XXVII INTERNATIONAL CONFERENCE «MATHEMATICAL AND COMPUTER SIMULATION IN MECHANICS OF SOLIDS AND STRUCTURES - MCM 2017»
FUNDAMENTALS OF STATIC AND DYNAMIC FRACTURE

FINAL SCHEDULE

SEPTEMBER 25-27, 2017
SAINT PETERSBURG, RUSSIA
PLENARY LECTURES AND ORAL PRESENTATIONS

MONDAY, SEPTEMBER 25

10:00 – 10:30 OPENING CEREMONY (The White Hall)
Introduction: Nikita Morozov, Yuri Petrov, Vadim Silberschmidt, Yuri Rutman

10:30 – 13:00 PLENARY LECTURES (The White Hall)
Co-Chairmen: Yuri Petrov, Vadim Silberschmidt

10:30 – 11:30
1. EFFECT OF MICRO-MORPHOLOGY OF CORTICAL BONE TISSUE ON FRACTURE TOUGHNESS AND CRACK PROPAGATION
Wang M., Zimmermann E.A., Riedel C., Busse B., Li S., Silberschmidt V.V.

2. A FULL-STRESS ANALYSIS OF HYDRAULIC FRACTURING – INFLUENCE OF THE HYDRAULICALLY INDUCED SHEAR STRESS
Zhao Ya-Pu

11:30 – 12:00 Coffee break

12:00 – 13:00
3. INVESTIGATION ON $\eta$ AND M FACTORS FOR J INTEGRAL IN SE(B) SPECIMENS
Kawabata T., Tagawa T., Aihara S.

4. ENERGY RELEASE RATE IN HYDRAULIC FRACTURE TAKEN ACCOUNT THE SHEAR STRESS INDUCED BY THE FLUID: CONSEQUENCE FOR PROPAGATION REGIME AND THE CRACK REDIRECTION.
Mishuris G.S.

13:00 – 14:00 Lunch (optional)

14:00 – 18:00 SESSION 1 (The White Hall)
Co-chairmen: Ya-Pu Zhao, Yulia Pronina

14:00 – 16:00
1. NUMERICAL MODELLING OF FINITE DEFORMATIONS WITH CONTACT INTERACTION
Abdrakhmanova A.I., Sultanov L.U.

2. MATHEMATIC MODELING OF REINFORCED CONCRETE ELEMENT WITH CRACKS UNDER LONG DURATION LOAD
Arleninov P.D., Krylov S.B.
3. DEVELOPMENT OF THE LIMIT EQUILIBRIUM THEORY
METHODS FOR NUMERICAL ANALYSIS OF INELASTIC SYSTEMS
SEISMIC REACTION
Lebedev V.L., Semenov V.A., Baglaev N.N.

4. THE COMPUTER MODELLING OF THE STRUCTURE OF THE
EPOXY, MODIFIED BY THE FULLERENES
Buzmakova M. M.

5. ON APPROXIMATION AND ACCURACY OF THE FEM SCHEMES
FOR 3D ELASTICITY THEORY PROBLEMS
Chekmarev D.T., Spirin S.V., Sadovsky V.V.

16:00 – 16:30  Coffee break

16:30 – 17:30  Excursion in the House of Scientists

16:30 – 18:00  6. ASSESSMENT OF FINITE ELEMENT ANALYSES FOR MITIGATION OF
POP-IN JUDGMENT CONDITION ON DELAMINATION
Kanna S., Yamashita Y., Kawabata T.

7. IDEAL FAILURE MODELS OF STRUCTURES FOR SOLUTION OF
PROBLEMS OF NONLINEAR STATICS AND DYNAMICS
Ermakova A.V.

8. APPROXIMATE ANALYTICAL APPROACH IN ANALYZING OF
AN ORTHOTROPIC RECTANGULAR PLATE WITH A CRACK
Goloskokov D.P., Matrosov A.V.

9. ON CALCULATION OF NATURAL FREQUENCIES, CRITICAL
FORCES AND BENDING MOMENTS IN COMPRESSED-BENT
ELASTIC RODS WITH VARIABLE CROSS-SECTION; SECTION
Kagan-Rosenzweig L.M.

10. ON THE TEMPORAL PECULIARITIES OF STABILIZATION
EFFECT UNDER CYCLIC PLASTIC DEFORMATION FOR STEEL
Selyutina N.

14:00 – 18:00  SESSION 2 (Oak Hall)
Co-chairmen: Venkitanarayanan Parameswaran,
Yurii Meshcheryakov

14:00 – 16:00  1. MODELING OF NONLINEAR BEHAVIOR OF
POLYCRYSTALLINE LEAD-FREE PIEZOCERAMICS WITH A
CONTENT OF TETRAGONAL, RHOMBOHEDRAL AND
ORTHORHOMBIC PHASES UNDER CYCLIC LOADING
Lobanov S.M., Semenov A.S.

