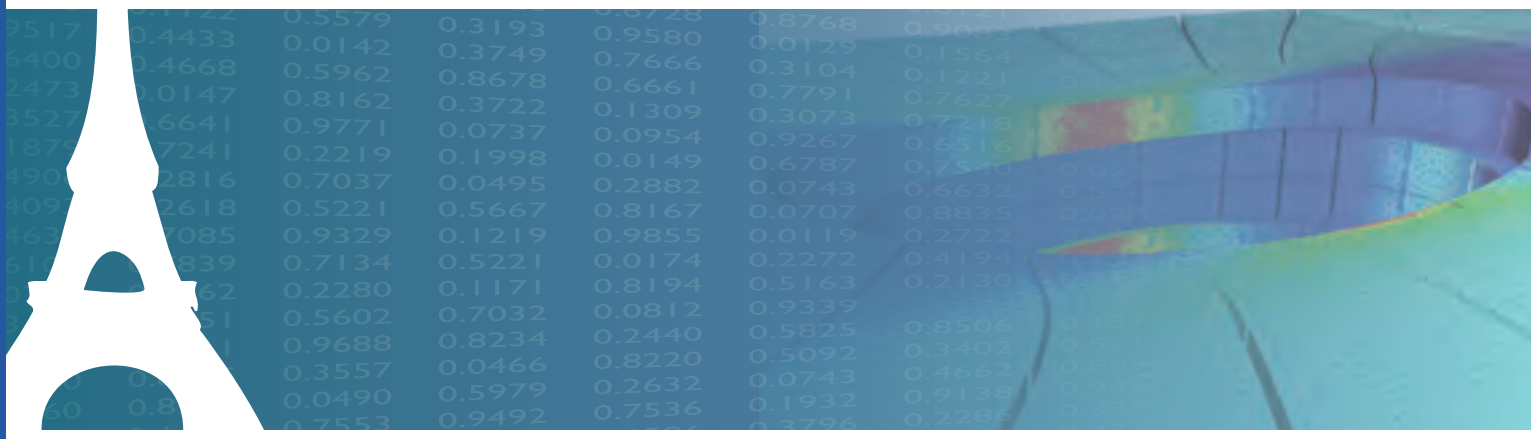
ECCOMAS
European Community on
Computational Methods in
Applied Sciences

ECCM 2010

IV European Conference on Computational Mechanics

Solids, Structures and Coupled Problems in Engineering
May 16-21, 2010 | Palais des Congrès, Paris, France



Programme

ECCOMAS conference

Organising institutions

ECCOMAS	European Community on Computational Methods in Applied Sciences
IACM	International Association for Computational Mechanics
ECCSM	Computational, Solid and Structural Mechanics Committee
CSMA	French Computational Structural Mechanics Association
GACM	German Association for Computational Mechanics
GAMM	Gesellshaft für Angewandte Mathematik und Mechanik
CEA	
ENS Cachan	

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Total

ECCM associated events

MAAXIMUS Public Forum

The research leading to MAAXIMUS results has received funding from the European Community's Seventh Framework Programme FP7/2007 2013 under grant agreement n°213371
see www.maaximus.eu for further information

E-CAero Special Session

E-CAero is a collaborative network coordinated by ECCOMAS in the field of aeronautical research funded as a coordination and support action by the European Community (FP7 grant agreement ACS8-GA-2009-234229)
see www-e-caero.com for further information

CLAROM

Club for research on offshore structures. Group of research organisations and companies organising exchange of information on emerging technologies and carrying pre-competitive research projects

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Conference organization

Greetings from the co-chairmen of ECCM 2010

Welcome to the Fourth European Conference on Computational Mechanics "Solids, Structures and Coupled problems in Engineering".

What are the reasons of the tremendous success of this edition of the Conference, with over 2,100 submitted abstracts and about 1,700 papers to be presented? Of course this is the first time this Conference is co-organised under the umbrella of national associations of two countries very active in the field (CSMA in France and GAMM and GACM in Germany). Of course Paris is an attractive city. Nevertheless, the main reason is surely the overwhelming response to the call of mini-symposia and the commitment to all people involved in mini-symposia organization. Clearly the success of the Conference is the success of the entire community!

We would like to express our gratitude to all the sponsors for their strong support of the conference and its main subject "Computational Mechanics". We also wish to thank Professor Oñate and Cristina Forace from CIMNE for their help in the dissemination of the information, and Professor Mota-Soares who, as organizer of ECCM 2006, helped us in launching this Conference. Also very helpful was the support of Professors Schrefler and Perego, who generously shared their experience as organizers of WCCM 2008 in Venice. This conference could not have been organized without the incredible commitment of the CEA and especially of Thierry Charras (General Secretary) and Antoine Letellier (Web site). Finally, the active involvement of Marc Bonnet and Hachmi Ben Dhia in the scientific management, and of David Néron in the programme edition, were also essential.

We hope this Conference will meet your expectations, both scientifically and socially, and we are very proud to be able to welcome all of you in Paris.

O. Allix and P. Wriggers
Chairmen of the Conference

Greetings from the President of ECCOMAS

On behalf of the European Community on Computational Methods in Applied Sciences (ECCOMAS) it is a great pleasure for me to welcome you to the IV European Conference on Computational Mechanics in Solids, Structures and Coupled Problems in Engineering (ECCM 2010) here in Paris. The ECCM Conference, together with the ECCOMAS congress and the European Conference on Computational Fluid Dynamics (CFD), constitute the three main scientific events of ECCOMAS organized every four years. ECCOMAS is a scientific organization grouping European associations with interests in the development and applications of computational methods in science and technology. The mission of ECCOMAS is to promote joint efforts of European universities, research institutes and industries which are active in the broader field of numerical methods and computer simulation in Engineering and Applied Sciences, to address critical societal and technological problems with particular emphasis on multidisciplinary applications. In addition to these three large-scale European events, ECCOMAS supports regional conferences, endorses thematic conferences and workshops, promotes young investigators conferences and courses and encourages the organization of open industrial days within its fields.

The main objective of the ECCM Conference series is to provide a forum for presentation and discussion of state-of-the-art advances in scientific computing applied to solids, structures and coupled problems in engineering, including basic methodologies, scientific developments and industrial applications, and to serve as a platform for establishing links between research groups of academia and industry with common as well as complementary activities. The previous ECCM Conferences were held in Munich in 1999, Cracow in 2001 and Lisbon in 2006. The ECCM 2010 Conference inaugurates the awarding of the Euler Medal for outstanding and sustained contribution to the area of computational solids and structural mechanics and coupled problems in engineering. This Medal, together with the O.C. Zienkiewicz Award for young scientists in the field of computational engineering sciences, is awarded biannually at the ECCOMAS Congresses and the ECCM Conferences.

I would like to take this opportunity to thank the Chairmen of the ECCM 2010 Conference, Professors Oliver Allix and Peter Wriggers and their teams for the excellent organization and for the impressive number of participants, reaching almost 2,000, which is a landmark in the history of the ECCM Conferences and to extend my best wishes to all the participants for an enjoyable and fruitful experience, both from the scientific and cultural points of view.

M. Papadrakakis
President of ECCOMAS

Organizing institutions

- ECCOMAS[12] European Community on Computational Methods in Applied Sciences
- IACM International Association for Computational Mechanics
- ECCSM[3] Computational, Solid and Structural Mechanics Committee
- CSMA French Computational Structural Mechanics Association
- GACM German Association for Computational Mechanics
- GAMM Gesellshaft für Angewandte Mathematik und Mechanik
- CEA
- ENS Cachan
- Ecole Polytechnique
- Ecole Centrale Paris

Organizing committee

- O. Allix (Conference Chairman), ENS Cachan, France
- P. Wriggers (Conference Chairman), Leibniz Universität Hannover, Germany
- T. Charras (General Secretary), CEA, France
- H. Ben Dhia, Ecole Centrale Paris, France
- M. Bonnet, Ecole Polytechnique, France
- D. Néron, ENS Cachan, France
- A. Letellier, CEA, France

International programme committee

- E. Oñate (President of IACM), Polytechnic University of Catalunya, Spain
- H. Mang (Vice-President of ECCOMAS), Technical University of Vienna, Austria
- M. Papadrakakis (President of ECCOMAS), National Technical University of Athens, Greece
- O. Allix (Conference Chairman), ENS Cachan, France
- P. Beckers, University of Liège, Belgium
- A. I. Borovkov, Polytechnical University of Saint Petersburg, Russia
- R. de Borst, Technische Universiteit Eindhoven, The Netherlands
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- D. Givoli, Israel Institute of Technology, Israel
- M. Kleiber, Polish Academy of Science, Poland
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- C. A. Mota Soares, Technical University of Lisbon, Portugal
- R. Ohayon, CNAM Paris, France
- D.R.J. Owen, University of Wales, United Kingdom
- E. Ramm, University of Stuttgart, Germany
- B. Schrefler, University of Padua, Italy
- E. Stein, University of Hannover, Germany
- N.E. Wiberg, Chalmers University, Sweden
- P. Wriggers (Vice Chairman), IKM/LUH, Germany

Local programme committee

- O. Allix, LMT, ENS Cachan, France
- H. Ben Dhia, LMSS-MAT, Ecole Centrale Paris, France
- M. Bischoff, Universität Stuttgart, Germany
- M. Bonnet, LMS, Ecole Polytechnique, France
- P. Cartraud, GeM, Ecole Centrale Nantes, France
- P. Chabrand, LMA, Université de la Méditerranée, France
- A. Combescure, LaMCoS, INSA Lyon, France
- F. Feyel, ONERA Châtillon, France
- S. Reese, Ruhr-Universität Bochum, Germany
- J. Schröder, Universität Stuttgart, Germany
- P. Verpeaux, CEA Saclay, France
- W. Wall, Universität Munich, Germany
- P. Wriggers, IKM, Leibniz Univeristät Hannover, Germany

International advisory board

- P. Alart, France
- D. Aubry, France
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- R. Stenberg, Finland
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- W. Wagner, Germany
- Z. Waszcyszyn, Poland
- N.E. Wiberg, Sweden
- G. Zavarise, Italy
- T.I. Zohdi, USA

[1]Meeting of the Managing Board of ECCOMAS on Sunday, 14:00
[2]Meeting of the General Assembly of ECCOMAS on Wednesday, 18:30
[3]Meeting of the ECCSM Committee on Wednesday, 12:40 to 14:00

Conference topics and mini-symposia

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42 – Micro and macro structural optimisation with anisotropic composite materials
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J. Duysens, S. Ben Chaabane

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123 – Advanced numerical methods in multibody systems and control
A. Mueller, Z. Terze

149 – Physically based large scale simulation of composite structures.
B. Andersson, J. Gaudin, P. Ladevèze

150 – Computational optimization of composite structures
A. Kling, Z. Gürdal, J. Gaudin, G. Lécina

B Dynamics, vibrations, impacts, waves and related problems

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E. Sapountzakis, J. Murin

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D. Pardo, L.E. García-castillo

13 – Computational methods in impact engineering
A. Vaziri, S. Potapov, V. Faucher

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N. Banichuk, P. Neittaanmäki, J. Jeronen, T. Tuovinen

75 – Acousto-ultrasonic waves in thin elastic structures
R. Lammering, U. Gabbert

100 – Dynamics of nonlinear structures with contact interfaces
E. Petrov, K. Willner

114 – Experiments, theory, and numerical modelling of waves in heterogeneous porous media
H. Steeb, D. Smeulders

123 – Advanced numerical methods in multibody systems and control
A. Mueller, Z. Terze

127 – Safe design of structures under cyclic loading
D. Weichert, K. Spiliopoulos

128 – Impact damage in composites from low-mass high-velocity projectiles
S. Shrivastava, P. Ladevèze, K. Ravi-chandar, A. Johnson

134 – Adaptive transient structural computations: recent advances and engineering applications
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C.N. Chen, M. Mestrovic, A. Letellier

38 – Fracture and damage mechanics of advanced materials with multifield coupling
A. Saez, C. Zhang

59 – Fracture and contact mechanics for interface problems
M. Paggi, A. Carpinteri, P. Wriggers

62 – Computational structural stability
H. Mang, Y.B. Yang

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C. Majorana, G. Khoury

87 – Computational methods for damage tolerant analysis: industrial case studies
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95 – Recent developments in computational failure analysis
T. Menouillard, J.H. Song, T. Belytschko

98 – Simulation lifecycle management and cad-cae integration
J. Duysens, S. Ben Chaabane

127 – Safe design of structures under cyclic loading
D. Weichert, K. Spiliopoulos

128 – Impact damage in composites from low-mass high-velocity projectiles
S. Shrivastava, P. Ladevèze, K. Ravi-chandar, A. Johnson

144 – Finite element modelling strategies for 3d cracking analysis of concrete structures
P. Rossi, B. Massicotte, J.L. Tailhan, S. Dal Pont

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F. Chinesta, P. Ladevèze, S. Idelsohn, A. Patera

6 – Reliability, error estimation and adaptivity for automatic simulations with enriched finite element methods (PUFEM/GFEM/XFEM)
S.P.A. Bordas, M. Duflot, J.J. Rodenas-garcia

8 – Advanced methods in computational electromagnetics
D. Pardo, L.E. García-castillo

9 – Partition of unity methods for moving boundaries
T. Rabczuk, S. Bordas

13 – Computational methods in impact engineering
A. Vaziri, S. Potapov, V. Faucher

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21 – Differential quadrature, generalized methods and related discrete element analysis methods
C.N. Chen, M. Mestrovic, A. Letellier

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P.A. Boucard, R. Le Riche, V. Toropov

Conference

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121 – Numerical simulation of manufacturing process in the nuclear industry
P. Gilles, J.M. Bergheau, G. Perrin

134 – Adaptive transient structural computations: recent advances and engineering applications
B. Tie, D. Aubry, P. Diez, P. LadevÈze

138 – Holistic numerical analysis of adaptive systems
T. Melz, H. Atzrodt, K. Janssens

139 – Mechanics of cell motility on compliant and engineered surfaces
D. Hammer, B. Fabry, B. Ladoux, A. Letellier

140 – Construction for sustainability: computational models and simulations of the behavior of built environments using natural materials
C. Bohatier, M. Vinches, M. Fremont, M. Como, F. Maceri

147 – Computational methods for radiation shielding on nuclear facilities
C. Majorana, F. Gramegna

149 – Physically based large scale simulation of composite structures.
B. Andersson, J. Gaudin, P. Ladevèze

150 – Computational optimization of composite structures
A. Kling, Z. Gürdal, J. Gaudin, G. Lécina

154 – Modelling and experimentation for materials and structures
M. Bonnet

M Adaptativity, verification and validation

6 – Reliability, error estimation and adaptivity for automatic simulations with enriched finite element methods (pufem/gfem/xfem)
S.P.A. Bordas, M. Duflot, J.J. RÓdenas-garcÍa

102 – Reliable and robust methods for global and goal-oriented error estimation in finite element analyses.
L. Chamoin, P. Diez, P. Ladevèze, E. Stein

103 – Estimation of modeling error and model adaptation in computational mechanics
L. Chamoin, R. Cottereau, J.T. Oden, S. Prudhomme

124 – Anisotropic adaptive meshing from error analysis to applications
T. Coupez, S. Perotto, Y. Mesri

134 – Adaptive transient structural computations: recent advances and engineering applications
B. Tie, D. Aubry, P. Diez, P. LadevÈze

N Modelling of processes

3 – Numerical modelling of microstructure evolution in metal forming conditions
J.L. Chenot, M. Bernacki, J. Kusiak

31 – Advanced numerical techniques in material forming
E. Cueto, R.A.F. Valente, S. Reese, T. Van Den Boogaard, R. Natal Jorge

37 – Multiscale methods in computational materials science
M. Pietrzyk, Y. Chastel, T. Burczynski

69 – Numerical strategies and optimization methodologies for finite element simulation of metal forming processes
L. Fourment, J.P. Ponthot

121 – Numerical simulation of manufacturing process in the nuclear industry
P. Gilles, J.M. Bergheau, G. Perrin

O Multiple scales, homogenization, heterogeneous media

7 – Computational models for masonry structures
P.B. Lourenço, T.J. Massart, E. Sacco

24 – Modeling of fiber-based structures
Y. Kyosev, S. Batra, D. Das, B. Pourdeyhimi, W. Renkens, F. Heim, D. Durville, J.F. Ganghoffer, P. Boisse

32 – Physical approaches in computational sciences of metal or semi-conductor materials
D. Ryckelynck, C. Gerard, S. Schmauder, A. Letellier

33 – Composite materials and multiscale modeling and design in medicine and engineering
M. Delfour, M. Thiriet

34 – Mathematical analysis and experimental characterization of micro-heterogeneous materials
D. Balzani, D. Raabe, J. Schroeder

37 – Multiscale methods in computational materials science
M. Pietrzyk, Y. Chastel, T. Burczynski

40 – Computational homogenization of single and multiphase polycrystalline aggregates
L. Delannay, J. Segurado, R. Lebensohn

42 – Micro and macro structural optimisation with anisotropic composite materials
P. Vannucci, B. Desmorat, A. Vincenti, E. Carrera

52 – Computational modeling of gradient plasticity
S. Bargmann, B. Svendsen, K. Runesson

58 – Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures
I. Tsukrov, T. Böhlke, R. Piat

63 – Methods and applications of multiscale materials modeling
J.F. Molinari, W. Curtin, D. Warner, A. Hartmaier

66 – Modeling plasticity and damage in porous media
F. Vernerey, K. Willam, Y. Malecot

70 – Multiscale modeling and dislocation density based models in plasticity
T. Hoc, B. Devincre, G. Winther

77 – Micro-macro scale-coupling and transition in solid and fluid mechanics
L. Desvillettes, A. Ibrahimbegovic, H. Matthies

83 – Multiscale and multiphysics computational methodologies for complex materials
P. Trovalusci, T. Sadowski, V. Sansalone, B.A. Schrefler

86 – Mechanics of microstructured interfaces
S. Stupkiewicz, I. Temizer

97 – Computational treatment of interfaces in multi-physics and multi-scale problems
I. Stanciulescu, H. Mourad

108 – Applied homogenization for advanced structural simulations
M. Sejnoha, J. Zeman

114 – Experiments, theory, and numerical modelling of waves in heterogeneous porous media
H. Steeb, D. Smeulders

116 – Sandwich structures: computational mechanics and multiscale modelling
A. Johnson, E. Baranger

135 – Arlequin, fe2 and other embedded domains methods for multimodel and multiscale mechanical problems: advances, analyses and computation of challenging fine scales applications
H. Ben Dhia, F. Feyel, F. Legoll, V. Kouznetsova

P Biomechanics

18 – Computational models for soft tissues
R. Natal Jorge, B. Calvo, B. Peña, J. Tavares, M. Barbosa

29 – Biological cells and capsules
T. Ishikawa, P. Vlahovska M., A.V. Salsac, Y. Imai

30 – Simulations and control of human movements
A. Eriksson, V. Berbyuk

33 – Composite materials and multiscale modeling and design in medicine and engineering
M. Delfour, M. Thiriet

53 – Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media
L. Sanavia, L. Laloui

67 – Modeling and computational methods for the mechanics of biological systems
M. Arroyo, A. Desimone

71 – Computational mechanics of biological tissues
T. Hoc, P. Chabrand, E. Budyn

90 – Mechanobiology of bone remodelling and adaptation (mbr&a)
S. Naili, V. Sansalone, D. Taylor, B. Van Rietbergen

139 – Mechanics of cell motility on compliant and engineered surfaces
D. Hammer, B. Fabry, B. Ladoux, A. Letellier

Plenary and semi-plenary lectures

Monday

- **Plenary lecture**

Amphithéâtre Bleu (Chair: P. Ladevèze)

09:05-09:50	**B. Charlès**	Virtual world for sustainable innovation

Tuesday

- **Plenary lecture**

Amphithéâtre Bleu (Chair: T. Hughes)

08:30-09:15	**S. Reese**	Challenges of computational modelling in production and medical technology

- **Semi-plenary lectures**

Amphithéâtre Bleu (Chair: B. Schrefler)

14:00-14:30	**T. Hughes**	Isogeometric Analysis: Toward Integration of CAD and FEA
14:30-15:00	**K. Terada**	Modeling and analysis of macroscopic mechanical deterioration due to time-varying microstructures

Room Maillot (Chair: H. Mang)

14:00-14:30	**T. Laursen**	Computational Interface Mechanics: Lessons from Mortar-Based Contact and Extensions to Granular Systems and Fluid-Structure Coupling
14:30-15:00	**J. Schröder**	Aspects of the Multiscale Modeling of Electromechanically Coupled Materials

Room 241 (Chair: M. Pietrzyk)

14:00-14:30	**A.M. Habraken**	Multiscale approach to describe the mechanical behaviour of Ti6Al4V alloys
14:30-15:00	**A. Araujo**	Hybrid Active-Passive Laminated Structures: Modeling Optimization and Identification

Room 251 (Chair: E. Ramm)

14:00-14:30	**G. Hofstetter**	Numerical Modelling and Finite Element Analysis of Geotechnical Problems Involving Partially Saturated Soils
14:30-15:00	**F. Auricchio**	Shape-memory alloys: effective 3D modeling, computational aspects and biomedical device analysis

Room 252B (Chair: J. Eberhardsteiner)

14:00-14:30	**P. Steinmann**	Recent Progress in the Modelling and Computation of Electro-Active Polymers
14:30-15:00	**O. Sigmund**	Multiphysics Topology Optimization

Room 342A (Chair: E. Stein)

14:00-14:30	**U. Perego**	Shell Interface Finite Elements for the Simulation of Folding and Cutting of Composite Laminates
14:30-15:00	**W. Curtin**	Origin of Plasticity Length-Scale Effects in Fracture and Deformation

Wednesday

- **Plenary lecture**

Amphithéâtre Bleu

08:30-09:15	**M. Geers**	Computational mechanics of material interfaces: trends & challenges

- **Semi-plenary lectures**

Amphithéâtre Bleu (Chair: R. Ohayon)

14:00-14:30	**A. Combescure**	When X-FEM ideas join the gap between experiments measures and numerical simulations: 3D fatigue crack propagation

Room Maillot (Chair: G. Schueller)

14:00-14:30	**R. Ghanem**	Verification and Validation: A psycho-analysis of Predictions
14:30-15:00	**P. Chinesta**	Routes to extreme simulations based on model reduction

		Room 241 (Chair: T. Sadowski)
14:00-14:30	**R. de Borst**	Computational Multi-scale Mechanics and Evolving Discontinuities
14:30-15:00	**J. Fish**	Computational Continua
		Room 251 (Chair: M. Bischoff)
14:00-14:30	**T. Burczynski**	Optimization and identification in multiscale modelling
14:30-15:00	**D. Clouteau**	Numerical modeling of multiple scattering of elastic waves
		Room 252B (Chair: S. Prudhomme)
14:00-14:30	**W. Wall**	Computational Fluid-Structure Interaction and Beyond—advances in formulations, methods, scales and applications
14:30-15:00	**I. Harari**	Enforcing Embedded Interface and Boundary Conditions by Nitsche's Method
		Room 342A (Chair: A. Klawonn)
14:00-14:30	**M. Doblare**	Constitutive models for soft tissue considering length and directional statistics of the fibre bundles
14:30-15:00	**M. Papadrakakis**	Neural Network Predictions in Computational Mechanics: To Trust or Not to Trust

Thursday

- **Plenary lecture**

		Amphithéâtre Bleu (Chair: E. Oñate)
08:30-09:15	**P. Ladevèze**	Virtual Structural Testing for Composites Today and Tomorrow

- **Semi-plenary lectures**

		Amphithéâtre Bleu (Chair: N. Moës)
14:00-14:30	**E. Oñate**	Advances in the Particle Finite Element Method (PFEM) for Problems in Sea, Earth and Fire
14:30-15:00	**A. Corigliano**	Modelling of spontaneous Adhesion phenomena in Microsystems
		Room Maillot (Chair: P. Diez)
14:00-14:30	**R.O. Ritchie**	Structure, Damage and Fracture in Biological Materials: Bone, teeth and seashells
14:30-15:00	**P. Le Tallec**	Multiscale modelling and approximation of incompressible reinforced materials
		Room 241 (Chair: R. Haber)
14:00-14:30	**D. Peric**	On Strongly Coupled Computational Strategies for Fluid-Structure Interaction: New Insights into Algorithmic Basis
14:30-15:00	**K. Runesson**	Adaptive Homogenization with Scale-Bridging in Material Modeling
		Room 251 (Chair: J.L. Chenot)
14:00-14:30	**F.G. Rammerstorfer**	Instabilities in Materials at the Nano, Micro, and Meso Scale
14:30-15:00	**P. Pimenta**	Nonlinear analysis of thin rods and shells
		Room 252B (Chair: A. Nouy)
14:00-14:30	**K.U. Bletzinger**	Parameter free shape design of shell and membrane structures: Effective and efficient solution techniques for very large design problems
14:30-15:00	**C. Sansour**	Generalised Continua, Electromechanical Coupling and Scale Effects
		Room 342A (Chair: P. Chabrand)
14:00-14:30	**J. Korelc**	Automation of Computational Modeling by Automatic Differentiation
14:30-15:00	**S. Stupkiewicz**	Interfacial energy and size effects in multiscale modelling of shape memory alloys

Friday

- **Plenary lecture**

		Amphithéâtre Bleu (Chair: M. Papadrakakis)
12:30-13:15	**C. Farhat**	Nonlinear model reduction via Petrov-Galerkin projection and compressive tensor-product approximation

- **Semi-plenary lectures**

		Amphithéâtre Bleu (Chair: G. Zavarise)
11:50-12:20	**X. Oliver**	On a new 3D contact domain method for large deformation contact problems
		Room Maillot (Chair: A. Ibrahimbegovic)
11:50-12:20	**H. Matthies**	Efficient Uncertainty Quantification via Sparse Representation
		Room 241 (Chair: A. Duarte)
11:50-12:20	**E. Sacco**	Modeling of masonry structures
		Room 251 (Chair: P. Cartraud)
11:50-12:20	**F. Feyel**	Towards coupling damage evolution and crack propagation
		Room 252B (Chair: M. Bonnet)
11:50-12:20	**R. Sevilla**	NURBS-enhanced finite element method (NEFEM)

Parallel sessions

Monday

10:00-11:00

MS 83 Chair: P. Trovalusci **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
10:00	950	R. Mueller, B. Xu, D. Schrade, D. Gross	Micromechanical analysis of cracks in ferroelectric materials
10:20	681	F. Vogel, P. Steinmann, S. Goktepe, E. Kuhl	Theory and numerics of viscous electroactive material
10:40	98	M. Birsan, H. Altenbach	On the equations of orthotropic thermoelastic rods made of a porous material

MS 88 Chair: T. Ricken **Room 242B**

Coupled problems in porous media mechanics

	ID	Authors	Title
10:00	1219	B. Markert, W. Ehlers, Y. Heider	Numerical treatment of the strongly coupled dynamics in porous media problems
10:20	1776	J. Bluhm, T. Ricken, M. Blossfeld	Freezing and thawing processes in liquid and gas saturated porous media
10:40	1112	J. Kruschwitz	Modelling of biomechanical interaction of sulfur-oxidizing bacteria and concrete surfaces

MS 144 Chair: P. Rossi **Room 243**

Finite element modelling strategies for 3d cracking analysis of concrete structures

	ID	Authors	Title
10:00	1499	J.L. Tailhan, S. Dal Pont, P. Rossi	3d modelling of concrete cracking via a macroscopic probabilistic approach.
10:20	1791	G. Vergara, N. Domínguez	Non-linear modelling of composite cft & src columns taking account of bonding
10:40			

MS 67 Chair: M. Arroyo **Room 252A**

Modeling and computational methods for the mechanics of biological systems

	ID	Authors	Title
10:00	546	A. Desimone	Nematic elastomers as soft contractile actuators: theoretical modeling and numerical simulations.
10:20	2009	L. Teresi, P. Nardinocchi, T. Svaton	Simulation of deformation processes in left ventricle during cardiac cycle
10:40	639	M. Vázquez, F. Carreras, R. Arís, G. Houzeaux, P. Villar, P. Lafortune, C. Labarta, D. Gil, J. Garcia-barnes, M. Ballester	A massively parallel electro-mechanical model of the heart for large-scale simulations

MS 154 Chair: F. Abed **Room 253**

Modelling and experimentation for materials and structures

	ID	Authors	Title
10:00	1636	H. Modarresi, H. Showkati	Analytical and experimental investigation of the effect of various stiffeners on bending of thin circular-plates under uniform pressure
10:20	1157	I. Gerdemeli, D. Ozer	The behaviour of uniformly distributed load carrying rectangular plates
10:40	1005	V. Pouzols, L. Tabourot, P. Balland	A complete approach for industrial bending simulation.

MS 112 Chair: R. Lammering **Room 341**

Computational aspects of smart structures and materials

	ID	Authors	Title
10:00	830	A. Zak, W. Ostachowicz	An algorithm to model sma behaviour by the finite element method
10:20	1959	M. Kuczma	Hysteretic response of shape memory alloy trusses
10:40	1115	Y. Chemisky, G. Chatzigeorgiou, D. Hartl, D. Lagoudas	Implementation of a 3d constitutive law for htsmas, considering cycling effects

MS 82 Chair: J. Eberhardsteiner **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
10:00	1733	J.M. Husson, J. Gril, F. Dubois, N. Sauvat	Hygro-locks modelling of the mechano-sorptive behavior based on integral formulation or internal variables
10:20	947	M. Ekevad	Three-dimensional orthotropic elastic-plastic-mechano-sorptive material model for simulation of wood behaviour
10:40	904	E.T. Engelund, S. Svensson	Modelling the time-dependent mechanics of wood cell wall by deformation kinetics

Parallel sessions

Monday

10:00-11:00

MS 51 Chair: R. Bialecki **Room 343**

Inverse methods for parameter identification

	ID	Authors	Title
10:00	618	S. Oliveira, A.M. Toader, V. Paulo	Finding the elastic coefficients of a damaged zone in a concrete dam using material optimization to fit measured modal parameters
10:20	76	S. Li	Parameter estimation of nonlinear constitutive model of soils by using genetic algorithm
10:40	1872	G. Cocchetti, T. Garbowski, G. Maier, G. Novati	Inelastic parameter identification for local diagnosis analysis of concrete dams

MS 57 Chair: M. Papadrakakis **Room 353**

The stochastic finite element method: recent advances

	ID	Authors	Title
10:00	227	X. Xu	Stochastic computation based on orthogonal expansion of random fields
10:20	792	T. Melink, J. Korelc	Stability of stochastic finite elements
10:40	1129	G. Stefanou, G. Pittos, M. Papadrakakis	Stochastic finite element pile settlement analysis

MS 1 Chair: E. Cueto **Room 352A**

Advanced computational techniques based on model order reduction

	ID	Authors	Title
10:00	147	F.K. Corbaci, A. Mugan	Model order reduction based on discrete equivalence principle
10:20	887	P. Tiso, S.D. Hannot, D. Rixen	A modal derivative approach for model reduction in mems nonlinear dynamic analysis.
10:40	1109	B. Haasdonk, M. Drohmann, M. Ohlberger	Model reduction of implicit and explicit parametrized nonlinear evolution schemes by empirical operator interpolation

MS 36 Chair: J. Réthoré **Room 362-363**

Identification of material models by non-trivial tests and innovative measurement techniques at different observation scales

	ID	Authors	Title
10:00	373	P. Leplay, J. Réthoré, S. Meille, M.C. Baietto	Damage law identification from a bending test of a quasi brittle material using digital image correlation
10:20	1792	A. Medda, A. Baldi, B. Filippo	Continuous damage mechanics parameters identification from full field dic information.
10:40	1617	M. Rossi, F. Pierron	Towards optimized mechanical test design for full-field measurements and inverse identification

MS 10 Chair: N. Moes **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
10:00	345	V.F. González Albuixech, E. Giner Maravilla, A. Vercher Martínez, J.E. Tarancón Caro, F.J. Fuenmayor Fernández	Enriched of the crack corner singularity with the extended finite element method using spherical harmonics
10:20	1502	M. Baydoun, T.P. Fries	The xfem using crack tip enrichment with large support for curved cracks
10:40	748	M. Bruyneel, S. Grosgeorge, C. Henrard, P. Morelle, M. Duflot, E. Wyart, F. Krull	Current practice in computational fracture mechanics: a software editor's point of view based on test cases

MS 99 Chair: D. Givoli **Room 315**

Model reduction methods in solid mechanics

	ID	Authors	Title
10:00	1521	S.K. Hong, B. Epureanu	Parametric reduced order models of the dynamics of complex structures
10:20	683	D. Amsallem, C. Farhat	Matrix manifold-based interpolation of parametric structural reduced-order models
10:40	1973	R. Ghanem	Stochastic model reduction in mechanics.

MS 49 Chair: T. Burczvnski **Room 221-222**

Algorithms for large scale multi-objective evolutionary optimization

	ID	Authors	Title
10:00	709	U. Yuki	Optimization of design support method for occupants restraint system by considering interaction between design factors
10:20	760	A. Dlugosz, T. Burczynski, G. Dziatkiewicz	Application of multi-objective evolutionary algorithms in optimization of piezoelectric models
10:40			

Parallel sessions

Monday

10:00-11:00

MS 33 Chair: M. Thiriet **Room 364**

Composite materials and multiscale modeling and design in medicine and engineering

	ID	Authors	Title
10:00	803	K. Patralski, P. Konderla	Remodelling of the aortic valve leaflet material
10:20	1542	S. Guessasma, R. Said, B. David	Hybrid optimisation approach towards understanding the interphase effect on the elasticity of biopolymer based composites reinforced using glass-silica filler
10:40			

MS 84 Chair: E. Rank **Room 224-225**

Geometric models and numerical simulation

	ID	Authors	Title
10:00	33	F. Auricchio, L. Beirao Da Veiga, T.J. Hughes, A. Reali, G. Sangalli	Isogeometric collocation methods
10:20	566	A. Nagy, M. Abdalla, Z. Gürdal	Optimal anisotropy of composite shells using an isogeometric approach
10:40	228	H. Netuzhylov, A. Zilian	Towards space-time isogeometric analysis of panel flutter

MS 119 Chair: B. Muite **Room 223M**

High resolution computational mechanics

	ID	Authors	Title
10:00	660	B. Muite	The chebyshev integral formulation for performing high spatial resolution collocation simulations
10:20	1242	R. Kolman, J. Plesek, D. Gabriel	Accuracy of finite quadratic serendipity elements in implicit dynamic wave propagation problems
10:40			

MS 98 Chair: J. Duvsens **Room 202-203**

Simulation lifecycle management and cad-cae integration

	ID	Authors	Title
10:00	1626	P. Grimberg	How to save money and cycle time by integrating cae to cad today with catia v5 and the future of collaborative simulation with the adn project.
10:20	1195	T.B. Fraga, J.E.S. De Cursi, A.J.D. Silva Neto, F.J.D.C.P. Soeiro	Presentation and analisys of three hybridization models with taboo search and similar particle swarm optimization heuristics for the job shop scheduling problem
10:40	2033	M. Engelman, V. Canu	Managing engineering knowledge

MS 104 Chair: B. Susanne **Room 241**

Gfem and numerical treatment of singularities

	ID	Authors	Title
10:00	41	T. Apel, J. Pfefferer, A. Rösch, D. Sirch	Local mesh grading for optimal control problems in non-smooth domains
10:20	585	L.Y. Sung	Cahn-hilliard singularities
10:40	876	M.A. Schweitzer	Stable enrichment in the particle–partition of unity method

MS 100 Chair: E. Petrov **Room 251**

Dynamics of nonlinear structures with contact interfaces

	ID	Authors	Title
10:00	1705	C. Weiss, N.P. Hoffmann	Ball joint dynamics - experiments, phenomena and models
10:20	428	D. Süß, J. Geisler, K. Willner	Numerical and experimental investigations on dynamic contact phenomena of jointed structures
10:40	564	V. Babitsky, V. Hiwarkar	To the modelling of dynamic structure with discontinuities

MS 101 Chair: E. Lund **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
10:00	137	S. Vigdergauz	Stress smoothing holes in statically loaded perforated plates
10:20	1498	S. Thibaut, L. Van Miegroet, E. Lemaire, P. Duysinx	Application of x-fem and level-set description to shape optimization of holes in elastic plates and periodic microstructures
10:40	441	M. Scherer, P. Steinmann	Towards node-based shape optimization: a fictitious energy constraint

Parallel sessions

Monday

10:00-11:00

MS 17 Chair: F. Schmerwitz **Room 342A**

Advances in computational tire mechanics

	ID	Authors	Title
10:00	466	D. Benasciutti, F. De Bona, M.G. Munteanu	Harmonic model for numerical simulation of thermal stresses in work roll of hot rolling mill
10:20	1166	A. Svistkov	Structural-phenomenological modeling of mechanical properties of rubber compounds
10:40	509	A. Kongo Kondé, I. Rosu, F. Lebon	Finite element model of aircraft tyre rolling

MS 58 Chair: I. Tsukrov **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
10:00	1795	R. Valenta, M. Sejnoha, J. Zeman	Applications of averaging schemes and periodic unit cells in search for effective properties of mastic asphalt mixtures
10:20	767	L. Snozzi, A. Caballero, J.F. Molinari	Influence of the meso-structure in dynamic fracture simulation of concrete under tensile loading
10:40	1913	C. Pichler, R. Lackner	Upscaling strategies for viscoelastic properties of highly-filled composites: application to bituminous mixtures

MS 114 Chair: D. Smeulders **Room 352B**

Experiments, theory, and numerical modelling of waves in heterogeneous porous media

	ID	Authors	Title
10:00	101	S. Serrano, S. Workman	New approaches to the propagation of nonlinear transients in porous media
10:20	2000	A. Britan, M. Liverts, H. Shapiro, G. Ben-dor	Protective barriers of particulate aqueous foams
10:40	290	C. Boutin	Non-local effects on wave propagation in air saturated rigid porous media

MS 53 Chair: R. Larsson **Room 242A**

Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media

	ID	Authors	Title
10:00	1675	M. Cuomo	Durability assessment of cracked concrete by means of a coupled transport analysis
10:20	1924	A. Nasedkina	Finite element simulation of transient axisymmetric thermoelastic problems for heterogeneous media with physical nonlinearities and circular fractures
10:40	387	M. Preisig, J.H. Prévost	Stabilization procedures in coupled poroelasticity problems: a critical assessment

Parallel sessions

Monday

11:20-12:50

MS 83 Chair: T. Sadowski **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
11:20 Keynote	46	R. De Borst, J. Réthoré, M.A. Abellan	Two-scale approaches for fluid flow in fracturing porous media
11:50	632	J. Lewandowska	Modelling of water flow and solute transport in double porosity unsaturated porous media: theory, two-scale computations and experiments
12:10	248	M. Murad, R. Ponce, S. Lima, A. Braga	Macroscopic behavior of ph-sensitive swelling porous media derived from homogenization
12:30	1224	J. Kaiser, T. Lemaire, S. Naili, V. Sansalone	Multiscale modeling and simulation of fluid flow within cortical bone including cationic exchanges

MS 88 Chair: B. Markert **Room 242B**

Coupled problems in porous media mechanics

	ID	Authors	Title
11:20 Keynote	1038	F. Irzal, J. Remmers, R. De Borst	A finite strain, partition of unity based cohesive zone formulation for propagating cracks in porous media
11:50	1722	T. Ricken	Modeling of the methane oxidation layer in landfills - a multiphase continuum approach
12:10	573	C. Becker, P. Kurzeja, H. Steeb	Numerical investigations of internal erosion in cohesionless soils: the role of interfacial areas
12:30	9	N. Laredj	This study presents a formulation for coupled moisture, air and chemical transport in expansive unsaturated clays.

MS 62 Chair: H. Mang **Room 243**

Computational structural stability

	ID	Authors	Title
11:20 Keynote	53	Z. Gaspar, T. Tarnai, K. Hincz	Bifurcations of an elastic model with non-smooth material law
11:50	253	M. Ahmed, I. Kiyohiro, Y. Yuki	Imperfection sensitivity analysis of structures in the plastic range
12:10	176	D. Lanc, I. Pesic, G. Turkalj	Stability analysis of beam-type structures with thin-walled laminated composite cross section
12:30	263	G. Turkalj, E. Merdanovic, D. Lanc	A beam model for nonlinear stability analysis of beam-type structures with flexible connections

MS 67 Chair: P. Purohit **Room 252A**

Modeling and computational methods for the mechanics of biological systems

	ID	Authors	Title
11:20 Keynote	808	T. Powers	Swimming microorganisms in complex fluids
11:50	535	F. Alouges, A. Desimone	Optimal locomotion at low reynolds number
12:10	473	A. Voigt, A. Raetz, J. Lowengrub	Domain formation and shape dynamics in vesicles
12:30	1030	M. Arroyo, A. Desimone, L. Heltai, B. Hashemian	Relaxation dynamics of fluid membranes

MS 154 Chair: M. Poncot **Room 253**

Modelling and experimentation for materials and structures

	ID	Authors	Title
11:20 Keynote	1154	A. Tillmanns, M.O. Weber, T. Blachowicz, L. Pawela, T. Kammermeier	Textile magnets as base for micromagnetic simulations
11:50	1303	F. Deleau, D. Mazuyer, A. Sanon	Dynamic instability visualization of a rubber/glass interface
12:10	464	F. Abed	Comparisons of the isothermal and adiabatic responses of diffferent steels
12:30	1352	M. Ponçot	A new method to measure and simulate the thermal instabilities of multimaterials during the ed-paint process.

