



Transilvania
University
of Brasov

FACULTY OF CIVIL ENGINEERING



CIBv2024 International Scientific Conference

Civil Engineering and Building Services, Braşov, 7th – 8th November 2024

CONFERENCE PROGRAM

Organized by:

Faculty of Civil Engineering, Transilvania University of Braşov

Shenyang Jianzhu University, China

Faculty of Constructions, Geodesy and Cadastre,
Technical University of Moldova

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CONFERENCE PROGRAM – CONCISE

Thursday, 7th of November

08:00	Registration of the participants	JAT
09:00	Opening ceremony	JAT1
09:40	Plenary session 1	JAT1
10:40	Coffee break	
10:50	Plenary session 2	JAT1
11:50	Coffee break	
12:00	Parallel session 1	JAT1
	Design for Energy Efficient Buildings, Circular Economy and Urban Planning	
12:00	Parallel session 2	JAT2
	Technologies and Design in Roads, Railways and Brigdes	
14:20	Lunch (Bellman's Quotidian Restaurant)	
15.30	Parallel session 3	JAT1
	Vulnerability Assessments and Risk Analysis	
15.30	Parallel session 4	JAT2
	Analysis and Design of Structures. Numerical Approaches	

Friday, 8th of November

08:00	Registration of the participants	JAT
09.00	Plenary session 3	JAT1
10:00	Coffee break	
10.10	Plenary session 4	JAT1
11:10	Coffee break	
11:20	Parallel session 5	JAT1
	Building Materials and renewable energy	
11:20	Parallel session 6	JAT2
	Processes and optimization methods used in Civil Engineering	
14:40	Lunch (Quotidian Restaurant)	
19:00	Gala Dinner (ARO Palace Horizon Restaurant)	

CONFERENCE PROGRAM – DETAILED

Thursday, 7th of November

08:00	Registration of the participants	JAT
09:00	Opening ceremony	JAT1
	Plenary session 1	JAT1
	09:40 - 10:40, Chairman Prof. Marijana Hadzima-Nyarko	
09:40	Prof. Guochang Li, Faculty of Civil Engineering at Shenyang Jianzhu University, Liaoning, China <i>Working mechanisms and design method of HCFHSST columns</i>	
10:00	Prof. Borko Bulajić, Faculty of Technical Sciences at the University of Novi Sad, Serbia <i>Eurocode 8 and design response spectra: historical background, contemporary approaches, and prospects for the future</i>	
10:20	Prof. Ercan Işık, Civil Engineering Department, Bitlis Eren University, Türkiye <i>Effects of the 2023 Destructive Türkiye Earthquakes on RC Structures in Kahramanmaraş</i>	
10:40	Coffee break	
	Plenary session 2	JAT1
	10:50 - 11:50, Chairman Prof. Guochang Li	
10:50	Prof. Marijana Hadzima-Nyarko, Faculty of Civil Engineering and Architecture, Josip Juraj Strossmayer University of Osijek, Croatia <i>Seismic prioritisation of buildings in selected urban areas</i>	
11:10	Prof. Ashok Vaseashta, International Institute for Clear Water, Manassas, USA <i>Challenges to critical infrastructure from dual-use research</i>	
11:30	Lect. Cutia Evgheni, Technical University of Moldova <i>Seismic Risk and Vulnerability Assessment of the Building Stock in Chişinău</i>	
11:50	Coffee break	
12:00	Parallel session 1	JAT1
	Design for Energy Efficient Buildings, Circular Economy and Urban Planning	
12:00	Parallel session 2	JAT2
	Technologies and Design in Roads, Railways and Bridges	
14:20	Lunch (Quotidian Restaurant)	
15.30	Parallel session 3	JAT1
	Vulnerability Assessments and Risk Analysis	
15.30	Parallel session 4	JAT2
	Analysis and Design of Structures. Numerical Approaches	
15.30	Poster Session	JAT

