

Organized by:

Moscow State University of Civil Engineering (National Research University)

Conference partners:

- LIRA soft
- SCAD Soft
- Novosibirsk State University of Architecture and Civil Engineering (Sibstrin)
- Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (IPMech RAS)

Date: November 13-15, 2019

Venue: Moscow State University of Civil Engineering (NRU MGSU)
129337, 26, Yaroslavskoye Shosse, Moscow, Russia

Main Topics:

- Mathematical and computer-aided modelling
- Building structures, evaluation and analysis
- Mechanics of materials

Conference Chairs:

- **Prof. Andrey Volkov**, Professor, DSc, Acting Rector of NRU MGSU, Corresponding member of the Russian Academy of Architecture and Construction Sciences, Chairman of the Educational Methodological Universities Association of the Russian Federation on construction education, Head of the scientific school 'System Engineering of Construction'.
- **Prof. Andrey Pustovgar**, Assoc. Professor, PhD, Vice-rector of NRU MGSU, The scientific supervisor of the Scientific Research Institute of Construction Materials and Technologies, Laureate of the Prize of the Government of the Russian Federation in the field of science and technology, Leading specialist in the field of building materials and modern construction technologies.

International Scientific Committee:

- **Prof. Vladimir Andreev**, Moscow State University of Civil Engineering (Russia), Department of Strength of Materials
- **Prof. Ashot Tamrazyan**, Moscow State University of Civil Engineering (Russia), Department of Reinforced Concrete and Masonry Structures
- **Prof. Sergey Kuznetsov**, Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (Russia)
- **Dr. Victoria Borkovskaya**, Moscow State University of Civil Engineering (Russia), Department of Housing and Communal Services

- **Prof. Stanislaw Jemiolo**, Warsaw University of Technology (Poland), Department of Strength of Materials and Theory of Elasticity and Plasticity
- **Prof. Artur Zbiciak**, Warsaw University of Technology (Poland), Department of Theoretical Mechanics and Pavement
- **Prof. Vladimir Rimshin**, Research Institute of Building Physics of the Russian Institute of Urban Development (Russia)
- **Prof. Oleg Figovsky**, Israel Association of Inventors (Israel), President
- **Prof. Alexander Chichurin**, The John Paul Catholic University of Lublin (Poland), Department of Modelling and Computer Simulation
- **Prof. Michal Fečkan**, Comenius University in Bratislava (Slovakia), Department of Mathematical Analysis and Numerical Mathematics
- **Prof. Vladimir Burkov**, V. Trapeznikov Institute of Control Sciences of RAS (Russia), Laboratory 57 (of active systems)
- **Dr. Alberto Celani**, Politecnico di Milano (Italy), Department of architecture, built environment and construction engineering
- **Prof. Knut Hartenstein**, Hochschule für Technik und Wirtschaft Berlin (Germany), Department FB 2
- **Prof. Roland Heiler**, Hochschule für Technik und Wirtschaft Berlin (Germany), School of Engineering, Department of Technology and Life
- **Prof. Stanislaw Jemiolo**, Warsaw University of Technology (Poland), Department of Strength of materials and theory of elasticity and plasticity
- **Prof. Evgeniy Korolev**, Moscow State University of Civil Engineering (Russia), Scientific and education center ‘Nanomaterials & Nanotechnology’
- **Dr. Reza Barkhi**, Virginia Tech (USA), Department of Accounting and Information Systems
- **Prof. Nicole Riediger**, Hochschule für Technik und Wirtschaft Berlin (Germany), Department of Technology and Life
- **Dr. Jaroslaw Rybak**, Wroclaw University of Science and Technology (Poland), Faculty of Civil Engineering
- **Prof. Valery Taranchuk**, Belarusian State University (Belarus), Department of Computer Applications and Systems
- **Prof. Andrzej Ubysz**, Wroclaw University of Science and Technology (Poland), Faculty of Civil Engineering
- **Prof. Tatiana Matseevich**, Moscow State University of Civil Engineering (Russia), Department of Applied Mathematics
- **Prof. Oleg Mkrtychyev**, Moscow State University of Civil Engineering (Russia), Department of Reliability and Seismic Resistance of Structures

- **Prof. Marcin Gajewski**, Warsaw University of Technology (Poland)
Department of Strength of Materials and Theory of Elasticity and Plasticity
- **Prof. Jan Awrejcewicz**, The Lodz University of Technology (Poland),
Department of Automation, Biomechanics and Mechatronics
- **Dr. Adam Ujma**, Czestochowa University of Technology (Poland), Faculty of
Civil Engineering
- **Prof. Dr.-Ing. Markus Krämer**, Hochschule für Technik und Wirtschaft
Berlin (Germany), Department of Life and Technology
- **Prof. Dr.-Ing. Anja Pfennig**, University of Applied Sciences Berlin
(Germany), Faculty 2: Engineering Sciences – Technology and Life
- **Prof. David Passmore**, Penn State University (USA), Learning & Performance
Systems; Institute for Cyberscience
- **Academician Corrado Carbonaro**, Polytechnic of Turin (Italy), Technical
Responsible for Laboratory Systems for Technology Innovation, Architecture
and Design Department (DAD)
- **Prof. Elena Lyapunsova**, Bauman Moscow State Technical University
(Russia), Department of Innovative Entrepreneurship
- **Prof. Daman Panesar**, University of Toronto (Canada), Department of Civil
& Mineral Engineering
- **Prof. Dr.-Ing. Nataliya Fedorova**, Moscow State University of Civil
Engineering (Russia), Department of Reinforced Concrete and Masonry
Structures
- **Prof. D.Sc. Vladimir Mondrus**, Moscow State University of Civil Engineering
(Russia), Department of Structural and Theoretical Mechanics
- **Prof. PK, Dr. hab. Eng. Sergiy Fialko**, Cracow University of Technology &
SCAD Soft IT company (Poland), Department of Computer Science

