



CIVIL 2014
ENGINEERING
PhD international conference

Conference program

Second International Conference for PhD Students in Civil Engineering and Architecture

“Building the community of young researchers”

CE-PhD 2014

www.cephd.ro

10-12 December 2014, Cluj-Napoca, ROMANIA

The conference venue is Grand Hotel Napoca, 400698 Cluj-Napoca, no.1 Octavian Goga street

Organized by Technical University of Cluj-Napoca in partnership with Academy of Technical Science of Romania and SEnS Group



**Academia de Stiinte
Tehnice din Romania**

**Academy of Technical
Sciences of Romania**



Dear participant,

Welcome to the second edition of the *International Conference for PhD Students in Civil Engineering and Architecture*. The conference has attracted 121 full papers covering the broad field of civil engineering and architecture. The final program and proceedings feature 91 successful peer-reviewed full papers that are grouped in the following sections:

- Structural analysis and design
- Geotechnical and hydrotechnical engineering
- Building materials
- Energy efficient, sustainable buildings and building services
- Architecture and urban planning

The organizing committee are very grateful to all authors for their valuable contribution and to the Members of the International Scientific Advisory Committee, as well as other colleagues, for their help in reviewing the papers published in the conference proceedings.

The CE-PhD2014 organisers are pleased announce that three best papers will be awarded. The best papers will be selected based on recommendations by the Members of the International Scientific Advisory Committee and external reviewers. The three best papers will receive special awards and will be announced during the conference.

Wednesday 10th December

18:00	<p>Welcome Reception Venue: Room ATRIUM Grand Hotel Napoca</p>
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Thursday 11th December

08:00 – 08:45	Registration				
08:45 – 10:15	<p>Opening Ceremony (Venue: Room ATENA)</p> <p>Prof. Cosmin G CHIOREAN-Conference Chairman Prof. Sergiu NEDEVSCHI – Vice-Rector of Technical University of Cluj-Napoca Prof. Traian PETRIȘOR-President of the TUCN Doctoral School</p>				
	<p>Keynote lectures (Venue: Room ATENA)</p> <p>Prof. Katrin BAYER – Switzerland <i>Performance of Reinforced Concrete Walls Under Seismic Loading— Research Projects at EPFL and Future Research Needs</i></p> <p>Prof. Alessandro FLORA – Italy <i>The Wise Use of Ground Improvement Techniques</i></p> <p><i>Chaired by: Prof. Cristina CAMPIAN, Prof. Anca G. POPA</i></p>				
10:15-10:45	Coffee break				
10:45 – 12:45	Parallel sessions – I				
	<p>Structural analysis and design (Venue: Room Atena) Chaired by: <i>Prof. Katrin BAYER; Prof. Pavel ALEXA</i></p>	<p>Building materials (Venue: Room Viena) Chaired by: <i>Prof. Daniela MANEA; Dr. Ligia MOGA Dr. Claudiu ACIU</i></p>	<p>Geotechnical engineering (Venue: Room Foayer) Chaired by: <i>Prof. Otto Leibniz; Dr. Nicoleta ILIES Dr. Vasile FARCAS</i></p>		
1	Justification to Launch Main Girders for a Steel-Concrete Composite Two-Girder Road Bridge <i>Marin-Catalin Mitoiu</i>	1	Reinforcing Glued-Laminated Elements Using Reclaimed Synthetic Materials <i>Vladimir Marusceac, Gavril Kollo</i>	1	Seepage study of Călinești Oas earth fill dam <i>Marius Lucian Botos</i>
2	Behavior of Steel Columns in Fire Conditions <i>Milan Petrović, Todor Vacev, Srđan Živković</i>	2	Investigation of SFRC Beams Shear Load Bearing Capacity	2	The Determination of Screwsol® Piles Bearing Capacity. Comparative Study Between Calculated