2. THE NUMERICAL ESTIMATE OF THE OVERALL STRENGTH OF THE HULL DURING THE DESCENT
Mironov M.Yu.

3. SOLUTION OF MULTIPOINT BOUNDARY PROBLEM OF THREE-DIMENSIONAL THEORY OF ELASTICITY BASED ON COMBINED APPLICATION OF FINITE ELEMENT METHOD AND DISCRETE-CONTINUAL FINITE ELEMENT METHOD
Akimov P.A., Negrozov O.A.

4. SOLUTION OF MULTIPOINT BOUNDARY PROBLEM OF TWO-DIMENSIONAL THEORY OF ELASTICITY BASED ON COMBINED APPLICATION OF FINITE ELEMENT METHOD AND DISCRETE-CONTINUAL FINITE ELEMENT METHOD
Akimov P.A., Negrozov O.A.

5. A STUDY OF KINEMATIC AND DYNAMIC PARAMETERS OF THE VESSEL DURING ITS MOVEMENT ON THE SEA WAVES
Ponomarev D.A., Korshunov V.A., Rodionov A.A.

16:00 – 16:30  Coffee break

16:30 – 18:00 6. NUMERICAL MODELING OF NONLINEAR PROCESSES OF DEFORMATION OF HULL STRUCTURES DURING INTERACTION WITH WATER-AIR MEDIUM UNDER SEA WAVE CONDITIONS
Ponomarev D.A., Korshunov V.A., Rodionov A.A.

7. A STUDY ON THE CREEP CHARACTERISTICS OF NCF 3015 ALLOY
Choi J.G., Koo J.M., Seok C.S., Nam D.H., Kim G.Y.

8. STRENGTH ANALYSIS OF NUCLEAR POWER PLANT STRUCTURES IN CASE OF AIRCRAFT CRASH IMPACT
Fedorenko R.V., Modestov V.S., Lukin A.V., Kudryavtsev A.A., Murtazin I.R.

9. METHOD OF THE CHOICE OF THE PLAN OF ACCEPTANCE CONTROL OF PRODUCTS
Pervukhin D.A., Klavdiev A.A., Afanaseva O.V.

10. NUMERICAL MODELLING OF DYNAMIC DEFORMATION AND DESTRUCTION OF MULTILAYERED COMPOSITE SHELLS TAKING INTO ACCOUNT THEIR LAMINATIONS
Ostrik A.V., Bakulin V.N., Matveenko A.M.
Round table with representatives of Gazprom Neft (Small Lecture Hall)

Round table is devoted to the experience of applying geomechanical modeling for the development of the mineral deposits of Gazprom Neft company

Moderator is Ovcharenko Yuri Viktorovich, Head of the Geomechanical Modeling Department, Gazpromneft STC, Martemyanov Andrey Nikolayevich – Specialist of Geomechanical Modeling Department, Gazpromneft STC

Presentation from Gasprom Neft
1. Specifics of Mechanical and Strength Rock Properties Estimation for Wells Drilling and Exploitation
2. Numerical and Analytic Modelling for Wellbore Stability Analysis
5. Time Dependent Hydro-Geomechanical Reservoir Simulation of Field Production

Participants from Gasprom Neft
Ovcharenko Yuri Viktorovich
Alchibaev Daniil Vitalievich
Martemyanov Andrey Nikolayevich
Chebyshev Igor Stanislavovich
Bazirov Ildar Shamelevich
Glazyrina Alexandra Evgenevna
Sidelnik Angelina Vladimirovna
Lukin Sergey Vladimirovich

Participants from MCM-2017
Prof. Yu-Pu Zhao
Prof. G. Mishuris
Prof. Julia Pronina
Prof. Dov Sherman
Prof. Lev Avramovich Ashkinazi
Prof. Alexander Kotomin
Prof. A. Abramian
Prof. Yu. Meshcheryakov

Coffee break
16:30 – 18:00  
**SESSION 3 (Small Lecture Hall)**  
*Co-chairmen: Luciano Rosati, Oleg Naimark*

16:30 – 18:00  
1. EXPERIMENTAL AND ANALYTICAL STUDY ON THE COLLAPSE OF PERFORATED SHELLS UNDER AXIAL IMPACT  
*Ravi Sankar H., Parameswaran V.*

2. PREDICTION OF STRAIN ENERGY DENSITY OF SIDEWALL RUBBER USING CROSS-LINKING DENSITY  
*Moon B.W., Lee J.M., Jun N.G., Koo J.M., Seok C.S.*

3. AXISYMMETRIC PROBLEM OF THE ULTIMATE STRESS STATE OF AN ICE MASSIF WITH AN INTERNAL CYLINDRICAL CAVITY  
*Pyatikrestovsky K.P.*

