SCIENTIFIC PROGRAM OF THE INTERNATIONAL CONFERENCE ON COMPUTER METHODS IN MECHANICS CMM-2025

TUESDAY, 08.07.2025

8.00-9.00, Registration

9.00-9.30, Conference Opening, Aula Major, Chairman: Marcin Kamiński

9.30-10.15, Plenary lecture, Aula Major, Chairman: George Stefanou, Marcin Kamiński

Pol D. Spanos, Hybrid analytical-numerical Monte Carlo approaches for stochastic response determination of systems endowed with fractional derivative elements

10.15-11.00, Plenary lecture, Aula Major, Chairman: Wojciech Sumelka, Mieczysław Kuczma

Christian Hellmich, Raphael Scharf, Ali Razgordanisharahi, Maximilian Sorgner, Bernd Moritz, Thomas Pilgerstorfer, Markus Brantner, Bernhard Pichler. Refinement of hybrid analyses reveals unexpected load-carrying mechanisms of NATM- and TBM-driven tunnels

11.00-11.30, Coffee break

11.30-13.30, Parallel sessions

	Aula Major	Chairs: Marek Lefik, Marek Wojciechowski	Arena Magica	Chairs: Eduardo Toledo, Marcin Kamiński	Aula Minor	Chairs: Anna Al Sabouni-Zawadzka, Jacek Szafran	Aula 1.05	Chairs: Agnieszka Tomaszewska, Piotr Kowalczyk
		Applications of AI for numerical modeling of engineering materials 1		**Probabilistic methods and reliability assessment 1**		**Mechanics in Engineering Problems 1**		**Numerical modeling in biomechanics 1**
11:30	156	**KEYNOTE LECTURE: Leonard Ziemiański, Bartosz Miller** Neural network-based surrogate modeling for multi-objective optimization of shell structures	23	**KEYNOTE LECTURE: Rafał Bredow, Marcin Kamiński** Dynamic reliability assessment of steel and steel-aluminum telecommunication skeletal towers based on relative entropy concept	36	**KEYNOTE LECTURE: Nicholas Fantuzzi, Dimitra Tsimpli, Francesco Fabbrocino** Data-driven self-healing concrete model and analysis	47	**KEYNOTE LECTURE: Katarzyna Szepietowska, Wiktoria Korbut, Aleksandra Kondrusik, Zuzanna Iwicka, Julia Niemierko, Mateusz Zamkowski, Maciej Śmietański,** Statistical shape model of the healthy abdominal wall towards finite element modelling including geometrical variability
11:50	30	**Amirhossein Davarpanah T.G., Marcin Koniorczyk** Evolutionary programming techniques for modeling the behavior of concrete containing RCA at high temperatures	54	**Anna Jabłonka, Radoslaw Iwankiewicz** Dynamical systems under parametric stochastic impulse process excitations. Equations for response probability density and moments	27	**Monika Chuda-Kowalska, Michał Malendowski, Zbigniew Pozorski** Experimental and numerical analysis of the effect of facing perforation on the mechanical properties of sandwich panels	71	**Piotr Kowalczyk** Parametric analysis of cancellous bone damage
12:10	33	**Łukasz Domagalski , Izabela Kowalczyk**	64	**Marcin Kamiński, Rafał L. Ossowski**	28	**Hyunseung Chung, Hyo-Gyoung Kwak**	101	**Michał Nowak, Jan Polak, Kamil Sędłak**