Friday, 8th of November

08:00	Registration of the participants	JAT
	Plenary session 3	JAT1
	09:00 - 10:00, Chairman Prof. Alina Bărbulescu	
09:00	Prof. Baoxin Qi, School of Civil Engineering, Shenyang Jianzhu University, Liaoning, China <i>Study on the Dynamic Compressive Mechanical Properties of PVA-basalt Fiber Concrete after Freeze-Thaw Circulation</i>	
09:20	Prof. Yousef Nazzal, College of Natural and Health Science, Zayed University, United Arab Emirates <i>Constructing a Bright Future: How Universities can Lead the Way to Sustainability</i>	
09:40	Adrian Ghencea, Allbim Net <i>Riding the Digital Wave: Your Gateway to Digital Education and BIM Standards</i>	
10:00	Coffee break	
	Plenary session 4	JAT1
	10:10 - 11:10, Chairman Prof. Baoxin Qi	
10:10	Asoc. Prof. Zihao Zhao, School of Civil Engineering, Shenyang Jianzhu University, Liaoning, China <i>Ultimate horizontal soil resistance of multi-pile foundations in clay considering the strain softening effect</i>	
10:30	Simion Tudor, Viarom Construct <i>Sustainable technologies in road infrastructures rehabilitation and maintenance</i>	
10:50	Lect. Vadim Ţurcan, Technical University of Moldova <i>Assessing climatic loads in Republic of Moldova according to Eurocode</i>	
11:10	Coffee break	
11:20	Parallel session 5	JAT1
	Building Materials and renewable energy	
11:20	Parallel session 6	JAT2
	Processes and optimization methods used in Civil Engineering	
14:40	Lunch (Quotidian Restaurant)	
16:30	Guided tour - Braşov Old City (meeting in front of ARO Palace Hotel)	
19:00	Gala Dinner (ARO Palace Horizon Restaurant)	



Considering that possible changes in the program may occur, please consult the latest conference program version, scanning the following QR code:

PARALLEL SESSIONS

Thursday - 7th of November

12:00 - 14:20, JAT1

Parallel session 1

Design for Energy Efficient Buildings, Circular Economy and Urban Planning

Chairman: Liting Fan, Christiana Cazacu

*Each presentation will last a maximum of **10 minutes**, followed by 2-3 minutes for questions and answers.

1	Numerical Simulation Study of the Wind Field of Twin-Tower High-Rise Building Linked with Connective Structures	Yanhua Wang, Yansheng Song, and Zhao Yang
2	Energy and seismic affordable renovation solutions	Ioan Silviu Doboşi
3	The potential for heat pump implementation in Transylvania region	Ioan Boian, Ioan Tuns
4	Numerical simulation study of flame transverse spread in conjoined high-rise buildings with different air humidity	Yu Wang, Na Zhang, Qiang Zhang
5	Integrating Nature-Based Solutions for Climate Change Adaptation in Urban Areas: A Case Study in Bucharest	George Radu, Maria Chevereşan, Sorin Perju, Alina Bărbulescu
6	Study on BP Neural Network for Predicting the Strength of GO-RAC under Sulfate Wet-Drycycles	Kai Guo, Lihua Wang
7	FAST health management system based on digital twinning	Li Boyao, Huo Linsheng
8	Xella – nZeb Best Practice	Ivan Sebastian, Ana Grigorescu
9	Research on Standardization of Connection for Integrated Prefabricated Box Building Modules	Xu Haojia, Xu Wei, Ding Jiawei, Liu Na, Zhang Yong
10	Current state of research on smart facade from 3D printed composite materials	Dan-Radu Baraboi, Gabriel Năstase, Alin Ionuţ Brezeanu, George Dragomir, Luminiţa Maria Scutaru
11	Research on the axial compression behavior of back-to-back stud the cold-formed thin-walled steel composite wall	Chungang Wang, Donghang Wang, Tianyu Cheng

Thursday - 7th of November

12:00 - 14:20, JAT2

Parallel session 2

Technologies and Design in Roads, Railways and Bridges

Chairman: Conţiu Mircea, Dorin Radu

*Each presentation will last a maximum of **10 minutes**, followed by 2-3 minutes for questions and answers.

