

Technical University of Košice, Faculty of Civil Engineering

Slovak Society for Mechanics, SAS

5th International Scientific Conference

Structural and Physical Aspects of Construction Engineering



Exhibition Spaces and Sponsorship

BYTEC BV, Belgium

Brain:IT, Slovakia

Program:

Wednesday, October 12, 2022

10.00 – 12.00	Foyer Registration
12.00 – 13.30	Lunch time
Chairs:	Congress Hall Jirí Němeček - Ladislav Sátor
13.30 – 13.35	Opening of the conference
13.35 – 13.55	Vladimír Sládek and Ján Sládek Higher-Grade Theory of Heat Conduction in Solids
13.55 – 14.15	Ladislav Sátor, Vladimír Sládek and Ján Sládek Analysis of Functionally Graded Piezoelectric Micro/Nano Plates by Moving Finite Element Method
14.15 – 14.35	Maryan Hrytsyna, Ján Sládek, Vladimír Sládek, and Olha Hrytsyna A Higher-Order Beam Theory for Vibration Analysis of Nanobeams with Including Dynamic Flexoelectric Effect
14.35 – 14.55	Olha Hrytsyna, Ján Sládek, Vladimír Sládek, and Maryan Hrytsyna Torsional Vibration of Nanotubes with Including Strain Gradient and Velocity Gradient Effects
14.55 – 15.15	Miroslav Repka and Ladislav Sátor Analysis of an Interface Crack in Solids With Flexomagnetic Effect
15.15 – 15.35	Jirí Němeček, Pavel Trávníček, Tomáš Koudelka, and Jaroslav KrUIS Some Aspects of Non-local Damage Models for Concrete
15.35 – 16.05	Coffee break
Chairs:	Congress Hall Drahomír Novák – Michal Šejnoha
16.05 – 16.25	Drahomír Novák and Radomír Pukl Advanced Integrated Assessment of Concrete Bridges Considering Nonlinearities, Uncertainties and Degradation
16.25 – 16.45	Roman Vodička A Computational Approach of Interface and Phase-Field Mixed Mode Fracture
16.45 – 17.05	Ján Benčat and Michal Lukáč Dynamic Effects of Turbulent Water Currents on Hydrotechnical Structures
17.05 – 17.25	Alena Zemanová, Petr Hála, Petr Konrád, and Michal Šejnoha Smeared Fixed Crack Model for Numerical Modelling of Glass Fracture in LS-DYNA
17.25 – 17.45	Hugo Sol, Jun Gu and Eva Kormaníková Impulse excitation technique for the determination of elastic engineering constants of CFRP composites
17.45 – 18.15	BYTEC BV, Belgium Demonstration of Resonalyser procedure
19.25 – 19.30	Conference photography in Congress Hall
19.30 – 23.00	Dinner with Welcome party in the Dining Room

Thursday, October 13, 2022

09.00 – 12.00	Excursion to Tatras Tower
12.00 – 14.00	Lunch time
14.30 – 16.00	Poster section 1– Foyer
1.	Daniela Kuchárová, Gabriela Lajčáková, Jozef Melcer and Veronika Valašková Frequency Response Composition in a Vehicle - Roadway System
2.	Darina Stachová Comparison of Inflection Points Occurring in a Certain Road Retarder Model
3.	Mária Mihalíková, Peter Tomašovič and Róbert Kočíško Effect of Polylactic Acid Filament Density on the Change of Mechanical Properties of 3D Printed Samples
4.	Petr Lehner, Lenka Koubová and David Bujdoš Evaluation of The Compressive Strength of Concrete Under Combined Force and Chloride Load
5.	Ivana Kumpová, Dominik Lisztwan, Bojan Poletanovič, Michal Vyhlídal, Iva Čairovič, Petr Daněk, Hana Šimonová, Petr Frantík, Ildikó Merta, Pavla Rovnaníková and Zbyněk Keršner Effect of Slenderness Ratio on Compressive Strength Value of Alkali-Activated Aluminosilicate Composite with Ceramic Precursor and Fly Ash-Based Geopolymer
6.	Dita Vořechovská, Dominik Lisztwan and Pavla Rovnaníková Effect of Calcium Hydroxide and Chloride Ion Content on Corrosion of Steel Reinforcement in Concrete
7.	Babak Safaei, Mohammad Karimzadeh Kolamroudi, and Kamila Kotrasová Effect of Face Sheet Thickness on Bending Behavior of Composite Sandwich Beam
8.	Nela Freiherrrová, Marie Horňáková, Marek Kawulok, David Juračka, Vratislav Mareš, Lukáš Horsák Long-term Testing of Textile Material - Methodology of Testing and Design of the Testing Equipment
9.	Marie Horňáková, Petr Lehner, Jan Pizoń and Jacek Golaszewski Numerical Evaluation of the Durability of Metallurgical Sludge Waste Concrete Exposed to Aggressive Environment
10.	Ivan Kološ, Lenka Lausová and Vladimíra Michalcová The Effect of The Surface Roughness of The Circular Cylinder on Drag Coefficient
11.	Eva Kormaníková and Kamila Kotrasová A Mode I Delamination Propagation Numerical Model Made of Carbon Fibre Reinforced Polymer Composite
12.	Lucie Malíková, Pavel Doubek, Petr Miarka and Stanislav Seitl Numerical Modelling of Stress Field Near a Crack Tip Influenced by Corrosion
13.	Dávid Mikolášek, Zuzana Marcalíková, Marek Johanides and Antonín Lokaj The Aspects of Numerical Modelling of Timber Frame Corner with Dowel Type Connections
14.	Tereza Juhászová, Petr Miarka and Stanislav Seitl Crack Grow Rate Comparison for Different Crack Front Shapes in Stainless-steel IPE 80 Beam

