INSTITUTE OF FUNDAMENTAL TECHNOLOGICAL RESEARCH
and
COMMITTEE ON MECHANICS
Polish Academy of Sciences

40th SOLID MECHANICS CONFERENCE

Warsaw, Poland
29.08 - 2.09 2016

Conference programme

		ROOM A	ROOM B	ROOM C	ROOM D	ROOM E	
Tuesday, 30.08	08:00	Registration					POSTERS ON BOARD
	09:00	Opening					
	10:00	Plenary lecture	Z. Bazant				
	11:00	Coffee break					
	11:20	S1	P182	P158 keynote	P047 keynote	P256 keynote	
	11:40	P209	P188				
	12:00	P059	P164 keynote	P088	P018	P031	
	12:20	P069		P144	P155	P145	
	12:40	Lunch					
	13:40	Plenary lecture	A. Rusinek				
	14:40	P146	P055	P104	P126 keynote	P015	
	15:00	P132	P007	P255		P181	
	15:20	P215	P074	P087	P151	P131	
	15:40	P212	P163	P045	P199	P113	
	16:00	Coffee break					
	16:20	Plenary lecture	W. Wagner				
	17:20	P105	P187	P168	P008	P082	
	17:40	P051	P240	P222	P096	P156	
	18:00	P053	P221	P052	P130	P026	
	18:20	P129	P229	P084	P072	P046	
	18:40		P231			P122	
Wednesday, 31.08	09:00	Plenary lecture	I. Romero				POSTERS ON BOARD
	10:00	S2	P049	P108 keynote	P061	P233 keynote	
	10:20	P239 keynote	P060		P103		
	10:40		P230	P137	P134	P073 keynote	
	11:00	P094	P244	P004	P241		
	11:20	Coffee break					
	11:40	P234 keyonte	P223	P041	P085	P042	
	12:00		P184	P075	P044	P043	
	12:20	P253 keynote	P180	P090	P179	P077	
	12:40		P173	P023	P219	P218	
	13:00	Coffee break					
	13:20	Concert					
	14:00	Lunch					
	15:00	Plenary lecture	D. Bigoni				
	16:00	P050	P001	P172	P071	P030	
	16:20	P119	P009	P054	P078	P141	
	16:40	P152	P027	P038	P081	P083	
	17:00	P174	P205	P228	P086	P127	
	17:20	P177			P099	P100	

Thursday, 1.09	09:00	Plenary lecture	T. Lewiński				POSTERS ON BOARD
	10:00	P021 keynote	P039	P242 keynote	P169 keynote	P162 keynote	
	10:20		P095				
	10:40	P002 keynote	P237	P014	P166	P136	
	11:00		P089	P064	P070	P076	
	11:20	Coffee break		P138		P097	
	11:40	POSTER SESSION					
	12:40	P202	P058	P161 keynote	P227 keynote	P066	
	13:00	P191	P185			P024	
	13:20	P159	P091	P165	P109	P147	
	13:40	P211	P106	P057	P114	P167	
	14:00	P236	P102	P208	P198	P203	
	14:20	Lunch					
	16:30	Żelazowa Wola departure					
Friday, 2.09	09:00	Plenary lecture	K. Kowalczyk – Gajewska				
	10:00	P056	P150 keynote	P040 keynote	P035	P216 keynote	
	10:20	P118			P143		
	10:40	P121	P110	P245	P246	P157	
	11:00	P178	P080	P226	P247	P079	
	11:20	Coffee break					
	11:40	P160	P139	P065		P048	
	12:00	P193	P116	P194		P063	
	12:20	P210	P192	P189		P117	
	12:40	Lunch					

Thematic Sessions

- Biomechanics
- Computational Aspects of Solid Mechanics, Fracture and Damage
- Elasticity, Plasticity and Phase Transition
- Experimental Mechanics
- Geomechanics and Multiscale Modelling of Materials
- Plates and Shells: Classical and Non-classical Models
- Smart Materials and Structures
- Stochastic Phenomena and Dynamics Inspired Methods in Neuroinformatics and Systems Biology
- Structural Mechanics and Optimization

plenary: 45+15 min, keynote: 30+10 min, normal: 15+5 min

About SolMech

The series of Solid Mechanics Conferences have been organized by the Institute of Fundamental Technological Research since 1953. The conferences have maintained high scientific standard and served as a forum for exchange of ideas and research information. Traditionally a set of invited lectures have been presented at the Conferences by outstanding researchers. The aim of the Conference is to bring together the researches from different countries and to create them the possibilities for the presentation of scientific results from a wide area of solid mechanics.

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Conference Venue

Conference will take place in the Old Library of Warsaw University, ul. Krakowskie Przedmieście 26/28.

Social Events

- Welcome reception – Monday, August 28, 17:00
  Main Hall of the Old Library of Warsaw University
- Concert, Wednesday, August 31, 13:20
  Room A of the Old Library of Warsaw University
- Concert and Gala Dinner in Żelazowa Wola
  Thursday, September 1, departure 16:30

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Invited Plenary Lectures

Zděnek Bažant, USA
Probabilistic nano-mechanics based finite weakest-link model for quasibrittle structure strength, size effect, lifetime and fatigue

Davide Bigoni, Italy
Folding and faulting instabilities in extreme elastic solids

Katarzyna Kowalczyk-Gajewska, Poland
Modelling of microstructure evolution in metals and alloys of high specific strength

Tomasz Lewiński, Poland
Optimization of structural topology

Ignacio Romero, Spain
A model for the multiscale simulation of thermo-chemo-mechanical problems

Alexis Rusinek, France
Discussion about dynamic behaviour of materials and structures

Werner Wagner, Germany
Multiscale methods for shell and plate structures - theory and applications

Thematic Sessions and Chairmen

Biomechanics

R. Będziński (Poland), A. John (Poland) and T. Lekszycki (Poland)

Computational Aspects of Solid Mechanics, Fracture and Damage

T. Burczyński (Poland) and E. Oñate (Spain)

Elasticity, Plasticity and Phase Transition

(Special session commemorating professor)

(Bogdan Raniecki)

