# ESMC2009

# Scientific Programme

# 7th EUROMECH
# Solid Mechanics Conference

Final Version 1.1 (August 6, 2009)

## Monday Morning (September 7, 2009)

| TIME | 08:00 – 08:40 | 08:40 – 09:00 | 09:00 – 10:00 | 10:00 – 10:20 | 10:20 – 11:20 | 11:20 – 13:00 |
|---|---|---|---|---|---|---|
| ROOM MA | ESMC2009 Registration Open | Opening Ceremony | EUROMECH Fellow Awards<br>EUROMECH Solid Mechanics Award Winner Lecture<br>**Viggo Tyvegaard**<br>Analyses of Crack Growth in Ductile Metals | Coffee Break | Cerimony in memory of Prof. João Martins | **MS-05.1** (Contact Mechanics) |
| VA.1 | | | | | **MS-26.1** (Stability and Nonlinear Behavior of Steel Structures) | **MS-26.2** (Stability and Nonlinear Behavior of Steel Structures) |
| VA.2 | | | | | **MS-03.1** (Composite Materials) | **MS-03.2** (Composite Materials) |
| VA.3 | | | | | **GS-MM.1** (Material Mechanics) | **GS-MM.2** (Material Mechanics) |
| VA.4 | | | | | **GS-DY.1** (Dynamics) | **GS-DY.2** (Dynamics) |
| VA.5 | | | | | **GS-SM.1** (Structural Mechanics) | **GS-SM.2** (Structural Mechanics) |
| VA.6 | | | | | **GS-EM.1** (Experimental Mechanics) | **GS-EM.2** (Experimental Mechanics) |
| O2.1 | | | | | **MS-12.1** (Modelling of Biological Materials) | **MS-12.2** (Modelling of Biological Materials) |
| O2.2 | | | | | **MS-18.1** (Nonlinear Vibrations and Acoustics) | **MS-18.2** (Nonlinear Vibrations and Acoustics) |
| O2.3 | | | | | **MS-20.1** (Optimization Methodologies. ... Applied to Material Forming) | **MS-20.2** (Optimization Methodologies. ... Applied to Material Forming) |

## Monday Afternoon (September 7, 2009)

| 13:20 | 13:40 | 14:00 | 14:20 | 14:40 | 15:00 | 15:20 | 15:40 | 16:00 | 16:20 | 16:40 | 17:00 | 17:20 | 17:40 | 18:00 | TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lunch Break | | General Lecture<br>**Franz Rammerstorfer**<br>On Instabilities Appearing During the Production of Plates and Shells | | | **MS-19.1** (Nonsmooth Dynamics) | | | | Coffee Break | **MS-19.2** (Nonsmooth Dynamics) | | | | | ROOM MA |
| | | | | | **MS-26.3** (Stability and Nonlinear Behavior of Steel Structures) | | | | | **MS-26.4** (Stability and Nonlinear Behavior of Steel Structures) | | | | | VA.1 |
| | | | | | **MS-15.1** (Multiscale Modeling of Ductile and Brittle Damage in Solids) | | | | | **MS-15.2** (Multiscale Modeling of Ductile and Brittle Damage in Solids) | | | | | VA.2 |
| | | | | | **GS-MM.3** (Material Mechanics) | | | | | **GS-MM.4** (Material Mechanics) | | | | | VA.3 |
| | | | | | **GS-DY.3** (Dynamics) | | | | | **GS-DY.4** (Dynamics) | | | | | VA.4 |
| | | | | | **MS-02.1** (Biomechanics of Human Locomotion) | | | | | **MS-02.2** (Biomechanics of Human Locomotion) | | | | | VA.5 |
| | | | | | **MS-25.1** (Waves in Solids, Nondestructive ... Health Monitoring) | | | | | **GS-CoM.1** (Computational Mechanics) | | | | | VA.6 |
| | | | | | **MS-10.1** (Mechanics of Cellular and Network-like (Bio)Materials) | | | | | **MS-10.2** (Mechanics of Cellular and Network-like (Bio)Materials) | | | | | O2.1 |
| | | | | | **MS-17.1** (Nonlinear Localization and Targeted Energy Transfer in ...) | | | | | **MS-18.3** (Nonlinear Vibrations and Acoustics) | | | | | O2.2 |
| | | | | | **MS-20.3** (Optimization Methodologies. ... Applied to Material Forming) | | | | | **MS-04.1** (Computer Modelling of Industrial Forming Processes) | | | | | O2.3 |

## Tuesday Morning (September 8, 2009)

| TIME | 08:00 – 08:40 | 09:00 – 09:40 | 10:00 – 11:00 | 11:20 | 11:40 – 13:00 |
|---|---|---|---|---|---|
| ROOM MA | ESMC2009 Registration Open | Plenary Lecture<br>**Pedro Camanho**<br>Advanced Lightweight Structures Based on Non-Conventional Composite Laminates | **GS-CM.1** (Continuum Mechanics) | Coffee Break | **GS-CM.2** (Continuum Mechanics) |
| VA.1 | | | **MS-26.5** (Stability and Nonlinear Behavior of Steel Structures) | | **MS-26.6** (Stability and Nonlinear Behavior of Steel Structures) |
| VA.2 | | | **MS-15.3** (Multiscale Modeling of Ductile and Brittle Damage in Solids) | | **MS-06.1** (Damage and Fracture) |
| VA.3 | | | **GS-MM.5** (Material Mechanics) | | **GS-MM.6** (Material Mechanics) |
| VA.4 | | | **MS-14.1** (Multibody Dynamics) | | **MS-14.2** (Multibody Dynamics) |
| VA.5 | | | **GS-CoM.2** (Computational Mechanics) | | **GS-CoM.3** (Computational Mechanics) |
| VA.6 | | | **MS-25.2** (Waves in Solids, Nondestructive ... Health Monitoring) | | **MS-25.3** (Waves in Solids, Nondestructive ... Health Monitoring) |
| O2.1 | | | **MS-12.3** (Modelling of Biological Materials) | | **MS-12.4** (Modelling of Biological Materials) |
| O2.2 | | | **MS-18.4** (Nonlinear Vibrations and Acoustics) | | **MS-18.5** (Nonlinear Vibrations and Acoustics) |
| O2.3 | | | **MS-03.3** (Composite Materials) | | **MS-03.4** (Composite Materials) |

