



# 3<sup>rd</sup> Croatian Conference on Earthquake Engineering 3CroCEE

19-22 March 2025, Split, Croatia

## Final Programme

### Conference Organizers



University of Zagreb  
Faculty of Civil  
Engineering



UNIVERSITY OF SPLIT,  
FACULTY OF CIVIL ENGINEERING,  
ARCHITECTURE AND GEODESY



### Supporting Organizations



The International  
Association for  
Earthquake Engineering



The European  
Association for  
Earthquake Engineering



Croatian  
Association for  
Earthquake Engineering



Government  
of the Republic  
of Croatia

### Under Auspices of

# Conference Map

Floor -1



Floor 1



## Conference Halls:

- Ballroom
- Oleandar
- Palma
- Ružmarin
- Agava

## Conference Programme – Short Version

### Wednesday, 19 March

08:00–09:00	Registration			
09:00–10:30	Opening Ceremony			
10:30–11:00	Coffee break			
	<b>Conference Hall: Ballroom</b>	<b>Conference Hall: Oleandar</b>	<b>Conference Hall: Palma</b>	<b>Conference Hall: Ruzmarin</b>
11:00–12:15	<b>Session: Experimental Techniques for Characterization of Materials and Structures</b>	<b>Round Table: Post-Earthquake Retrofitting Experiences and the Imperative of Seismic Safety Classification for Buildings in Croatia (in Croatian)</b>	<b>Session: Seismic Performance of Structures</b>	<b>Session: Lessons Learnt From Earthquake Disasters</b>
12:15–13:00	Paulo B. Lourenço Keynote Lecture* <b>Masonry Enclosures: Damage, Applications, Lessons Learned from Testing and New Solutions</b>			
13:00–14:00	Lunch			
14:00–14:15	Marketing: SPEGRA			
14:15–15:00	Miha Tomažević Keynote Lecture* <b>Testing for the Assessment of Earthquake Resistance of Heritage Masonry Buildings: Nondestructive Versus Destructive, Laboratory Versus In-Situ Testing</b>			
15:00–18:00	Technical visit: Diocletian's Palace			
16:30–18:00	HCPI General Assembly (invitation only)			
20:00–00:00	Conference party			

### Thursday, 20 March

09:00–09:45	Serena Cattari Keynote Lecture* <b>Modelling and Analyses for the Seismic Assessment of Existing Urm Buildings: Research Challenges and Engineering-Practice Implications</b>			
09:45–10:30	Helen Crowley Keynote Lecture* <b>Why Seismic Hazard Modelling Has Become a Risky Business</b>			
10:30–11:00	Coffee break			
	<b>Conference Hall: Ballroom</b>	<b>Conference Hall: Oleandar</b>	<b>Conference Hall: Palma</b>	<b>Conference Hall: Ruzmarin</b>
11:00–13:00	<b>Risk Uncertainty Brawl</b>	<b>Session: Seismic Performance of Structures</b>	<b>Session: Seismic Performance of Bridges</b>	<b>Session: Historical Structures</b>
13:00–14:00	Lunch			
14:00–16:00	<b>Panel Discussion: Rules and Guidelines for the Design of Simple Masonry Buildings in Seismically Active Areas</b>	<b>Session: Seismic Loss and Risk Analysis</b>	<b>Session: Repair and Strengthening of Structures</b>	<b>Session: Engineering Seismology</b>
16:00–16:30	Coffee break			



## Thursday, 20 March (continued)

16:30–17:30	<b>Session: Seismic Performance of Structures</b>	<b>Session: Preparedness and Emergency Management</b>	<b>Session: Repair and Strengthening of Structures &amp; Seismic Performance of Structures</b>	<b>Session: Engineering Seismology &amp; Geotechnical Earthquake Engineering</b>
17:30–17:45	Transfer to the Faculty of Civil Engineering, Architecture and Geodesy, University of Split			
17:45–18:00	Arrival and Registration at the Faculty of Civil Engineering, Architecture and Geodesy, University of Split			
18:00–19:00	PhD Special Session			
18:00–20:00	Student Shaking Table Competition at the Faculty			

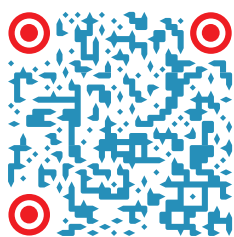
## Friday, 21 March

09:00–09:45	Michael N. Fardis			
Keynote Lecture*	<b>Comparison of Two Generations of Eurocodes for Earthquake-Resistant Concrete Buildings Through Systematic Applications</b>			
09:45–10:30	Gian Michele Calvi			
Keynote Lecture*	<b>Seismic Isolation in Loss-Based Design</b>			
10:30–11:00	Coffee break			
	<b>Conference Hall: Ballroom</b>	<b>Conference Hall: Oleandar</b>	<b>Conference Hall: Palma</b>	<b>Conference Hall: Ruzmarin</b>
11:00–13:00	<b>Special Session: Repair and Retrofit of Structures</b>	<b>Session: Historical Structures</b>	<b>Session: Geotechnical Earthquake Engineering</b>	<b>Session: Seismic Performance of Structures</b>
13:00–14:00	Lunch			
14:00–15:45	<b>Special Session: Repair and Retrofit of Structures</b>	<b>Session: Preparedness and Emergency Management &amp; Post-Earthquake Reconstruction Process</b>	<b>Session: Geotechnical Earthquake Engineering &amp; Seismic Performance of Structures</b>	<b>Session: Seismic Performance of Structures</b>
15:45–16:15	Closing Ceremony			
16:15–18:30	Technical Visit: Marjan Hotel Construction Site			