D. Bigoni (Italy), Ch. Lexcellent (France) and H. Petryk (Poland)

Experimental Mechanics

Z. Kowalewski (Poland) and A. Rusinek (France)

Geomechanics and Multiscale Modelling of Materials

(Special session devoted to the anniversary of)

(professor Zenon Mróz)

S. Pietruszczak (Canada), J. Rojek (Poland), S. Stupkiewicz (Poland) and J. Tejchman (Poland)

Plates and Shells: Classical and Non-classical Models

J. Chróścielewski (Poland) , V. Eremeyev (Russia), W. Wagner (Germany) and K. Wiśniewski (Poland)

Smart Materials and Structures

E. Pieczyska (Poland) and H. Tobushi (Japan)

Stochastic Phenomena and Dynamics Inspired Methods in Neuroinformatics and Systems Biology

R. Iwankiewicz (Germany), Z. Kotulski (Poland), E. Postek (Poland) and J. Szczepański (Poland),

Structural Mechanics and Optimization

T. Lewiński (Poland) and P. Kowalczyk (Poland)

Tuesday, 30.08, Room A

Plenary lecture

10:00
Z. Bažant
Probabilistic Nano-Mechanics Based Finite Weakest-Link Model for Quasibrittle Structure Strength, Size Effect, Lifetime and Fatigue

Elasticity, Plasticity and Phase Transition

Session 1

11:20 S1
Z. Mróz
Contribution of Prof. B. Raniecki to Nonlinear Mechanics of Solids

11:40 P209
Ch. Lexcellent
Review of Phase Transformation Surfaces Around a Crack Tip for Shape Memory Alloys

12:00 P059
K. Takeda, R. Matsui, H.Tobushi and E.A. Pieczyska
Subloop Deformation of Shape Memory Alloy

12:20 P069
K. Tůma, S. Stupkiewicz and H. Petryk
The Effect of Twin Spacing on the Morphology of Austenite-Twinned Martensite Interface

Plenary lecture

13:40
A. Rusinek
Discussion About Dynamic Behaviour of Materials and Structures

Session 2

14:40 P146
R. Denzer
A Phase-Field Approach for Liquid to Solid Phase Transformation for Binary Ni-Cu Alloy

15:00 P132
B. Skoczeń
Coupled Strain Induced Phenomena in Ductile Materials at Extremely Low Temperatures

Session 2 cd

15:20 P215
H. Petryk and S. Stupkiewicz
A Simple Approach to Boundary-Layer and Size Effects in Gradient-Enhanced Crystal Plasticity

15:40 P212
M. Lewandowski and S. Stupkiewicz
A Study of Rate-Dependent and Rate-Independent Regularization of Crystal Plasticity at Finite Strains

Plenary lecture

16:20
W. Wagner
Multiscale Methods for Shell and Plate Structures - Theory and Applications

Session 3

Elasticity, Plasticity and Phase Transition

17:20 P105
R. Bustamante
Implicit Constitutive Relations for Thermoelastic Bodies

17:40 P051
V. Sadovskii
On Thermodynamically Consistent Form of Nonlinear Equations of the Cosserat Theory

18:00 P053
S.N. Korobeynikov, A.Y. Larichkin, T.A. Rotanova and A.A. Oleinikov
Lagrangian Formulation of Hencky's Hyperelastic Material Model: Theory, Experiment, and Computer Simulation

18:20 P129
I.Yu. Zubko
Material Spin and Finite Hypo-Elasticity for Two-Dimensional Orthotropic Media

Session 1

11:20 P182
M.S. Chaudhry and A. Czekanski
Effect of FDM Process Parameters on Mechanical Properties of Thermoplastic Elastomer Subject to High-Strain Rates

11:40 P188
W. Moćko, P. Grzywna, Z.L. Kowalewski and J. Radziejewska
Constitutive Behaviour of DP500 Steel Exposed to Prior Cyclic Loadings

12:00 P164 keynote
N.D. Alexopoulos, A. Proiou, S.K. Kourkoulis, S. Riekehr and N. Kashaev
The Effect of Artificial Ageing Heat Treatments on the Corrosion Resistance of 2198 (Al-Cu-Li) Aluminium Alloy

Session 2

14:40 P055
M.Z. Kabir, A.E. Seyf
Special Design and Production of Fixture to Measure the Symmetric and Anti-Symmetric Tensile Buckling Load of the Notched Thin Plates

15:00 P007
J. Szafran
From Full-Scale Testing of Steel Lattice Towers to Stochastic Reliabilty Analysis

15:20 P074
P. Bajerski and R.B. Pęcherski
Influence of Additive Manufacturing Technology on Mechanical Properties of Glass-Filled Fine Polyamide PA3200 GF

15:40 P163
N. Alexopoulos, Z. Paragkamian, S.K. Kourkoulis and P. Poulin
Tensile and Fracture Toughness Enhancement of Epoxy Resin Reinforced with Graphene Nanoplatelets

Session 3

17:20 P187

A.M. Stręk, K. Wańczyk, B. Lipowska, P. Kasza and R.B. Pęcherski

Compression of Aluminum Sponge

17:40 P240

K. Makowska and Z.L. Kowalewski

Barkhausen Noise and Magnetoacoustic Emission as a Potential Tools for Mechanical Properties Estimation of Ferromagnetic Materials

18:00 P221

A. Kwiecień, M. Gams, T. Rousakis and A. Viskovic

Use of Deformable Polymers Between RC Frames and Masonry Infills for Improved Seismic Performance

18:20 P229

D.M. Jarząbek and M. Chmielewski

The Measurement of the Adhesion Force Between Ceramic Particles and Metal Matrix in Ceramic Reinforced-Metal Matrix Composites

18:40 P231

W. Dera, C. Dziekoński and D.M. Jarząbek

The Measurement of Viscosity of Thin Polymer Films

Session 1

11:20 P158 keynote
M. Gilbert, L. He, C.J. Smith and T. Johnson
Layout Optimization in Structural Analysis & Design: Recent Developments