		Application of machine learning models in predicting vibration frequencies of variable thickness plates		Application of shannon entropy to uncertainty quantification in time-dependent reaction-diffusion problems using the stochastic finite difference method		Approximation of pressure-impulse diagram of RC beams exposed to blast loading based on a section analysis approach		Structural optimization principles as a base for trabecular bone stimulation algorithms development
12:30	45	**Artur Góral, Marek Lefik** Interpretation of the pile static load test using artificial neural networks	102	**Paulina Obara, Urszula Radoń** Influence of the initial prestress level on the reliability index of Geiger domes	31	**Arkadiusz Denisiewicz, Tomasz Socha, Krzysztof Kula, Wojciech Błażejewski, Marek Wyjadłowski** Numerical determination of the load-bearing capacity of a perforated thin-walled beam in a structural system with a chipboards	124	**Anna Skorupa, Alicja Piasecka-Belkhayat** Determination of diffusion coefficient during cryopreservation of selected biological tissues
13:00	60	**Mateusz Jocz , Marek Lefik** Artificial neural networks in the recognition of geotechnical parameters	95	**Mauricio A. Misraji, Marcos A. Valdebenito, Matthias G.R. Faes** Importance line sampling for reliability estimation in stochastic linear dynamics	26	**Zhen Pei Chow** Evaluation of simplified finite element models for predicting impact response of thin composite plates	115	**Alicja Piasecka-Belkhayat** Application of the boundary element method to numerical modelling of heat transfer in cryopreservation
13:20			53	**Noman Jabbar, Wojciech Sumelka, Paulina Stempin** Parametric analysis of stochastic space-fractional truss model	38	**Sergiy Fialko** Nonlinear dynamic analysis of building structures subjected to extremal loading	61	**Antoni John, Henryk Bąkowski, Paweł Dudek** Design and strength analysis of a low-cost ambulance stretcher
13.40-14.45, Lunch and coffee break								
14.45-15.30, Plenary lecture, Aula Major, Chairman: Christian Hellmich, Witold Cecot								
Alberto Corigliano, Andrea Manzoni, Luca Rosafalco, Matteo Torzoni. Computing for mechanics and mechanics for computing								
15.30-16.45, Parallel sessions								
	Aula Major	**Chairs: Witold Cecot, Mieczysław Kuczma**	**Arena Magica**	**Chairs: Eduardo Toledo, Marcin Kamiński**	**Aula Minor**	**Chairs: Zbigniew Pozorski, Tomasz Krykowski**	**Aula 1.05**	**Chairs: Agnieszka Tomaszewska, Piotr Kowalczyk**
		Minisymposium in Honor of Prof. Janusz Orkisz's 90th Birthday: Advances in Meshless Methods 1		**Probabilistic methods and reliability assessment 2**		**Mechanics in Engineering Problems 2**		**Numerical modeling in biomechanics 2**
15:30	59	**KEYNOTE LECTURE: Irena Jaworska**	44	**Lucas P Gouveia, Eduardo Toledo Lima Junior**	62	**Michał Jukowski, Ewa Błazik-Borowa, Jarosław**	151	**Jolanta M. Wołowicz,**