3. HYDRODYNAMICS OF THE VESSEL AT THE MOORING WITH BACK-UP SLOPE  
*Maximov V.V., Nudner I.S., Semenov K.K., Leontiev V.A., Krylatykh E.A.*

4. THE RESTORATION OF THE PLASTICALLY DEFORMED INNER SURFACE OF CYLINDER  
*Kuznetsov V.G., Kurbanov T.A.*

5. THE METHOD OF SOLVING THE PROBLEMS OF STRENGTH AND FRACTURE TOUGHNESS USING THE MODIFIED FUNCTION «BIRTH AND DEATH» FOR THREE MODES OF DEFORMATION AT THE TIP OF A CRACK  
*Renev S.A., Shelofast V.V.*

14:00 – 18:00  
**SESSION 4 (Auditorium 311)**  
*Co-chairmen: Gennady Mishuris, Alexander Belostotsky*

14:00 – 16:00  
1. DYNAMIC DAMAGE IN WOVEN CARBON/EPOXY COMPOSITES DUE TO AIR BLAST  
*Coles L.A., Tilton C., Roy A., Shukla A., Silberschmidt V.V.*

2. DISSIPATION ENERGY DURING BRITTLE CRACK PROPAGATION IN SINGLE CRYSTAL OF 3% SI-FE ALLOY  
*Kawabata T., Nakanishi D., Namegawa T., Aihara S.*

3. STRENGTH ESTIMATION AND INTERNAL DEGREE OF FREEDOM FOR CRYSTAL DAMAGING  
*Zubko I.Yu.*

4. EFFECT OF BONE DEFECT LOCALIZATION ON THE FAILURE OF THE HUMAN FEMUR AFTER SURGICAL RESECTION  
*Bosiakov S.M., Alekseev D.V., Silberschmidt V.V., Shpileuski I.*
5. ABOUT THE ANALYSIS OF ASYMPOTICS SOLUTIONS OF COUPLED DYNAMIC PROBLEMS OF THERMOELASTICITY
Zorin I.S., Zimin B.A., Sventitskaya V.E.

16:00 – 16:30 Coffee break

16:30 – 18:00 6. MECHANICAL CLINCHING JOINT CALCULATION
Berezhnoi D.V., Shamim M.R., Balafendieva I.S.

7. DEFINING RELATIONS OF MECHANICS OF DAMAGED MEDIA
EFFECTED BY FATIGUE AND CREEP

8. STUDY ON CRACK BRANCHING CRITERIA FOR BRITTLE
CRACK PROPAGATION IN STEELS
Tonsho F., Kawabata T., Aihara S.

9. ON THE NUMERICAL SOLUTION AND GRAPHIC CONCEPT OF
RESULTS OF ELASTIC-PLASTIC SD-MATERIALS BEND
Pavilaynen G.V., Orekhov A.V.

TUESDAY, SEPTEMBER 26

09:00 – 13:00 PLENARY LECTURES (The White Hall)
Co-Chairmen: Ya-Pu Zhao, Vladimir Skripnyak

1. ANALYTICAL SOLUTION OF ELASTIC FIELDS INDUCED BY A
2D INCLUSION OF ARBITRARY POLYGONAL SHAPE
Zuccaro G., Trotta S., Sessa S., Marmo F., Rosati L.

2. CRACK DYNAMICS IN BRITTLE CRYSTALS: PSEUDO R-CURVE
BEHAVIOR AND THE EFFECT OF REFLECTED STRESS WAVES
Sherman D., Shaheen-Mualim M., Gleizer A.

3. DAMAGE-FAILURE TRANSITION AS CRITICAL PHENOMENON
IN MULTISCALE DEFECTS KINETICS: WIDE-RANGE
EXPERIMENTS AND MODELING
Naimark O.B.

4. THE ELASTOPLASTIC ANALYSIS OF ROD SYSTEMS ON THE
BASIS OF THE GENERALIZED FLEXIBILITY METHOD (GFM)
Meleshko V.A., Rutman Yu.L.

11:00 – 11:30 Coffee break
5. BALLISTIC CHARACTERISTICS OF BI-LAYER CERAMIC/METAL TARGET WITH VARIOUS ALUMINIUM BACKING AGAINST OGIVE NOSE PROJECTILE
Venkatesan J., Iqbal M.A., Gupta N.K., Bratov V., Kazarinov N., Morozov N.

6. MULTIPLE CRACK INTERACTION IN NON-HOMOGENEOUS MATERIALS AND STRUCTURES UNDER THERMAL LOADING
Petrova V.E., Schmauder S., Shashkin A.I.

7. ADIABATIC SHEAR BANDS IN AM60B UNDER HIGH SPEED IMPACT
Jiang Jian-Tang, Zhang Bo, Li Guo-Ai, Shao Wen-Zhu, Zhen Liang

13:00 – 14:00  Lunch (optional)

14:00 – 18:00  SESSION 1 (The White Hall)
Co-chairmen: Mohd Iqbal, Vladimir Bratov

14:00 – 16:00  1. VARIATIONAL FORMULATION AND NEW EXACT SOLUTIONS OF THE ELASTIC RODS STABILITY PROBLEMS
Lalin V.V.