12:00 P088
M. Nowak, W. Gnarowski and P. Abratowski
Structural Optimization of Helicopter Air-Landing Rope Console with Multiple Loading Conditions

12:20 P144
B. Bochenek and M. Mazur
A Novel Heuristic Algorithm for Minimum Compliance Topology Optimization

Session 2

14:40 P104
B. Bochenek and K. Tajs-Zielińska
Efficient Generator of Structural Topologies Based on Irregular Cellular Automata

15:00 P255
W. Szteleblak
Generalized Topology Optimization of Shallow Shells

15:20 P087
R. Kutyłowski and M. Szwechłowicz
Thighbone-Implant Interaction - Topology Optimization Analysis

15:40 P045
E. Šamec, K. Fresl and M. Baniček
Iterative Application of the Force Density Method

Session 3

17:20 P168

A. Pichugin, A.Tyas and M. Gilbert

Few Observations on the Optimal Configuration of Some Common Types of Bridges

17:40 P222

T. Sokół and T. Lewiński

Solution of the Three Force Problem in a Case of Two Forces Being Mutually Orthogonal

18:00 P052

M. Shimoda, K. Kameyama and J.X. Shi

Parameter-Free Shape-Size Optimization for Deformation Tailoring of a Frame Structure

18:20 P084

Z. Bieniek

Self-Equilibrium Geometry of the Class-Theta Tetrahedral Tensegrity Module

Session 1

11:20 P047 keynote

E. Majchrzak and G. Kałuża

Analysis of Thermal Processes Occuring in the Heated Multilayered Metal Films Using the Dual-Phase Lag Model

12:00 P018

H.M. Shodja and M.R Delfani

Capturement of the Nanoscopic Morphological Parameters in Chiral SWCNT's via a Well-Posed Continuum Model

12:20 P155

A. Uściłowska and M. Chudzicka-Adamczak

Collation of Thermal Imaging and Computer Simulations Using Method of Fundamental Solutions for Building Envelopes

Session 2

14:40 P126 keynote

M. Nitka, J. Suchorzewski and J. Tejchman

Effect of Aggregate Shape on Concrete Fracture During Compression and Bending in DEM Calculations

15:20 P151

M. Ostaszewska, J. Suchorzewski, E. Korol, J. Tejchman and Z. Mróz

Numerical and Experimental Investigations of Size Effect in Rainforced Concrete Beams Scaled in One Direction

15:40 P199

G. Vadillo, J. Reboul and J. Fernández-Sáez

A Modified Gurson Model to Account for the Influence of the Lode Parameter at High Triaxialities

Session 3

17:20 P008

A. Kaczyński

Thermal Stresses in an Elastic Isotropic Space with an Anticrack Under Symmetric Temperature Loads

17:40 P096

J. Jaśkowiec

Very High-Order Elements in Thermal and Mechanical Problems

18:00 P130

G. Dziatkiewicz

Complex Variable Step Method for Derivative Computation of Green's Functions in 3D Magneto-Electro-Elasticity

18:20 P072

A. Długosz

Multiobjective Optimization in Two-Scale Thermoelastic Problems for Porous Solids

Session 1

11:20 P256 keynote
W. Witkowski
Selected Topics of Implementation of the Nonlinear 6-Parameter Shell Theory

12:00 P031
N. Chinchaladze and G. Jaiani
Antiplane Strain (Shear) of Orthotropic Non-Homogeneous Prismatic Shell-Like Bodies

12:20 P145
S.I. Zhavoronok
On the Variational Formulaton of the Extended High-Order Shell Theory of I. N. Vekua Type

Session 2

14:40 P015
N.F. Morozov, P.E. Tovstik and T.P. Tovstik
Multyilayer Plate Bending Model with Application to a Nano-Plate Bending and Free Vibrations

15:00 P181
S. Burzyński, J. Chróścielewski, K. Daszkiewicz and W. Witkowski
Elastoplastic Analysis of Functionally Graded Shells in Nonlinear 6 Parameter Shell Theory

15:20 P131
M.R. Moeini, M. Salehi and M. Yarmohammadi
Dynamic Behavior of Composite Laminated Plate with Eco-Friendly Matrix and Natural Fibers and Bio-Inspired Stacking

15:40 P113
A. Al Sabouni-Zawadzka, J. Kłosowska, P. Obara and W. Gilewski
Continuum Model of Orthotropic Tensegrity Plate-Like Structures with Self-Stress Included

Session 3

17:20 P082

J. Chróścielewski, A. Sabik, B. Sobczyk and W. Witkowski

Pucks Criterion - Nonlinear 6 Parameter Shell Theory Approach

17:40 P156

A.P. Kerzhaev, M.D. Kovalenko and I.V. Menshova

On the Analytical Solutions of Boundary Value Problems of the Elasticity Theory for Finite Domains with the Angular Points of a Boundary and the Changing Points of the Type of Boundary Conditions

18:00 P026

D. Pawlus

Evaluation of Critical Loads of Three-Layered Annular Plates with Damaged Composite Facings

18:20 P046

F. Zakęś

Vibrations of Point Supported Rectangular Thin Plates Subjected to a Moving Force

18:40 P122

K. Wiśniewski and E. Turska

Recent Results on Nine-Node Shell Elements Using Two-Level Approximation of Strains

Wednesday, 31.08, Room A

Plenary lecture

09:00
I. Romero
A Model for the Multiscale Simulation of Thermo-Chemo-Mechanical Problems

Geomechanics and Multiscale Modelling of Materials

Session 1

10:00 S2
S. Stupkiewicz
On Contributions of Professor Zenon Mróz to Solid Mechanics

10:20 P239 keynote
T. Wierzbicki, E. Sahraei and J. Zhu
The Mechanics of Lithium-Ion Batteries

11:00 P094
J. Kozicki and J. Tejchman
Effect of Grain Shape on Creation of Vortex/Anti-Vortex- Structures in Granular Bodies Using DEM

Session 2

11:40 P234 keynote
S. Pietruszczak
Modelling of Localized Damage Using an Enhanced Embedded Discontinuity Approach: an Overview