## Tuesday Afternoon (September 8, 2009)

| 13:20 | 13:40 | 14:00 | 14:20 | 14:40 | 15:00 | 15:20 | 15:40 | 16:00 | 16:20 | 16:40 | 17:00 | 17:20 | 17:40 | 18:00 | TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lunch Break | | Plenary Lecture<br>**Peter Eberhard**<br>About Model Reduction of Elastic Bodies Used in Flexible Multibody Dynamics | | | **GS-CM.3** (Continuum Mechanics) | | | | Coffee Break | **GS-CM.4** (Continuum Mechanics) | | | | | ROOM<br>MA |
| | | | | | **MS-26.7** (Stability and Nonlinear Behavior of Steel Structures) | | | | | **MS-26.8** (Stability and Nonlinear Behavior of Steel Structures) | | | | | VA.1 |
| | | | | | **MS-06.2** (Damage and Fracture) | | | | | **MS-15.4** (Multiscale Modeling of Ductile and Brittle Damage in Solids) | | | | | VA.2 |
| | | | | | **MS-05.2** (Contact Mechanics) | | | | | **MS-05.3** (Contact Mechanics) | | | | | VA.3 |
| | | | | | **MS-29.1** (Vehicle Dynamics) | | | | | **MS-29.2** (Vehicle Dynamics) | | | | | VA.4 |
| | | | | | **MS-02.3** (Biomechanics of Human Locomotion) | | | | | **MS-02.4** (Biomechanics of Human Locomotion) | | | | | VA.5 |
| | | | | | **GS-CoM.4** (Computational Mechanics) | | | | | **MS-25.4** (Waves in Solids, Nondestructive ... Health Monitoring) | | | | | VA.6 |
| | | | | | **MS-12.5** (Modelling of Biological Materials) | | | | | **MS-10.3** (Mechanics of Cellular and Network-like (Bio)Materials) | | | | | O2.1 |
| | | | | | **MS-07.1** (Force Chain Fluctuations and Jamming ... Granular Flows) | | | | | **MS-07.2** (Force Chain Fluctuations and Jamming in Dense Granular Flows) | | | | | O2.2 |
| | | | | | **GS-CP.1** (Coupled Problems) | | | | | **GS-CP.2** (Coupled Problems) | | | | | O2.3 |

## Wednesday Morning (September 9, 2009)

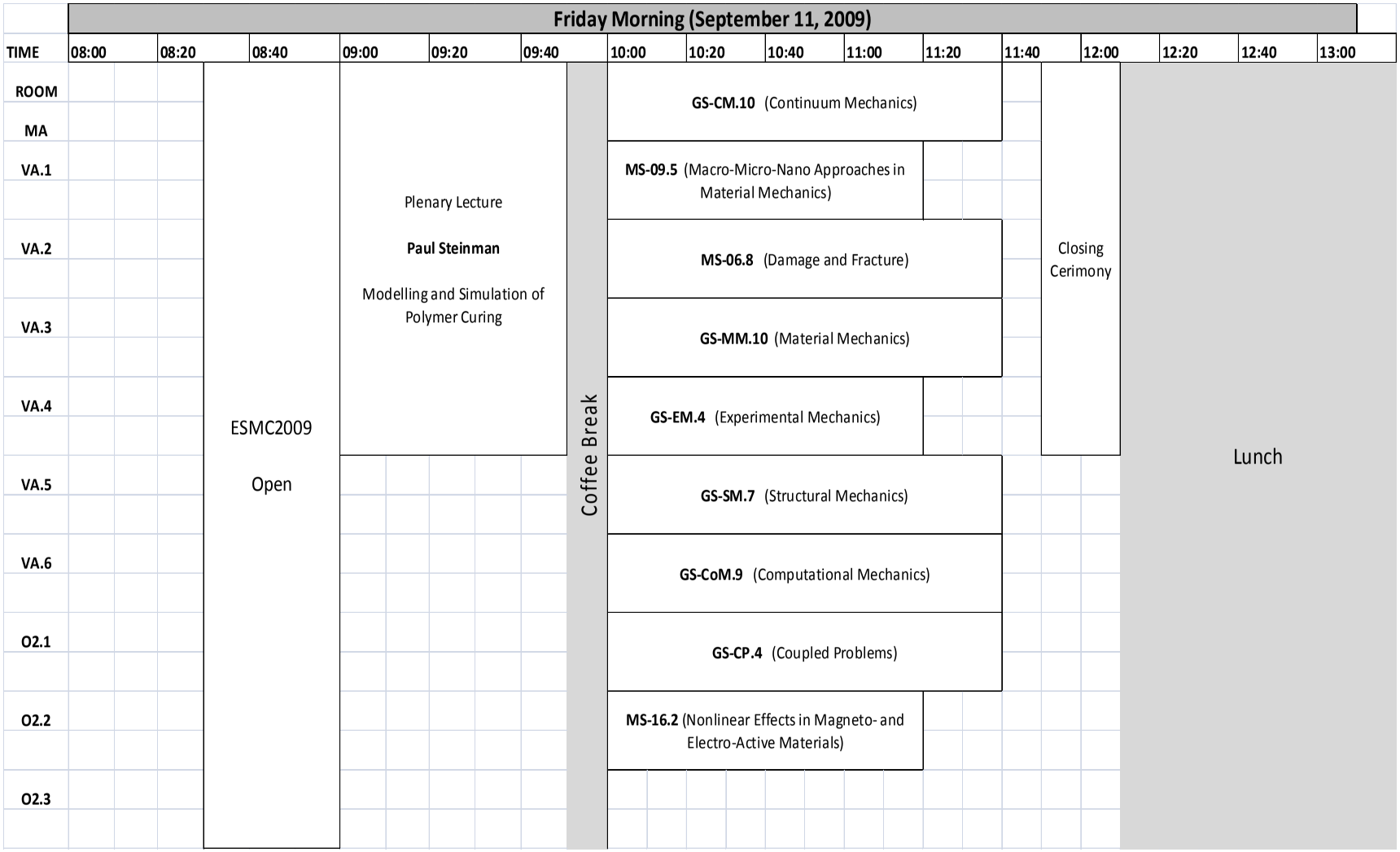
| TIME | 08:00 – 08:40 | 09:00 – 09:40 | 10:00 – 11:00 | 11:20 – 13:00 |
|---|---|---|---|---|
| ROOM MA | ESMC2009 Registration Open | Plenary Lecture<br>**Manuel Doblare**<br>On Modelling Damage and Osseointegration Evolution in Bone Implant Surfaces | **GS-CM.5** (Continuum Mechanics) | Poster Session and Coffee |
| VA.1 | | | **MS-13.1** (Modelling, Simulation and Testing of Composite and Adaptive Structures) | |
| VA.2 | | | **MS-06.3** (Damage and Fracture) | |
| VA.3 | | | **MS-27.1** (Stability of Solids Under Finite Deformation) | |
| VA.4 | | | **MS-14.3** (Multibody Dynamics) | |
| VA.5 | | | **GS-CoM.5** (Computational Mechanics) | |
| VA.6 | | | **GS-MM.7** (Material Mechanics) | |
| O2.1 | | | **MS-26.9** (Stability and Nonlinear Behavior of Steel Structures) | |
| O2.2 | | | **MS-07.3** (Force Chain Fluctuations and Jamming in Dense Granular Flows) | |
| O2.3 | | | **MS-08.1** (Image Processing and Visualization in Solid Mechanics Processes) | |

## Wednesday Afternoon (September 9, 2009)

| 13:20 – 13:40 | 14:00 – 14:40 | 15:00 – 16:00 | 16:20 | 16:40 – 18:00 | TIME / ROOM |
|---|---|---|---|---|---|
| | | **GS-CM.6** (Continuum Mechanics) | | **GS-CM.7** (Continuum Mechanics) | MA |
| | Plenary Lecture<br>**Antonio di Simone**<br>Nematic Elastomers as Soft Contractile Actuators: Theoretical Modeling and Numerical Simulations | **GS-CoM.6** (Computational Mechanics) | | **MS-13.2** (Modelling, Simulation and Testing of Composite and Adaptive Structures) | VA.1 |
| | | **MS-06.4** (Damage and Fracture) | | **MS-06.5** (Damage and Fracture) | VA.2 |
| | | **MS-28.1** (Progress In Thermomechanics of Materials) | | **MS-27.2** (Stability of Solids Under Finite Deformation) | VA.3 |
| Lunch Break | | **MS-29.3** (Vehicle Dynamics) | Coffee Break | **MS-14.4** (Multibody Dynamics) | VA.4 |
| | | **MS-09.1** (Macro-Micro-Nano Approaches in Material Mechanics) | | **MS-09.2** (Macro-Micro-Nano Approaches in Material Mechanics) | VA.5 |
| | | **GS-SM.3** (Structural Mechanics) | | **GS-SM.4** (Structural Mechanics) | VA.6 |
| | | **MS-08.2** (Image Proc. and Visualization in Solid Mech. Processes) | | **GS-MM.8** (Material Mechanics) | O2.1 |
| | | **MS-07.4** (Force Chain Fluctuations and Jamming ... Granular Flows) | | **MS-07.5** (Force Chain Fluctuations and Jamming in Dense Granular Flows) | O2.2 |
| | | **MS-24.1** (Kinetics, Control and Vibrorheology – KINCONVIB 2009) | | **MS-23.1** (Probabilistic Models for ... Mechanics of Materials) | O2.3 |