## Saturday, 22 March

08:00–19:30 Technical Visit: Hvar

\* All keynote lectures will take place in the conference hall Ballroom



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## Conference Programme – Detailed Version

Conference Hall: Ballroom		Wednesday, 19 March
08:00–09:00	Registration	
09:00–10:30	Opening Ceremony	
10:30–11:00	Coffee break	
11:00–12:00	<b>Session: Experimental Techniques for Characterization of Materials and Structures</b> Chairing: Goran Baloević & Marina Frančić Smrkić	
	<b>Advancing Seismic Design and Assessment through Experimental Testing: Insights from the ERIES Project</b> Gerard O'Reilly, Igor Lanese, Elisa Rizzo Parisi, Filippo Dacarro, Volkan Ozsarac, Davit Shahnazaryan, Roberto Nascimbene, Gian Michele Calvi	
	<b>Testing of the Seismic Behaviour of a Traditional Joint in a Wooden Roof Structure</b> Nives Meštrović, Ivica Guljaš	
	<b>Push-Out Tests on Timber-Steel Hybrid Joint with Screws Connections: Numerical and Experimental Investigations</b> Giovanni Muciaccia, Laura Corti	
	<b>Integration of OMA and FEMU for Estimation Modulus of Elasticity in Masonry Structures</b> Suzana Ereiz, Ivan Duvnjak, Janko Koščak, Marko Bartolac, Domagoj Damjanović, Marina Frančić Smrkić	
12:15–13:00	<b>Masonry Enclosures: Damage, Applications, Lessons Learned from Testing and New Solutions</b> Keynote Paulo B. Lourenço Lecture Chairing: Maja Baniček & Boris Trogrlić	
13:00–14:00	Lunch	
Marketing	SPEGRA	
14:15–15:00	<b>Testing for the Assessment of Earthquake Resistance of Heritage Masonry Buildings: Nondestructive Versus Destructive, Laboratory Versus In-Situ Testing</b> Keynote Miha Tomažević Lecture Chairing: Neno Torić & Mario Uroš	
15:00–18:00	Technical Visit: Diocletian's Palace	
16:30–18:00	HCPI General Assembly (invitation only)	
20:00–00:00	Conference Party	
Conference Hall: Ružmarin		Wednesday, 19 March
11:00–12:15	<b>Session: Lessons Learnt from Earthquake Disasters</b> Chairing: Željana Nikolić & Marta Šavor Novak	
	<b>Computed Bi-Directional Combination Coefficients for Structures Using the Feb. 6<sup>th</sup>, 2023 Kahramanmaras Earthquakes Ground Motion Data</b> Asma Yahiaoui, Oguz Koz, Oguz C Celik	
	<b>Analysis of SGM Data Characteristics for Better Explanation of Building Damage During the Feb. 6<sup>th</sup>, 2023 Kahramanmaras, Turkey Earthquakes</b> Oguz Koz, Sinem Guntepe, Oguz C Celik	
	<b>Rapid Earthquake Loss Assessment Framework: RELAR Project and Its Application on the Data Set from the Kraljevo (Serbia) Earthquake in 2010</b> Božidar Stojadinović, Marko Marinković, Dejan Marinković, Filip Đorđević, Marija Ivanović, Miloš Kovačević, Mladen Nikolić, Nevena Simić, Zoran Babović, Zoran Pucanović, Zoran Stojadinović, Đorđe Nedeljković	
	<b>Field Observations of Buildings and Infrastructure Behaviour During 2024 Floods and Rockfall in Bosnia and Herzegovina</b> Ante Pilipović, Karlo Jandrić	
	<b>SUZI-SAEI Earthquake Image Database: A Framework for Tagging Earthquake-Induced Damage</b> Filip Đorđević, Marko Radišić, Svetlana Brzev, Marko Marinković	
15:00–18:00	Technical Visit: Diocletian's Palace	
16:30–18:00	HCPI General Assembly (invitation only)	
20:00–00:00	Conference Party	

Conference Hall: Palma		Wednesday, 19 March
11:00–12:15	<b>Session: Seismic Performance of Structures</b> Chairing: Marija Smilović Zulim & Senad Medić	
	<b>Augmented Modal Dimensions for Seismic Evaluation of Buildings</b> Jui-Liang Lin	
	<b>Research Imperatives for Enhancing the Analysis and Seismic Performance of Joints in Vertical Building Extensions</b> Alush Shala, Jelena Bleiziffer	
	<b>Numerical Experiment for Shear Key Joint Behavior Simulation in Arch Dams: Part 1 – Investigating the Influence of the Key Shape and Angle</b> Ana Nanevska, Violeta Mircevska	
	<b>Numerical Experiment for Shear Key Joint Behavior Simulation in Arch Dams: Part 2 – Investigating the Influence of the Arch Thickness and Applied Force</b> Violeta Mircevska, Ana Nanevska	
	<b>Dynamic Effects in Tall Steel Structures with Different Purposes</b> Elena Stokuca, Golubka Necevska-Cvetanovska, Milos Stokuca	
15:00–18:00	Technical Visit: Diocletian's Palace	
16:30–18:00	HCPI General Assembly (invitation only)	
20:00–00:00	Conference Party	

Conference Hall: Oleandar		Wednesday, 19 March
11:00–12:15	<b>Post-Earthquake Retrofitting Experiences and the Imperative of Seismic Safety Classification for Buildings in Croatia (In Croatian)</b> Chairing: Ivan Banović	