1	Study on the influence of tunnel spacing on seismic response of double-hole parallel underground tunnels	Fan Gu, Jianing Guo, Lingzi Su, Boyang Zong
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2	The use of a reduced-gauge tunnel in a crowded intersection in Iasi	Găluşcă Narciza-Izabela, Iriciuc Silviu-Cristian , Gimiga Gelu-Răzvan, Scutaru Maria-Cristina, Dima Diana-Nicoleta
3	Study on the Effectiveness of Tunnel Blasting Vibration Control	Jiaxi Liu,Bo Shi
4	Structural Strengthening case study in Romania	Dan Zeno Gunther
5	Evaluation and recommendations for rehabilitation and modernisation of a road tunnel in high mountain area	Flaviu Ioan Nică, Teodor Iftimie
6	Grout diffusion mechanism behind corrugated steel lining reinforced tunnels	Guoqing Zhao, Yufeng Jiang, Tiantian Cui, Suyun Meng
7	Case study regarding consolidation of conglomerate, sandstone, marl slopes	Ioan Abrudan, Costel Pleşcan, Ildikó-Renata Száva
8	Seismic Vulnerability Analysis of Continuous Bridges with Concrete-Filled Steel Tube Piers under Aftershock Damage	Qiao Jin, Liting Sun
9	Studies related to embrittlement by fatigue and by hydrogenation of the hot dip galvanized steel	Virgiliu Vişan, Viorel Ilie
10	Prediction Method of Tunnel Surrounding Rock Deformation Based on EEMD-PSO-LSTM Model	Lin Kun, Sun Yazhen, Zhu Fengbin
11	The Use of Neural Networks to Improve Traffic Flow in the Most Congested Area of Bucharest	Ungureanu Valentin-Vasile, Maleanu Mihai Alexandru
12	Static and dynamic testing of a composite bridge in Galaţi	Vlad Daniel Urdăreanu, Ionuţ Radu Răcănel, Corina Chiotan, George Mădălin Pirontea

Thursday - 7th of November

15:30 - 18:15, JAT1

Parallel session 3

Vulnerability Assessments and Risk Analysis

Chairman: Alina Bărbulescu, Radu Muntean

*Each presentation will last a maximum of **10 minutes**, followed by 2-3 minutes for questions and answers.

1	Numerical simulation analysis of effects of window sizes on vertical fire spread in concave high-rise buildings	Yu Wang, Yiran Bi, Xiaorui Wang
2	Influence of traveling wave excitation on seismic responses of long-span tensioning truss structures considering soil-structure interaction	Yu Wang, Yongzhi Meng, Ming Ye
3	Analytical solution for torsional response of single-story bidirectional eccentric frame structure under velocity pulse wave passage excitation	Yuqi Guan, Tielin Liu
4	Seismic Vulnerability Analysis of Post-Fire Steel Frame Structures Based on the IDA Method	Jin Qiao, Su Wanchong
5	Research and practice on demolition of structures worldwide in the 21st century: Exploring methods using mechanics of solid bodies with object tracking validation	Julide Yuzbasi
6	Fire resistance of the X-shaped intersecting joints between stainless steel square tubes and round branches	Zhang Yunqiang

7	The Influence of the Horizontal Stiffness of Seismic Isolators on the Isolation Performance of the Large-chassis Single-tower Structure with Inter-storey Isolation	Fan Gu, Boyang Zong, Lingzi Su, Jianing Guo, Chao Wang
8	Study on the Fire Propagation Characteristics of Low-Rise Clusters of Small Buildings	Zhaoming Sheng Yansheng Song Yanhua Wang
9	Mechanical properties analysis of steel frame parking building under local fire	Yuelang Qiu, Yansheng Song, Zhuoyuan Jiang
10	Analysis of the influence of chimney structural parameters on seismic performance	Jiayi Liu, Peijin Jia
11	The reliability of slopes under rainfall action	Zihao Zhao, Zhipeng Liu, Jiarui Wang
12	Numerical simulation study on the explosion law of dust collector under the action of dust explosion load	Chang Li, Kun Shu
13	Prevention of environmental hazards through conservation of a technogenic deposit	Ludmila Semenova, Natalia Bredikhina, Aleksandr Bredikhin

Thursday - 7th of November

15:30 - 18:00, JAT2

Parallel session 4

Analysis and Design of Structures. Numerical Approaches

Chairman: Teofil Gălăţanu, Cutia Evgheni

*Each presentation will last a maximum of **10 minutes**, followed by 2-3 minutes for questions and answers.

1	Analysis on seismic performance of hollow CFST columns outsourced with UHPC	Liu Li, Su Siyu
2	Research on Defect Detection Method of Full Grouting Sleeve Based on Piezoelectric Ultrasonic Method	Wei Sun, Jingyi Zhou, Xuekai Wang
3	Seismic Performance of T-shaped Component Reinforced Square Tube Column-H-beam Joint	GuoShuai Wang, Lu Jin
4	Truss reinforced concrete beams vs. conventional reinforced concrete beams: A comparative study	Ahmed Afia, Francesco Baldi, Viorel Ungureanu
5	Numerical analysis of axial compression performance of partially encased steel-ultra-high-performance concrete composite short columns	Chungang Wang, Puhuan Yin, Daye Cheng
6	Dynamic responses of GFRP tube concrete-encased steel members under lateral impact	Haixia Zhang, Luming Wang, Meng Lu
7	Study On Joint Stiffness Degradation Of I-steel Connecting Coupling Beam And Shear Wall	Zheng Debin, Li Ming, Chen Gaomin, He Yikai
8	Applied Element Method: Earthquake Simulation Analysis of Soft Story and Weak Story in Building Structures Using Solid Mechanics	Julide Yuzbasi
9	Performance of both ends fixed GFRP tube concrete-encased steel members under lateral impact loads	Haixia Zhang, Meng Lu, Luming Wang
10	Review of research progress of snakeskin-inspired pile	Zihao Zhao, Kaixiang Huang, Yazheng Cao
11	Research on The Design Method of Shear Wall and beam Connected by U-shaped Steel Bars	Xie Changjian, Li Ming, Sun Hong