2. A NEW MODEL OF THE CONTINUOUS MEDIUM
Prozorova E.V.

3. COMPARISON OF REINFORCED CONCRETE STRUCTURES CROSS SECTIONS CALCULATION BY FINITE ELEMENTS METHOD WITH STATUTORY CALCULATION
Krylov S.B., Arleninov P.D., Goncharov E.E.

4. MODELING THE GENERAL CORROSION OF A STEEL TUBE UNDER ITS OWN WEIGHT
Stareva I.A., Pronina Yu.G.

5. STRESS-STRAIN STATE IN THE CORNER POINTS OF A CLamped PLATE
Matrosov A.V., Suratov V.A.

6. FINITE-ELEMENT SIMULATION PLANE-BINDED STATE OF THE INTENSE TIRES REINFORCED CONCRETE STRUCTURES WITH LONG DEFORMATION
Výsokovsky D.A., Gaidzhurov P.P., Kravchenko G.M.

16:00 – 16:30  Coffee break

16:30 – 18:00  7. NON-CLASSICAL THEORIES OF SHELLS IN THE ANALYSIS OF ANNULAR PLATES OF VARIABLE THICKNESS UNDER
CONCENTRATED LOADS
Velichko V.E.

8. THE METHOD OF CALCULATION OF STRESS-STRAIN STATE OF SOIL IN RABBET CORSET
Kondrat'eva L.N., Karpov V.V., Medvedskiy P.E.

9. COMPUTER TECHNOLOGIES OF DEVELOPMENT OF PREPROCESSOR OF SIGMA SOFTWARE PACKAGE FOR STRUCTURAL MODELING
Dimitrienko Yu.I., Zakharov A.A.

14:00 – 18:00
SESSION 2 (The Oak Hall)
Co-chairmen: Vera Petrova, Svetlana Atroshenko

14:00 – 16:00
1. NUMERICAL INVESTIGATION ON THE ENERGY ABSORPTION OF PERFORATED CYLINDERS UNDER AXIAL IMPACT
Ravi Sankar H., Parameswaran V.

2. THE USE OF THE PARTICLE METHOD FOR THE MODELING OF BULK MEDIA IN THE MECHANICS OF A RIGID DEFORMABLE BODY
Berezhnoi D.V., Miheev V.V.

3. THE AGING AND FRACTURE OF COMPRESSIBLE ELASTIC-VISCOUS MEDIUM
Arutyunyan A.R., Arutyunyan R.A., Ushakov M.D.

4. COMPARATIVE ANALYSIS OF CHARACTERISTICS OF MATERIAL DAMAGE AT VARIOUS LOAD SPEEDS BY ELECTRIC EXPLOSION OF CONDUCTORS
Morozov V.A., Atroshenko S.A., Kats V.M., Gribanov D.A.

5. INVESTIGATION OF THE CORRELATION BETWEEN ACOUSTIC ANISOTROPY, DAMAGE AND MEASURES OF THE STRESS-STRAIN STATE
Tretyakov D.A., Belyaev A.K., Polyanskiy V.A., Semenov A.S., Yakovlev Yu.A.

16:00 – 16:30
Coffee break

16:30 – 18:00
6. INVESTIGATION OF THE ELASTOPLASTIC AND STRENGTH PROPERTIES OF THE MAGNESIUM ALLOY AZ31B UNDER QUASI-STATIC AND DYNAMIC LOADING
Atroshenko S.A., Sudienkov Yu.V., Smirnov I.V., Shao Wen Zhu, Morozov N.F.
7. NON-CLASSICAL THEORIES OF SHELLS IN THE ANALYSIS OF ANNULAR PLATES OF VARIABLE THICKNESS UNDER CONCENTRATED LOADS
Velichko V.

8. THE STRUCTURAL TEMPORAL APPROACH TO DYNAMIC AND QUASI-STATIC STRENGTH OF ROCKS AND CONCRETE

9. MATHEMATICAL MODELING OF ORIGIN AND PROPAGATION OF DISCONTINUITIES IN DAMAGABLE THERMOELASTOVISCOPLASTIC MEDIA
Kiselev A.B., Zacharov P.P.

10. THE INVESTIGATIONS OF THE DYNAMICS OF FRACTURE OF BRITTLE MEDIA ON THE BASIS OF EXPERIMENTAL DATA AND THEORETICAL ANALYSIS.