Conference Hall: Ballroom		Thursday, 20 March
09:00–09:45	<b>Modelling and Analyses for the Seismic Assessment of Existing Urm Buildings: Research Challenges and Engineering-Practice Implications</b> Keynote Lecture Serena Cattari Chairing: Josip Atalić & Alen Harapin	
09:45–10:30	<b>Why Seismic Hazard Modelling Has Become a Risky Business</b> Keynote Lecture Helen Crowley Chairing: Josip Atalić & Alen Harapin	
10:30–11:00	Coffee break	
11:00–13:00	<b>Risk Uncertainty Brawl</b> Chairing: Paolo Bazzurro, Vitor Silva & Dimitrios Vamvatsikos	
13:00–14:00	Lunch	
14:00–16:00	<b>Rules and Guidelines for the Design of Simple Masonry Buildings in Seismically Active Areas</b> Panel Discussion	
14:00–14:10	<b>Introduction to Session</b> Mario Uroš	
14:10–14:55	<b>Seismic Design of Masonry Structures with the Second Generation of Eurocodes – Background and Application</b> C. Butenweg	
14:55–15:15	<b>Work on the part of national annex of Eurocode 8 regarding simple masonry buildings – Croatian experiences</b> D. Grandić, K. Tarnik	
15:15–16:00	Round Table, Discussion	
16:00–16:30	Coffee break	

16:30–17:30	<b>Session: Seismic Performance of Structures</b> Chairing: Mirela Galić & Ivo Haladin
	<b>Influence of Ground Motion Parameters on Seismic Response</b> Tanja Kalman Šipoš, Adriana Brandis
	<b>Analysis of Reinforced Concrete Beam-Column Joint in ANSYS Software</b> Ivana Drobnjak, Marina Rakočević
	<b>The Influence of Structural Eccentricity on the Seismic Behavior of Torsionally Sensitive Structures</b> Riste Volchev, Nikola Postolov, Koce Todorov, Ljupcho Lazarov
	<b>Evaluation of the Seismic Performance of the Honeycomb Yielding Damper (HYD)</b> Mohammad Ghanooni Bagha, Zeinolabedi Mortezaali, Peyman Shadman Heidari
17:30–17:45	Transfer to the Faculty of Civil Engineering, Architecture and Geodesy, University of Split
17:45–18:00	Arrival and Registration at the Faculty of Civil Engineering, Architecture and Geodesy, University of Split
18:00–20:00	Student Shaking Table Competition at the Faculty

<b>Faculty of Civil Engineering, Architecture and Geodesy, University of Split</b>		<b>Thursday, 20 March</b>
17:30–17:45	Transfer to the Faculty of Civil Engineering, Architecture and Geodesy, University of Split	
17:45–18:00	Arrival and Registration at the Faculty of Civil Engineering, Architecture and Geodesy, University of Split	
18:00–19:00	<b>PhD Special Session</b> Chairing: Gabrijela Grozdanić	
	<b>Response of the Building in Aggregates According to the Interconnected Different Parameters</b> Maja Mrkonjić, Josip Atalić	
	<b>Influence of Ground Motion Record Selection on Higher Modes: A Comparison of UHS and CS Approaches</b> Jose Poveda, Gerard O'Reilly	
	<b>Analytical Approach to Seismic Behaviour Assessment of RC Frame Structures with Rubber Jointed Masonry Infill</b> Liljana Bozinovska Mijalkova, Aleksandra Bogdanovic, Bartolomeo Panto, Enrico Tubaldi, Marko Marinković	
	<b>Effect of Base Column Rotational Stiffness on the Seismic Response of Steel Framed Buildings</b> George Papagiannopoulos, Menelaos Papamichelakis	
	<b>Natural Composites in Construction: Overview of the Development, Application and Challenges of Natural Fiber Reinforced Cementitious Matrix (NFRCM)</b> Mario Žigo, Marina Nikolić, Marija Smilović-Zulim, Nikola Grgić	
	<b>Near-Distance Spectral Parameter Kappa Calculations for Stations Installed in N. Macedonia</b> Marina Poposka, Davor Stanko, Radmila Salic Makreska, Dragi Dijchinovski, Marta Stojnaoska	
18:00–20:00	Student Shaking Table Competition at the Faculty	

<b>Conference Hall: Oleandar</b>		<b>Thursday, 20 March</b>
11:00–13:00	<b>Session: Seismic Performance of Structures</b> Chairing: Mirela Galić & Davor Grandić	
<b>Invited Lecture</b>	<b>Seismic Performance and Fragility Assessment of Glass Curtain Walls: Methods and Influencing Parameters</b> Chiara Bedon	
<b>Marketing</b>	FIPMEC	
	<b>Performance-Based Seismic Assessment of RC Frame Structures Using Simplified SDOF Incremental Dynamic Analyses</b> Leart Taravari, Koce Todorov	
	<b>Effective Stiffness of Flanged Reinforced Concrete Structural Walls: A Numerical Approach</b> Komaravolu Venkata Purneshwar, Kaustubh Dasgupta, Nilanjan Samanta	
	<b>Seismic Behavior of Prefabricated Wall Panels</b> Anđela Čavčić, Ivan Banović, Nikola Grgić, Alen Harapin	
	<b>Improved Seismic Assessment of Existing RC Frame Structures</b> Aleksandar Zhurovski, Borjan Petreski, Igor Gjorgjiev	
	<b>Seismic Isolation of the Existing Reinforced Concrete Building</b> Krešimir Todorić, Mario Uros	
13:00–14:00	Lunch	



14:00–16:00 **Session: Seismic Loss and Risk Analysis**  
Chairing: Marta Šavor Novak & Ivan Balić

**Invited Lecture** **Seismic Risk Assessment in Urban Areas: Innovative Approaches to Support Large-Scale Vulnerability Evaluations in the Digital Age**  
Tiago Miguel Ferreira