MS 112 Chair: M. Kuczma **Room 341**

Computational aspects of smart structures and materials

	ID	Authors	Title
11:20 Keynote	2020	R. Bastaits, G. Rodrigues, A. Preumont	Challenges in modelling and control of extremely large telescopes
11:50	274	S. Ringwelski, U. Gabbert	A coupled fe-fe-be approach for the modeling of smart lightweight structures for active noise and vibration control
12:10	797	M. Fischer, K.U. Bletzinger, R. Wüchner	Fe-simulation and optimal design of smart adaptive lightweight structures
12:30	708	E.P. Kligman, N. Yurlova	Solution of optimization problems of multimodal damping by external electric circuits

MS 82 Chair: J. Gril **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
11:20 Keynote	1972	J. Carmeliet, R. Guyer, D. Derome	Moisture and mechanical hysteretic behavior of wood: a two-scale approach
11:50	1968	D. Derome, M. Abuku, J. Carmeliet	Analysis of the impact of cell geometry and swelling on vapor permeability of wood
12:10	1457	J. Eitelberger, K. Hofstetter	An advanced multiscale approach to stationary and transient moisture transport in wood below the fiber saturation point
12:30	239	F. Gaignat, F. Wittel, H. Herrmann	Micro-mechanical modeling of swelling in wood

Parallel sessions

Monday

11:20-12:50

MS 51 Chair: G. Maier **Room 343**

Inverse methods for parameter identification

	ID	Authors	Title
11:20 Keynote	542	N. Sakharova, V. Fernandes, M. Oliveira, J. Antunes	On the determination of mechanical properties of a material with residual stresses by indentation: numerical simulation study
11:50	2045	V. Buljak, G. Maier, B. Miller	Comparative assessment of inverse analyses for material characterization based on indentation tests
12:10	1777	J. Prou, K. Kishimoto, A. Constantinescu	Identification of thin films young's modulus from continuous indentation test and inverse analysis
12:30	1105	A.G. Geffroy, P. Longere, P. Pilvin, B. Leble	Improved methodology for parameters identification of non linear material behaviour

MS 57 Chair: G. Stefanou **Room 353**

The stochastic finite element method: recent advances

	ID	Authors	Title
11:20 Keynote	1806	Z. Yang, S. Xiangting	Monte carlo simulation of 3d complex fracture considering random heterogeneous material properties
11:50	1274	I. Papaioannou	Embedded domain discretization of stochastic fields
12:10	1925	D. Charmpis	Iterative solution methods for stochastic finite element equations
12:30			

MS 1 Chair: F. Chinesta **Room 352A**

Advanced computational techniques based on model order reduction

	ID	Authors	Title
11:20 Keynote	654	T. Lelievre	Results and questions on a nonlinear approximation approach for solving high-dimensional partial differential equations
11:50	664	A. Falco, A. Nouy, F. Chinesta	A generalization of the eckart and young theorem and the proper generalized decomposition
12:10	433	A. Nouy	Alternative definitions of proper generalized decompositions for the numerical solution of problems formulated in tensor product spaces
12:30	1964	A. Lozinski	Incremental and non-incremental strategies for time marching in the method of separated representations

MS 36 Chair: F. Hild **Room 362-363**

Identification of material models by non-trivial tests and innovative measurement techniques at different observation scales

	ID	Authors	Title
11:20 Keynote	614	M. Grediac, M. Bonnet	Identifying constitutive parameters from full-field measurements: a challenging issue in computational mechanics
11:50	896	E. Durif, J. Réthoré, M. Fregonese, A. Combescure	Development of a digital image correlation method used in fatigue crack propagation control
12:10	6	R. Fedele, F. Hild, S. Roux	Assessment of interface properties and boundary conditions by digital image correlation and kalman filter
12:30	1765	T. Pottier, F. Toussaint, P. Vacher	Constitutive behavior identification using a highly heterogeneous 3d test

MS 10 Chair: N. Moes **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
11:20 Keynote	1992	C. Linder, D. Rosato, C. Miehe	Modeling failure in piezoelectric ceramics using finite elements with embedded strong discontinuities
11:50	1134	K. Mansouri	Numerical analysis of the plane strain crack-tip problem using x-fem in incompressible hyperelasticity
12:10	1483	H. Hu, L. Chambon, D. Crozes, A. Frangi, M. Bonnet	Symmetric fem-driven bem-fem coupling for 3d linear fracture mechanics
12:30	1475	E. Benvenuti	Modelling the fracture process zone by means of a regularized extended finite element approach

MS 99 Chair: R. Ohavon **Room 315**

Model reduction methods in solid mechanics

	ID	Authors	Title
11:20 Keynote	10	A. Batou, C. Soize	Stochastic reduced-order model for dynamical structures having numerous local elastic modes in the low-frequency range
11:50	1878	H. Jakobsson, F. Bengzon, M.G. Larson	Adaptive model reduction in multiphysics simulation
12:10	534	S. Cartel	Adaptive reduced order modeling for inverse problems
12:30			

MS 37 Chair: T. Burczvnski **Room 221-222**

Multiscale methods in computational materials science

	ID	Authors	Title
11:20 Keynote	1356	M. Bernacki, T. Coupez, R. Logé	Level set framework for the numerical modelling of recrystallization
11:50	706	L. Madej, S. Patryk, K. Michalik, F. Kruzel, P. Maciol, K. Banas, M. Pietrzyk	Study on development of an adaptive finite element - cellular automata model for austenite-ferrite phase transformation
12:10	1189	H. Steeb, H. Ramézani, J. Jeong	Analytical and numerical investigation on penalized micro-dilatation (pmd) theory based on the macro-micro link concept on porous solid
12:30			

Parallel sessions

Monday

11:20-12:50

MS 33 Chair: Y. Bourgault **Room 364**

Composite materials and multiscale modeling and design in medicine and engineering

	ID	Authors	Title
11:20 Keynote	1043	S. Bélanger, J. Vetel, A. Garon, D. Pelletier	Grid adapted time-dependent lagrangian coherent structures identification
11:50	993	M.I. Farinas, S. Bélanger, P. Miron, A.M. Dufour, A. Garon, D. Pelletier	Grid independent hemolysis computation: contribution to the fda critical path initiative for standardization of cfd techniques
12:10	1818	O. Emmanuel, M. Clerc, T. Papadopoulo	Domain decomposition for coupling finite and boundary element methods in electroencephalography.
12:30	1983	J.M. Urquiza, I. Dione, A. Fortin, A. Garon	Finite element implementations of the no-penetration boundary condition on curved boundaries

MS 84 Chair: A. Duester **Room 224-225**

Geometric models and numerical simulation

	ID	Authors	Title
11:20 Keynote	638	B. Szabo, R. Actis	Experience with quasi-regional mapping in connection with the p-version
11:50	691	B. Matthias	Refinement of p-version hexahedral meshes on curvilinear domains
12:10	2080	V.M. Calo	Transfinite interpolation: from geometry representation to analysis
12:30			

MS 119 Chair: B. Muite **Room 223M**

High resolution computational mechanics

	ID	Authors	Title
11:20 Keynote	912	D. Komatitsch, G. Erlebacher, D. Goeddeke, D. Michea	Modeling of seismic wave propagation using high-order finite elements with mpi on a cluster of 192 gpus
11:50	663	G. Pena, C. Prud'homme	Spectral element approximation of fluid-structure interaction in hemodynamics
12:10	1686	P. Pathmanathan	Computational cardiac electro-mechanics
12:30	250	K. Roidot, C. Klein	Fourth-order time stepping for stiff pdes in the small dispersion limit

MS 98 Chair: S. Ben Chaabane **Room 202-203**

Simulation lifecycle management and cad-cae integration

	ID	Authors	Title
11:20 Keynote	2031	J. Duysens, J. Courquet	Challenges in slm capabilities for industrial competitiveness
11:50	364	S. Sugiono	Developing the database used for car body shape design with the less fuel consumption and vibration
12:10	1665	O. Hardy, F. Krabchi, H. Oubensaid	Simulation data management for multidisciplinary design optimization (mdo) with cad and cae
12:30			

MS 104 Chair: M.A. Schweitzer **Room 241**

Gfem and numerical treatment of singularities

	ID	Authors	Title
11:20 Keynote	655	C.A. Duarte, J. Pereira, D.J. Kim	Analysis of three-dimensional propagating cracks: a two-scale approach using coarse finite element meshes
11:50	695	I. Mitrea, W. Tucker	Mellin transforms, calderon-zygmund theory, and validated numerics for elliptic boundary value problems
12:10	630	J. Brannick	Auxiliary space preconditioners for linear elasticity based on generalized finite element methods
12:30	435	P. Ciarlet, S. Labrunie	Numerical analysis of the generalised maxwell equations: charged particle simulations in singular domains

MS 100 Chair: K. Willner **Room 251**

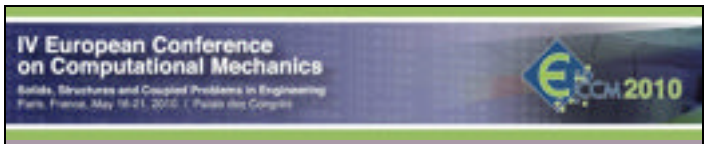
Dynamics of nonlinear structures with contact interfaces

	ID	Authors	Title
11:20 Keynote	1846	L. Salles, L. Blanc, F. Thouverez, A.M. Gouskov, P. Jean	Dynamic analysis of fretting-wear in 3d structures in contact with friction
11:50	1785	E. Petrov	High-fidelity reduced modelling for analysis of nonlinear steady-state dynamics of jointed structures
12:10	1690	M. Torkhani, I. Nistor, L. Peletan, G. Jacquet	A hybrid harmonic balance method for the prediction of the rotor transient response after blade-off with radial rubbing
12:30	1667	C. Firrone, S. Zucca, M. Gola	Static/dynamic coupling of gears with a ring damper for the nonlinear forced response calculation.

MS 101 Chair: E. Lund **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
11:20 Keynote	644	M. Kocvara, M. Stingl	On the solution of topology and material optimization problems with stress constraints
11:50	992	E. Munoz, M. Stolpe	Global optimal design of composite laminates including failure criteria using decomposition techniques
12:10	330	F. Schury, G. Leugering, M. Stingl, F. Wein	Design of isotropic lightweight material structures by inverse homogenization and topology optimization
12:30	196	C. Brecher, W. Klein, M. Seiler	Parametric optimization of structural components considering geometrical restrictions



Parallel sessions

Monday

11:20-12:50

MS 17 Chair: M. Kaliske **Room 342A**

Advances in computational tire mechanics

	ID	Authors	Title
11:20 Keynote	533	A. Suwannachit, U. Nackenhorst	Computational approach for the prediction of rubber behavior in a broad frequency domain
11:50	551	C. Zopf	Description of uncured rubber for tire moulding simulation
12:10	2065	F. Schmerwitz	Effective modeling of local friction dynamics between rubber and rough surfaces
12:30	136	M. Koishi, C.T. Wu	Microscopic simulation of particle filled rubber and fiber reinforced rubber in a tire using meshfree method

MS 58 Chair: M. Seinoha **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
11:20 Keynote	1650	V. Levin, K. Zingerman, A. Vershinin, E. Freiman, A. Kukushkin, A. Trachenko	Development and use of the cae-system "fidesys" for nonlinear analysis of solids with microstructure that changed during loading
11:50	335	A. Visrolia, S. Angioni, M. Meo	A hierarchical xfem plate model for the simulation of composite laminates failure
12:10	964	M. Kaestner, B. Jörg, M. Obst, V. Ulbricht	Multiscale modelling of the effective viscoplastic material behaviour of textile-reinforced polymers using xfem
12:30	2052	T. Breitzman, E. Iarve, R. Lipton, D. Mollenhauer, E. Zhou	Multiscale discrete damage modeling in laminated composites

MS 114 Chair: P. Adler **Room 352B**

Experiments, theory, and numerical modelling of waves in heterogeneous porous media

	ID	Authors	Title
11:20 Keynote	188	S. Pride	Modeling of acoustic attenuation in porous media
11:50	1554	H. Steeb, M. Frehner, S. Schmalholz	Oscillatory waves in residual saturated porous media: theoretical and numerical investigations
12:10	1619	S.M. Hassanizadeh, S. Bottero, L. Pyrak-nolte, V. Joekar-niasar	Experimental and numerical investigations of capillarity in two-phase in porous media
12:30	929	E.H. Saenger	Time reverse characterization of sources in heterogeneous media

MS 53 Chair: T. Hueckel **Room 242A**

Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media

	ID	Authors	Title
11:20	262	F. Oka, S. Kimoto	A chemo-thermo-mechanically coupled analysis on hydrate-bearing sediments
11:50	420	T. Meynet, S. Fauriel, L. Laloui	Biogrout propagation in soil in the framework of microbial induced calcite precipitation
12:10	871	T. Schanz, L. Nguyen Tuan, M. Zimmerer, M. Datcheva	Hydro-mechanical behaviour of a multi-layer engineered barrier system with imperfections: numerical simulation
12:30	1343	L. Luison, M. Passarotto, B. François, L. Sanavia, L. Laloui	Finite element modelling of thermo-elasto-plastic unsaturated porous materials with application to nuclear waste disposal.

Parallel sessions

Monday

14:15-15:45

MS 83 Chair: M. Ostoja-starzewski **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
14:15 Keynote	1824	G. Pijaudier-cabot	Evolving boundary effects in non local damage models: continuum to discrete transition
14:45	306	T. Sadowski	Multiscale modelling of gradual degradation in al2o3/zro2 ceramic composites under compression
15:05	1742	D. Boso, M. Lefik, B.A. Schrefler	Generalised self-consistent like method for thermo-mechanical damage in multiscale structures
15:25	1987	H. Schütte	On a fatigue damage approach based on explicit crack propagation in periodic unit cells

MS 88 Chair: J. Bluhm **Room 242B**

Coupled problems in porous media mechanics

	ID	Authors	Title
14:15 Keynote	1373	W. Ehlers	Multiphasic continuous media: an investigation of the coupled multi-physical behaviour of geomechanical and biomechanical problems
14:45	1734	A. Millard	Computational simulation of the hydro-mechanical response of argillite during a ventilation experiment
15:05	1188	H. Ramézani, J. Jeong, H. Steeb, J. Colin	On multi-disciplinary modeling of the carbonation shrinkage phenomenon of the porous mortars
15:25	241	A. Mehrabian, Y. Abousleiman	The poroviscoelastic response of brain tissues during ventriculostomy treatments

MS 62 Chair: M. Ahmed **Room 243**

Computational structural stability

	ID	Authors	Title
14:15 Keynote	1013	L.G. Aigner, A. Sinwel, J. Gerstmayr, H. Irschik	Stability of thin sheet layered structures with frictional contact
14:45	578	O. Bashorun, D. Odwyer	Parametric finite element analysis of cantilevered stone stairs
15:05	1275	G. Höfinger, J. Xin, H. Mang	Correlation of constraint conditions in koiter's initial postbuckling analysis and in the consistently linearized eigenproblem
15:25	1628	M. Cacho, A. Lorenzana, P.M. López-reyes, R. Sáiz	Method to determine in a simple way the critical buckling load of frames with variable cross-section members under any type of load

MS 67 Chair: A. Desimone **Room 252A**

Modeling and computational methods for the mechanics of biological systems

	ID	Authors	Title
14:15 Keynote	539	P. Purohit	Unusual mechanical behavior of blood clots at the macro-scale is due to protein unfolding at the nano-scale.
14:45	2005	R. Allena, J. Munoz, D. Aubry	Mechano-diffusion model for drosophila embryo development
15:05	169	C. Cyron, O. Lieleg, K. Schmoller, A. Bausch, W.A. Wall	A finite element approach for brownian dynamics of 3d biopolymer networks
15:25	822	P. Causin, M.T. Raimondi, R. Sacco, P. Zunino	Multiscale computational modelling in bioreactor tissue engineering: the biosynthetic response of cartilage cells to nutrient supply and fluid-induced shear stress

MS Chair: **Room 253**

	ID	Authors	Title
14:15 Keynote			
14:45			
15:05			
15:25			

MS 112 Chair: W. Ostachowicz **Room 341**

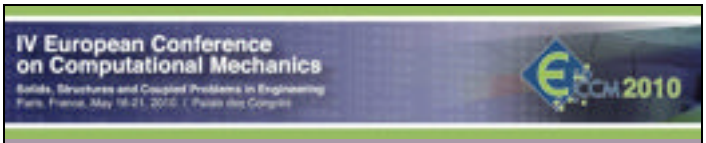
Computational aspects of smart structures and materials

	ID	Authors	Title
14:15 Keynote	377	E. Artioli, S. Marfia, E. Sacco	This paper presents an innovative shell finite element approach for the analysis of devices made of shape memory alloy.
14:45	2057	R. Naghdabadi, J. Arghavani, F. Auricchio, A. Reali, S. Sohrabpour	Computational issues in finite strain sma constitutive modeling
15:05	934	A. Senechal, O. Thomas, J.F. Deü	Optimization of shunted piezoelectric patches for complex structure vibration reduction - application to a turbojet fan blade.
15:25	1418	G. Lhostis, K. Moussaoui, H. Drobez, K. Gautier, F. Laurent, B. Durand	Fem modelisation of a thermal active composite structure

MS 82 Chair: D. Derome **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
14:15 Keynote	350	H. Petersson	Use of optical ander laser scanning techniques as tools for obtaining improved fe-input data for strength and shape stability analysis of timber and glulam products
14:45	1052	Z. Kavazovic, J. Deteix, A. Fortin, A. Cloutier	Coupled mechanical and heat and mass transfer numerical models for mdf hot pressing
15:05	141	S. Saft, M. Kaliske	Numerical modelling of wood for the restoration of historical pianofortes
15:25	576	R. Wolffhardt, G. Grüll, K.P. Schober, K. Höfler	Practical applications of simulation models for the optimisation of the behaviour of wood based constructions in regard to moisture impact



Parallel sessions

Monday

14:15-15:45

MS 51 Chair: H. Orlande **Room 343**

Inverse methods for parameter identification

	ID	Authors	Title
14:15 Keynote	891	D. Amodio, G. Palmieri, M. Sasso	Inverse procedure for identification of hyperelastic material parameters by planar tension tests
14:45	1596	Z. Bulinski, N. Andrzej, K. Kasza, L. Matysiak	Thermal inverse problems in modelling of the electrical bushing drying process
15:05	1897	O. Cortés-aburto, J.A. Hernández-pérez, G. Urquiza-beltrán, C. García-meneses	Gas turbine optimization using neural network inverse
15:25	1689	M. Cialkowski, J.A. Kolodziej	Inverse problem for nonstationary nonlinear heat conduction equation

MS 57 Chair: X. Xu **Room 353**

The stochastic finite element method: recent advances

	ID	Authors	Title
14:15 Keynote	1305	G. Stefanou, M. Fragiadakis	Nonlinear dynamic analysis of frame structures with stochastic system properties
14:45	2014	B. Pascual, S. Adhikari	Beyond the stochastic finite element method: hybrid uncertainty quantification using random pdes
15:05	874	A. Notin	Sldl: a stochastic approach of the ldl decomposition to speed up monte carlo simulations
15:25			

MS 1 Chair: T. Lelievre **Room 352A**

Advanced computational techniques based on model order reduction

	ID	Authors	Title
14:15 Keynote	788	S. Niroomandi, I. Alfaro, E. Cueto, F. Chinesta	Towards the third generation of surgical simulators
14:45	909	F. Galland, A. Gravouil, M. Rochette	A global model reduction approach for 3d fatigue crack growth with confined plasticity
15:05	1509	F. Joly, A. Neveu	Natural convection flow reduction by branch modes
15:25	1676	J.L. Dulong, F. Druesne, P. Villon	A priori reduction method and a priori hyper-reduction method for a non linear problem

MS 36 Chair: R. Fedele **Room 362-363**

Identification of material models by non-trivial tests and innovative measurement techniques at different observation scales

	ID	Authors	Title
14:15 Keynote	296	L. Peroni, M. Avalle, M. Peroni, D. Lehmhus	Modeling the inelastic behavior of aluminum foams based on ct scan geometry reconstruction
14:45	858	V. Korepanov, V. Matveyenko, I. Shardakov	Numerical investigation of static and dynamic problems in the framework of asymmetric elasticity theory
15:05	1463	M. Ben Azzouna, P. Feissel, P. Villon	Use of diffuse approximation for strain reconstruction from full-field measurements
15:25			

MS 10 Chair: X. Oliver **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
14:15 Keynote	1836	R. Abedi, R. Haber, O. Allix	Spacetime damage-delay cohesive model for elastodynamic fracture with riemann contact conditions
14:45	207	L. Sarah, J.F. Molinari, A. Seagraves, R. Radovitzky	Parallel simulations of the fragmentation of heterogeneous structures
15:05	742	A. Dahl	Dynamic modeling of crack arrest experiments with a local stress criterion
15:25	931	A. Seagraves, R. Radovitzky	A scalable fragmentation algorithm in three dimensions

MS 99 Chair: D. Givoli **Room 315**

Model reduction methods in solid mechanics

	ID	Authors	Title
14:15 Keynote	333	A. Placzek, D.M. Tran, R. Ohayon	Reduced order model identification by the pod for a rigidly moving structure in a nonlinear compressible flow
14:45	878	S. Hoffait, G. Kerschen, O. Brüls	Toward robust parameterized reduced-order model of non-linear structures using pod
15:05	572	S. Giambattista, M. Domenico, D. Stijn	A vehicle body concept modeling approach using reduced models of beams, joints and panels
15:25			

MS 37 Chair: M. Pietrzvk **Room 221-222**

Multiscale methods in computational materials science

	ID	Authors	Title
14:15 Keynote	1314	K. Nowak	Cafe model for creep damage induced by nonstationary creep deformation
14:45	933	F. Di Paola, S. Pascal, C. Berdin	Multi-scale modeling of the thermo-mechanical behavior of a particle-based nuclear fuel
15:05	1304	M. Hammoud, K. Sab, D. Duhamel	Coupled discrete-continuous methodology for in plane loaded elastic masonry
15:25	1656	K. Kowalczyk-gajewska	Comparison of three-scale and two-scale modelling of polycrystalline materials with lamellar substructure

Parallel sessions

Monday

14:15-15:45

MS 33 Chair: A. Garon **Room 364**

Composite materials and multiscale modeling and design in medicine and engineering

	ID	Authors	Title
14:15 Keynote	1126	Y. Bourgault, O. Rousseau, C. Pierre	Towards patient-specific electro-mechanical models of the heart including fiber architecture
14:45	673	M. Delfour, A. Garon, G. Blanchet	Modeling and role of the dose in the design of coated stents
15:05	1534	L. Petrini, V. Sassi, W. Wu, D. Gastaldi, M. Vedani, S. Trasatti, F. Migliavacca	Biodegradable stent design through numerical simulations
15:25			

MS 84 Chair: B. Szabo **Room 224-225**

Geometric models and numerical simulation

	ID	Authors	Title
14:15 Keynote	1246	E. Rank, C. Sorger, A. Duester	From the geometric model to numerical simulation
14:45	651	A. Duester, C. Vinci, Z. Yang, E. Rank	The application of boundary conditions in the finite cell method
15:05	1682	B. Bornemann, R. Sanches, F. Cirak	Immersed b-spline finite elements
15:25			

MS 94 Chair: S. Idelsohn **Room 223M**

Meshless and related methods

	ID	Authors	Title
14:15 Keynote	1198	J.S. Chen, L. Wang, H.Y. Hu	Subdomain radial basis collocation method for fracture mechanics
14:45	1564	J. Orkisz, S. Milewski	Non-linear analysis by the meshless finite difference method using higher order approximation
15:05	1104	I. Jaworska, J. Orkisz	Generalization of the multipoint fdm on arbitrarily irregular meshes
15:25	1209	J. Krok	A unified approach to the adaptive fem and meshless methods with adaptivity on thetransition zone

MS 92 Chair: E. Simiu **Room 202-203**

Database-assisted design: basics, data compression, applications to tall buildings

	ID	Authors	Title
14:15 Keynote	480	Y. Tamura, E. Simiu	Aerodynamic e-databased assisted design of buildings
14:45	400	D. Yeo	Database-assisted design and the interface between wind and structural engineering
15:05	289	C. Dragoiescu, J. Garber, J. Galsworthy, J. Kilpatrick	The use of high-frequency pressure integration (hfpi) technique for the structural design of low-rise and high-rise structures
15:25	1044	R. Gabbai	An assessment of safety margins for wind effects on tall buildings

MS 55 Chair: J.S. Chen **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
14:15 Keynote	1003	R. Becker, E. Burman, P. Hansbo	A nitsche xfem for fictitious domain simulations by use of a band of elements adjacent to the boundary.
14:45	1019	M. Karimpour, D. Balint, S. Wang, J. Lin	A crystal plasticity extended finite element method for simulating grain boundaries in polycrystalline materials
15:05	1204	D. Schillinger, S. Kollmannsberger, R.P. Mundani, E. Rank	The finite cell method for nonlinear problems of solid mechanics
15:25	1361	A. Ferreira	Analysis of stepped plates by rbf-ps collocation

MS 100 Chair: E. Petrov **Room 251**

Dynamics of nonlinear structures with contact interfaces

	ID	Authors	Title
14:15 Keynote	944	G.P. Ostermeyer	Nonlinear dynamics in contact interfaces with friction
14:45	848	D. Nowell, M. Kartal, D. Mulvihill, D. Hills	A simple model for the prediction of tangential contact stiffness in frictional contact
15:05	1961	D. Dini, D. Proprentner, S. Medina, C. Schwingshackl, A. Olver, E. Petrov, D. Ewins	Hysteretic response of frictional joints
15:25	376	R. Creac'hcadec, J. Maurice, J.Y. Cognard	A non associated elasto-visco-plastic model for adhesive suited to the numerical simulation of bonded assemblies

MS 101 Chair: M. Stingl **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
14:15 Keynote	1379	R. Lipton, M. Stuebner, H. Zhang	Optimal design for local stress control : explicit parametrization via inverse homogenization
14:45	924	O. Amir, M. Stolpe, O. Sigmund	Efficient computational procedures for topology optimization of nonlinear structures
15:05	386	N. Gerzen, F.J. Barthold	Model reduction in topology optimisation using singular value decomposition (svd)
15:25	1122	B. Bochenek, K. Tajs-zielinska	Local rules of cellular automata for generating optimal topologies in structural design

Parallel sessions

Monday

14:15-15:45

MS 11 Chair: P. Wriggers **Room 342A**

Computational contact mechanics

	ID	Authors	Title
14:15 Keynote	1280	A. Konyukhov, K. Schweizerhof	Contact interaction inside knots - towards the mechanics of knots
14:45	365	Z.Q. Feng	Dynamics of shell structures with contact interfaces
15:05	811	K. Fietz, U. Nackenhorst	An efficient fe-approach on the synovial contact in the human hip joint
15:25	1557	R. Krenn	Flexible wheel - soft soil contact modeling for mbs simulations

MS 58 Chair: T. Seelig **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
14:15 Keynote	1310	T. Böhlke, K. Jöchen, R. Piat, I. Tsukrov, G. Todd, B. Reznik	Thermoelastic properties of pyrolytic carbon: theory and identification based on microstructural data
14:45	672	I. Tsukrov, B. Drach, S. Wesley, R. Piat, T. Böhlke, J.M. Gebert, A. Wanner	Effective elastic moduli of materials with irregularly shaped pores characterized by micro-computed tomography
15:05	1255	R. Piat, G. Stasiuk, T. Böhlke, J.M. Gebert, S. Dietrich, A. Wanner, I. Tsukrov, O. Deutschmann, G. Todd	Influence of the preform architecture on the effective elastic material properties of carbon/carbon composites
15:25	1945	T.A. Langhoff, T. Böhlke	On aspects of thermomechanical homogenization with applications to c/c composites

MS 114 Chair: S. Pride **Room 352B**

Experiments, theory, and numerical modelling of waves in heterogeneous porous media

	ID	Authors	Title
14:15 Keynote	589	J. Berryman	Poroelasticity of orthotropic systems: modeling seismic waves in fluid-filled reservoirs with vertical fractures
14:45	1786	H. Fan, D. Smeulders	Shock-induced stoneley waves in fractured and permeable formations
15:05	1288	M. Braatz, J. Renner	Laboratory measurements of ultrasound attenuation in rock-like materials : yes, we can?
15:25	436	D. Smeulders, M. Schakel	Seismo-electric prospecting: theory and experimental results

MS 53 Chair: L. Laloui **Room 242A**

Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media

	ID	Authors	Title
14:15	2056	T. Hueckel, L. Hu, M. Hu	Environmental degradation of materials: modeling.
14:45	543	M. Nuth, L. Laloui	Performances of the effective stress in describing the physics of multiphase porous materials
15:05	138	G. Buscarnera, C. Di Prisco, R. Nova	The effect of multi-physical perturbations on geomaterial instability: a framework for hydro-mechanical coupling in crushable soils
15:25	913	O. Avci, W. Ehlers	A new approach for plastic failure criteria of granular materials

Parallel sessions

Monday

16:10-17:10

MS 83 Chair: R. Pyrz **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
16:10	609	C. Pellegrino, G. Mazzucco, V. Salomoni, C. Maiorana	Experimental and 3d numerical study on bond behaviour between concrete and frp composites
16:30	1430	F. Campi, I. Monetto	Progressive interface failure of 2-layer composite beams with interlayer slip
16:50	186	M. Teixeira, P. Pimenta, E.M.B. Campello	Micromechanical analysis of damage in concrete with the efg method

MS 77 Chair: L. Desvillettes **Room 242B**

Micro-macro scale-coupling and transition in solid and fluid mechanics

	ID	Authors	Title
16:10	149	L. Desvillettes, A. Ibrahimbegovic	Micro-macro scale-coupling and transition in solid and fluid mechanics: keynote prsentation
16:30	1543	M. Massot, F. Laurent, S. De Chaisemartin, L. Freret, D. Kah	Eulerian multi-fluid model for the simulation of evaporating polydisperse sprays : micro-macro scale modelling and numerical issues
16:50	1340	C. Kassiotis, A. Ibrahimbegovic, H. Matthies	A componentwise implementation of a partitioned strategy for fluid-structure interaction and its application to sloshing waves impacting structures

MS 62 Chair: Z. Gasbar **Room 243**

Computational structural stability

	ID	Authors	Title
16:10	2071	H. Mang, G. Höfinger, J. Xin	On the interdependency of the primary and the initial secondary equilibrium path for elastic buckling
16:30	875	S.H. Assaee, H.R. Ovesy, M. Hajikazemi, M.H. Sadr	Postbuckling behavior of thin and relatively thick laminated plates under end-shortening and normal pressure loading using semi energy finite strip method
16:50	2021	K. Maksym	Numerical analysis of load-carrying capacity of thin-walled cylinders with geometrical imperfections periodical in circumferential direction (experiment and numerical simulation)

MS 67 Chair: M. Arroyo **Room 252A**

Modeling and computational methods for the mechanics of biological systems

	ID	Authors	Title
16:10	1130	P. Young, V. Bui Xuan, D. Raymont	Mesh generation and computational modelling of biomedical image data
16:30	161	C. Bertsch, A. Bolea Albero, M. Böl	3d modelling of biofilm structures using the finite element method
16:50	1544	T. Guelon, J.D. Mathias, G. Deffuant	Homogenization of the diffusion of bacterial biofilms

MS 153 Chair: L. Komlanvi **Room 253**

Computational methods for structures

	ID	Authors	Title
16:10	600	A. Moreno, A. Loureiro, R. Gutiérrez, J.M. Reinosa, M. López	Numerical simulation and experimental evaluation of three-dimensional steel beam-to-column joints under non proportional loading
16:30	134	F. Karaoulanis, T. Chatzigogos	Implicit numerical integration of the hoek-brown yield criterion in principal stress space
16:50	2053	W. Gerrits, W. Brink, Van Den	Design optimisation by tailored fibre placement

MS 27 Chair: R. Rizzoni **Room 341**

Mathematical and numerical modelling of microstructures in phase transformation and damaged materials

	ID	Authors	Title
16:10	1289	K. Ammar, B. Appolaire, S. Forest, G. Cailletaud	Combining phase field approach and homogenization methods for modelling phase transformation in elastoplastic media
16:30	1172	A. Tahimi, F. Barbe, R. Quey, L. Taleb	Plasticity induced by diffusive phase transformation: polycrystal fe modelling and experimental analysis
16:50	694	J.L. Shao	Atomistic simulation of nanovoid-induced structural transition in shocked iron

MS 82 Chair: M. Kaliske **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
16:10	2019	G. Meschke, M. Gofman, S. Mueller	3d numerical simulations of anchor pull-out tests based on a multisurface plastic-damage model for chipboard
16:30	1732	P. Toussaint, I. Tavakoli-gheynani, J.F. Bocquet, P. Triboulot	Application and modelling pre-stressed timber joints
16:50	1727	I. Tavakoli-gheynani, P. Toussaint, C. Barthram, J.F. Bocquet	Embedment strength at any angle to the grain: experimental and numerical analysis

Parallel sessions

Monday

16:10-17:10

MS Chair: **Room 353**

	ID	Authors	Title
16:10			
16:30			
16:50			

MS 51 Chair: E. Kasparek **Room 343**

Inverse methods for parameter identification

	ID	Authors	Title
16:10	2050	T. Garbowski, G. Maier, G. Novati	Material model calibration for anisotropic elastic-plastic free-foils by cruciform tests, full-field measurements and inverse analysis
16:30	1540	M. Wesolowski, E. Barkanov, A. Chate	Characterisation of storage and loss moduli of laminated composites via an inverse technique
16:50	1298	F. Louf, D. Néron, P. Ladevèze	Damping updating in spaces structures

MS 1 Chair: A. Nouv **Room 352A**

Advanced computational techniques based on model order reduction

	ID	Authors	Title
16:10	1459	F.Z. Daïm, S. Cartel, D. Ryckelynck	Truncated integration for pgd solution of inseparable thermal equations
16:30	754	D. Ryckelynck	Toward "green" mechanical simulations in materials science: hyper reduction of a polycrystal plasticity model
16:50	246	X. Manyu, B. Piotr	Surrogate models based on constrained pod for optimization

MS 69 Chair: J.P. Ponthot **Room 362-363**

Numerical strategies and optimization methodologies for finite element simulation of metal forming processes

	ID	Authors	Title
16:10	1236	V. Zubov	The choice of cost functional for the optimal control problem of the crystallization process
16:30	678	M.M. Rahman, F. Tarlochan, R. Singh, A.K. Ariffin, S.S. Md Nor	A model for the simulation of powder compaction process at elevated temperature
16:50	328	S. Germain, P. Steinmann	Towards form finding for anisotropic materials

MS 10 Chair: M. Jirasek **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
16:10	2040	J. Füssl, R. Lackner	Micromechanical model for the description of fatigue behavior of asphalt mixtures
16:30	1993	V. Lepov	Multiscale structural modelling of damage and fracture processes
16:50	862	M. Fischlschweiger, W. Ecker, T. Antretter, R. Pippan	Fem-modelling of plasticity-induced crack closure under cyclic loading and plane strain condition

MS 35 Chair: J. Mosler **Room 315**

Energy-based variational methods in computational mechanics

	ID	Authors	Title
16:10	463	L. Stainier	A variational finite element approach for thermo-mechanical coupling in computational structural mechanics
16:30	1434	G. Alduncin	Composition duality methods for quasistatic evolution elasto-visco-plastic variational problems
16:50	1844	N. Bleier, J. Mosler, O. Bruhns	Numerically efficient variational constitutive updates

MS 37 Chair: M. Bernacki **Room 221-222**

Multiscale methods in computational materials science

	ID	Authors	Title
16:10	1495	W. Cecot, M. Serafin	Application of hp-adaptive mixed elements to numerical homogenization
16:30	1494	M. Serafin, W. Cecot	Homogenization based on a single rve for inelastic heterogeneous materials
16:50	1059	P. Mitkowski, W. Mitkowski	Approximation of the basis function at determination of effective conductivity coefficient of elliptic system using asymptotic homogenization

Parallel sessions

Monday

16:10-17:10

MS 18 Chair: F. Gentil **Room 364**

Computational models for soft tissues

	ID	Authors	Title
16:10	1873	B. Hernandez, B. Peña, B. Calvo, M. Doblare	Computational model of the muscle of the rabbit and implanted meshes
16:30	144	T. Roza, R. Natal Jorge, M. Parente, C. Saleme, A. Filho, M. Pinotti, T. Mascarenhas	Development of a methodology to simulate valsalva maneuver and its influence on pelvic floor using finite elements method
16:50	988	T. Waffenschmidt, P. Saez, V. Alastrue, B. Peña, A. Menzel, M. Doblare	A computational micro-sphere approach applied to the modelling of anisotropic soft biological tissues

MS 84 Chair: Y. Basilevs **Room 224-225**

Geometric models and numerical simulation

	ID	Authors	Title
16:10	751	N. Andreas, C. Katz, S. Kaiser	Converting analytical building-models to consistent analysis models
16:30	1383	V. Nübel	Geometric model, numerical model, prototype - challenges in tool development
16:50	1316	W. Volk, I. Heinle	New approach for the evaluation of plastic flow curves for large strains with the bulge test

MS 94 Chair: P. Villon **Room 223M**

Meshless and related methods

	ID	Authors	Title
16:10	1637	G. Liu	A g space theory and weakened weak (w2) formulation of meshfree methods for biomechanics problems
16:30	763	F. Ureña, J. Benito, L. Gavete, L. Gavete	Application of the generalized finite difference method to seismic wave propagation. in this paper, this meshless method (gfdm) is applied to seismic wave propagation. we derived stability conditions and grid dispersion relations in 2-d.
16:50	776	L. Gavete	Modelling of the advection-diffusion equation with the generalized finite difference method

MS Chair: **Room 202-203**

	ID	Authors	Title
16:10			
16:30			
16:50			

MS 55 Chair: A. Simone **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
16:10	1508	M. Macri	Multiscale modeling of high-temperature performance of heterogeneous materials using structural based enrichment
16:30	697	H. Huang	Modeling subsurface features using multiphysics enriched finite element method
16:50	1580	E. Ahmadi	Micromechanics of fibrous composite materials using a new meshless method

MS 100 Chair: K. Willner **Room 251**

Dynamics of nonlinear structures with contact interfaces

	ID	Authors	Title
16:10	298	Y. Renard	The singular dynamic method: a well-posed semi-discretization of contact problems in elastodynamics
16:30	965	D. Doyen	Modified mass method for dynamic contact problems with friction
16:50	1532	A. Kireenkov	Pade approximants in dynamics of solids under conditions of combined kinematics

MS 101 Chair: P. Duvsinx **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
16:10	728	R. Makinen, J. Toivanen, J. Haslinger	Topology optimization governed by the bernoulli free boundary problem using level set parametrization and pseudo-solid solver
16:30	198	M. Shimoda	Optimal shape design of shell structures
16:50	903	S. Arnout, G. Lombaert, G. Degrande, G. De Roeck	Optimization as a design tool for shell structures

Parallel sessions

Monday

16:10-17:10

MS 11 Chair: G. Zavarise **Room 342A**

Computational contact mechanics

	ID	Authors	Title
16:10	1073	A. Chudzikiewicz, A. Myslinski	Rolling contact problems with two - layer structures
16:30	1364	T. Iwai, A. Sugimoto, T. Aoyama, H. Azegami	Shape optimization problem of elastic bodies for controlling contact pressure
16:50	733	Y. Kanno, F. Ryo	A numerical algorithm for enumerating all wedged configurations in contact problem with coulomb friction

MS 58 Chair: T.A. Langhoff **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
16:10	1055	P. Hempel, A. Hillenberg, T. Seelig	Multiscale mechanical modeling of talc particle reinforced thermoplastic polymers
16:30	749	A. Sedighiamiri, T. Van Erp, H. Van Dommelen, L. Govaert, G. Peters	Three-phase micromechanical modeling of the elastic properties of semicrystalline polymers
16:50	1672	S. Lin, T. Böhlke, R. Piat, M. Heizmann	Determination of correlation functions of pyrolytic carbon microstructures based on an image segmentation technique

MS 114 Chair: H. Steeb **Room 352B**

Experiments, theory, and numerical modelling of waves in heterogeneous porous media

	ID	Authors	Title
16:10	460	P. Adler, A. Pazdniakou, J.F. Thovert, V. Mourzenko, I. Malinouskaya, X.Y. Li	Acoustic properties of porous media: an overview
16:30	1004	M. Schanz, M. Nenning	Infinite elements in saturated porous media
16:50			

MS 53 Chair: L. Sanavia **Room 242A**

Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media

	ID	Authors	Title
16:10	1199	R. Larsson, M. Rouhi, M. Wysocki	Infusion modelling using two-phase porous media theory
16:30	170	D. Cohen, P. Lehmann, M. Schwarz, G. Michlmayr, D. Or	Mechanics of hydrologically triggered shallow landslide using concepts of fiber bundle models
16:50	346	A. Larese De Tetto, E. Onate, R. Rossi	Overtopping in rockfill dams: a mixed lagrangian eulerian formulation

Parallel sessions

Monday

17:20-18:40

MS 83 Chair: V. Sansalone **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
17:20	1355	A. Nemov, A. Borovkov, D. Boso, B.A. Schrefler	Finite element simulation of the mechanical behaviour of multilevel composite iter cables
17:40	1448	B. Hugues	Numerical simulation of iter cable-in-conduit conductors mechanical behavior
18:00	25	A. Apicella, U. Heckenberger, G. Iannuzzo, G. Albertini	Integrated platform for design in aeronautics
18:20			