15.	Norbert Jendželovský Modeling of Reinforced Concrete Columns Loaded with Fire
16.	Mohammad Ibrahim Amini and Kamila Kotrasová Study of RC Elevated Tanks Subjected to Earthquake Ground Motions
16.00 – 16.30	Coffee break
16.30 – 18.00	Poster section 2 – Foyer
17.	Oldřich Sucharda and Ján Jeřábek Mechanical Properties and Shrinkage of Fine-Grained Concrete
18.	Marek Johanides, Zuzana Marcalíková, and Antonín Lokaj Nonlinear Analysis and Numerical Modelling of Timber Semi-Rigid Connection
19.	Lenka Kabošová, Eva Kormaníková and Stanislav Kmeř Wind-Driven Form-Finding of a CFRP Pavilion
20.	Pavel Padevět, Petr Bittnar and Barbora Mužíková Measurement of Strains Relation of Rammed Unburned Earth by DIC
21.	Jiří Brožovský, Martin Krejsa, Petr Lehner, Přemysl Pařenica, and Stanislav Seitl Reliability Analysis of Bridge Details from High-Strength Steel with Use of DOProC Approach: Challenges and Research Directions
22.	Eva Panulinová and Slávka Harabinová Specifics of The Rock Environment and Geotechnical Risks
23.	Lenka Štulerová, Patrícia Vaňová, Kamila Kotrasová, Mária Hlinková and Martina Zeleňáková Solving possibilities of Truss Systems
24.	Anna Sedláková, Veronika Merjavá and Štefánia Bučková Alternative Perimeter Cladding Compositions for Nearly Zero-Energy Buildings
25.	Katarína Tvrdá and Mária Minárová Deformation of The Foundation Soil under The Reservoirs
26.	Natália Heliová, Mária Minárová, and Katarína Tvrdá Mechanical Response of Human Lower Part Mandibular Segment with a Tooth
27.	Kamila Kotrasová and Vladimíra Michalcová Thermal Analysis of Cylinder Subjected to Bottom Heat Flux Loadings Using FEM
28.	Sergej Priganc, Peter Sabol, Stefan Kušnir, and Daniel Dubecký Diagnostics and Strengthening of the Bearing Concrete Structure in Stages
29.	Viktória Bajzecerová and Ján Kanócz Short-term Bending Test of Prestressed CLT-Concrete Composite Panels
30.	Shota Urushadze, Y. B. Yang, and J. D. Yau, Bayer Experiment of an SDF Test Vehicle for Indirect Bridge Frequency Measurement
31.	Tomáš Baroš, Lenka Kabošová and Dušan Katunský Shape Exploration of a Parametrically-Designed Cliff Observatory
32.	Silvia Vilčeková, Peter Mesároš, Eva Krídlová Burdová, Jana Budajová Analysis of sustainability indicators and circularity of external wall structures
33.	Slávka Harabinová, Eva Panulinová, Eva Kormaníková, and Kamila Kotrasová Analysis and assessment of slope stability
20.00 – 23.00	Informal discussion in Foyer

Friday, October 14, 2022

	Congress Hall
Chairs:	Stanislav Seitl – Vlastimil Bílek
09.00 – 09.15	Vlastimil Bílek, David Bujdos, Viktor Dubovsky, Filip Khestl, Lukas Prochazka, Lucie Malikova and Petr Miarka Development of Fracture and Other Mechanical Properties of Concretes with Different Curing
09.15 – 09.30	Petr Miarka, Lucie Malíková, Vlastimil Bílek, Anna Benešová and Stanislav Seitl On the Fatigue Resistance of High Performance Concrete
09.30 – 09.45	Petr Frantík Optimized Displacement Load Approximation of Elastic Layer System
09.45 – 10.00	David Juracka, Marek Kawulok, David Bujdos, Martin Krejsa Mechanical Properties of Composite Samples Produced by FFF/FDM 3D Printing Technology in a Three-Point Flexural Test
10.00 – 10.15	Krzysztof Kuliński, Maciej Major and Izabela Major Static Response Investigations of a Column Connected with Foundation via an Original Cut-off Pyramid Head Acting under Euler's Load
10.15 – 10.45	Coffee break
	Congress Hall
Chairs:	Eva Kormaníková – Petr Frantík
10.45 – 11.00	Marián Dobranský, Andrej Škrinár, Martina Zeleňáková The Inlet Structure of Fishway in Dam Veľké Kozmálovce
11.00 – 11.15	Juraj Mužík A boundary knot method for density-driven groundwater flow
11.15 – 11.30	Ondřej Pešek, Pavel Simon, Ivan Balázs and Michal Štrba Development and Testing of a New GFRP Foot-Bridge Deck Panel
11.30 – 11.45	Ivan Balázs, Ondřej Pešek, Martin Horáček and Martin Vild Resistance of Column Webs Subjected to Transverse Compression at the Unstiffened End
11.45 – 11.50	Closing of the conference
12.00 – 14.00	Lunch time