		On MFDM as part of the meshless methods		Probabilistic assessment of tubular collapse using ultrasonic inspection data and nonlinear finite element analysis		**Bęc** The influence of the velocity and mass of moving body on the dynamic response of the beam		**Ryszard Wojnar** Epithelial structure and hexatic phase
15:50	93	**Sławomir Milewski** Identification of heat source for inverse thermal problems using the Monte Carlo method with finite difference-based random walks	65	**Marcin Kamiński, Łukasz Supeł** Stochastic Finite Difference Method-based computations of the critical moments in steel structures	52	**Safdar Iqbal, Marcin Kamiski** Analytical and numerical homogenization equivalence for elastic and plastic models of 2D hexagonal cellular structures	137	**Anita Gryko, Piotr Prochor** Numerical analysis of the effect of an orthopaedic scaffold biodegradation on the long bone healing process
16:10	89	**Jacek Magiera** Analysis of stability of an iterative a posteriori estimation of experimental data error by the physically based global method approximation	34	**Grzegorz Dziatkiewicz** First-order uncertainty propagation analysis of specific figures of merit for 1-3 magnetoelectroelastic two-phase composites using isofield micromechanical models and complex variable step method	73	**Damian Kozanecki, Artur Wirowski, Martyna Rabenda** Analytical and numerical assessment of bidirectionally sinusoidal corrugated steel shells under selected support and load conditions	46	**Jakub Krzysztof Grabski** Metaheuristic and meshless methods applied for tumor localization
16:30	57	**Jan Jaśkowiec, Artur Krowiak** Meshless least-squares collocation method with boundary constraints	129	**Damian Sokołowski, Marcin Kamiński** Structural safety analysis of corrugated web beam subjected to structural static load and corrosion using relative entropy approach	74	**Marcin Krajewski** The numerical analysis and experimental tests of the connection stiffness between selected steel sections	141	**Agnieszka Tomaszewska, Milena Drozdowska, Piotr Aschenbrenner** Resonant frequency of a muscle as an indicator of its functional status
16.50-17.10, Coffee break								
17.10-18.40, Parallel sessions								
	Aula Major	**Chairs: Irena Jaworska, Sławomir Milewski**	**Arena Magica**	**Chairs: Tomasz Sokół, Wacław Kuś**	**Aula Minor**	**Chairs: Ryszard Walentyński, Jerzy Podgórski**		
		Minisymposium in Honor of Prof. Janusz Orkisz's 90th Birthday: Advances in Meshless Methods 2		**Structural optimization, theory and numerical methods 1**		**Mechanics in Engineering Problems 3**		
17:10	42	**Maciej Głowacki, Janusz Orkisz** Dedicated evolutionary algorithms and MFDM	29	**Tadeusz Chyży** The alghoritms to automatic designing of truss structures	77	**Tomasz Krykowski** Application of FEM to assess the load-bearing capacity of reinforced		

		applied to chosen large optimization problems of mechanics				concrete structures subjected to corrosion and cyclic loads		
17:30	83	**Artur Lax, Sławomir Milewski** Selected examples of steel frame and truss optimization of varying complexity aided by a pattern-based approach	49	**Andrzej Myśliński** Phase field topology optimization of finite strain viscoplastic structures in contact	138	**Alireza Tabrizikahou, Mieczysław Kuczma** Numerical simulation and experimental investigation of concrete prestressed with iron-based shape memory alloy (Fe-SMA) short fibers		
17:50	100	**Marcin Nowak, Paweł Szeptyński, Sandra Musiał, Michał Maj** Application of the virtual fields method for hyperelastic characterization of polymers under nonhomogeneous deformation	70	**Izabela Kowalczyk, Łukasz Domagalski** Genetic algorithm optimization of truss towers in terms of dynamics properties	126	**Przemysław Smela** Numerical analysis of cryogenic tank exposed to the influence of the earthquake		
18:10	78	**Mieczysław Kuczma** Statics and dynamics of shape memory alloy octet-truss lattice structures	72	**Damian Kowalski** Stress-biased topology optimization using artificial neural networks	113	**Jan Pelczynski, Kamila Martyniuk-Sienkiewicz, Anna Al Sabouni-Zawadzka** Numerical modeling of a prestressed tensegrity core in a sandwich panel		
18:30	25	**Witold Cecot, Marek Klimczak, Marta Oleksy** Application of the discontinuous Petrov-Galerkin (DPG) methodology in the meshless methods			142	**Ako Umar Abdulaziz** The use of advanced numerical methods to analyze underground structures in complex geometrical and boundary conditions		

19.00-21.00, Tramway city trip (19.15 - 21.00)

WEDNESDAY, 09.07.2025

8.00-9.00, Registration

9.00-9.45, Plenary lecture, Aula Major, Chairman: Marek Lefik

Nicholas Fantuzzi, Meral Tuna, Patrizia Trovalusci, Mechanical homogenization and optimization of porous 3D printable composites for biomedical applications

9.45-10.30, Plenary lecture, Aula Major, Chairman: Pol Spanos, Marcin Kamiński

George Stefanou, Random field modeling of the mechanical properties of heterogeneous materials based on their microstructure