12	Seismic behavior of high-strength concrete filled high-strength square steel tubular beam-columns	Zengmei Qiu, Guochang Li
13	Study on the axial compression behavior of GFRP tube reinforced hollow high-strength concrete short columns	Zhijian Yang, Cong Xu, Guochang Li

Friday - 8th of November

11:20 - 14:40, JAT1

Parallel session 5

Building Materials and renewable energy

Chairman: Vadim Ţurcan, Zihao Zhao

*Each presentation will last a maximum of **10 minutes**, followed by 2-3 minutes for questions and answers.

1	Experimental Research on the Adhesion Performance of Tiled Polyurethane Insulating Mortar to the Structural Layer	Weining Sui, Huangchao Peng, Xiaodong Zeng
2	Bamboo Material for Large Span Space Structures and Key Study	Ngo Van Duc, Hani A M Alkhatib, Kenza Belkhiri, Viorel Ungureanu
3	Preparation and experimental study on properties of solid waste-based polyurethane insulation material	Weining Sui, Mengmeng Wang, Di Wang
4	Comparative study of physics parameters that influence the heat and mass transfer in the case of steel-concrete composite beam-type elements	Imre Lajos, Chiorean Cosmin Gruia
5	Effect of pore characteristics on frost resistance of recycled concrete	Yichao Zhang, Yonghao Li, Tong Li, Deng Fang, Kaikai Yu, Yong Xie
6	Transforming Construction Waste. The Role of Pre-Demolition Audit: Comprehensive Literature Review	Alina Mitache, Viorel Ungureanu
7	Research on axial compressive behavior of L-shaped aluminum alloy-timber composite columns	Zhuangnan Zhang, Jiahui Hao, Yujue Wang
8	Acoustic Characteristics of Eco-Concrete	Radu Gabriel Mihai, Marinela Bărbuță, Ştefănică Eliza Vizitiu, Mowaffak Tawfiq
9	Study on axial compression performance of aluminum alloy wood composite special-shaped columns with different cross-sectional forms	Zhuangnan Zhang, Junnan Lü, Yujue Wang
10	The effect of heat variation and energy consumption on thermal conductivity for buildings composite panels	Chircan Eliza, Gheorghe Vasile, Coştiuc Iuliana, Coştiuc Liviu
11	Mechanical behavior of circular hollow GFRP-recycled concrete-steel long column under eccentric compression	Zhi Wang; Shilong Jia; Lixin Li
12	Water Pumping Station Energy Indicators	Vlad Cojanu, Elena Helerea
13	Electrical and pressure-sensitive properties of complex-phase conductive concrete	Kai Guo, Jiahua Zhang, Yan Li
14	Missing data for forecasting the properties of concrete containing waste bricks: state of the art and missing results	Agnieszka Chowaniec-Michalak, Sławomir Czarnecki, Marijana Hadzima-Nyarko
15	Non-destructive thermal inspection of steel reinforcement in reinforced concrete structures	Vladimir Bredikhin, Kirill Los, Darya Sherkunova, Aleksandr Bredikhin

16	Compatibility of repair mortars used in restoration solutions for heritage buildings	Mihaela Pericleanu, Bucur Dan Pericleanu, Ana Maria Grămescu
17	Steelfiber concrete in modern construction	Bredikhina Natalia, Davidenko Yuliya, Lobova Viktoriya
18	Marble Powder as a Sustainable Cement Replacement: A Review of Mechanical Properties	Moutaman M. Abbas, Radu Muntean

Friday - 8th of November

11:20 - 14:40, JAT2

Parallel session 6

Processes and optimization methods used in Civil Engineering

Chairman: Ion Creţu, Liting Fan

*Each presentation will last a maximum of **10 minutes**, followed by 2-3 minutes for questions and answers.