**SP-BELA: A Structural Seismic Vulnerability Assessment Methodology Based on Pushover Curves**  
Barbara Borzi, Antonella di Meo, Marta Faravelli

**Bridging the Gap: A Software Tool for Efficient Ground Motion Selection in Earthquake Engineering**  
Davit Shahnazaryan, Volkan Ozsarac, Gerard O'Reilly

**On the Impacts of Structure-to-Structure Damage Correlation for Regional Seismic Risk Assessment**  
Tomas Mejia, Gerard O'Reilly

**Enhancing Functional Recovery Estimations Through Story Loss Functions**  
Davit Shahnazaryan, Gerard O'Reilly

**Application of Parametric Pushover Curve Model for Seismic Loss Estimation of Building Stock**  
Neja Fazarinc, Anže Babič, Matjaž Dolšek

**From Global to Local Exposure Datasets: Accounting for the Dynamic Properties of Buildings in Seismic Exposure and Damage Assessment**  
Bojana Petrovic, Chiara Scaini, Danijel Schorlemmer

16:00–16:30 Coffee break

16:30–17:30 **Session: Preparedness and Emergency Management**  
Chairing: Katarina Rogulj & Mislav Stepinac

**Enhancing Urban Disaster Risk Management: A Transnational Analysis of Seismic Risk Assessment Frameworks in Europe**

Anže Babič, Can Baran Aktaş, Christina Rechberger, Jelena Pejović, Marco Gaetani d'Aragona, Maria Polese, Marta Faravelli, Matjaž Dolšek, Mehmet Firat Aydın, Neja Fazarinc, Nina Serdar, Paolo Ricci, René Kastner, Rıza Secer Orkun Keskin, Serena Cattari, Valerio Poggi, Özkan Kale

**Deploying of Seismic Alert Warning Systems in Industrial Facility**  
Igor Gjorgjiev, Marija Vitanova, Marta Stojnaoska

**The Use of UAVs in Assessing Seismic Vulnerability of Existing URM Buildings**  
Mislav Stepinac, Lucijano Bajić, Milan Domazet

**EMERGE: Rapid Multi-Risk Needs Evaluation and Planning Platform**

Radmila Salic Makreska, Igor Gjorgjiev, Julijana Bojadjeva, Vlatko Sesov, Roberta Apostolska, Goran Chapragoski

17:30–17:45 Transfer to the Faculty of Civil Engineering, Architecture and Geodesy, University of Split

17:45–18:00 Arrival and Registration at the Faculty of Civil Engineering, Architecture and Geodesy, University of Split

18:00–20:00 Student Shaking Table Competition at the Faculty





11:00–13:00	<b>Session: Seismic Performance of Bridges</b> Chairing: Alen Harapin & Anđelko Vlašić
	<b>Experimental Testing of Circular RC Bridge Pier Models Supporting Development of Refined Nonlinear 3D Micro-Model</b> Laurent Hakaj, Jelena Ristic, Toni Arangelovski, Danilo Ristic
	<b>Seismic Assessment of the Damage Limit States of Existing Highway Bridges</b> Miloš Čokić, Radomir Folić
	<b>Experimental In-Situ Testing of an Existing Bridge</b> Antonio Shoklarovski, Aleksandra Bogdanovic, Zoran Rakicevic, Filip Manojlovski, Angela Poposka
	<b>Combining Conventional and Next-Generation Intensity Measures for Risk Assessment of Bridge Structures with Hazard-Consistent Ground Motions</b> Savvinos Aristeidou, Gerard O'Reilly
	<b>Experimental Assessment of Existing Bridge Structure</b> Angela Poposka, Aleksandra Bogdanovic, Antonio Shoklarovski, Filip Manojlovski, Zoran Rakicevic
	<b>New Provisions for Seismic Design of Bridges</b> Ana Mandić Ivanković, Mladen Srbić, Gordana Hrelja Kovačević
	<b>Remote Testing and Assessment of Different Types of Bridge Structures Using Advanced Evaluation Methods</b> Borjan Petreski, Igor Gjorgjiev, Marija Vitanova, Ana Nanevska, Filip Manojlovski, Trajche Zafirov, Vlado Micov
	<b>Impact of Environment and Climate Change on Seismic Resistance of Concrete Bridges</b> Marija Kušter Marić, Petra Milić, Anđelko Vlašić, Mladen Srbić, Ana Mandić Ivanković, Dominik Skokandić
13:00–14:00	Lunch
14:00–16:00	<b>Session: Repair and Strengthening of Structures</b> Chairing: Nikolina Živaljić & Ivica Guljaš
<b>Marketing</b>	MAPEI
	<b>Optimal Estimation of Linear Shear-Type Models for Benchmark Steel Structures in Dynamic Analysis</b> Maziar Fahimi Farzam, Salehy Shahram
	<b>Numerical Validation of Masonry Wall Experiments Using the Applied Element Method</b> Sergey Churilov
	<b>BIM Application in Seismic Strengthening of Reinforced Concrete Building Using FRP Materials</b> Goran Chapragoski, Golubka Nechevska Cvetanovska
	<b>Tests on Special Anchors for Masonry Infills with Special Opportunity for Seismic Retrofitting</b> Matthias Roik, Caroline Piesker
	<b>Seismic Retrofit of Masonry Walls Using Repointing with Traditional Mortar and Polypropylene Strips - Test Results</b> Festim Ademi, Elena Dumova-Jovanoska, Sergey Churilov, Enis Jakupi
	<b>Structural Reconstruction of the Belfry, Monastery and Church of St. Francis on the Kaptol in Zagreb</b> Ante Mlinar, Ante Kelava, Ante Borovina, Ante Buzov
	<b>Seismic Assessment and Cost-Benefit Analysis of Retrofitting Measures for Post-War Multi-Residential Masonry Buildings in Ljubljana</b> Simon Petrovčič, Petra Prašnikar, Vojko Kilar
16:00–16:30	Coffee break
16:30–17:30	<b>Session: Repair and Strengthening of Structures</b> Chairing: Nikolina Živaljić & Marija Demšić
	<b>Comparison of Results Obtained from Analytical and Experimental Investigations of RC Building Columns Using CFRP</b> Artur Roshi, Golubka Nechevska-Cvetanovska, Jordan Bojadjiev
	<b>Dynamic Assessment of RC Beams Flexurally Strengthened with CFRP Strips</b> Tomislav Brozović, Tomislav Kisicek
	<b>Seismic Retrofit of 'Plinio il Giovane' School Building: Major Application of Base Isolation Using High Damping Rubber Bearings</b> Stefano Barone
	<b>Seismic Assessment of the Precode High-Rise Building Frame Using the Pushover Analysis</b> Karlo Grgurić, Mario Uros
17:30–17:45	Transfer to the Faculty of Civil Engineering, Architecture and Geodesy, University of Split
17:45–18:00	Arrival and Registration at the Faculty of Civil Engineering, Architecture and Geodesy, University of Split
18:00–20:00	Student Shaking Table Competition at the Faculty