MS 77 Chair: L. Desvillettes **Room 242B**

Micro-macro scale-coupling and transition in solid and fluid mechanics

	ID	Authors	Title
17:20	553	V. Galkin, A. Galkin	The condensed structure in system of colliding particles
17:40	1530	L. Boudin, B. Grec, D. Yakoubi	We numerically investigate the relevance, in the aerosol-air model, of the strong coupling between both phases, in the framework of the respiratory system.
18:00	1439	L. Desvillettes, L. Chamoin	Control of simulation models used for kinetic equations
18:20			

MS 62 Chair: J. Murin **Room 243**

Computational structural stability

	ID	Authors	Title
17:20	28	K. Rzeszut	Initial imperfections and clearances in stability analysis of thin walled steel structures k. rzeszut, a. garstecki
17:40	1249	J. Xin, H. Mang	Conversion of an imperfection-sensitive into an imperfection-insensitive arch bridge
18:00	1655	I. Zuardy, P. Zahlen, W. Vöge, A. Herrmann	Stability behaviour of plain-curved cfrp sandwich panel with foam core under compression and shear loads
18:20	1334	K. Saavedra, O. Allix, P. Gosselet	Towards a multiscale domain decomposition method for the simulation of delamination and buckling interaction in composites

MS 67 Chair: A. Desimone **Room 252A**

Modeling and computational methods for the mechanics of biological systems

	ID	Authors	Title
17:20	1826	F. Fulga, C. Fulga, D. Nicolau	Multiobjective genetic algorithm for flexible filament model parameters extraction
17:40	715	S. Hossain, C. Nelson, T. Boulet, M. Arnoult, L. Zhang, A. Holmberg, J. Hein, N. Kleinschmit, E. Sogbesan	Material modeling and development of a realistic dummy head for testing blast induced traumatic brain injury
18:00	3	R. Miftahof	Dynamicsof the gravid uterus
18:20			

MS 153 Chair: F. Karaoulanis **Room 253**

Computational methods for structures

	ID	Authors	Title
17:20	1344	J.M. Battini, M. Hjiaj, Q.H. Nguyen	Geometrically non-linear finite element analysis of two-layer composite beams with interlayer slip
17:40	425	L. Komlanvi	Sensitivity analysis of solutions computed through the anm: application to the geometrical nonlinear behaviour of a laminated glass beam
18:00	669	T.R. Seong, T.Y. Yoon, H.M. Koh	Finite-element simulation of nonlinear behavior of ultra-thick plate joint with gap between plates
18:20	2036	T. Canor, V. Denoël	Patching asymptotic solution of a cable with a small bending stiffness

MS 27 Chair: F. Lebon **Room 341**

Mathematical and numerical modelling of microstructures in phase transformation and damaged materials

	ID	Authors	Title
17:20	240	F. Davi'	Singularities in landau-devonshire potentials for ferroelectrics phase-transitions
17:40	1535	R. Melnik	Numerical analysis of phase transformations in finite size nanostructures with mesoscopic models
18:00	1724	D. Indeitsev	Mathematical modeling of dynamical instability of surface and structure of materials
18:20	782	R. Rizzoni, F. Lebon	Asymptotic analysis of an elastic thin interphase with mismatch strain

MS 82 Chair: L. Muszvnski **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
17:20	1737	G. Turk	Semi-analytical buckling loads of timber columns subjected to fire
17:40	1121	J.L. Coureau	On the application of fracture mechanics for traditional connections design
18:00	1140	N. Dourado, S. Morel	R-curve estimate through an exact self-weight compensation method:wood
18:20	611	J. Cabrero, A. Heiduschke, P. Haller	Numerical and experimental investigation on wooden profiles with fiber confinement

Parallel sessions

Monday

17:20-18:40

MS 51 Chair: A.G. Geffroy **Room 343**

Inverse methods for parameter identification

	ID	Authors	Title
17:20	1710	E. Kasparek, U. Zencker, R. Scheidemann, H. Voelzke	Neural networks for parameter identification of dynamically loaded polyurethane foams
17:40	1851	F. Vianna, H. Orlande, G. Dulikravich	Design of a heating system for petroleum pipelines based on state estimation and optimal control
18:00	467	Z. Lozina, D. Vucina, D. Sedlar	An assessment of the reliability of the inverse procedures in the structural change detection based on the residual force approach
18:20	1641	J. Zhang, C.G. Koh	Output-only substructural identification of jack-up spudcan fixity

MS 14 Chair: G. Schueller **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
17:20	880	M. Schevenels, G. Lombaert, G. Degrande	Optimal sensor placement in geophysical tests
17:40	923	C. Desceliers, C. Soize, Q. Grimal, M. Talmant, S. Naili	Identification of the probabilistic model for a nonhomegeneous cortical bone using in vivo measurements in ultrasonic range
18:00	1036	A. Litvinenko, H. Matthies	Sparse data formats and efficient numerical methods for uncertainties quantification in numerical aerodynamics
18:20	592	S. Klostermann, D. Vogt, M. Gehlken	Dynamic simulation of a phased-array radar considering earthquake loads

MS 1 Chair: P. Ladevèze **Room 352A**

Advanced computational techniques based on model order reduction

	ID	Authors	Title
17:20	245	A. Ammar, F. Chinesta, E. Cueto	Advances in time-multi-scale simulation: when time becomes multidimensional
17:40	381	G. Bonithon, P. Joyot, F. Chinesta, P. Villon	Non-incremental boundary element discretization of the heat equation based on the use of the proper generalized decompositions
18:00	1088	M. Beringhier, J.C. Grandidier	Proper generalized decomposition and time adapted discretizations to solve thermoviscoelastic problem with two characteristic times
18:20	247	H. Lamari, A. Ammar, P. Cartraud, F. Chinesta, F. Jacquemin, G. Legrain	Advanced non-linear homogenization: speeding-up concurrent simulations

MS 69 Chair: J.P. Ponthot **Room 362-363**

Numerical strategies and optimization methodologies for finite element simulation of metal forming processes

	ID	Authors	Title
17:20	1807	M. Pietryga, I. Vladimirov, S. Reese	Continuum mechanical material modelling of anisotropy with application to sheet metal forming
17:40	1393	N. Merah, A. Al-aboodi, A.R. Shuaib, Y. Al-nassar	3-d fea of the effects of large overtolerances on roller expanded tube-tubesheet joint strength
18:00	1804	J. Frischkorn, S. Reese	Modelling the compaction of metal powder and its application towards fe simulations of a new coating process
18:20	268	B. Gueye, O. Pantalé	Die design for minimizing the forging forces during radial forging process : fem and optimization algorithm.

MS 10 Chair: M. Jirasek **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
17:20	552	R. Schöngrundner, S. Endler, G. Milassin, O. Kolednik	Endurance limit of chromium nitride coated tool-steels - experimental and numerical studies
17:40	1002	A. Stoll, A.J. Wilkinson	Bem based dislocation modeling of intergranular crack propagation
18:00	270	H. Riahi	Probabilistic assessment of mixed mode fatigue crack growth using stochastic collocation method
18:20	991	M. Benachour, M. Benguediab, A. Hadjoui, N. Benachour	Simulation of fatigue crack growth by fem for 2024 aluminum alloy

MS 35 Chair: L. Stainier **Room 315**

Energy-based variational methods in computational mechanics

	ID	Authors	Title
17:20	34	K. Myslecki, P. Sawinski	Static and dynamic analysis of cable nets based on hellinger-reissner functional and hamilton's principle
17:40	217	I. Kovacic, Z. Rakaric	Higher approximations for motion for conservative oscillators with a fractional-order restoring force: non-simultaneous and simultaneous variational approach
18:00	45	H. Santos, C. Paulo	A complementary energy principle for the geometrically exact analysis of cables: derivation of an equilibrium stress-based finite element model
18:20	1374	L. Madureira, E. Fonseca, F. Melo	Out of plane bending in curved pipes a mixed formulation for evaluating stress field of curved pipes subjected to bending moment is presented and compared to finite element and experimental results

MS 37 Chair: E. Maichrzak **Room 221-222**

Multiscale methods in computational materials science

	ID	Authors	Title
17:20	481	W. Kus, T. Burczynski	Multiscale analysis of biological tissues with the use of fem and gpu computing
17:40	129	A. Milenin, M. Kopernik, M. Pietrzyk	The multi-scale fem model of artificial heart chamber composed of polyurethane and tin nanocoating deposited by pulsed laser deposition method
18:00	851	D. Zöllner, P. Streitenberger	Influence of the junction mobility on grain growth in nanocrystals
18:20			

Parallel sessions

Monday

17:20-18:40

MS 18 Chair: B. Calvo **Room 364**

Computational models for soft tissues

	ID	Authors	Title
17:20	256	F. Gentil, C. Garbe, M. Parente, P. Matins, R. Natal Jorge	Otosclerosis - a comparative study using finite element method
17:40	1142	K.B. Gu, L. Li	Computational contact mechanics of human knee joint - influence of fluid flow and fibre orientation
18:00	1087	G. Martufi, T. Gasser, M. Auer	A growth model for abdominal aortic aneurysms based on continuous collagen turn-over
18:20	987	N. Cavallini, G. Guidoboni, R. Glowinski	Fluid structure interaction in blood flow: a stable loosely coupled algorithm

MS 84 Chair: W. Volk **Room 224-225**

Geometric models and numerical simulation

	ID	Authors	Title
17:20	1478	E. Marchandise, J.F. Remacle, C. Geuzaine	High quality meshing with harmonic maps
17:40	1541	J. Spühler, J. Hoffman, U. Gustafsson, M.G. Larson, P. Vesterlund	Simulation of flow in the human heart using moving geometries based on ultrasound measurements
18:00	1634	C. Erdönmez, O. Salman, E. Imrak	Characterizing the finite element analysis of nested helical geometry and test procedure for wire ropes
18:20	1863	R. Leite, R. Natal Jorge, A. Jesus	An integrated system for reticular structures modeling regarding the fatigue analysis of riveted bridges

MS 94 Chair: G. Liu **Room 223M**

Meshless and related methods

	ID	Authors	Title
17:20	1548	J. Eom, S. De	A point collocation-based residual free bubble method
17:40	1644	D. Racz	Mlpg techniques: adaptive integration, mapping of integration domains and comparing results to fea solutions
18:00	1819	E. Costa, L. Godinho, J. Santiago, A. Pereira, C. Dors	An efficient numerical model for the prediction of acoustic wave propagation in the vicinity of a wedge coastal region
18:20	895	A. Schoenewald, O. Von Estorff	Meshfree methods for the dynamic analysis of saturated soil

MS 92 Chair: A. Gan Chowdhurv **Room 202-203**

Database-assisted design: basics, data compression, applications to tall buildings

	ID	Authors	Title
17:20	314	F. Lombardo, J. Main	Automated extraction and classification of thunderstorm and non-thunderstorm wind data for extreme-value analysis
17:40	54	M. Grigoriu	Generation of large databases of synthetic hurricane, thunderstorm, and synoptic directional wind speeds
18:00	185	E. Simiu, G. Bitsuamlak, A. Gan Chowdhury, R. Li, A. Tecle, D. Yeo	Testing of residential homes under wind loads
18:20	1186	I. Canino, A. Gan Chowdhury	Aerodynamic load and multi-axial performance testing on fiber- reinforced polymer connections and metal fasteners

MS 55 Chair: A. Simone **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
17:20	220	A. Alizada, T.P. Fries	Cracks and crack propagation with xfem and hanging nodes in 2d
17:40	259	H. Minnebo, J. Majerus, L. Noels	Displacement extrapolation method : an alternative to j-integral for stress intensity factors using x-fem
18:00	478	S. Abbas, T.P. Fries	High gradient enrichment functions for crack propagation in cohesive and cohesion-less cracks
18:20	392	D. Simkins	Mulit-scale structural mechanics for advanced aircraft design

MS 100 Chair: E. Petrov **Room 251**

Dynamics of nonlinear structures with contact interfaces

	ID	Authors	Title
17:20	458	A. Iwasaki	Effect of pore side contact to the loosening behavior of the bolted joint of cfrp / isotropic plate
17:40	118	A. Sadeghi, H. Zohoor	Nonlinear vibration of double tapered atomic force microscope cantilevers by considering the hertzian contact theory
18:00			
18:20			

MS 101 Chair: M. Kocvara **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
17:20	586	M. Stingl, M. Kocvara	Free material optimization and the plato-n software
17:40	1016	J.P. Blasques, G. Bir, K. Maute, M. Stolpe	Optimal design of laminated composite beams with mass, stiffness and aeroelastic constraints for wind turbine applications
18:00	889	C.G. Hvejsel, E. Lund, E. Munoz	Multi-material optimization - global optimization and relaxations
18:20	741	B. Schmidt, M. Stingl	Simultaneous multi-layer shape and material optimization - existence, convergence and numerical results

Parallel sessions

Monday

17:20-18:40

MS 11 Chair: G. Zavarise **Room 342A**

Computational contact mechanics

	ID	Authors	Title
17:20	1930	A. Markopoulos, T. Brzobohaty, P. Horyl, T. Kozubek, Z. Dostal, V. Vondrak	Scalable feti methods for contact problems with friction in 2d
17:40	343	N. Strömberg	Contact modeling in topology optimization
18:00	1590	Y. Renard, T. Ligursky	A well-posed semi-discretization of elasto-dynamic contact problems with friction
18:20	1612	V. Yastrebov, G. Cailletaud, F. Feyel	Implementation and application of a feti based parallel contact algorithm

MS 58 Chair: B. Svendsen **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
17:20	472	J. Vorel, M. Sejnoha, J. Zeman	Hierarchical modeling of plain weave fabric composites
17:40	680	M. Giovinazzo, I. Tsukrov, G. Todd, M. Fruscello, J. Goering, G. Collin, Y. Lapusta	Multiscale numerical modeling of 3d textile composites to predict cure-induced micro-cracking
18:00	1358	G. Couégnat, E. Martin, J. Lamon, N. Carrère	Multiscale modeling of woven ceramic matrix composites based on a discrete micromechanical damage description
18:20	846	T. Vaughan, C. Mccarthy	Micromechanical modelling of transverse damage in fibre reinforced composite materials

MS 13 Chair: S. Potapov **Room 352B**

Computational methods in impact engineering

	ID	Authors	Title
17:20	1398	V. Faucher, S. Kokh	Explosive fluid structure-interaction using multi-component flows with anti-dissipation
17:40	1335	V. Feldgun, Y. Karinski, D. Yankelevsky	Soil-structure interaction: riemann solver and the modified godunov method for irreversibly compressible media
18:00	1605	L. Maheo, G. Rio, V. Grolleau	Damping efficiency of the explicit time integration tchamwa-wielgosz scheme and the bulk viscosity method
18:20			

MS 53 Chair: W. Ehlers **Room 242A**

Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media

	ID	Authors	Title
17:20	16	F. Pizzocolo, J. Huyghe, J. Remmers, K. Ito, R. De Borst	A mixed hybrid formulation for 2 d poroelasticity with discontinuity
17:40	1248	A. Grillo, G. Wittum	Considerations on growth and transfer processes in multiphasic materials
18:00	1283	D. Pioletti	Mechanical interaction between cells and fluid for bone tissue engineering scaffold
18:20	1093	R. Ruben, P. Fernandes, J. Folgado	Optimum design of cementless hip prostheses considering stem alignment effect on long-term performance

Parallel sessions

Tuesday

09:25-10:55

MS 83 Chair: G. Maier **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
09:25 Keynote	1365	M. Ostoja-starzewski	Fractals in mechanics of materials
09:55	1354	F. Meftah, S. Dal Pont, B.A. Schrefler	A three-dimensional staggered finite element modeling of thermohygro- mechanical behavior in porous media with random properties
10:15	806	J. Hohe, V. Hardenacke, C. Beckmann	Numerical homogenization analysis of disorder effects in the effective thermo-mechanical response of structural foams and porous solids
10:35	1114	M. Zingales	The fractal model of non-local elasticity with long-range interactions

MS 56 Chair: T. Wallmersperger **Room 242B**

Advanced structures and coupled multifield problems

	ID	Authors	Title
09:25 Keynote	816	F. Franco, S. De Rosa, T. Polito	Vibroacoustic design of a prototypal sandwich panel
09:55	151	S. Brischetto, O. Polit, E. Carrera	A nine parameter shell model for the analysis of innovative structures
10:15	1251	S. Klinkel	The treatment of electromechanical locking in a finite shell element for piezoelectric structures
10:35	1378	S. Hartmann, A.W. Hamkar, K.J. Quint, S. Rothe	Thermo-mechanically coupled finite element analysis using high order time integrators

MS 62 Chair: H. Irschik **Room 243**

Computational structural stability

	ID	Authors	Title
09:25 Keynote	222	V. Kutis, J. Murin, M. Aminbaghai	Stability of composite beam-column
09:55	1395	R. Alsafadie, M. Hjiaj, J.M. Battini	Corotational mixed three-dimensional finite element for structural stability problems
10:15	1568	A. Ruggerini, S. De Miranda, R. Miletta, F. Ubertini	On the numerical modeling of thin-walled cold-formed roof systems.
10:35	1660	S. De Miranda, G. Garcea, A. Madeo, F. Ubertini, G. Zagari	Koiter postbuckling fem analysis of plate assemblages using a corotational formulation

MS 29 Chair: T. Ishikawa **Room 252A**

Biological cells and capsules

	ID	Authors	Title
09:25 Keynote	2027	C. Misbah	Vesicles and red blood cells under flow: dynamics and rheology
09:55	508	T. Klöppel, W.A. Wall	A novel two-layer, coupled finite element approach for the nonlinear elastic and viscoelastic behavior of human erythrocytes
10:15	1113	P. Dimitrakopoulos, S. Kuriakose, W.R. Dodson Iii	Non-axisymmetric motion of capsules and red blood cells in microfluidic channels and vascular microvessels
10:35	1390	I. Pivkin, M. Dao, G. Karniadakis, S. Suresh	Numerical simulations of flow dynamics of human red blood cells in microfluidic systems

MS 153 Chair: R. Duris **Room 253**

Computational methods for structures

	ID	Authors	Title
09:25 Keynote	242	M. Szczotka	Dynamic analysis of a subsea pipeline installation on seabed
09:55	5	J.B. Paiva, D.B. Ribeiro	Numerical static analysis of rafts resting on a three-dimensional infinite layered media
10:15	275	M. Abasolo Bilbao, J. Aguirrebeitia, R. Aviles, I. Fernandez De Bustos	A tetraparametric metamodel for the analysis and design of bolting sequences for wind generator flanges
10:35	1579	A. Nour, T. Djedid, Y. Chevalier, M.O. Si-chaïb, M.S. Bouamrene	This work presents an evaluation of stress engendered by defects of the spiral bevel gears meshing.

MS 27 Chair: R. Rizzoni **Room 341**

Mathematical and numerical modelling of microstructures in phase transformation and damaged materials

	ID	Authors	Title
09:25 Keynote	1381	J.J. Marigo, K. Pham, C. Maurini	Construction and stability properties of localized states in gradient damage model
09:55	1630	G. Allaire, F. Jouve, N. Van Goethem	A level set method for damage evolution in brittle materials
10:15	710	I. Chenchiah, C. Larsen	Evolution of brittle damage with multiple damaged states
10:35	793	R. Paroni, C. Davini	Piece-wise constant approximation of first order variational problems via $w^{1,p}$ estimates

MS 82 Chair: G. Meschke **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
09:25 Keynote	1671	F. Wittel, H. Herrmann	Micro-mechanical modeling of failure processes in wood
09:55	959	M. Lehmann, T. Tannert, M. Grosse	Multi surface plasticity model for timber bending members
10:15	1435	C. Hackspiel, K. Hofstetter, M. Lukacevic, J. Eberhardsteiner	A numerical simulation tool for wood grading
10:35	372	P. Isaksson	A strong nonlocal plasticity model for approximation of the macroscopic mechanical behavior of planar random fiber networks

Parallel sessions

Tuesday

09:25-10:55

MS 20 Chair: B. Guzina **Room 343**

Inverse problems

	ID	Authors	Title
09:25 Keynote	293	F. Cakoni	Transmission eigenvalues and their application to inverse scattering problems
09:55	23	L. Borcea	Imaging in random waveguides
10:15	448	A. Charalambopoulos	On the development of a new moments method for the solution of the inverse acoustic scattering problem
10:35	1238	C. Bellis, M. Bonnet	Crack identification in elasticity using 3d time-domain topological derivative

MS 14 Chair: C. Soize **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
09:25 Keynote	238	M. Valdebenito, G. Schueller	Design of maintenance schedules for fatigue-prone metallic components using reliability-based optimization
09:55	368	A. Gallina, A. Gallina, T. Uhl	Accurate modal meta-modeling procedure for representation of mode crossing and veering
10:15	690	R. Sternfels, S. Koutsourelakis	Stochastic optimal design using approximate models
10:35	1020	E. Schimmel, J. Remmers, C. Verhoosel, M. Gutiérrez	Sensitivity and reliability analysis for fracture modeled by cohesive segments and the partition of unity method

MS 1 Chair: S. Idelsohn **Room 352A**

Advanced computational techniques based on model order reduction

	ID	Authors	Title
09:25 Keynote	730	N. Relun, P.A. Boucard, D. Néron	Multiscale elastoviscoplastic analysis using the proper generalized decomposition
09:55	301	S. Boyaval	Computational reductions in parametrized monte-carlo simulations
10:15	1319	D. Néron, P. Ladevèze	A time-space framework based on the proper generalized decomposition for solving evolution problems
10:35			

MS 69 Chair: L. Fourment **Room 362-363**

Numerical strategies and optimization methodologies for finite element simulation of metal forming processes

	ID	Authors	Title
09:25 Keynote	31	R. Boman, J.P. Ponthot	Advances in numerical simulation of stationary processes using arbitrary lagrangian eulerian formalism. application to roll forming process.
09:55	1301	F. Béchet	Numerical modeling of the contact sheet/roller using a coupled anm/ad method
10:15	1227	N. Mathieu, R. Dimitriou, A. Parrico, M. Potier-ferry, H. Zahrouni	Numerical simulation of flatness defects during the levelling process
10:35	1296	A. Rassineux, C. Labergère, S. Belkacem, K. Saanouni	Adaptative remeshing procedures dedicated to metal forming processes with damage

MS 10 Chair: P. Kotronis **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
09:25 Keynote	1659	A. Simone, P. Lura, J. Weiss	Shrinkage crack propagation in restrained cement paste cylinders
09:55	182	D. Dias-da-costa, J. Veludo, J. Alfaiate, E. Júlio	An element enriched formulation for simulating longitudinal cracking of concrete due to rebar slippage
10:15	68	A. Kiselev	Computational simulation of irreversible deforming, micro- and macrofracture of rock in the vicinity of a boreholein its dynamical unloading
10:35	1486	T. Jankowiak, T. Lodygowski	Failure criteria and dynamic fracture of concrete

MS 35 Chair: J. Mosler **Room 315**

Energy-based variational methods in computational mechanics

	ID	Authors	Title
09:25 Keynote	1991	C. Miehe	Variational principles and stability in dissipative electro-magneto-mechanics
09:55	744	G. Venturini, O. Michael	A variational approach to mechano-chemical problems
10:15	504	M. Groß, P. Betsch	Energy-based mechanical time integrators of higher-order for nonlinear thermo-viscoelastic continua
10:35	519	A. Rosolen, D. Millan, M. Arroyo	On the optimum support size in meshfree methods: a variational adaptivity approach with local maximum-entropy approximants

MS 37 Chair: W. Cecot **Room 221-222**

Multiscale methods in computational materials science

	ID	Authors	Title
09:25 Keynote	1241	L. Madej, S. Patryk, P. Konrad, D. Farrugia, M. Pietrzyk	Multiscale numerical simulation of the phase transformation during industrial cooling process
09:55	783	R. Szopa, E. Majchrzak, B. Mochnacki	Numerical models of thermal processes in domain of metal superficial layer subjected to an external heat flux
10:15	779	B. Mochnacki, E. Majchrzak	Numerical modelling of micro-scale heat transfer in 2d cylindrical domain
10:35			

Parallel sessions

Tuesday

09:25-10:55

MS 18 Chair: B. Peña **Room 364**

Computational models for soft tissues

	ID	Authors	Title
09:25 Keynote	341	C. Weichert, M. Böl	Skeletal muscle tissues - experimental and numerical investigation
09:55	771	E. Majchrzak, B. Mochnacki	Numerical modelling of heat transfer between blood vessels (artery and vein) and biological tissue
10:15	202	R. Bouzerar, I. Tekaya, B. Roger, B. Olivier	Intracranial dynamics: from brain elasticity to hydrocephalus
10:35	1079	N.H. Nguyen, H.J. Raatschen, M. Staat	A hyperelastic model of biological tissue materials in tubular organs

MS 12 Chair: J. Tavares **Room 224-225**

Image processing and visualization

	ID	Authors	Title
09:25 Keynote	302	J. Tavares, R. Natal Jorge, Z. Ma	3d modeling of pelvic organs and pelvic floor muscles in magnetic resonance images
09:55	208	C. Garbe, F. Gentil, M. Parente, P. Matins, R. Natal Jorge	Analysis of the influence of tympanic membrane on the dynamic behavior of human middle ear
10:15	1901	A. Araújo, A. Pereira, N. Marranghello, J. Tavares	Segmentation of skin lesions using active contours initialized by region growing
10:35	1131	A. Sobiecki, C.E. Thomaz, L.A.P. Neves	To a better digitalization and visualization of frontal face photographs

MS 9 Chair: S. Bordas **Room 223M**

Partition of unity methods for moving boundaries

	ID	Authors	Title
09:25 Keynote	1888	M. Duflot	Recent advances and applications of xfem for 3d crack propagation
09:55	1884	T. Rabczuk, N.T. Nhon	Isogeometric analysis using polynomial splines over hierarchical t-meshes
10:15	444	L. Gastaldi	Finite elements for the immersed boundary method
10:35	1713	S. Kulasegaram, Y. Chen	Modelling particulate composites using sph method

MS 140 Chair: M. Girardi **Room 202-203**

Construction for sustainability: computational models and simulations of the behavior of built environments using natural materials

	ID	Authors	Title
09:25 Keynote	1424	M. Girardi	Some explicit solutions to the dynamic problem of masonry pillars
09:55	1276	C. Bohatier	This communication present new method considering discrete rigid elements for modelling masonry.a system of equations is assembled according to a local and a global list of unknown variables.
10:15	1697	A. Caporale, R. Luciano	Limit analysis of reinforced multi-span masonry arches with finite compressive strength
10:35	1037	C. Chazallon	Finite element modelling of a wall built in natural soil

MS 55 Chair: C.A. Duarte **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
09:25 Keynote	1910	J. Robbins	Modeling dislocations in a polycrystal using the generalized finite element method
09:55	1268	E. Grinspun, S.E. Mousavi, N. Sukumar	Harmonic enrichment functions: a unified treatment of multiple, intersecting, branched cracks
10:15	1135	C. Rostislav, J. Jerabek, J. Hegger	Crack-centered enrichment including debonding for 2d modeling of cementitous composites
10:35	1533	A. Zamani, R. Gracie, M. Eslami	Convergent direct sifs by improving the extended finite element method

MS 41 Chair: D. Givoli **Room 251**

Computational methods for waves in solids

	ID	Authors	Title
09:25 Keynote	1061	A.S. Bonnet-ben Dhia, G. Legendre	A way to use perfectly matched layers in the presence of backward guided elastic waves
09:55	1092	A. Prieto, O. Bruno	A new high-order method for the numerical simulation of wave propagation in heterogeneous materials
10:15	1063	V. Baronian, A.S. Bonnet-ben Dhia, E. Lunéville	Modal transparent condition for 3d elastic waveguides
10:35	1183	J. Staudacher	Conservative numerical scheme for the propagation of high frequency acoustic waves through a curved interface

MS 101 Chair: E. Ramm **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
09:25 Keynote	1832	P. Duysinx, J. Emonds-alt, G. Virlez, O. Brüls, M. Bruyneel	Recent developements in optimization of flexible components of multibody systems
09:55	1751	S. Cho, M.G. Kim, H.R. Jang	Design sensitivity analysis of molecular-continuum multi-scale problems using bridging scale approach
10:15	558	D. Materna, F.J. Barthold	Improvement of first-order sensitivity relations based on an exact formulation for the change in the state due to design perturbations
10:35	471	I. Merta, S. Kravanja	Multi-parametric cost optimisation design of reinforced concrete two-way slabs

Parallel sessions

Tuesday

09:25-10:55

MS 11 Chair: M. Raous **Room 342A**

Computational contact mechanics

	ID	Authors	Title
09:25 Keynote	1805	S. Stupkiewicz	Formulation and finite element treatment of finite-strain soft elastohydrodynamic lubrication problems
09:55	1549	S. Medina, D. Dini	Recent progress in continuum contact mechanics at the nanoscale
10:15	1578	M. Solar, H. Meyer, C. Gauthier, R. Schirrer, J. Baschnagel	Molecular dynamics simulation of indentation and scratching on amorphous linear polymer surfaces for a better comprehension of local physics of contact mechanics
10:35	593	T. Junge, J.F. Molinari, W. Curtin, J. Song	Investigation of the size of plastic zones in nano indentation and nano scratching

MS 58 Chair: R. Piat **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
09:25 Keynote	869	B. Klusemann, B. Svendsen	Homogenization approach for composites with a layered microstructure
09:55	818	Y. Sinchuk, R. Piat, T. Ziegler, A. Neubrand, S. Roy, A. Wanner	Aspects of the microstructure modelling of interpenetrated metal-ceramic composites
10:15	814	V. Levin, V. Lokhin, K. Zingerman, I. Nikiforov, D. Sabitov	Effective properties of porous and composite materials which structure may be changed in the process of loading
10:35	1107	E. Arrieta, J. Useche	Stochastic fem 3d micromechanical model for fgrp layers

MS 13 Chair: S. Potapov **Room 352B**

Computational methods in impact engineering

	ID	Authors	Title
09:25 Keynote	201	F. Casadei, M. Larcher	On some computational methods for the simulation of structures subjected to blast loading and fragmentation
09:55	580	O. Soto	A stabilized linear large-deformation tetrahedral element for coupled cfd/csd blast and impact simulations.
10:15	835	S. Moulin, M. Galan, S. Potapov	Simulation of reinforced concrete slab behavior under blast load
10:35	2030	S. Guinard, A. Schenker	Simulation of low velocity, low energy impacts on damage tolerant stiffened panels for aircraft composite fuselages

MS 53 Chair: F. Oka **Room 242A**

Computational models and methods for multiphysics processes in geomaterials, biomaterials and other multiphase porous media

	ID	Authors	Title
09:25			
09:55	2060	C. Callari, F. Armero	Wave propagation in a porous shear layer in presence of strain localization
10:15	393	P. Maghoul, B. Gatmiri, D. Duhamel	Three-dimensional fundamental solution for the dynamic behaviour analysis of multiphasic porous media
10:35	113	G. Pacquaut, J. Bruchon, N. Moulin, S. Drapier	Combining a level set method and a stabilized mixed formulation p1/p1 for coupling stokes-darcy flows with mobile interfaces

Parallel sessions

Tuesday

11:20-12:40

MS 83 Chair: G. Borino **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
11:20	312	S. Federico	The linear elasticity tensor of porous materials
11:40	1454	F.A. Diaz De La O, S. Adhikari	Bayesian assimilation of multi-fidelity finite element models
12:00	1018	E. Rohan, R. Cimrman, G. Griso, T. Lemaire, S. Naili	Homogenization of a fluid saturated medium with dual porosity and semipermeable discontinuity interfaces.
12:20	774	J. Wismans, H. Van Dommelen, L. Govaert, H. Meijer	X-ray computed tomography based modeling of polymer foams. the strain-rate dependence of polymer foams.

MS 56 Chair: E. Carrera **Room 242B**

Advanced structures and coupled multifield problems

	ID	Authors	Title
11:20	1827	K. Keller, T. Wallmersperger, B. Kröplin, M. Günther, G. Gerlach	Chemo-electro-mechanical modeling of stimulated polyelectrolyte gels
11:40	824	D. Huber, M. Krommer, H. Irschik	A novel model-based approach for trajectory planning of plate-like structures with a piezoelectric sensor-actuator network
12:00	70	A. Deraemaeker, G. Tondreau, F. Bourgeois	Equivalent loads for flat piezoelectric transducers attached to shell structures
12:20	164	A. Katunin	On the self-heating effect of the polymer-based laminate rectangular plates in non-steady state under harmonic excitation

MS 95 Chair: T. Menouillard **Room 243**

Recent developments in computational failure analysis

	ID	Authors	Title
11:20	291	M. Chambart, J.F. Molinari	Explicit description of defects for dynamic failure analysis of brittle materials with cohesive zone model
11:40	1956	G. Alfano	Multi-time-scale analysis of fatigue crack growth via cohesive-zone models
12:00	1147	E.D. Leonel, W.S. Venturini	Crack growth analysis in 2d structures submitted to fatigue using boundary element method.
12:20	1970	V. Chiaruttini, F. Feyel, J.L. Chaboche	A robust meshing algorithm for complex 3d crack growth simulations

MS 29 Chair: Y. Imai **Room 252A**

Biological cells and capsules

	ID	Authors	Title
11:20	412	L. Duc Vinh	Large deformation of liquid capsules enclosed by thin shells in shear flow
11:40	762	J. Walter, A.V. Salsac, D. Barthes-biesel	Coupling of finite element and boundary integral methods: motion of ellipsoidal capsules in simple shear flow
12:00	781	T. Omori, T. Ishikawa, D. Barthes-biesel, A.V. Salsac, Y. Imai, T. Yamaguchi	Impact of membrane modeling in analysing deformation of a capsule: comparison between a spring network model and constitutive laws
12:20	1585	V. Gupta, C. Eggleton	Computational model of capsule detachment due to an applied load

MS 153 Chair: M. Szczotka **Room 253**

Computational methods for structures

	ID	Authors	Title
11:20	1876	D. Ribaric, G. Jelenic	A new quadrilateral thick plate element based on a pure displacement linked interpolation
11:40	833	P. Litewka, S. Sikora	Elliptic curved beam finite element
12:00	2049	R. Duris, J. Murin	2d geometric nonlinear beam finite element with full nonlinearised stiffness matrices
12:20	1396	M. Chatiri, L. Bindeman, S. Fell, A. Matzenmiller	Multi layered solid element for thick composite analysis

MS 133 Chair: H.K. Lee **Room 341**

Modeling of nanofiller reinforced composites/cementitious materials

	ID	Authors	Title
11:20	1413	I.W. Nam, H.K. Kim, H.K. Lee	Investigation of high-strength and electromagnetic wave shielding properties of a mortar incorporating carbon nanotube (cnt)
11:40	1366	B.R. Kim, H.K. Lee	Gradually incremental damage analysis of particle-reinforced composites
12:00	131	K. Kabanemi, J.F. Hétu	Dynamics of linear entangled polymers reinforced with nanoscale rigid particles
12:20			

MS 82 Chair: K. Hofstetter **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
11:20	837	P. Åslund, P. Isaksson	Analysis of in-plane fibre buckling influence on macroscopic stiffness of paper
11:40	588	T.K. Bader, K. Hofstetter, C. Hellmich, J. Eberhardsteiner	Multiscale microporomechanics of softwood - applications and experimental model validation
12:00	805	J. Freund, J. Tuhkuri, M. Hughes	Micro-stress statistics of honeycomb material
12:20	863	A. Karakoc, J. Freund	Failure initiation statistics on wood-like cellular structures

Parallel sessions

Tuesday

11:20-12:40

MS 20 Chair: L. Borcea **Room 343**

Inverse problems

	ID	Authors	Title
11:20	1514	H. Barucq, C. Bekkey, R. Djellouli	An efficient multi-step procedure for enriching limited two-dimensional far-field pattern measurements
11:40	540	H. Haddar, A. Lechleiter	A linear sampling method for inverse scattering in the time domain
12:00	984	J. Foiret, J.G. Minonzio, M. Talmant, P. Laugier	Ultrasonic bone parameter estimation using guided waves measured with multi-emitter and multi-receiver arrays
12:20	1963	H. Yuan, B. Guzina, S. Chen, M. Fatemi	Quantitative tissue viscoelastivity imaging from vibro-acoustography measurements

MS 14 Chair: R. Ghanem **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
11:20	401	T. Hasselman, T. Paez	Quantification of margins and uncertainties in structural dynamic models of spacecraft
11:40	1000	Y. Hsu, W.F. Wu, T.Y. Tsai, C.Y. Su	Drop-impact life prediction and reliability assessment of electronic packages
12:00	1196	H. Pradlwarter, G. Schueller	On the construction of the limit state response surface for reliability investigations in nonlinear dynamics
12:20	1239	E. Patelli, G. Schueller, H. Pradlwarter, M. Valdebenito, H.M. Panayirci, B. Goller, M. Broggi, P. Beaurepaire	Cossan-x: a general purpose code for computational stochastic structural analysis

MS 8 Chair: L.E. García-castillo **Room 352A**

Advanced methods in computational electromagnetics

	ID	Authors	Title
11:20	249	J. Gopalakrishnan	Computing resonances of thin photonic membranes
11:40	39	**F.D. Quesada Pereira, A. Vidal Pantaleoni, F.J. Pérez Soler, A. Berenguer, A.A. San Blas Otálora, F. Mira, B. Gimeno, V.E. Boria Esbert, A. Álvarez Melcón**	Broad band analysis of arbitrarily shaped microwave filters using a novel singular value decomposition technique
12:00	127	R. Florencio, R. Rodriguez Boix, J.A. Encinar	Two numerical techniques for the electromagnetic analysis of multilayered periodic structures with application to the design of reflectarray antennas
12:20	283	C. Geuzaine, A. Vion, R. Sabariego	Iterative solution of high-frequency multiple-scattering problems using finite elements

MS 69 Chair: A. Rassineux **Room 362-363**

Numerical strategies and optimization methodologies for finite element simulation of metal forming processes

	ID	Authors	Title
11:20	1110	D. Schaefer, G. Hirt	Adaptive meshing for thermo-mechanical simulation of incremental bulk metal forming processes
11:40	17	L. Fourment	A parallel multi-mesh method for speeding-up multi-physics computations - application to the cogging process
12:00	971	P. Bussetta, J.P. Ponthot	Comparison of field transfer methods between two meshes
12:20	1375	A. Halouani, Y.M. Li, A. Boussad, G. Ying-qiao	Numerical modelling of axi-symmetrical forging process by inverse approach

MS 10 Chair: J. Munoz **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
11:20	2022	J. Remmers, J. Huyghe, R. De Borst	A p-adaptive, partition of unity based cohesive zone model for the simulation of brittle fracture
11:40	1212	L. Kaczmarczyk, C. Pearce	Numerical multiscale simulation of fracturing heterogeneous materials
12:00	1834	N. Katic, O. Hededal	On the local instabilities in simulations of installation processes in geotechnics
12:20	1458	L. Skarzynski, J. Tejchman	Multi-scale modelling of notched concrete beams subjected to three-point bending

MS 35 Chair: L. Stainier **Room 315**

Energy-based variational methods in computational mechanics

	ID	Authors	Title
11:20	1380	K. Hackl, R. Fechte-heinen, P. Junker	Micromechanical modeling of shape memory alloys - energies and evolution laws
11:40	354	T. Bartel, A. Menzel	On the modeling of the interaction between martensitic phase transformations and plasticity via energy relaxation
12:00	1169	B. Benesova	Energy-estimates based global optimization strategies
12:20	445	M. Peigney, J.P. Seguin	Numerical simulation of coupled thermo-mechanical evolutions in shape memory alloys structures

MS 63 Chair: J.F. Molinari **Room 221-222**

Methods and applications of multiscale materials modeling

	ID	Authors	Title
11:20	688	I. Bilionis, S. Koutsourelakis	Adaptive free energy calculations for crystalline materials
11:40	2037	G. Metzler, R. Lackner, C. Pichler	Multiscale representation of thermo-mechanical properties of highly-densified expanded polystyrene foam
12:00	1912	D. Warner, L. Nguyen	Reaction rate theory prediction of room temperature void growth in al by dislocation nucleation
12:20			

Parallel sessions

Tuesday

11:20-12:40

MS 18 Chair: B. Peña **Room 364**

Computational models for soft tissues

	ID	Authors	Title
11:20	483	P. Tracqui, J. Ohayon	Toward a multi-scale modelling of cardiac tissue self-adaptive contractility
11:40	603	A. Ehret, M. Itskov	A generalized modelling concept for the anisotropic elastic, inelastic and active behaviour of soft tissues
12:00			
12:20			

MS 12 Chair: R. Natal Jorge **Room 224-225**

Image processing and visualization

	ID	Authors	Title
11:20	1137	O. Wirjadi	Gradient-based algorithms for computing the volume-weighted fiber direction distribution
11:40	1185	J. Wu, J. Brigham, M. Simon, S. Tripathy, K. Kang, M. Sacks	Computational analysis and comparison of geometric features of the human right ventricle, with and without pulmonary hypertension
12:00	1679	V. D'otreppe, R. Boman, J.P. Ponthot	Smooth multiple-region mesh generation for biomedical applications
12:20	1738	P. Zaspel, M. Griebel	Fluid animation in autodesk maya - application of a high-order 3d two-phase navier-stokes fluid solver