12:20 P253 keynote
T. Burczyński, A. Mrozek and W. Kuś
Computational Models of New Graphene-Like Nano-Structures

Plenary lecture

15:00
D. Bigoni
Folding and Faulting Instabilities in Extreme Elastic Solids

Session 3

Geomechanics and Multiscale Modelling of Materials

16:00 P050
M. Klimczak and W. Cecot
Comparison of Two Methods for Numerical Upscaling

16:20 P119
W. Bielski and R. Wojnar
Brinkman's Flow Through Porous Elastic Media: an Asymptotic Approach

16:40 P152
W. Beluch and M. Hatłas
Multiscale Identification of Parameters of Inhomogeneous Materials by Means of Global Optimization Methods

17:00 P174
M. Wojciechowski and M. Lefik
Optimal Boundary Conditions and RVE of Arbitrary Shape for Computational Homogenization of Disordered Media

17:20 P177
M. Lefik and D.P. Boso
Identification of Parameters of Adsorption by Approximation of Inverse Relation and Using Artificial Neural Networks

Wednesday, 31.08, Room B

Experimental Mechanics

Session 4

10:00 P049

H. Zarrinzadeh, M.Z. Kabir and A. Deylami

Experimental and Numerical Fatigue Crack Growth of an Aluminum Pipe Under Mixed Mode Fracture Condition

10:20 P060

K. Takeda, R. Matsui, H. Tobushi and K. Hattori

Influence of Ultrasonic-Shot Peening on Fatigue Life of Tini Shape Memory Alloy

10:40 P230

C. Dziekoński, W. Dera, L. Frąś and D.M. Jarząbek

Precise Force Sensors for Micro and Nanotensile Tests

11:00 P244

L.J. Frąś, D. Jarząbek, C. Dziekoński and R.B. Pęcherski

Viscoplastic Deformation of Magnethoreological Solids

Elasticity, Plasticity and Phase Transition

Session 4

11:40 P223

L. Rauch, K. Perzyński, L. Madej, K. Bzowski and M. Pietrzyk

The Strategy for Efficient Modelling of Phase Transformations in Materials Processing

12:00 P184

A. Uściłowska

The Computer Simulation of Some Metal Forming Processes - Numerical Experiment Based on FEM and MFS

12:20 P180

M. Kursa and H. Petryk

Algorithm for Rate-Independent Plasticity of Single Crystals Based on Incremental Work Minimization

12:40 P173

B. Wcisło, J. Pamin and A. Menzel

Simulations of Thermal Softening in Large Strain Thermoplasticity with Degradation

Session 5

16:00 P001

Yu.M. Grigoriev

Regularized Analytical Solution of Cauchy Problem for Elastic Rectangle

16:20 P009

D.R Mcarthur and L.J. Sudak

A Circular Inclusion with Inhomogeneous Rough Imperfect Interface in Harmonic Materials

16:40 P027

F. Ojaghnezhad and H.M. Shodja

Effective Elastic Constants and Surface Characteristics of Films with Nanometric Thickness

17:00 P205

A.R. Shahmohamadi, M. Salehi, M. Sadighi and S. Saber-Samandari

Improving Mechanical Properties of Composites by Nanoparticles Using a Three Dimensional Model

Session 4

10:00 P108 keynote
B. Poplawski, G. Mikułowski and Ł. Jankowski
On-Off Damping of Free Vibrations and Optimum Actuator Placement

10:40 P137
R Rafiee, M. Moradi and M. Khanpour
Analyzing Structural Behavior of a Composite Wind Turbine Blade Using Simplimed Modeling

11:00 P004
R. Steinbuch
Improving the Earthquake Response of High Buildings by Bionically Optimized Passive Tuned Mass Dampers

Session 5

11:40 P041
I. Goda, J.F. Ganghoffer and T. Lewiński
Evolutionary and Topology Optimization Based Algorithms for Bone External and Internal Remodeling

12:00 P075
T. Łukasiak
Two-Phase Isotropic Composites of Extremal Moduli. The Inverse Homogenization Problem

12:20 P090
G. Dzierżanowski
Inverse Homogenization in Isotropic Material Design

12:40 P023
X. Chen and S.A. Meguid
Stability Analysis of Thermally and Electrically Actuated Functionally Graded Material Microbeam

Session 6

16:00 P172

J. Pozorska and Z. Pozorski

On Face Layer Wrinkling in Sandwich Structures with an Orthotropic Core

16:20 P054

R. Idzikowski and P. Śniady

System of Coupled Beams as a Model of Timber Face Sheets Sandwich Beam - Experimental Verification

16:40 P038

I. Paczelt, Z. Mróz, S. Kucharski and A. Baksa

Analysis of Wear Processes for Monotonic or Periodic Sliding and Loading Conditions

17:00 P228

L. Wittenbeck

Optimal Design of Pressure Vessel Head

Session 4

10:00 P061
S. Hirobe and K. Oguni
Modeling and Numerical Analysis Methods for the Desiccation Cracks

10:20 P103
J. Lachowski and J. Borowiecka-Jamrozek
Mathematical Model of Diamond Particle in Metallic Matrix

10:40 P134
J. Reboul and G. Vadillo
Extended Gurson-Type Yield Criteria for Strain Rate Sensitive Materials

11:00 P241
M. Korobeynikova and S. Schmauder
The Influence of Graphene Slices on the Mechanical Properties of Mono- and Polycristalline α - Iron

Session 5

11:40 P085
K. Nowak
Nonlocal Approach to Cafe Solution of Creep Crack Growth Problem

12:00 P044
W. Ogierman and G. Kokot
Pseudo-Grain Discretization in Homogenization of Misaligned, Inelastic Composites

12:20 P179
A. Urbaś, A. Jabłoński and J. Kłosiński
Application of the Lugre Friction Model in the Dynamics Analysis of a Truck-Mounted Crane with a Flexible Link.