11:00–13:00	<b>Session: Historical Structures</b> Chairing: Ivan Balić & Marija Demšić
<b>Invited Lecture</b>	<b>Seismic Analysis of Masonry Structures</b> Hrvoje Smoljanović
	<b>Seismic Analysis of Dry Stone Masonry Structures Within the Diocletians' Palace in Split</b> Nikolina Živaljić, Ivan Balić, Hrvoje Smoljanović, Boris Trogrlić, Ante Munjiza
	<b>Seismic Vulnerability Assessment of Complex Historical Masonry Aggregates with Interactions Between Structural Units</b> Madalena Ponte, Andrea Penna, Gabriele Guerrini, Rita Bento
	<b>Prediction of Masonry Strength and Earthquake Characteristics Using Machine-Learning Algorithms for Gründerzeit Buildings in Vienna</b> Karl Deix, Branko Rusnov
	<b>Assessing Mechanical Properties of Historic Stone Masonry: Case Study in Jurdani (Rijeka)</b> Paulo Šćulac, Josipa Mihaljević, Ivana Štimac Grandić, Davor Grandić
	<b>Effectiveness of Built Heritage Construction in Resisting Strong Earthquakes: A Review of Post-1979 Montenegro Earthquake Retrofitting of the Rector's Palace in Dubrovnik</b> Davorin Penava, Lars Abrahamczyk, Marin Valinčić, Ante Vrban
	<b>Performance Analysis of Historical Churches and Mosques During Recent Earthquakes – Some Perspectives on Application of AI/ML Systems</b> Satwant Rihal
13:00–14:00	Lunch
14:00–16:00	<b>Session: Engineering Seismology</b> Chairing: Iva Dasović & Davor Stanko
<b>Invited Lecture</b>	<b>Examples of Application of Seismic Interferometry in Engineering Seismology</b> Stefano Parolai
	<b>Patterns of Earthquake Damage in Ston: A 146-Year Comparison</b> Marijan Herak, Davorka Herak
	<b>Investigating Time-Dependent Earthquake Clustering in Short-Term Risk Analysis</b> Atefe Darzi, Benedikt Halldórsson, Mojtaba Moosapoor
	<b>Towards a Hybrid Seismic Hazard Model for Iceland</b> Benedikt Halldórsson, Atefe Darzi, Farnaz Bayat, Hamed Davari, Milad Kowsari
	<b>Parametrization of Synthetic Near-Fault Seismic Wavefields for the Southwest Iceland Transform Zone</b> Farnaz Bayat, Benedikt Halldórsson, Milad Kowsari
	<b>Developing Earthquake Ground Motion Models for Iceland Using Bayesian Hierarchical Modeling</b> Hamed Davari, Atefe Darzi, Benedikt Halldórsson, Birgir Hrafnkelsson, Milad Kowsari, Sahar Rahpeyma
	<b>Physics-Based Site-Specific PSHA for Several Urban Centers in Southwest Iceland</b> Milad Kowsari, Benedikt Halldórsson
16:00–16:30	Coffee break
14:45–15:45	<b>Session: Engineering Seismology &amp; Geotechnical Earthquake Engineering</b> Chairing: Iva Dasović & Davor Stanko
	<b>Local Earthquakes - Ground Motion Models for Epicentral Zone</b> Snezana Stamatovska
	<b>A Causal Lens Perspective on Basin Effects</b> Rashid Shams, Chukwuebuka Nweke, Chenhao Wu, Henry Burton
	<b>Seismic Ground Motion Amplification Induced by Topographic Irregularity in Northern Croatia – Preliminary Results</b> Davor Stanko, Dragana Dogančić, Sanja Kovač, Jasmin Jug, Stjepan Strelec, Vesna Postončec-Petrić, Marijan Kovačić, Francesco Panzera, Olga-Joan Ktenidou
	<b>The Role of Seismic Geophysical Methods in Near-Surface Characterization</b> Irena Gjorgjeska, Vlatko Sheshov, Julijana Bojadjeva, Kemal Edip
17:30–17:45	Transfer to the Faculty of Civil Engineering, Architecture and Geodesy, University of Split
17:45–18:00	Arrival and Registration at the Faculty of Civil Engineering, Architecture and Geodesy, University of Split
18:00–20:00	Student Shaking Table Competition at the Faculty