Organizing Committee:

Dr. Oleg Kovalchuk, Dr. Nadezhda Cherednichenko, Dr. Alla Sokolova, Dr. Natalya Tyupenko, Dr. Aleksey Adamtsevich, Pavel Vorobev

CONFERENCE SCHEDULE

NOVEMBER, 13		
Arrival of the participants, checking into hotels		
NOVEMBER, 14 26, Yaroslavskoye Sh., Moscow, Russia, 129337		
09:00-10:00	Registration of participants and Coffee break	Hall of the Academic Council
10:00-10:30	Opening ceremony & Welcome speech of Acting Rector Andrey Volkov	Hall of the Academic Council
10:30-13:00	<p>Plenary session: reports of key speakers</p> <p>Borislav Hristov (Germany, Hochschule für Technik und Wirtschaft Berlin) Monetary evaluation of the reduced service life of asphalt pavements caused by the interlayer bond</p> <p>Sergey Fialko (Poland, Tadeusz Kosciuszko Cracow University of Technology & SCAD Soft company) Dynamic analysis of the elastoplastic behavior of buildings and structures in the SCAD ++ software package</p> <p>Alexey Kolesnikov (Russia, "LIRA soft" LLC) Calculation of buildings and structures for seismic and emergency loads</p> <p>Svetlana Valger, Natalya Fedorova (Russia, Novosibirsk State University of Architecture and Civil Engineering (Sibstrin)) CFD Methods for city planning problems</p> <p>Anja Pfenning, Marcus Wolf (Germany, Hochschule für Technik und Wirtschaft Berlin) Influence of geothermal environment on the corrosion fatigue behavior of standard duplex stainless steel X2CrNiMoN22-5-3</p>	Hall of the Academic Council
13:00-14:00	Lunch	Restaurant 'Grabli'

14:00-18:00	Section 'MATHEMATICAL AND COMPUTER-AIDED MODELLING'	Scientific and Technical Library № 59
14:00-18:00	Section 'BUILDING STRUCTURES, EVALUATION AND ANALYSIS'	Scientific and Technical Library № 47
14:00-18:00	Section 'MECHANICS OF MATERIALS'	Scientific and Technical Library №84
15:45-16:15	Coffee break	Scientific and Technical Library

NOVEMBER, 15 26, Yaroslavskoye Sh., Moscow, Russia, 129337		
09:00-10:00	Registration and Coffee break	Hall of the Academic Council
10:00-13:00	Section 'MATHEMATICAL AND COMPUTER-AIDED MODELLING'	Scientific and Technical Library № 59
10:00-13:00	Section 'BUILDING STRUCTURES, EVALUATION AND ANALYSIS'	Scientific and Technical Library № 47
10:00-13:00	Section 'MECHANICS OF MATERIALS'	Scientific and Technical Library №84
12:00-13:00	POSTER SESSION	Scientific and Technical Library
13:00-14:00	Lunch	Restaurant 'Grabli'
14:00-15:00	Closing ceremony, diplomas and certificates delivery ceremony	Hall of the Academic Council
15:00-18:00	Conducted tour of scientific and research centers and laboratories of NRU MGSU	NRU MGSU, Laboratories

NOVEMBER, 16	
09:00-12:00	Closing day departure of the conference participants

NOVEMBER, 14

SECTION I

Mathematical and computer-aided modeling

November 14, 2019

14:00-18:00 Scientific and Technical Library 59

Chairs: Tatiana Matsevich, Alexander Chichurin, Valery Taranchuk

Submission #	Title of the report	Authors and Speaker
6	Surface waves in NDT of interfacial cracks: dispersion analysis	Sergey Kuznetsov , Aleksandr Dudchenko, Tzu- Kang Lin
44	The analysis of the polymer concrete characteristics by fractional calculus	Temirkhan Aleroev
52	Simulation of free vibrations of a thick plate without simplified hypotheses	Davronbek Usarov , Qodirjon Turajonov, Saidjon Khamidov
72	Modelling fluidic windows for heating and cooling	Mathias Fraaß , Lingqi Su
80	Search for optimal methods for calculating atypical spatial structures on the example of a climbing wall	Dmitry Loktev , Aleksy Tarasov, Sergey Deordiev, Inna Petuhova, Igor Tarasov
88	On the theory of constructing a numerical-analytical solution of a cantilever beam bend nonlinear differential equation of the first order	Aleksandr Chichurin , Viktor Orlov
90	Mathematical modeling of hydrodynamics and stability of swirling flows in channels with solid walls	Vadim Akmetov