10.30-11.00, Coffee break							
11.00-13.00, Parallel sessions							
	Aula 1.05	**Chairs: Marek Galewski, Anna Ochal**	**Arena Magica**	**Chairs: Robert Cichowicz, Marcin Koniorczyk**	**Aula Major**	**Chairs: Tomasz Sokół, Wacław Kuś**	**Aula Minor**	**Chairs: Ewa Błazik-Borowa, Nicholas Fantuzzi**
		Variational and monotone methods with applications in mechanics		**Computer methods in heat and mass transfer 1**		**Structural optimization, theory and numerical methods 2**		**Mechanics in Engineering Problems 4**
11:00	16	**KEYNOTE LECTURE: Piotr Bartman-Szwarc, Anna Ochal, Meir Shillor, Ken Kuttler** Dynamic membrane obstacle problems with the damped normal compliance condition	90	**KEYNOTE LECTURE: Ewa Majchrzak, Bohdan Mochnacki** Formulation of the boundary-initial conditions supplementing the energy equation with delay times	98	**KEYNOTE LECTURE: Wacław Kuś** Bio and quantum inspired evolutionary algorithms in optimization of structures	145	**Ryszard Walentyński, Robert Cybulski, Henryk Myrcik** Numerical study of doubly-corrugated thin-walled steel panels
11:20	17	**Krzysztof Bartosz** Vanishing viscosity method for a noncoercive hyperbolic differential hemivariational inequality	35	**Grzegorz Dziatkiewicz, Adam Długosz** Optimization of thermal metamaterials for the desired heat flux distribution	127	**Przemysław Sobczak, Tomasz Sokół** Hilbertian descent directions for level-set method in plane structural shape optimization problems	152	**Qingxia Yue, Qingru Liu** Finite elements based numerical investigation of a novel slit-damped web-type plate and its application in Frame Structure Retrofitting
11:40	19	**Michał Bełdziński** An analogue of the smallness condition for uniformly monotone operators	20	**Jakub Bobrowski, Artur Gutkowski, Marcin Łęcki** Numerical study of heat transfer in microchannel heat exchangers	130	**Tomasz Sokół, Tomasz Lewiński** Longitudinal distortions of bars in truss layout optimization	154	**Maciej Zawistowski, Arkadiusz Poteralski** Optimization of mechanical properties of multiphase materials with auxetic phase
12:00	68	**Igor Kossowski** Evolution equations with generalized fractional Laplacian	106	**Iman A.N. Omrani, Marcin Koniorczyk, Marta Choińska Colombel, Patrycja Duży** Improved random hierarchical capillary bundle model for simulating the gas permeability of porous media	140	**Katarzyna Tajs-Zielińska** Periodic topology optimization including design-dependent loads	116	**Arkadiusz Poteralski, Maciej Zawistowski** Mechanical testing of auxetic structures strength and deformation
12:20	88	**Barbara Łupińska, Tatiana Odziejewicz, Ewa Schmeidel** On solutions to the boundary value problem with ψ-derivative	133	**Tomasz Stręk** Computational modelling of heat sink with cellular core	94	**Bartosz Miller, Leonard Ziemiański** Advanced multi-fidelity FEM-model based optimization of dynamic	117	**Zbigniew Pozorski, Jolanta Pozorska, Annalena Schardt** On the influence of support conditions on the structural behavior of