			<i>Katalin Halvax, Éva Lubl6y</i>		Values and Measured Values. <i>Vasile F. Chiorean, Calin M. Gherman , Olimpiu C. Muresan , L6r6nd Sata, 6rpad Szerz6, Vasile S. Farcas</i>
3	Setting Up a Test Stand for Steel Beam-To-Column Connections Behavior under Post-Earthquake Fire <i>Tudor Petrina, Dragos Muntean</i>	3	Phase Change Materials as a Universal Solution for Thermoregulation <i>S. Paunovi6, J. Bijelji6, I. Nešovi6</i>	3	Techniques for Laying Pipelines for Raw Water <i>Radu Pop</i>
4	Numerical Model for Earthquake Analysis of Buildings Equipped with Different Devices for Seismic Damping <i>Adriana I. Ionescu</i>	4	Volatile Organic Compounds in Indoor Air of a Residential Building <i>Ludmila Meciarova, Silvia Vilcekova</i>	4	Response Spectrum Shape Piloted by Inverted Pendulums Free to Rock <i>Ivan Kraus, Mensur Mulabdi6, Vedran Jagodnik</i>
5	Using Bouc-Wen Method for Hysteresis Curves Simulation of BRB Dampers and SERB New Romanian Dampers. Experimental and F.E.M. Studies for SERB Dampers <i>Adriana I. Ionescu</i>	5	Properties of Nanosilica Modified Concretes <i>Pawel Sikora, Krzysztof Cendrowski, Ewa Mijowska, Elzbieta Horszczaruk</i>	5	Specific Analyses of Composite Integral Abutment Bridges <i>Zoltan Teiter</i>
6	Numerical Assessment of the Weakening Induced by Cut-outs Made in Precast Reinforced Concrete Wall Panels <i>Carla Todu6, Valeriu Stoian, Daniel Dan, Tam6s Nagy-Gy6rgy</i>	6	Comparison between Several Models for Calculating Drying Shrinkage of Concrete <i>Yana D. Kancheva, Roumiana A. Hadjieva-Zaharieva</i>	6	Physical Modeling of Diaphragm Wall using Geotechnical Centrifuge <i>S. Wilomski</i>
7	Failure Modes of Concrete Shear Walls Structures in Seismic Areas <i>Stefania L. Pasca, Roxana Verde</i>	7	Sustainable Design: Easy Way to Energy <i>Marina Jodanovic, Ljiljana Jevremovic, Milanka Vasic</i>	7	
8	Reinforced Concrete Frames with Masonry Infills. Damages and Consolidation Measures <i>Cristian Petrus, Valeriu Stoian, Marius Mosoarca, Anthimos Anastasiadis</i>	8	Indoor Environmental Quality and Productivity in Open Space Office <i>Zdenka Budaiova, Silvia Vilcekova, Peter Kapalo</i>	8	

12:45 – 14:00

Lunch Break

14:00 – 16:00	<p>Keynote lectures (Venue: Room ATENA)</p> <p>Prof. Dan STEMATIU - Romania <i>A Brief Review of Dam Safety and Risk Assessment</i></p> <p>Prof. Ľubica VITKOVÁ – Slovakia</p> <p>Dr. Alexandru CABUZ - Romania <i>Industrial Collaborations, Intellectual Property and Technology Transfer in an Emerging Country</i></p> <p>Company presentations</p> <p>Spectrum Construct Compania de Apa Someș Elis pavaje</p> <p><i>Chaired by: Prof. Anca Gabriela POPA, Prof. Cosmin G CHIOREAN</i></p>
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16:00 – 16:30	Coffe break				
16:30 – 18:30	Parallel sessions - II				
<p>Structural analysis and design (Venue: Room Atena) Chaired by: <i>Prof. Alen HARAPIN; Prof. Cristina CAMPIAN; Prof. Jan CERVENKA</i></p>		<p>Geotechnical Engineering (Venue: Room Viena) Chaired by: <i>Dr. Nicoleta ILIES, Dr. Vasile FARCAS Prof. Alesandro FLORA</i></p>		<p>Architecture (Venue: Room Foyer) Chaired by: <i>Prof. Cristina PURCAR; Prof. Smaranda BICA</i></p>	
1	Numerical Modelling of Column-Base Connection Solutions for Steel Over-roofing Systems <i>Andra Floricel, Giuseppe Zagari, Viorel Ungureanu</i>	1	Optimization of Hanger Inclination for a Tied-Arch Bridge <i>Mihai Vlad, Gavril Kollo</i>	1	The Concert Hall as The Reflection of Technical Evolution <i>Costin V. Alexandru</i>
2	Stability Functions for a General Non-Prismatic Beam-Column Element <i>Ioana V. Marchiș, Cosmin G. Chiorean</i>	2	Problems Involving Application of BiogROUT Technology <i>M. I. Máté, Zs. Kaltenbacher, L. Kopenetz, V. Fărcas, I. C. Molnar</i>	2	A new tool for the study of auditorium seating layout <i>Costin V. Alexandru, Popescu S. Cornelia Victoria</i>

