

**17th INTERNATIONAL CONFERENCE ON COMPUTER METHODS IN MECHANICS,
CMM-2007**

Timetable

Monday, 18 June	
16:00-19:00	Registration
19:00-23:00	Welcome Reception

Tuesday, 19 June				
	Room F	Room G	Room H	Room K
08:00-08:50	Registration			
08:50-09:20		Opening Session		
09:20-10:00		Plenary lecture (PL4)		
10:00-10:40		Plenary lecture (PL2)		
10:40-11:00	Coffee break			
11:00-13:00	Parallel sessions			
	SSME I	SS OPID I KL6	SS BIEM I KL14, KL8	BIOM
13:00-14:30	Lunch			
14:30-16:30	Parallel sessions			
	SSME II	SS OPID II KL17	SS BIEM II KL13, KL16	EXME
16:30-16:50	Coffee break			
16:50-19:10	Parallel sessions			
	SSME III	SS COIN I KL15, KL3	COPR	FLME
19:00-20:00	Dinner			
20:00		Open panel discussion (in Polish)		

Wednesday, 20 June			
	Room F	Room G	Room H
09:00-09:40		Plenary lecture (PL7)	
09:40-10:20		Plenary lecture (PL5)	
10:20-10:40	Coffee break		
10:40-12:40	Parallel sessions		
	AMCM I	SS OPID III KL5	SS MEME I KL2
12:40-14:10	Lunch		
14:10-16:30	Parallel sessions		
	MEMA I	SS COIN II	SS MEME II KL10
18:00-19:00	Concert		
20:00-21:00	Dinner		
21:00		PACMM Meeting	

Thursday, 21 June				
	Room F	Room G	Room H	Room K
09:00-09:40		Plenary lecture (PL6)		
09:40-10:20		Plenary lecture (PL1)		
10:20-11:00	Coffee break			
11:00-13:20	Parallel sessions			
	MEMA II	SS OPID IV KL7	SS MEME III	HETR
13:00-14:30	Lunch			
14:30-16:30	Parallel sessions			
	AMCM II	SS COIN III KL1, KL9	SS MUNA I KL4, KL12	INAP
16:30-16:50	Coffee break			
16:50-19:00	Parallel sessions			
	AMCM III	SS COIN IV	SS INPR I KL11	
20:00-24:00		Banquet		

Friday, 22 June			
	Room F	Room G	Room H
09:00-11:00	Parallel sessions		
	GRSO	SS MUNA II	SS INPR II
11:00-11:40	Coffee break		
11:40-12:20		Plenary lecture (PL3)	
12:20-12:40		Closing Session	
12:40-14:10	Lunch		

NOTATION:

PL	Plenary Lecture
KL	Keynote Lecture
SS	Special Session
BIEM	Boundary Integral Equation Methods
COIN	Computational Intelligence
INPR	Inverse Problems
MEME	Meshless Methods
MUNA	Multiscale Methods and Nanomechanics
OPID	Optimization and Identification
AMCM	Applied mathematics and computational methods
BIOM	Biomechanics
COPR	Coupled problems
EXME	Experimental mechanics
FLME	Fluid mechanics
GRSO	Granular materials and soils
HETR	Heat Transfer
INAP	Industrial Applications
MEMA	Mechanics of Materials
SSME	Solid and Structural Mechanics

CONFERENCE PROGRAMME

MONDAY, 18 JUNE

16:00–19:00 **Registration**
19:00–23:00 **Welcome reception**

TUESDAY, 19 JUNE

08:00–08:50 **Registration**
08:50–09:20 **OPENING SESSION ROOM: G, H**

PLENARY LECTURES

Room: G, H

Chair: Z. Waszczyszyn

09:20–10:00 B. Schrefler, D.P. Boso, M.J. Lefik
Computational Fusion Technology: the Superconducting Coil Analysis

10:00–10:40 R. Białeckci, Z. Ostrowski, A. Fic, A. Klimanek
Application of the Proper Orthogonal Decomposition Method to the solution of direct and inverse heat transfer problems

