



ICCMSE 2023

19th International Conference of Computational Methods in Sciences and Engineering

ICCMSE 2023 CONFERENCE



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Registration Desk Hours:

Date	Hours:
23/05	09.00-15.00

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**23 May 2023****Physical Room 1**

Session Name:	Methods of Applied Mathematics in Modeling and Digital Twins in Energy Aspects of Waste Recycling	No:	14
Chair Name:	Vladislav N. Kovalnogov		
Hours	Paper Title	Author	
09.00-09.20	Numerical Study of the Effectiveness of Promising Technologies for Reducing Greenhouse Gas Emissions from the Combustion of Gaseous Fuels	Vladislav N. Kovalnogov, Ruslan V. Fedorov, <u>Larisa V. Khakhaleva</u> , Dmitry A. Generalov, Mariya I. Kornilova, Andrey V. Chukalin	
09.20-09.40	Modeling and Simulation of Atmospheric Boundary Layer Flow through Wind Farm	Vladislav N. Kovalnogov, <u>Mariya I. Kornilova</u> , Larisa V. Khahaleva, Andrey V. Chukalin, Dmitry S. Stepanov, Anton V. Petrov	
09.40-10.00	Comparative Analysis of Mathematical Models of the Turbulent Atmospheric Boundary Layer in the Area of the Ulyanovsk Wind Farm	Vladislav N. Kovalnogov, Yuriy A. Khakhalev, Larisa V. Khakhaleva, Mariya I. Kornilova, <u>Andrey V. Chukalin</u>	

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23 May 2023

Physical Room 1

Session Name:	7th Symposium on Computational Simulation and Experimental Analysis of Hygrothermal Phenomena in Historical Building Envelopes	No:	6
Chair Name:	Václav Kočí		
Hours	Paper Title	Author	
10:00 - 10:15	Applicability of natural fibres as a reinforcement for lime-based plasters	<u>Jiří Maděra</u> , Eva Vejmelková, Vojtěch Pommer, Jitka Krejsová, Lucie Poláková, Dana Koňáková	
10:15 - 10:30	Computational analysis of a convective heat transfer in building materials by means of wind tunnel experiment	<u>Jan Kočí</u> , Tomáš Navara, Arsenii Trush, Riccardo Cacciotti and Stanislav Pospíšil	
10:30 - 10:45	Design of Thermoelectric Geopolymer Composite with Carbonaceous Admixture	Petr Hotěk, <u>Lukáš Fiala</u> , and Robert Černý	
10:45 - 11:00	Materials for applications in radioactive waste repositories: computational assessment of cement and non-cement-based solution	<u>Václav Kočí</u>	

11.00 – 11.30	Coffe Break
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Physical Room 1 – Virtual Room 1

Session Name:	The 9th Quantum Science (QS) symposium	No:	1
Chair Name:	Taku Onishi		
Hours	Paper Title	Author	
11.30-12.00	Constraints on the variation of the electron mass by cosmic microwave background and big bang nucleosynthesis	Osamu Seto	
12.00-12.30	W4neo: leveraging the power of lambda coupled cluster theory for reduced-cost high-accuracy computational thermochemistry	Jan M. L. Martin	

Physical Room 1			
Session Name:	General Session		No:
Chair Name:	Andreas Ioakim		
Hours	Paper Title	Author	
12.40-13.00	Numerical simulation of closed die hot forging process of CuZn40Pb2 brass alloy valve body cover	Mehmet Ceviz, Isik Cetintav and Damla GUNEL	
13.00-13.20	Wave Propagation in Functionally Graded Nanostrips	Mustafa Arda	
13.20-13.40	The Method of Introducing Deformations in Sheets for Simulation of Hidden Corrosion in Aircraft Structures	Andrzej Katunin, Krzysztof Lis, Kamil Jozsko, Piotr Synaszko and Krzysztof Dragan	
13.40-14.00	Preliminary Analysis of a FRF-based Depth-Dependent Stiffness Estimation Approach for Lateral Pile-Soil Interaction	Andreas Ioakim and Luke J. Prendergast	
14:00-14:20	Modelling of Flow Energy Harvesters with C-Shaped Vibration Inducers	Giampiero Sciortino, Valentina Lombardi and <u>Pietro Prestininzi</u>	