3	Passive Seismic Protection. Added Mass vs. Added Damping <i>Delia M. Suci</i>	3	Analytic and Numerical Study of a Single Pile Behaviour Arpad Szerzo , Loretta Batali	3	Assessing Site-Geometry for Architectural Design Using Graph Theory <i>Anca S. Horvath</i>
4	Amquake – Software Program for Seismic Assessment of Masonry Buildings <i>Mirela Bumb, Mircea Petrina</i>	4	Stress-Strain Analysis and Global Stability of Tunnel Excavation <i>Slobodan D. Radovanović , Dragan M. Rakić, Dejan Lj. Divac ,Miroslav M. Živković</i>	4	Pattern Design of Gridshell Structures. Experimental Pavilion Design <i>Popescu S. Cornelia-Victoria</i>
5	Residual Shear Strength of Clayey Soils: The Influence of Displacement Rate <i>Gianvito Scaringi, Caterina Di Maio</i>	5	Thermal Properties of Soils – Determination of Thermal Conductivity <i>Diana Rusu, Otto Leibniz</i>	5	Innovative Tensegrity Models Generated on the Basis of Representatives of Living Nature <i>Yuliya M. Ilieva</i>
6	Advanced Nonlinear Inelastic Analysis of Composite Beams with Partial Shear Connection <i>Ștefan M. Buru, Cristian V. Miculaș, Mihai D. Șelariu, Tudor Milchiș, Cosmin . Chiorean</i>	6	The Quantitative Influence of Corrosion on the Market Value in the Assessment Process of Pipeline Transportation Systems <i>Ciprian Gheorghe</i>	6	Aluminium Factories - Values and Regeneration Option <i>Tereza Bartšiková</i>
7	Evaluation of Deflections for PFRP-RC Hybrid Beams with Complete and Partial Shear Connection <i>Catalin A. Neagoe, Lluís Gil</i>	7	Geo-Seismic Survey of Stratified Media using Body and Surface Waves. Comparison to Classical Geotechnical Investigations <i>Rares V. Oarga, Vasile Farcas</i>	7	Rethinking of Architectural Aspects of Psychoneurological Rehabilitation Facilities of Late XIX and Early XX Centuries (Europe) <i>Oresta Remeshylo-Rybchynska, Andrii Bayev</i>
8	Global Response Evaluation of a Hungarian Late Romanesque Church Due to a Historical Seismic Event <i>Eduardo C. Morais, László G. Vigh, János</i>	8		8	Golden Ratio-an Aesthetic Standard in Nature, Science and Engineering <i>Ioana Craciun, Lucian Tudose</i>

20:00 – 00:00	Gala dinner
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Friday – 12th December