12:40 P219
P. Dziewulski and S. Stanisławek
The Influence of Forming Process on Road Barrier Strength

Session 6

16:00 P071

P. Fedeliński

Effective Mechanical Properties of Materials with Branched and Intersecting Cracks

16:20 P078

Ł. Kaczmarczyk and Ch. Pearce

Implicit Analysis of Crack Propagation in Brittle 3D Solids

16:40 P081

E. Postek and T. Sadowski

A Crack Model Around Junctions in Wc\Co Composite

17:00 P086

T. Sadowski, L. Marsavina and E. Craciun

Cracking in 2-Phase Ceramic Matrix Composite Materials Under Uniaxial Quasi-Static Deformation

17:20 P099

M. Majewski, P. Hołobut, M. Kursa and K. Kowalczyk-Gajewska

Micromechanical Modelling of Packing and Size Effects in Particulate Elastic-Plastic Composites

Session 4

10:00 P233 keynote

A. Tessler

Recent Advances in Refined Zigzag Theory and Its Finite Element Approximations for Beams and Plates

10:40 P073 keynote

V. Eremeyev, B. Sun, K.A. Lazopoulos and E.C. Aifantis

On Plates Models Based on Strain Gradient Elasticity

Session 5

11:40 P042

S. Fialko

Triangular Flat Shell Finite Element for Analysis of Reinforced Concrete Thin-Walled Structures

12:00 P043

J.C.G. Verschaeve

A Web-Spline Solver for Plates Supported by an Arbitrary Stiffener Arrangement

12:20 P077

Ł. Kaczmarczyk and Ch. Pearce

Prism Solid-Shell Element with Hierarchical Approximation

12:40 P218

S. Burzyński

On Deformations of Geometrically Nonlinear 6-Parameter Stiffened Shells

Session 6

16:00 P030

T. Okawa, S. Shimizu, S. Shimizu, G. Fujita and N. Tanaka

Study on the Vertical Buckling Collapse of I-Shaped Steel Girders

16:20 P141

W. Guggenberger and M.B. Tekleab

Buckling of Liquid-Filled Thin-Walled Conical Shells: a Long-Standing Puzzle Resolved

16:40 P083

M. Psotny and J. Havran

Stability Analysis of the Very Shallow Shell with Imperfection

17:00 P127

N. Kuczyńska, P. Hajko, M. Wójcik and J. Tejchman

Stability Analyses of Cylindrical Steel Silos with Corrugated Sheets and Columns Containing Bulk Solids

17:20 P100

P. Jarzębski and K. Wiśniewski

Evaluation of Partial Factorization for Condensation of Shell and Solid-Shell Elemental Matrices

Thursday, 1.09, Room A

Plenary lecture

09:00
T. Lewiński
Optimization of Structural Topology

Geomechanics and Multiscale Modelling of Materials

Session 4

10:00 P021 keynote
A.V. Manzhirov
Fundamentals of the Theory of Surface Growth with Applications to Geomechanics and AM Technologies

10:40 P002 keynote
V.N. Hakobyan
Periodic and Doubly Periodic Problems for Piecewise Space with Defects

Session 5

12:40 P202
A. Niemunis, C.G. Tavera, T. Wichtmann and T. Triantafyllidis
Modeling of Peak Stress Obliquity in Drained and Undrained Sands

13:00 P191
P. Hajko and J. Tejchman
Modelling of Granular Flow in Silo Within Non-Local Hypoplasticity Using Material Point Method

13:20 P159
M. Sobótka and C. Machelski
Hysteretic Live Load Effect in Soil-Steel Structures

13:40 P211
I. Bagińska, M. Kawa and M. Wyjadłowski
The Reliability Analysis of Sheet Pile Wall Located in Soil with Random Parameters

14:00 P236
Z. Mróz, J. Tejchman and A. Bobiński
Extended Scale Effect Analysis Required for Structural Size and Shape Variation

Session 6

10:00 P039
M. Svanadze
Boundary Value Problems of Steady Vibrations in the Theory of Thermoelastic Double Porosity Materials

10:20 P095
P.B Béda
On Non-Local Materials, Internal Length and Fractional Calculus

10:40 P237
W. Sumelka, J. Fernández-Sáez and R. Zaera
On Dispersion Phenomena in the Framework of the Fractional Continuum Mechnics

11:00 P089
O. Sergushova
Asymptotic Formulae for the Lowest Natural Frequencies of Strongly Inhomogeneous Structures

Session 7

12:40 P058
K. Takeda, R. Matsui, H. Tobushi and S. Hayashi
Deformation Property of Functionally-Graded Shape Memory Polymer

13:00 P185
M. Smaga and T. Beck
Phase Transformation and Deformation Behaviour of Steels with Different Content of Metastable Austenite

13:20 P091
T. Wegner and D. Kurpisz
Construction of the Limit Surface for Nonlinear Elastic Material Under Complex Load State with Using the Energetic Criterions

13:40 P106
P. Sulich, W. Egner, S. Mroziński and H. Egner
Thermomechanical Fatigue of P91 Steel

14:00 P102
M. Banaszkiewicz, W. Radulski and K. Dominiczak
Numerical Modelling of Creep-Fatigue Damage Development in Steam Turbine Rotors Using Inelastic Material Models

Session 1

10:00 P242 keynote
T. Ikeda
Constitutive Model of Shape Memory Alloy for Cyclic Deformation Based on One-Dimensional Phase Transformation Model

10:40 P014
I. Ario, Y. Chikahiro, M. Nakazawa, J. Holnicki-Szulc, P. Pawłowski and C. Graczykowski
Structural Analysis of a Two-Unit of Scissors Structure

11:00 P064
T. Węgrzyn, J. Piwnik, Z. Stanik and W. Tarasiuk
Argon-Nitrogen Gas Mixtures for Micro-Jet Cooling After Steel Welding

11:20 P138
S. Kumar, R.P. Yadav and A.K. Singh
Surface Wave in a Non-Planar Fgpm Composite Structure Having Imperfect Interface

Session 2

12:40 P161 keynote
R. Lammering and N. Rauter
Nonlinear Elastic Waves for Evaluation of Composite Material Deterioration

13:20 P165
T. Bartel, B. Kiefer, K. Buckmann and A. Menzel
A Variational Framework for the Modelling of Variant Switching and Reorientation in MSMA Using Energy Relaxation Methods