## Thursday Morning (September 10, 2009)

| TIME | 08:00 – 08:40 | 09:00 – 09:40 | 10:00 – 11:00 | 11:20 | 11:40 – 13:00 |
|---|---|---|---|---|---|
| ROOM MA | ESMC2009 Open | Plenary Lecture **Jean-Baptiste Leblond** In-Plane Coalescence of Slit-Cracks | **GS-CM.8** (Continuum Mechanics) | Coffee Break | **GS-CM.9** (Continuum Mechanics) |
| VA.1 | | | **MS-13.3** (Modelling, ...Testing of Composite and Adaptive Structures) | | **MS-13.4** (Modelling, ...Testing of Composite and Adaptive Structures) |
| VA.2 | | | **MS-06.6** (Damage and Fracture) | | **MS-06.7** (Damage and Fracture) |
| VA.3 | | | **MS-09.3** (Macro-Micro-Nano Approaches in Material Mechanics) | | **MS-09.4** (Macro-Micro-Nano Approaches in Material Mechanics) |
| VA.4 | | | **GS-MM.9** (Material Mechanics) | | **GS-EM.3** (Experimental Mechanics) |
| VA.5 | | | **GS-SM.5** (Structural Mechanics) | | **GS-SM.6** (Structural Mechanics) |
| VA.6 | | | **GS-CoM.7** (Computational Mechanics) | | **GS-CoM.8** (Computational Mechanics) |
| O2.1 | | | **GS-DY.5** (Dynamics) | | **GS-DY.6** (Dynamics) |
| O2.2 | | | **MS-16.1** (Nonlinear Effects in Magneto- and Electro-Active Materials) | | **GS-CP.3** (Coupled Problems) |
| O2.3 | | | **MS-24.2** (Kinetics, Control and Vibrorheology – KINCONVIB 2009) | | **MS-23.2** (Probabilistic Models for ... Mechanics of Materials) |
| | | | | | Lunch Break |


Friday Morning (September 11, 2009)
TIME
08:00
08:20
08:40
09:00
09:20
09:40
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12:40
13:00
ROOM
MA
VA.1
VA.2
VA.3
VA.4
VA.5
VA.6
O2.1
O2.2
O2.3
ESMC2009
Open
Plenary Lecture
Paul Steinman
Modelling and Simulation of Polymer Curing
Coffee Break
GS-CM.10 (Continuum Mechanics)
MS-09.5 (Macro-Micro-Nano Approaches in Material Mechanics)
MS-06.8 (Damage and Fracture)
GS-MM.10 (Material Mechanics)
GS-EM.4 (Experimental Mechanics)
GS-SM.7 (Structural Mechanics)
GS-CoM.9 (Computational Mechanics)
GS-CP.4 (Coupled Problems)
MS-16.2 (Nonlinear Effects in Magneto- and Electro-Active Materials)
Closing Cerimony
Lunch

General Session: **Continuum Mechanics**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-CM.1 | Tuesday | Morning | 10:00 | 11:20 | MA |
| GS-CM.2 | Tuesday | Morning | 11:40 | 13:00 | MA |
| GS-CM.3 | Tuesday | Afternoon | 15:00 | 16:20 | MA |
| GS-CM.4 | Tuesday | Afternoon | 16:40 | 18:00 | MA |
| GS-CM.5 | Wednesday | Morning | 10:00 | 11:20 | MA |
| GS-CM.6 | Wednesday | Afternoon | 15:00 | 16:20 | MA |
| GS-CM.7 | Wednesday | Afternoon | 16:40 | 18:00 | MA |
| GS-CM.8 | Thursday | Morning | 10:00 | 11:20 | MA |
| GS-CM.9 | Thursday | Morning | 11:40 | 13:00 | MA |
| GS-CM.10 | Friday | Morning | 10:00 | 11:20 | MA |

**Session GS-CM.1** Tuesday Morning **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 15 | S. Vigdergauz | Energy-Minimizing Openings Around a Circular Hole in an Elastic Plate |
| 10:20 | 17 | K.P. Soldatos | On Plane-Strain Deformation of Fibre-reinforced Materials According to a Second Gradient Hyper-elasticity Theory |
| 10:40 | 29 | A-L. Chen, Y.-S. Wang, J.-B. Li, C. Zhang | Localization Phenomenon of Two-Dimensional Randomly Disordered Phononic Crystals |
| 11:00 | 590 | S. Federico, T.C. Gasser | Non-Linear Elasticity of Composites with Statistically Oriented Fibres |

**Session GS-CM.2** Tuesday Morning **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 31 | D. Natroshvili, O. Chkadua, T. Buchukuri | Stress Singularity Analysis in Interface Crack Problems for Composite Structures |
| 12:00 | 62 | F.F. Wang, H.H. Dai | On Bifurcations of Compression of a Welded Incompressible Rectangle |
| 12:20 | 83 | A.V. Porubov, E.L. Aero, G.A. Maugin | Nonlinear Description of Internal Structural Deviations in Solids |
| 12:40 | 93 | A. Rusinko | Plastic-Creep Deformation Interrelation |

**Session GS-CM.3** Tuesday Afternoon **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 95 | E. Ryzhak | Korn's Constant for a Parallelepiped with a Free Face or Pair of Faces |
| 15:20 | 116 | A.P. Kiselev, G.A. Rogerson | Elastic Surface Waves with General Lateral Dependencies in Layered Structures |
| 15:40 | 157 | M. Rousseau, G.A. Maugin, M. Berezovski | Elements of Wave Propagation in Dynamic Materials |
| 16:00 | 193 | A.I. Khromov, A.A. Bukhanko, O.V. Patlina | The Problem of Blunting of an Angular Notch (Crack Tip) |

**Session GS-CM.4** Tuesday Afternoon **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 302 | S. Reina, D. Dini, D.A. Hills | Measuring Friction in Partial Slip Fretting Tests: Theoretical and Experimental Investigations of “Walking” Contact Pairs |
| 17:00 | 355 | C.F.O. Dahlberg, J. Faleskog | Interface and Plastic Strain-Gradient Effects on the Global Response of a Layered Solid Deformed in Simple Shear |
| 17:20 | 385 | S. Holopainen | Symmetrization of Tensors on General Spaces and Their Applications in Continuum Mechanics |
| 17:40 | 338 | M. Svanadze | Dynamical Theory of Elasticity for Double Porosity Solids |