						and cost parameters in composite shell structures		sandwich panels subjected to thermal actions
12:40	107	**Urszula Ostaszewska, Małgorzata Zdanowicz, Ewa Schmeidel** Asymptotic behavior of solutions to difference equations of Volterra type with p-Laplacian	149	**Julia Wiśniewska** Phase change materials in passive solutions for maintaining thermal comfort in buildings	81	**Maksym Grzywiński** Jaya algorithm for design optimization of truss tower structures	134	**Jacek Szafran** Reinforcements of the steel structural members – computational aspects
13:00	112	**Ewa Pawłuszewicz, Mohammad Reza Molaei, Adrian Kawecki** Aspects of the equations of rigid body motion depending on the time scale	21	**Jakub Bobrowski, Krzysztof Sobczak** Numerical investigation and improvement of solar vehicle aerodynamics			41	**Wojciech Gilewski, Adam Zawadzki, Maciej Kołodziejczak, Anna Al Sabouni-Zawadzka** Evaluation of a class of 2D graded cellular metamaterials fabricated using 3D printing
13:20	63	**Michał Jureczka** Application of Graph Neural Networks to model reduction in contact mechanics simulations						
13.00-14.30, Lunch and Coffee								
14.30-15.30, Sponsor's presentation - TOYA: "Zagrożenia cybernetyczne - człowiek i sprzęt", Aula Major, Chairman: Marcin Kamiński								
15.30-16.15, Witold Kąkol, An Introduction to NAFEMS Activities, Aula Major, Chairman: Wojciech Sumelka								
16.15-17.30, Coffee break, panel discussions, CMM-2025 Organizing Committee Meeting								
17.30-18.30, Public lecture, prof. dr hab. inż. Anna Fabijańska "When Artificial Intelligence Becomes an Engineer – From Learning to Applications in the Engineering of Tomorrow", Aula Major, Chairman: Marcin Kamiński, Marek Lefik								
18.30-20.00, PACM meeting, Aula Major								
THURSDAY, 10.07.2025								
8.00-9.00, Registration								
9.00-9.45, Plenary lecture, Aula Major, Chairman: Witold Cecot								
Chongmin Song. A scaled boundary finite element framework for fully automated computational engineering analysis								
9.45-10.30, Plenary lecture, Aula Major, Chairman: Dariusz Gawin, Alberto Corigliano								
Jerzy Rojek. Multiscale and multiphysics modelling of powder metallurgy processes using the discrete element method								
10.30-11.00, Coffee break								
11.00-13.00, Parallel sessions								
	Arena Magica	**Chairs: Eduardo Toledo, Marcin Kamiński**	**Aula 1.05**	**Chairs: Jacek Szafran**	**Aula Minor**	**Chairs: Wacław Kuś, Jerzy Rojek**	**Aula Major**	**Chairs: Marek Wojciechowski, Marek Lefik**

		Probabilistic methods and reliability assessment 3		Experimental and computational mechanics		Computational mechanics 1		Applications of AI for numerical modeling of engineering materials 2
11:00	155	**KEYNOTE LECTURE: Zbigniew Zembaty** Peak factor in non-stationary random vibrations	55	**Iwona Jankowiak** Modeling of pull-off test of FRP strip bonded to concrete surface by means of different numerical approaches	58	**KEYNOTE LECTURE: Jan Jaśkowiec, Piotr Pluciński** Advances in orthogonalized finite element method	150	**KEYNOTE LECTURE: Marek Wojciechowski** Surrogate modeling of the unsteady heat conduction problem using artificial neural networks to determine the shape of the jet-grouting column
11:20	132	**Michał Strąkowski, Marcin Kamiński** On the relative entropy as a measure of structural reliability of an I-profile beam in fire conditions	51	**Bogusław Hościło, Andrzej Werner, Piotr Mrozek, Krzysztof Molski, Robert Latoś** 3D scanning methodology of painting path: a case study in preparing a numerical model of an object with minor height variations	40	**Mihiretu Gezahagn Ganta, Marta Kurek** Effect of corrosion on multi-axial fatigue performance of maraging steel produced by laser powder bed fusion (LPBF)	43	**Tomasz Godlewski, Łukasz Wodzyński, Leszek Chomacki** Application of chosen artificial tools for assessment of georisk caused by underground constructions in urban space
11:40	136	**Danuta Szeliga, Jakub Foryś, Natalia Jażdżewska, Jan Kusiak, Rafał Nadolski, Piotr Oprocha, Maciej Pietrzyk, Paweł Potorski, Łukasz Rauch** Stochastic phase transformation model: Identification, verification and application to the evaluation of the uncertainty of the process parameters	79	**Krzysztof Kula, Arkadiusz Denisiewicz, Tomasz Socha, Cristiane Lopes, Bruno Pedrosa, Grzegorz Lesiuk, Paweł Zielonka, Szymon Duda, Hermes Carvalho, José Correia** Numerical and experimental development of glass/carbon/basalt hybrid FRP rebars for reinforced-concrete beams under bending	48	**Piotr Grześ, Michał Kuciej** FE modeling of temperature, thermal stresses and wear in the 2Bgu tread brake	84	**Marek Lefik, Marek Wojciechowski** Reduced model of a foundation on a weak soil reinforced with rigid inclusions, numerically defined using a complex artificial neural network
12:00	147	**Hanna Weber, Radosław Iwankiewicz** Non-linear stochastic vibrations of the guy line in the three-cable guyed tower model under seismic excitation	114	**Zbigniew Perkowski, Mariusz Czabak** Defect detection in timber composite I-beams based on the measurement error distribution normality tests for deflection local linear approximation	32	**Yared D. Desta, Paweł Olejnik** A comprehensive review of the complex interplay between friction-induced vibration and acoustics	110	**Cezary Pałczyński** Anomaly classification in mechanical systems using dual-branch neural networks and wavelet transform