13:40 P057
K. Takeda, R. Matsui, H. Tobushi and E.A. Pieczyska
Design of Rotary Driving Actuator by Using Torsinal Deformation of Sma Tapes

14:00 P208
K. Golasiński, E. Pieczyska, M. Staszczak, M. Maj, T. Furuta and S. Kuramoto
Thermomechanical Behavior of Gum Metal Under Cyclic Loading

Session 7

10:00 P169 keynote

B. Wcisło, M. Mucha, K. Kowalczyk-Gajewska and J. Pamin

Large Strain Thermo-Elasto-Plasticity: Simulation of Shear Banding for Different Stress States

10:40 P166

J. Tabin, B. Skoczeń and J. Bielski

Damage Affected Discontinuous Plastic Flow

11:00 P070

P. Sadowski, K. Kowalczyk-Gajewska and S. Stupkiewicz

Efficient Algorithmic Treatment of the Incremental Mori-Tanaka Scheme for Elasto-Plastic Composites

Session 8

12:40 P227 keynote

M. Wilkus, M. Kaszuba, Z. Gronostajski, Ł. Rauch and M. Pietrzyk

Accounting for Various Mechenism of Failure in Modelling of Tool Wear in Hot Forging

13:20 P109

A. Sahakyan and N.N. Shavlakadze

The Contact Problem for Piecewise-Homogeneous Elastic Plate Reinforced by Finite Elastic Stringer of Variable Stiffness

13:40 P114

P. Pandi and G. Bolzon

A Numerical Investigation of the Influence of the Material Microstructure on the Failure Mode of Metal-Ceramic Composites

14:00 P198

Z. Poniżnik, Z. Nowak and M. Basista

Numerical Modeling of Fracture Toughness of Metal-Ceramic Interpenetrating Phase Composites with Account of Material Microstructure

Session 1

10:00 P162 keynote
V. Alekna, O. Ardatov, R. Kačianauskas, N. Kizilova, J. Simonovic, A. Trykozko and M. Tamulaitien
FEM-based Estimation of Mechanical Strength of Human Vertebrae as New Indicator of Bone Disease and Fracture

10:40 P136
T. Klekiel, R. Będziński and J. Wodzisławski
Modeling of Damping Properties of Articular Cartilage During Impact Load

11:00 P076
S.K. Kourkoulis and A. Mitousoudis
An Experimentally Validated Model for the Ilizarov Fixator Considering the Loss of Wire's Pretension

11:20 P097
V. Creuillot, C. Dreistadt and P. Lipinski
Comparison of Tmj Behavior Between Healthy and Short-Term Edentulous Mandible Wearing Fixed Prosthesis. Case of Incisal Foodstuff Biting

Session 2

12:40 P066
E. Bednarczyk and T. Lekszycki
Osteophytes Development During OA - Consideration Angiogenesis, Mechanical Loading and Tissue Microstructure

13:00 P024
J. Miodowska, J. Bielski and M. Kromka-Szydek
A New Model of Bone Remodeling

13:20 P147
A. Maknickas, V. Alekna, O. Ardatov, N. Kizilova, M. Tamulaitien and R. Kačianauskas
Numerical Failure Study of Trabeculae in Osteoporotic Degradation of Lumbar Vertebral Bod

13:40 P167
A.M. Ryniewicz and T. Madej
FEM Analysis in the Hip Joint Reconstructed by Hip Resurfacing

14:00 P203
K. Kamieniecki, J. Piechna and P. Borkowski
Analysis of a Dynamic Response of a Cochlea Using Fluid-Structure Interaction Model

Plenary lecture

09:00
K. Kowalczyk-Gajewska
Modelling of Microstructure Evolution in Metals and Alloys of High Specific Strength

Geomechanics and Multiscale Modelling of Materials

Session 6

10:00 P056
R. Rafiee, A. Ghorbanhosseini
Hierarchichal Multi-Scale Modeling of CNT-Coated Fiber-Reinfroced Laminates

10:20 P118
G. Bolzon and M. Shahmardani
Adhesion Properties and Macroscopic Response of Metal-Polymer Laminates

10:40 P121
Z. Wang and R. Michalowski
Contact Maturing and Aging of Silica Sand

11:00 P178
R. Balevičius and Z. Mróz
Modeling of Frictional Contact Interaction of Spherical Particles

Session 7

11:40 P160
M. Doroszko and A. Seweryn
Pore-Scale Modeling of the Sintered Porous 316L Deformation Process Using Micro Computed Tomography

12:00 P193
J. Rojek, Sz. Nosewicz, M. Maździarz, P. Kowalczyk and K. Wawrzyk
Modelling of Powder Sintering at Various Scales

12:20 P210
K. Wawrzyk and P. Kowalczyk
Macroscopic Constitutive Model of Sintering Processes and Its Numerical Implementation

Session 1

10:00 P150 keynote

R. Kačianauskas, A. Maknickas, J. Rojek and D. Vainorius

Numerical Simulation of Acoustic Wake Agglomeration of Microparticles in Aerosol

10:40 P110

P. Brzeski, M.Lazarek and P. Perlikowski

Dynamics of Inerter Based Vibration Absorber with Continuously Variable Inertia

11:00 P080

E. Postek, F. Dubois, R. Mozul and P. Cañadas

Modelling of a Collection of Non-Rigid Particles with Smooth Discrete Element Method

Session 2

11:40 P139

V. Volkova

Hybrid Modeling of Nonlinear Dynamic System with Rigid Restoring Force Under Polyharmonic External Excitation

12:00 P116

M. Lazarek, P. Brzeski and P. Perlikowski

Novel Type of Inerer Based Vibration Absorber: Conceptual Design and Practical Realization

12:20 P192

B. Paprocki, A.Pręgowska and J. Szczepański

Information Processing in Brain-Inspired Networks: Size and Density Effects

Session 3

10:00 P040 keynote

R. Matsui, K. Suzuki and A. Kato

Strain Distribution Analysis for Shape Memory Alloy with Functionally Graded Properties