**Session GS-CM.5** Wednesday Morning **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 396 | M.A. Grekov | A Boundary Perturbation Technique in some Problems of Elasticity |
| 10:20 | 406 | C. Mbodj, M. Renouf, L. Baillet, G. Peillex, Y. Berthier, P. | Influence of Contact Contrast Properties on the Evolution of Carbon/Carbon Composites under Dynamical Conditions of Rubbing |
| 10:40 | 416 | S.A. Kostyrko, M.A. Grekov | Stress and Stability Analysis of a Thin Film Surface Subjected to High Temperature |
| 11:00 | 418 | V.F. Chekurin, D. Sankowski | Mathematical Problems for Stress Tensor Fields Optical Tomography. Variational FEM Approach |

**Session GS-CM.6** Wednesday Afternoon **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 471 | E.I. Shifrin | Reciprocity Gap Functional and Invariant Integrals in Linear Isotropic Elastostatics, Their Properties and Applications to Inverse Problems |
| 15:20 | 479 | E.F. Grekova, M.A. Kulesh, G.C. Herman | Bulk and Rayleigh-typeWaves in Soils and Rocks Modelled as Linear Elastic Isotropic Reduced Cosserat Continuum |
| 15:40 | 508 | L. Paletti, G. Campoli, C. Rans, R. Benedictus | On Adapting the Hertz Contact Model for Application to Contact in Mechanically Fastened Joints |
| 16:00 | 529 | H. Petryk, S. Stupkiewicz | On Interfacial Energy and Dissipation in Martensitic Transformations |

**Session GS-CM.7** Wednesday Afternoon **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 552 | S. Maïolino, M. P. Luong | Measuring Discrepancies Between Coulomb and Other Geotechnical Criteria: Drucker-Prager and Matsuoka-Nakai |
| 17:00 | 573 | M. Cuomo, M. Fagone | About the Evolution of the Symmetry Group of Anisotropic Elastoplastic Materials in Finite Deformations |
| 17:20 | 595 | M. Lazar | On the Field Theory of Dislocations |
| 17:40 | 601 | W. Domański | Propagation and Interaction of Weakly Non-linear Elastic PlaneWaves along Acoustic Axes |

## Session GS-CM.8 Thursday Morning Room: MA

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 626 | I. Ario, A. Watson, M. Nakazawa | Multi-Folding Behaviour of a Tree Structure |
| 10:20 | 658 | L.G. Aigner, J. Gerstmayr, A.S. Sinwel, H. Irschik | The Constitutive Modeling of Homogenized Contact and Friction Conditions in Thin-Sheet Packages |
| 10:40 | 668 | I.G. Goryacheva, A.N. Lyubicheva | A Periodic Contact Problem for a Viscoelastic Base |
| 11:00 | 669 | D.M. Kochmann, K. Hackl, K.C. Le | A Continuum-Dislocation Theory for Modeling Dislocation Microstructures |

## Session GS-CM.9 Thursday Morning Room: MA

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 699 | E.V. Torskaya | Friction Contact of Coated Bodies with a Rough Indenter |
| 12:00 | 705 | S. Ricker, J. Mergheim, P. Steinmanny | FE2 Based Multi-Scale Computation of Defect Driving Forces |
| 12:20 | 707 | E.K. Agiasofitou, M. Lazar | On the Nonlinear Continuum Theory of Dislocations |
| 12:40 | 743 | S. Dumont, J. Fortin | Polarization of the Contact Forces in an Interface |

## Session GS-CM.10 Friday Morning Room: MA

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 818 | T. Fülöp, P. Ván | Finite Strain Tensors: Which One To Use? |
| 10:20 | 825 | A. Salupere, L. Ilison | On Interaction of Solitary Waves in Granular Materials |
| 10:40 | 863 | S.-Y. Leu | Limit Analysis of Orthotropic Pressure Vessels with Strain Hardening |
| 11:00 | 8 | D.V. Georgievskii | General Asymptotic Expansions by Low Geometric Parameter in Problems of Thin Solid Mechanics |

General Session: **Coupled Problems**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-CP.1 | Tuesday | Afternoon | 15:00 | 16:20 | O2.3 |
| GS-CP.2 | Tuesday | Afternoon | 16:40 | 18:20 | O2.3 |
| GS-CP.3 | Thursday | Morning | 10:00 | 13:00 | O2.2 |
| GS-CP.4 | Friday | Morning | 10:00 | 11:40 | O2.1 |

**Session GS-CP.1** Tuesday Afternoon **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 70 | L. Monier, F. Razafimahery, N. Bideau | A Fluid-Structure Model for a Monofin |
| 15:20 | 196 | T. Heuzé, J.B. Leblond, J.M. Bergheau, É. Feulvarch | Modeling Fluid/Solid Couplings in High Temperature Assembly Processes |
| 15:40 | 619 | V. Flores, H.A. Sánchez, M.J. Pérez, C. Cortés | Mechanical Behavior of the Storage Tanks |
| 16:00 | 867 | R. Serpieri, L. Rosati | A Finite Deformation Model for the Dynamic Behaviour of Fluid Saturated Porous Biphasic Media |

**Session GS-CP.2** Tuesday Afternoon **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 24 | I.V. Andrianov, V.V. Danishevs'kyy, D. Weichert | Homotopy Perturbation Method and Padé Approximants |
| 17:00 | 44 | T.P. Ivanov, R. Savova | Thermoviscoelastic Surface Waves |
| 17:20 | 60 | V. Subramaniyan, A. Andrade-Campos | Development and Implementation of a Thermo-Mechanical Constitutive Model for Heat Treatments |
| 17:40 | 142 | I. Münch, J.E. Huber | 3D Ferroelectric Domain Structures on the Nanoscale |
| 18:00 | 246 | O. Simionescu-Panait | Guided Wave Propagation in Strained/Polarized Crystals |

**Session GS-CP.3** Thursday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 251 | S. Enz, J.J. Thomsen | Phase Shift Effects for Vibrating Pipes Conveying Pulsating Fluid |
| 12:00 | 342 | L. Studer, S. Detrembleur, B.J. Dew als, M. Pirotton, A.M. | Modeling the Vertical Spincasting of Large Bimetallic Rolling Mill Rolls |
| 12:20 | 390 | V.V. Vedeneev, S.V. Guvernyuk, M.E. Kolotnikov | Experimental Observation of Single Mode Panel Flutter in Supersonic Gas Flow |
| 12:40 | 429 | H. Damanik, A. Ouazzi, J. Hron, S. Turek | A Monolithic Fem Approach for Temperature and Shear Dependent Viscosity in Viscoelastic Flow |

**Session GS-CP.4** Friday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 103 | I.A. Guz, Y.A. Zhuk, C.M. Sands | Modification of Monoharmonic Approach for Vibration Control of Inelastic Beams with Piezoactive Layers under Cyclic Loading |
| 10:20 | 378 | A. Ask, A. Menzel, M. Ristinmaa | Modeling of Rate-Dependent Electrostrictive Polyurethane Elastomers |
| 10:40 | 507 | P. Pathmanathan, D.J. Gavaghan, J.P. Whiteley | An Implicit Numerical Method for Cardiac Electro-Mechanics Simulations |
| 11:00 | 655 | X. Cao, A. Büter, D.G. Weis, U. Kosidlo | Reliability of Actuators Made With Carbon Nanotube Polymers |
| 11:20 | 820 | A. Nasedkin | New Model for Piezoelectric Porous Medium with Application to Analysis of Ultrasonic Piezoelectric Transducers |