Submission #	Title of the report	Authors and Speaker
94	Arrival probability based parking algorithm for elevators	Emre Tartan, Cebrail Ciflikli
121	Investigation of phase portraits belonging to polynomial dynamic systems in a Poincare disk	Irina Andreeva, Tatyana Efimova
152	Piezoelectric stacks as an effective gauge of small dynamic strains	Nelly Rogacheva
192	BIM as a tool for Green Building Certifications: an evaluation of the energy category of LEED, BREEAM and DGNB	Nicole Riediger, Scarlet Romano
261	Methods for subsoil modeling under dynamic impacts and inhomogeneous damping in SCAD FEA software with geophysical monitoring	Viktor Mikhailov, Nuzhdin Voskresenskiy

SECTION II

Building structures, evaluation and analysis

November 14, 2019

14:00-18:00 Scientific and Technical Library 47

Chairs: Andrzej Ubysz, Nataliya Fedorova, Sergey Savin

Submission #	Title of the report	Authors and Speaker
30	An assessment of dynamic characteristics of high-rise structures taking into account dissipative properties of the material	Sherzod Khudainazarov, Talibjan Sabirjanov, Alisher Ishmatov
45	Nonstationary strain of cylindrical shells under a plane pressure wave	Sagdulla Abdulkadirov, Bakhtiyor Yuldoshev, Bakhtiyor Urinov, Abdurasul Nosirov

Submission #	Title of the report	Authors and Speaker
85	Problems related to storage of acid substances in reinforced concrete tanks	Marek Maj , Ashot Tamrazyan, Andrzej Ubysz
96	Phenomenon of cracks in chimney walls	Marek Maj , Ashot Tamrazyan, Andrzej Ubysz
100	Estimation of modular green roof systems installation using the method of chronometry measurements	Natalya Shushunova , Elena Korol
103	Stability investigation of a stiffened plate by using numerical methods	Gaik Manuiolov, Sergey Kosytsyn, Irina Grudtsyna
104	Account for the contribution of higher vibration modes under seismic resistance estimation of system with elastomeric supports by nonlinear static method	Maksim Zubritskiy , Oleg Ushakov, Lenar Sabitov
107	Deformation and failure of monolithic reinforced concrete frames under special actions	Nataliya Fedorova, Vu Ngoc Tuyen
134	Stability analysis of reinforced concrete building frames damaged by corrosion under static-dynamic loading	Sergey Savin , Sergey Fedorov
143	The choice of durable blocking waterproofing mathematical method	Nadezhda Smirnova , Serafima Sokova
217	Buckling load of an infinitely long cylindrical shell interacting with the soil environment	Sergey Kosytsyn, Vladimir Akulich
260	Crack resistance criterion of plane stress RC elements with prestressed reinforcement	Vitaly Kolchunov, Tatiana Ilushchenko

SECTION III

Mechanics of Materials

November 14, 2019

14:00-18:00 Scientific and Technical Library 84

Chairs: Sergey Kuznetsov, Oleg Mkrtychev, Alexander Sak

Submission #	Title of the report	Authors and Speaker
10	Granular metamaterials for seismic protection. Hyperelastic potentials, elastic and hypoelastic models	Sergey Kuznetsov, Hubert Maigre
14	Fatigue strength assessment of track rollers	Sebastian Götz, Stefan Schröder
35	Stability of Ladders when Working at heights and Safety while performing this type of work	Nam Thanh Pham, V. Vasilenko
40	Solution of the problem of stability of 40x steel shell	Stepan Cheremnykh, Marat Kuzhin
78	Arbitrary shaped planar cracks. A pseudodifferential approach	Vladislav Vershinin, Anastasia Karakozova
109	High-speed tensile testing of extruded PC based polymers for cable ducts	Sebastian Noller, Roland Heiler, Anja Pfennig
187	Vibration reduction techniques for Rapid Impulse Compaction (RIC)	Cheynesh Kongar-Syuryun, Przemysław Dobrzycki, Albert Khayrutdinov, Jarosław Rybak
258	Prediction of construction bases frozen soil temperature development under intense heating	Fyodor Kiselyov, Philipp Sergeyev

NOVEMBER, 15

SECTION I

Mathematical and computer-aided modeling

November 15, 2019

10:00-13:00 Scientific and Technical Library 59

Chairs: Tatiana Matsevich, Alexander Chichurin, Valery Taranchuk

Submission #	Title of the report	Authors and Speaker
2	Solution of model boundary value problems on oscillations of mechanical systems with moving boundaries by the Duhamel method	Vladislav Litvinov
23	The properties of certain linear and nonlinear differential equations of the fourth order, arising in beam models	Aleksandr Chichurin , Galina Filipuk
41	The Begley-Torvik model difference scheme matrix eigenvalues	Ludmila Kirianova
86	An analytical solution with a given accuracy for a nonlinear mathematical model of a console-type construction	Victor Orlov , Oleg Kovalchuk
123	Foundation design taking into account non-linear soil behavior in karst-hazardous areas	Alexander Shebunyaev , Irina Yudina
150	Features extraction from non-destructive testing data in cyber-physical monitoring system of construction facilities	Vladislav Kats , Andrey Volkov
170	The methodology of storing the information model of building structures at various stages of the life cycle	Alexander Ginzburg, Liubov Shilova , Leonid Shilov