10:40–11:00 **Coffee break**

PARALLEL SESSIONS

Room: F **Solid and Structural Mechanics I**

Chair: R. Białeckci, W. Gutkowski

11:00–11.20 A. Nowak, J. Tejchman
FE-analysis of buckling strength of silo shells containing bulk solids

11:20–11.40 M. Chybiński, K. Rzeszut, A. Garstecki
Stability of thin walled structures with slotted connections

11:40–12.00 D. Bojczuk
Optimization of buckling load and natural vibration frequency for bar structures with variable support conditions

12:00–12.20 T. Sokół
Estimation of imperfection sensitivity for structures exhibiting buckling mode interaction

12:20–12.40 B. Blachowski, W. Gutkowski
Robust discrete optimization for structural dynamics

12:40–13.00 M. Hirs, K. Wilde
Imperfection localization in beams by FE model updating based on vibration tests

Room: G	Optimization and Identification I , organised by: A. Garstecki
Chair:	A. Garstecki
11:00–11.30	A. Długosz, T. Burczyński, W. Kuś (KEYNOTE) Application of multiobjective evolutionary algorithms in shape optimization of heat exchangers
11:30–11.50	T. Burczyński, W. Kuś, A. Poteralski, M. Szczepanik Global optimization using artificial immune systems and comparison with evolutionary algorithms
11:50–12.10	T. Burczyński, A. Poteralski, M. Szczepanik Evolutionary optimization of the shell-solid structures
12:10–12.30	E. Radaszewska, K. Dems Genetic optimization of curvilinear fibers arrangement in composite elements subjected to heat load
12:30–12.50	M. Jabłoński, D. Bojczuk Optimal design of active support of smart structures under forced harmonic vibrations using adjoint method
Room: H	Boundary Integral Equation Methods I , organised by: W.L. Wendland
Chair:	W.L. Wendland
11:00–11.30	E.P. Stephan, S. Geyn, M. Maischak, M. Andres (KEYNOTE) A boundary element / finite element procedure for metal chipping
11:30–12.00	M. Habarta, T. Burczyński (KEYNOTE) Boundary integral equation method for gradient elasticity
12:00–12.20	W.L. Wendland, G.C. Hsiao, G. Of, O. Steinbach Boundary integral equations and fast boundary element methods
12:20–12.40	H. Harbrecht On the fast solution of 3D inverse obstacle scattering problems
Room: K	Biomechanics
Chair:	E. Majchrzak, W. Ostachowicz
11:00–11.20	W. Bochniak, A. Martowicz, Ł. Pieczonka, T. Uhl Analysis of stress distribution in human femur in the area of hip joint endoprosthesis supported by uncertainty analysis
11:20–11.40	A. John, P. Wysota Elastoplastic analysis of the plate stabilizer and femur bone
11:40–12.00	P. Kowalczyk Computational model for anisotropic microstructure remodelling of cancellous bone
12:00–12.20	A. John, P. Orantek, M. Miarka The interval and fuzzy analysis of the human pelvic bone
12:20–12.40	A. Vahdati, F. Ghalichi, G. Rouhi, M. Tahani Computer simulation of trabecular bone remodeling: role of cellular accommodation in time-dependent simulations
12:20–12.40	M. Kopernik, D. Szeliga, J. Nowak Modelling of mechanical response of leaflet of aortic valve based on the sensitivity analysis with respect to geometry and material parameters
12:40–13.00	P. Konderla, K. Patralski Analysis of flow through the aortic valve bioprosthesis model
13:00–14:30	Lunch

PARALLEL SESSIONS

Room: F **Solid and Structural Mechanics II**

- Chair: T. Lewiński, A.P. Zieliński
- 14:30–14.50 M. Guminiak, R. Sygulski
Analysis of fluid-plate interaction in free vibrations by the BEM
- 14:50–15.10 G. Widłak, A.P. Zieliński
Shakedown FEM analysis of high-pressure reactors with stress concentrators
- 15:10–15.30 Z. Pozorski, M. Chuda-Kowalska, R. Studziński, A. Garstecki
Numerical modelling of sandwich panels with deep profiled facings
- 15:30–15.50 Z. Pawlak, J. Rakowski
Analysis of infinite plate strip on elastic foundation by the finite strip method
- 15:50–16.10 P.M. Lewiński, P.P. Więch
Finite element model for nonlinear analysis of reinforced concrete slabs of moderate thickness