09:00–09:45 Keynote Lecture	<b>Comparison of Two Generations of Eurocodes for Earthquake-Resistant Concrete Buildings Through Systematic Applications</b> Michael N. Fardis Chairing: Boris Trogrlić & Tomislav Kišiček
09:45–10:30 Keynote Lecture	<b>Seismic Isolation in Loss-Based Design</b> Gian Michele Calvi Chairing: Boris Trogrlić & Tomislav Kišiček
10:30–11:00	Coffee break
11:00–13:00	<b>Special Session: Repair and Retrofit of Structures</b> Chairing: Gian Michele Calvi, Amr Elnashai, Michael Fardis, Luigi di Sarno,
11:00–11:05	<b>Introduction to Special Session</b> A. Elnashai
11:05–11:35	<b>Overview of the Morning Session – Guidelines and Regulations</b> M. Calvi
11:35–11:55	<b>Earthquake Protection of Heritage Structures: Status of Regulations and Practice in North Macedonia</b> V. Sendova
11:55–12:15	<b>Behavior and Design of Interfaces Between Concretes Cast at Different Times</b> E. Vintzeleou
12:15–12:35	<b>Recent Developments in the Risk-Targeted Repair and Retrofitting of Existing Structures</b> G. O'Reilly
12:35–12:55	<b>Applicability of the New Methods of the Second-Generation of Eurocode 8 to Seismic Upgrading RC Frames Using Hybrid Dampers with Recentering Capability</b> A. Benavent-Climent
12:55–13:00	<b>Wrap-Up, Summary</b> L. di Sarno
13:00–14:00	Lunch
14:00–15:45	<b>Special Session: Repair and Retrofit of Structures</b> Chairing: Gian Michele Calvi, Amr Elnashai, Michael Fardis, Luigi di Sarno,
14:00–14:05	<b>Introduction to Session</b> A. Elnashai
14:05–14:35	<b>Overview of the Afternoon Session</b> M. Fardis
14:35–14:55	<b>Assessing and Mitigating the Effects of Reinforcement Corrosion in Bridge Infrastructure with Novel Cementitious Materials: The Opportunities Provided by Ultra-High Performance Concrete</b> S. Pantazopoulou
14:55–15:15	<b>Seismic Strengthening of Existing Buildings with Steel Exoskeletons: Design Methodology and Applications</b> R. Landolfo
15:15–15:35	<b>Large Scale Experimental Verification of Seismic Retrofitting of Substandard RC Structures</b> S. Bousias
15:35–15:45	<b>Wrap-Up, Summary</b> Four Organizers
15:00–15:15	Closing Ceremony
16:15–16:30	Presentation on the Marjan Hotel Construction Site
16:30–16:45	Technical visit: Marjan Hotel
16:45–17:00	Arrival at the Marjan Hotel Construction Site
17:00–17:45	Technical Visit: Marjan Hotel