Submission #	Title of the report	Authors and Speaker
174	Mathematical modeling of the building materials production processes	Olga Vasil'eva
188	Tools and examples of intelligent processing, visualization and interpretation of GEODATA	Valery Taranchuk
195	Fatigue cracks in castellated I-beams under cyclic loads	Sergey Saiyan, Alexander Paushkin
208	Modeling and analysis of three-layer floor slabs made of composite materials	Kamil Khayrnasov
231	Machine translation system modelling based on sentences comparison	Alexander Sak

SECTION II

Building structures, evaluation and analysis

November 15, 2019

10:00-13:00 Scientific and Technical Library 47

Chairs: Andrzej Ubysz, Nataliya Fedorova, Sergey Savin

Submission #	Title of the report	Authors and Speaker
16	Component based Finite Element Design of Seismically Qualified Joints	František Wald, Martin Vild, Marta Kuřiková
19	Non-stationary oscillation of a box-like structure of a building	Makhamatali Usarov, Giyosiddin Mamatisaev, Javlon Yarashov, Elyor Toshmatov

Submission #	Title of the report	Authors and Speaker
26	Statistical modeling of a seismic isolation object under random seismic exposure	Vladimir Lapin , Syrymgali Yerzhanov, Yerkin Aldakhov
61	Natural vibrations of structurally inhomogeneous multi-connected shell structures with viscoelastic elements	Tulkin Mavlanov , Sherzod Khudainazatov, Izlomjon Khazratkulov
111	Calculation of the bottom of vertical cylindrical steel tanks under the action of special loads.	Eduard Elenitskiy
113	Experimental study of the aerodynamic effects on the monument	Pavel Churin , Oleg Egorychev, Anastasia Fedosova
153	The improvement of protection methods from the progressive collapse of one-storey industrial buildings	Nikolay Trekin , Emil Kodysh, Sergey Shmakov, Aleksey Chaganov, Ivan Terekhov, Nikolay Kelasiev
179	Measured and forecast settlements of buildings near deep pits in Vietnam	Nadezhda Nikiforova , Nguyen Van-Hoa, German Alekseev
193	Moment redistribution in concrete statically undetectable systems with FRP	Oleg Simakov
223	The consideration of compliance of structural joints in the numerical calculation of large-panel buildings	Darya Davletbaeva , Anna Malakhova
235	3D modeling of supply and exhaust ventilation in the concept of passive building in the software package Autodesk 3ds Max	Oleg Korol , Alexandr Petrov, Konstantin Shreiber

POSTER

SECTION I

Mathematical and computer-aided modeling

November 14, 2019

15:00-17:00 Scientific and Technical Library Hall

November 15, 2019

11:00-13:00 Scientific and Technical Library Hall

Submission #	Title of the report	Authors
4	Seismic barriers: mathematical foundations and dimensional analysis	Alla Ilyashenko
5	Rayleigh-Lamb waves in stratified halfspace: 3D complex formalism	Alla Ilyashenko, Tzu-Kang Lin, Timur Nizamaev
9	Soliton-like SH waves in anisotropic media	Timur Nizamaev, Alexey Gordeev
11	Global asymptotics of particle transport in porous medium	Liudmila Kuzmina, Yuri Osipov, Yulia Zheglova
21	Manufacturing of the Oloid. CAD/CAM Workflow.	Mar Bellido Coope
22	On guided waves at subsonic regime	Anna Avershyeva, Vladimir Mondrus
31	Analytical representation for the problem of a loaded hollow layered cylinder, taking into account the creep of its layers	Tatiana Bobyleva, Alexey Shamaev
39	Filtration model with multiple particle capture	Yuri Osipov, Galina Safina, Yuri Galaguz
50	Quasi-Static Solution of a Problem of Thermal Shock Acting on a Plate	Nelly Rogacheva, Alexander Suvorov

Submission #	Title of the report	Authors
54	Ultimate stress state of a plate made of orthotropic material under uniform internal pressure.	Nina Blokhina
55	Creation of the information system based on the integrated evaluation of a construction object at various life cycle stages	Mikhail Kozhevnikov, Alexander Ginzburg, Sophia Kozhevnikova
56	Simulation of Wireless Network Throughput in Providing the Monitoring of Building Structures	Svetlana Grigoreva
57	On one method of finding optimal control in construction industry	Tatiana Titova
65	Methods of construction of objects taking into account the simulation of the temperature regime of hardening concrete	Ivan Pulyaev, Sergey Pulyaev
67	Mathematical calculations of water saving during furrow irrigation of cotton using a screen from an interpolymer complex	Baxodir Amanov, Nodir Gadaev, Dilmurod Ahmedjonov and Ermekul Zhaparkulova
69	Towards Building Information Modelling for diagnosis, assessment and rehabilitation automation for existing buildings	Nicholas Garyaev, Fadi Ayoub
76	The impact of hydro-wear parts of pumps for operational efficiency of the pumping station	M. Mamajonov, D. Bazarov, B. Uralov, G. Jumabayeva, N. Rahmatov
79	CFD Methods in Architecture and City Planning	Svetlana Valger, Natalya Fedorova
82	Prediction of compatibility of polypropylene and modified basalt fibers	Kirill Galitseiskii, Tatiana Matseevich, Andrey Askadskii
83	Longitudinal Pochhammer – Chree waves. Secular equations and spectral analysis	Tagibek Gadzhibekov