10:40 P245

J. Ivanova, T. Petrova, Elisaveta Kirilova and W. Becker

Optimal Parameters of a Dynamically Loaded Patch/Layer Structure Against the Elastic-Brittle Interface Debonding

11:00 P226

Y. Chikahiro, I. Ario, M. Nakazawa, J. Holnicki-Szulc, P. Pawłowski and C. Graczykowski

Numerical Study on Reinforcement and Optimization of a Scissors Structure

Session 4

11:40 P065

B. Szczucka-Lasota, Z. Stanik, W. Tarasiuk and D. Sieteski

Modern Hybrid Spraying Method for Obtaining High Quality Coatings

12:00 P194

E.A. Pieczyska, M. Staszczak, H. Tobushi, K. Takeda, R. Matsui and S. Hayashi

Shape Memory Polymer - Influence of Temperature, Strain Rate and the Loading History on the Stress-Strain Curves

12:20 P189

M. Staszczak, E.A. Pieczyska and H. Tobushi

Thermomechanical Analysis of Polyurethane Shape Memory Polymer in Cyclic Loading - Shape Recovery and Shape Fixity

Session 9

10:00 P035 keynote

A. Mleczek and P. Kłosowski

Numerical Analysis of the Carpentry Joints for Different Load Schemes

10:20 P143

A. Urbaś and M. Szczotka

Modelling Friction Phenomena in the Dynamics Analysis of Forest Cranes

10:40 P246

P. Ziółkowski, T. Kowalczyk, P. Ziółkowski and J. Badur

Advanced Thermal-FSI Conception and Application in Damage Assessment of Steam Turbine Caused by a Flood Wave

11:00 P247

J. Badur, P. Ziółkowski, S. Kornet, K. Banaś, T. Kowalczyk, M. Bryk, M. Stajnke and P.J. Ziółkowski

On the Advanced Thermal-FSI Approach to the Thermo-Elastic-Fragile Cracking Caused by Thermal Stresses Based on the Burzyński-Pęcherski Criterion

Session 3

10:00 P216 keynote

M. Ratajczak and R. Będziński

Biomechanical Aspects of Brain Tissue Dysfunctions

10:40 P157

G. Gaidulis, R. Kačianauskas, N. Kizilova and Yu. Romashov

A Mechanical Model of Heart Valves with Chords for in Silico Real Time Computations and Cardiosurgery Planning

11:00 P079

E. Stupak, A. Kaceniauskas, V. Starikovicius, A. Maknickas, R. Pacevic, M. Staskuniene, G. Davidavicius and A. Aidietis

Computational Analysis of Patient-Specific Aortic Valves

Session 4

11:40 P048

M. Ciesielski, B. Mochnacki and A. Piasecka-Belkhayat

Analysis of Temperature Distribution in the Heated Skin Tissue Under the Assumption of Thermal Parameters Uncertainty

12:00 P063

A. John and M. John

Numerical Modelling of Foam Metal and Honeycomb Structures for Application in Exoskeleton Devices

12:20 P117

D. Gawel, P.Główka, Sz. Rubczak, T. Kotwicki and M. Nowak

Robust Method for Extracting 3D Medical Objects From MRI Data

11:40 P003
W. Ryżyński
Some Aspects of Analysis Structure Built by Robots

11:40 P016
J.B. Kim
The Effects of a Micro Hole in the Bellows Convolution with Positive Rotation Movement on the Stress Behavior

11:40 P022
J. García Sanz-Calcedo, D.R. Salgado, A. González, O. Lopez, I. Cambero and J.M. Herrera
Drilling Projects by Tool Condition Monitoring System (TCMS)

11:40 P029
I.K Senchenkov, O.P. Chervinko, E. Turyk and I.A. Ryabtsev
Numerical Method of Calculation of Thermomechanical State of Cylindrical Bodies Under Growing and Subsequent Cyclic Loading

11:40 P065
B. Szczucka-Lasota, Z. Stanik, W. Tarasiuk and D. Sieteski
Modern Hybrid Spraying Method for Obtaining High Quality Coatings

11:40 P067
Ch.F. Markides, E.D. Pasiou, S.K. Kourkoulis
The Multi-Layered Ring Under Parabolic Pressure

11:40 P068
D. Miedzińska
Numerical Investigation of Pores Statistic Distribution Inluence on Porous Material Mechanical Behaviour

11:40 P093
K. Kamiński and T. Krzyżański
Thermal Efficiency Investigation of Flat-Plate Solar Collector with Different Type of Geometry

11:40 P107

T. Moldovan and A.M. Ioani

Effect of the Infill Walls on the Structural Response of a 13-Story RC Framed Building Subjected to the Removal of a Corner Column

11:40 P115

R. Grzejda

Modelling Nonlinear Preloaded Multi-Bolted Systems on the Operational State

11:40 P120

K. Augustynek and K. Warwas

Modeling of Closed Kinematic Chains with Flexible Links Using Modification of RFE Method

11:40 P124

B. Tomczyk and P. Szczerba

A New Asymptotic-Tolerance Model of Dynamic Problems for Thin Transversally Graded Cylindrical Shells

11:40 P125

B. Tomczyk and B. Ślęzowski

A New Tolerance Model of Thermodynamic Problems for Thin Uniperiodic Cylindrical Shells

11:40 P140

L. Obrezkov

Equilibrium and Stability of Nonlinearly Elastic Cylinder From Blatz-Ko Material

11:40 P142

M. Ryś and H. Egner

Damage Evolution in the Elastic Plastic Material Reinforced by Brittle Inclusion

11:40 P148

K. Talaśka

Searching for the Material Parameters of the Constitutive Models of the Blood Vessel Walls

11:40 P149

I. Malujda and K. Talaśka

Identification of Thermo-Mechanical Properties of Natural Polymers with a Hybrid Method