Room: G **Optimization and Identification II**, organised by: A. Garstecki

- Chair: D. Bojczuk
- 14:30–15.00 J. Wiśniewski, K. Dems (KEYNOTE)
Stiffness optimisation of fibre-reinforced composites
- 15:00–15.20 T. Bednarek, W. Sosnowski
Multiple eigenvalue optimization problem for linear discrete systems using the DDM method
- 15:20–15.40 R. Lewandowski
Sensitivity analysis for structures executing nonlinear free and steady state vibration
- 15:40–16.00 G. Dzierżanowski
On a certain non-iterative solution method for material layout optimization
- 16:00–16.20 M. Nowak
Biomimetic aspects of the topology optimization problem

Room: H **Boundary Integral Equation Methods II**, organised by: W.L. Wendland

- Chair: W.L. Wendland
- 14:30–15.00 M. Schanz, L. Kielhorn (KEYNOTE)
Galerkin-BEM for elastodynamics in the time domain based on the convolution quadrature method
- 15:00–15.30 W. Weber, K. Kolk, G. Kuhn (KEYNOTE)
Fast 3D crack growth analyses by the combination of fast BEM techniques
- 15:30–15.50 U. Kähler, R. Schneider
Wavelet radiosity
- 15:50–16.10 R. Górski, P. Fedeliński
Free vibration analysis of non-homogeneous plates by the boundary element method

Room: K	Experimental mechanics
Chair:	K. Jármai, W. Ostachowicz
14:30–14.50	T. Wandowski, P. Malinowski, W. Ostachowicz Influence of transducers number on damage localisation using multi-phased array
14:50–15.10	P. Kudela, W. Ostachowicz Damage detection in composite rods by the elastic wave propagation method
15:10–15.30	K. Wilde, M. Rucka, J. Chróścielewski Wave propagation in elastic rod and plate - simulations and experiments
15:30–15.50	G. Kovács, J. Farkas, K. Jármai Analysis of a new sandwich-like structure
16:30–16:50	Coffee break

PARALLEL SESSIONS

Room: F	Solid and Structural Mechanics III
Chair:	R. Sygulski, L. Ziemiański
16:50–17.10	D. Jasińska, M. Janus-Michalska Contact problem for a class of anisotropic elastic cellular bodies with nonpositive Poisson's ratio
17:10–17.30	P. Litewka A smoothing technique for frictional beam-to-beam contact
17:30–17.50	G.M. Ashawesh, S.M. Issa, A.A. Alfagih Aeroelastic analysis of a real composite wing box using finite element method
17:50–18.10	J. Wdowicki, E. Wdowicka Analysis of spatial shear wall structures of variable cross-section
18:10–18.30	K. Lipiński Application of multibody system dynamics for modelling of spherical four-bar mechanism
Room: G	Computational Intelligence I , organised by: T. Burczyński
Chair:	T. Burczyński
16:50–17.20	Z. Waszczyszyn, M. Słoński (KEYNOTE) From deterministic to Bayesian neural networks: some applications to structural mechanics
17:20–17.40	M. Słoński Robust prediction of mechanical properties of HPC with Bayesian neural networks
17:40–18.10	A. Borowiec, L. Ziemiański (KEYNOTE) Neural network identification of damage in beams based on frequency changes caused by an additional mass
18:10–18.30	M. Perzyk, J. Kozłowski, R. Biernacki, A. Kocharński Analysis of significances and interactions of input variables of neural models for engineering applications
18:30–18.50	T. Burczyński, A. Poteralski, M. Szczepanik Advanced optimal design using evolutionary algorithm

Room: H **Coupled problems**

Chair: B.A. Schrefler, A. Borkowski

16:50–17.10 D. Gawin, F. Pesavento, B.A. Schrefler
Numerical modelling of concrete strains by means of effective stresses, with application to concrete at early ages and at high temperature

17:10–17.30 T. Krykowski
The simulation of concrete cover fracturing process as the result of corrosion

17:30–17.50 A. Nagórka
Partitioned multigrid solution of a 3D strongly coupled thermomechanical problem