Submission #	Title of the report	Authors
87	Modeling of human flows during a fire	Aleksander Parfenenko
95	Finite element modelling of unbonded post-tensioned simply supported beam	Alexey Gawrilenko, Temur Barkaya
97	A complexly method of GIS technologies and models used in the development of environmentally modes of hydraulic and hydropower facilities in Uzbekistan	Aydar Nasrulin, Muradulla Mukhammadiev, Arsen Mukolyants, Dilbar Ergasheva
101	Algorithm for parametric identification of mathematical models of viscoelastic materials	Sergey Erokhin
105	Investigation of the influence of various factors on the results of a calculation-experimental assessment of frequencies and amplitudes during vortex excitation of bending vibrations of building structures	Anastasia Fedosova, Olga Poddaeva, Nikita Ageev
110	The mathematical model of environmental waters purification	Yuri Skolubovich, Tamara Krasnova, Elena Gogina
115	Finite element modeling of fluid filtration in a deformable porous medium	Alimzhan Bekbolatov, Azhikhanov Nurlan
117	Characteristics of the plastic zones of the large-scale buildings soil foundation	Nikita Kurilin, Dmitry Chunyuk
120	Microwave unit for heat treatment of building materials	Irina Vorotyntseva
124	Methods and models for building bank branches. A Multicriteria approach for a decision-making tool.	Alberto Celani, Gianandrea Ciaramella, Stefano Bellintani

Submission #	Title of the report	Authors
126	Random factors in thermal insulation properties of buildings	Elena Korol, Grigoriy Afanasyev
128	Exponential stability of the stationary solutions of the kinetic Carleman system	Sergey Dukhnovsky
130	About applicability of semi-Markov models of operation	Rustam Khayrullin
136	The integration of mathematical models of the dams in GIS	Solangel Vazquez, Natalia Mokrova
138	Modeling of subsidence of anthropogenic soil containing ice lenses	Evgeny Bord, Aleksander Shevchenko, Sergey Lavrov
139	Study of the composite action of concrete and reinforcement in the floor in case of emergency impact	Oleg Mkrtychev
142	Calculation methods and problems of optimizing the effective characteristics of rods made of composite materials	Tatiana Bobyleva, Alexey Shamaev
154	Mathematical model of temperature regime and thermal stress state of roller-compacted concrete gravity dam	Nikolay Aniskin, Chuc Nguyen Trong
158	Modeling of water permeability through the polymer nanocomposites	Tatiana Matseevich
159	The problem of finding the radon flux density by its concentration at different depths of the earth's surface	Temirkhan Aleroev, Sergey Erokhin
166	Structural scheme for the synthesis of stable motion of a walking drive using a self-oscillation control system	Anna Polyanina

Submission #	Title of the report	Authors
169	The mathematical modeling as the basis for the method of the rapid evaluation of the resources for the building of the physical level of modern civil engineering facilities information system	Andrey Semenov
173	An investigation to determine the bearing capacity of driven piles and pressed friction pile using practical method	Le Thuy Duong
174	Mathematical modeling of the building materials production processes	Olga Vasil'Eva
175	Mathematical modelling in cyber-physical construction systems	Boris Titarenko, Roman Titarenko
178	The deformability of shear bonds in the load-bearing systems of panel buildings	Valery Lyublinskiy
180	Piled raft foundation assessment based on geotechnical monitoring results	Elena Gryaznova
190	Study of the seismic isolation sliding belt: the case of a monolithic reinforced concrete building	Oleg Mkrtychev, Salima Mingazova
202	Modeling of accidental leaks from utility lines during calculation of the temperature regime of permafrost soil bases of buildings	Mikhail Rabinovich
203	Application of modern modelling methods: virtual technologies in the era of digitalization and their role in modern companies	Elena Lyapunтова, Maria Vdovichenko, Yulia Belozerova, Alexandr Gorbатов
205	Using counterfactuals from macroeconomic models to assess risks to accomplishment of structural innovations	David Passmore, Victoria Borkovskaya

Submission #	Title of the report	Authors
207	Optimization of calculation of the stress-strain state of a base reinforced with inert material	Armen Ter-Martirosyan, Stanislav Sergeev, Lyubov' Ermoshina
209	The analysis of existing neural networks for natural language interfaces	Andrey Pilyay, Liubov Shilova
214	Simulation model of thermal-seepage regime of thawing dams with permafrost curtain	Nikolay Aniskin, Anton Antonov
215	Constructions Mechanical and Thermal Conditions Modeling with GPU-based Approach	Vasiliy Sazonov, Ivan Samylovskiy, Oleg Morozov
232	Mathematical and computer modeling in the design of steel rod structures	Andrey Vasilkin
238	The temporal correlation simulations in layered bio-models	Vladimir Kuzmin, Alexey Valkov, Leonid Zubkov, Yuri Zhavoronkov
239	The longitudinal - transverse bending of multilayered concrete rods taking into account the influence of gravity	Sergey Tikhonov, Yuri Nemirovskii
240	Modelling the reliability of the implementation of the schedule building work	Vadim Evseev, Victoria Borkovskaya, Reza Barkhi
242	Electric field driven transformations of orientational structure in chiral nematic systems with large flexoelectricity	Anton Oskirko, Sergey Ul'Yanov, Alexey Valkov
243	Scale model operation of formation of pressure at internal explosion	Vycheslav Gorev
244	Deformation of beam structures in an internal explosion	Vycheslav Gorev