MS 9 Chair: S. Bordas **Room 223M**

Partition of unity methods for moving boundaries

	ID	Authors	Title
11:20	1940	C. Dunant, K. Scrivener, S. Bordas	A coupled xfem-damage framework for composites with evolving microstructures : applications to the alkali silica reaction
11:40	310	K.W. Cheng, T.P. Fries	H-adaptive xfem for two-phase incompressible flow on a dynamic quadtree mesh
12:00	1207	L. Cahill, C. Mccarthy, S. Bordas, S. Natarajan, S. Dal Pont, P. Kerfriden	Enriched finite elements (xfem) for multi-crack growth simulations in orthotropic materials
12:20			

MS 140 Chair: C. Bohatier **Room 202-203**

Construction for sustainability: computational models and simulations of the behavior of built environments using natural materials

	ID	Authors	Title
11:20	1176	D. Arslan	An overall evaluation of external shear wall application on strengthening rc frames
11:40	1377	M. Lucchesi, M. Silhavy, N. Zani	Measure divergence tensorfields in the statics of masonry bodies
12:00	1464	R.S. Olivito, F. Zuccarello	An experimental study on the damage of concrete structures by means of acoustic emission technique
12:20	1566	F. Freddi, G. Royer-carfagni	Numerical experiments of compressive splitting in masonry-like solids. an energy-based variational approach

MS 55 Chair: C.A. Duarte **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
11:20	2083	V.P. Nguyen, M. Stroeven, B. Sluys	Homogenization-based multiscale crack modelling: from micro diffusive damage to macro cracks
11:40	523	M. Seabra, J. César De Sá	Continuous-discontinuous formulation for crack initiation and propagation
12:00	1060	K. Dréau, N. Chevaugeon, N. Moes	Higher order x-fem for curved cracks
12:20	560	M.T. Cao-rial, C. Moreno, P. Quintela	Dynamic contact problems in cracked domains

MS 41 Chair: C. Tsogka **Room 251**

Computational methods for waves in solids

	ID	Authors	Title
11:20	178	E. Becache, D. Givoli, T. Hagstrom, D. Rabinovich	High-order absorbing boundary conditions for elastic waves
11:40	1164	G. Kreiss, K. Duru	Perfectly matched layers for liner anisotropic, elasto-dynamics
12:00	957	S. François, M. Schevenels, G. Lombaert, G. Degrande	A 2.5d displacement-based pml for elasto-dynamic wave propagation
12:20			

MS 101 Chair: M. Matos Neves **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
11:20	712	E. Lindgaard, E. Lund	Optimization of composite structures considering local buckling
11:40	1388	M. Kirikov, E. Altus	Shape optimization of beams and plates for structural buckling
12:00	1680	C. Anikó	A higher-order path-following method for stability-constrained optimization of geometrically nonlinear shallow trusses
12:20	494	E. Lund, E. Lindgaard	Nonlinear buckling multi-material topology optimization including "worst" shape imperfections

Parallel sessions

Tuesday

11:20-12:40

MS 11 Chair: K. Schweizerhof **Room 342A**

Computational contact mechanics

	ID	Authors	Title
11:20	1798	P. Brammer	Effect of boundary conditions in numerical simulations of spherical instrumented indentation of thin metallic sheets
11:40	1083	R. Nitsche, P. Wriggers, P. Hauret, A. Rezgui	A multiscale projection method for contact on rough surfaces
12:00	1009	S.B. Ramisetti, G. Anciaux, J.F. Molinari	Multiscale modeling of a thermo-mechanical contact problem
12:20	1001	L. Sun, H. Proudhon	Prediction of crack initiation in fretting problem

MS 58 Chair: T. Böhlke **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
11:20	1677	T. Van Phan, K. Jöchen, A. Melcher, P. Gumbsch, T. Böhlke	Micromechanical modeling of metal forming operations
11:40	1794	S. Schendel, R. Moenig, O. Kraft	Experimental investigation of deformation in steel samples - from the grain to the component level.
12:00	1571	I. Ahmadi, M. Aghdam	Unity test function meshless method for heat transfer in heterogeneous materials
12:20			

MS 13 Chair: V. Faucher **Room 352B**

Computational methods in impact engineering

	ID	Authors	Title
11:20	160	E. Deletombe, A. Combescure, J. Fabis, Y. Chuzel-marmot	Ice impact modeling with sph
11:40	2078	T. Saksala	Numerical modelling of bit-rock interaction in percussive drilling
12:00	171	V. Michaut	Dynamic fragmentation using the discrete element method
12:20	718	S. Potapov	Discrete element modeling of the rc structures under severe impact

MS 126 Chair: R. Ohavon **Room 242A**

Computational multiphysics involving surface or volume interactions

	ID	Authors	Title
11:20	1215	K.C. Park, R. Ohayon, C. Felippa, J.Á. González Pérez	Partitioned formulation of internal and gravity waves interacting with flexible structures
11:40	1214	J.Á. González Pérez, K.C. Park, R. Ohayon, C. Felippa	Finite element solution of fluid-structure interaction problems considering the effect of internal and gravity waves
12:00	103	C. Felippa, E. Onate, S. Idelsohn	A fic-based variational framework for particle finite element methods (pfem)
12:20	1401	J.S. Schotte, M. El-kamali, T. Miras, R. Ohayon	Vibrations of liquids inside tanks in microgravity

Parallel sessions

Tuesday

15:10-16:40

MS 83 Chair: J. Fish **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
15:10 Keynote	60	R. Pyrz	Discrete-continuum transition in modeling nanomaterials
15:40	369	L. Colombo, E. Cadelano, P. Palla, S. Giordano	Stretching and bending elasticity of graphene: a combined continuum/atomistic approach
16:00	872	C. Picu, N. Mathew, M. Shephard	Concurrent multiscale method for atomistic-continuum coupling at finite temperatures
16:20	704	J. Padbidri, S. Mesarovic	Discrete element method for quasistatic processes - acceleration methods and boundary conditions

MS 56 Chair: S. Klinkel **Room 242B**

Advanced structures and coupled multifield problems

	ID	Authors	Title
15:10 Keynote	1467	O. Polit, P. Vidal, M. D'ottavio	A new c^o finite element based on a refined theory for multifield analysis of heterogeneous plate/shell structures
15:40	1507	N. Triantafyllidis	Modeling of electromagnetic forming processes in finitely strained solids
16:00	279	M. Avalishvili, G. Avalishvili	On approximation of nonclassical models of thermoelastic shells by two-dimensional initial-boundary value problems
16:20	287	S.M. Hosseini, M.H. Abolbashari	Coupled thermoelasticity (without energy dissipation) analysis in thick hollow cylinder subjected to thermal shock loading using a general analytical method

MS 95 Chair: T. Menouillard **Room 243**

Recent developments in computational failure analysis

	ID	Authors	Title
15:10 Keynote	720	J. Réthoré, F. Hild, S. Roux	Coupling computational methods with experimental techniques for the analysis of failure
15:40	1638	E. De Luycker, D. Benson, Y. Basilevs, M.C. Hsu, T. Belytschko	Xfem with nurbs in crack mode i
16:00	1460	P.E. Bernard, N. Moes, C. Stolz, N. Chevaugeon	A thick level set approach to model evolving damage and transition to fracture
16:20			

MS 29 Chair: A.V. Salsac **Room 252A**

Biological cells and capsules

	ID	Authors	Title
15:10 Keynote	269	Y. Imai, K. Nakaaki, H. Kondo, T. Ishikawa, C.T. Lim, T. Yamaguchi	Numerical simulation of interaction among malaria-infected red blood cells, healthy red blood cells, and endothelial cells
15:40	174	D. Kardas, U. Nackenhorst, A. Hürkamp, I. Arsenyev, O. Khromov	Numerical computation of the cell mechanical behaviour for different finite element models of osteocytes based on tensegrity structures
16:00	411	D. Giacche, T. Ishikawa, T. Yamaguchi	Hydrodynamic entrapment of bacteria near a solid surface
16:20	1717	P. Van Liedekerke	An sph-dem model to simulate the micromechanics of cells and tissues

MS Chair: **Room 253**

	ID	Authors	Title
15:10 Keynote			
15:40			
16:00			
16:20			

MS 34 Chair: K. Hackl **Room 341**

Mathematical analysis and experimental characterization of micro-heterogeneous materials

	ID	Authors	Title
15:10 Keynote	684	S. Kalidindi	Building knowledge systems for the design and processing of materials with improved performance characteristics
15:40	943	O. Dmitrieva, D. Raabe, P. Dondl, S. Müller, J. Svirina	Microstructural analysis of the deformation laminates in single crystals: experiments and theory
16:00	662	D. Phelan, N. Savvides	Nano-bainitic steel microstructures: a dc magnetron sputtering and nanoindentation model study
16:20	711	D. Balzani, D. Brands, J. Schroeder	Construction of statistically similar representative volume elements for fe^2-simulations based on the lineal-path function

MS 82 Chair: G. Turk **Room 342B**

Computational material modeling of wood and wood products

	ID	Authors	Title
15:10 Keynote	2038	L. Muszynski, F. Hussain, J.A. Nairn	Load transfer between wood flour particles and polymer matrix in wood/plastic composites
15:40	382	M. Frese	Computer-aided simulation of glulam strength parallel to grain
16:00	1291	M.A. Hossein, M. Roohnia	Drilling a hole in radial direction of a beam affects the vibration in lr plane
16:20	299	F. Dubois, D. Dureisseix, B. Marcon	Code coupling for thermo-hygro-mechanical problems with application to wooden structures and painting supports of cultural heritage

Parallel sessions

Tuesday

15:10-16:40

MS 20 Chair: M. Bonnet **Room 343**

Inverse problems

	ID	Authors	Title
15:10 Keynote	951	E.M. Lourens, G. Lombaert, E. Reynders, G. De Roeck, G. Degrande	A combined deterministic-stochastic approach to force identification
15:40	511	S. Jimbo, A. Morassi, G. Nakamura, K. Shirota	Damage identification in steel-concrete composite beams by finite eigendata
16:00	968	N. Bochud, A. A. Fahim, Á.M. Gómez, R. Muñoz, G. Rus	Signal processing - based reconstruction of damage in composites
16:20	1213	Z. Ostrowski, R. Bialecki, A. Kassab, M. Muster, R. Weber	Inverse pod-rbf solution for time and spatial distribution of film coefficient for ball immersed in cooling water

MS 14 Chair: H. Pradlwarter **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
15:10 Keynote	264	W. Graf, S. Freitag, J.U. Sickert	Uncertain structural processes and neural network approach
15:40	145	K. Mazur-sniady, R. Sieniawska, P. Sniady, S. Zukowski	Vibration of girder with uncertain parameters under fuzzy stochastic excitation
16:00	1226	M. Broggi, G. Schueller	Accurate prediction of the statistical deviations of the buckling load of imperfect cfrp cylindrical shells
16:20	1368	H. Yu, M. Ichchou	A simple method able to deal with time-dependent reliability problems in dynamic systems

MS 8 Chair: D. Pardo **Room 352A**

Advanced methods in computational electromagnetics

	ID	Authors	Title
15:10 Keynote	800	W. Rachowicz, A. Zdunek	Application of coupled fem/bem with adaptivity for electromagnetic inverse scattering
15:40	122	P. Robustillo, J. Rubio, E. Carrasco, J. Zapata	A hybrid fem/ann method for fast reflectarray antenna design
16:00	2012	B. Andres-garcia, L.E. García-castillo, I. Gomez-revuelto, L.E. Garcia-muñoz, C. Craeye	A modular approach to fem-mom hybridization for the analysis of finite arrays of antennas
16:20	1349	H. Gassot	Coupled electromechanical analysis for stability of radiofrequency supraconducting cavities

MS 69 Chair: L. Fourment **Room 362-363**

Numerical strategies and optimization methodologies for finite element simulation of metal forming processes

	ID	Authors	Title
15:10 Keynote	383	A. Canelas, J.R. Roche, J. Herskovits	Shape optimization for direct and inverse electromagnetic casting problem
15:40	937	M. Grauer, F. Thilo, K. Kassem, K. Diethelm	Utilizing computational optimization methods to increase the efficiency of metal forming processes
16:00	2047	I. Peshekhodov, B.A. Behrens	Multi-scale fe simulation of damage in polymer composite coatings bonded to sheet metal
16:20	524	A. Albu, A. Albu	Mathematical modelling and optimal control of the process of solidification for the object with complex geometry

MS 10 Chair: A. Simone **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
15:10 Keynote	1145	J. Munoz, A. Lyamin, A. Huerta	Limit analysis of anchored walls
15:40	1161	B. Sanz, J. Planas, J.M. Sancho	Study of the size effect in a model to simulate concrete cracking due to rebar corrosion and comparison to accelerated corrosion tests
16:00	1290	S.Y. Alam, P. Kotronis	Modelling size effect and cracking in concrete structures
16:20	1939	I. Scheider, J. Mosler	Evolution of damage in a new thermodynamically and variationally consistent cohesive model

MS 35 Chair: L. Stainier **Room 315**

Energy-based variational methods in computational mechanics

	ID	Authors	Title
15:10 Keynote	1574	B. Bourdin, J.J. Marigo, C. Maurini	The variational approach to fracture mechanics: application to numerical simulation of thermal-shock cracks
15:40	1614	J. Zeman, A. Mielke, T. Roubicek	Numerical treatment of a rate-independent model of non-local damage
16:00	318	E. Gurses, T. El Sayed	A variational constitutive model of void growth in single and polycrystals
16:20	423	J. Mosler	Variationally consistent cohesive models based on strong displacement discontinuities

MS 63 Chair: A. Hartmaier **Room 221-222**

Methods and applications of multiscale materials modeling

	ID	Authors	Title
15:10 Keynote	1994	B. Eidel, N. Prajapati	Multiscale modelling and simulation of surfaces in metallic nanostructures
15:40	1778	J.F. Molinari	Atomistic-continuum modeling of sliding contact
16:00	1624	W. Curtin, J. Song	Multiscale modeling of hydrogen embrittlement
16:20	1729	S. Echeverri Restrepo, B.J. Thijsse	Interaction between grain boundaries and dislocations: analysis of the stress field.

Parallel sessions

Tuesday

15:10-16:40

MS 18 Chair: F. Gentil **Room 364**

Computational models for soft tissues

	ID	Authors	Title
15:10 Keynote	1173	T. Gasser	An elasto-plastic damage model for collagenous biological tissues
15:40	277	A. Cardoso, A. Cardoso, V. Sá, A. Cardoso	On the importance of chassaignac's space in breast modelling
16:00	1877	M. Cilla, B. Peña, M.Á. Martinez-barca, M. Doblare	Computational modelling of atherome plaque: biomechanical factors in the risk of plaque rupture
16:20	1297	A. Eddhahak, I. Masson, M. Zidi, F. Mohand Kaci	On a stochastic anisotropic fibrous model for the human arterial pressure estimation

MS 39 Chair: P. Cartraud **Room 224-225**

Image based modeling of materials in computational mechanics applications

	ID	Authors	Title
15:10 Keynote	1124	F. Willot, S. Guessasma, G. Della Valle, D. Jeulin	A fft method for computing the elastic response of highly-contrasted starch-based materials
15:40	1976	K. Krabbenhoft, M.R. Karim	Extraction of effective cement paste diffusivities from x-ray microtomography images
16:00	532	W.D. Lian, G. Legrain, P. Cartraud	Comparison of two computational approaches for image-based micromechanical modeling
16:20	116	A. Keßler, C. Könke	Effective iterative grid-based matrix-free solvers

MS 109 Chair: A. Legay **Room 223M**

Advanced mechanical and numerical modeling of interfaces in fluid-structure interaction

	ID	Authors	Title
15:10 Keynote	832	S. Reinstädler, A. Zilian, D. Dinkler	Finite element methods for strongly-coupled systems of fluid-structure interaction with application to granular flow in silos
15:40	1491	R. Rumpler, A. Legay, J.F. Deü	A substructuring fe model for reduction of stuctural acoustic problems with dissipative interfaces
16:00	575	F. Pasenow, A. Zilian, D. Dinkler	Multi-phase model for transient analysis of landslide generated waves
16:20	877	M. Ouisse, E. Sadoulet-reboul	On the comparison of formulations for model reduction of harmonic frequency-dependent damped fluid-structure problems

MS 72 Chair: B. Michel **Room 202-203**

New challenges in mechanics for nuclear plants

	ID	Authors	Title
15:10 Keynote	1506	N. Hourdequin, F. Bentejac, C. Strub	Toutatis: pellet-cladding interaction (pci) modelling with the cast3m finite element code
15:40	505	S. Pascal	Coupled 1d thermohydraulic - 3d thermomechanical study of a space nuclear reactor
16:00	1446	P. Verpeaux, S. Gounand	A robust and economic preconditioner for the conjugate gradient method applied to solid mechanic
16:20	2015	C. Guerin	Influence of fuel pellets on the flexural behavior of fuel rods. a numerical study and experimental study

MS 55 Chair: C.A. Duarte **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
15:10 Keynote	1477	E. Benvenuti, A. Tralli	Regularized xfem for meso-macro scale problems
15:40	1539	F. Van Der Meer, B. Sluys	Simulation of complex failure mechanisms in laminates
16:00	537	M. Fagerström, R. Larsson, J. Mediavilla	A cohesive zone formulation of fracturing shells based on xfem
16:20	1205	K. Fackeldey, D. Krause, R. Krause	The weak coupling method - coupling continuum and atomistic simulations by weak constraints

MS 41 Chair: E. Becache **Room 251**

Computational methods for waves in solids

	ID	Authors	Title
15:10 Keynote	817	C. Tsogka, P. Joly	Higher order absorbing boundary conditions for elastodynamics
15:40	1790	H. Sprenger, S.R. Raman, L. Gaul	Design of ultrasonic transducers for guided waves using non-reflecting boundary conditions
16:00	455	O. Sadovskaya, V. Sadovskiy	Numerical analysis of elastic waves propagation in the framework of cosserat theory
16:20			

MS 101 Chair: P. Duysinx **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
15:10 Keynote	1678	E. Ramm, F. Hilchenbach, J. Kato, A. Lipka	Optimization of heterogeneous materials with nonlinear response
15:40	2029	M. Matos Neves, R.M.D. Costa Nunes, F.H. Mendonça, F.J.P. Lau, S.N.Y. Gerges, E. Viveiros, J. Bento Coelho	Reduction of turbulent flow-induced vibrations of viscoelastically supported plates using a density gradient-based topology optimization method with a corcos model
16:00	894	T. Gao	Topology optimization involving thermo-elastic stress loads
16:20			

Parallel sessions

Tuesday

15:10-16:40

MS 11 Chair: S. Stupkiewicz **Room 342A**

Computational contact mechanics

	ID	Authors	Title
15:10 Keynote	1577	M. Raous, C. Henninger, J.P. Vilotte, G. Festa	Adhesion and friction for fault interface in geophysics
15:40	1277	K. Schweizerhof, A. Konyukhov, C. Schmied	A generalized anisotropic coulomb adhesion-friction law – verification via homogenization for contact interfaces
16:00	1279	C. Weißenfels, P. Wriggers	Numerical simulation of projected friction laws with the finite element method
16:20	459	F. Hauer, K. Willner	Elastic-plastic contact simulation using halfspace theory

MS 58 Chair: I. Tsukrov **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
15:10 Keynote	1661	V. Kompis, Z. Murcinkova, V. Ferencey, M. Ockay, P. Droppa	Computational modelling of interaction of fibres in composites
15:40	32	A. Makradi, A. Mikdam, S. Belouettar	Effective conductivity of fiber filled polymer composites: effect of orientation distribution and aspect ratio
16:00	994	Y. Othmani, L. Delannay, I. Doghri	The elastic field of a spherical inhomogeneity with nonlinear interface debonding
16:20	48	T. Michelitsch, G. Maugin, F. Nicolleau, A. Nowakowski, S. Derogar	Dispersion relation and wave propagation in linear chains with self-similar distributions of harmonic interactions

MS 13 Chair: A. Vaziri **Room 352B**

Computational methods in impact engineering

	ID	Authors	Title
15:10 Keynote	1986	R. Desmorat, M. Chambart, F. Gatuingt, D. Guilbaud	Dynamic cracks initiation, propagation, coalescence, speed and arrest from anisotropic damage mechanics analysis
15:40	1905	M. Herrenbrück, R. Wüchner, K.U. Bletzinger, R. Lackner	Performance-oriented design of viscoelastic materials subjected to impact loading
16:00	1890	B. Durand, F. Delvare, J.L. Hanus, P. Bailly	Analytical and numerical methods for processing hopkinson bar loaded bending test on concrete: a comparative study
16:20			

MS 126 Chair: C. Felippa **Room 242A**

Computational multiphysics involving surface or volume interactions

	ID	Authors	Title
15:10 Keynote	470	M. Von Scheven, E. Ramm, M. Bischoff	Efficient algorithms for fluid-structure interaction
15:40	450	B. Avci, P. Wriggers	Numerical simulation of particle-fluid systems
16:00	619	R. Codina, J. Baiges	Stabilization of neumann transmission conditions in domain interaction problems
16:20	2010	M. Joosten, W. Dettmer, D. Peric	Analysis of the influence of non-matching time integration schemes on the stability and accuracy of coupled fsi problems

Parallel sessions

Tuesday

17:00-18:20

MS 83 Chair: L. Colombo **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
17:00	969	M. Renouf, C. Hong-phong, N. Viet-hung	Relation between the multi-scale and the multi-physical feature of a tribological contact interface
17:20	266	C. Boutin, S. Hans, C. Chesnais	Generalized beam and continua, and atypical dynamics of periodic reticulated systems
17:40	1082	P. Trovalusci	A generalized voigt's approach to multiscale-multifield modelling of 'complex' materials
18:00	429	V. Sansalone, P. Trovalusci	Computing the nonlinear response of blocky materials: discrete-lattice and cosserat-continuum models

MS 56 Chair: S. Hartmann **Room 242B**

Advanced structures and coupled multifield problems

	ID	Authors	Title
17:00	731	A.R. Gersborg, O. Sigmund	Transformation optics based on the framework of non-linear elasticity
17:20	1510	I. Guz, Y. Zhuk, M. Kashtalyan	On a single frequency approximation in the vibration control and the dissipative heating analysis of thin-wall shells containing piezoactive layers
17:40	755	O. Lyeshchuk	Multiphysics problems in superhard materials synthesis
18:00	778	R. Rey, E. Javierre, S. García, S. Van Der Zwaag, J.M. García-aznar	Modelling the self-healing capacity of multilayered clay-polymer coatings: effects of geometric and mechanical conditions.

MS 95 Chair: J. Réthoré **Room 243**

Recent developments in computational failure analysis

	ID	Authors	Title
17:00	658	T. Menouillard, T. Belytschko, J.H. Song	Smoothly discontinuous enrichment in xfem for dynamic crack propagation
17:20	1394	A. Glema, T. Lodygowski, W. Sumelka	Remarks on the explicit time integration scheme for an adiabatic deformation of an anisotropic elasto-viscoplastic solids accounting for damage
17:40	1754	I. Guiamatsia, J. Ankersen, L. Iannucci, G. Davies	An industry-capable interface element. this talk focuses on the introduction of enrichments into interface element shape functions to reduce the computational cost of the simulation of delamination in composite structures.
18:00			

MS 30 Chair: A. Eriksson **Room 252A**

Simulations and control of human movements

	ID	Authors	Title
17:00	272	A. Eriksson	Activation dynamics in the temporal fem optimization of targeted movements
17:20	1693	J. Östh, K. Brolin, R. Happee	Closed loop control of fe arm model
17:40	554	V. Berbyuk	Simulation of human movements based on optimization of under-actuated multibody systems
18:00			

MS 59 Chair: M. Paggi **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
17:00	234	M. Mueser, C. Campana	Recent advances in analytical and computational approaches to contact mechanics
17:20	2061	K.S. Kim	Nano-contact strength of fcc gold in compression and shear
17:40	853	P. Spijker, J.F. Molinari	The dependence of the friction coefficient on surface roughness studied at the atomistic level
18:00	569	T. Horst, K. Reincke, S. Ilisch, G. Heinrich, W. Grellmann	Fracture surface roughness scaling of filled elastomers

MS 34 Chair: J. Schroeder **Room 341**

Mathematical analysis and experimental characterization of micro-heterogeneous materials

	ID	Authors	Title
17:00	1228	K. Hackl, D. Kochmann	Modeling the evolution of microstructures in finite crystal plasticity
17:20	852	S. Ricker, J. Mergheim, P. Steinmann, R. Mueller	A comparison of different approaches in the multi-scale computation of configurational forces
17:40			
18:00			

MS 52 Chair: S. Bargmann **Room 342B**

Computational modeling of gradient plasticity

	ID	Authors	Title
17:00	1143	P. Eisenlohr, C. Kords, E. Demir, F. Roters, D. Raabe	A non-local constitutive hardening model based on polar dislocation densities
17:20	1403	T. Yalcinkaya, M. Brekelmans, M. Geers	Plastic slip patterning driven by rate dependent non-convex strain gradient plasticity
17:40	713	B.D. Reddy, A. Mcbride	Algorithms for local and nonlocal single crystal plasticity
18:00			

Parallel sessions

Tuesday

17:00-18:20

MS 20 Chair: A. Charalambopoulos **Room 343**

Inverse problems

	ID	Authors	Title
17:00	1234	A. Constantinescu, H.D. Bui, S. Chaillat, E. Grasso	Identification of a planar crack in zener type viscoelasticity
17:20	606	S. Le Floc'h, G. Finet, P. Tracqui, G. Cloutier, R. Pettigrew, J. Ohayon	Ivus modulography of coronary plaques based on a segmentation driven optimization procedure: theoretical frameworks
17:40	840	A. A. Fahim, G. Rus	Model-based damage reconstruction in composites from ultrasound transmission
18:00	1218	D. Martini, C. Hochard, J.P. Charles	Loads identification : application to structural monitoring

MS 14 Chair: W. Graf **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
17:00	544	J.M. Mencik	A sensitivity analysis of the wave finite element method for describing coupling junctions with uncertain eigenfrequencies
17:20	1702	P. Rouch, C. Blanze	Vibrational analysis of a touch screen with stochastic interfaces in the medium frequency range
17:40	784	C. Blanze	Vibration reduction by means of shunted piezoelectric patches with uncertain dimensions and location
18:00	1259	G. Borello	Analysis of energy transfer of vibrational fields in the medium and high frequency range

MS 8 Chair: W. Rachowicz **Room 352A**

Advanced methods in computational electromagnetics

	ID	Authors	Title
17:00	74	A. Buffa, G. Sangalli, R. Vazquez	Isogeometric analysis applied to electromagnetic problems
17:20	823	D. Pardo	Self-adaptive goal-oriented hp-adaptivity with multiple objectives
17:40	115	P.D. Ledger, A.J. Gil	A hp finite element approach to coupled electro-mechanical problems
18:00	1327	S. Zaglmayr	Efficient high-order maxwell solvers via discrete space splittings

MS 94 Chair: S. De **Room 362-363**

Meshless and related methods

	ID	Authors	Title
17:00	361	J. Soric, T. Jarak	An efficient meshless computational approach for analysis of shells
17:20	637	D. Millan, A. Rosolen, M. Arroyo	Point-set manifold processing: application to thin shell analysis
17:40	2062	A. Uscilowska	Application of method of fundamental solutions for large deflection of functionally graded plates
18:00	812	I. Tsukanov, S. Wdowinski	Treatment of discontinuous boundary conditions using distance fields: implications for earthquake research

MS Chair: **Room Maillot**

	ID	Authors	Title
17:00			
17:20			
17:40			
18:00			

MS 73 Chair: O. Widlund **Room 315**

Domain decomposition methods in computational mechanics

	ID	Authors	Title
17:00	1907	A. Klawonn, O. Rheinbach	On the implementation of coarse spaces in feti-dp domain decomposition methods
17:20	898	A. Klawonn, P. Neff, O. Rheinbach, S. Vanis	Feti-dp domain decomposition methods for elasticity with structural changes: p-elasticity
17:40	1938	D. Brands, A. Klawonn, O. Rheinbach, J. Schroeder	Iterative substructuring in the simulation of biological soft tissue
18:00	1425	S. El Arem, I. Gueye, G. Cailletaud, F. Feyel, F.X. Roux	Numerical experiments on a two-level massively parallel solver

MS 63 Chair: D. Warner **Room 221-222**

Methods and applications of multiscale materials modeling

	ID	Authors	Title
17:00	414	A. Dicarlo	Hybridizing molecular dynamics and continuum mechanics through parallelized andersen-parrinello-rahman-like cells
17:20	1505	A. Fau, D. Aubry	Molecular ab-initio calculations: polarizability tensor as quantity of interest
17:40			
18:00			

Parallel sessions

Tuesday

17:00-18:20

MS 102 Chair: L. Chamoin **Room 364**

Reliable and robust methods for global and goal-oriented error estimation in finite element analyses.

	ID	Authors	Title
17:00	1695	M. Rüter, E. Stein	Goal- oriented implicit a posteriori error estimators for xfem
17:20	1752	P. Diez	Error estimation and goal-oriented adaptivity for wave problems and transient structural dynamics
17:40	1031	A. Parret-fréaud, P. Gosselet, C. Rey	Convergence of a discretization error estimator for sub-structured problems based on a fully parallel recovery of admissible fields
18:00	491	E. Florentin	On constitutive relation error and associated admissible fields construction using samcef

MS 39 Chair: G. Laschet **Room 224-225**

Image based modeling of materials in computational mechanics applications

	ID	Authors	Title
17:00	1780	K. Terada, M. Kurumatani, T. Ushida, H. Aoyagi, T. Kawada, K. Sato, H. Watanabe	Electro-chemo-mechanical analysis of pen structure under sofc operation
17:20	1721	A. Carofalo, M. De Giorgi, S. Giancane, F. Palano	Numerical and experimental characterization of metal foam subjected to shear load
17:40	1731	L. Giraldi, G. Laschet, M. Mathes	Influence of the segmentation technique on the effective thermal conductivity of open-cell metallic foam
18:00	1874	C. Proppe, D. Schwarzer	Image based determination of uncertainties in macroscopic properties of metal foams

MS 109 Chair: J.F. Deü **Room 223M**

Advanced mechanical and numerical modeling of interfaces in fluid-structure interaction

	ID	Authors	Title
17:00	1254	C. Janssen, A. Legay, A. Zilian	A rheological interface model for fluid-structure interaction and numerical investigation of controlled flow-induced vibrations
17:20	1990	H. Schippke, A. Zilian, A. Legay	Water jet stability at aerated overflow gates
17:40	442	A. Zilian	Numerical analysis of the inflation of textile membranes
18:00			

MS 72 Chair: S. Pascal **Room 202-203**

New challenges in mechanics for nuclear plants

	ID	Authors	Title
17:00	1902	D. Combescure	Calculation and comparison of dynamic and seismic loads for the design of iter components
17:20	2017	B. Michel, I. Ramiere, J. Sercombe	Pleiades: multi concept nuclear fuel modelling
17:40	1670	P. Fossati, L. Van Brutzel	Molecular dynamics simulations of the nuclear fuel mechanical behaviours under irradiation
18:00			

MS 55 Chair: C.A. Duarte **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
17:00	1728	A. Schroeder, A. Byfut	Constrained approximation in h- and hp-adaptive extended finite element methods
17:20	700	O. Diyankov	Uncertain grid method for numerical solution of pde
17:40	1097	S. Vallaghé, T. Papadopoulo	A trilinear immersed fem for solving the eeg forward problem
18:00	1745	L. Facchini, P. Biagini	Neural network and pufem approaches for plane stress problems in linear elasticity

MS 134 Chair: P. Diez **Room 251**

Adaptive transient structural computations: recent advances and engineering applications

	ID	Authors	Title
17:00	1474	B. Tie, D. Aubry	Goal-oriented adaptive remeshing for elastic wave propagation
17:20	1245	J. Waeytens, P. Ladevèze, L. Chamoin	Verification in transient dynamics through guaranteed error bounds
17:40	443	E. Biotteau, A. Gravouil, A. Lubrecht, A. Combescure	Space time automatic refinement method for non linear transient dynamic problems based on a localized multigrid strategy
18:00	1133	V. Mouysset	Goal-oriented hp-adaptivity for time-dependent friedrich systems using discontinuous galerkin scheme.

MS 101 Chair: M. Stuebner **Room 252B**

Recent advances in structural optimization - modeling and methods

	ID	Authors	Title
17:00	440	M. Yamakawa, F. Van Keulen	Structural optimum design in conjunction with transient dynamic analysis using global direct search
17:20	482	A. Poteralski, M. Szczepanik, W. Kus, J. Ptaszny, T. Burczynski	Optimization and identification of structures using artificial immune system
17:40	510	W. Beluch, T. Burczynski, W. Kus	Artificial immune system in laminates' optimization
18:00	484	M. Szczepanik, A. Poteralski, W. Kus, T. Burczynski	Topology optimization for minimum mass criterion using pso

Parallel sessions

Tuesday

17:00-18:20

MS 11 Chair: N. Strömberg **Room 342A**

Computational contact mechanics

	ID	Authors	Title
17:00	1904	L. De Lorenzis, G. Zavarise	A comparative assessment of coupled cohesive zone models for modeling of mixed-mode debonding and contact
17:20	1081	R.A. Sauer	Enriched contact finite elements for stable peeling computations
17:40	42	M. Ricci	Internal loading distribution in high-speed ball bearings, subjected to a combined radial, thrust, and moment load, including the effects of temperature and fit
18:00	226	A. Popp, U.M. Mayer, W.A. Wall	From 3d finite deformation dual mortar contact towards a fluid-structure-contact interaction method

MS 58 Chair: T. Böhlke **Room 351**

Micromechanical modeling of composites and heterogeneous materials with hierarchical microstructures

	ID	Authors	Title
17:00	1735	M. Maziere, S. Forest, A. Mortensen	Simulation of the portevin - le chatelier effect in metal matrix composites
17:20	1320	C. Mennerich, M. Jainta, F. Wendler, B. Nestler	A phase-field model for twin boundary motion in martensitic microstructures
17:40			
18:00			

MS 13 Chair: V. Faucher **Room 352B**

Computational methods in impact engineering

	ID	Authors	Title
17:00	1516	E. Eglitis, C. Bisagni, K. Kalnins, O. Ozolinsh, K. Dzelzitis	Dynamic buckling of axially impacted cylindrical composite shells
17:20	865	D. Morin, B. Bourel, F. Lauro, B. Bennani	Structural bonding modelling for crash simulations
17:40	413	F. Tarlochan	Understanding the failure mechanism of composite sandwich structure for crashworthiness application
18:00	2032	A. Vaziri	Impact mechanics of metal sandwich panels

MS 126 Chair: K.C. Park **Room 242A**

Computational multiphysics involving surface or volume interactions

	ID	Authors	Title
17:00	1886	C.E. Silva, J. Alves, A. Coutinho, F. Rochinha, R. Elias, N. Guevara, M. Martins, M. Ferreira	Edgecfd-ale: a finite element system for complex fluid-structure interactions in offshore engineering
17:20	1704	S. Mitra	A fluid-structure-fluid finite element method for the analysis of coupled nonlinear sloshing and ship motion problems
17:40	1538	T. Van Opstal, C. Verhoosel, S. Hulshoff, H. Van Brummelen	Robust discretization of the transonic small disturbance equation for fluid-structure interactions
18:00	1519	M. Bukac, G. Guidoboni, S. Canic	Numerical simulation of arterial blood flow under physiological conditions

Parallel sessions

Wednesday

09:25-10:55

MS 83 Chair: R. De Borst **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
09:25 Keynote	59	B. Karihaloo, S. Kulasegaram, A. Ghanbari	Modelling the flow of self-compacting concrete
09:55	847	E. Aigner, R. Lackner, J. Eberhardsteiner	Recent developments in multiscale modeling of asphalt concrete - from continuum micromechanics to structural analysis
10:15	2051	D. Gawin, F. Pesavento	Modelling alkali-silica reaction under non-isothermal conditions in partially saturated cementitious materials
10:35	656	J. Escoda, F. Willot, D. Jeulin, J. Sanahuja, C. Toulemonde	Representative volume element determination of elastic properties in a mortar material from coupling fft and microtomography

MS 135 Chair: H. Ben Dhia **Room 242B**

Arlequin, fe2 and other embedded domains methods for multimodel and multiscale mechanical problems: advances, analyses and computation of challenging fine scales applications

	ID	Authors	Title
09:25 Keynote	181	M. Potier-ferry, H. Hu, N. Damil	Arlequin coupling of core and boundary models to analyse buckling pattern formation
09:55	1916	O. Jamond, H. Ben Dhia	Propagation of local alterations using xfem within the arlequin framework
10:15	641	C. Barthel, U. Gabbert	Utilization of the arlequin method as a coupling tool in model and dimensional adaptivity
10:35	1817	J. Touzeau, V. Chiaruttini, F. Feyel, H. Ben Dhia	Arlequin method applied to degradation of composite materials

MS 127 Chair: D. Weichert **Room 243**

Safe design of structures under cyclic loading

	ID	Authors	Title
09:25 Keynote	1610	K. Spiliopoulos, M. Antoninis, G. Lykidis	Numerical simulation of bond-slip in the analysis of reinforced concrete structures under cyclic loading
09:55	327	Z. Nikolic	Mathematical formulation of the model for the cyclic behaviour of 3d reinforced concrete structures
10:15	497	J. Wang, H.S. Yu, H. Li	Static shakedown analysis of multi-layered pavements
10:35	882	M.H. Arslan	A new method for rapid assesment of performances of existing rc buildings under earthquake loading

MS 90 Chair: B. Van Rietbergen **Room 252A**

Mechanobiology of bone remodelling and adaptation (mbr&a)

	ID	Authors	Title
09:25 Keynote	1576	T. Adachi, Y. Kameo, M. Hojo	Modeling of mechanosensing and intercellular communications by osteocytes in trabecular bone adaptation
09:55	394	S. Komarova, L. Buono, P. Grutter, G. Lopez, O. Maria, S. Xing	Mechanosensitivity and mechanotransduction in bone cells
10:15	707	M.D. Ryser, N. Nigam, S. Komarova	The cellular dynamics of bone remodeling: a nonlinear pde model
10:35	908	T. Lemaire, E. Capiez-lernout, J. Kaiser, S. Naili, E. Rohan, V. Sansalone	Investigation of the electro-chemical couplings in bone tissue

MS 59 Chair: P. Wriggers **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
09:25 Keynote			
09:55	1229	Z. Li, X. Zhao	Solution of wheel-rail frictional rolling at geometrical defects in the contact surface
10:15	1231	C. Stolz	A thermodynamic analysis of wear
10:35	1453	D. Nowell, D. Hills, R. Paynter	The implications of wear for fretting fatigue performance in the partial slip regime

MS 43 Chair: A. Corigliano **Room 341**

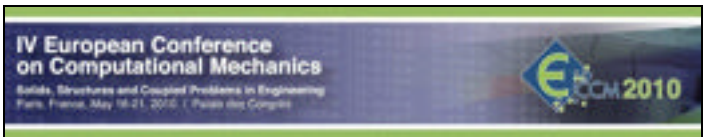
Computational methods for micro and nano systems

	ID	Authors	Title
09:25 Keynote	999	P.A. Romero, G. Anciaux, A. Molinari, J.F. Molinari	Atomistic mechanics in nanometric machining of crystalline solids
09:55	90	B. Novakovic, D. Majetic, J. Kasac, D. Brezak	Application of schrodinger equation to an alpha field in nanorobotics
10:15	132	H. Zohoor, A. Sadeghi	The flexural vibration of dagger shaped atomic force microscope cantilevers by consideration timoshenko beam theory and using the differential quadrature method
10:35	1440	A. Sadeghi, H. Zohoor, I. Valizadeh	The flexural and torsional vibrations of rectangular atomic force microscope cantilevers by consideration the contact position

MS 52 Chair: K. Runesson **Room 342B**

Computational modeling of gradient plasticity

	ID	Authors	Title
09:25 Keynote	562	M. Geers, I. Erturk, P. Van Beers, G. Mcshane, H. Van Dommelen, R. Peerlings, V. Kouznetsova, V. Deshpande	Strain gradient crystal plasticity: physical, thermodynamical and engineering aspects
09:55	1221	A. Gaubert, N. Cordero, S. Forest, E. Busso, F. Gallerneau, S. Kruch	Size effects in generalised continuum crystal plasticity for two-phase laminates
10:15	165	L. Poh, R. Peerlings, M. Geers, S. Swaddiwudhipong	Strain gradient plasticity - tensorial implicit gradient formulation
10:35			



Parallel sessions

Wednesday

09:25-10:55

MS 20 Chair: G. Rus **Room 343**

Inverse problems

	ID	Authors	Title
09:25 Keynote	1947	P. Barbone, A. Oberai, S. Goenezen, J.F. Dord	Role of boundary conditions in nonlinear elasticity imaging
09:55	506	L. Bourgeois, J. Dardé	On identification of defects from boundary measurements: the case of elastoplastic media
10:15	725	I. El Khaldi, E.M. Daya, I. Charpentier	Optimal control with a complex nonlinear eigenvalue solver for viscoelastic law identification
10:35	57	S. Chaillat, H. Bui	On the identification of an inhomogeneity in viscoelasticity

MS 14 Chair: R. Ghanem **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
09:25 Keynote	106	C. Soize	Identification of high-dimension polynomial chaos expansions of tensor-valued random fields from limited observed responses of boundary value problems
09:55	1175	R. Berry, H. Najm, B. Debusschere, H. Adalsteinsson, Y. Marzouk	Data-free inference of the joint distribution of uncertain model parameters
10:15	1749	L. Mehrez, S. Debruyne, D. Moens, D. Vandepitte	Characterization of stochastic material properties of one- and two-dimensional composite panels from experimental databases using polynomial chaos expansion
10:35	981	L. Tamellini, F. Nobile, J. Back, R. Tempone	Stochastic galerkin and collocation methods for pdes with random coefficients: a numerical comparison

MS 8 Chair: J. Gopalakrishnan **Room 352A**

Advanced methods in computational electromagnetics

	ID	Authors	Title
09:25 Keynote	446	D. Boffi	Differential forms and the p version of edge finite elements
09:55	389	F. Le Louër, M. Costabel	Shape derivatives of boundary integral operators in electromagnetic scattering
10:15	456	K. Mattsson	Summation by parts operators for finite difference approximations of second derivatives with variable coefficients
10:35	465	G. Bozza, P. Fernandes, M. Ottonello, M. Raffetto	Recent developments in the approximability of time-harmonic electromagnetic boundary value problems involving innovative materials

MS 149 Chair: B. Andersson **Room 362-363**

Physically based large scale simulation of composite structures.