23 May 2023

Virtual Room 1

Session Name:	7th Symposium on Computational Simulation and Experimental Analysis of Hygrothermal Phenomena in Historical Building Envelopes	No:	6
Chair Name:	Peter Hlaváč		
Hours	Paper Title	Author	
12:45-13:00	Effect of time development of physical and chemical degradation of basalt-based reinforcement on its applicability in cement composites	<u>Martin Keppert</u> , Eva Vejmelková and Robert Černý	

Session Name:	Modeling and Simulation of Complex Systems to Solve Problems and to Control Systems in the Field of Energy Engineering	No:	4
Chair Name:	Dr. Rania JRADI		
Hours	Paper Title	Author	

24 May 2023

Virtual Room 1

Session Name:	Modern methods in environmental research	No:	15
Chair Name:	Damian Absalon and Natalia Janczewska		
Hours	Paper Title	Author	
10.00-10.20	Remote detection of water presence - new approach in water management	Natalia Janczewska	
10.20-10.40	Analysis of the possibility of increasing retention in the Tresna reservoir catchment area in the context of counteracting the effects of drought	Łukasz Pieron	
10.40-11.00	Hazards to the quality of surface water from discharge of saline mining waters in the Oder River and Vistula River Basin	Magdalena Matysik	
11.00-11.20	Freshets and floods in the Soła River basin	Damian Absalon	

Virtual Room 1

Session Name:	Allometry and correlations in Biophysics and Medicine	No:	12
Chair Name:	Prof. Atanasov AT		
Hours	Paper Title	Author	
14:00-14:20	Allometry between volume to surface ratio and lifespan of living organisms and planet from solar system	Atanasov, Valev, Parashkevova	

Virtual Room 1

Session Name:	General Session	No:	
Chair Name:	TBA		
Hours	Paper Title	Author	
14.30-14.50	Simulating Mass Transfer through Deformable Semipermeable Membranes in Fluid Flows	Farhad A. Amiri and Junfeng Zhang	
14.50-15.10	Transforming Mining Industry Through Adoption Of Disruptive Technologies	Ravi K. Jade	
15.10-15.30	Determination Of Parasitic Shift Of Additively Manufactured Rotational Pivot	Kristina Marković, Maja Dundović, Željko Vrcan and Marina Franulović	
15.30-15.50	Reconstruction of 3-Dimensional Ship Hull Geometries from 2-Dimensional Drawings	Georgia Koini, Argiris I. Delis, Ioannis K. Nikolos, Eleftherios S. Zografos, Charilaos S. Zografos, Sotirios S. Sarakinos, Petros Manousis	
15.50-16.10	Enhancements on Migrating Birds Optimization Algorithm	Ahmad Bassaleh and Ekrem Duman	

Virtual Room 1			
Session Name:	General Session		No:
Chair Name:	TBA		
Hours	Paper Title	Author	
16.10-16.30	Break		
16.30-16.50	A Case Study on Clustering of Time Series Data of Air Pollutant Concentrations	Jo Takeuchi, Tetsuya Nagato, Mao Akiyama, Yuichiro Jindai and Shuhei Sasaki	
16.50-17.10	A time window process based on a hybrid application of Artificial Neural Networks and Kalman Filters for the improvement of the results of numerical wave prediction models	I. Famelis, A. Donas, I. Kordatos, A. Alexandridis, G. Galanis	
17.10-17.30	On Some Vertex-Degree-Based Topological Indices of Hexagonal Chemical Graphs	Armen Bagdasaryan and Milica Micic	
17.30-17.50	MODELING OF CONTROLLABLE MOTION OF A SPACECRAFT WITH A SOLAR SAIL NEAR LIBRATION POINT L1	Alexander Shmyrov, Vasily Shmyrov and Dzmitry Shymanchuk	
17.50-18.10	Freshets and floods in the Soła River basin	Damian Absalon	
18.10-18.30	Analysis of the Possibility of Increasing Retention in the Tresna Reservoir Catchment Area in the Context of Counteracting the Effects of Drought	Łukasz Pieron, Damian Absalon, Magdalena Matysik	
18.30-18.50	Computational Study and 2D Mapping Method for Motion Sensors To Measure Two Physical Quantities Simultaneously	Kamran Siddique	

25 May 2023

Virtual Room 1

Session Name:	The Virtual Section on Information, Intelligent, Education and Engineering Application (IIEEA 2023)	No:	11
Chair Name:	Chia-Liang Lin and Jia-Ni Liu		
Hours	Paper Title	Author	
09.00-09.20	NIKE China official shopping website interface usability evaluation preliminary investigation	Xiao-Xi Li	
09.20-09.40	Nanjing Museum's Website Interface Usability Evaluation	Su-Yang Liu	
09.40-10.00	Mobile Game Interface Usability Evaluation for the Glory of King Using Heuristic Evaluation	Xiao-Yi Liu and Chia-Liang Lin	
10.00-10-20	To be announced	Jia-Ni Liu	