17:50–18.10 R. Korycki
Sensitivity analysis of the coupled heat and mass transport within textile structures

18:10–18.30 K.M. Majewska, A.J. Żak, W.M. Ostachowicz
Magnetic shape memory effect by finite element method

18:30–18.50 S.M. Bosiakov
Application of functional programming for modeling wave movements in homogeneous piezoactive anisotropic environments

18:50–19.10 G. Dziatkiewicz, P. Fedeliński
Eigenvalue solution for nonhomogenous piezoelectric plates using the boundary element method

Room: K **Fluid mechanics**

Chair: B. Bermúdez, B. Mochnacki

16:50–17.10 T. Stręk
Finite element analysis of interaction of fluid with auxetic structure

17:10–17.30 A. Nicolás, E. Báez, B. Bermúdez
Natural convection instability of air in a tall cavity

17:30–17.50 B. Bermúdez, A. Nicolás
Velocity-vorticity viscous incompressible flows

17:50–18.10 E. Błazik-Borowa
The application of the sensitivity analysis of flow properties to parameters of the $k-\varepsilon$ method

18:10–18.30 P.J. Matuszyk, M. Paszyński
Fully automatic hp finite element method for Stokes problem in two dimensions

18:30–18.50 T. Jankowiak, T. Łodygowski, P.W. Sielicki
Modelling of pressure distribution after explosion

18:50–19.10 S. Dykas, W. Wróblewski, T. Chmielniak
Hybrid uRANS/Euler method of aeroacoustic noise prediction

19:00–20:00 **Dinner**

20:00 **Open panel discussion** on the role of computer modelling and simulation in contemporary science (in Polish). Introduction: M. Kleiber, moderator: J. Orkisz.

WEDNESDAY, 20 JUNE

PLENARY LECTURES

Room: G, H

- Chair: W.L. Wendland
09:00–09:40 P. Wriggers, J. Nettingsmeier
Multi-scale methods in contact mechanics
19:40–10:20 M.A. Schweitzer
Meshfree methods for partial differential equations

10:20–10:40 Coffee break

PARALLEL SESSIONS

Room: F Applied mathematics and computational methods I

- Chair: P. Fedeliński, V. Kompiš
10:40–11.00 J. Ptaszny, P. Fedeliński
Analysis of two-dimensional micromechanical structures by the fast multipole boundary element method
11:00–11.20 T. Czyż, P. Fedeliński, R. Górski
Subregion boundary element method for inelastic structures
11:20–11.40 B. Baranoglu
Exact and non-singular integration in the BEM using 2-D discontinuous quadratic elements for Laplace Equation
11:40–12.00 W. Gilewski
Some extensions of energy-difference criterion for finite element evaluation
12:00–12.20 W. Gilewski, M. Sitek
Evaluation of shell finite elements: ellipticity, consistency and inf-sup condition. Some practical examples.
12:20–12.40 M. Kurska, T. Lewiński
Evaluation of convergence of DST and DSG3 elements in equilibrium problems of elastic plates of moderate thickness

Room: G	Optimization and Identification III , organised by: A. Garstecki
Chair:	R. Korycki
10:40–11.10	S. Czarnecki, M. Kursa, T. Lewiński (KEYNOTE) Optimal design of elastic properties of the core layers of sandwich plates
11:10–11.30	A. Myśliński Shape and topology structural optimization by level set method
11:30–11.50	J. Grabowska, M. Krawczuk, M. Palacz Identification of the discontinuity kind in one-dimensional isotropic elements
11:50–12.10	T. Burczyński, P. Orantek, W. Kuś, R. Górski, A. Poteralski, M. Szczepanik The identification of uncertain parameters in mechanical structures
12:10–12.30	A. Knitter-Piątkowska, Z. Pozorski, A. Garstecki Detection of localized damage using dynamic response fields and wavelet transformation
Room: H	Meshless Methods I , organised by: J. Orkisz
Chair:	J. Orkisz, V. Sladek
10:40–11.10	L. Beuth, T. Benz, P.A. Vermeer, Z. Więckowski, C.J. Coetzee (KEYNOTE) Large deformation analysis using a quasi-static Material Point Method
11:10–11.30	V. Srinivasan, G. Subbarayan Hierarchical partition of unity constructions for meshless optimal design in the presence of cracks
11:30–11.50	Z. Więckowski Material point analysis of doming phenomenon in granular flow problem
11:50–12.10	S. Czarnecki Application of the global search algorithm and the meshfree method in shape optimization of 2D elastic bodies
12:10–12.30	A. Uscilowska Meshless method for a plate dynamics
12:40-14:10	Lunch