14:00 – 18:00  SESSION 3 (Small Lecture Hall)
Co-chairmen: Jian-Tang Jiang, Vladimir Lalin

14:00 – 16:00
1. INVESTIGATION OF THE INFLUENCE OF STRAIN INDUCED JUNCTION DISCLINATIONS ON HARDENING AND NUCLEATION OF CRACKS DURING PLASTIC DEFORMATION OF POLYCRYSTALS
Rybin V.V., Perevezentsev V.N., Svirina J.V.

2. SPECIAL ASPECTS OF FORMULATION AND IMPLEMENTATION OF A PRESSURE- AND LODE-DEPENDENT PLASTICITY MODEL WITHIN AN EXPLICIT FINITE ELEMENT CODE
Vershinin V.V.

3. NUMERICAL SIMULATION OF OSCILLATORY PROCESSES IN THE CENTRIFUGAL COMPRESSOR LABYRINTH SEALS IN GAS TRANSMITTLAL UNITS
Butymova L.N., Modorskii V.Ya.

4. ENERGY ABSORPTION CAPACITY OF PRESTRESSED AND REINFORCED CONCRETE SLABS SUBJECTED TO MULTIPLE IMPACTS
Kumar V., Iqbal M.A., Mittal A.K.

5. IMPACT RESISTANCE OF PRESTRESSED AND REINFORCED CONCRETE SLABS UNDER FALLING WEIGHT INDENTER
Kumar V., Iqbal M. A., Mittal A. K.
16:00 – 16:30  Coffee break

16:30 – 18:00  
6. ASYMPTOTIC SOLUTION OF THE EQUILIBRIUM AND STABILITY PROBLEMS OF A ROD WITH A LONGITUDINAL, SHEAR AND BENDING STIFFNESS BEING TAKEN INTO ACCOUNT  
Lalin V.V., Kuznetsova D.A.

7. NUMERICAL MODELING OF THE FLOW IN THE CENTRIFUGAL COMPRESSOR STAGE AND THE STRUCTURE DISPLACEMENTS IN 2FSI AND IN UNRELATED UNSTEADY FORMULATIONS  
Mekhonoshina E.V., Modorskii V.Ya.

8. THEORY OF MASS DAMPERS OF DAMPED SYSTEMS  

9. CALCULATING STRONGLY DAMPED SYSTEMS UNDER SEISMIC LOADS  
Uzdin A.M., Fedorova M.Yu., Nesterova O.P.

10. SOIL STIFFNESS ACCOUNTABILITY DURING STRENGTH ANALYSIS OF NUCLEAR POWER PLANT STRUCTURES  

14:00 – 18:00  SESSION 4 (Auditorium 311)  
Co-chairmen: Jong Sung Kim, Aleksander Frumen

14:00 – 16:00  
1. STABILITY OF ORTHOTROPIC SHELL STRUCTURES REINFORCED BY STIFFENERS UNDER DYNAMIC LOADING  
Semenov A.A.

2. MICROSTRUCTURE CHARACTERIZATION OF ADIABATIC SHEAR BANDS GENERATED IN MG-AL-MN ALLOY UNDER BALLISTIC IMPACT  
Zhang Bo, Jiang Jian-Tang, Liu Li, Li Guo-Ai, Shao Wen-Zhu, Zhen Liang

3. DESIGN AND MATERIAL ANALYSIS OF A COMPOSITE RIGID REFLECTOR FOR SPACE ANTENNA  
Moskvichev E.

4. THE MINIMUM TIME TO DESTRUCTION OF THE OBJECT IN BROADBAND RANDOM VIBRATION - ON «OWN BANDS OF THE SPECTRUM»  
Ovchinnikov I.N.

5. PREDICTION OF STEADY-STATE CRACK PROPAGATION IN A DISCRETE CHAIN BASED ON DIFFERENT FRACTURE CRITERIA  
Gorbushin N., Vitucci G., Mishuris G., Volkov G.
16:00 – 16:30  Coffee break

16:30 – 18:00  6. MATHEMATICAL MODEL FOR ROTATIONAL OSCILLATION OF A CYLINDER IN AIR FLOW  
Ryabinin A.N., Kiselev N.A.

7. THE COEFFICIENT OF LATERAL DEFORMATION OF PLASTIC DEFORMATION OF METALS  
Zorin I.S., Zimin B.A., Smirnov I.V., Sventitskaya V.E.

8. ABOUT SEISMIC ANALYSIS OF UNDERGROUND STRUCTURES  
Belostotsky A.M., Akimov P.A., Dmitriev D.S.

9. DYNAMIC ANALYSIS OF GAS PERMEABLE BLASTING MAT AS GEOMETRICALLY NONLINEAR SYSTEM WITH UNILATERAL CONSTRAINTS  
Kostiunina O.A., Lovtsov A.D.