11:00–13:00	<b>Session: Historical Structures</b> Chairing: Hrvoje Smoljanović & Mislav Stepinac
	<b>Integrated Non-Destructive Approach for Diagnosis of Historic Monuments</b> Jasna Grujoska Kuneska, Veronika Shendova
	<b>Assessment, Evaluations and Retrofitting Application Methods for Masonry Old Stone Structure</b> Naser Kabashi, Teuta Imeri, Alush Shala, Enes Krasniqi, Ylli Murati
	<b>Seismic Evaluation of the High-Rise Residential Building with Structural Walls from the Late 60s</b> Mustafa Hrasnica, Amina Karavelić-Hadžimejlić, Senad Medic, Jelena Medić
	<b>Seismic Features of Existing Prefabricated Systems for Multi-Family Housing Construction in Serbia and the Region: Case Study of New Belgrade</b> Milica Petrović, Svetlana Nikolić Brzev
	<b>Seismic Assessment of a Historic Austro-Hungarian Masonry Building in Sarajevo's Baščaršija</b> Camil Medanovic, Naida Ademovic, Marijana Hadzima-Nyarko
	<b>A State-of-the-Art Review: Seismic Vulnerability Assessment Methods</b> Antonela Moretić, Karlo Ožić, Mislav Stepinac
	<b>Assessment of the Physical Condition of Byzantine Churches in North Macedonia</b> Jasna Grujoska Kuneska, Veronika Shendova
	<b>Assessment of Tram-Induced Vibrations on Earthquake-Damaged Buildings</b> Franka Meštrović, Ivo Haladin, Katarina Vranešić, Krešimir Burnać, Zvonimir Santek
13:00–14:00	Lunch
14:00–15:45	<b>Session: Preparedness and Emergency Management &amp; Post-Earthquake Reconstruction Process</b> Chairing: Katarina Rogulj & Zvonko Sigmund
	<b>Building Resilient Communities: Advancing STEM Education and Earthquake Engineering Research</b> Marija Vitanova, Roberta Apostolska, Vlatko Sheshov, Ana Nanevska, Dejan Ivanovski, Filip Manojlovski, Goran Jekic, Elena Delova
	<b>Building Classification Model for Seismic Risk Assessment of Gostivar, North Macedonia</b> Shpresim Ibraimi, Koce Todorov, Miroslav Nastev, Stanislav Milovanovic
	<b>Increasing Structural Resilience: A Case Study of Hospital Retrofitting in Albania</b> Izet Mehmetaj, Erjon Çobani
	<b>Field Application for Assessing the Damage and Usability of Bridges After an Earthquake</b> Anđelko Vlašić, Marta Savor Novak, Ana Mandić Ivanković, Gordana Hrelja Kovačević, Mladen Srbić, Marija Kušter Marić, Dominik Skokandić, Jelena Bleiziffer
	<b>Earthquake Risk Perception in Banja Luka: Implications for Seismic Risk Management</b> Vesna Šipka, Mirjana Landika
	<b>Application of the Bailey Bridge in Post-Earthquake Interventions</b> Marko Šimić, Dražen Brkić, Marija Kušter Marić, Anđela Ivanović
	<b>Education of Experts for Damage Assessment of Buildings Immediately After an Earthquake Using XR – Project Progress</b> Zvonko Sigmund, Massimo Migliorini, Karlo Jandrić, Elios De Maio, Marina Nadalin
15:45–16:15	Closing Ceremony
16:15–16:30	Presentation on the Marjan Hotel Construction Site
16:30–16:45	Technical visit: Marjan Hotel
16:45–17:00	Arrival at the Marjan Hotel Construction Site
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11:00–13:00	<b>Session: Geotechnical Earthquake Engineering</b> Chairing: Nikola Grgić & Mario Bačić
<b>Invited Lecture</b>	<b>Exploiting Nonlinear Soil-Foundation Response in Defence of the Superstructure</b> Ioannis Anastasopoulos
	<b>Liquefaction Assessment Using a Synthetic CPT Derived from Correlation with Shear Wave Velocity</b> Mario Bacic, Lovorka Libric, Meho Saša Kovačević
	<b>Landslide Triggering as an Indirect Consequence of an Earthquake - Case Study from Northern Croatia</b> Jasmin Jug, Stjepan Strelec, Kristijan Grabar, Dragana Dogančić, Anja Bek
	<b>Sand and Sand-Kaoline Mixtures Cyclic Properties Under Low Confining Stress</b> Vedran Jagodnik, Davor Marušić, Ivana Bošnjak, Neira Mušić
	<b>Cantilever Retaining Wall Analysis According to Eurocode 7 and 8 in Drained and Undrained Conditions</b> Dejan Ivanovski, Jovana Ristova, Julijana Bojadjieva, Kemal Edip, Vlatko Sheshov, Toni Kitanovski
	<b>Evaluation of the Fundamental Site Period Including the Nonlinear Soil Behavior: A Case Study of the Saguenay, Eastern Canada</b> A S M Fahad Hossain, Ali Saeidi, Mohammad Salsabili, Miroslav Nastev, Juliana Ruiz Suescun
	<b>Effect of Seismic Load on the Stability of a Dolomite Quarry in Hungary</b> Saltanat Yesselbayeva, Máté Urbán, Péter Görög
13:00–14:00	Lunch
14:00–15:45	<b>Session: Geotechnical Earthquake Engineering &amp; Seismic Performance of Structures</b> Chairing: Ivan Banović & Mario Bačić
<b>Marketing</b>	RADNIK
	<b>Effects of Ground Motion Intensity in Assessment of Soil Slopes in Earthfill Dam</b> Kemal Edip, Davor Stanko, Julijana Bojadjieva, Radmila Shalic-Makreska, Vlatko Sheshov
	<b>The Effects of Soil-Structure Interaction on the Seismic Design of Shallow Foundations for Eccentrically Braced Steel Frames</b> Sanda Koboevic, Bardia Ramin Afshar
	<b>Laboratory Testing on Small Strain Modules of Natural Sandy Deposits</b> Toni Kitanovski, Dejan Ivanovski, Julijana Bojadjieva, Kemal Edip, Vlatko Sheshov
	<b>Thermo-Mechanical Behavior and Structural Design of Geothermally Active Piles</b> Guxim Rrudhani, Josif Josifovski
	<b>Influence of Kinematic Soil-Structure Interaction on the Seismic Behaviour of Reinforced-Concrete Frame Buildings</b> Nikola Petrov, Julijana Bojadjieva, Jordan Bojadjiev
	<b>Protection of Sensitive Infill in Frame Buildings Using SB-Upgraded Isolation System: Seismic Tests of Model</b> Ilir Canaj, Jelena Ristic, Elena Dumova-Jovanoska, Danilo Ristic
	<b>Earthquake Resistance of Poles Along Roads</b> Višnja Tkalčević Lakušić, Iva Crnjac
15:45–16:15	Closing Ceremony
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<b>11:00–13:00</b>	<b>Session: Seismic Performance of Structures</b> Chairing: Mirela Galić & Marija Demšić
	<b>Application of the New Eurocode 8 to the Seismic Assessment of an Existing Building in Zagreb</b> Andrea Brunelli, Silvia Pinasco, Serena Cattari, Sergio Lagomarsino
	<b>Pushover Analysis of Timber Buildings with Light Frame Panels for Engineering Practice: Method Description, Discussion, and Highlighting Research Gaps</b> Meta Krzan
	<b>Modelling the Seismic Response of a Three-Storey Confined Masonry Building Using Equivalent Diagonal Strut Models</b> Nemanja Krtinić, Matija Gams, Marko Marinković
	<b>Shake Table Testing of U-Shaped Masonry Structures: Out-of-Plane Response to Varying Ground Motion Signals</b> Babar Ilyas, Dario Vecchio, Nuno Mendes, Paulo B. Lourenco
	<b>Analytical Investigation of Masonry Infill Reinforced Concrete Frames Under Axial and Lateral Loading</b> Florim Grajcevci, Valon Veseli, Labeat Misini, Zijadin Guri, Ilir Canaj
	<b>In-Plane Behaviour of RC Frames with Traditional and Decoupled Infills: Parametric Study</b> Marko Marinković, Christoph Butenweg
	<b>Seismic Vulnerability Assessment of 1960s Reinforced Concrete Frame Buildings with Infill Masonry Walls</b> Naser Kabashi, Enes Krasniqi, Florim Grajcevci, Milot Muhaxheri, Ylli Murati, Valon Veseli
	<b>Predicting Modal Parameters of Damage Stages and Retrofit Methods of a URM Masonry Building</b> Maja Baniček, Mahmoud Shaqfa, Josip Atalić, Sara Vaing
<b>13:00–14:00</b>	Lunch
<b>14:00–15:45</b>	<b>Session: Seismic Performance of Structures</b> Chairing: Nikolina Živaljić & Damir Varevac
	<b>Interaction Between Masonry Walls and Construction</b> Goran Simonovic, Mustafa Hrasnica, Senad Medić
	<b>Engineering Analysis of a Typical Pre-Code URM Building in Zagreb</b> Kenan Omerović, Mario Uros, Senad Medic
	<b>Influence of Connecting Elements in Horizontal Load-Bearing System of a Mass Timber Office Building</b> Robert Buzjak, Mario Uros
	<b>Behaviour of Dual Steel Frames with Innovative Double Skin Cold-Formed Steel-Concrete Composite Shear Walls</b> Ivan Lukačević, Emanuel Krupa-Jurić, Ivan Ćurković, Marko Barišić
	<b>Comparative Numerical Investigation of Timber Added Floors on Existing RC Structures</b> Trajche Zafirov, Viktor Hristovski
	<b>Challenges and Considerations for Modular Construction Systems in Seismic Prone Regions: A State-of-the-Art Review</b> Vasco Bernardo, Paulo Candeias, António A. Correia
	<b>Ties in Unreinforced Masonry Structures: Case Study in Krk</b> Paulo Šćulac, Kristina Galjanić, Davor Grandić, Josipa Mihaljević, Željko Smolčić
<b>15:45–16:15</b>	Closing Ceremony
<b>16:15–16:30</b>	Presentation on the Marjan Hotel Construction Site
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**11:00–13:00 Session: Seismic Loss and Risk Analysis**