PARALLEL SESSIONS

Room: F **Mechanics of materials I**

Chair: M. Kuczma, P. Wriggers

- 14:10–14.30 I. Marzec, J. Bobiński, J. Tejchman
Analysis of strain localization in concrete beams with a coupled elasto-plastic-damage model with non-local softening
- 14:30–14.50 T. Jankowiak, T. Łodygowski
Cumulative fracture criterion for concrete spalling
- 14:50–15.10 J. Bobiński, J. Tejchman
FE-simulations of cracks in concrete under mixed mode conditions
- 15:10–15.30 T. Majewski, I. Marzec, T. Małecki, J. Tejchman
FE-studies on strain localization in reinforced concrete elements
- 15:30–15.50 M. Serafin, W. Cecot
Computational aspects of residual stress determination by the successive cracking method
- 15:50–16.10 W. Karmowski
A concept of analytical-numerical stress analysis of the elastic body with a crack
- 16:10–16.30 J. Jackiewicz
Application of the combined method of contour elements with nonlocal regularization to modeling crack problems

Room: G **Computational Intelligence II**, organised by: T. Burczyński

Chair: L. Ziemiański

- 14:10–14.30 W. Kuś, T. Burczyński
Comparison of computational intelligence algorithms in inverse acoustic problems
- 14:30–14.50 E. Pabisek, Z. Waszczyszyn
Identification of constitutive matrix for equivalent elastic orthotropic material applying FEM/NCM method and monitored structural responses
- 14:50–15.10 B. Miller, L. Ziemiański
FE model updating using eigenfrequencies and eigenforms
- 15:10–15.30 P. Orantek, T. Burczyński
The identification of stochastic parameters in mechanical structures
- 15:30–15.50 M. Przychodzki, R. Lewandowski
Optimal active control of building structures based on acceleration feedback using artificial neural networks
- 15:50–16.10 M. Jakubek
Parametric neural identification of I beam-to-column semi-rigid steel connections

Room: H	Meshless Methods II , organised by: J. Orkisz
Chair:	V. Kompiš, J.Kolodziej
14:10–14.30	J. Krok, J. Orkisz A discrete analysis of boundary-value problems with special emphasis on symbolic derivation of meshless FDM/FEM models
14:30–14.50	M.J. Pazdanowski Estimation of residual stress states in railroad rails and wheels subject to manufacturing and service loads
14:50–15.10	J. Orkisz, S. Milewski Higher Order approximation multigrid approach in the Meshless Finite Difference Method
15:10–15.30	I. Jaworska, J. Orkisz On the multipoint approach in the Meshless FDM
15:30–15.50	J. Orkisz, Ł. Dobrowolski On the best approach to moving least squares approximation
18:00–19:00	Concert
20:00–21:00	Dinner
21:00	PACMM Meeting

THURSDAY, 21 JUNE

PLENARY LECTURES

Room: G, H

Chair: K. Dems

09:00–09:40 K. Sobczyk

Morphological complexity and fracture of material microstructures: Challenges in modelling and computing

19:40–10:20 O. Allix

A look on “exact” Multi-Scale Strategy for Structural Mechanics and their adaptation for solving non-linear problem

10:20–11:00 Coffee break

10:00–18:00 Conference Tour for accompanying persons

PARALLEL SESSIONS

Room: F Mechanics of materials II

Chair: O. Allix, W. Karmowski

11:00–11.20 J. Kozicki, J. Tejchman

Effect of aggregate density on fracture process in concrete using 2D discrete lattice model

11:20–11.40 W. Sumelka, A. Glema

The evolution of microvoids in elastic solids

11:40–12.00 N.L. Troyani, C.J. Gomes, P.M. Báiz

Capability for capturing temperability as a criterion for the validity of thermoviscoelastic constitutive equations