Submission #	Title of the report	Authors
245	BIM and QR-codes interaction on a construction site	Ruslan Vasilyev, Constantine Lossev, Alexander Cheprasov, Denis Bektash
253	Calculation and experimental substantiation of optimal sizes of large-size tanks filled with bulk material	Tatyana Fedorova
266	Theoretical model of the flow with interacting circulating streams	Andrey Zuikov, Genrikh Orekhov
267	Mathematical model and calculation of the working part of the power plant	A. Kornilov, E. Vasileva

SECTION II

Building structures, evaluation and analysis

November 14, 2019

15:00-17:00 Scientific and Technical Library Hall

November 15, 2019

11:00-13:00 Scientific and Technical Library Hall

Submission #	Title of the report	Authors
8	Analysis of the stress-strain state of the toroidal transition connecting the wall and the bottom of the tank	Leonid Zemlerub, Julia Terzeman, Marat Teregulov
20	Forced vibrations of a box-like structure of a multi-storey building under dynamic effect	Makhamatali Usarov, Giyosiddin Mamatisaev, Elyor Toshmatov, Javlon Yarashov
25	Assessment and inspection of the technical condition of monolithic reinforced structures in transportation infrastructure facilities	Dmitriy Topchiy, Alina Bolotova

Submission #	Title of the report	Authors
27	Numerical simulation and experiment on steel fiber concrete beams	Thanh Quang Khai Lam, Thi My Dung Do, Van Thuc Ngo, Trong Chuc Nguyen, Trong Phuoc Huynh
28	Monitoring the changes of dynamic characteristics of a high-rise building	Syrymgali Yerzhanov, Vladimir Lapin, Yerkin Aldakhov
33	About the Danger of Vibration Combustion in Gas Explosions in the Room	Iurii Polandov, Anton Korolchenko
34	The influence of open cracks in compressed area of concrete on behaviour of bending elements of frame buildings under special alternating loads	Sofya Kurnavina, I. Tsatsulin
36	New protecting structures on buildings of explosive production	Anton Korolchenko
38	Modeling strain processes in earth dams with account for inhomogeneous features of a structure	Takhirjon Sultanov, Aleksandra Bestuzheva, Bakhtiyor Yuldoshev, Bakhtiyor Urinov, Akhror Numanov
46	The model analytical finite rod-type element for static and dynamic analysis	Oleg Kovalchuk
48	Metaheuristic optimization of building structures with different level of safety	Anatoliy Alekseytsev
51	Service life of hydraulic structure reinforced concrete elements according to protective layer carbonization criteria	Asror Yangiev, Masharif Bakiev, Oybek Muratov, Jamshid Choriev, Shahnoza Djabbarova
59	On stability of slopes in mountain zones. Case study	Dilnoza Sagdullayeva, Shakhnoza Maxmudova, Farkhadjan Adilov, Rustam Abirov, Islomjon

Submission #	Title of the report	Authors
		Khazratkulov, Ismail Nasirov
62	Modeling of kinetics of corrosion cracking of metals using the long-term readability theory a.r. rzhantsyna	Vladimir Mavzovin, Igor Ovtchinnicov
64	Modeling of corrosion-mechanical behavior of composition rotation shells in a temperature field	Vladimir Mavzovin, Ilya Ovtchinnicov
70	Modelling of horizontal pipe drainage for Sultansandjar dam	Masharif Bakiev, Kahramon Babajanov, Nuriddin Maalem, Shahnoza Djabbarova, Kuvonch Yakubov
73	Application of one mathematical method in solving boundary value problems of natural vibrations of a rectangular viscoelastic plate located under the surface of a deformable medium	Assel Janmuldayeva, Abilmajin Adamov, Bakitzhan Dzhanmuldaev
81	Theoretical aspects of seismic Rayleigh – Lamb wave diffraction	Filatov Vladimir, Sukhaib Saidmukaram
84	Fire damage of concrete building structures	Marina Akulova, Denis Flegontov, Yulia Sokolova, Alla Sokolova
89	Natural studies for forming stable channel sections	Aybek Arifjanov, Alisher Fatxullaev
91	Analytical solution for longitudinal and transverse loading of elastic-plastic beam	Eduard Elenitskiy
93	Decrease of radon permeability in cement concrete and solutions	Igor Tarasov, Rashit Nazirov, Aleksey Tarasov, Dmitry Loktev, Sergey Dobrosmislov

Submission #	Title of the report	Authors
98	Calculation of the prismatic thin-walled structure on the concentrated effect	Maria Plyasunova, Gennadiy Kazantsev, Alexandr Kolesnikov, Irina Alekseenko
99	Losses in the manufacture of wooden building structures	Nikolay Seregin
106	Relaxation of stresses in the elements of reinforced concrete structures	Tatiana Zhdanova
114	Frame structures optimization based on evolutionary modeling in active overall stability constraints	Anatoliy Alekseytsev
122	The use of reduced models in the reliability analysis of deformable systems with dynamic vibration dampers	Yuriy Gerber, Vladimir Sebeshev
127	Comparative analysis of the strength of normal adhesion of a masonry from aerated concrete blocks of autoclave hardening, performed on various cement and polymer-cement mortars	Bulat Dzhamuev
132	Visualization of the photoelastic method data in the angular zone of a region	Lyudmila Frishter
133	Increase of energy performance of residential buildings with enclosing structures made of masonries with application of ceramic blocks	Anatolij Bedov, Azat Gabitov, Aleksandr Salov, Anastasiya Biktasheva
135	Modelling of a prestressed beam without concrete-to-steel bond	Keo Oun, Il'Ya Gneushev, Alexander Topilin
140	Experimental evaluation of the work of a polymer culvert corrugated pipeline	Yulia Bryanskaya, Aleksandra Ostyakova