12:20	13	**Andrew Angus, Mustafa Okumus, Łukasz Figiel** Bayesian approach to probabilistic modelling of mass transport in composite materials	120	**Ali Raza, Chengfang Yuan** Numerical and experimental investigation of durability and microstructural performance of sustainable 3D-printed engineered cementitious composites with Yellow River Sand	80	**Krzysztof Kurowski, Cezary Mazurek, Tomasz Pecyna, Piotr Rydlichowski** Reshaping the future with quantum technologies in computing and networking	125	**Marek Słoński** Data-driven design space exploration with conditional variational autoencoder for design of steel structures
12:40	118	**Maciej Przychodzki, Marcin Kamiński** Random eigen vibrations of multilayered viscoelastic beams modeled using zig-zag theory	122	**Mir Sayad Shah** Investigating the rheological and strength performance of low cost reactive powder concrete	69	**Andrzej Koszewnik, Krzysztof Kamil Żur** Modelling and analysis of active vibration control of collocated and non-collocated structures with contact and contactless sensors	146	**Zhihui Wang, Roberto Cudmani** Validating data-driven geo-constitutive models through initial boundary value problems
13.00-14.30, Lunch and coffee break								
14.30-15.15, Plenary lecture, Chairman: George Stefanou, Marcin Kamiński								
Michael Beer. Aleatory and epistemic uncertainties in engineering analysis								
15.15-16.30, Parallel sessions								
	Arena Magica	**Chairs: Stanisław Stupkiewicz, Jerzy Rojek**	**Aula 1.05**	**Chairs: Jarosław Jędrysiak, Piotr Ostrowski**	**Aula Minor**	**Chairs: Michał Guminiak**	**Aula Major**	**Chairs: Marek Wojciechowski, Marek Lefik**
		Computational mechanics 2		**Modelling of micro-structured media 1**		**Applications of the Boundary Element Method for mathematics and mechanics 1**		**Applications of AI for numerical modeling of engineering materials 3**
15:15	76	**KEYNOTE LECTURE: Jaroslav Kruis, Aleš Jíra, Jan Vorel** Numerical simulations of 3D printed structures based on alloy of titanium with betastructure	37	**Piotr Fedeliński** Investigation of the effect of stiffening by nanotubes on the dynamic response of nanocomposites	14	**KEYNOTE LECTURE: Tadeusz Burczyński** Applications of the Boundary Element Method for mathematics and mechanics	148	**Marcin Wierszycki, Jakub Michalski** Using LSTM-based surrogate models for efficient material calibration in finite element simulations
15:35	67	**Anna Knitter-Piątkowska, Michał Guminiak** Theory and application of Discrete Wavelet Transform for selected structural mechanics problems	56	**Piotr Jankowski, Krzysztof Kamil Żur** Coupled vibration of nanocomposite beam with discontinuities	24	**Nikhil Arora, Martin Schanz** Parameter choices for a time domain boundary element formulation based on the generalized convolution quadrature method	150	**Marek Wojciechowski** Surrogate modeling of the unsteady heat conduction problem using artificial neural networks to determine the shape of the jet-grouting column