General Session: **Computational Mechanics**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-CoM.1 | Monday | Afternoon | 16:40 | 18:00 | VA.6 |
| GS-CoM.2 | Tuesday | Morning | 10:00 | 11:20 | VA.5 |
| GS-CoM.3 | Tuesday | Morning | 11:40 | 13:00 | VA.5 |
| GS-CoM.4 | Tuesday | Afternoon | 15:00 | 16:20 | VA.6 |
| GS-CoM.5 | Wednesday | Morning | 10:00 | 11:20 | VA.5 |
| GS-CoM.6 | Wednesday | Afternoon | 15:00 | 16:20 | VA.1 |
| GS-CoM.7 | Thursday | Morning | 10:00 | 11:20 | VA.6 |
| GS-CoM.8 | Thursday | Morning | 11:40 | 13:00 | VA.6 |
| GS-CoM.9 | Friday | Morning | 10:00 | 11:40 | VA.5 |

**Session GS-CoM.1** Monday Afternoon **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 41 | L. Marin | Stable MFS Solution of Singular Cauchy Problems Associated with Two-Dimensional Helmholtz-type Equations |
| 17:00 | 49 | S. Bauer, L. Lukassen, M. Schäfer | Numerical Aspects of Finite Rotation Parameterization for Non-Linear Micropolar Finite Element Analysis |
| 17:20 | 55 | D.B. Ribeiro, J.B. Paiva | A New Infinite Boundary Element Formulation Combined to an Alternative Multi-Region Technique |
| 17:40 | 102 | P. Angeli, F.D. Bona, M.G. Munteanu | Non-Incremental Beam Finite Element for Fast Non-Linear Analysis of 2D and 3D Systems |

**Session GS-CoM.2** Tuesday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 108 | C.H. Daros | A Time-Harmonic Fundamental Solution for a Class of Inhomogeneous Transversely Isotropic Media |
| 10:20 | 139 | N. Zivaljic, A. Mihanovic, B. Trogrlic | A Two-Phase Loading Model for Nonlinear Analysis of Cable Structures |
| 10:40 | 155 | S. Victor, B. Guy, T. Speianu | The Θg-Convolution Method for Green's Integral Formulas Derivation |
| 11:00 | 182 | J. Li, Y.-S. Wang, C. Zhang | Finite Element Simulation on Localized Defect Modes in Two-Dimensional Fluid/Solid Phononic Crystals |

**Session GS-CoM.3** Tuesday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 194 | A. Maciag | Solving Inverse Thermoelasticity Problems by Means of Trefftz Functions |
| 12:00 | 198 | K. Grysa, A. Maciąg, B. Maciejewska | Wave Polynomials as Base Functions of FEM in Problems of Elastokinetics |
| 12:20 | 213 | S. Meireles, A. Completo, P. Flores, C. Relvas, A. Ramos, J.A. | Development of a Computational and Experimental Model for Intact and Implanted Patellofemoral Articulation |
| 12:40 | 228 | I.I. Mykhailova, O.V. Menshykov, I.A. Guz | Elastodynamic Contact Problems for Plane Cracks |

**Session GS-CoM.4** Tuesday Afternoon **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 247 | D. Materna, F.-J. Barthold | Configurational Variations for the Primal and the Dual Problem in Elasticity with Applications to Goal-Oriented r-Adaptive Mesh |
| 15:20 | 380 | M. Ciałkowski, J.A. Kolodziej | Solution of Inverse Design Problem of Cooling of Elliptical Annulus by the Method of Fundamental Solutions and Minimization of Intensity of |
| 15:40 | 389 | A. Quesada, A. Gauchía, C. Álvarez-Caldas, J.L.S. Román | Influence of the parameters of the material model in finite element simulation of sheet metal stamping |
| 16:00 | 399 | L.M.J.S. Dinis, R.M. Natal Jorge, J. Belinha | The Non-Linear Analysis of 3D Beams Using a Radial Interpolation Meshless Method |

**Session GS-CoM.5** Wednesday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 410 | H.-G. Kwak, J.-W. Hwang | Bond-slip Behavior of Composite Beams under Monotonic Loads |
| 10:20 | 435 | D. Nizetic, D. Kuzmanic, B. Trogrlic | Numerical Testing of Timber Beam with CFRP Sheet by Comparative Body Model |
| 10:40 | 450 | J. Lewinski, K. Magnucki | Strength Optimization of Middle Surface of a Dished Head of Circular Cylindrical Pressure Vessel |
| 11:00 | 451 | J. A. Kołodziej, M. Mierzwiczak | Transient Heat Conduction by Different Versions of Method of Fundamental Solutions – a Comparison Study |
| 11:20 | 461 | P. Gorzelanczyk, J.A. Kołodziej | Application of Method of Fundamental Solutions for Elasto-plastic Torsion of Prismatic Rods |

**Session GS-CoM.6** Wednesday Afternoon **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 493 | A. Sohrabpour, S.A.R. Hosseiny, A. Hashemian, H.M. Shodja | Analysis of an Anticrack problem via Reproducing Kernel Particle Method |
| 15:20 | 568 | H. Gotovac, V. Kozulić, B. Gotovac | Modeling of Boundary-Initial Value Problems using an Adaptive Meshless Method |
| 15:40 | 576 | A. Uscilowska | Bending of Plates with Variable Thickness – Solution by Method of Fundamental Solutions |
| 16:00 | 593 | T. Sikiwat, M. Breidt, D. Hartmann | Collapse Simulations of Large Scale Complex Structures due to Controlled Explosive |

**Session GS-CoM.7** Thursday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 599 | L.M. Keer, K. Zhou | Stress Field of a Cluster of Inhomogeneities Embedded in an Infinite Matrix |
| 10:20 | 617 | A. Castro, A. Completo, J.A. Simões, P. Flores | Biomechanical Study of the Bone-Implant Interface in Patellofemoral Arthroplasty |
| 10:40 | 640 | G. Garcea, A. Madeo, G. Zagari | Geometrically Exact Beam and Plate Models: the Implicit Corotational Method |
| 11:00 | 722 | K.S. Rogers, N.S. Ferguson, A.A. Perryman, B.R. Mace | Modelling Axially Moving Beams of Varying Length Using the Finite Element Method |

**Session GS-CoM.8** Thursday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 750 | M. Ejday, L. Fourment | Metamodel Assisted Multi-Objective Optimization for Non-Steady 3D Metal Forming Applications |
| 12:00 | 764 | G. Garcea, L. Leonardo | Numerical Methods for the Evaluation of the Shakedown and Limit Loads |
| 12:20 | 775 | B. Szyszka | An Interval Method for Solving the One-Dimensional Wave Equation |
| 12:40 | 782 | J. Cugnoni, M. Galli, J. Botsis | Representative Volume Element Size of Particulate Composites for Different Nonlinear Behaviors |

**Session GS-CoM.9** Friday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 790 | V. Kulbach, J. Idnurm | Interaction Between Cable Structures and Their Supporting System |
| 10:20 | 791 | N. Domínguez, L. Davenne, A. Ibrahimbegovic | Development of an Enhanced Solid Element for Modeling of Reinforced Concrete Structures |
| 10:40 | 796 | M.A.F. Torres, N.D. Ramírez | Development of Some Special Techniques for Simplifying XFEM Implementation in a Standard Finite Element Code (FEAP) |
| 11:00 | 902 | M. O. Vasiliev, Y. A. Kholodov, O. V. Geller | Simulation of Propagation of Fine and Ultra Fine Particle Aerosols in Airway Systems |
| 11:20 | 975 | K.L. Nielsen | Damage and Void Shape Evolution during Destructive Testing of Resistance SpotWelded Joints |