	ID	Authors	Title
09:25 Keynote	2091	M. Ostergaard	Advanced non-linear analysis in airbus :current status and directions
09:55	522	B. Andersson	Large-scale structural analysis with error control : the gdof challenge
10:15	323	J. Diaz, S. Hernandez, A. Baldomir, L. Romera	Uncertainty quantification and reliability analysis in large scale aircraft structures
10:35	498	M. Dunbar, A. Prior, J. Carter	Abaqus performance improvements on large composite models

MS 10 Chair: M. Jirasek **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
09:25 Keynote	1027	E. Lorentz	A gradient damage model combined with adaptive mesh refinement
09:55	873	E. Tamayo-mas, A. Rodríguez-ferran	A continuous-discontinuous model for softening and cracking based on non-local displacements
10:15	1891	H.R. Javani Joni	Computational treatment of three dimensional remeshing and crack growth for elastic-plastic damaging materials
10:35	184	M. Chiumenti, M. Cervera, R. Codina	Mixed stabilized finite element methods in nonlinear solid mechanics

MS 73 Chair: A. Klawonn **Room 315**

Domain decomposition methods in computational mechanics

	ID	Authors	Title
09:25 Keynote	1866	O. Widlund	Almost incompressible elasticity, feti–dp, bddc, and alternatives
09:55	1657	C. Farhat, R. Tezaur, J. Toivanen	A domain decomposition method for a discontinuous galerkin method for scattering in fluids and solids
10:15	233	D. Iceta, D. Dureisseix, P. Alart	Domain decomposition for granular dynamics: scalability issue
10:35	1321	J. Hinojosa Rehbein, O. Allix, P.A. Guidault, P. Cresta	Primal and mixed non linear domain decomposition methods for the post-buckling analysis of large structures.

MS 24 Chair: P. Boisse **Room 221-222**

Modeling of fiber-based structures

	ID	Authors	Title
09:25 Keynote	1452	D. Durville	Modeling and simulation of textile and fibrous materials at the scale of individual fibers
09:55	525	A. Mesejo, A. Leon-mecias, P. Schiebel	Filament interaction in bended carbon tows simulated by a particle system
10:15	636	Y. Kyosev, W. Renkens	Computational mechanics models of warp knitted structures for tension and compression under small deformations
10:35	49	J. Orlik, A. Nam, H. Andrae, O. Iliev	Computation of effective mechanical properties of textiles via asymptotic homogenization

Parallel sessions

Wednesday

09:25-10:55

MS 102 Chair: P. Diez **Room 364**

Reliable and robust methods for global and goal-oriented error estimation in finite element analyses.

	ID	Authors	Title
09:25 Keynote	899	J. Almeida, E. Maunder	Recovery of equilibrium on three-dimensional star patches and its application in the determination of solution bounds for large scale problems
09:55	668	M. Kardani, M. Nazem, A. Abbo, D. Sheng	A study of adaptive finite element methods in solving large deformation problems in geomechanics
10:15	1262	A. Loseille, A. Dervieux, F. Alauzet	3d anisotropic mesh adaptation for functional outputs
10:35	1311	B. Blaysat	A first attempt for guaranteed error bounds in (visco)-plasticity

MS 39 Chair: K. Terada **Room 224-225**

Image based modeling of materials in computational mechanics applications

	ID	Authors	Title
09:25 Keynote	2025	S. Forest, A. Jean, F. Willot, D. Jeulin	Determination of the rve in linear elasticity for a multi-scale combination of boolean schemes of spheres and for a penrose tesselation.
09:55	1397	D. Sangare, L. Jasinski, N. Gland, V. Mourzenko, S. Youssef, J.F. Thovert, O. Vizika, P. Adler	Ct-based characterization and simulation of a bentheim sandstone
10:15	192	R. Valenta, M. Sejnoha, J. Zeman	Macroscopic constitutive law for mastic asphalt mixtures from computational homogenization
10:35	410	N. Takano, M. Tatsuya	Micro stress evaluation for peri-implant trabecular bone in human mandible based on ct images

MS 42 Chair: E. Carrera **Room 223M**

Micro and macro structural optimisation with anisotropic composite materials

	ID	Authors	Title
09:25 Keynote	200	P. Vannucci, A. Vincenti	The polar method in analysis and design of anisotropic materials: theoretical aspects and numerical results
09:55	604	C. Maurini, S. Vidoli, A. Vincenti	Modelling and design of anisotropic multistable shells
10:15	69	A. Panesar, A. Pirrera, P. Weaver	Multi-step design of bistable laminates for morphing rotor blades.
10:35	1998	A. Vincenti	Optimal design of anisotropic composite structures by polar method and topology optimization

MS 87 Chair: H. Minnebo **Room 202-203**

Computational methods for damage tolerant analysis: industrial case studies

	ID	Authors	Title
09:25 Keynote	528	E. Wyart, M. Duflot, H. Minnebo, D. Coulon, F. Lani	Morfeo, an adapted tool for industrial damage tolerant approaches, combining advanced simulation techniques
09:55	1244	S. Geniaut, J. Messier	3d crack propagation using x-fem and level sets, with the industrial finite element software code aster
10:15	1342	J. Rannou, V. Chiaruttini, F. Feyel, N. Osipov, S. Quilici	X-fem and explicit crack meshing techniques applied to industrial fracture mechanics problems
10:35	476	C. Timbrell, R. Chandwani, R. Hewitt	A round robin in fracture mechanics using zencrack

MS 55 Chair: M.A. Schweitzer **Room 241**

Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
09:25 Keynote	309	A. Mazzucato, V. Nistor, Q. Qu	The generalized finite element method for transmission problems
09:55	1261	F. Barros, C. Barcellos, C.A. Duarte	A subdomain approach for the error estimator of the generalized finite element method
10:15	1382	I. Babuska, R. Lipton	On local-global apprximation error for gfem
10:35	1723	A. Byfut, A. Schröder	Higher-order extended finite element method - an application of the partition of unity method

MS 5 Chair: E. Sapountzakis **Room 251**

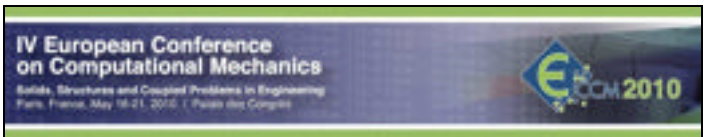
Computational structural dynamics

	ID	Authors	Title
09:25 Keynote	66	J. Murin, M. Aminbaghai, V. Kutis	Free vibration of the fgm-beams with continuous transversal symmetric and longitudinal variation of material properties with effect of large axial force
09:55	770	I. Stanciulescu	Stability boundaries of thermo-mechanically coupled thin curved structures
10:15	209	A.P. Nowak	Measurement verification of the hybrid finite element method
10:35	211	H.R. Ovesy, P. Khaneh Masjedi	Free vibration of torsion-bending coupled thin-walled composite beams

MS 60 Chair: R. Le Riche **Room 252B**

Minisymposium on optimization of structural, coupled, uncertain systems

	ID	Authors	Title
09:25 Keynote	2043	V. Dubourg, J.M. Bourinet, B. Sudret	Reliability based design optimization using hierarchical gaussian processes surrogates
09:55	936	D. Salazar, R. Le Riche, X. Bay	Adding hypothesis testing to evolutionary rbdo with monte carlo simulations
10:15	218	H.A. Kim	Level-set structural optimisation with uncertainties
10:35			



Parallel sessions

Wednesday

09:25-10:55

MS 11 Chair: L. De Lorenzis **Room 342A**

Computational contact mechanics

	ID	Authors	Title
09:25 Keynote	499	C. Hesch, P. Betsch	Numerical aspects of 3d domain decomposition and contact problems
09:55	1769	T. Cichosz, M. Bischoff	Non-linear dynamic multibody contact using a primal-dual mortar formulation
10:15	1363	I. Paczelt, Z. Mroz, S. Kucharski	Numerical analysis of wear processes in steady and quasi-steady states
10:35	1903	G. Zavarise, L. De Lorenzis	A regression-based augmented lagrangian procedure for contact problems

MS 70 Chair: G. Winther **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
09:25 Keynote	308	R. Barabash, G. Ice, J. Pang, T. Ohashi, W. Liu	Fintite element modeling and polychromatic microdiffraction study of dislocation density re-distribution near the boundary of a ni bicrystal
09:55	1885	O. Robach, C. Le Bourlot, J.S. Micha, O. Ulrich, X. Biquard, F. Rieutord, P. Gergaud, O. Castelnau, R. Chiron, D. Faurie	White and monochromatic x-ray microdiffraction on the cea-cnrs crg-if bm32 beamline at esrf : recent developments
10:15	258	G. Daveau, T. Hoc, B. Devincre, O. Robach	Crystal distortion gradient in the vicinity of a grain-boundary in plastically deformed bicrystals
10:35	1278	X. Liu, E. Van Der Giessen	On treating dislocation interactions with grain boundaries in the framework of discrete dislocation plasticity

MS 65 Chair: P. Betsch **Room 352B**

Structure-preserving integrators in computational dynamics and control

	ID	Authors	Title
09:25 Keynote	582	B. Leimkuhler	On the accurate recovery of averages
09:55	93	E. Kanso, S. Leyendecker	Optimal locomotion of a submerged cosserat beam
10:15	990	A. Moore, S. Ober-blöbaum, J. Marsden	The effect of mesh refinement on spacecraft trajectory design using discrete mechanics and optimal control
10:35	316	M. Gonzalez, B. Schmidt, O. Michael	Energy-stepping integrators in lagrangian mechanics

MS 110 Chair: T. Coupez **Room 242A**

Advanced numerical methods for fluid-structure interactions

	ID	Authors	Title
09:25 Keynote	1270	E. Longatte	Partitioned procedure for fully-coupled fluid solid system computation
09:55	1911	E. Hachem, L. Silva, T. Coupez	Stable-mixed formulation for fluid-structure interaction: theory and application
10:15	975	G. Olivier, F. Alauzet	A mesh topology change ale framework for efficient body large-displacement adaptive simulations
10:35	324	K. Sugiyama, S.T. Takeuchi	Full eulerian simulations of fluid-structure interactions

Parallel sessions

Wednesday

11:20-12:40

MS 83 Chair: J. Lewandowska **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
11:20	843	L.A. Gömze, M.N. Gömze	Testing and modelling of mechanical behaviour and stress relaxation of heteromodulus ceramics after high speed collision
11:40	285	H. Zhao	Impact behaviour identification of honeycomb structures par multiscale simulation
12:00	397	L. Krstulovic-opara, S. Loehnert, D. Mueller-hoeppe, M. Vesenjak	Multi-scale modeling of regular open-cell cellular structures
12:20	84	R. Barsoum	Multi-scale modeling of polymers at high strain rates for shock mitigation

MS 135 Chair: H. Ben Dhia **Room 242B**

Arlequin, fe2 and other embedded domains methods for multimodel and multiscale mechanical problems: advances, analyses and computation of challenging fine scales applications

	ID	Authors	Title
11:20	845	S. Pfaller, P. Steinmann	Coupling particle based and finite element simulations by using bridging domain methods
11:40	422	J. Haelewyn, P. Marin, L. Daudeville, S. Potapov	Coupling discrete elements with 3d and shell finite elements
12:00	1022	C. Wellmann, P. Wriggers	A multi-scale approach to granular materials
12:20	995	G. Anciaux, S.B. Ramisetti, J.F. Molinari	Bridging domain multiscale coupling of molecular dynamics with finite elements at finite temperature.

MS 127 Chair: D. Weichert **Room 243**

Safe design of structures under cyclic loading

	ID	Authors	Title
11:20	1569	H. Maitournam, B. Pommier, F. Comte, M.L. Nguyen-tajan	Direct cyclic methods for structures under thermomechanical loadings
11:40	900	O. Kintzel	A variationally consistent coupled isotropic elasto-plastic damage model for the analysis of lcf at finite strains
12:00	1042	T.N. Tran, M. Staat	Shakedown analysis of two dimensional structures by an edge-based smoothed finite element method
12:20	1859	A. Benoit, H. Maitournam, L. Remy, F. Oger	Asymptotic behaviour of structures subjected to thermomechanical cyclic loadings: application to exhaust manifolds

MS 90 Chair: M. Knothe Tate **Room 252A**

Mechanobiology of bone remodelling and adaptation (mbr&a)

	ID	Authors	Title
11:20	930	C. Jean Marie, M. Stroe, M. Racila	Possible role of collagen in mechano transduction of cortical bone
11:40	108	R. Müller	Cell and tissue based simulation of osteoporosis and antiresorptive pharmacological treatment
12:00	1125	R. Van Oers, B. Van Rietbergen, H. Peter, K. Ito, H. Rik	A sclerostin-based theory for strain-induced bone formation
12:20	1482	J.W. Dunlop, M.A. Hartmann, D. Ruffoni, C. Lukas, P. Fratzl, Y. Bréchet, P. Roschger, K. Klaushofer, R. Weinkamer	The effect of bone remodeling and mineralization on bone architecture and material

MS 59 Chair: D. Hills **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
11:20	1914	T. Kozubek, Z. Dostal, R. Kucera, V. Vondrak, T. Brzobohaty, A. Markopoulos	Numerically and parallely scalable feti based algorithms for contact problems of mechanics and their powerful ingredients
11:40	231	M. Gitterle, A. Popp, M.W. Gee, W.A. Wall	3d finite deformation frictional mortar contact using a semi-smooth newton method with consistent linearization
12:00	172	F. Braghin, M. Madia	Prediction of the friction behaviour of rubber compounds via dynamic finite element simulations
12:20	1556	M. Cocou, L. Badea	Approximation results for quasistatic contact problems

MS 43 Chair: A. Frangi **Room 341**

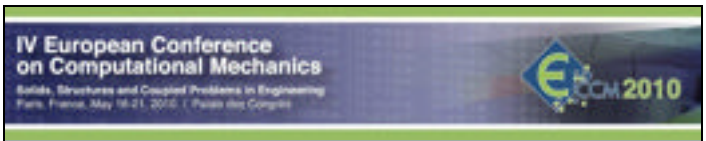
Computational methods for micro and nano systems

	ID	Authors	Title
11:20	640	M. Pustan, J.C. Golinval, V. Rochus	Geometrical effects on the dynamical behavior of mems structures
11:40	1714	M. Niessner, G. Schrag, J. Iannacci, G. Wachutka	Validation of a multi-energy domain coupled macromodel for viscously damped mems at varying pressure conditions
12:00	1726	V. Senthilkumar	Vibration analysis of double-walled carbon nanotube
12:20	1645	C. Bailey	Multi-physics/scale modelling of micro and nano packaging applications - current capabilities and future requirements

MS 52 Chair: B. Svendsen **Room 342B**

Computational modeling of gradient plasticity

	ID	Authors	Title
11:20	804	C.B. Hirschberger, T. De Geus, R. Peerlings, M. Brekelmans, M. Geers	Dislocation interactions in strain gradient crystal plasticity
11:40	1603	M. Ekh, E. Lindfeldt	Computational modeling of the influence of the interlamellar spacing in pearlitic steel
12:00	2	S. Bargmann, B. Svendsen	Numerical implementation of a continuum theory of dislocations
12:20			



Parallel sessions

Wednesday

11:20-12:40

MS 20 Chair: A. Constantinescu **Room 343**

Inverse problems

	ID	Authors	Title
11:20	570	G. Puel, D. Aubry	Identification of transient nonlinear models with contact using adjoint state formulations
11:40	1608	P. Bisegna, F. Caselli, F. Maceri	Recovery of shape and dielectric properties of biological cells via tomographic impedance microfluidic cytometry
12:00	1685	M. Mierzwiczak, J.A. Kolodziej	The determination of the temperature-dependent thermal conductivity as an inverse steady heat conduction problem
12:20	1438	N. Auffray, M. Bonnet, S. Pagano	Parabolic reciprocity gap for heat source identification

MS 14 Chair: R. Ghanem **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
11:20	1646	M. Arnst, R. Ghanem	Formulation and solution of stochastic variational inequalities describing inelastic material behavior and contact/impact
11:40	461	M. Chevreuil, A. Nouy	Model reduction based on proper generalized decomposition for the propagation of parametric uncertainty in structural dynamics
12:00	563	J. Tryoen, O. Le Maitre, M. Ndjinga, A. Ern	Roe solver and entropy corrector for hyperbolic systems with uncertain coefficients
12:20	1441	G.M. Guerra Bernada, F. Alves Rochinha	Stochastic modeling of flow-structure interaction using a sparse grid stochastic collocation method

MS 8 Chair: D. Boffi **Room 352A**

Advanced methods in computational electromagnetics

	ID	Authors	Title
11:20	2084	A. Chernov	Numerical approximation of electrostatic problems with random data by p-version of sparse grids
11:40	583	S. Brenner	Nonconforming maxwell eigensolvers
12:00	1177	G. Rousseaux, F. Rapetti	Implications of galilean electromagnetism in numerical modeling
12:20	1979	H. Kurkcu, N. Nigam, F. Reitich	Efficient calculation of the green's functions for the helmholtz equation in periodic domains.

MS 149 Chair: B. Andersson **Room 362-363**

Physically based large scale simulation of composite structures.

	ID	Authors	Title
11:20	556	I. Gueye, F.X. Roux, X. Juvigny, F. Feyel	A parallel sparse direct solver to improve scalability of feti methods
11:40	430	D. Coulon, F.X. Roux, J.P. Delsemme, F. Lani	Feti method in samcef for simulations on large fuselage models using massively parallel computing
12:00	352	P. Cresta	Implementation of a multi-level nonlinear substructuring scheme for the analysis of large structures with local nonlinearities
12:20	732	A. Batti, M. Brun, A. Combescure	External code coupling based on energy conserving sub-domain decomposition methods

MS 10 Chair: N. Moes **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
11:20	716	S. Loehnert, D. Mueller-hoeppe, P. Wriggers	Efficient microcrack / macrocrack interaction and propagation analysis using an adaptive multiscale technique
11:40	1664	P. Trapper, K. Volokh	Elasticity with energy limiters for modeling dynamic failure propagation
12:00	921	L. Contrafatto, M. Cuomo	Finite element implementation of an enhanced strong discontinuities approach formulation vs. smeared crack models.
12:20	1165	G. Mejak	Effective moduli of an elastic solid with random nondilute distribution of microcraks

MS 73 Chair: A. Klawonn **Room 315**

Domain decomposition methods in computational mechanics

	ID	Authors	Title
11:20	1317	O. Lloberas Valls, D. Rixen, A. Simone, B. Sluys	Multiscale analysis of heterogeneous brittle materials using domain decomposition techniques
11:40	1598	J.E. Ortiz Távara	A parallel non-conforming domain decomposition method for non-homogenous elasticity problems
12:00	1944	N. Elkhodja, F.X. Roux, H. Ben Dhia	A domain-decomposition solver for a multi-alterated structures modeled in the multi-model arlequin framework
12:20	743	P. Gosselet, D. Rixen, C. Rey	On the enrichment of the krylov search space of the feti method applied to structures containing repeated patterns

MS 24 Chair: Y. Kvosev **Room 221-222**

Modeling of fiber-based structures

	ID	Authors	Title
11:20	1151	J. Militky	Identification of yarn hairiness complexity type
11:40	1708	B. Witkowska, I. Frydrych	Theoretical model of cotton fabric tearing process
12:00	838	H. Altendorf, D. Jeulin	Modeling fiber systems using random walks
12:20			

Parallel sessions

Wednesday

11:20-12:40

MS 102 Chair: L. Chamoin **Room 364**
Reliable and robust methods for global and goal-oriented error estimation in finite element analyses.

	ID	Authors	Title
11:20	1429	F. Daghia, S. De Miranda, F. Ubertini	An enhanced patch based stress recovery for elastoplasticity
11:40	2041	C. Fagiano, M. Abdalla, Z. Gürdal	Interlaminar stress recovery of multilayer shell composite laminates having plies with non conforming meshes.
12:00			
12:20			

MS 3 Chair: J.L. Chenot **Room 224-225**
Numerical modelling of microstructure evolution in metal forming conditions

	ID	Authors	Title
11:20	409	K. Komori	Proposal and use of a void model for the evaluation of ductile fracture in sheet metal forming
11:40	1766	P.O. Bouchard, R. Djebbi, M. Milesi, M. Bernacki	3d numerical micro-modeling of ductile damage mechanisms applied to hot metal forming processes
12:00	168	K. Hitti, P. Laure, L. Silva, T. Coupez, M. Bernacki	Fast generation of complexes rev
12:20			

MS 42 Chair: P. Vannucci **Room 223M**
Micro and macro structural optimisation with anisotropic composite materials

	ID	Authors	Title
11:20	1024	F. Biscani, G. Giunta, H. Hu, E. Carrera, S. Belouettar	Hierarchical beam models coupling via the arlequin method
11:40	112	E. Carrera, M. Petrolo	A mixed axiomatic/asympthotic approach for the evaluation of refined plate theories
12:00	1875	E. Valot, O. Polit, M. D'ottavio, P. Vidal	Influence of 2d finite element models on the 3d stresses evaluation for composite laminates: assessment of anisotropic effects
12:20	1057	B. Gentilleau	Stress analysis in specimens made of multilayer polymer/composite used for hydrogen storage application: comparison with experimental results

MS 147 Chair: A. Dorsival **Room 202-203**
Computational methods for radiation shielding on nuclear facilities

	ID	Authors	Title
11:20	1567	D. Zafiropoulos, L. Sarchiapone, G. Prete	Evaluation of activation in shielding structures of the spes project in anticipation of the decommissioning
11:40	1668	B. Pomaro, V. Salomoni, F. Gramegna, G. Prete, C. Majorana	Radiation damage in the target area shielding of a facility for selective production of exotic species: application on concrete
12:00	286	M. Fadil	Computational methods and tools for a nuclear facility conception: the example of spiral2 facility
12:20	1833	A. Dorsival	Radiation shielding at the isolde facility

MS 55 Chair: M.A. Schweitzer **Room 241**
Generalized/extended fem, meshless methods and related approaches

	ID	Authors	Title
11:20	154	N. Marheineke	Optimization strategies with mesh-less methods for pdes
11:40	2042	R. Rossi	The particle finite element method and beyond
12:00	1029	S. Gross	An extended finite element pair for incompressible two-phase flows
12:20	1117	M. Griebel	On the particle-partition of unity method

MS 5 Chair: J. Murin **Room 251**
Computational structural dynamics

	ID	Authors	Title
11:20	348	M. Jokic, M. Stegic, N. Vrankovic	Implementation and application of krylov subspace methods in model order reduction of large-scale mechanical systems
11:40	536	S. Saramago, L.A. Purcina, M.A.V. Duarte	Differential evolution applied to solve problems of indirect identification of external forces
12:00	769	C. Zehetner, H. Irschik	Compensation of flexural and torsional vibrations of piezo-laminated beams performing rigid-body motions
12:20	21	R. Steinbuch, L. Schmidt	Handling damping in numerical structural dynamics - some questions and some proposals

MS 60 Chair: V. Toropov **Room 252B**
Minisymposium on optimization of structural, coupled, uncertain systems

	ID	Authors	Title
11:20	801	R. Ansola, E. Vegueria, J. Canales	Topology optimization of thermally actuated compliant mechanisms by an evolutionary method
11:40	790	B. Soulier, P.A. Boucard	Multilevel optimization using interpolation models coupled with a multiparametric strategy
12:00	948	V. Baudoui, P. Klotz, J.B. Hiriart-urruty, S. Jan, F. Morel	Robustness-based surrogate models for multidisciplinary robust design optimization
12:20	342	R. Choufany, G. Lavaud, B. Piotr, C. Vayssade	The communication submitted concern the use of statistical reduction model to simulate a multidisciplinary problem in an optimization and robustness context

Parallel sessions

Wednesday

11:20-12:40

MS 11 Chair: R.A. Sauer **Room 342A**

Computational contact mechanics

	ID	Authors	Title
11:20	1895	D. Franke, A. Duester, E. Rank	Two dimensional frictional contact using high order finite elements
11:40	961	B. Magnain, A. Batailly, N. Chevaugeon, M. Legrand, C. Pierre	Comparative study of the use of c1-continuous finite elements and splines for contact problems with large slidings
12:00	1931	D. Gabriel, J. Kopacka, J. Plesek, M. Ulbin	Assessment of methods for calculating the normal contact vector in local search
12:20			

MS 70 Chair: G. Cailletaud **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
11:20	997	A. Vattré, A. Roos, B. Devincre	Strength of single-crystal nickel-based superalloys: predictions of the discrete-continuous model
11:40	62	A. Staroselsky, T. Martin, B. Cassenti	Dislocation dynamics modeling in high temperature single crystal superalloy viscoplasticity. application to turbomachinery.
12:00	1856	A. Gaubert, Y. Le Bouar, A. Finel, F. Gallerneau, S. Kruch	Coupling phase field models with continuum crystal plasticity
12:20	363	H.J. Chang, N. Cordero, V. Taupîn, S. Berbenni, M. Fivel, S. Forest	Analysis of gnd distributions around an inclusion obtained by field dislocation mechanics, strain gradient plasticity and dislocation dynamics

MS 65 Chair: I. Romero **Room 352B**

Structure-preserving integrators in computational dynamics and control

	ID	Authors	Title
11:20	1034	S. Ober-blöbaum, S. Leyendecker	A variational approach to multirate integration
11:40	166	C. Hartmann, S. Leyendecker	Event-driven molecular dynamics and non-smooth integration
12:00	156	C. Hager, B. Wohlmuth	Locally improved resolution of dynamic contact problems using overlapping domain decomposition and time subcycling
12:20	402	K. Modin, G. Söderlind	Geometric integration of hamiltonian systems perturbed by rayleigh damping

MS 110 Chair: P.D. Anderson **Room 242A**

Advanced numerical methods for fluid-structure interactions

	ID	Authors	Title
11:20	398	A. Nastase	An iterative optimum-optimorum theory with weak interaction aerodynamics/structure
11:40	2054	E. Vergnault, O. Allix, S. Maison-le-poëc	A mortar-based fluid-structure interaction method for large structural displacements
12:00	1545	E. Guerber, M. Benoit, C. Buvat, S. Grilli, C. Kassiotis	Numerical modeling of fully nonlinear interactions of ocean waves with a submerged moving body
12:20	1098	J. Useche, E. Arrieta	Harmonic response of plate structures containing acoustic fluids using a full boundary element formulation

Parallel sessions

Wednesday

15:10-16:40

MS 83 Chair: B. Karihaloo **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
15:10 Keynote	1313	S. Schmauder	Computational design of steels based on multiscale simulations
15:40	405	V. Levitas	Nano- and macro-scale phase field modeling of phase transformations
16:00	204	D. Anders, K. Weinberg	Numerical simulation of phase separation and coarsening processes in eutectic brazing solder ag-cu
16:20	107	S. Benke, J. Schele, M. Apel	Multi-scale simulation of the austenite to ferrite transformation in low carbon steels

MS 135 Chair: V. Kouznetsova **Room 242B**

Arlequin, fe2 and other embedded domains methods for multimodel and multiscale mechanical problems: advances, analyses and computation of challenging fine scales applications

	ID	Authors	Title
15:10 Keynote	123	P. Ghysels, G. Samaey, P. Van Liedekerke, E. Tijskens, H. Ramon, D. Roose	Multiscale modeling of viscoelastic plant tissue
15:40	998	E. Coenen, V. Kouznetsova, M. Geers	Multi-scale modelling of localization and damage: microscale boundary conditions
16:00	449	F. Fritzen, T. Böhlke	Nonuniform transformation field analysis of particulate metal matrix composites with anisotropic microstructure
16:20	902	T. Dickopf, R. Krause, J. Steiner	Coupling concepts for heterogeneous models in mechanics

MS 127 Chair: K. Spiliopoulos **Room 243**

Safe design of structures under cyclic loading

	ID	Authors	Title
15:10 Keynote	1150	J.W. Simon, D. Weichert	An interior-point algorithm for shakedown analysis of engineering structures with limited kinematical hardening
15:40	1701	G. De Saxcé, A. Oueslati, S. Hasbroucq	Elastic plastic responses with temperature-dependent elastic modulus under cyclic thermomechanical loadings
16:00	901	P.T. Pham, D.K. Vu, T.N. Tran, M. Staat	A primal-dual algorithm for shakedown analysis of elastic-plastic bounded linearly kinematic hardening bodies
16:20	300	G. Inglebert	Life estimation for welded joints

MS 90 Chair: D. Taylor **Room 252A**

Mechanobiology of bone remodelling and adaptation (mbr&a)

	ID	Authors	Title
15:10 Keynote	2001	M. Knothe Tate, S. Dolejs, S. Mcbride, R. Miller, U. Knothe	Multiscale mechanobiology of de novo bone generation and remodeling & adaptation of autograft
15:40	1526	L. Kaczmarczyk, C. Pearce	Computational modelling of mechanically regulated bone adaptation using 3d hybrid finite elements
16:00	1025	S. Nesbitt, J. Macione, A. Debroy, Y. Roberts, S. Kotha	Relationship between in-vivo mechanical loading and activation of wnt siglaning in bone
16:20	418	L. Podshivalov, A. Fischer, P. Bar-yoseph	3d multiscale finite element analysis of bone microstructure

MS 59 Chair: K.S. Kim **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
15:10 Keynote	631	O. Menshykov, M. Menshykova, I. Guz	Elastodynamic contact problems for interface cracks
15:40	12	T. Apatay, S. Dag, M.A. Guler, M. Gulgec	Subsurface stresses in an fgm coating loaded by a sliding flat punch
16:00	1923	E. Torskaya	Axisymmetric contact problem for multilayered elastic half-space
16:20	223	D. Dalmas, E. Barthel, D. Vandembroucq	Crack propagation and pinning in heterogeneous materials: effects of microscopic disorder and toughness pattern.

MS 43 Chair: C. Bailev **Room 341**

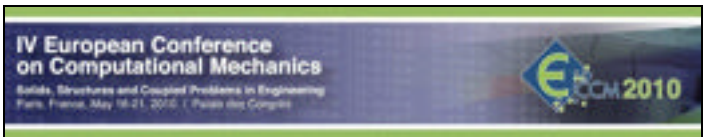
Computational methods for micro and nano systems

	ID	Authors	Title
15:10 Keynote	855	I. Erturk, J. Bielen, H. Van Dommelen, M. Geers	Strain gradient crystal plasticity modeling of time and scale dependent metal thin film behavior
15:40	1485	Z. Shabir, E. Van Der Giessen, C.A. Duarte, A. Simone	Intergranular crack paths in brittle polycrystals: a matter of mechanics or geometry?
16:00	1767	N. Kacem, S. Hentz, S. Baguet, R. Dufour	Mixed behavior identification in nonlinear nanomechanical resonators
16:20	928	G. Jeong	The study on the deformation of mlcc green chips during manufacturing process

MS 66 Chair: K. Willam **Room 342B**

Modeling plasticity and damage in porous media

	ID	Authors	Title
15:10 Keynote	953	J. Andrade, C. Avila	Multiscale modeling and characterization of granular matter
15:40	1353	A. Idiart, I. Carol, C. Lopez	Modeling the chemo-mechanical behavior of concrete at the meso-scale. application to external sulfate attack
16:00	1906	T. Ring, M. Zeiml, R. Lackner	Micromechanics-based model for load-induced thermal strains in concrete at elevated temperatures - from experimental observations towards structural safety assessment
16:20	1194	A. Benabbes, W.K. Liu, L. Dormieux, L. Siad	Yield design homogenization method for compaction of monosized spherical powders



Parallel sessions

Wednesday

15:10-16:40

MS 20 Chair: H. Bui **Room 343**

Inverse problems

	ID	Authors	Title
15:10 Keynote	1761	A. Nassiopoulos, F. Bourquin	Three-dimensional temperature assimilation with accurate final state
15:40	515	R. Rischette, T. Baranger, N. Debit	Boundary condition identification for thermal cauchy problem : numerical analysis of data noise effects
16:00	827	Y. Jarny, A. Agazzi	The cooling phase of the thermoplastic injection process: an inverse heat transfer control problem
16:20			

MS 14 Chair: C. Soize **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
15:10 Keynote	574	O. Le Maitre, L. Mathelin, O. Knio, Y. Hussaini	Asynchronous time integration for polynomial chaos expansion of uncertain periodic dynamics
15:40	332	L. Shen, X. Xu	Numerical implementation of multiscale stochastic finite element method (msfem)
16:00	1900	R. Cottereau, D. Clouteau, H. Ben Dhia	Localized modeling of uncertainty in the arlequin framework
16:20	1821	C. Audouze, P. Hakansson, F. De Vuyst, P. Nair	Reduced-order modeling of randomly parameterized partial differential equations

MS 15 Chair: E. Darve **Room 352A**

Fast multipole methods, fast boundary element solvers, and applications

	ID	Authors	Title
15:10 Keynote	1985	D. Zorin, H. Langston	Kernel-independent fmm-based solvers for domains with complex boundaries in three dimensions
15:40	1148	M. Maischak, H. Harbrecht	The boundary element method with geometric meshes and with wavelets — a comparision on complicated geometries
16:00	1648	H. Isakari, H. Yoshikawa, N. Nishimura	A periodic fmm for three dimensional elastodynamics
16:20	1649	K. Niino, N. Nishimura	Preconditioning based on calderon's formulae for periodic boundary value problems for helmholtz' equation

MS 149 Chair: B. Andersson **Room 362-363**

Physically based large scale simulation of composite structures.

	ID	Authors	Title
15:10 Keynote	517	P.A. Boucard, V. Roulet, L. Champaney	A multiparametric approach dedicated to composite assemblies
15:40	719	J. Irslinger, M. Bischoff	Reliable surface oriented shell finite elements for accurate stress prediction in composite laminates
16:00	949	J. Remmers, C. Verhoosel, R. De Borst	On the simulation of inter- and intralaminar failure in layered composite materials
16:20	1008	F. Daghia, P. Ladevèze, E. Abisset, F. Bordeu	Intra/interlaminar coupling in the virtual testing of laminated composite structures

MS 10 Chair: E. Lorentz **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
15:10 Keynote	1479	N. Chevaugeon, N. Moes, C. Stolz, P.E. Bernard	A level set approach for brittle damage
15:40	71	F. Fraternali, B. Schmidt, O. Michael	A variational element erosion technique for brittle fracture
16:00	1892	M. Horak, M. Charlebois, M. Jirasek, P. Zysset	Regularized damage-plastic model for trabecular bone
16:20	2026	G. Altmeyer, F. Abed-meraim, T. Balan	Formability prediction of damageable elastic-viscoplastic media by a material stability analysis based on a linear perturbation method

MS 132 Chair: M. Bischoff **Room 315**

Computational techniques for large strain problems

	ID	Authors	Title
15:10 Keynote	1820	T. Elguedj	Robustness of projection methods for the simulation of elastic and inelastic incompressible problems
15:40	977	M. Jabareen, M.B. Rubin	A higher order plane strain triangular cosserat point element (cpe) for nonlinear elasticity
16:00	1647	L. Sharipova	A three dimensional brick element for nonlinear orthotropic elastic materials based on the theory of a cosserat point.
16:20	650	U. Solinc, J. Korelc, P. Wriggers	An improved eas brick element for finite deformations

MS 24 Chair: D. Das **Room 221-222**

Modeling of fiber-based structures

	ID	Authors	Title
15:10 Keynote	1588	P. Boisse	Continuous and discrete approaches for textile composite reinforcement forming simulations
15:40	557	J. Llorca, A. Ridruejo, C. González	Computational modeling of deformation and fracture of nonwoven felts
16:00	727	L. Beex, R. Peerlings, M. Geers	From macroscopic to mesoscopic modeling of cracking in paperboard
16:20	595	G. Haasemann, C. Lux, V. Ulbricht	Determination of an elastic-plastic constitutive model of textile reinforced composites

Parallel sessions

Wednesday

15:10-16:40

MS 124 Chair: T. Coupez **Room 364**

Anisotropic adaptive meshing from error analysis to applications

	ID	Authors	Title
15:10 Keynote	786	S. Micheletti, S. Perotto	Anisotropic adaptation based on a gradient recovery error estimator
15:40	970	F. Alauzet, G. Olivier	An linf-lp space-time anisotropic mesh adaptation strategy for time-dependent problems
16:00	1703	A. Lyamin, J. Munoz, K. Krabbenhoft, S. Sloan	Comparison of adaptive strategies for limit analysis applications
16:20	1409	T. Coupez	Length distribution tensor and anisotropic adaptivity for level set and free surface flow

MS 3 Chair: M. Bernacki **Room 224-225**

Numerical modelling of microstructure evolution in metal forming conditions

	ID	Authors	Title
15:10 Keynote	616	R. Logé, H. Resk, L. Delannay, T. Coupez, M. Bernacki	3d modelling of deformation and recrystallization in polycrystals, combining a level set framework with adaptive meshing techniques
15:40	1969	A. Rollett	3d digital microstructures
16:00	81	J. Bruchon, D. Pino-munoz, S. Drapier, F. Valdivieso	3d simulation of the matter transport during a sintering process, within a level-set framework
16:20			

MS 76 Chair: M. Birades **Room 223M**

SPECIAL CLAROM EVENT: offshore engineering - current practice and developments

	ID	Authors	Title
15:10 Keynote	2088	C. Berhault	Numerical modelling in offshore engineering
16:10	2067	D. Idier, C. Oliveros	Linear and non-linear modelling of sediment mobility and continental shelf bedform dynamics

MS 85 Chair: R. Wagner **Room 202-203**

Textile materials and environment in buildings

	ID	Authors	Title
15:10 Keynote	2008	F. Weininger, K. Heinlein	Analysis of mobile flood barriers made of textile membranes
15:40	1758	P. Andersson, P. Blomqvist, H. Tuovinen	Modelling of fire burn-trough of textile membranes in buildings
16:00	1764	L. De Geetere, B. Ingelaere	Modelling sound transmission and sound absorption by membrane-incorporating multilayered structures
16:20	43	K.L. Apedo, S. Ronel, E. Jacquelin, M. Massenzio, A. Bennani	Nonlinear finite element analysis of inflatable beams made from orthotropic woven fabric

MS 146 Chair: T. Kvamsdal **Room 241**

Isogeometric methods

	ID	Authors	Title
15:10 Keynote	1822	Y. Bazilevs	Advances in isogeometric analysis technology and applications
15:40	1762	K. Bandara, F. Cirak	High-degree, non-uniform, rational subdivision shells
16:00	1416	B. Jüttler, M. Kapl, M. Rossgatterer	Turbine blade modelling for isogeometric analysis
16:20	2044	E.R. Christensen, T. Kvamsdal, K.M. Okstad	A comparison of spline, lagrange and spectral finite elements for structural mechanics applications

MS 5 Chair: J. Murin **Room 251**

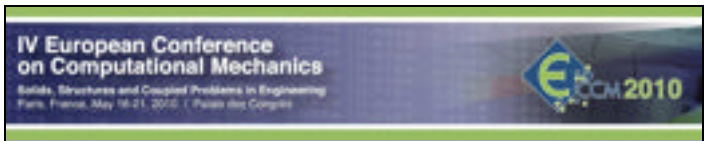
Computational structural dynamics

	ID	Authors	Title
15:10 Keynote	47	E. Sapountzakis, A. Kampitsis	Nonlinear dynamic analysis of shear deformable beam-columns on nonlinear two-parameter viscoelastic foundation
15:40	1006	S. Stoykov, P. Ribeiro	Modal interaction in free vibrations of 3d beams
16:00	1007	P. Persson, K. Persson, D. Bard, P.E. Austrell, G. Sandberg	Analysis of vibrations in high-tech facility
16:20	1120	J. Retka, A. Lion	On the numerical prediction of dynamical properties of elastomer- mounts

MS 60 Chair: P.A. Boucard **Room 252B**

Minisymposium on optimization of structural, coupled, uncertain systems

	ID	Authors	Title
15:10 Keynote	1883	V. Toropov, A. Polynkin, U. Armani, L. Alvarez	Application of metamodel building by genetic programming to industrial optimization problems
15:40	1443	A. Schulz, D. Bestle	Acceleration of compressor blade structural design process by direct use of efficient 3d aerofoil parameterisation and shell elements
16:00	63	C. Barbarosie, S. Lopes, A.M. Toader	Optimization of a tube bundle immersed in a fluid
16:20	671	Z. Liu, Y.W. Zhang	Optimized materials and structural designsfor stretchable electronics