25 May 2023

Virtual Room 1

Session Name:	Design, Analysis and Retrofitting of Civil Structures and Infrastructures in Seismic Prone Areas	No:	9
Chair Name:	Milani - Formisano - Magagnini - Clementi		
Hours	Paper Title	Author	
14:00-14:20	Numerical modeling of a majestic masonry structure: A comparison of advanced techniques	Schiavoni M, Giordano E., Roscini F., Clementi F.	
14:20:14:40	Numerical tool to predict the compressive capacity of squared columns strengthened with FRP jackets	da Silva L. C. M.; Milani G., Grande E.	
14:40-15:00	Analysis and seismic retrofitting of an existing precast RC industrial building	Magagnini E., Capozucca R., Pace G.	
15:00-15:20	Numerical analysis for a novel hybrid seismic isolator	Kai Guo, Gabriele Milani	
15:20-15:40	Numerical study on the local reinforcing of RC columns by steel perforated sheeting	Meglio E., Davino A., Formisano A.	
15:40-16:00	Seismic investigation and retrofit of Villa Vannucchi in the Vesuvius area	Longobardi G., Fabbrocino F., Formisano A.	
16:00-16:20	Numerical analysis and comparison for a low-rise masonry house with the application of seismic isolator with and without S-shaped steel dampers	Kai Guo, Gabriele Milani	
16:20-16:40	Horizontal behaviour of Fiber Reinforced Elastomeric Isolator (FREI) of different boundary conditions: experimental investigation	Pianese G., Milani G., Formisano A.	
16:40-17:00	Advanced numerical modelling of masonry arches reinforced with SRG	Pingaro N., Milani G.	
17:00-17:20	Debonding sawtooth analytical model for SRG-strengthened joints subjected to direct shear and experimentally tested	Pingaro N., Calabrese A.S., Milani G., Poggi C.	
17:20-17:40	Heterogeneous limit analyses for a real reinforced masonry arch experimentally tested in-situ	Hua Y., Milani G.	
17:40-18:00	2D Limit Analysis for Masonry Arch Bridges with Full Modeling of Backfill	Hua Y., Milani G.	
18:00-18:20	A novel limit analysis method based on rigid elements to evaluate the seismic vulnerability of a masonry pagoda	Wang P., Milani G., Li S.	
18:20-18:40	A novel limit analysis method to analysis the seismic vulnerability of masonry aggregates	Wang P., Milani G.	

26 May 2023

Virtual Room 1

Session Name:	Mathematical Models and Investigations Methods for Nonlinear Systems of Different Nature	
Chair Name:	Alexey A. Kireenkov	
Program:		
Hours	Paper Title	Author
09.00-09.20	Bifurcation Diagrams of a Lagrange Top with a Vibrating Suspension Point	S.V. Sokolov, P.E. Ryabov
09.20-09.40	On the theory of shape memory membrane shells undergoing incomplete thermoelastic phase transitions	Kurbatov A.S., Zhavoronok S.I.
09.40-10.00	The problem of the interaction of a Kirchhoff-Love shell segment with a cylindrical wave in an elastic medium	Lokteva N.A., Vo Van Dai
10.20-10.40	Study of methods of analytical calculation of three-layer panels with a cone-shaped discrete core	Volkov A.N., Zotov A.A.
10.40-11.00	Evaluation of the effect of thermal hardening of the VJ175ID alloy on the microstructure of the welded joint during friction welding	2. Babaytsev A.V., Fozilov T.T., Shumskaya S.A.
11.20-11.40	Classical and generalized thermal conductivity in solids	3. Fozilov T.T., Zatorkina K.V.
11.40-12.00	Mathematical modeling of heat transfer in the screen-vacuum thermal insulation of spacecrafts	4. Pronina P.F., Egorova M.S.
11.40-12.00	Theory of Combined Dry Friction in Engineering Applications	Alexey A. Kireenkov
11.40-12.00	Contact stresses in the problem of the motion of a spherical shell along a corner chute	Fedotenkov G.V., Mikhailova E.Yu., Pryazhevsky R.D.
11.40-12.00	Biangulation goniometric localization of humanoid robot in robofootball	Azer Babaev, Sergey Semendyaev, Nikita Kopersk