15:55	85	**Nicolas G. Leiva, Ricardo Herrera, Rafael Ruiz** Exploring fluid-membrane interaction on highly flexible containers under hydrostatic pressure	103	**Witold Ogierman** Prediction of the effective behavior of composites with discontinuous reinforcement using data-driven mean-field homogenization	50	**Michał Guminiak, Marcin Kamiński** Random buckling analysis of thin plates considering internal constraints by the Boundary Element Method	39	**Tomasz Gajewski, Jakub K. Grabski, Damian Mrówczyński, Aram Cornaggia,Tomasz Garbowski** Determination of material and structural properties of corrugated board in manufacturing and processing
16:15	86	**Agnieszka Lenartowicz, Maciej Przychodzki, Michał Guminiak** Eigenvibrations of plates resting on viscoelastic constraints considering its optimal placement and description by fractional derivatives	104	**Witold Ogierman, Iwona Pokorska, Tadeusz Burczyński** Computational homogenization of cement paste: influence of microstructure model parameters on mechanical properties	66	**Marcin Kamiński, Arkadiusz Tomczyk** On the AI-based implementation of the Stochastic Boundary Element Method	92	**Jakub Matkowski, Mateusz Żurawski, Robert Zalewski** Artificial intelligence for real-time control of adaptive impact damper
16.30-17.00, Coffee break								
17.00-18.30, Parallel sessions								
	Arena Magica	**Chairs: Jerzy Pamin**	**Aula 1.05**	**Chairs: Jarosław Jędrysiak, Piotr Ostrowski**	**Aula Minor**	**Chairs: Michał Guminiak**	**Aula Major**	**Chairs: Łukasz Figiel**
		Computational mechanics 3		**Modelling of micro-structured media 2**		**Applications of the Boundary Element Method for mathematics and mechanics 1**		**Computational mechanics 4**
17:00	87	**Magdalena Łasecka-Plura** Laplace-based interval analysis of frequency response function in systems with viscoelastic elements	109	**Piotr Ostrowski, Ewelina Kubacka, Barbara Tomczyk** On the effect of laminate microstructure layout on the unidirectional heat wave propagation and duration	75	**KEYNOTE LECTURE: Thomas Kramer, Benjamin Marussig, Martin Schanz** A higher order isogeometric boundary element method in the time domain	128	**Agnieszka Sobierańska, Balbina Wcisło** Numerical modeling of aluminium alloy using large strain thermo-elasto-plasticity at different temperatures
17:20	91	**Jakub Marczak** Dynamics of sandwich plates with honeycomb core	121	**Miroslav Repka, Ladislav Sator** Multiphysical effects in micro/nano structures in energy harvesting devices	119	**Jacek Ptaszny** Application of FMBEM to the numerical/mean-field homogenization of 3D composite materials	141	**Piotr Tarasiuk, Krzysztof Kamil Żur, Andrzej Koszewnik** Numerical vibration analysis of an active cantilever beam with collocated and non-