Submission #	Title of the report	Authors
141	Scheduling prophylactic maintenance of engineering systems of residential buildings	Grigory Afanasyev, Konstantin Shreiber
145	Refined second-order plastic-hinge dynamic analysis for planar steel frames	Van Tu Nguyen, Thanh Binh Pham, Xuan Bang Nguyen
146	Experimental and numerical substantiation the efficiency method of compaction of soil base by creating sealing pressure inside soil massif	Lobacheva Nataliia, Viktor Yarkin
149	Evaluation of shear resistance for beam-column connections using ultra high performance steel fibre reinforced concrete (UHPSFRC) under cyclic loading by experimental research	Thi Thuy Van Tran, Trung Hieu Tran
157	Complex frequency characteristic and Green's function for cantilever beam under longitudinal oscillations	Sergey Kalashnikov, Elena Gurova, Yuliya Kalashnikova, Renat Kuramshin, Ernst Retling, Alexander Starov
160	Nonequilibrium processes of power and environmental resistance of reinforced concrete structures to progressive collapse	Vitaly Kolchunov, Natalia Androsova
161	Checking the integrity of piles by seismoacoustic defectoscopy	Evgeniy Degaev, Vladimir Rimshin
162	Durability of suspension facade systems with air gap	Aleksandr Mamin, Emil Kodysh, Vladimir Bobrov, Aleksandr Reutsu, Olga Volkova, Aleksej Chaganov
165	The simulation of compliance of structural joints in the calculation of multi-story frame buildings	Anna Malahova, Dina Morozova

Submission #	Title of the report	Authors
167	Interaction of a barrette with surrounding and underlying soil taking into account rheological property of soils	Zaven Ter-Martirosyan, Dam Huu Hung
183	Physical modelling of reinforced concrete structures exposed to emergency loads	Vladimir Chemodurov, Pavel Korenkov, Yuliya Leonenko, Olesia Korenkova
185	The terms of soils removal from the defects of the underground structures' lining	Elena Kulikova, Alexander Ivannikov
186	Deformation of intermediate zones of two-layers elements of reinforced concrete structures	Nataliya Fedorova, Maria Gubanova, Sergey Savin
189	On the reinforcement of thin-walled cold-drawn C-channel beams	Gaik Manuilov, Maksim Begichev
194	Integrated Assessment of Contractor's Building Production Culture During Facade Repair	Evgeniy Degaev, Reza Barkhi
198	Possibilities and limitations of high-strength lightweight fiber-reinforced concrete structures	Thanh Qui Duong, Ngoc Tuyen Vu, Aleksandr Inozemtcev, Evgeniy Korolev
199	The renewal of the bearing capacity of rubble masonry by the composite solution	Valentin Gorbachevskii, Marina Panfilova, Nikolay Zubrev, Sania Efremova
200	Data analysis in price police marketing research in construction	O. Grineva, I. Shirochenskaya
204	Indicator system for monitoring the development of urban bicycle transport infrastructure	Natalia Kireeva, Dmitry Zavialov, Olga Saginova, Nadezhda Zavyalova
206	A comparative study of ordinary piles and superlong piles in consolidating soil	Osama Hegazy, Vladimir Znamenskii

Submission #	Title of the report	Authors
210	Work flange connections of structural elements of an open profile on high-strength bolts	Konstantin Shafray, Sergey Shafray
211	Flexural behavior of RC beam strengthened by stay in place SFRC sheet formwork	Leis Zeid Kilani, Dmitriy Kapustin
212	Analysis of the structures in water treatment and sanitation facilities for their strengthening	Ekaterina Kuzina, Vladimir Rimshin, Igor Shubin
213	Comparison between analytical method and numerical model for footings on soft clay supported by stone columns	Vladimir Znamenskii, Diaaeldin Sayed
216	Calculation of the stiffness of reinforced concrete structures under the action of torsion and bending	Vladimir Kolchunov, Aleksey Dem'yanov, Nikolay Naumov, Mihail Mihailov
218	Performance evaluation of the effectiveness of the use of core drivers in the construction of base plates	Dmitriy Chunyuk, Serafima Selviyan
222	Study of impact sheet pile and Franki NG pile driving on weir construction	Marek Wyjadłowski, Eugeniusz Sawicki
224	Numerical studies of reinforced concrete pile foundations on permafrost soils at low climatic temperatures	Andrey Istomin, Timur Nazarov
225	Technology of installation and dismantling of soft synthetic fencing rod spatial dome of the international youth center VOLGA	Boris Strigin
226	Modern principles of model formation on the example of the coastal zone of the Yauza river in Moscow	Vadim Danilchenko, Vitaliy Kas'Yanov
228	Uncertainty of Measurement of Vibration of Rail Vehicles	Michael Vasilyev, Nikolay Kanev