Parallel sessions

Wednesday

15:10-16:40

MS 89 Chair: T. Laursen **Room 342A**

Preconditioned iterative methods for mechanical contact problems

	ID	Authors	Title
15:10 Keynote	1191	R. Krause, C. Gross, C. Mohr	Solving frictional contact with optimal complexity - localizing and parallel strategies for nonlinear and nonsmooth problems
15:40	1757	M. Van Gijzen, T. Jonsthovel, C. Vuik, T. Scarpas	A parallel deflated preconditioned conjugate gradient method for the finite element analysis of composite materials
16:00	1982	E. De Sturler, G. Paulino, S. Wang	Multilevel preconditioners for simulations and optimization on dynamic, adaptive meshes
16:20			

MS 70 Chair: D. Raabe **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
15:10 Keynote	496	J. Mach, J. Chevy, B. Armand, A. Acharya	On continuity of the plastic deformation rate
15:40	646	L. Gelebart, L. Vincent, R. Dakhlaoui, B. Marini	Application of numerical localization procedures to body-centered cubic materials
16:00	886	J. Pacull, B. Michel, O. Debordes	Polycrystalline aggregate model for the behavior of oxide fuels
16:20	1240	T. Carvalho-resende	Application of a dislocation based model for interstitial free (if) steels to marciniak stretch test simulations

MS 65 Chair: S. Levendecker **Room 352B**

Structure-preserving integrators in computational dynamics and control

	ID	Authors	Title
15:10 Keynote	1879	S. Krenk	Conservative time integration in a rotating frame using hybrid state-space variables
15:40	761	P. Betsch, N. Sänger, R. Siebert, S. Uhlar	A rotationless rigid body formulation: advantages for the design of structure-preserving integrators in multibody dynamics
16:00	1812	I. Romero	Energy-entropy-momentum discretizations of dissipative evolution problems
16:20	512	M. Krüger, M. Groß, P. Betsch	A comparison of two structure-preserving integrators for nonlinear thermo-elastodynamics

MS 110 Chair: E. Hachem **Room 242A**

Advanced numerical methods for fluid-structure interactions

	ID	Authors	Title
15:10 Keynote	798	E. Maitre	Level set models of fluid-structure interaction in biomechanics
15:40	1010	T. Heuzé	A mixed finite element for the modelling of fluid/solid couplings in high temperature assembly processes
16:00	313	S.T. Takeuchi, T. Kajishima	Simulation of dispersed multi-phase flow involving dispersed components with deformable boundaries based on a new immersed boundary method
16:20	866	L. Monasse, V. Daru, C. Mariotti, S. Piperno	Conservative coupling of an immersed boundary method with a discrete element method for fluid-structure interaction

Parallel sessions

Wednesday

17:00-18:20

MS 83 Chair: L. Deseri **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
17:00	424	A. Lebée, K. Sab	A full bending gradient theory for periodic plates homogenization
17:20	854	G. Geymonat, S. Hendili, F. Krasucki, M. Vidrascu	Some asymptotic models for a thin layer of heterogeneities in an elastic structure
17:40	502	K. Alexandr, S.I. Rakin	Numerical analysis of homogenized tunability of composite material
18:00			

MS 135 Chair: F. Legoll **Room 242B**

Arlequin, fe2 and other embedded domains methods for multimodel and multiscale mechanical problems: advances, analyses and computation of challenging fine scales applications

	ID	Authors	Title
17:00	1095	R. Costaouec, X. Blanc, C. Le Bris, F. Legoll	Variance reduction methods for homogenization of random materials
17:20	1522	O. Vorobiev, T. Antoun	Equivalent continuum modeling for wave propagation in discontinuous media
17:40	841	C. Mbodj, M. Renouf, L. Baillet, Y. Berthier, P. Jacquemard	Looking for representative volume element of c/c composite under tribological sollicitations
18:00			

MS 127 Chair: K. Spiliopoulos **Room 243**

Safe design of structures under cyclic loading

	ID	Authors	Title
17:00	273	H. Li, H.S. Yu	Kinematic shakedown analysis for cohesive-frictional materials
17:20	1156	N. Saha	A numerical method for statistical distribution for rainflow cycles
17:40			
18:00			

MS 90 Chair: V. Sansalone **Room 252A**

Mechanobiology of bone remodelling and adaptation (mbr&a)

	ID	Authors	Title
17:00	378	P. Tisbo, G. Presbitero, D. Geraghty, D. Taylor	Simulation of microcrack growth and repair in living bone
17:20	1323	R. Hambli, C.L. Benhamou	Neural networks and finite element hybrid algorithm for multiscale simulation of bone microdamage evolution
17:40	1032	J. Macione, R. Knapp, R. Sterling, M. Eschbach, S. Kotha	Site of failure changes with magnitudes of load during cyclic loading of whole bone
18:00	1922	L. Roseiro, P. Carvalhais, F. Simões	Total hip joint revision - a comparison between the mechanical properties of older and fresh cement

MS 59 Chair: O. Menshykov **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
17:00	966	A. Piccolroaz, G. Mishuris, A. Movchan	Symmetric and skew-symmetric weight functions for the analysis of perturbed interfacial crack problems
17:20	338	A. Linkov, L. Rybarska-rusinek	Asymptotics of fields and physical interface conditions near multi-wedge points
17:40	1553	M. Kotoul, T. Profant, J. Klusak	Computational model of crack deflection by an interface between orthotropic materials - effect of second order asymptotic term
18:00	1075	A. Mintzas, D. Nowell	Validation of an hcr - based fracture initiation criterion for adhesively bonded joints

MS 43 Chair: J.G. Korvink **Room 341**

Computational methods for micro and nano systems

	ID	Authors	Title
17:00	1673	V. Rochus, E. Lemaire, C. Geuzaine	Dual approach for an accurate estimation of pull-in voltage
17:20	1407	E. Bertarelli, R. Ardito, A. Corigliano, R. Contro	Static and dynamic behaviour of electrostatic diaphragm micro-pumps
17:40	1575	A. Abramyan	Vibration and bounding wall structure effects on a flow in nano-channels
18:00			

MS 66 Chair: Y. Malecot **Room 342B**

Modeling plasticity and damage in porous media

	ID	Authors	Title
17:00	7	O. Chesnikova	Qualitative features of rigid plastic solutions for porous materials
17:20	1178	O. Cazacu, J. Stewart	Yield criterion for porous aggregates with matrix displaying strength differential effects
17:40			
18:00			

Parallel sessions

Wednesday

17:00-18:20

MS 130 Chair: G. Lombaert **Room 343**

Model and parameter identification in structural mechanics

	ID	Authors	Title
17:00	1174	B. Peeters, H. Van Der Auweraer	Experimental parameter identification of megastructures
17:20	1159	E. Reynders, G. De Roeck	A hybrid experimental-operational approach to modal parameter identification of large structures
17:40	859	M. Peeters, G. Kerschen, J.C. Golinval	Experimental modal analysis of nonlinear vibrating structures using nonlinear normal modes
18:00	210	C. Rainieri, G. Fabbrocino	Opportunities and challenges of blind source separation techniques for dynamic parameter identification and monitoring

MS 14 Chair: C. Soize **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
17:00	1952	P. Nair, P. Hakansson	Prospects for overcoming the curse of dimensionality in polynomial chaos based stochastic projection schemes
17:20	617	H.M. Panayirci, H. Pradlwarter, G. Schueller	Application of guyan reduction within the polynomial chaos expansion based sfe analysis
17:40	1035	D. Liu, H. Matthies	Tryings to break the "curse of dimension" in uncertainty quantification with shallow water equations
18:00	1233	G. Blatman, B. Sudret	An adaptive algorithm based on least angle regression for uncertainty propagation and sensitivity analysis

MS 15 Chair: A. Frangi **Room 352A**

Fast multipole methods, fast boundary element solvers, and applications

	ID	Authors	Title
17:00	520	S. Nintcheu Fata, L.J. Gray	On the treatment of 3d poisson's equation in bem
17:20	746	A. Aimi, M. Diligenti, C. Guardasoni	Exploiting geometrical symmetries in space-time bies discretization
17:40	1597	J. Yamaguchi, T. Fukui	Application of operational quadrature bem to multi-group neutron diffusion problems
18:00	753	J. Zechner, G. Beer	Fast bem simulations in tunnelling

MS 149 Chair: B. Andersson **Room 362-363**

Physically based large scale simulation of composite structures.

	ID	Authors	Title
17:00	325	C. González, S. Sádaba, J. Llorca	Modelling the interaction between matrix cracking and delamination in angle ply laminates. xfem analysis of the interaction between ply failure by splitting and delamination.
17:20	385	R. Frizzell, R. O'higgins, C. Mccarthy	Development and implementation of a nonlocal damage model for the analysis of aircraft structural components
17:40	910	S. Czichon, R. Rolfes	Development of a mesomechanical modell for the assessment of void inclusions
18:00	1217	H. De Boer	Multi-scale damage modelling in abaqus

MS 10 Chair: A.E. Huespe **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
17:00	2072	P. Gilles	Simulation of the appearance of residual stress during manufacturing of a dissimilar material weld and their redistribution during ductile crack growth
17:20	777	P. Hutar	Fracture mechanics description of a polymer weld
17:40	1100	C. Forsell, T. Gasser	Experimental and modeling of myocardial splitting
18:00	359	S. Rezaee, C. Berdin	Cleavage fracture probability of spheroidized steels using polycrystalline modelling

MS 132 Chair: F. Auricchio **Room 315**

Computational techniques for large strain problems

	ID	Authors	Title
17:00	1531	G. Scovazzi, J.N. Shadid, T.J. Hughes	High strain rate shock hydrodynamics flow computations on tetrahedral finite elements
17:20	1322	A. Shutov, J. Ihlemann, R. Kreißig	On the advantages of time stepping techniques preserving the inelastic incompressibility for large strain viscoplasticity
17:40	1168	D. Aubram, S.A. Savidis	On mesh smoothing and material advection for modelling pile installation in sand
18:00	457	V. Sadovskiy	On mathematical modeling of granular flow with stagnant zones

MS 24 Chair: G. Haasemann **Room 221-222**

Modeling of fiber-based structures

	ID	Authors	Title
17:00	775	F. Beyer, B. Zastrau	Biaxially loaded textile reinforced concrete structures with inclined crack bridging
17:20	729	P. Jungbecker, T. Klietzing, G. Seide, T. Gries	Modelling and simulation of fibres in air flow with applications in textile technology
17:40	682	D. Das	The air permeability of non-uniform fibrous porous media
18:00	698	A. Ramasamy	Modelling of rtm mold fill operation with preform permeability properties for multi-layer interlocked fabric preforms

Parallel sessions

Wednesday

17:00-18:20

MS 124 Chair: S. Perotto **Room 364**

Anisotropic adaptive meshing from error analysis to applications

	ID	Authors	Title
17:00	1928	W. Zerguine, Y. Mesri	Anisotropic mesh adaptation for capturing multi-phase interfaces.
17:20	1309	C. Dobrzynski, P. Frey	An anisotropic delaunay mesh kernel. application to interface capturing and rigid body problems.
17:40	1550	A. Agouzal	. a posteriori error estimators and metric tensors for generation of quasi-optimal meshes
18:00	1756	A. Loseille, R. Lohner	Unified anisotropic mesh generation and adaptation for computational fluid dynamics

MS 3 Chair: J. Kusiak **Room 224-225**

Numerical modelling of microstructure evolution in metal forming conditions

	ID	Authors	Title
17:00	962	T. Jurczyk, B. Glut	Tetrahedral mesh generation for microstructure modelling
17:20	13	M. Beneš	Quantitative aspects of microstructure formation in solidification
17:40	157	R. Zhang, F. Wu, L. Jian, Y.Q. Kou	Numerical simulation of thermal stress fields in quenching 7075 aluminum alloy drop-forged
18:00			

MS 76 Chair: M. Birades **Room 223M**

SPECIAL CLAROM EVENT: offshore engineering - current practice and developments

	ID	Authors	Title
17:00	2087	J. Amdahl, T. Holmas	Nonlinear analysis of offshore structures
17:30	2085	T. Holmas	Fire resistance of offshore structures
18:00			

MS 121 Chair: J.M. Bergheau **Room 202-203**

Numerical simulation of manufacturing process in the nuclear industry

	ID	Authors	Title
17:00	1918	G. Kokot, J. Adamiec, A. John	The welding simulation of magnesium alloys using the finite element method
17:20	1563	S. Sarkar, M. Rao, M. Rao	Heat transfer model for boron carbide manufacturing process by carbothermal route
17:40	1839	S. Youssef	Hand cup grinding: analytical and numerical modeling
18:00			

MS 146 Chair: T. Dokken **Room 241**

Isogeometric methods

	ID	Authors	Title
17:00	907	J. Gravesen	Isogeometric analysis in shape optimisation
17:20	1753	S. Cho, B.Y. Koo, S.H. Ha	Isogeometric shape sensitivity analysis and optimization of design-dependent problems
17:40	1326	J. Kiendl, R. Wüchner, K.U. Bletzinger	Isogeometric shape optimization of surface coupled structures
18:00	1346	P. Noertoft Nielsen, J. Gravesen, A.R. Gersborg	Isogeometric analysis and shape optimization in fluid mechanics

MS 5 Chair: E. Sapountzakis **Room 251**

Computational structural dynamics

	ID	Authors	Title
17:00	1282	A. Sjöström, D. Bard, K. Persson, G. Sandberg	Simulating the effects on sound attenuation due to structural discontinuities in a floor assembly
17:20	1367	D. Makovicka	Dynamic response of building with vibrobase insulation
17:40	1387	S. Earle, L. Kwasniewski, P. Szurgott, J. Wekezer	Dynamic performance of reinforced concrete bridges
18:00	1592	A. Smirnov	Vibrations and stability of non-isotropic plates with cutouts.

MS 60 Chair: V. Dubourg **Room 252B**

Minisymposium on optimization of structural, coupled, uncertain systems

	ID	Authors	Title
17:00	696	E. Katamine	Shape optimization for drag minimization and lift maximization in viscous flow fields
17:20	265	P. Zhang	Reliability optimization of machining parameters for numerical control milling of ultrahigh strength steel
17:40	1999	A.J. Torii, R.H. Lopez, M.A. Luersen, J.E.S. De Cursi	A local-global strategy for simultaneous sizing and geometry truss optimization
18:00			

Parallel sessions

Wednesday

17:00-18:20

MS 89 Chair: C. Vuik **Room 342A**

Preconditioned iterative methods for mechanical contact problems

	ID	Authors	Title
17:00	128	Z. Dostal	Preconditioning improving rate of convergence for contact problems
17:20	1893	M. Jarosova, Z. Dostal, A. Klawonn, O. Rheinbach	Feti-dp averaging for the solution of contact problems
17:40	1948	D. Horak, Z. Dostal	Contact corner preconditioning of feti-dp
18:00	1386	P.A. Guidault, L. Champaney	A micro-macro mixed ddm for frictional contact problem : choice of the macro-problem and improvement of the convergence rate by a local-global iterative scheme

MS 70 Chair: A. El-azab **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
17:00	1981	A. Benzerga, P. Guruprasad, S. Keralavarma	Dimensional and microstructural size effects in crystal plasticity by means of computational dislocation dynamics
17:20	796	K. Danas, V.S. Deshpande, A.C. Cocks	Modelling dislocation climb with a novel discrete dislocation dynamics framework
17:40	1951	L. Dupuy, M. Bletry, E. Ferrie, V. Quatela, M. Fivel	A study of dislocations junctions in fcc metals by dislocation dynamics: effect of the stacking-fault energy
18:00	1422	R. Madec, L. Kubin	Binary and ternary interaction coefficients in bcc metals

MS 65 Chair: C. Hesch **Room 352B**

Structure-preserving integrators in computational dynamics and control

	ID	Authors	Title
17:00	1033	R. Denzer, M. Gei, D. Bigoni, A. Menzel	Band-gap properties of elastic and viscoelastic periodic beam structures for flexural waves with large amplitudes
17:20	813	N. Mahjoubi, A. Gravouil, A. Combescure, N. Greffet	A consistent multi-scale in time coupling method for heterogeneous time integrators - application to transient structural dynamics
17:40			
18:00			

MS 110 Chair: E. Longatte **Room 242A**

Advanced numerical methods for fluid-structure interactions

	ID	Authors	Title
17:00	1026	H. Mutsuda	Numerical simulation of interaction between wave and floating body using eulerian scheme with lagrangian particles
17:20	193	G. Dynnikova	The viscous vortex domains (vvd) method for non-stationary viscous incompressible flow simulation
17:40	897	C. Murea, S. Sy	A monolithic semi-implicit algorithm for fluid-structure interaction problem
18:00			

Parallel sessions

Thursday

09:25-10:55

MS 83 Chair: B.A. Schrefler **Amphithéâtre bleu**

Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
09:25 Keynote	243	J. Fish, S. Kuznetsov	Computational continua
09:55	1325	U. Schmidt, P. Steinmann	Computational homogenization for strongly coupled thermomechanical problems on the macroscale
10:15	591	C. Oskay, M. Haney	Computational model for titanium structures subjected to thermo-chemo-mechanical environment
10:35	366	D.K. Trinh, S. Forest	Effective micromorphic elastic properties for composite media

MS 135 Chair: F. Fevel **Room 242B**

Arlequin, fe2 and other embedded domains methods for multimodel and multiscale mechanical problems: advances, analyses and computation of challenging fine scales applications

	ID	Authors	Title
09:25 Keynote	1831	F.X. Roux	Feti-2lm domain decomposition methods with non-conforming meshes
09:55	973	R. Jaenicke	Two-scale modelling of micromorphic media
10:15	153	S. Nezamabadi, H. Zahrouni, J. Yvonnet, M. Potier-ferry	Multiscale second order homogenization using asymptotic numerical method
10:35	1408	E. Lignon, P. Le Tallec, N. Triantafyllidis	Stability analysis of a fiber reinforced ply under compression

MS 19 Chair: T. Tison **Room 243**

Robust design and uncertainty

	ID	Authors	Title
09:25 Keynote	1449	R. Chowdhury, S. Adhikari	Collocation based high dimensional model representation for stochastic partial differential equations
09:55	18	R. Filomeno Coelho, J. Lebon, P. Bouillard	Multiobjective reliability-based optimization of truss structures with stochastic surrogate models
10:15	1989	Y. Caniou, B. Sudret	Distribution-based global sensitivity analysis using polynomial chaos expansions.
10:35			

MS 71 Chair: E. Budvn **Room 252A**

Computational mechanics of biological tissues

	ID	Authors	Title
09:25 Keynote	547	M. Curtis, E. Budyn, T. Desai, T. Hoc, B. Russell	Microscale-based anchorage in 3d alters the mechanics of cardiac myocyte contraction
09:55	567	G. Guérin, D. Ambard, P. Swider	A model of mechanobiological interactions in implant healing involving cells, growth factors and bioactive surface properties
10:15	612	D. Drikakis, D. Sourmaidou	Computational nanotechnology of drug delivery through biological membranes
10:35	1942	R. Peyroux	Numerical simulation of mechanical effects accompanying division and growth of cells

MS 59 Chair: O. Rabinovitch **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
09:25 Keynote	890	M. Kaliske	Characteristics of fracture processes by discrete and continuum modelling
09:55	1235	M. Angelillo, E. Babilio	Numerical solutions for the propagation of cracks based on the variational theory of fracture
10:15	173	C. Vuik, T. Johnsthovel, M. Van Gijzen	Fast iterative methods for mechanical problems with interfaces
10:35	232	I. Iturrioz, L. Miguel, J.D. Riera	Size effects in dynamic fracture analysis of brittle materials using a truss-like discrete element method

MS 25 Chair: J. Yvonnet **Room 341**

Multiscale methods for modelling surface effects on nanosystems and nanostructured materials

	ID	Authors	Title
09:25 Keynote	620	F. Sansoz, C. Deng	Influences of surface faceting and microstructure on plasticity in gold nanowires
09:55	1	H. Park, G. Yun	Multiscale modeling of surface-induced instabilities in nanomaterials
10:15	297	N. Combe, P.M. Chassaing, F. Demangeot, L. Saviot	Surface effects on acoustic vibration modes in zno and metallic nanoparticles
10:35	52	H. Koguchi, N. Nishi	Nano-contact analysis for anisotropic and amorphous materials considering surface stress and elasticity

MS 40 Chair: L. Delannav **Room 342B**

Computational homogenization of single and multi-phase polycrystalline aggregates

	ID	Authors	Title
09:25 Keynote	1788	O. Lopez Pamies, P. Ponte Castaneda, V. Racherla	Thermoplastic elastomers: multiscale modeling, microstructure evolution and macroscopic instabilities
09:55	2055	I. Doghri, L. Brassart, L. Adam, J.S. Gérard	A second-order incremental formulation for the mean-field homogenization of elasto-plastic composites
10:15	230	J. Segurado, R. Lebensohn	A model for complex deformation of polycrystalline materials based on the implementation of a viscoplastic self-consistent formulation in a fe implicit code
10:35	356	M. Salmi, F. Auslender, M. Bornert, M. Fogli	Improved bounds for linear elastic random composites

Parallel sessions

Thursday

09:25-10:55

MS 130 Chair: C. Papadimitriou **Room 343**

Model and parameter identification in structural mechanics

	ID	Authors	Title
09:25 Keynote	1988	J. Conte, B. Moaveni, X. He, G. Lombaert	System and damage identification studies of large-scale building specimens subjected to seismic tests
09:55	1371	S.K. Au, F. Zhang, Y. Ni	Modal identification of a primary-secondary structure using ambient data
10:15	367	S. Caddemi	An identification procedure of multiple concentrated damages on beam-like structures based on natural frequency and mode shape dynamic measurements is presented. in some cases the procedure leads to closed form solutions of the damage intensities.
10:35	1433	A. Strauss	Reliability assessment of existing and new conrete structures based on identification

MS 14 Chair: G. Schueller **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
09:25 Keynote	648	C. Pettit, D.K. Wilson	Updating and sample-size effects in cluster-weighted models for global sensitivity analysis
09:55	565	O. Pajonk, R. Schulze-riegert, M. Krosche, H. Matthies, J. Axmann	Uncertainty updating in oil reservoir simulation
10:15	633	F. Duddeck, S. Hunkeler, M. Rayamajhi	Robustness and sensitivity of structural designs for crashworthiness with respect to uncertainties in shape parameters
10:35	1190	M. Zarroug, C. Desceliers, L. Rota	Uncertainty modelling of crash test

MS 15 Chair: M. Schanz **Room 352A**

Fast multipole methods, fast boundary element solvers, and applications

	ID	Authors	Title
09:25 Keynote	284	C. Geuzaine, R. Gaignaire, O. Bruno	High-order stochastic integral equation scheme for wave scattering problems with random impedance boundary conditions
09:55	1267	C. Cecka, E. Darve	Fourier based fast multipole method for the helmholtz equation
10:15	1372	E. Grasso, R. Bost, S. Chaillat, J.F. Semblat, M. Bonnet	Multi-level fast multipole bem for the complex-wavenumber formulation of 3-d viscoelastodynamics
10:35	1492	A. Frangi, M. Bonnet	On the application of fast multipole methods to helmholtz problems with complex wavenumber

MS 149 Chair: B. Andersonn **Room 362-363**

Physically based large scale simulation of composite structures.

	ID	Authors	Title
09:25 Keynote	452	L. Kärger, A. Kling	Feedback method transferring manufacturing data of tfp structures to as-build fe models
09:55	360	M. Weiglein, P. Horst	Influence of interlaminary located voids on fracture mechanical parameters
10:15	421	E. Pietropaoli, A. Riccio	Virtual crack closure technique and fail release approach: an effective finite element implementation for delamination growth phenomena
10:35	661	L. Iannucci, J. Ankersen, F. Ehrich	A fracture based damage model for impact predictions

MS 10 Chair: F. Fevel **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
09:25 Keynote	794	P. Gray, C. Mccarthy	A combined analytical/numerical model for the efficient simulation of load transfer in multi-bolt composite joints and structures
09:55	1400	W. Wagner	Fe-modeling of stability-induced coupled ply failure and delamination effects in skin-stringer stiffened cfrp-panels
10:15	1965	J. Ankersen, G. Davies	Interface elements versus vcct for delamination predictions
10:35	1808	N. Le Minh	Failure criterion for silicon-based joints under flexion loading

MS 23 Chair: J. Schroeder **Room 315**

New trends in non-standard finite elements

	ID	Authors	Title
09:25 Keynote	1315	F. Gruttmann	Computation of interlaminar stresses in layered shells
09:55	105	F. Armero, J.S. Valverde	Finite elements for kirchhoff rods
10:15	2028	G. Balduzzi, F. Auricchio	A new modeling approach for planar beams
10:35	1362	G. Castellazzi, P. Krysl	High order finite elements for reissner-mindlin plates based on assumed strain formulation

MS 24 Chair: J. Militkv **Room 221-222**

Modeling of fiber-based structures

	ID	Authors	Title
09:25 Keynote	408	A. Das	Mathematical modelling of vertical wicking through yarns and fabrics
09:55	828	A. Majumdar	Modeling of thermal properties of knitted fabrics using artificial neural network
10:15	1843	D. Roessner, J.Y. Drean, J.F. Osselin	Interlock fabric implant tearing modeling
10:35			

Parallel sessions

Thursday

09:25-10:55

MS 103 Chair: L. Chamoin **Room 364**

Estimation of modeling error and model adaptation in computational mechanics

	ID	Authors	Title
09:25 Keynote	1497	R. Gracie	Adaptive time-dependent continuum-atomistic simulations
09:55	1222	A. Abdulle, A. Nonnenmacher	Adaptive finite element heterogeneous multiscale method for homogenization problems
10:15	1593	S. Prudhomme, H. Ben Dhia, L. Chamoin, J.T. Oden	On an optimal approach for adaptive atomic-to-continuum coupling methods
10:35	1654	C. Zaccardi, R. Cottereau, L. Chamoin, H. Ben Dhia	Multiscale stochastic model and coupling with the arlequin method

MS 145 Chair: Z. Waszczvszvn **Room 224-225**

Soft computing in computational mechanics: recent advances.

	ID	Authors	Title
09:25 Keynote	1858	M. Klos, M. Sulewska, Z. Waszczyszyn	Neural prediction of compaction parameters for granular soils
09:55	1712	M. Jurek, L. Ziemianski	Damage detection in composite panel based on elastic wave propagation and artificial neural networks.
10:15	1739	M. Slonski	Structure damage localization based on the relevance vector machine
10:35	1854	B. Miller	Identification of a yielding zone using dynamic characteristics and bayesian neural networks

MS 76 Chair: C. Berhault **Room 223M**

SPECIAL CLAROM EVENT: offshore engineering - current practice and developments

	ID	Authors	Title
09:25	2086	B. Andrew, T. Eyles	Global analysis of single leg hybrid risers
09:55	2066	J.M. Leroy, T. Perdrizet, V. Le Corre, P. Estrier	A few models to assess stresses in armour layers of flexible risers
10:25	1384	P. Davies, D. Choqueuse	Prediction of long term durability of synthetic fibre ropes and insulation materials for offshore applications

MS 80 Chair: C. Davie **Room 202-203**

Concrete and concrete structures subject to high temperature and fire

	ID	Authors	Title
09:25 Keynote	1414	P. Kabele, J. Surovec, J. Pekar	Mesoscale analysis of high temperature effects on properties of concrete
09:55	1529	T.T.H. Le, F. Meftah, H. Boussa, K. Zibouche	A 3d finite element meso-scale modelling of thermo-hydro-mechanical behaviour of concrete exposed to elevated temperatures
10:15	1300	C. Davie, H. Zhang	Numerical investigation of damage and spalling in concrete exposed to fire
10:35			

MS 146 Chair: A. Reali **Room 241**

Isogeometric methods

	ID	Authors	Title
09:25 Keynote	1496	T. Dokken, V. Skytt	Locally refined splines
09:55	1442	F. Auricchio, L. Beirao Da Veiga, T.J. Hughes, A. Reali, G. Sangalli	Nurbs-based isogeometric analysis: efficient quadrature and collocation techniques
10:15	1594	T. Kvamsdal, K.A. Johannessen, M.G. Larson, K.M. Okstad	A posteriori error estimates for isogeometric analysis
10:35	2046	K.A. Johannessen, T. Kvamsdal	Adaptive isogeometric analysis using t-splines

MS 5 Chair: J. Murin **Room 251**

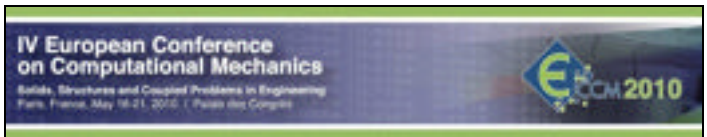
Computational structural dynamics

	ID	Authors	Title
09:25 Keynote	598	C. Pozzolini, S. Cogan, M. Salaun	A modelling error localization process for large finite element models in structural dynamics
09:55	1635	B. Sobol	Singularities of dynamic stress in angular points of elastic prism of compound rectangular cross-section
10:15	2011	J.G. Santos Da Silva, C. Kamei, W. Ferreira	Vibration analysis of a steel-concrete charging station platform
10:35			

MS 28 Chair: O. Sigmund **Room 252B**

Topology optimization for multiphysics problems

	ID	Authors	Title
09:25 Keynote	431	Y.Y. Kim, K.H. Sun	Topology design optimization of magneto-electric multiferroic heterostructures
09:55	1809	E. Lemaire, L. Van Miegroet, S. Thibaut, P. Duysinx, V. Rochus	Multiphysic topology optimization of electromechanical micro-actuators considering pull-in effect
10:15	561	N. Jin Yee, G.H. Yoon	A three-dimensional fe procedure and sensitivity analysis for topology optimization of pzt structure
10:35	1411	J. Peethambaran, J. Guedes, H. Rodrigues	Optimization of ferroelectric polycrystalline materials for piezoelectric applications



Parallel sessions

Thursday

09:25-10:55

MS 118 Chair: V. Popov **Room 342A**

Computational methods for the simulation of friction and wear in contacts with elastomeres

	ID	Authors	Title
09:25 Keynote	1461	P. Moldenhauer, M. Kröger	Dynamics of rubber components with frictional contact
09:55	1480	S. Ripka, M. Wangenheim	Dynamics of a siped tire tread block on rough surfaces
10:15	1490	L. Busse, I. Boubakri, M. Klüppel	Friction master curves for elastomers sliding on granite in simulation compared to experiment at various temperatures
10:35	1759	S. Tatzko, M. Wangenheim	Lcp contact formulation for spring mass systems with frictional contact

MS 70 Chair: B. Devincre **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
09:25 Keynote	1260	D. Raabe	Analysis of deformation patterns beneath indents using 3d ebsd and dislocation-based crystal plasticity finite element simulations
09:55	820	G. Winther	Crystal plasticity modelling of grain subdivision by dislocation boundaries
10:15	339	V. Taupin, S. Berbenni, C. Fressengeas, O. Bouaziz	On particle size effects: an internal length mean field approach using field dislocation mechanics
10:35	114	J. Driver, R. Quey, D. Piot	Microtexture tracking in hot deformed polycrystalline aluminium; comparison experiments - simulations

MS 45 Chair: O. Thomas **Room 352B**

Periodic and quasi-periodic vibrations of non-linear structural systems

	ID	Authors	Title
09:25 Keynote	183	L. Virgin	Limit cycle oscillations of a nonlinear airfoil
09:55	1500	K. Sami, C. Bruno, V. Christophe	A high order harmonic balance formulation : application to the periodic solutions of the reed musical instrument
10:15	1023	A. Lazarus, O. Thomas, J.F. Deü	Finite elements reduced order models for nonlinear vibrations of stratified piezoelectric beams with application to nems
10:35	288	F. Boumediene, D. Laetitia, C. Jean-marc, M. Abdelhamid, B. Elhassan	A reduction method based on linear normal modes

MS 131 Chair: J. Degroote **Room 242A**

Partitioned simulation of fluid-structure interaction and other coupled problems with black-box solvers

	ID	Authors	Title
09:25 Keynote	1744	M. Hojjat, E. Stavropoulou, R. Wüchner, K.U. Bletzinger	Geometry treatment and shape optimization for fluid-structure interaction wind engineering problems
09:55	972	S. Annerel, J. Degroote, J. Vierendeels	Numerical simulation of a 3d bileaflet mechanical heart valve using fluid-structure interaction
10:15	1230	L. Gendre, O. Allix, P. Gosselet	An application of non-intrusive coupling techniques to structural problems with localized plasticity
10:35			

Parallel sessions

Thursday

11:20-12:40

MS 83 Chair: J. Eberhardsteiner **Amphithéâtre bleu**
Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
11:20	911	F. Moravec, M. Holecek	Non-linear viscoelasticity in cellular tissues
11:40	1099	R. Landgraf, J. Ihlemann, S. Kolmeder, A. Lion	Thermomechanical-chemical coupled, large deformation material model representing curing processes in acrylic bone cement: finite element implementation and simulation
12:00	191	V. Sansalone, S. Naili, V. Bousson, C. Bergot, F. Peyrin, J.D. Laredo, G. Haiat	Computing the heterogeneous anisotropic elastic properties of cortical bone by a micromechanical approach
12:20	2079	L. Deseri, C. Biondi, M.E. Ferretti, L. Lunghi	Cells response to ligands is predicted through a new energetics accounting for the coupling of conformational and mechanical effects arising in such systems.

MS 38 Chair: C. Zhang **Room 242B**
Fracture and damage mechanics of advanced materials with multifield coupling

	ID	Authors	Title
11:20	647	Z. Itam	Multiscale numerical simulation of thermo-hygral alkali-silica reaction in concrete under the influence of mechanical loading
11:40	1077	Y. Charles	Finite element simulation of the disk pressure test using an hydrogen sensitive cohesive element
12:00	1997	S. Skatulla, C. Sansour, A. Arockiarajan	A nonlinear electro-elasticity formulation with higher-order electric field contributions
12:20			

MS 19 Chair: S. Adhikari **Room 243**
Robust design and uncertainty

	ID	Authors	Title
11:20	155	N. Lyes, B. Sébastien, A. Evelyne	Robust approach for limit cycle analysis in nonlinear dynamic friction systems.
11:40	51	S. Lippert, O. Von Estorff	Efficient modelling of vibro-acoustic systems with parameter uncertainties
12:00	426	A. Secgin, J.F. Dunne, L. Zoghaib	Transfrequency frf bounding for uncertain plate structures using extreme value theory and discrete singular convolution
12:20			

MS 71 Chair: P. Chabrand **Room 252A**
Computational mechanics of biological tissues

	ID	Authors	Title
11:20	1071	M. Heljak	Evolutionary design of bone scaffolds with respect to material selection
11:40	1066	M. Mengoni, J.P. Ponthot	A continuum damage mechanics based bone remodeling model in a finite strains framework.
12:00	434	A. Devulder, T. Hoc, D. Aubry, G. Puel, M. Bensidhoum	Micromechanics of bone remodelling
12:20	1488	P.J. Liotier, J.M. Rossi, P. Chabrand	A multiscale approach for bone remodelling in microgravity

MS 59 Chair: M. Kaliske **Room 253**
Fracture and contact mechanics for interface problems

	ID	Authors	Title
11:20	158	M. Paggi, P. Wriggers	A computational homogenization approach for a three-level hierarchical composite material
11:40	836	F. Greco, P. Lonetti, P. Nevone, L. Leonetti	Micromechanical modeling of composite material subjected to mixed-mode cracking
12:00	918	J. Toti, S. Marfia, E. Sacco	A coupled inferface-body nonlocal damage model
12:20	829	E.J. Barbero, D. Bruno, F. Greco, G. Sgambitterra	A finite element model to predict damage evolution in laminate composites with arbitrary stacking sequence

MS 25 Chair: H. Park **Room 341**
Multiscale methods for modelling surface effects on nanosystems and nanostructured materials

	ID	Authors	Title
11:20	133	T.P. Chang, M.F. Liu	Small scale effect on instability of double-walled carbon nanotubes conveying fluid
11:40	199	V.B. Tan, L. Dai	Tensile deformations of metal oxide nanowires via molecular dynamics simulations
12:00	615	I. Remediakis, N. Galanis, G. Kopidakis	Scaling laws for the mechanical properties of nanocrystalline materials
12:20	331	P. Olsson	Vibrational properties of strained gold nanowires

MS 40 Chair: J. Segurado **Room 342B**
Computational homogenization of single and multi-phase polycrystalline aggregates

	ID	Authors	Title
11:20	1921	N. Barton, J. Bernier, R. Lebensohn	Computationally efficient homogenization with texture evolution and twinning
11:40	1069	A. Prakash, D. Helm, H. Riedel	Modeling twinning and recrystallization during high temperature deformation of magnesium alloys using the visco-plastic self-consistent model
12:00	1072	D. Tjahjanto, P. Eisenlohr, F. Roters	Computational method for simulating polycrystalline material response using relaxed grain cluster (rgc) model
12:20	1915	A. Nasedkin	Some features of the coupled finite element acoustoelectroelastic analysis for piezoelectric devices with porous and polycrystalline piezocomposites

Parallel sessions

Thursday

11:20-12:40

MS 130 Chair: G. Lombaert **Room 343**

Model and parameter identification in structural mechanics

	ID	Authors	Title
11:20	1796	C. Papadimitriou, E. Ntotsios, D.C. Papadioti	Bayesian weight selection in structural model updating based on weighted residuals
11:40	861	J.F. Unger, C. Könke	Design of experiments and parameter identification using bayesian neural networks
12:00	1417	A. Alarcon, C. Bodel, M. Bonnet	Structural dynamics monitoring via a coupled data assimilation and modified error in constitutive relation technique
12:20	486	F. Lanata, F. Schoefs, K.T. Le	Statistical identification via polynomial chaos expansion and markov chain monte carlo methods

MS 14 Chair: H. Jensen **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
11:20	1294	B. Goller, J. Beck, G. Schueller	Identification of weighting factors of modal properties in bayesian model updating using experimental benchmark data
11:40	2018	A. Kucerova, J. Sykora, B. Rosic, H. Matthies	Uncertainty updating in description of heterogeneous materials with nonlinear constitutive law
12:00	868	A. Clement, A. Nouy	An enriched spectral stochastic finite element method for the numerical simulation of structures with random cracks
12:20	1324	T. Ritto, C. Soize, R. Sampaio	Probabilistic model identification of uncertainties for the bit-rock interaction model (local nonlinearity) of a drill-string system

MS 15 Chair: M. Bonnet **Room 352A**

Fast multipole methods, fast boundary element solvers, and applications

	ID	Authors	Title
11:20	1428	T. Klug, C. Lage, P. Urthaler, L. Kielhorn, Z. Andjelic	Fast bem for analysis of dielectric problems in power engineering design
11:40	1688	L. Kielhorn, T. Klug, Z. Andjelic	An aca-based fast bem in electrical engineering design
12:00	1711	R. Grzhibovskis, V. Baecker, S. Rjasanow, F. Klocke	Coupling fast bem with commercial fem when modeling deep rolling
12:20	1848	D. Lukas, J. Szweda	An element-based fast bem applied to acoustics of a railway wheel

MS 150 Chair: J. Gaudin **Room 362-363**

Computational optimization of composite structures

	ID	Authors	Title
11:20	2058	S. Grihon	Numerical optimisation of advanced composite structures
11:40	261	J. Vankan, A. De Wit	Optimisation strategies for composite fuselage panel design
12:00	526	M. Calomfirescu, F. Daoud, T. Pühlhofer	A new look into structural design philosophies for aerostructures with advanced optimization methods and tools
12:20	1146	M. Bruyneel, B. Colson, S. Grihon, P. Kaletta, A. Remouchamps, S. Zein	Composite optimisation in practice: from problem definition and stacking sequence generation to optimisation

MS 10 Chair: F. Fevel **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
11:20	1783	L. Marcin, N. Carrère, J.F. Maire	Macroscopic damage model and associated numerical tools for structural computations of woven ceramic matrix composite
11:40	1308	N. Feld, O. Allix, E. Baranger, J.M. Guimard	Simulating the crash-absorption capability of cfrps: modeling of microstructural kinking
12:00	1584	C. Dupleix-couderc, O. Allix, F. Gatuingt, B. Malherbe	Towards the multi-scale analysis of delamination in dynamics
12:20	1841	M. David, A. Johnson	Numerical modelling of crushing morphology in composite energy absorbers

MS 23 Chair: Z. Cai **Room 315**

New trends in non-standard finite elements

	ID	Authors	Title
11:20	885	A. Schwarz, J. Schroeder, G. Starke	An improved mixed finite element based on a modified least-squares formulation
11:40	150	D. Mueller-hoeppe, S. Loehnert, P. Wriggers	A brick element with inhomogeneous mode enhancement for finite deformations
12:00	351	R. Mahnken	Stabilized mixed triangular and tetrahedral finite elements using volume and area bubble functions
12:20	1840	A. Bilotta, G. Garcea, L. Leonetti	Plastically enriched assumed stress finite elements

MS 7 Chair: P.B. Lourenco **Room 221-222**

Computational models for masonry structures

	ID	Authors	Title
11:20	475	S. Casolo, G. Milani, C. Sanjust, G. Uva	Macro-scale dynamic modelling of out-of-plane collapse of masonry façades accounting for texture quality
11:40	303	F. Dubois, F. Lebon, A. Rekik	Computational methods for masonry structures: interface modeling and dynamics
12:00	1341	A. Fortunato, M. Angelillo, A.M. Avossa	A lumped dynamical method for masonry structures
12:20	1216	A. Abbo	The application of finite element methods using a constituive law based upon damage mechanics to the simulation of fracture within unreinforced masonry.