								collocated sensors and actuators
17:40	96	**Hojjat Mousavisogolitappeh, Aneta Ustrzycka, Stanisław Stupkiewicz** Anisotropic effects on radiation-induced embrittlement in Fe-Ni-Cr alloys: a molecular dynamics study	15	**Marek Barski, Krzysztof Kamil Żur, Victor Giurgiutiu** Guided waves in carbon-based polymer composites	82	**Vibudha Lakshmi Keshava, Martin Schanz** Partial integration based regularization in BEM for 3D elastostatic problems: The role of line integrals	135	**Krzysztof Szajek, Wojciech Sumelka** A comparative study of space-fractional truss and spring-mass model with variable stiffness
18:00	12	**Hasan Al-Rifaie, Nima Movahedi, Teik-Cheng Lim** Near-zero Poisson's ratio metamaterials: a hybrid approach enhancing crashworthiness	131	**Paulina Stempin, Wojciech Sumelka** Space-fractional finite element approach for size-dependent frame structures			99	**Jakub Nowak, Rafał Radecki, Wiesław J. Staszewski** Crack-wave interaction in ultrasonic shear horizontal wave propagation – modelling based on hysteresis and numerical parallel processing
18:20	123	**Mateusz Sitko, Łukasz Madej** Parallel computing performance for cellular automata models						

19.30-23.00, Conference dinner

8.00-9.00, Registration

9.00-9.45, Plenary lecture, Aula Major, Chairman: Marek Lefik, Mieczysław Kuczma

Chenfeng Li. Heterogeneous materials: characterization, reconstruction, simulation, and application

9.45-10.30, Plenary lecture, Aula Major, Chairman: Marcin Kamiński

Vladimir Sladek, Jan Sladek. Modelling and numerical treatment of scale effects in nanoscopic structures

10.30-11.00, Coffee break

11.00-10.45, Plenary lecture, Aula Major, Chairman: Mieczysław Kuczma, Marcin Kamiński

Dariusz Gawin, Marcin Koniorczyk, Francesco Pesavento, Bernhard A. Schrefler. Non-equilibrium modeling of some physico-chemical processes in concrete elements in variable environmental conditions

11.45-12.30, Parallel sessions

	Aula Major	**Chairs: Michał Guminiak**	**Aula Minor**	**Chairs: Jan Jaśkowiec**	**Arena Magica**	**Chairs: Marcin Kamiński**		
		Computational mechanics 5		**Computational mechanics 6**		**Computational mechanics 7**		
11:45	105	**Paweł Olejnik, Yared D. Desta, Marcin Mydłowski**	138	**KEYNOTE LECTURE: Paulina Świątkiewicz, Zdzisław**	97	**Marzena Mucha, Lars Rose, Balbina Wcisło,**		

		Estimation of energy losses in a driven table-beam dynamical system with stick-slip friction		**Więckowski** Reissner-Mindlin plate bending theory in multiply connected domains by the equilibrium finite element method		**Andreas Menzel, Jerzy Pamin** Modelling of propagative instabilities using an Estrin-McCormick extension of large strain thermo-visco-plasticity		
12:05	111	**Jerzy Pamin, Balbina Wcisło, Marzena Mucha, Andreas Menzel** Regularization options for finite strain softening thermo-plasticity	144	**Muhammad Umer, Paweł Olejnik** Challenges and solutions of approximate analytical methods for nonlinear systems	18	**Błażej Bartoszewicz, Krzysztof Kamil Żur** Numerical and experimental stationary vibroacoustic analysis of a cracked shaft		
12:25	157	**Weronika Zwolińska-Faryj, Kinga Nalepka, Błażej Skoczeń, Rafał Schmidt, Elwira Schmidt, Robert Chulist** The impact of phase transformation on crack propagation in austenitic stainless steels at cryogenic temperatures	153	**Monika Zaczyńska, Mehdi Bohlooly Fotovat** Impact of extension-bending coupling on the stability of thin-walled composite laminates	22	**Piotr Bońkowski** Experimental analysis of response-based stiffness identification using axis rotation measurements		

12.30-13.30, Tutorial on Quantum Computing

13.30-13.50, S. Ardakani & C. Collert, A Game-Based Approach to Teaching Statics

13.50-15.00, Lunch and coffee break

15.00-16.00, Conference closing