12:00–12.20 P. Romanowicz, A.P. Zieliński

Application of multiaxial high-cycle fatigue criterion to repeated rolling contact

12:20–12.40 M. Kuczma, K. Kula, R. Schlebusch, B.W. Zastra

Numerical simulation of thin composite structures with delamination

12:40-13.00 M.M. Kamiński

Sensitivity analysis in homogenization of periodic fiber-reinforced composites via the response function method

13:00-13.20 J.Podgórski, T. Nowicki

Fine mesh window technique used in fracture analysis of the composites with random structure

Room: G	Optimization and Identification IV , organised by: A. Garstecki
Chair:	P. Fedeliński
11:00–11.30	P. Foryś (KEYNOTE) A modified particle swarm optimizer applied to mixed variable design of truss structures
11:30–11.50	K. Ziopaja, Z. Pozorski, A. Garstecki Damage identification in layered structures using discrete wavelet transform
11:50–12.10	J. Farkas, K. Jármai, K. Rzeszut Optimum design of a welded stringer-stiffened steel cylindrical shell of variable diameter subject to axial compression and bending
12:10–12.30	S. Kmet, K. Jármai, J. Kanócz, J. Farkas Parametric evaluation of large-span suspended members
12:30–12.50	M. Rodak, M. Ostwald, J. Kasprzak Multiobjective optimization of cold-formed beams with the use of normal constraint method
Room: H	Meshless Methods III , organised by: J. Orkisz
Chair:	J. Orkisz, M. Pazdanowski
11:00–11.30	J. Magiera (KEYNOTE) Enhancement of noisy neutron diffraction data by the meshless physically based global method
11:30–11.50	V. Sladek, J. Sladek, Ch. Zhang Numerical analysis of axisymmetric problems in functionally graded elastic materials by Local Integral Equations
11:50–12.10	V. Kompiš, M. Štiavnický, A. Munjiza Method of Continuous Source Functions
12:10–12.30	P. Gorzelańczyk, J.A. Kołodziej Some remarks concerning the shape of the source contour with application of the method of fundamental solutions to elastic torsion of prismatic rods
12:30–12.50	J. Krok, J. Wojtas An adaptive approach to experimental data collection based on a posteriori error estimation of data
Room: K	Heat transfer
Chair:	P. Aliawdin, D. Gawin
11:00–11.20	E. Majchrzak, G. Kałuża Numerical solution of thermal wave model of bioheat transfer using the boundary element method
11:20–11.40	E. Majchrzak, M. Jasiński Burn evaluation of skin subjected to instantaneous heating using the thermal wave model of bioheat transfer
11:40–12.00	A. Fic, I. Szczygieł, A. Sachajdak Temperature distribution in the system for pad welding - sensitivity analysis
12:00–12.20	P. Aliawdin, J. Polczynski Numerical analysis of heat transfer in road pavement structures
12:20–12.40	B. Mochnacki, M. Dziewoński, G. Kałuża Freezing process of biological tissue - identification of latent heat
13:00–14:30	Lunch

PARALLEL SESSIONS

Room: F **Applied mathematics and computational methods II**

Chair: J. Rakowski, B. Wrana

14:30–14.50 B. Boni, J. Haan

Displacement-based versus stress-based submodeling techniques

14:50–15.10 Z. Więckowski, I. Wagner

Error estimation for stress-based finite element solution

15:10–15.30 W. Jakubowski

Application of the stress recovery method using complementary energy minimization for mesh adaptation

15:30–15.50 J. Kriváček

Closed-form stiffness matrices of finite elements with linearly varying elastic modulus

15:50–16.10 F. Abed-Meraim, A. Combescure

Improved formulation for the stabilized enhanced strain solid-shell element (SHB8PS): geometrically linear and non-linear applications

16:10–16.30 S. Yu. Fialko

A sparse incomplete Cholesky conjugate gradient method for finite-element analysis of large-scale problems in structural mechanics

Room: G **Computational Intelligence III**, organised by: T. Burczyński

Chair: Z. Waszczyszyn

14:30–15.00 W. Beluch, T. Burczyński, P. Orantek (KEYNOTE)