Parallel sessions

Thursday

11:20-12:40

MS 103 Chair: S. Prudhomme **Room 364**

Estimation of modeling error and model adaptation in computational mechanics

	ID	Authors	Title
11:20	215	X. Blanc, F. Legoll, C. Le Bris, C. Patz	Positive temperature coarse-graining of one-dimensional systems
11:40	1882	A. Romkes, T.C. Moody, K.M. Klein	Estimation of local modeling errors in the multi-scale modeling of heterogeneous materials
12:00	1909	G. Rodin	Address critical issues in matching discrete and continuum models
12:20			

MS 145 Chair: N.D. Lagaros **Room 224-225**

Soft computing in computational mechanics: recent advances.

	ID	Authors	Title
11:20	162	E. Mohammadi, M.R. Forouzan, M.R. Niroomand, M. Salimi	Optimization of multi stand cold strip rolling process parameters according to chatter phenomenon by taanga method
11:40	244	M. Abd Elrehim, F. El-kashef, G. Swoboda, M. Eid	Optimization of ground improvement techniques in tunnelling using genetic algorithms
12:00	1523	V. Plevris, L. Poufos, M. Papadrakakis	A comparison of particle swarm optimization and genetic algorithms for the optimum design of steel truss structures
12:20	1995	C. Mitropoulou, N.D. Lagaros, M. Papadrakakis	Soft computing methodologies in computational earthquake engineering

MS 76 Chair: M. Birades **Room 223M**

SPECIAL CLAROM EVENT: offshore engineering - current practice and developments

	ID	Authors	Title
11:20	225	C. Gaumain, N. Fremion, A. Peccard, J. Berger, O. Verin	Fpso noise and vibration control from feed through epc to commissioning
11:50	2089	F.H. Peter	Experiences using the model correction factor method as a response surface technique
12:20	2090	J. Goyet, E. Lharidon	Risk based inspection of offshore structures

MS 80 Chair: G. Periskic **Room 202-203**

Concrete and concrete structures subject to high temperature and fire

	ID	Authors	Title
11:20	1111	P. Mitkowski	Double composite bridge girders under thermal loads
11:40	477	G. Periskic, J. Ozbolt, R. Eligehausen	3d fe analysis of fasteners at elevated temperatures
12:00	255	Y.C. Wu, B. Xia	Total lagrangian finite element formulations of nonlinear analyses for steel frames in fire
12:20			

MS 146 Chair: T. Dokken **Room 241**

Isogeometric methods

	ID	Authors	Title
11:20	1064	A. Buffa, C. De Falco, G. Sangalli	Isogeometric analysis for incompressible viscous flows
11:40	336	R. Sevilla, O. Hassan, K. Morgan	Nurbs-enhanced finite volume method (nefvm)
12:00	1967	M. Bergou, B. Audoly, E. Grinspun, M. Wardetzky	Unified geometric model of elastic rods and viscous threads
12:20			

MS 5 Chair: C. Zehetner **Room 251**

Computational structural dynamics

	ID	Authors	Title
11:20	1357	M.N. Ouissi, A. Houmat	Non axisymmetric free vibration analysis of linearly varying thickness shells (and plates) of revolution by a bi-hierarchical finite element having two hierarchical mode numbers.
11:40	1743	Z. Kazanci, H. Turkmen	The effect of in-plane deformations on the nonlinear dynamic response of laminated plates
12:00	36	J. Laier	High-order padé algorithm for non-linear dynamics
12:20			

MS 28 Chair: G.H. Yoon **Room 252B**

Topology optimization for multiphysics problems

	ID	Authors	Title
11:20	334	F. Wein, M. Kaltenbacher, E. Baensch, G. Leugering, F. Schury	Acoustic near field topology optimization of a piezoelectric loudspeaker
11:40	416	J.S. Lee, Y.J. Kang, Y.Y. Kim	Topology optimization of coupled poroelastic-acoustic-elastic systems based on unified multi-phase modeling technique
12:00	757	C. Andreasen, O. Sigmund	Optimization of the pressure coupling coefficient in periodic poroelastic materials
12:20	487	C. Kim	Topology optimization of gas flow channel routes in fuel cells

Parallel sessions

Thursday

11:20-12:40

MS 118 Chair: M. Kröger **Room 342A**

Computational methods for the simulation of friction and wear in contacts with elastomeres

	ID	Authors	Title
11:20	1515	J.A. Moreno, F. Marin, A. Soto, F. Alhama	The solution of the frenkel kontorova tomlinson model is obtained using a network model. based on this model the static dry friction is studied.
11:40	1476	M. Theumert	Experimental evaluation of friction and wear in contacts with elastomers
12:00	1850	M. Strangfeld, A. Maedler, M. Stoll	Experimental friction analysis - the measurement process
12:20			

MS 70 Chair: A. Finel **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
11:20	791	J. Kratochvil, J. Kristan	Iteraction of glide dislocations and dipolar loops in a persistent slip band of fatigue matals
11:40	1299	S. Rao, D. Dimiduk, T. Parthasarathy, M. Uchic, J. El-awady, C. Woodward	Atomistic simulations of cross-slip nucleation at screw dislocation intersections in fcc ni
12:00	1718	R. Madec, L. Pillon, C. Denoual	Inertial effect for dislocation in 3d: comparison between dislocation dynamic and peierls-nabarro galerkin simulations
12:20	40	G. Monnet, C. Domain	Dislocation nucleation from free surfaces in iron: surface resistance to local shear stresses

MS 45 Chair: L. Virgin **Room 352B**

Periodic and quasi-periodic vibrations of non-linear structural systems

	ID	Authors	Title
11:20	1828	M. Gruin, F. Thouverez, L. Blanc, P. Jean	Non-linear dynamics of a bladed dual-shaft
11:40	407	Y. Wang, H. Luo	Nonlinear vibration and stability of rotors with bearing and transverse magnetic excitations
12:00	1265	S. Hutton	Frequency characteristics of rotating discs at critical speeds
12:20	670	D. Lee, J. Ryu, W. Lee	Responses of nonlinear asymmetric vibrations of an imperfect circlular plate

MS 136 Chair: W.A. Wall **Room 242A**

Computational fluid-structure interaction and multi-material problems

	ID	Authors	Title
11:20	1068	P. Moireau, N. Xiao, M. Astorino, A. Figueroa, D. Chapelle, C. Taylor, J.F. Gerbeau	Fluid-structure interaction in arteries - external tissue support and inverse problems
11:40	1329	A. Arranz Carreño, A.J. Gil, J. Bonet, O. Hassan	The immersed structural potential method for fluid-structure interaction haemodynamic applications
12:00	469	C. Vergara	New methodologies and theoretical results in fluid-structure interaction problems applied to haemodynamics
12:20	601	C. Bertoglio, D. Chapelle, J.F. Gerbeau, P. Moireau, M. Fernandez	Filtering-based data assimilation in vascular fluid-structure interaction through displacement measurements at the interface

Parallel sessions

Thursday

15:10-16:40

MS 83 Chair: G. Piiaudier-cabot **Amphithéâtre bleu**
Multiscale and multiphysics computational methodologies for complex materials

	ID	Authors	Title
15:10 Keynote	1803	G. Borino, B. Failla, F. Parrinello	A computational two-scale approach to nonlinear analysis of etherogeneous composite structures
15:40	856	M.L. De Bellis, D. Addessi, V. Ciampi	A mixed fe multiscale procedure based on a cosserat model for masonry panels
16:00	932	J.C. Pina, V. Kouznetsova, G. Van Den Oord, M. Geers	Microstructural modelling of cast iron under thermo-mechanical loading conditions
16:20	83	G. Laschet, H. Quade, T. Henke, H.H. Dickert, M. Bambach	Comparison of elastoplastic multi-scale analysesof the u-forming process of a steel line-pipe tube

MS 38 Chair: A. Saez **Room 242B**
Fracture and damage mechanics of advanced materials with multifield coupling

	ID	Authors	Title
15:10 Keynote	1080	M. Kuna, Q. Li, M. Enderlein	Simulation of crack tip fields in ferroelectrics by a micromechanical domain switching model
15:40	1333	R. Rojas Díaz, A. Saez, N. Sukumar, F. Garcia-sanchez	Unified formulation of the xfem for fully anisotropic multifield problems based on the stroh's formalism
16:00	1814	M. Wünsche, C. Zhang, Y.S. Wang	Interface cracks in layered piezoelectric materials under impact loading
16:20			

MS 19 Chair: M. Hanss **Room 243**
Robust design and uncertainty

	ID	Authors	Title
15:10 Keynote	559	W. Verhaeghe, M. De Munck, W. Desmet, D. Vandepitte, D. Moens	Numerical static analysis of uncertain mechanical structures based on interval fields
15:40	1825	T. Haag, M. Hanss	Inverse fuzzy arithmetic for the identification of simplified friction models
16:00	916	F. Massa, B. Lallemand, T. Tison, S. Mary, F. Buffe	Fuzzy robust optimization of demeter satellite
16:20	1253	C. Valente, D. Spina, S. Gabriele	Modelling and experimental uncertainties in railway bridges dynamics

MS 71 Chair: P. Swider **Room 252A**
Computational mechanics of biological tissues

	ID	Authors	Title
15:10 Keynote	1106	K. Raum, A. Gerisch, Q. Grimal	Multiscale structure-functional modeling of lamellar bone
15:40	624	F. Peyrin	3d x-ray computerized tomography imaging of bone at different scales as an input to computational biomechanics
16:00	315	E. Budyn, J. Jonvaux, T. Hoc	Characterisation of micro-fractures in human cortical bone using physical imaging
16:20	1312	Q. Grimal, G. Rus, W. Parnell, M.B. Vu, S. Naili, P. Laugier	Two-degree-of-freedom model of compact bone elasticity

MS 59 Chair: M. Angelillo **Room 253**
Fracture and contact mechanics for interface problems

	ID	Authors	Title
15:10 Keynote	340	O. Rabinovitch	Interfacial instability in layered multimaterial systems: debonding dynamics in masonry walls strengthened with composite materials
15:40	905	V. Acary, F. Dubois	Non smooth fracture dynamics (nsfd)
16:00	1162	L. Macorini, B. Izzuddin	A nonlinear interface formulation for the assessment of masonry structures
16:20	1256	A.V. Van De Graaf, M. Hendriks, J. Rots	Saw-tooth softening models for discrete cracks and slip planes in concrete and masonry

MS 25 Chair: V.B. Tan **Room 341**
Multiscale methods for modelling surface effects on nanosystems and nanostructured materials

	ID	Authors	Title
15:10 Keynote	384	H. Duan	Wetting phenomena driven by temperature and electric field
15:40	148	J. Yvonnet, A. Mitrushchenkov, G. Chambaud	Constructing continuum models of ionic nanowires from quantum mechanics computations
16:00	1015	K. Samadikhah, R. Larsson, F. Bazooyar, K. Bolton	Continuum-molecular modeling of graphene lattice
16:20	35	A. Javili, P. Steinmann	Computational mechanics of solids with boundary energies

MS 40 Chair: O. Lopez Pamies **Room 342B**
Computational homogenization of single and multi-phase polycrystalline aggregates

	ID	Authors	Title
15:10 Keynote	758	P. Suquet, A. Labe, N. Lahellec, H. Moulinec	Elasto-viscoplastic behavior of polycrystals: a comparison between full-field simulations and a micromechanical model based on "effective" internal variables.
15:40	807	L. Brassart, L. Stainier, L. Delannay, I. Doghri	Mean-field modeling of elasto-plastic composites based on an incremental variational approach
16:00	1640	R. Lebensohn	Recent applications of the crystal plasticity fast fourier transform-based approach
16:20	1469	K. Jöchen, T. Böhlke	Prediction of the material behavior of fcc polycrystals by using a new self-consistent scheme

IV European Conference on Computational Mechanics

Solids, Structures and Coupled Problems in Engineering

Paris, France, May 16-21, 2010 | Palais des Congrès

ECCM 2010

Parallel sessions

Thursday

15:10-16:40

MS 130 Chair: C. Papadimitriou **Room 343**

Model and parameter identification in structural mechanics

	ID	Authors	Title
15:10 Keynote	568	A. Morassi	Dynamic identification of the hypo bank office complex
15:40	212	G. Chellini, F.V. Lippi, L. Nardini, F. Nogarin, W. Salvatore	Long-term monitoring of sesia high speed railway bridge
16:00	1639	T.K. Lin, A. Kiremidjian, C.A. Tsai, K.C. Chang	A bio-inspired two-mode structural health monitoring system
16:20			

MS 14 Chair: G. Schueller **Room 353**

Uncertainty quantification in computational mechanics and engineering sciences

	ID	Authors	Title
15:10 Keynote	1444	H. Jensen	An efficient decision support system for robust design of stochastic dynamical systems
15:40	1225	P. Beaurepaire, G. Schueller	Reliability of fatigue prone components
16:00	1348	E. Cataldo, M. Julien, R. Sampaio	Fitting random variables associated to a two-mass model for the vocal folds using neural networks
16:20	1318	S.F. Ali, S. Adhikari	Control of a class of non-linear stochastic partial differential equations

MS 15 Chair: N. Nishimura **Room 352A**

Fast multipole methods, fast boundary element solvers, and applications

	ID	Authors	Title
15:10 Keynote	1410	G. Biros	Fast algorithms for 3d vesicle flows
15:40	56	P.D. Létourneau, C. Cecka, E. Darve	Generalized fast multipole method
16:00	765	J. Ravnik, L. Skerget, J. Lupse	Wavelet and fast multipole data sparse approximations of boundary element method matrices in a fluid flow solver
16:20	842	G. Of, O. Steinbach, P. Urthaler, Z. Andjelic	A comparison of fast boundary element methods for transmission problems

MS 150 Chair: J. Gaudin **Room 362-363**

Computational optimization of composite structures

	ID	Authors	Title
15:10 Keynote	2059	P. Kaletta, S. Grihon	Advanced numerical optimisation of laminate stacking sequences using a load categorisation approach
15:40	349	A. Baldomir, S. Hernandez, J. Diaz, L. Romera	Sensitivity analysis with regards to fixed parameters in optimum design of aircraft structures
16:00	294	M. Samuelides, D. Bettebghor, S. Grihon, N. Bartoli, J. Morlier, A. Merval	Using mixture of experts surrogate models and em learning for multilevel structural optimization
16:20			

MS 10 Chair: M. Jirasek **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
15:10 Keynote	1800	A.E. Huespe, A. Needleman, X. Oliver, P.J. Sánchez	A numerical method for the simulation of ductile fracture
15:40	1056	B. Medjo, M. Rakin, N. Gubeljak, J. Predan, A. Sedmak	Computational aspects of micromechanical ductile fracture analysis of steel welded joints
16:00	652	H. Wang, C. Berdin, P. Claude, S. Forest, M. Matthieu, P. Aurore	Numerical modeling of ductile fracture in the presence of portevin le-chatelier effect in a c-mn steel
16:20	613	A. Simatos, F. Cazes, S. Marie, A. Combescure, B. Prabel	Modelling ductile tearing from continuously strained state to crack propagation with the xfem

MS 23 Chair: G. Starke **Room 315**

New trends in non-standard finite elements

	ID	Authors	Title
15:10 Keynote	194	Z. Cai	Flux recovery and a posteriori error estimation conforming elements for second order elliptic partial differential equations
15:40	927	F.S. Attia, Z. Cai, G. Starke	First-order system least squares for contact problems in linear elasticity
16:00	1613	I.D. Moldovan, J.A. Teixeira De Freitas, T. Cao Duc	Sensitivity assessment of hybrid-trefftz stress and displacement elements for poroelasticity
16:20	1170	R. Winkler	Large strain continuum elements with arbitrary aspect ratios

MS 7 Chair: T.J. Massart **Room 221-222**

Computational models for masonry structures

	ID	Authors	Title
15:10 Keynote	102	P.B. Lourenço, J. Leite, F. Ferraguti, G. De Felice	Benchmarking for the analysis of masonry infilled reinforced concrete frames
15:40	22	C. Maruccio, D. Oliveira, P.B. Lourenço, G. Monti	Nonlinear analysis of masonry structures: comparison between micro-modelling and macro-modelling approaches
16:00	581	R. Sahlaoui, K. Sab	Limit analysis of masonry wall
16:20	850	D. Addessi, E. Sacco	A multi-scale procedure for regular masonry based on a cosserat-cauchy nonlinear homogenization procedure .

Parallel sessions

Thursday

15:10-16:40

MS 103 Chair: L. Chamoin **Room 364**

Estimation of modeling error and model adaptation in computational mechanics

	ID	Authors	Title
15:10 Keynote	915	M.G. Larson, H. Jakobsson	Adaptive reduction of finite element models in linear elasticity
15:40	1880	D. Heintz, P. Hansbo	Model adaptivity for plates based on a continuous-discontinuous finite element method
16:00	507	W. Hoitinga, H. Van Brummelen	Adaptivity and model reduction for a boltzmann-type equation
16:20	1399	J. Hoffman, P. Brune, A. Kadir, P. Roman	Adaptive modeling of geometry and boundary conditions with focus on turbulent fluid flow

MS 145 Chair: V. Plevris **Room 224-225**

Soft computing in computational mechanics: recent advances.

	ID	Authors	Title
15:10 Keynote	1345	G. Marano, G. Quaranta, S. Sgobba, Y. Tsompanakis	Domination-based selection schemes for handling constraints in particle swarm optimization algorithms
15:40	596	M. Müller, G.P. Ostermeyer	The cellular automaton method for elliptic and parabolic partial differential equations
16:00	492	T. Kudryashova, S. Polyakov, O. Kosolapov, E. Kononov, A. Sverdlin	Parallel software package for modeling problems of continuous media mechanics on modern multiprocessor systems
16:20	1520	C. Stathi, N.D. Lagaros, M. Papadrakakis	Reliability analysis of rc structures based on nn predictions: a comparative study of 3d solid and beam element modeling

MS 146 Chair: T. Kvamsdal **Room 223M**

Isogeometric methods

	ID	Authors	Title
15:10 Keynote	917	M. Bischoff, R. Echter	Increasing accuracy and efficiency of nurbs fem for non-linear elasticity problems via the dsg method
15:40	956	C. Verhoosel, M.A. Scott, R. De Borst, T.J. Hughes	An isogeometric approach to cohesive zone formulations
16:00	1936	J. Gravesen, A. Evgrafov, A.R. Gersborg, M. Dang Nguyen	Isogeometric design of vibrating membranes
16:20	219	T. Elguedj, J. Réthoré, M. Coret, P. Simon	Displacement derivatives measurement using nurbs based isogeometric digital image correlation

MS 107 Chair: A. Kassab **Room 202-203**

Conjugate heat transfer - with industrial applications

	ID	Authors	Title
15:10 Keynote	73	M. Lamnaouer, E. Divo, E. Petersen, A. Kassab	Conjugate heat transfer modeling in an axi-symmetric shock tube
15:40	221	R. Bialecki, A. Klimanek	A 3d cfd model of a natural draft wet-cooling tower
16:00	1338	J. Smolka, Z. Bulinski, A. Fic, K. Banasiak, N. Andrzej	Two-phase transonic compressible co2 flow through heat pump ejector based on homogeneous equilibrium model
16:20	1339	J. Smolka	Ga optimisation of cooling duct shape in a naturally ventilated electrical transformer

MS 61 Chair: D. Evheramendv **Room 241**

Advances in software strategies for computational mechanics

	ID	Authors	Title
15:10 Keynote	1774	J. Jansson, J. Hoffman, N. Jansson, M. Nazarov	Unicorn: an automated unified continuum mechanics solver
15:40	1797	F. Hecht	Freefem++, a generic tools to solve mechanical pde with finite elements
16:00	1802	H. Narayanan	An automated computational framework for nonlinear elasticity
16:20	1503	R. Saad	Generalized finite element discretization: an object-oriented analysis

MS 5 Chair: W. Ferreira **Room 251**

Computational structural dynamics

	ID	Authors	Title
15:10 Keynote	1606	J. Philippon, D. Aubry, B. Tie	Transient dynamic structure-structure interaction: characterization and numerical modeling
15:40	1691	N. Mahdavi, H. Mahdavi, H. Ahmadi	Evaluation of plastic hinge lengths in conventional push-over analysis method in comparison with nonlinear dynamic analysis
16:00	1950	A. Iounes, D. Lemosse, E. Souza De Cursi	Response surface of a cable submitted to a pulse at one of its end
16:20	1602	B. Sbartai	Free field response in the vicinity of a vibrant foundation

MS 28 Chair: Y.Y. Kim **Room 252B**

Topology optimization for multiphysics problems

	ID	Authors	Title
15:10 Keynote	317	S. Rakshit, G.K. Ananthasuresh	Computational protein sequence design using topology optimization techniques
15:40	1957	M. Rene	Tailoring dispersion properties for slow light application by transient topology optimization
16:00	278	G.H. Yoon	Optimal heat dissipating structure design considering forced convective heat transfer
16:20	1747	S. Cho, S.H. Ahn	Level set based topological shape optimization of heat conduction problems with design-dependent convection boundary

Parallel sessions

Thursday

15:10-16:40

MS 118 Chair: M. Kröger **Room 342A**

Computational methods for the simulation of friction and wear in contacts with elastomeres

	ID	Authors	Title
15:10 Keynote	1402	V. Popov	Dimensional reduction for fast simulations of contact and frictional problems
15:40	1473	B. Fernandez-diaz, M. Conte, A. Igartua, X. Fernandez, G. Mendoza, A. Straub	Investigation of the friction and wear behaviour of hvof and pvd coatings and ptfe tribopairs under lubricated reciprocating sliding
16:00	2074	K. Monaghan, N. Epiphaniou	Continuum simulations of non-linear wear model for elastomeric sealing systems
16:20	1867	A. Daubner, W. Haas	Modelling and simulation of wear at ptfe lip seals at multiple scales

MS 70 Chair: C. Denoual **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
15:10 Keynote	1551	A. El-azab	On the closure problem in density-based modeling of dislocations
15:40	1933	A. Finel, U. Salman	Phase field modeling of the martensitic transition: i) comparison between geometrically linear and non-linear elasticity, and ii) thermoelasticity and self-organized criticality.
16:00	1898	G. Abrivard, B. Appolaire, E. Busso, S. Forest	A coupled crystal plasticity - phase field formulation to describe microstructural evolution in polycrystalline aggregates
16:20	179	B. Beausir, C. Fressengeas, N. Gurao, L. Toth, S. Suwas	Continuity constraints and spatial correlations at interfaces in crystal plasticity

MS 45 Chair: C. Bruno **Room 352B**

Periodic and quasi-periodic vibrations of non-linear structural systems

	ID	Authors	Title
15:10 Keynote	1811	S. Neukirch, J. Frelat, A. Goriely, C. Maurini	Frequency jumps in the transverse vibrations of an elastic beam
15:40	1715	P. Ribeiro	On the effect of viscous dissipation on the elasto-plastic and large amplitude vibrations of beams
16:00	395	E. Manoach	Damage detections of nonlinear vibrating thermally loaded structures
16:20			

MS 136 Chair: M. Fernandez **Room 242A**

Computational fluid-structure interaction and multi-material problems

	ID	Authors	Title
15:10 Keynote	530	U. Küttler, M.W. Gee, W.A. Wall	Monolithic newton-krylov schemes with algebraic multigrid preconditioners for fluid–structure interaction problems
15:40	1935	J. Hron, S. Turek	Monolithic solver for fluid-structure interaction problems with temperature and shear dependent material parameters
16:00	1524	G. Scovazzi	A method for shock hydrodynamics on tetrahedral finite elements
16:20	1232	B. Despres	I will present a new consistency criterion for lagrangian simulations adapted to multi-material calculations. i will discuss the satisfaction of the criterion for various meshes used in research and engineering 2d and 3d codes.

Parallel sessions

Thursday

17:00-18:20

MS 108 Chair: J. Zeman **Amphithéâtre bleu**

Applied homogenization for advanced structural simulations

	ID	Authors	Title
17:00	1595	V. Buryachenko, M. Brun	Linea elastic fea of random structure composites reinforced by heterogeneities of noncanonical shape
17:20	674	V. Smilauer, C. Hoover, Z. Bazant, B. Patzak, A. Waas, K. Shahwan	Multiscale simulation of fracturing braided composites via repetitive unit cells
17:40	2035	M. Zeiml, R. Lackner	A randomized pore-network model for investigation of the permeability of porous materials
18:00	1211	J. Novak, L. Kaczmarczyk, P. Grassl, C. Pearce	Hybrid analysis of heterogeneous materials

MS 38 Chair: M. Wünsche **Room 242B**

Fracture and damage mechanics of advanced materials with multifield coupling

	ID	Authors	Title
17:00	625	D. Gross, P. Dineva, R. Mueller, T. Rangelov	Dynamic anti-plane fracture problem in continuously inhomogeneous cracked piezoelectric solid
17:20	1421	R. Palma, G. Rus, R. Gallego	Dynamic experimental design of damage identification in piezoelectrics
17:40	1527	L. Janski, P. Steinhorst, M. Kuna	Efficient finite element computer program for crack propagation simulations in piezoelectric structures
18:00			

MS 19 Chair: D. Moens **Room 243**

Robust design and uncertainty

	ID	Authors	Title
17:00	1431	P. Lardeur, L. Martini, E. Arnoult, F. Druesne	An economical approach for the variability of natural frequencies and frequency response functions of structures modelled by finite elements
17:20	1932	R. Croquet, D. Lemosse, J.E.S. De Cursi	An iterative scheme founded on computation of optimal safety factors to solve rbdo problems : method and numerical resultats .
17:40	1772	E. Zhang, P. Feissel, J. Antoni	Bayesian update of finite element model in the presence of modeling error
18:00			

MS 71 Chair: P. Chabrand **Room 252A**

Computational mechanics of biological tissues

	ID	Authors	Title
17:00	1493	S. Kolmeder, A. Lion, R. Landgraf, J. Ihlemann	Constitutive modelling of curing phenomena of acrylic bone cements and experimental identification
17:20	799	X. Hu, D. Clair	A probabilistic approach to the primary stability of a cementless hip prosthesis
17:40	1974	A. Joda, S. Korossis, J. Summers, F. John, Z. Jin	Fluid-structure interaction simulations of nonlinear isotropic and transversely isotropic hyperelastic aortic valves
18:00	1572	E. Vennat, D. Aubry, M. Degrange	Numerical simulation of mercury infiltration through a collagen fiber network

MS 59 Chair: U. Nackenhorst **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
17:00	474	M. Steigemann, M. Specovius-neugebauer, S.A. Nazarov	Scenarios of crack propagation near material interfaces
17:20	1699	D. Bruno, F. Greco, P. Lonetti, A. Manna, P. Nevone	Dynamic crack propagation in composite structures including bridging effects
17:40	1633	S. Reina, D. Dini, D. Hills	Interfacial frictional behaviour of layered systems under cyclic loading
18:00	938	T. Stengel	Fibre reinforced civil engineering materials - a model for fibre pullout based on tribological mechanisms and contact mechanics

MS 25 Chair: F. Sansoz **Room 341**

Multiscale methods for modelling surface effects on nanosystems and nanostructured materials

	ID	Authors	Title
17:00	295	T. Delph	A local instability criterion for defect initiation in solids
17:20	1158	C. Reina Romo, S. Conti, O. Michael	A dislocation-based model of size-dependent plasticity and ductile fracture by void nucleation, growth and coalescence in metals
17:40	1074	W. Pranger, T. Antretter, T. Waitz, D. Fischer	Numerical analysis of the role of interface energies in the context of martensite formation in niti nanograins
18:00			

MS 40 Chair: R. Lebensohn **Room 342B**

Computational homogenization of single and multi-phase polycrystalline aggregates

	ID	Authors	Title
17:00	1223	L. Delannay, M.R. Barnett	Modelling of a combined effect of grain shape and grain size on the plastic anisotropy of textured polycrystals
17:20	1768	S. Ramtani, G. Dirras	A generalized self-consistent approach for both grain-size and texture dependence of yield stress of nano-grained materials
17:40	739	N. Cordero, H.J. Chang, S. Forest, E. Busso, V. Taupîn, S. Berbenni, M. Cherkaoui	Gnd layer density at interfaces and grain boundaries: strain gradient plasticity simulations of the effect of the microstructure's size on the fields in polycrystals
18:00	1725	J. Gawad, A. Van Bael, P. Van Houtte, G. Samaey, D. Roose	The dynamic local facet method for multiscale modeling of texture anisotropy in metal forming processes

Parallel sessions

Thursday

17:00-18:20

MS 130 Chair: C. Papadimitriou **Room 343**

Model and parameter identification in structural mechanics

	ID	Authors	Title
17:00	1347	G. Lombaert, B. Moaveni, J. Conte	Uncertainty quantification in vibration-based damage assessment of a seven-story reinforced concrete shear wall building
17:20	1978	P. Rosko	Model and parameter identification of civil structure under earthquake loading
17:40			
18:00			

MS 31 Chair: E. Cueto **Room 353**

Advanced numerical techniques in material forming

	ID	Authors	Title
17:00	143	H. Mata, R. Natal Jorge, A. Fernandes, R.A.F. Valente, M. Parente	Fem analysis of sandwich shells with metallic foam cores
17:20	326	M. Hojny, M. Glowacki	Development of hybrid analytical-numerical system of steel deformation in semi-solid state
17:40	1835	J.C. Cisneros, M.D. Berrade, E. Royo, M.P. Carruesco, F. Torres	Robust design in the deep drawing process by means of simulation and statistical optimization of the critical sheet thinning.
18:00	213	B. Regener, C. Krempaszky, E. Werner	Characterization of residual stresses in heat treated ti-6al-4v forgings by machining induced distortion

MS Chair: **Room 352A**

	ID	Authors	Title
17:00			
17:20			
17:40			
18:00			

MS 150 Chair: J. Gaudin **Room 362-363**

Computational optimization of composite structures

	ID	Authors	Title
17:00	500	B. Gambino, G. Iannuzzo, C. Guadagno	Stochastic optimization of a fuselage panel
17:20	736	A. Apicella, F. Aliabadi	Multilevel multiscale procedure for compression composite stiffened panel test simulation
17:40	860	C. Bisagni, R. Vescovini	Buckling optimization of composite omega-stiffened panels
18:00			

MS 10 Chair: A.E. Huespe **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
17:00	488	S. Feld-payet, J. Besson, F. Feyel	A continuous-discontinuous description of ductile fracture using adaptive remeshing strategies
17:20	870	J. Velde	3d-modelling of nonlocal ductile damage under reversed complex loading for predicting structural stability and safety
17:40	1632	N. Valoroso	Interface elements, drilling rotations and parameter identification in computational failure analysis of adhesive structural joints
18:00	1666	J. Retama Velasco, G. Ayala, M. Cuomo	Consistent symmetric formulation of the enhanced embedded discontinuity method

MS Chair: **Room 315**

	ID	Authors	Title
17:00			
17:20			
17:40			
18:00			

MS 7 Chair: E. Sacco **Room 221-222**

Computational models for masonry structures

	ID	Authors	Title
17:00	723	J. Sykora, M. Sejnoha, J. Sejnoha	Computational homogenization of coupled heat and moisture transport in masonry structures
17:20	1103	G. De Felice, A. Amorosi, M. Malena	Multi-surface elasto-plastic analysis of masonry based on homogenization
17:40	1108	A. Mauro, G. De Felice, P.B. Lourenço	Closed form micro-macro relationships for periodic masonry
18:00			

Parallel sessions

Thursday

17:00-18:20

MS 103 Chair: R. Cottereau **Room 364**

Estimation of modeling error and model adaptation in computational mechanics

	ID	Authors	Title
17:00	738	A. Pros, P. Diez, C. Molins	Model validation for the numerical simulation of the double punch test
17:20	1601	T. Kunow, T. Grätsch, F. Hartmann	Safety margins in structures, goal oriented analysis and model adaptivity
17:40	2068	B. Youn	A hierarchical model validation method of computational models for engineering product development
18:00	1949	L. El Alaoui, A. Blouza	Mesh adaptation for koiter's shell model

MS Chair: **Room 224-225**

	ID	Authors	Title
17:00			
17:20			
17:40			
18:00			

MS 61 Chair: J. Jansson **Room 241**

Advances in software strategies for computational mechanics

	ID	Authors	Title
17:00	390	K. Banas, K. Michalik	Parallel mesh management for finite element simulations of complex problems
17:20	1447	T. Charras, P. Verpeaux	Use of language for automatic parallelization of general purpose finite element code
17:40	307	B. Raghavan, B. Piotr	Programming paradigms for parallel finite element analysis and structural optimization
18:00	1472	H. Leclerc	Towards a no compromise approach between modularity, versatility and execution speed for computational mechanics on cpus and gpus

MS 75 Chair: P. Kudela **Room 251**

Acousto-ultrasonic waves in thin elastic structures

	ID	Authors	Title
17:00	216	J.M. Vivar-perez, U. Gabbert	Chebyshev spectral analysis for wave propagation in thin plates
17:20	485	E. Glushkov, N. Glushkova, R. Lammering, A. Eremin, M. Neumann	Theoretical and experimental investigations of lamb waves excitation and their diffraction by surface obstacles
17:40	439	B. Hennings, O. Winkler, R. Lammering	Spectral finite elements for modelling of wave propagation
18:00	374	Z.A.B. Ahmad, U. Gabbert	Influence of material variations in composite plates on lamb wave propagation and edge reflection

MS 123 Chair: Z. Terze **Room 252B**

Advanced numerical methods in multibody systems and control

	ID	Authors	Title
17:00	549	M. Blundell, D. Harty, M. Dickison	A multibody systems based investigation into the influence of mass distribution on vehicle dynamics responses
17:20	785	C. Pereira, J. Ambrósio, A. Ramalho	Influence of contact modeling on the dynamics of chain drives
17:40	884	A. Gorobtsov, E. Ryzhov	Sinthesys of the control motion of robotics systems by inverse dynamic method with nonlinear feedback
18:00	1419	S. Kadam, B. Seth	Multi-body dynamic model of one-wheel robot

MS 118 Chair: M. Kröger **Room 342A**

Computational methods for the simulation of friction and wear in contacts with elastomeres

	ID	Authors	Title
17:00	1860	T. Chatel, C. Gauthier, H. Pelletier, R. Schirrer	Creep and recovery of spherical contact on amorphous polymer: experimental results and numerical analysis
17:20	1838	F.J. Martinez-barca, M. Canales-compaired, M.Á. Jiménez-caballero, M.Á. Martinez-barca	Development of a numerical-experimental methodology as support tool for the design of systems with reciprocating contacts rubberlike-metal
17:40			
18:00			

MS 70 Chair: T. Hoc **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
17:00	989	M. Shehadeh	Numerical and strain localization issues in modeling dislocation-shock interaction
17:20	1012	B. Devincre, T. Hoc, L. Kubin	Dislocation mean free paths and strain hardening of crystals: from intermittent to continuous modelling of plasticity.
17:40			
18:00			

Parallel sessions

Thursday

17:00-18:20

MS 136 Chair: G. Scovazzi **Room 242A**

Computational fluid-structure interaction and multi-material problems

	ID	Authors	Title
17:00	503	S. Iakovlev, J.F. Sigrist, C. Leblond, M. Mitchell, R. Murray, K. Williston	Analytical benchmarks for shock-shell interaction
17:20	1466	M. Cremonesi, A. Frangi, U. Perego	A particle finite element method for fluid-structure interaction problems with non-newtonian fluids
17:40	2075	K. Willam	Mismatch and spalling of concrete materials under rapid heating and drying
18:00			

MS 45 Chair: P. Ribeiro **Room 352B**

Periodic and quasi-periodic vibrations of non-linear structural systems

	ID	Authors	Title
17:00	1369	T.T. Pham	Passive control of a 2 dof system under two different harmonic excitations
17:20	1264	P. Mitkowski	Numerical analysis of existence of invariant and ergodic measure in the model of dynamics of red blood cell's production system
17:40			
18:00			

Parallel sessions

Friday

08:30-10:00

MS 108 Chair: M. Seinoha **Amphithéâtre bleu**

Applied homogenization for advanced structural simulations

	ID	Authors	Title
08:30 Keynote	1406	V. Kouznetsova, E. Coenen, J. Fioole, L. Noels, M. Geers	Multi-scale computational homogenization for structured shells
09:00	1359	B. Mercatoris, T.J. Massart	Multi-scale modelling of failure in heterogeneous periodic thin shells
09:20	142	D. Branke, B. Jörg, G. Haasemann, V. Ulbricht	Investigation of the cosserat material parameters obtained by homogenization of a cauchy continuum
09:40	516	M. Lombardo, H. Askes	Higher-order continuum for wave dispersion in microstructured membranes

MS 97 Chair: G. Haikal **Room 242B**

Computational treatment of interfaces in multi-physics and multi-scale problems

	ID	Authors	Title
08:30 Keynote	1849	G. Wells	Automated modelling for multi-physics problems with evolving boundaries
09:00	789	M. Puso, J. Sanders, T. Laursen	A locking-resistant technique for tying computational domains across embedded interfaces
09:20	925	I. Tsukanov, S. Pasupuleti	Exact treatment of interface boundary conditions using distance fields
09:40	87	G. Shi Wei	Computational simulation of bubble and deformable structure interaction

MS 2 Chair: H. Matthies **Room 243**

Heterogeneous materials with inelastic behavior

	ID	Authors	Title
08:30 Keynote	99	A. Ibrahimbegovic, H. Matthies	Computational mechanics of heterogeneous materials and failure with size effect
09:00	489	B. Rosic, H. Matthies, M. Zivkovic	Mathematical formulation and numerical simulation of stochastic elastoplastic behaviour
09:20	1437	I. Temizer, P. Wriggers	Space-time homogenization of inelastic contact boundary layers
09:40	1763	L. Li, D. Brancherie, J.M. Roelandt, J. Favergeon	Modeling of different fracture modes for zr/zro2 system by strong discontinuity approach with probabilistic aspect

MS 71 Chair: P. Chabrand **Room 252A**

Computational mechanics of biological tissues

	ID	Authors	Title
08:30 Keynote	1662	L.R. Zastrow	On the dynamics of muscle tissue
09:00	1028	A. El Baroudi, F. Razafimahery, N. Bideau, L. Rakotomanana	Dynamic analysis of the aorta during an impact. fluid-structure interaction approach
09:20	1046	A. Brunon, M. Coret, K. Bruyere Garnier, A. Combescure	Numerical modeling of biological fibrous tissue - yield surfaces and damage evolution for a 2d material
09:40	1302	A. Franquet, R. Le Riche, S. Avril	Recovering young moduli in heterogeneous stenosed carotid arteries: a numerical 2d plane strain study.