10. ASSIGNMENT OF VALID COMPUTER MODELS OF CONSTRUCTIVE MATERIALS WITH RHEOLOGICAL PROPERTIES  
Sidorov V., Nowak K.

WEDNESDAY, SEPTEMBER 27

09:00 – 13:00  PLENARY LECTURES (The White Hall)  
Co-Chairmen: Yuri Petrov, Dov Sherman

1. KINETIC THEORY OF STRUCTURAL HETEROGENIZATION  
Meshcheryakov Yu.I.

2. MECHANICAL BEHAVIOR OF NANOSTRUCTURED AND ULTRAFINEGRAINED METAL ALLOY UNDER DYNAMIC LOADING  
Skripnyak V.A., Skripnyak E.G., Skripnyak V.V.

3. ACTUAL PROBLEMS OF NUMERICAL MODELLING OF UNIQUE STRUCTURES, BUILDINGS AND FACILITIES  
Belostotsky A.M., Akimov P.A., Afanasyeva I.N., Kaytukov T.B.

4. POLYNOMIAL SELECTION FOR INDUCED EIGENSTRAIN INSIDE A STIFF INCLUSION INTERACTING STRONGLY WITH A MODE I CRACK  
Agrawal A., Parameswaran V.

11:00 – 11:30  Coffee break
11:30 – 13:00
5. COMPUTATIONAL SIMULATION OF PWSCC GROWTH BEHAVIOR FOR ALLOY 600 NUCLEAR COMPONENTS USING FINITE ELEMENT DAMAGE ANALYSIS
   *Kim Jong-Sung, Kim Ji-Soo, Kim Yun-Jae, Kwon Dongil*

6. THIN PRESSURIZED SPHERE EXPOSED TO INSIDE GENERAL CORROSION AND NONUNIFORM HEATING
   *Sedova O., Pronina Yu.G.*

7. A BAYESIAN APPROACH FOR CONTROLLING STRUCTURAL DISPLACEMENTS
   *D'Urso M.G., Gargiulo A., Sessa S.*

14:00 – 18:00
SESSION 1 (The White Hall)
*Co-chairmen: Maria D'Urso, Svetlana Atroshenko*

14:00 – 16:00
1. THE DEFINITION OF FLOW STRESS UNDER DYNAMIC LOADING BASED ON RELAXATION MODEL OF PLASTICITY
   *Selyutina N.*

2. NUMERICAL AND EXPERIMENTAL RESEARCH OF NATURAL FREQUENCIES AND MODE SHAPES OF RUNNER OF FRANCIS TURBINE
   *Zolotarevich V.P., Salienko A.E., Frumen A.I., Yugov N.V.*

3. ANISOTROPIC PLATE ANALYSIS USING DISCRETE-CONTINUAL FINITE ELEMENT METHOD
   *Akimov P.A., Sidorov V.N.*

4. SOLUTION OF MULTIPOINT BOUNDARY PROBLEM OF PLATE ANALYSIS BASED ON COMBINED APPLICATION OF FINITE ELEMENT METHOD AND DISCRETE-CONTINUAL FINITE ELEMENT METHOD
   *Akimov P.A., Negrozov O.A.*

5. NUMERICAL SIMULATION OF FLUID-STRUCTURE INTERACTION BETWEEN ELASTIC THIN-WALLED STRUCTURE AND TRANSIENT FLUID FLOW
   *Boznyakov E.I., Afanasyeva I.N., Belostotsky A.M.*

6. ABOUT APPLICATION OF ADAPTIVE FINITE ELEMENT MODELS WITHIN STRUCTURAL HEALTH MONITORING SYSTEMS OF UNIQUE BUILDINGS
16:00 – 16:30  Coffee break

16:30 – 18:00  7. ESTIMATION OF AERODYNAMIC INSTABILITY OF BUILDING STRUCTURES

8. CALCULATION OF AXISYMMETRIC BODIES, LOADED WITH A TRACKING PRESSURE
Fedorov A.S.

9. MATHEMATICAL MODELING OF THE EFFECT OF LOCALIZATION OF ACOUSTIC ANISOTROPY IN THE THIN SURFACE LAYER
Lobachev A.M., Tretyakov D.A., Shtukin L.V., Modestov V.S., Polyansky V.A., Pivkov A.V.

14:00 – 18:00  SESSION 2 (The Oak Hall)
Co-chairmen: Gennady Mishuris, Yulia Pronina

14:00 – 16:00  1. SHOCK-INDUCED STRUCTURAL HETEROGENIZATION
Meshcheryakov Yu.I., Konovalov G.V., Divakov A.K., Zhigacheva N.I., Osokin E.P.

2. FINITE ELEMENT MODELING AND ANALYSIS OF THE PAPER-MAKING MACHINE’S FOUNDATION
Pogodina V.S., Soklakov A.V., Mihalyuk D.S.

3. STRUCTURAL-TEMPORAL APPROACH AND GEOMETRY OF THE FRACTURE ZONE IN SPALLING
Petrov Y.V., Utkin A.A.

4. THE METHOD OF CALCULATION OF STRESS-STRAIN STATE OF SOIL IN CLOSED SHEET PILING
Kondrat’eva L.N., Popov, Medvedskiy P.E.