1	Design and Development of a Small Mobile Vibratory Equipment	Sizheng Wang, Liting Fan, Yang Zhang, Ziqi Wang
2	Compressive strength and density prediction in micro-polymer concrete using fuzzy logic model	Adina Rusu, Marilena Bărbuță
3	Research on Autonomous Navigation System of Vibratory Equipment for Building Foundation Construction	Xiyang Jiang, Liting Fan, Yang Zhang, Ziqi Wang
4	Experimental investigation on the diagonal compression test of the masonry walls strengthened with overlays of concrete incorporating fibers	R. Chelarasu, S. Scripca, P. Mihai, Bogdan Rosca, Marilena Barbuta, E. Vizitiu
5	Online fault diagnosis of mine ventilation system based on OCSVM and Incremental learning	Weihao Zhang, Zhiyuan Shen
6	Special infrastructure solutions within the Park&Ride Brasov Multi-storey Car Park project	Victor Manda, Remus Frîncu
7	Research on Dynamic Response of Cable Network Impact of Truss Structure of Large-aperture Space Deployable Antenna	ZiYun Zhang, Lu Jin, Junjie Pei
8	Carbon Fiber Reinforced Polymers applied in steel structures for fatigue behaviour improving - a short literature review	Ciprian Bratu, Radu Băncilă
9	Design of Novel Diagonal Rod Connection Joints for the Mortise and Tenon Full-Support Framework	Chunchen Fan, Shilong Jia, Chang Li
10	Scanning bridges using UAVs to monitor the evolution of in-service behavior	Maria-Cristina Scutaru, Gheorghită Boacă, Izabela-Narcisa Gălușcă, Răzvan-Gelu Gimiga, Silviu -Cristina Iriciuc
11	Comparative Study of Inter-storey Isolation System and Base Isolation System of Single Tower Structure with Large Chassis	Fan Gu, Lingzi Su, Yuetong Li, Jianing Guo, Boyang Zong
12	Study on Toughening Mechanism of C-S-H Based on Molecular Dynamics Theory GO	Kai Guo, Muqing Wang, Yan Li
13	Studies regarding the stabilization of foundation soils through alternative methods	Marinela Scanghel, Adrian-Alexandru Serbanoiu, Diana-Nicoleta Dima

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14	Underactuated mechanical systems: A review	Yanze Long, Shaoyang Chu, Huaitao Shi, Peng Zhou, Shenghao Tong, Guoyao Fu, Yijun Wu, Cheng Li
15	Research Progress on Reinforced Concrete Composite Slab Technology	Luo Yao, Li Ming, Yang Yongsheng
16	Denoising Algorithm for Friction Vibration Signals of Reciprocating Sliding Friction Pairs	YanLing Sun, Mingkun Xiao

Thursday - 7th of November

15:30 - 18:00, JAT

POSTER SESSION

1	The force state analysis of the lower chord chear pin of the inverted triangle hoisting arm of a large tower crane	Zhu Chunxia Zhao Yanhua Li Bin
2	Design and Research of the Horizontal Arm Structure of the New Telescopic Arm Quick-Erect Tower	Zhu Chunxia, Zhao JiaXian, Yang Kun, Liang Yu, Li Bin
3	Research on stable pendulum control system of tower crane with weight swinging function	Zhu Chunxia, Lu Wenjing, Liang Yu, Yang Kun, Li Bin
4	Optimization design of DJC pile composite foundation based on genetic algorithm	Yazhen Sun, Yongben Zhang, Qingchen Li, Xiaming Huang, Jinchang Wang, Xinyang Li
5	An Optimization Method for the Structure and Parameters of a Tipping Table for the Precast Component Mold	Xiaochen Zhang, Yijun Wu, Yanze Long
6	Three-dimensional stability analysis of slope reinforced by double-row anti-slide piles	Zihao Zhao, Lulu Li, Jiarui Wang
7	Damage mechanism of shield tunnel under ultimate load of soft and hard soil layer	Sun Yazhen, Sun Jiuhui, Li Shuyan, Zhu Fengbin, Wang Longyan
8	Mechanism and Control of Transverse Cracks in Precast Beams Induced by Frost Heaving in Cold Regions	Zhu Fengbin, Zhai Tao, Xu Shikang, Hu Shen, Li Junfeng, Wang Jin-Chang Tang Weiyi
9	Optimization of Pre-Splitting Blasting Parameters for a Rock Slope	Kangkang Zheng, He Li, Jinchang Wang, Longyan Wang
10	Damage monitoring of ultra-high performance concrete slab under impact load based on embedded piezoelectric smart aggregate	Long Cheng, Baoxin Qi

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