflič**, M. Čarman, M. Krivic: *Landslide hazard forecast in Slovenia - MASPREM*
15:20 - 15:30		**M. Marjanović**, S. Zečević, I. Basarić: *On perspectives of semi-automated landslide assessment*

Technical Program, Friday, 8 March 2013

Oral Presentations, University of Zagreb, Marshal Tito Square 14, The Aula

15:30 - 16:00	Coffee break	
16:00 - 16:10	Session 2: **Landslide Hazard Mapping: Inventories, Susceptibility, Hazard and Risk** Moderators: Marui H. and Mihalić Arbanas S.	**T. Peternel**, M. Jemec Auflič: *Exposure of inhabitants, constructions and infrastructures to landslide susceptibility in case of selected municipalities in Slovenia*
16:10 - 16:20		**B. Bajat**, M. Kilibarda, M. Pejović, M. Samardžić Petrović: *The preliminary damage assessment of properties based on massive appraisal maps*
16:20 - 16:30		**A. Strom**, K. Abdrakhmatov: *ICL Summer School on Rockslides and related phenomena: Field training course on morphology and internal structure of large-scale catastrophic bedrock landslides*
16:30 - 16:50	Short break	
16:50 - 17:00	Session 3: **Flash Floods and Debris Flows** Moderators: Yamashiki Y. and Ožanić N.	**O. Bonacci**, I. Andrić, Y. Yamashiki: *Hydrological model of karstic Blue Lake near Imotski (Croatia)*
17:00 - 17:10		**N. Suljić**, O. Kovčić, N. Kikanović, R. Muminović, S. Kadrić: *Analysis of flood flows at profile of Modrac Dam and its impact on downstream area*
17:10 - 17:20		**J. Sodnik**, A. Kryžanowski, M. Martinčič, M. Mikoš: *Torrential check-dams as debris-flow sources*
17:20 - 17:30		**N. Krvavica**, V. Travaš, N. Ravlić, N. Ožanić: *Hydraulics of stratified two-layer flow in Rječina Estuary*
17:30 - 18:30	**Symposium poster session (S1,S2)**	
18:30 - 19:30	Moderator: Mihalić Arbanas S. Facilitators: Arbanas Ž., Abolmasov B., Mikoš M., Čarman M.	**ICL ABN Round table: Discussion and Endorsement in the Course of the ICL Adriatic-Balkan Network Activities**

Poster Session, Friday, 8 March 2013, 17:30 - 18:30

University of Zagreb, Marshal Tito Square 14, In the front of Aula

F. Faris, **F. Wang**:
Landslide investigation of earthquake induced landslide during rainfall in Tandikat, West Sumatra, Indonesia

N. Suljić, S. Zekan:
Terramesh system application in landslide remediation

G.C. Silvas:
Instability phenomena and mitigation measures in the area of the Cluj Ethnographic Museum

P. Šiša, Ž. Sokolić:
Remediation of the unstable location Plavča Draga on the Zagreb-Split railway line

M. Grošić, Ž. Arbanas, S. Mihalić Arbanas, S. Bernat, I. Matjašić, D. Vidović:
Instabilities of open pit cuts, case studies from Croatia

D. Udovič, Ž. Arbanas, S. Mihalić Arbanas, M. Grošić:
Rockfall hazard management on traffic facilities in Croatia

D. Gibson, C. Wendeler, **V. Budimir**:
Landslide and debris flow barriers at A83 Rest and be Thankful in Scotland

T. Nikolić:
Anthropogenic influence on the stability of slopes in Bosnia and Herzegovina

H. Begić:
Characteristic landslide risk zones in the Federation of Bosnia and Hercegovina

M. Jusufati, M. Lamaj, M. Dardha, O. Jaupaj, E. Plaku:
Landslide inventory map of the Vlora Region at scale 1:50,000

Č. Benac, P. Đomlija, **M. Vivoda**, R. Buljan, D. Navratil:
The instability phenomena along the coasts of the Kvarner area (NE Adriatic Sea)

Ž. Miklin, L. Podolszki, J. Martinčević:
Availability of data about landslides in Croatia and their implementation in proposed formats of EU landslides data bases

M. Podboj, J. Šinigoj:
Inspired GEOdata CLOUD Services

Notes

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