The fuzzy strategy in identification of laminates' elastic constants

15:00–15.20 T. Burczyński, A. Długosz, G. Dziatkiewicz, P. Orantek

Identification of uncertain parameters in coupled problems

15:20–15.40 A. Piasecka Belkhat

Modelling of two-dimensional transient diffusion problem with interval thermal parameters and interval boundary conditions

15:40–16.10 W. Kuś, T. Burczyński (KEYNOTE)

Applications of parallel artificial immune system in shape optimization

16:10–16.30 P. Nazarko, L. Ziemiański

Damage evaluation in structure members using Neural Networks

Room: H **Multiscale Methods and Nanomechanics I**, organised by: M. Pietrzyk, T. Burczyński, P. Dłużewski

Chair: M. Pietrzyk, T. Burczyński, P. Dłużewski

14:30–15.00 J. Chen, H.P. Lei, P. Ruterana, G. Nouet, A. Belkadi, P. Dłużewski (KEYNOTE)
On the stress induced InGaN/GaN quantum wells and quantum dots

15:00–15.30 A. Mrozek, W. Kuś, T. Burczyński (KEYNOTE)
Boundary and finite element methods coupled with molecular model in the multiscale analysis

15:30–15.50 D.P. Boso, M.J. Lefik, B.A. Schrefler
A generalised self-consistent like homogenisation for non-linear thermo-mechanical analyses

15:50–16.10 M. Chrzanowski, K. Nowak
Cellular Automata in Damage Mechanics - scale effect in modelling of creep damage

16:10–16.30 Ł. Madej, M. Pietrzyk, V. Pidvysotskyy
Multi scale analysis of the strain state evolution during the ring compression test

Room: K **Industrial applications**

Chair: A. John, K. Wilde

14:30–14.50 Ł. Doliński
Analysis of the influence of composite coat damages on dynamic of wind turbine blade

14:50–15.10 G. Kokot, A. John, J. Górka
Welding process simulation using FEM

15:10–15.30 A. Kaczor, R. Sygulski
Analysis of floating roofs of cylindrical tanks under seismic motion

15:30–15.50 M. Palacz, M. Mieloszyk, W. Ostachowicz
Method of monitoring a technical condition of the rig support

15:50–16.10 B. Szybiński, J. Krużelecki
Numerical analysis and optimisation of connection between HF Pipe and CT2 Pipe for the CMS experiment

16:30–16:50 **Coffee break**

PARALLEL SESSIONS

Room: F	Applied mathematics and computational methods III
Chair:	B. Boni, T. Lewiński
16:50–17.10	B. Wrana Identification of damping by means of wavelet and half bandwidth method
17:10–17.30	R. Schneider, C. Schwab, H. Harbrecht Sparse second moment analysis for potentials on stochastic domains
17:30–17.50	J. Kasprzak, M. Ostwald A multiobjective evolutionary approach to solving scalar optimization problems with a parameter
17:50–18.10	E. Zieniuk, A. Boltuc Boundary points as a non-element method of modeling smooth geometries in two-dimensional problems defined by Navier-Lame equation solved by PIES
18:10–18.30	J. Rakowski, P. Wielentejczyk Dynamics of one-dimensional systems by NURBS - analytical solution
18:30–18.50	H. Argeso, A.N. Eraslan Deformation analysis of FGM rotating hollow shafts with shooting method
Room: G	Computational Intelligence IV , organised by: T. Burczyński
Chair:	T. Burczyński, W. Kuś
16:50–17.10	A. Krok Simulation of hysteresis loops using neural networks with Kalman filtering
17:10–17.30	M. Kłos Neural simulation of dynamic parameters and identification of shape parameters for the plane curved bars eigenproblem
17:30–17.50	P. Nazarko, L. Ziemiański, Ch. Efstathiades, Ch.C. Baniotopoulos Neural detection of damaged supports in the aluminium curtain-wall systems
17:50–18.10	M. Jurek, P. Nazarko, L. Ziemiański Identification of additional mass in aluminium strip based on structural wave propagation and neural computing
18:10–18.30	T. Burczyński, M. Szczepanik Topology optimization for minimum mass criterion using evolutionary methods