11:40 P170

W. Ryniewicz, A.M. Ryniewicz, T. Madej and G. Wiśniewska

Strength Estimation of Teeth Reinforced with Different Types of Post Systems

11:40 P171

G. Mura, M. Adamczyk, M. Nocoń

Design and Multibody Dynamics Analysis of High Mobility Miners Rescue Robot

11:40 P176

M. Biglar, F. Stachowicz, T. Trzepieciński and M. Gromada

Multiscale Analysis of Piezoelectirc Cermics by Using Boundary Element Method

11:40 P183

M. Krajewski and P. Iwicki

The Influence of Wind Loading on Stability of the Truss

11:40 P200

A. Łukowicz and M. Krajewski

Stability of Innovative Cold-Formed Geb Section

11:40 P201

M. Miśkiewicz, J. Chróścielewski, B. Sobczyk and Ł. Pyrzowski

Composite Sandwich Footbridge - Numerical ESL FEM Calculations vs. in Situ Measurements

11:40 P206

S. Kourkoulis, A. Kouvaka, Ch. Andriakopoulou and I. Dontas

An Alternative Approach for the Interpretation of Data From Three Point Bending of Long Bones

11:40 P220
A. Candelario, J. García Sanz-Calcedo, D.R. Salgado, A. González and O. Lopez
Planning, Monitoring and Control of Mechanics Projects by BIM in Collaborative Environments

11:40 P232
J. Radziejewska, A. Sarzyński, M. Strzelec, J. Hoffman and W. Moćko
Evaluation of Dynamic Hardness and Adhesion of Thin Layer Using Nanosecond Laser Pulse

11:40 P235
K. Wacławiak
Simulation of Deposit Growth Onto Recuperator Tubes in Pit Furnaces

11:40 P243
P. Nalepka, K. Nalepka and R.B. Pęcherski
Analysis of Deformation Mechanisms in Cu / α - Al2O3 Interfaces with the Use of HRTEM Images

11:40 P250
I. Pokorska and M. Grzywinski
Computational Sensitivity Analysis of Ruled_Surface

11:40 P251
Ł. Derpenski and A. Seweryn
Ductile Fracture Elements with Notches Under Complex Loading

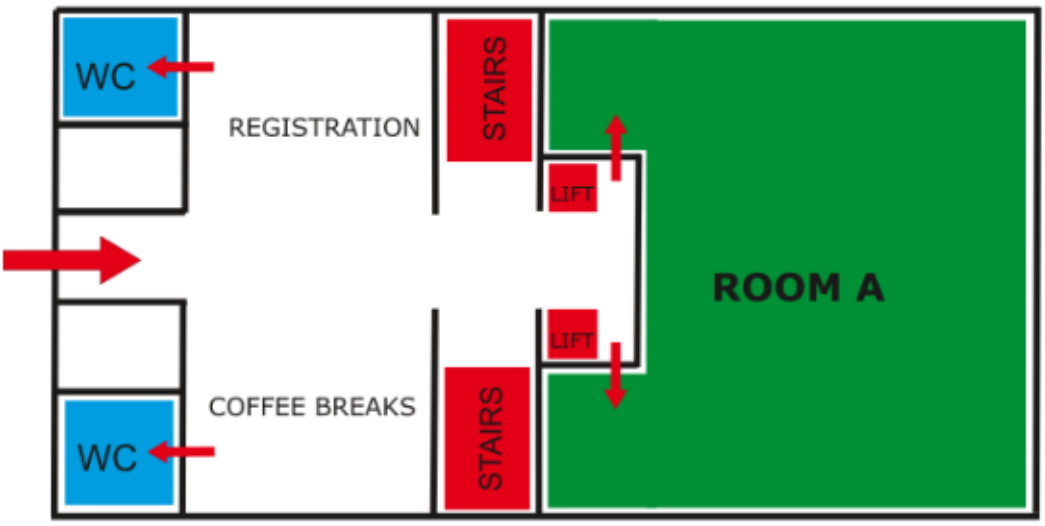
11:40 P254
M. Biglar, F. Stachowicz, T. Trzepiecinski and M. Gromada
Multiscale Analysis of Piezoelectirc Cermics by Using Boundary Element Method

11:40 P257
J. Chrzanowska, P. Denis, T. Mościcki, J. Hoffman, D. Garbiec, L. Frąś and Z. Szymański
Characterization of Tungsten Boride Layers Deposited in Pulsed Laser Ablation Process

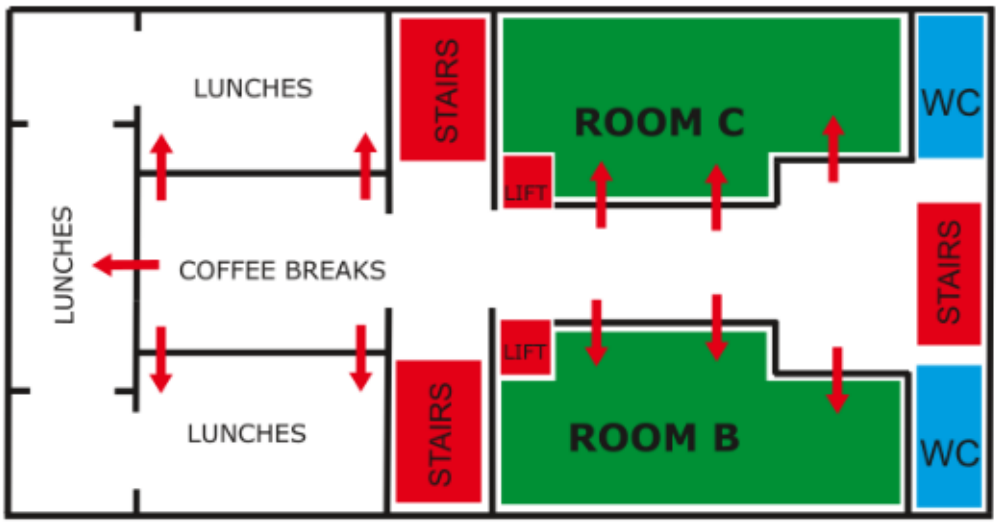
11:40 P258
R. Bijarnia and B. Singh
Propagation of Plane Waves in a Transversely Isotropic Micropolar Piezoelectric Medium

SolMech 2016 Old Library building

Ground floor



1st floor



2nd floor