MS 59 Chair: C. Vuik **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
08:30 Keynote	881	U. Nackenhorst, A. Lutz	Numerical investigations of osseointegration and long-term remodeling based on a bio-active interface theory
09:00	1047	J. Hoefnagels, M. Kolluri, H. Van Dommelen, M. Geers	An in-situ experimental-numerical approach for detailed characterization of interface delamination properties
09:20	935	G. Giambanco, A. Spada, G. Fileccia Scimemi	Meso-modeling of heterogeneous structures via interphase model
09:40			

MS 25 Chair: A. Abdul-latif **Room 341**

Multiscale methods for modelling surface effects on nanosystems and nanostructured materials

	ID	Authors	Title
08:30 Keynote	1405	M. Grekov, S. Kostyrko	Model of a thin coating with variable thickness
09:00	19	A. Abdul-latif	Elasto-inelastic cyclic modeling for ellipsoidal inclusion under multiaxial loading paths
09:20			
09:40			

MS 120 Chair: A. Delaplace **Room 342B**

Damage anisotropy: modeling and computational issues

	ID	Authors	Title
08:30 Keynote	955	S. Kammoun, I. Doghri, L. Delannay	Micromechanical modeling of the progressive failure in short glass-fiber reinforced thermoplastics - anisotropic damage model
09:00	447	H. Hosseini-toudeshky, B. Mohammadi, M.H. Sadr, S. Aivazzadeh	Multi surface continuum damage-plasticity analyses of laminates including unilateral effects
09:20	1040	L. Thi Tuyet Nhung, D. Katell, F. Joseph, B. Didier, O. Brigitte	Behaviour law for the bmc composites
09:40	2082	G. Lebon, H. Nguyen, F. Ragueneau	Hybrid simulations of structures using a 3d induced anisotropic damage mode

Parallel sessions

Friday

08:30-10:00

MS 54 Chair: G. Biros **Room 343**

Fast algorithms for inverse scattering

	ID	Authors	Title
08:30 Keynote	1870	J.W. Kang, S. Kucukcoban, L. Kallivokas	The inverse medium problem in pml-truncated domains
09:00	1604	A. Oberai, P. Barbone, G. Feijoo	Krylov subspace methods for focusing and imaging
09:20	643	S. Chaillat, G. Biros	General fast inversion method to recover small 3-d inhomogeneities using a small number of sources and excitation frequencies
09:40			

MS 31 Chair: R. Natal Jorge **Room 353**

Advanced numerical techniques in material forming

	ID	Authors	Title
08:30 Keynote	1789	I. Vladimirov, M. Schwarze, S. Reese	A finite strain anisotropic plasticity formulation for metal forming processes
09:00	764	I. Alfaro, F. Gagliardi, L. Filice, E. Cueto	Simulation of porthole die extrusion process by natural element method
09:20	577	A. Hadoush, T. Van Den Boogaard	Efficient implicit simulation for incremental forming
09:40			

MS 117 Chair: B. Wohlmuth **Room 352A**

Treatment of boundary or interface conditions with x-fem

	ID	Authors	Title
08:30 Keynote	311	V. Gravemeier, F. Henke, U. Rasthofer, W.A. Wall	Extended variational multiscale finite element methods for premixed combustion and two-phase flow
09:00	734	P. Quintela, J. Paredes	Numerical simulation of some problems in fluid mechanics with xfem.
09:20	2016	A. Caron, P. Massin, N. Moes	Quadratic x-fem elements with contact and friction
09:40	849	M. Siavelis, M. Guiton, P. Massin, N. Moes	3d x-fem of frictional fault networks with large sliding and non linear kinematics

MS 150 Chair: J. Gaudin **Room 362-363**

Computational optimization of composite structures

	ID	Authors	Title
08:30 Keynote	437	H. Wenzel	A framework for optimization and robust optimization of a composite airframe panel
09:00	752	O. Tabaste	Engineering process capture and automation to sustain aircraft composite structure optimization
09:20	362	L. Le Breton, O. Hardy, G. Lecina	A plm multi-skill integration framework to enable the virtualisation of composite structures engineering
09:40			

MS 10 Chair: F. Daghia **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
08:30 Keynote	1559	P. Gruber, J. Zeman	Variational model for debonding in fibrous composites solved by feti method
09:00	941	P. Kerfriden, O. Allix, P. Gosselet	Importance and control of the time discretization for delamination prediction.
09:20	1746	C. Balzani, W. Wagner	Semi-numerical estimation of critical energy release rates for adhesive joints in composite laminates
09:40	1681	C. Le Mauff, P. Ladevèze	On the calculation of damage localization in laminated composite structures

MS 113 Chair: C. Tiago **Room 315**

Meshless & other novel computational methods

	ID	Authors	Title
08:30 Keynote	2002	S.P. Proenca	Multisite damage by the generalized finite element method
09:00	493	J.L. Morales, J.A. Moreno, F. Alhama	Solution of the axy-symmetric elasticity problems by using papkovich - neuber formulation and the network method
09:20	1547	H. Santos, P. Pimenta, J. Almeida	A hybrid-mixed 3d beam finite element for the geometrically exact analysis of framed structures
09:40	490	J.L. Morales, J.A. Moreno, F. Alhama	Solution of 2d elasticity problems formulated by navier equations based on the network simulation method

MS 116 Chair: E. Baranger **Room 221-222**

Sandwich structures: computational mechanics and multiscale modelling

	ID	Authors	Title
08:30 Keynote	1779	A. Johnson, S. Kilchert	Modelling impact damage in sandwich structures with folded composite cores
09:00	1583	T. Block, C.B. Nguyen, I. Zuardy, P. Zahlen, A. Herrmann	Finite element analysis of the impact behavior of sandwich structures with pin-reinforced foam cores
09:20	1054	L. Gornet, G. Marckmann, S. Kamran Ali, S. Marguet, J.P. Regoin	Failure criteria and mechanical properties of nomex honeycomb cores
09:40	773	Y.S. Kim, S. Chang, J.K. Mok, K.H. Moon, S.H. Cho	Effect analysis of sandwich structures in center frame for low-floor vehicle

Parallel sessions

Friday

08:30-10:00

MS 6 Chair: J.J. Ródenas-garcía **Room 364**

Reliability, error estimation and adaptivity for automatic simulations with enriched finite element methods (pufem/gfem/xfem)

	ID	Authors	Title
08:30 Keynote	276	C. Hoppe, S. Loehnert, P. Wriggers, E. Stein	Error estimation within the extended finite element analysis of cracks
09:00	926	R. Allais, G. Legrain, P. Cartraud	Comparison of two approaches for error estimation with x-fem
09:20	1920	G. Bricteux, M. Duflot, J.F. Remacle	Goal-oriented error estimation in fracture mechanics using xfem.
09:40			

MS 138 Chair: T. Melz **Room 224-225**

Holistic numerical analysis of adaptive systems

	ID	Authors	Title
08:30 Keynote	1445	S. Herold	Holistic simulation of smart structures - a methodic approach
09:00	1450	T. Jungblut, S. Herold, M. Matthias, J. Thiel	Holistic simulation of smart structures - active mount application
09:20	1669	K.H. Hoffmann, P. Feulner, A. Alizadeh, H. Atzrodt	Concept for a piezohydraulic pump for automotive applications
09:40	267	B. Kranz, W.G. Drossel	Mimo state space models of piezo-mechanical systems with exact impedance mapping

MS Chair: **Room 223M**

	ID	Authors	Title
08:30 Keynote			
09:00			
09:20			
09:40			

MS Chair: **Room 202-203**

	ID	Authors	Title
08:30 Keynote			
09:00			
09:20			
09:40			

MS 61 Chair: H. Leclerc **Room 241**

Advances in software strategies for computational mechanics

	ID	Authors	Title
08:30 Keynote	1281	P. Notz, R. Pawlowski, J. Sutherland	A software design for solving coupled multi-physics equations in a dynamic, extensible and efficient way
09:00	1793	J.D. Garaud, A. Roos	Design and implementation of code coupling methods for solving fluid-structure interactions problems
09:20	1045	S. Mattern, K. Schweizerhof	Highly efficient implementation of 'solid-shell' finite elements with enhanced assumed strains in explicit time integration
09:40			

MS 75 Chair: R. Lammering **Room 251**

Acousto-ultrasonic waves in thin elastic structures

	ID	Authors	Title
08:30 Keynote	167	W. Ostachowicz, P. Kudela	Spectral elements with electro-mechanical coupling for elastic wave modelling in 3d solids
09:00	645	R. Martin, D. Komatitsch, E. Bruthiaux	Convolution and non convolution perfectly matched layer techniques optimized at grazing incidence for anisotropic, poroelastic or viscoelastic high-order wave propagation modelling
09:20	1784	C. Willberg, S. Dudzek, J. Pohl, G. Mook, U. Gabbert	Adhesive layer influence of piezoelectric induced lamb waves
09:40	1247	M. Micunovic, A. Grillo, I. Muha, G. Wittum	Two-dimensional plastic waves in quasi-rate independent viscoplastic materials

MS 123 Chair: A. Mueller **Room 252B**

Advanced numerical methods in multibody systems and control

	ID	Authors	Title
08:30 Keynote	602	T. Murphey	Topology-based variational integration of degenerate interconnected mechanical systems
09:00	759	N. Sänger, P. Betsch	A systematic finite element approach to flexible multibody dynamics
09:20	1709	O. Brüls, A. Cardona	Time integration of finite rotations in flexible multibody dynamics using lie group integrators
09:40	810	S. Emam	An accurate low-oder model for the dynamics of a slender, flexible manipulator exhibiting a rigid-body motion

Parallel sessions

Friday

08:30-10:00

MS 128 Chair: S. Shrivastava **Room 342A**

Impact damage in composites from low-mass high-velocity projectiles

	ID	Authors	Title
08:30 Keynote	1852	N. Toso-pentecôte, A. Johnson	Modelling damage in stiffened composite panels under high velocity impact
09:00	1810	A.T. Rhead, R. Butler, C. York	On the compression after impact strength of asymmetric fully orthotropic laminates
09:20	1980	S. Guénette, S. Shrivastava	Fe simulation of face/core interface debonding in a circular sandwich plate under axisymmetric impact type loading
09:40			

MS 70 Chair: T. Hoc **Room 351**

Multiscale modeling and dislocation density based models in plasticity

	ID	Authors	Title
08:30	1153	N. Osipov, N.C. N'guyen, F. Barbe, G. Cailletaud, A. Musienko, C. Petry, B. Marini	Crystal plasticity based micromechanical local approach of brittle failure in bainite high resolution polycrystals
08:50	163	C. Tome, I. Beyerlein, B. Clausen, L. Capolungo	Dislocation-density-based hardening laws implemented in polycrystal models
09:10	550	C. Lebon, F. Onimus, L. Dupuy, L. Vincent	Experimental study and numerical simulation of the plastic deformation of alpha-zirconium single crystals
09:30	86	R. Dingreville, L. Zhang, T. Bartel	Mesoscale modeling of nuclear fuel microstructures

MS 74 Chair: P. Neittaanmäki **Room 352B**

Dynamics of moving materials: instability effects

	ID	Authors	Title
08:30 Keynote			
09:00	834	S. Turek	Fem-multigrid techniques and benchmarking for fluid-structure interaction problems
09:20	1771	N. Banichuk	Elastic stability of travelling orthotropic membrane
09:40	883	N. Banichuk, J. Jeronen, T. Tuovinen, P. Neittaanmäki	Dynamics and localized instability of axially moving plates

MS 136 Chair: M. Fernandez **Room 242A**

Computational fluid-structure interaction and multi-material problems

	ID	Authors	Title
08:30 Keynote	1220	D. Chapelle, J.F. Gerbeau, J. Sainte-marie, I. Vignon-clementel	A poroelastic model valid in large strains with applications to perfusion in cardiac modeling
09:00	1295	C. Michler, J. Lee, S. Krittian, J. Chapman, N. Smith	Numerical simulation of blood perfusion in the human heart
09:20	1517	G. Guidoboni	Modeling free boundary flows with applications to blood flow
09:40	1525	L. Boudin, C. Grandmont, D. Yakoubi	This talk aims to present the model, the numerical process and an experimental vs. numerical study in a device designed and used by aerosol therapists from inserm (u618).

Parallel sessions

Friday

10:10-11:30

MS 108 Chair: V. Smilauer **Amphithéâtre bleu**

Applied homogenization for advanced structural simulations

	ID	Authors	Title
10:10	1067	V. Marcadon, S. Kruch	About the role of defects on the effective mechanical behaviour of hollow-sphere structures
10:30	1292	A. Verma, M. Mira	Wave properties of graphene sheet modeled as periodic structure
10:50	939	D. Pham Tuong Minh, A. Boussad, G. Ying-qiao	Homogenization models for the packs of food containers and the insert cardboard sheet in a pallet system during transport
11:10			

MS 97 Chair: J. Sanders **Room 242B**

Computational treatment of interfaces in multi-physics and multi-scale problems

	ID	Authors	Title
10:10	1560	G. Haikal, A. Prakash	A coupled meshfree-finite element method for hyperelastic solids
10:30	1208	K. Davey, R. Mondragon	A transport level-set approach for the annihilation of weak discontinuities in solidification modelling
10:50	974	S. Gladkov, R. Spatschek, I. Steinbach, M. Stiemer, B. Svendsen	Dendritic growth - a benchmark problem for fem
11:10			

MS 2 Chair: D. Brancherie **Room 243**

Heterogeneous materials with inelastic behavior

	ID	Authors	Title
10:10	1468	D. Brancherie, V. Bonnaillie Noel, M. Dambrine, S. Tordeux, G. Vial	Effect of "small" heterogeneities on structure failure
10:30	206	T. Taxer, B. Regener, E. Werner	A micromechanical finite element model for ni-base cast alloys utilizing computer generated microstructures
10:50	375	J. Vondrejc, J. Zeman	Fast fourier transform based homogenization solved by iterative solvers
11:10			

MS 71 Chair: T. Hoc **Room 252A**

Computational mechanics of biological tissues

	ID	Authors	Title
10:10	787	Z. Yang, C. Dick, A. Duester, M. Ruess, R. Westermann, E. Rank	Finite cell method with fast integration - an efficient and accurate analysis method for ct/mri derived models
10:30	1658	M. Ben Tkaya	Modeling of the mechanical behavior of the human hair
10:50			
11:10			

MS 59 Chair: S. Marfia **Room 253**

Fracture and contact mechanics for interface problems

	ID	Authors	Title
10:10	1203	R. Estevez, M. Romero De La Osa, C. Olagnon, J. Chevalier, C. Tallaron	Cohesive zone model and analysis of slow crack growth in silica and ceramics
10:30	11	W. Sha	A model of ordered porosity formation
10:50			
11:10			

MS 120 Chair: H. Stang **Room 342B**

Damage anisotropy: modeling and computational issues

	ID	Authors	Title
10:10	1389	B. Richard, E. Martin, F. Ragueneau, C. Cremona, L. Adelaide	Three dimensional numerical analysis of reinforced concrete beams subject to corrosion
10:30	1065	R. Scotta, D.A. Talledo, L. Tesser, A. Saetta	Non-linear behaviour modelling of rc panels subjected to in-plane loads
10:50	2081	A. Delaplace, R. Desmorat	Link between anisotropic continuous damage and discrete cracking
11:10			

MS 54 Chair: S. Chaillat **Room 343**

Fast algorithms for inverse scattering

	ID	Authors	Title
10:10	1943	M. Bonnet	A fast approximate global search methodology for defect identification based on small-inclusion asymptotics of misfit functionals
10:30	1139	Y. Grisel, P.A. Mazet, V. Mouysset, J.P. Raymond	A refraction index retrieval method using the factorization method for acoustics.
10:50			
11:10			

Parallel sessions

Friday

10:10-11:30

MS 31 Chair: R.A.F. Valente **Room 353**

Advanced numerical techniques in material forming

	ID	Authors	Title
10:10	427	M.R. Khoshravan, M.A. Setoudeh	Numerical and experimental analysis of welding deformation in thin plates
10:30	236	M.A. Khan, R. Schledjewski	Process simulation and parametric study of an online consolidation composite manufacturing setup
10:50			
11:10			

MS 117 Chair: P. Massin **Room 352A**

Treatment of boundary or interface conditions with x-fem

	ID	Authors	Title
10:10	756	E. Pierres, M.C. Baietto, A. Gravouil	3d two-scale x-fem crack simulation with interfacial frictional contact
10:30	768	N. Bonfils, N. Chevaugeon, N. Moes	Treating inequality constraint in a continous medium with a coupled x-fem/level-set strategy
10:50	388	Q.Z. Zhu, J.F. Shao, J. Yvonnet, Q.C. He	Modelling by xfem of size and shape effects of spring-layer imperfect interfaces in composite materials
11:10	1868	J.C. Roux	An x-fem modelling for internal oxidation

MS 10 Chair: F. Daghia **Room Maillot**

Computational fracture and failure of materials and structures

	ID	Authors	Title
10:10	531	M. Prechtel, G. Leugering, P. Steinmann, M. Stingl	Optimization of fiber shapes inside brittle composite materials
10:30	952	O. Van Der Sluis, Y.Y. Hsu, S. Noijen, P. Timmermans, M. Gonzalez, J. Hoefnagels	Delamination of metal-polymer interfaces in microelectronics
10:50	1041	B. Egan, R. Frizzell, C. Mccarthy	Issues with developing robust objective damage models for composite materials
11:10	1663	B. Tranquart, P. Ladevèze, E. Baranger, A. Mouret	Toward a multiscale modelling of cmcs using gfem

MS 113 Chair: J.L. Morales **Room 315**

Meshless & other novel computational methods

	ID	Authors	Title
10:10	914	H.C. Gomes, P. Pimenta	Extended finite element method for 2d fluid-structure interaction problems
10:30	1707	J. Costa, C. Tiago, P. Pimenta	A linear shell model regarding initial curvature as a finite deformation: a meshless implementation
10:50	1946	N. Collier, V.M. Calo	Transfinite interpolation based analysis
11:10	2064	H. Gotovac	Explicit adaptive fup collocation method for solving the parabolic problems

MS 116 Chair: A. Johnson **Room 221-222**

Sandwich structures: computational mechanics and multiscale modelling

	ID	Authors	Title
10:10	1273	E. Baranger, P.A. Guidault, C. Cluzel, S. Fischer	Generation of physical defects for the prediction of the behaviour of folded cores
10:30	1471	B. Tian, B. Tie, D. Aubry	Elastic wave propagation in sandwich shells with honeycomb cores
10:50	329	M. Bilasse, I. Charpentier, E.M. Daya	A generic approach for the solution of nonlinear residual equations: application to vibrations of viscoelastic structures
11:10	79	N. Troyani, P. Baiz	Two numerical strategies to compute the elastic-viscoelastic mechanics in composites

MS 6 Chair: M. Duflot **Room 364**

Reliability, error estimation and adaptivity for automatic simulations with enriched finite element methods (pufem/gfem/xfem)

	ID	Authors	Title
10:10	1427	L. Chamoin, P. Ladevèze	Control of numerical outputs for fracture mechanics problems solved with xfem
10:30	1179	S. Amdouni, K. Mansouri, Y. Renard, A. Makrem, M. Moakher	Numerical convergence and stability of mixed formulation of x-fem cut-off for incompressible isotropic linear plane elasticity problem in a cracked domain
10:50	1385	J.J. Ródenas-garcía, E. Nadal, J. Albelda, F.J. Fuenmayor Fernández	H-adaptive refinement based on a nearly statically admissible recovered stress field for meshes independent of the geometry
11:10			

MS 138 Chair: T. Melz **Room 224-225**

Holistic numerical analysis of adaptive systems

	ID	Authors	Title
10:10	628	U. Gabbert, C. Barthel	Overall virtual design of smart structures
10:30	980	A. Wirsen, J. Mohring	Methods for h2 optimal actuator placement and controller design based on high dimensional parametric models of mechanical structures
10:50	1830	O. Enge-rosenblatt, P. Schneider, C. Clauß, A. Schneider	A functional digital mock-up framework for modelling and simulation of adaptive mechatronic systems is proposed. this idea provides a holistic approach to the task of variable coupling of simulation tools via a master simulator.
11:10			

Parallel sessions

Friday

10:10-11:30

MS 61 Chair: D. Eyheramendy **Room 241**

Advances in software strategies for computational mechanics

	ID	Authors	Title
10:10	2070	L. Chorel, J.L. Charles, P. Viot, I. Iordanoff	Object oriented simulation of automotive pyrotechnic equipments.
10:30	721	C. Bordreuil, F. Dubois	A generic framework for natural and finite element method
10:50	271	K. Samiei, B. Peters	The discrete particle method (dpm) an advanced numerical simulation tool for granular material capable of modeling arbitary-shaped particles
11:10			

MS 75 Chair: U. Gabbert **Room 251**

Acousto-ultrasonic waves in thin elastic structures

	ID	Authors	Title
10:10	419	S. Von Ende, R. Lammering	Simulation of lamb wave generation and propagation in viscoelastic plates
10:30	95	V. Puzyrev	Electroelastic waves in solid cylindrical waveguides of noncircular cross section
10:50	451	M. Golub, C. Zhang	Sh-wave propagation and resonance phenomena in periodic composites with cracks
11:10	1272	V.H. Nguyen, S. Naili	A spectral finite element formulation for ultrasonic wave propagation in fluid-loaded cortical bone solids

MS 123 Chair: T. Murphey **Room 252B**

Advanced numerical methods in multibody systems and control

	ID	Authors	Title
10:10	839	Z. Terze, D. Vucinic, M. Vrdoljak	Numerical simulation of dynamical multibody systems in fluid flow
10:30	85	A. Mueller	A semialgebraic regularization method for closure constraints in multibody system models
10:50	599	K. Kime	Comparison of numerical methods for quantum mechanical transmission and reflection at an interface
11:10	229	I. Kosenko, E. Aleksandrov	An approach to construct the multibody dynamics library on modelica language

MS 128 Chair: S. Shrivastava **Room 342A**

Impact damage in composites from low-mass high-velocity projectiles

	ID	Authors	Title
10:10	282	P. Jetteur	Numerical implementation of the enhanced nonlocal damage lmt mesomodel.
10:30	235	P. Navarro, J.F. Ferrero, S. Marguet, M. De La Mota, S. Lemaire	Modelling of the impact on sandwich panel
10:50			
11:10			

MS 74 Chair: N. Banichuk **Room 352B**

Dynamics of moving materials: instability effects

	ID	Authors	Title
10:10	780	R. Vilela De Abreu, J. Hoffman, J. Jansson	Adaptive fluid-structure interaction simulation of the flow past an in-duct plate
10:30	819	N. Banichuk, J. Jeronen, P. Neittaanmäki	Dynamical behavior of axially moving membranes and plates submerged in axially flowing ideal fluid
10:50	815	J. Jeronen	Fourier-galerkin simulation of dynamics of axially moving membranes and plates submerged in axially flowing ideal fluid
11:10	1250	J. Rodriguez Garcia, G. Rio, C. Jean-marc, J. Troufflard	Simulation of inflatable structures: extension of the barnes-han-lee method for any reversible behavior and type of membrane elements

MS 136 Chair: G. Scovazzi **Room 242A**

Computational fluid-structure interaction and multi-material problems

	ID	Authors	Title
10:10	224	J. Baiges, R. Codina, J. Principe	The fm-ale method for fluid-structure interaction problems involving a free surface
10:30	1741	T. Rueberg, F. Cirak	Immersed finite element method with boundary integral correction for low reynolds number flows
10:50	745	R. Becker, E. Burman, P. Hansbo	Nitsche xfem and the ghost penalty for incompressible elasticity and fictitious domain methods
11:10	55	M. Shashkov	Remapping - conservative interpolation we present review of remapping methods for arbitrary lagrangian-eulerian (ale) methods

Access and conference rooms plans

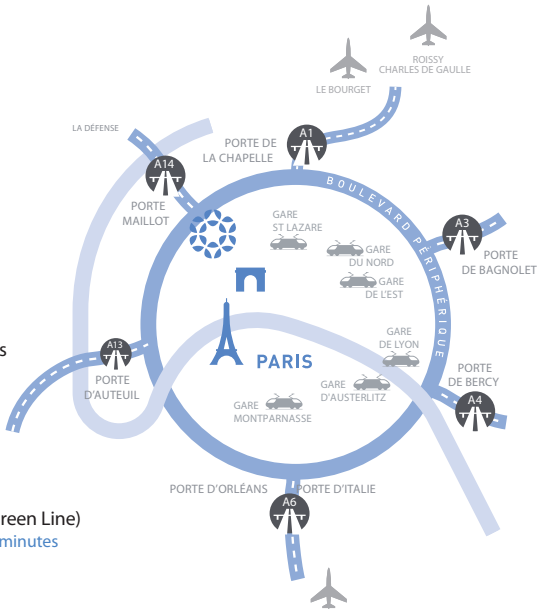
Access to Palais des Congrès

ADDRESS

Le Palais des Congrès de Paris
2, place de la Porte Maillot
75017 Paris

PEDESTRIAN ACCESS

- Metro: line 1,
  Porte Maillot-Palais des Congrès station
- Bus: lines PC 1, PC 3, 82, 73, 43, 244
- RER: line C, Neuilly - Porte Maillot - Palais des Congrès station



FROM THE AIRPORTS

From Roissy Charles de Gaulle Airport:

33 min: Shuttle bus Air France (Green Line)
departure/arrival every 15 minutes

25 min by car

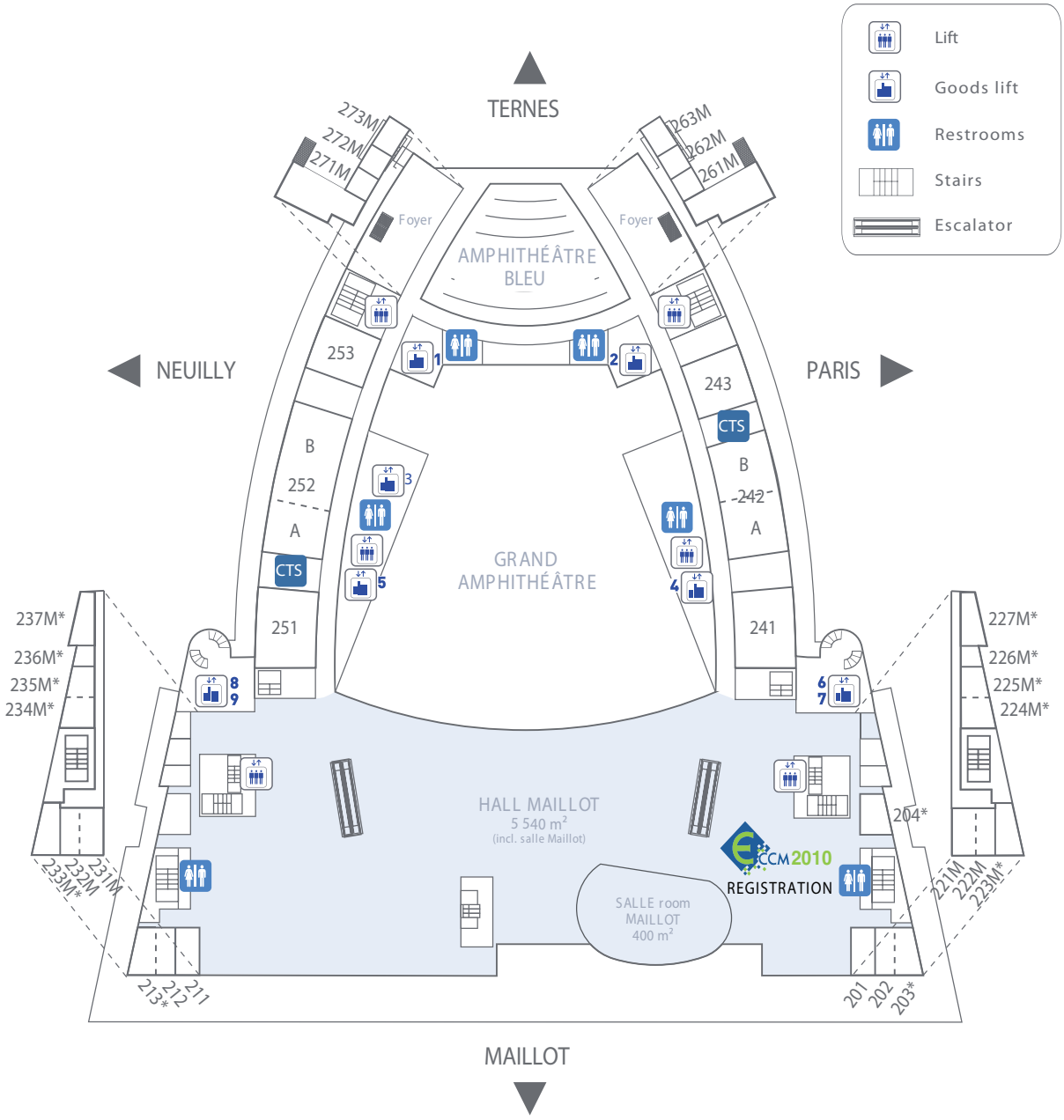
From Orly Airport :

55 min : Shuttle bus Air France (Red Line) + BUS 73
departure/arrival every 15 minutes

25 min by car

Conference rooms plan: Level 2 / Hall Maillot

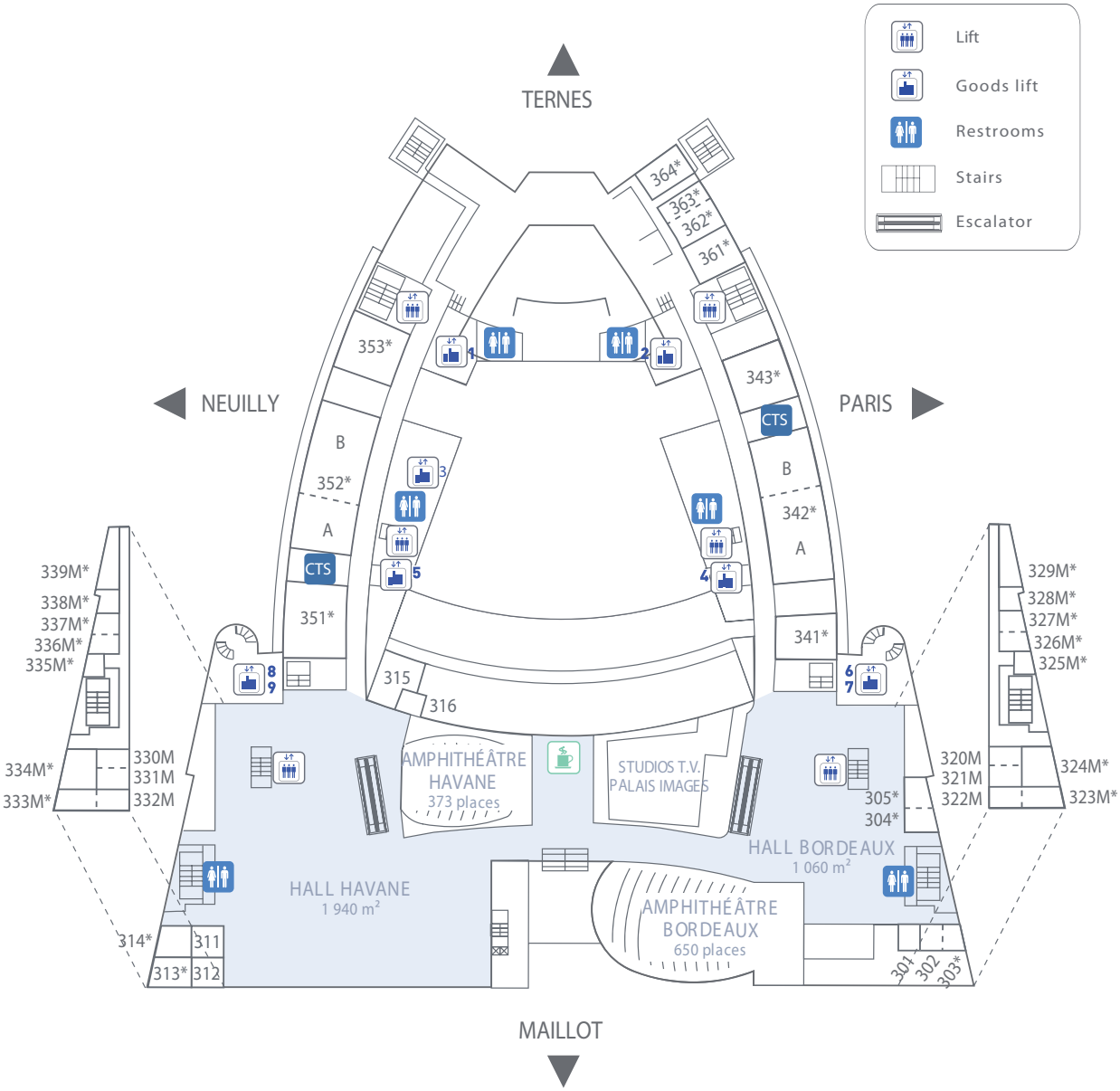
PLENARY LECTURES IN AMPHITHÉÂTRE BLEU



Plans

Conference rooms plan: Level 3

CONFERENCE ROOM



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Events

SUNDAY MAY 16		
Registration	15:00-18:30	Palais des Congrès, Hall Maillot
Welcome reception	18:30	Palais des Congrès, Hall Maillot
MONDAY MAY 17		
Opening ceremony	08:15-09:00	Palais des Congrès, Amphithéâtre Bleu
THURSDAY MAY 20		
Congress banquet	19:30	Hôtel de Ville de Paris (City Hall) and Flyboat

Congress banquet

HÔTEL DE VILE DE PARIS (CITY HALL)

3 rue de lobau, 4e arrondissement
75004 Paris

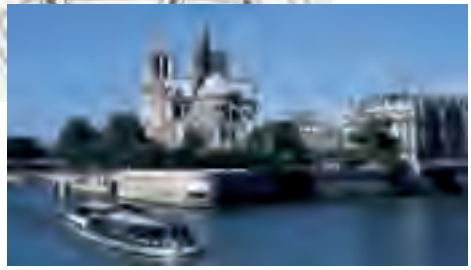
Access by Metro
Porte Maillot station: Line 1
Hôtel de Ville station: stop
20 min from Palais des Congrès

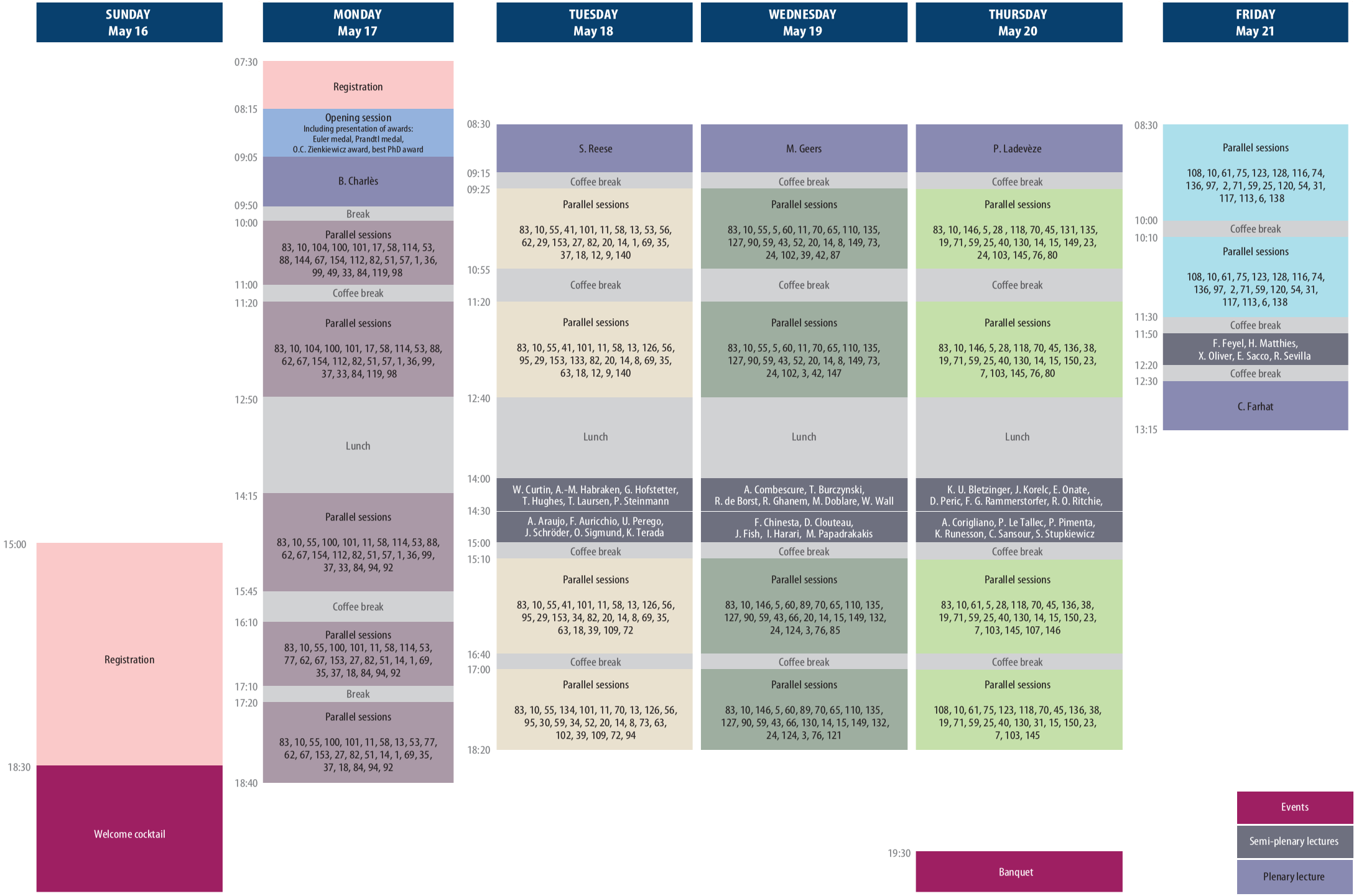
FLYBOAT
LES BATEAUX PARISIENS

Port de la Bourdonnais
75007 Paris

Access by Bus
Front of Palais des Congrès: Line 82
Iena station: stop
20 min from Palais des Congrès

Access by RER
Neuilly-Porte Maillot station: Line C
Pont de l'Alma station: stop
20 min from Palais des Congrès




SUNDAY May 16
MONDAY May 17
TUESDAY May 18
WEDNESDAY May 19
THURSDAY May 20
FRIDAY May 21
07:30
Registration
08:15
Opening session
Including presentation of awards:
Euler medal, Prandtl medal,
O.C. Zienkiewicz award, best PhD award
09:05
B. Charlès
09:50
Break
10:00
Parallel sessions
83, 10, 104, 100, 101, 17, 58, 114, 53, 88, 144, 67, 154, 112, 82, 51, 57, 1, 36, 99, 49, 33, 84, 119, 98
11:00
Coffee break
11:20
Parallel sessions
83, 10, 104, 100, 101, 17, 58, 114, 53, 88, 62, 67, 154, 112, 82, 51, 57, 1, 36, 99, 37, 33, 84, 119, 98
12:50
Lunch
14:15
Parallel sessions
83, 10, 55, 100, 101, 11, 58, 114, 53, 88, 62, 67, 154, 112, 82, 51, 57, 1, 36, 99, 37, 33, 84, 94, 92
15:45
Coffee break
16:10
Parallel sessions
83, 10, 55, 100, 101, 11, 58, 114, 53, 77, 62, 67, 153, 27, 82, 51, 14, 1, 69, 35, 37, 18, 84, 94, 92
17:10
Break
17:20
Parallel sessions
83, 10, 55, 100, 101, 11, 58, 13, 53, 77, 62, 67, 153, 27, 82, 51, 14, 1, 69, 35, 37, 18, 84, 94, 92
18:40
08:30
S. Reese
09:15
Coffee break
09:25
Parallel sessions
83, 10, 55, 41, 101, 11, 58, 13, 53, 56, 62, 29, 153, 27, 82, 20, 14, 1, 69, 35, 37, 18, 12, 9, 140
10:55
Coffee break
11:20
Parallel sessions
83, 10, 55, 41, 101, 11, 58, 13, 126, 56, 95, 29, 153, 133, 82, 20, 14, 8, 69, 35, 63, 18, 12, 9, 140
12:40
Lunch
14:00
W. Curtin, A.-M. Habraken, G. Hofstetter, T. Hughes, T. Laursen, P. Steinmann
14:30
A. Araujo, F. Auricchio, U. Perego, J. Schröder, O. Sigmund, K. Terada
15:00
Coffee break
15:10
Parallel sessions
83, 10, 55, 41, 101, 11, 58, 13, 126, 56, 95, 29, 153, 34, 82, 20, 14, 8, 69, 35, 63, 18, 39, 109, 72
16:40
Coffee break
17:00
Parallel sessions
83, 10, 55, 134, 101, 11, 70, 13, 126, 56, 95, 30, 59, 34, 52, 20, 14, 8, 73, 63, 102, 39, 109, 72, 94
18:20
M. Geers
Coffee break
Parallel sessions
83, 10, 55, 5, 60, 11, 70, 65, 110, 135, 127, 90, 59, 43, 52, 20, 14, 8, 149, 73, 24, 102, 39, 42, 87
Coffee break
Parallel sessions
83, 10, 55, 5, 60, 11, 70, 65, 110, 135, 127, 90, 59, 43, 52, 20, 14, 8, 149, 73, 24, 102, 3, 42, 147
Lunch
A. Combescure, T. Burczynski, R. de Borst, R. Ghanem, M. Doblare, W. Wall
F. Chinesta, D. Clouteau, J. Fish, I. Harari, M. Papadrakakis
Coffee break
Parallel sessions
83, 10, 146, 5, 60, 89, 70, 65, 110, 135, 127, 90, 59, 43, 66, 20, 14, 15, 149, 132, 24, 124, 3, 76, 85
Coffee break
Parallel sessions
83, 10, 146, 5, 60, 89, 70, 65, 110, 135, 127, 90, 59, 43, 66, 130, 14, 15, 149, 132, 24, 124, 3, 76, 121
P. Ladevèze
Coffee break
Parallel sessions
83, 10, 146, 5, 28 , 118, 70, 45, 131, 135, 19, 71, 59, 25, 40, 130, 14, 15, 149, 23, 24, 103, 145, 76, 80
Coffee break
Parallel sessions
83, 10, 146, 5, 28, 118, 70, 45, 136, 38, 19, 71, 59, 25, 40, 130, 14, 15, 150, 23, 7, 103, 145, 76, 80
Lunch
K. U. Bletzinger, J. Korelc, E. Onate, D. Peric, F. G. Rammerstorfer, R. O. Ritchie,
A. Corigliano, P. Le Tallec, P. Pimenta, K. Runesson, C. Sansour, S. Stupkiewicz
Coffee break
Parallel sessions
83, 10, 61, 5, 28, 118, 70, 45, 136, 38, 19, 71, 59, 25, 40, 130, 14, 15, 150, 23, 7, 103, 145, 107, 146
Coffee break
Parallel sessions
108, 10, 61, 75, 123, 118, 70, 45, 136, 38, 19, 71, 59, 25, 40, 130, 31, 15, 150, 23, 7, 103, 145
19:30
Banquet
08:30
Parallel sessions
108, 10, 61, 75, 123, 128, 116, 74, 136, 97, 2, 71, 59, 25, 120, 54, 31, 117, 113, 6, 138
10:00
Coffee break
10:10
Parallel sessions
108, 10, 61, 75, 123, 128, 116, 74, 136, 97, 2, 71, 59, 120, 54, 31, 117, 113, 6, 138
11:30
Coffee break
11:50
F. Feyel, H. Matthies, X. Oliver, E. Sacco, R. Sevilla
12:20
Coffee break
12:30
C. Farhat
13:15
15:00
Registration
18:30
Welcome cocktail
Events
Semi-plenary lectures
Plenary lecture