5. STIFFNESS MATRIX AND FORCES CALCULATION FOR ROD CONSTRAINED TORSION
Geraymovich Yu.D., Ievzerov I.D., Marchenko D.V., Kolesnikov A.V.

6. STRUCTURAL-TIME AND PULSE CHARACTERISTICS OF DYNAMIC FRACTURE OF SOME CONSTRUCTION MATERIALS
Kuchmin A.Yu., Abramyan A.K.

16:00 – 18:00  Coffee break

16:30 – 18:00  7. ELASTOMER COMPOSITES BASED OF FILLER WITH NEGATIVE THERMAL EXPANSION COEFFICIENT: EXPERIMENTS
AND NUMERICAL SIMULATION
Shubin S.N., Akulichev A.G., Freidin A.B.

8. PREDICTION OF MICROSTRUCTURE EVOLUTION FOR METALS UNDERGOING ECAP AND MULTIDIRECTIONAL FORGING
Bratov V.A., Borodin I.N.

9. VIBRATIONS IN SPATIAL PRETENSIONED STRUT FRAMES
Egorov V.V, Belyy G.I.

10. ON SHEARING STRESSES IN BEAMS (GENERALIZATION OF ZHURAVSKY THEORY)
Kharlab V.D.

14:00 – 18:00 SESSION 3 (Small Lecture Hall)
Co-chairmen: Dov Sherman, Vladimir Skripnyak

14:00 – 16:00
1. COMPUTER DESIGN OF POROUS AND CERAMIC PIEZOCOMPOSITES IN THE FINITE ELEMENT PACKAGE ACELAN
Kudimova A.B., Mikhayluts I.V., Nadolin D.K., Nasedkin A.V.,
Nasedkina A.A., OganesyanP.A., Soloviev A.N.

2. MODELING OF NONLINEAR BEHAVIOR OF FERROELECTRIC CERAMICS WITH TETRAGONAL AND RHombohedral VARIANTS WITHIN A SINGLE CRYSTAL
Pudeleva O., Semenov A., Melnikov B.

3. FREE OSCILLATIONS OF SEMI-UNDERGROUND TRUNK THIN-WALL OIL PIPELINES OF BIG DIAMETER IN CASE OF NON-UNIFORM IMPACT OF RESILIENT BEARING PRESSURE OF SOIL
Sokolov V.G., Veselov V.A., Razov I.O.

4. INELASTIC DEFORMATION OF FLEXIBLE GRAPHITEO-RING SEALS UNDER THEIR EXPLOITATION IN STOP VALVES

5. AN EXPERIMENTAL INVESTIGATION OF THE STRENGTH CHARACTERISTICS OF ABS PLASTIC UNDER DYNAMIC LOADS
Chevrychkina A.A., Volkov G.A., Evstifeev A.D.

16:00 – 16:30 Coffee break

16:30 – 18:00 6. COMPARATIVE ANALYSIS OF STRESS-STRAIN STATE OF SPECIMENS FOR THERMAL FATIGUE TESTS
Grishchenko A.I., Savikovskiy A.V., Semenov A.S.
7. INCUBATION TIME CRITERIA ANALYSIS OF ROCK MATERIALS UNDER DYNAMIC LOADINGS  
Martemyanov A.N., Selyutina N.S., Katorina A.I., Petrov Y.V.

8. MODELING OF INCREASED STIFFNESS FOR ANISOTROPIC NANOPOROUS COMPOSITES BASED ON ANSYS FINITE ELEMENT SOFTWARE  
Nasedkin A.V., Kornievsky A.S.

9. INFLUENCE OF CONCRETE STRENGTH AND OTHER STRUCTURAL FACTORS ON THE BEARING CAPABILITY OF REINFORCED-CONCRETE WALLS  
Petrov A.N., Belov V.V., Chernykh A.G.

10. MATHEMATICAL MODEL OF MULTIPHASE POLYCRYSTALLINE MATERIALS INELASTIC DEFORMATION DESCRIBING HARDENING AND DAMAGE ACCUMULATION  
Volegov P.S., Ozernykh V.S., Telkanov M.A.

14:00 – 18:00  
SESSION 4 (Auditorium 311) 
Co-chairmen: Iqbal Mohd, N. Kazarinov

14:00 – 16:00  
1. INFLUENCE OF BOUNDARY CONDITIONS ON STIFFNESS PROPERTY OF A RECTANGULAR NANOPlate  
Bochkarev A.O.

2. NOTCHES IN FIBROUS MATERIALS: MICRO-MECHANISMS OF DEFORMATION AND DAMAGE  
Sozumert E., Farukh F., Sabuncuoglu B., Demirci E., Acar M., Pourdeyhimi B., Silberschmidt V.V.