Room: H	Inverse Problems I , organised by: G. Maier and A. Morassi
Chair:	G. Maier, A. Morassi
16:50–17.20	E. Majchrzak, J. Mendakiewicz, M. Paruch (KEYNOTE) Comparison of different algorithms of temperature-dependent specific heat identification
17:20–17.40	M. Paszyński, D. Szeliga, B. Barabasz, P. Macioł An algorithm for relating convergence ratios of inverse and direct problem solutions by means of the self-adaptive hp finite element method
17:40–18.00	M. Bocciarelli, G. Bolzon Identification of constitutive parameters of thin layers on substrate
18:00–18.20	D. Słota Reconstruction of the heat transfer coefficient in the three-phase inverse design Stefan problem by genetic algorithm
18:20–18.40	I. Szczygieł, A. Fic, A. Sachajdak Inverse analysis of thermal phenomena during surfacing by welding
18:40–19.00	A. Bilotta, E. Turco Influence of data-unknowns ratio on the solution of Cauchy problems
20:00–24:00	Banquet

FRIDAY, 22 JUNE

PARALLEL SESSIONS

Room: F **Granular materials and soils**

Chair: J. Tejchman, A. Truty

09:00–09.20 J. Rojek

Combined discrete/finite element modelling of rock cutting problems

09:20–09.40 J. Tejchman, J. Górski

FE-studies on size effects in granular bodies within micro-polar hypoplasticity

09:40–10.00 M. Wójcik, J. Tejchman

An uncoupled ALE-formulation to describe the granular flow behaviour in silos with inserts

10:00–10.20 J. Kozicki, J. Tejchman

Modelling of a direct shear test in granular bodies with a continuum and a discrete approach

10:20–10.40 A. Borowiec, B. Wrana

Response of a two phase saturated soil layer under dynamic load

10:40–11.00 A. Truty, K. Piotrowski, K. Dziewoński

3D modelling of progressive deformation of Kościuszko's mound

Room: G **Multiscale Methods and Nanomechanics II**, organised by: M. Pietrzyk, T. Burczyński, P. Dłużewski

Chair: M. Pietrzyk, T. Burczyński, P. Dłużewski

09:00–09.20 B. Mochnacki, M. Ciesielski

Micro/macro model of solidification. Numerical simulation using the control volume method

09:20–09.40 G. Kokot, W. Kuś

Multiscale analysis of shell structures with small features

09:40–10.00 M. Kopernik, A. Stanisławczyk, D. Szeliga

Problems of material models for hard nanocoatings

10:00–10.20 M. Petrov, L. Lymperakis, J. Neugebauer, R. Stefaniuk, P. Dłużewski

Nonlinear elastic effects in group III-Nitrides: From ab initio to finite element calculation

Room: H	Inverse Problems II , organised by: G. Maier and A. Morassi
Chair:	G. Maier, A. Morassi
09:00–09.20	G. Alessandrini, A. Bilotta, A. Morassi, E. Rosset, E. Turco Size detection of buried inclusions by Electrical Impedance Tomography
09:20–09.40	M. Ageno, G. Bolzon, G. Maier An inverse analysis technique for the material parameter identification of elastic-plastic free standing foils
09:40–10.00	S. Caddemi, A. Morassi Identification of concentrated damages in elastic beams
10:00–10.20	M. Dilena, A. Morassi Damage detection in vibrating beams and generalized Fourier coefficients
10:20–10.40	R. Ardito, G. Maier Damage diagnosis of concrete dams on the basis of seasonal monitoring
10:40–11.00	C. Gentile Condition assessment of historic arch bridges from modal and structural identification: the Victory bridge (1923)
11:00–11.20	A. De Stefano, D. Sabia, R. Spadavecchia Conditions for the Ho-Kalman algorithm application: analysis and case studies
11:00-11:40	Coffee break

PLENARY LECTURE

Room: G, H	
Chair:	B.A. Schrefler
11:40–12:20	M. Pietrzyk, Ł. Madej Multiscale modelling of discontinuous and stochastic phenomena in materials

12:20-12:40 CLOSING SESSION ROOM: G, H

12:40-14:10 Lunch