Chairing: Goran Baloević &amp; Marta Šavor Novak

**Every Building on Earth**

Danijel Schorlemmer, Chengzhi Rao, Juan Camilo Gomez Zapata, Lars Lingner, Laurens Oostwegel, Pablo De la Mora Lobaton, Tara Evaz Zadeh

**Integrating Seismic Risk Assessment into Spatial Planning: Case Republic of North Macedonia**

Elena Dumova-Jovanoska, Kristina Milkova, Sergey Churilov, Simona Bogoevska

**A Review of Existing Seismic Vulnerability Functions for Buildings in the Balkan Region**

Kristina Milkova, Marta Savor Novak, Marko Marinković, Elena Dumova-Jovanoska

**Building Exposure Modelling for National Seismic Risk Assessment in Montenegro**

Nina Serdar, Jelena Pejović

**Improvement of the Exposure Model and Preliminary Physical Risk Analysis:****A Pilot Case in Aerodrom-Skopje Municipality**

Daniel Tomic, Radmila Salic Makreska, Marija Vitanova, Zabedin Neziri, Noah Martin

**Recent Advances in Seismic Vulnerability Assessment of Croatian Coastal Urban Area**

Željana Nikolić, Elena Benvenuti, Luka Runjić, Nenad Mladineo, Marko Mladineo

**A Collaborative Framework to Model the Seismic Vulnerability of RC Buildings Using Simulated Design**

Volkan Ozsarac, Nuno Pereira, Hossameldeen Mohamed, Xavier Romão, Gerard O'Reilly, Helen Crowley

13:00–14:00 Lunch

**14:00–15:45 Session: Seismic Loss and Risk Analysis**

Chairing: Goran Baloević &amp; Mislav Stepinac

**Vulnerability Assessment and Seismic Risk Analysis of Buildings in Iraq:****Insights from Building Surveys and Damage Scenarios**

Peshawa Luqman Hasan, Baban Bapir, Brwa Hamah Saeed Hamah Ali, Serwan Rafiq, Lars Abrahamczyk

**Scenario-Based Seismic Risk Assessment of School Buildings in the Skopje Area, North Macedonia**

Lisa Jusufi, Roberta Apostolska

**Seismic Vulnerability Assessment of Part of Historic Center of Skopje**

Aleksandar Zlateski, Elena Delova, Veronika Shendova

**Rapid Visual Screening Method for RC Building Structures**

Burbuqe Shatri, Golubka Nechevska-Cvetanovska

**Development of K Quotient Methodology for Inter-Code Lateral Force Comparison**

Daniel Tomic, Jovan Trajchevski, Radmila Salic Makreska, Zoran Milutinovic

**Seismic Performance Evaluation of Existing Reinforced Concrete Buildings in Skopje**

Elena Delova, Aleksandar Zlateski, Marin Grubišić, Veronika Shendova, Zivko Bozinovski

**Seismic Risk and Loss Assessment of Reinforced Concrete Frame Structures****Strengthened by the Addition of Masonry Infill Walls**

Marin Grubišić

15:45–16:15 Closing Ceremony

16:15–16:30 Presentation on the Marjan Hotel Construction Site

16:30–16:45 Technical visit: Marjan Hotel

16:45–17:00 Arrival at the Marjan Hotel Construction Site

17:00–17:45 Technical Visit: Marjan Hotel

**Technical Visit - Hvar Arsenal**

Saturday, 22 March

08:30–10:20 Ferry from Split to Hvar

10:30–11:15 Arrival in Stari Grad Port and Bus Transport to Hvar

11:15–12:30 Technical Visit: Hvar Arsenal

13:00–14:00 Lunch

16:30–17:00 Return to Stari Grad Port and Ferry to Split

17:30–19:20 Ferry from Hvar to Split



# 3<sup>rd</sup> Croatian Conference on Earthquake Engineering

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