3. BEHAVIOR OF THE ALLOY VT6 OF DIFFERENT STRUCTURAL STATE UNDER CONDITIONS OF HIGH-SPEED EROSION  
Atroshenko S.A., Evstifeev A.D., Kazarinov N.A., Petrov Yu.V., Valiev R.Z.

4. STRENGTH AND FRACTURE OF ULTRAFINE-GRAINED TITANIUM GRADE 4  
Smirnov I., Polyakov A., Sudenkov Yu.

5. A COMPARATIVE ANALYSIS OF SOME FUNCTIONS FOR DESCRIPTION OF LOCAL DISSIPATIVE PROCESSES WITH RELAXATION MECHANISM OF INTERNAL FRICTION  
Lomovskov V.A.

16:00 – 16:30  
Coffee break
6. DIAGRAMS OF DESTRUCTION OF CEMENT COMPOSITE MATERIALS REINFORCED WITH AMORPHOUS METAL FIBERS
   Pukharenko Yu.V., Morozov V.I., Zhavoronkov M.I.

7. INELASTIC DEFORMATION, DAMAGE EVOLUTION, DILATATION, STRAIN-SOFTENING AND LOCALIZED FAILURE IN SANDSTONE MEDIA UNDER TRIAXIAL QUASISTATIC LOADING
   Zaitsev A.V., Karev V.I., Kovalenko Yu.F., Sidorin Yu.V., Sokolkin Yu.V., Ustinov K.B.

8. SIMULATION OF NONLINEAR BEHAVIOR OF REINFORCED CONCRETE TANK UNDER EXTREME TEMPERATURE LOADS
   Fedorov I.V.

9. ANALYSIS OF VIBRATIONS OF THE HYDRO POWER PLANT STRUCTURES DUE TO HYDRODYNAMIC LOADS ON THE SPILLWAY STRUCTURES AND RIVERBED
   Tseytlin B.V., Vitokin E.Ju.

18:30 Conference banquet (optional)

POSTER SESSIONS

MONDAY, SEPTEMBER 25

P-1  EVALUATION OF THE REDUCTION RATIO OF BRIDGE PIERS
     Benin A.V., Nesterova O.P., Uzdin A.M., Guan Y.

P-2  METHOD OF THE NUMERICAL SOLUTION OF THREE-DIMENSIONAL PROBLEMS OF THE DYNAMIC STRENGTH OF MASONRY
     Demareva A.V., Ivanov V.A., Shushkina Yu.A.

P-3  TEMPERATURE-FREQUENCY ELASTICITY AND INELASTICITY OF A HOMOGENEOUS CONTINUOUS MEDIUM BASE SUBSYSTEM
     Belashova I.S., Gorshkov A.A., Korovaytseva E.A., Kukhtenkova A.A., Lomovskoy V.A.

P-4  ON THE CHOICE OF RELAXATION FUNCTION FOR THE DESCRIPTION OF DISLOCATION INTERNAL FRICTION RELAXATION MECHANISM

P-5  THE THEOREM OF THE INFLUENCE FUNCTIONS FOR THE DISPLACEMENTS OF THE BEAMS AND ITS USE IN SOLVING PROBLEMS OF APPLIED MECHANICS
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P-18 ON MACROKINETICS UNDER DYNAMIC SUPERPLASTICITY
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P-19 MECHANISM OF FORMATION OF BANDS OF LOCALIZATION OF PLASTIC
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Mansyrev D.

P-20 MECHANICAL CLINCHING JOINT CALCULATION
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P-21 INFLUENCE OF GRAIN SIZE OF BARIUM TITANATE SINTERED
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P-25 METHODS OF THE EXPERIMENTAL INVESTIGATION OF MECHANICAL
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P-28 ALGORITHM FOR CALCULATING THE CENTRIFUGAL COMPRESSOR OF
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P-29 SIMULATION OF VIBRATION PROCESSES OCCURRING IN THE CYLINDER GROUP INTERNAL COMBUSTION ENGINE
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P-42 THE NUMERICAL MODELING OF LARGE ELASTIC-PLASTIC DEFORMATIONS
Davydov R.L., Sultanov L.U.

P-43 EXACT ANALYTICAL SOLUTIONS TO PROBLEMS ON EQUILIBRIUM STATE OF ELASTIC ANISOTROPIC HEAVY SPHERICAL BODIES AND THEIR APPLICATIONS TO GEOMECHANICAL PROBLEMS
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P-44 NUMERICAL ANALYSIS OF NONLINEAR VIBRATIONS OF ELASTICALLY SUPPORTED DEFORMABLE SYSTEM WITH LIMIT SUPPORTS AT THE ENDS
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P-45 MODELLING DESIGN SEISMIC INPUT FOR BUILDING THE SCENARIO OF STRUCTURE DAMAGES ACCUMULATION
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