Submission #	Title of the report	Authors
229	Method of integration finite element analysis into the SHM systems	Leys Zeyd Kilani, Valentin Ermakov, Andrey Korgin
233	Development of the methodology of calendar planning in the system of organizational and technological preparation of capital repair of multi-apartment residential houses	Oleg Korol
236	Multi-factor analysis of technological operations of extinguishing exterior walls with a heat-insulating layer from concrete of low heat conductivity	Yulia Kustikova
246	Progressive destruction of building structural systems with corrosion damage	Dmitry Avdyakov
248	Increase of fire protection and strength of wooden structures by modification in a thin surface layer by nanodispersion composites	Elena Pokrovskaya
249	Account of the force resistance in the calculation of reinforced concrete structures	Valentin Gorbachevskii, Alexandr Borovskih, Liliya Pakhomova
250	Probability theory in construction logistics	Elena Okunkova, Irina Sharova, Vladimir Burkov, Irina Burkova, David Passmore, Zarina Daulbaeva
259	Prediction of the coefficient of thermal expansion of building materials based on polyvinyl chloride	Chuang Wang, Valeriy Kondrashchenko, Andrey Matseevich
262	A modified penalty function method for treating multi freedom constraints in finite element analysis of frames	Quyen Vu Thi Bich, Tien Dao Ngoc, Dung Nguyen Nhu
263	Optimization of plane frame structure with consideration of semi-rigid connections	Thi Thuy Van Tran, Thi Bich Quyen Vu, Le Thuy Nguyen

Submission #	Title of the report	Authors
264	Comprehensive assessment of fire protective intumescent paint “terma”	Tatiana Eremina, Dmitry Korolchenko, I. Kuznetsova
268	Modeling of stage of construction and operation of unique large-span structures	Sayidmaxsud Razzakov, Ulugbek Axmadiyarov
269	Limit state of steel reinforced concrete round plates in the operational stage	Sayidmaxsud Razzakov
270	An analytical solution to the problem of bending-torsional vibrations of a thin-walled rod	Alexander Ibragimov

SECTION III

Mechanics of Materials

November 14, 2019

15:00-17:00 Scientific and Technical Library Hall

November 15, 2019

11:00-13:00 Scientific and Technical Library Hall

Submission #	Title of the report	Authors
12	Nonisocyanate hybrid polyurethane floorings based on cyclic carbonates: optimal compositions and service properties	Oleg Figovsky
13	Modeling of deformation processes of structural steels along circular paths	Vladimir Zubchaninov, Andrey Alekseev, Vadim Gulyaev
15	Interaction of whole fiber and destroyed neighbour fiber in reinforced plastic	Robert Turusov, Evgeny Bogachev, Vladimir Andreev
17	Modelling of the effect of the water-cement ratios on properties foam concrete	Tang Van Lam, Ngo Xuan Hung, Vu Kim Dien, Boris Bulgakov, Olga

Submission #	Title of the report	Authors
		Alexandrova, Vu Dinh Tho
43	Low-cycle fatigue of high processible aluminum alloy flat products from alloyage system al-mg-si	Aleksandr Shuvalov, Alla Katanina, Oleg Kornev, Mikhail Kovalev
60	Strength, chloride resistance and corrosion reinforced of High-strength concrete	Ngo Xuan Hung, Tang Van Lam, Boris Bulgakov, Olga Alexandrova
92	Problems of formation of the spatial structure of a condensed system of calcium sulphate dihydrate	Aleksandr Buryanov, Victoriya Petropavlovskaya, Kirill Petropavlovskii, Tatyana Novichenkova
108	Soliton-like seismic waves in anisotropic layered media	Anastasia Karakozova
147	Effect of the soil pressure and that of filtration forces on a triangular retaining wall	Elephan Agakhanov, Murad Agakhanov, Nadim Begov
151	Saint-Venant principle for kinematic boundary conditions	Sergey Saiyan, Alexander Paushkin
155	Foamed concrete containing various amounts of organic-mineral additives	Dien Vu Kim, Ly Nguyen Cong, Lam Tang Van, Sofya Bazhenova
156	The influence of stress state, density and moisture on the dynamic properties of soil cement samples created by the method of deep soil mixing	Evgeny Sobolev, Armen Ter-Martirosyan
172	Modeling of damages of steel structures of industrial buildings	Anastasia Alexeeva, Boris Chernykhovsky and Nina Buzalo
182	The application of sulfur modifier containing toxic gas emission neutralizers in asphalt concrete	Huu Tuan Le, Sergey Inozemtsev, Evgeniy

Submission #	Title of the report	Authors
		Korolev, Phuong Nam Nguyen
184	Application of Jet Grouting technology for the renovation of historic buildings	Andrzej Makowski, Bernadetta Polanska
191	Comparison of assessing the filtration coefficient from laboratory tests with correlation results determined from CPTu test for coarse-grain soil	Nikola Dudek, Irena Bagińska
230	Impact of loading rate increase on stress-related properties of concrete	Konstantin Tsvetkov
234	Non-destructive determining of foundation pile length variability for reliability analysis	Jarosław Rybak
254	Application of gabions for strengthening marine coastal slopes	Liudmila Cherkasova
255	Analytical methods of theoretical physics in the modeling of building structures	Aleksandr Gulkanov, Konstantin Modestov
257	The loss of durability in reinforced concrete structures	Marek Maj, Filip Grzyski