General Session: **Dynamics**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-DY.1 | Monday | Morning | 10:20 | 11:20 | VA.4 |
| GS-DY.2 | Monday | Morning | 11:40 | 13:00 | VA.4 |
| GS-DY.3 | Monday | Afternoon | 15:00 | 16:20 | VA.4 |
| GS-DY.4 | Monday | Afternoon | 16:40 | 18:00 | VA.4 |
| GS-DY.5 | Thursday | Morning | 10:00 | 11:20 | O2.1 |
| GS-DY.6 | Thursday | Morning | 11:40 | 13:00 | O2.1 |

**Session GS-DY.1** Monday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 166 | R.M. Bulatovic, M. Kazic | On Conservation Laws of Gyroscopic Two Degree of Freedom Systems Linear in the Velocities |
| 10:40 | 168 | R. Bastaits, G. Rodrigues, B. Mokrani, A. Preumont | Control-Structure Interaction in Active Optics of Large Segmented Mirrors |
| 11:00 | 959 | Z. Dimitrovová | Transversal Vibrations in Infinite Beams Supported by Piece-Wise Homogeneous Visco-Elastic Foundation |

**Session GS-DY.2** Monday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 233 | E. Ghafoori, M. Sadeghpour | Investigation on Nonlinear Vibration of Dynamical Systems with Multi Degrees of Freedom |
| 12:00 | 346 | A. Stępniewski | D'Alembert's Supplemented Principle and Newton's Five Supplemented Laws |
| 12:20 | 375 | M. Rodriguez, B. Moulia, E. de Langre | Experimental Investigations of a Walnut Tree Multimodal Dynamics |
| 12:40 | 427 | J. Šašek, M. Hajžman | Modal Synthesis Method and The Reduced Modelling of Flexible Rotors |

**Session GS-DY.3** Monday Afternoon **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 438 | K.M. Popp, M. Kröger, M. Deichmueller, B. Denkena | On Contact Modeling of Workpiece and Grinding Wheel with Nonlinear Elements |
| 15:20 | 453 | T. Bartel, S. Herold, D. Mayer | Modeling of a Multipoint Mounted Body with 6 Degrees of Freedom |
| 15:40 | 585 | H. Bournine, D.J. Waggy, S. Neild | Vibration Damping In Bolted Friction Columns |
| 16:00 | 589 | J. Potter, J. Potter, D.J. Wagg | Optimisation Of Semi-Active Switching Controllers |

**Session GS-DY.4** Monday Afternoon **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 288 | P. Thota, B. Krauskopf, M. Lowenberg | Bifurcation Analysis of Shimmy Oscillations in an Aircraft Nose Landing Gear with a Dual-wheel Configuration |
| 17:00 | 38 | F. Weidermann, P. Wieland | Control Technology in Simulation of Complex FE Models |
| 17:20 | 686 | P. Grönefeld, S. Tatzko, M. Wangenheim | Sprag-Slip Simulation with a ModularWiper Model |
| 17:40 | 704 | M. Hajžman, J. Šašek | High-frequency Vibrations of Complex Flexible Rotating Systems |

**Session GS-DY.5** Thursday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 662 | H. Irschik, M. Krommer, C. Zehetnery | Dynamic Displacement Tracking of Linear Elastic Solids and Structures |
| 10:20 | 780 | K.Y. Osipenko | The Motion of the Rigid Body of Revolution in an Elastoplastic Medium with Small Perturbations |
| 10:40 | 809 | P. Polach | Calculation of Natural Vibration of a Steam Turbine Bladed Disk Using Rotational Periodicity and Comparison with Experimental Measurement |
| 11:00 | 523 | R. Attarnejad, A. Shahba, A. Golalipour | Longitudinal Free Vibration Analysis of Tapered Euler-Bernoulli Beams Using Axial Basic Displacement Functions |

**Session GS-DY.6** Thursday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 855 | F. Fujii, T. Satoh, S. Fukumoto | Dynamic Contact Mechanics of the Domino Wave Propagation |
| 12:00 | 896 | A. Steinwolf, N.C.J. Ng | Random Vibration Testing with PSD Simulation Supplemented by Kurtosis and Skewness Control |
| 12:20 | 911 | H. Hetzler | On Self-Excited Vibrations due to Sliding Friction in Systems of Elastic Bodies – General Formulation and Influence of Contact Properties |

General Session: **Experimental Mechanics**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-EM.1 | Monday | Morning | 10:20 | 11:20 | VA.6 |
| GS-EM.2 | Monday | Morning | 11:40 | 13:00 | VA.6 |
| GS-EM.3 | Thursday | Morning | 11:40 | 12:40 | VA.4 |
| GS-EM.4 | Friday | Morning | 10:00 | 11:20 | VA.4 |

**Session GS-EM.1** Monday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 144 | Z.L. Kowalewski, T. Szymczak | Mechanical Parameters Variation of 2024 Aluminium Alloy Subjected to Monotonic Loading Assisted by Cyclic Deformation |
| 10:40 | 183 | G. Rauchs, J. Bardon, D. Dumitriu | Identification of Elasto-Viscoplastic Material Properties From Nanoindentation Testing Using Gradient-based Optimization and Finite |
| 11:00 | 313 | J. Neggers, J.P.M. Hoefnagels, P.H.M. Timmermansy, E.J.L. | Copper-Rubber Interface Delamination in Stretchable Electronics |

**Session GS-EM.2** Monday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 319 | J. Brnic, M. Canadija, G. Turkalj, D. Lanc | Uniaxial Tests of 50CrMo4 Steel at Lowered and Elevated Temperatures and Impact Notch Energy Determination |
| 12:00 | 330 | V. Miranda, F. Teixeira-Dias, I. Duarte | Multiaxial Experimental Characterisation of Aluminium Foams |
| 12:20 | 373 | R. Berge-Gras, J. Molimard, J. Monnatte, H. Klöcker | Cracking of Al-Li Sheet Metal: In-Situ Optical Observation of the Strain Field |
| 12:40 | 715 | V. Dattoma, M. De Giorgi, S. Giancane, R. Nobile | Investigation of Aluminum Foam Shear Behavior by DIC Analysis |

**Session GS-EM.3** Thursday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 499 | J. Barnat, M. Bajer, J. Kala | Bond Quality Analysis of Actual Chemical Anchors |
| 12:00 | 755 | V.Richter-Trummer, S.Tavares, D. Peixoto,S.Silva,O.Frazão et al. | Calibration of Fibre Bragg Grating (FBG) Sensors and Their Use for Welding Monitoring |
| 12:20 | 840 | M.A.S. Quintanilla, A. Castellanos | Onset of Avalanches of Fine Powders in a Rotating Drum: Experiments and Modeling |