10:00 – 11:30	<p align="center">Keynote lectures (Venue: Room ATENA)</p> <p align="center">Prof. Alen HARAPIN – Croatia <i>Numerical Models and Procedures for the Simulation of Fluid-Structure Interaction Problems</i></p> <p align="center">Prof. Jan CERVENKA – Czech Republic <i>Modelling of Reinforced Concrete Structures for Seismic Design in ATENA</i></p> <p align="center"><i>Chaired by: Prof. Cristina CÂMPIAN , Prof. Anca Gabriela POPA, Prof. Cosmin G CHIOREAN,</i></p>		
11:30 – 12:00	<p align="center">Coffee break</p>		
12:00 – 14:00	<p align="center">Parallel sesions - III</p>		
	<p align="center">Room: Atena Structural analysis and design Chairmans: Dr. Zsolt NAGY Prof. Mircea CALIN</p>	<p align="center">Room: Viena Energy efficient and sustainable buildings. Building Services Chairmans: Dr. Ligia MOGA Dr. Mircea BUZDUGAN</p>	<p align="center">Room: Foayer Architecture Chairmans: Prof. Prof. Ľubica VITKOVÁ Prof. Serban TIGANAS</p>
1	<p>Relevant Aspects Concerning the Local Seismic Hazard for Iasi Municipality <i>Georgiana Bunea, Gabriela M. Atanasiu</i></p>	<p>1 Test Bench of the Stirling Engine Cogeneration System for Residential Applications <i>Teodora Susana Oros (Pop), Claudiu Brad, Ioan Berinde</i></p>	<p>1 Solar Optimization of Complex Architectural Geometry Using Generative Tools, Simulation and Search Algorithms <i>Nejur M. Andrei</i></p>
2	<p>Nondestructive SHM of Wire Rope in Situ <i>Florin D. Lişman, Ludovic G. Kopenetz</i></p>	<p>2 Comparison of Reference Years for Bratislava and Derivation of Hourly Temperature Data <i>Martina Jurigová, Zsolt Nagy and Roman Rabenseifer</i></p>	<p>2 The Digital Atrophy of Classic Architectural Authorship <i>Nejur M. Andrei</i></p>
3	<p>Variation of stress concentration around rectangular holes in steel slabs <i>Maria Pop, Cristina Campian, Petru Cosobea , Mihai Senila</i></p>	<p>3 Comparative Analysis of Multi-Dimensional Heat Flow Modeling <i>Balázs Nagy</i></p>	<p>3 The Ideological Model of The Eastern Bloc's Mass Housing Developments in The 60's <i>Szende Szentesi</i></p>
4	<p>Cold-Formed Steel Framed Structures: Experimental Studies and Approaches <i>Paula I.Groza, Zsolt Nagy , Mircea Petrina</i></p>	<p>4 Insulated Sandwich Panels – Thermal Performance <i>Ancuța Maria Măgurean, Lidia-Maria Lupan, Ioan Moga</i></p>	<p>4 Recovering the City Center in the Era of Consumerism <i>Iulia C. Ghibu</i></p>

5	Wind Surface Pressure Distribution on Advertising Road Sign <i>Marius L. Botos, Tudor Milchiș, Jacob Borș</i>	5	The Energy-Efficient Home - Timisoara 'EEH' Pilot Project <i>Maracineanu Cristian, Smaranda Bica</i>	5	Aesthetic of Industrial Architecture in Era of Reindustrialization <i>Ljiljana Jevremovic, Milanka Vasic, Marina Jodanovic</i>
6	Numerical Simulations of Bolted Beam to Column Connections with Haunches in Steel Moment Frames <i>Cosmin Maris, Cristian Vulcu, Aurel Stratan, Dan Dubina</i>	6	Considerations on the use of Airlift Pumps in the Sewage Treatment Plants <i>Mircea-Vlad Mureșan, Elena Maria Pică, Marius-Daniel Roman, Raluca-Andreea Felseghi</i>	6	The Architectural Model of Space for Interdisciplinary Research in Art and Technology <i>Kristina Careva, Bojan Baletic</i>
7	Study of Hennebique Reinforced Concrete Design in Oradea. Case Study: Ullmann Palace <i>Anca-Maria Durgheu</i>	7	The Geothermal Resources in the South Eastern European Space and their Connection to the Historical Backgrounds of the Built Environment <i>Jovanovic Aleksandar</i>	7	Intensification as a Tool for Valorization of Slovak Housing Estates <i>Karol Görner</i>
8	Thermal and Mechanical Assessment of Composite Steel-Concrete Cross-Sections Subjected to Fire <i>Mihai D. □ elariu</i>	8	Green Roofs as a Means of Creating Micro Climate, Humidifying Dry Air, Water Retention and Unloading Surface Drainage <i>Zuzana Poórová, Zuzana Vranayová</i>	8	Rehabilitation Methods for Historic Monuments with Wrought or Puddle Iron Structure <i>Ovidiu Baci</i>
				9	Green Zone Buildings in Modern Architecture <i>Jelena N. Stevanović, Milan G. Pavlović, PhD Gordana Topličić Ćurčić</i>

14:00 – 15:00	Plenary session Prof. Serban TIGANAS Plan 31 Best Paper Award Ceremony <i>Chaired by: Prof. Sergiu NEDEVSKI ; Prof. Cosmin G CHIOREAN</i>
15:00 – 16:00	Lunch
16:30 – 18:00	Technical visit



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