**Session GS-EM.4** Friday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 904 | L. Waltz, D. Retraint, A. Roos, P. Olier | Experimental Investigation on a Nanocrystallized Multilayered Structure Obtained with a Duplex Treatment: SMAT and Co-rolling |
| 10:20 | 969 | M. Poncelet, G. Barbier, B. Raka, S. Courtin, R. Desmorat, J.C. Le | Experimental Validation of the Number of Cycles to Failure Predicted by a Two Scale Damage Model for a 304L Steel Under Biaxial HCF |
| 10:40 | 970 | T. Kasimayan, K. Ramesh | Whole Field Photoelastic Parameters Estimation Using Five-step Method |
| 11:00 | 792 | M. Benachour, M. Benguadiab, A. Hadjoui, N. Benachour, F. Hadjoui | Effect of Machining Mode of the V-Notch on Fatigue Crack Growth in Aluminum Alloy |

General Session: **Material Mechanics**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-MM.1 | Monday | Morning | 10:20 | 11:20 | VA.3 |
| GS-MM.2 | Monday | Morning | 11:40 | 13:00 | VA.3 |
| GS-MM.3 | Monday | Afternoon | 15:00 | 16:20 | VA.3 |
| GS-MM.4 | Monday | Afternoon | 16:40 | 18:00 | VA.3 |
| GS-MM.5 | Tuesday | Morning | 10:00 | 11:20 | VA.3 |
| GS-MM.6 | Tuesday | Morning | 11:40 | 13:00 | VA.3 |
| GS-MM.7 | Wednesday | Morning | 10:00 | 11:20 | VA.6 |
| GS-MM.8 | Wednesday | Afternoon | 16:40 | 17:40 | O2.1 |
| GS-MM.9 | Thursday | Morning | 10:00 | 11:20 | VA.4 |
| GS-MM.10 | Friday | Morning | 10:00 | 11:40 | VA.3 |

**Session GS-MM.1** Monday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 34 | X.-Z. Zhou, A-L. Chen, Y.-S. Wang, C. Zhang | Wave Localization in One-Dimensional Disordered Phononic Crystals w ith Local Resonant Structures |
| 10:40 | 57 | M. Nakajima, Y. Uematsu, M. Akita, K. Tokaji | Fatigue Properties of Type 304N2 High-Nitrogen Austenitic Stainless Steel |
| 11:00 | 58 | M. Akita, M. Nakajima, Y. Uematsu, K. Tokaji | Fatigue Behaviour of Type 444 Ferritic Stainless Steel Annealed and Quenched at High Temperatures |

**Session GS-MM.2** Monday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 63 | J. Wang, H.-H. Dai | Phase Transitions Induced by Extension in a Slender SMA Cylinder: Analytical Solution for the Hysteresis Loop based on a Quasi-3D |
| 12:00 | 72 | D. Słota | Using Experimental Data for Numerical Identification of the Boundary Condition |
| 12:20 | 191 | N. Chiba, N. Ogasaw ara, X. Chen | Finite Element Study on Overshoot and Undershoot of Hardness in Film/Substrate Indentation |
| 12:40 | 192 | T. Yamada, Y. Yamashita, M. Torigoe | Study on Ductile Crack Grow th Property of Compressively Prestrained Steels |

**Session GS-MM.3** Monday Afternoon **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 199 | M. Chouman, M. Martinez, H. Haddadi | Constitutive Model Of Cyclic Plasticity Taking Into Account A Cyclic Yield Surface Distortion |
| 15:20 | 203 | H. Egner, W. Egner, B. Skoczeń | Damage Development In Tw o-Phase Metallic Materials At Cryogenic Temperatures |
| 15:40 | 231 | V.I. Bolshakov, V.V. Danishevs'kyy, O.I. Ryzhkov, M. | Dispersion of Shear Waves in Viscoelastic Cancellous Bones |
| 16:00 | 240 | P. Hess, A.M. Lomonosov, V.V. Kozhushko | Quantitative Study of Multi-Mode Fracture Mechanics: Contact-Free Laser-Based Investigation of Anisotropic Silicon |

**Session GS-MM.4** Monday Afternoon **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 262 | A. Benallal, T. Børviky, O.S. Hopperstady, R.N. Codes | On the characteristics of Portevin-Le Chatelier instabilities and their predictions for AA5083-H116 aluminium alloy |
| 17:00 | 265 | P. Romanow icz, A.P. Zieliński | Application of Multiaxial High-cycle Fatigue Criteria to Rolling Contact Problem |
| 17:20 | 266 | Y. Luo, Z. Wang | Orthotropic Optimization Design of 1-1 Piezoelectric Composite Material Actuator/ Sensor Element |
| 17:40 | 292 | T. Stengel | Fracture Toughness of Steel Fibre Reinforced Ultra High Performance Concrete |

**Session GS-MM.5** Tuesday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 325 | C. Woźniak | A Tolerance Approach to the Mathematical Modelling of Functionally Graded Materials (FGM) |
| 10:20 | 335 | M. Dubé, V. Doquet | Investigation of the Thermo-Mechanical Behavior of a Borosilicate Glass Used for Nuclear Waste Vitrification |
| 10:40 | 354 | F. Szmytka, L. Rémy | Constitutive Elastic-Viscoplastic Models For Metallic Materials Used In The Automotive Industry |
| 11:00 | 398 | O.A. Terfas, B. Bezensek | The Influence of the Specimen Thickness on the CTOD Fracture Toughness |

**Session GS-MM.6** Tuesday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 441 | M. Cocou | A Dynamic Problem of Contact Interactions betw een Viscoelastic Bodies |
| 12:00 | 462 | K.P. Jayachandran, J.M. Guedes, H.C. Rodrigues | Effective Magnetoelectric Coupling of Multiferroics |
| 12:20 | 467 | E. Rejovitzky, E. Altus | A Micromechanical Fatigue Model w ith Micro-crack Coalescence |
| 12:40 | 548 | J. Jędrysiak | Tolerance Modelling of Thermoelasticity Problems of Multilayered Media |

**Session GS-MM.7** Wednesday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 584 | G. Ceglia, D. Bernard, P. Viot, O. Mondain-Monval, V. Schmitt, H. | Mechanical Properties of Calibrated Porous Polymer Materials Based on Emulsions |
| 10:20 | 587 | S. Dartois, S. Pommier, P.-A. Guidault | Contribution to a Multiscale Crack Grow th Modelling Accounting for Plastic Behaviour at Crack Tip. Implementation in An X-FEM Code and |
| 10:40 | 649 | C. Ayas, E.V. Giessen | A Discrete Dislocation Framew ork for the Development of Intrinsic Stress During Thin Film Grow th |
| 11:00 | 650 | J. Sw eeney, S. Naz, P.D. Coates | Constitutive Modelling of Ultra High Molecular Weight Polyethylene |

**Session GS-MM.8** Wednesday Afternoon **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 671 | C Comi, A. Corigliano, A. Merassi, B. Simoni | A Surface Micromachined Resonant Accelerometer with High Resolution |
| 17:00 | 684 | S. Kumar, A.C.F. Cocks | Modelling the Growth of Imperfections in Thermal Barrier Coatings |
| 17:20 | 691 | F. Fremy, S. Pommier, S. Pattofatto, E. Galenne | Evidences of Crack Growth Rate Variations in Variable Amplitude Fatigue from Fractographics. |
| 17:40 | 713 | B. Hirschberger, R. Peerlings, M. Brekelmans, M. Geers | On the Dislocation Interactions Underlying Higher-Order Crystal Plasticity |

**Session GS-MM.9** Thursday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 727 | P. Areias, N.V. Goethem, E.B. Pires | Ductile Fracture: Constrained Strong Ellipticity Condition and Non-Smooth Problems |
| 10:20 | 749 | J.S. Soares, K.R. Rajagopal, J.E. Moore | A Constitutive Model for Deformation-Induced Degradation of Polymers: Inflation and Extension of a Degradable Cylindrical Annulus |
| 10:40 | 822 | R.B. Canto, N. Schmitt, F. Hild, R. Billardon | Identification of 3-D Elasto-Viscoplastic Constitutive Equations to Model Pure PTFE Powder Compaction |

**Session GS-MM.10** Friday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 803 | T. Fülöp, P. Ván | Plasticity, Thermodynamics and Rheology |
| 10:20 | 857 | J.P.M. Hoefnagels, C.C. Tasan, M.G.D. Geers | Comparison of Quantitative Damage Characterization Methodologies |
| 10:40 | 886 | S. Castagnet, J.C. Grandidier, Y. Nadot, Q.H. Vu, A. Berrehili | Cyclic Behaviour of a Polyethylene Thermoplastic and Relationship to Multiaxial Fatigue Life |
| 11:00 | 890 | H.L. Schreyer | Combined Modeling of Inelastic Deformation and Failure in Concrete and Geological Materials |

General Session: **Structural Mechanics**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| GS-SM.1 | Monday | Morning | 10:20 | 11:20 | VA.5 |
| GS-SM.2 | Monday | Morning | 11:40 | 13:00 | VA.5 |
| GS-SM.3 | Wednesday | Afternoon | 15:00 | 16:20 | VA.6 |
| GS-SM.4 | Wednesday | Afternoon | 16:40 | 18:00 | VA.6 |
| GS-SM.5 | Thursday | Morning | 10:00 | 11:20 | VA.5 |
| GS-SM.6 | Thursday | Morning | 11:40 | 13:00 | VA.5 |
| GS-SM.7 | Friday | Morning | 10:00 | 11:40 | VA.5 |

**Session GS-SM.1** Monday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 80 | C.A.J. Miranda, E. Maneschy, P. Rodrigues | Structural Integrity Assessment of Angra 1 Steam Generator Tubing Using Deterministic and Statistic Methods – Past and Present |
| 10:40 | 128 | A.P. Seyranian, N. Olhoff | Bifurcation Analysis and Post-Buckling Behaviour of Bimodal Optimum Columns |
| 11:00 | 150 | K.L. Apedo, S. Ronel, E. Jacquelin, M. Massenzio, A. | Theoretical Analysis of Inflatable Beams Made from Orthotropic Fabric |

**Session GS-SM.2** Monday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 211 | B. Tomczyk | Dynamical Stability of Uniperiodically Ribbed Cylindrical Shells |
| 12:00 | 218 | M. Chekchaki, V. Lazarus | Analytical and 3D Finite Element Study of the Residual Stresses Induced Deflection of an Elastic Cantilever Plate. |
| 12:20 | 291 | M. Asghari, A.R. Ghahremani, E. Ghafoori | Semi-Analytical Analysis of the Dynamic Response of Rectangular Plates under Traversing Moving Oscillator |
| 12:40 | 295 | S.N. Mikryukov, A.L. Smirnov | Free Vibrations of Plates and Shells with Cutouts |

**Session GS-SM.3** Wednesday Afternoon **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 336 | R.R. Rajaonah, L.R. Rakotomanana | Contribution to the Buckling of Plates: Influence of the Thermal Expansion Parameter on the Thermoelastic Eigenfrequencies and |
| 15:20 | 349 | J. Blachut, O. Ifayefunmi | Combined Stability of Unstiffened Cones |
| 15:40 | 409 | H.-G. Kwak, J.-H. Kwaky | Long-term Ultimate Strength of Biaxially Loaded Slender RC Column |
| 16:00 | 447 | W.B. Fraser, G.H.M. van der Heijden | The Stability of a Whirling Transported String |

**Session GS-SM.4** Wednesday Afternoon **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 458 | S. Vidoli, C. Maurini, A. Fernandes | Multiparametric Actuation of Bistable Plates: A Method to Avoid Snap-through Instabilitites |
| 17:00 | 463 | M. Massenzio, E. Jacquelin, A. Bennani, S. Ronel, S. Ronel, J.P. | Assessing the Anti-Oscillator Model Parameters from Numerical or Experimental Data |
| 17:20 | 486 | Y.G. Pronina | Analytical Study of General Mechanochemical Corrosion of the Pipe Under the Axial Force and Pressure |
| 17:40 | 532 | M.L. Szwabowicz | Dimensional Reduction for Shells of Variable Thickness |

**Session GS-SM.5** Thursday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 577 | G. Martínez, C. Graciano, E. Casanova, O. Pelliccioni | Sensitivity Analysis of Expanded Metal Sheets Under Tension |
| 10:20 | 579 | A.P. Korte, G.H.M. van der Heijden | New Triangular Buckling Pattern of Twisted Inextensible Sheets |
| 10:40 | 608 | M.C. Oliveira, J.L. Alves, L.F. Menezes, R. Padmanabhan, A. | Numerical Analysis of the Drawbead Friction Test Using a Pressure Dependent Coulomb's Friction Coefficient |
| 11:00 | 701 | H. Obrecht, U. Reinicke, M. Walkowiak | Thermal Buckling and Impact Performance of Lattice Structures |

**Session GS-SM.6** Thursday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 708 | J.B. de Aguiar, J.M. de Aguiar | Brittle Failure of Semi-infinite Beams of Variable Thickness on an Elastic Foundation under Contact Loading |
| 12:00 | 811 | L. Lopes, P. Neto, J. Alfaiate | The Influence of Geometrical Parameters on the Behaviour of Concrete – CFRP Interface |
| 12:20 | 848 | L.A. Borges, J.C.V. Ferreira | A Nonlinear Global-Local Model for the Analysis of Laminated Composite Plates |
| 12:40 | 864 | A. Watanabe, Y. Kotani, K. Nishimura, H. Watari, N. Koga | Elastic Deformation Characterisitics of Die and A CNC Servo Press During Deep Drawing Process |

**Session GS-SM.7** Friday Morning **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 882 | M. Bîrsan, H. Altenbach | On the Dynamical Theory of Thermoelastic Simple Shells |
| 10:20 | 893 | V.H. Nguyen, V.N. Le, M. Guadagnini, K. Pilakoutas | Effect of Shear on the Behaviour of RC Beams Retrofitted with Near Surface Mounted Reinforcement |
| 10:40 | 912 | E. Araque, C. Graciano | Strength of Partially Stiffened Cylinders under Axial Compression |
| 11:00 | 964 | L. Oroszváry, L. Oroszváry | Finite Element Modeling and Simulation of Degeneration and Hydro-Traction Therapy of Human Lumbar Spine Segments |

Mini-Symposium 02: **Biomechanics of Human Locomotion**

Organized by: Miguel Silva, Javier Alonso

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-02.1 | Monday | Afternoon | 15:00 | 16:20 | VA.5 |
| MS-02.2 | Monday | Afternoon | 16:40 | 18:00 | VA.5 |
| MS-02.3 | Tuesday | Afternoon | 15:00 | 16:20 | VA.5 |
| MS-02.4 | Tuesday | Afternoon | 16:40 | 17:40 | VA.5 |

**Session MS-02.1** Monday Afternoon **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 932 | F.J.Alonso, D.R. Salgado, J. Cuadrado, P. Pintado | Automatic Smoothing of Raw Kinematic Signals Using SSA and Cluster Analysis |
| 15:20 | 889 | R.J.F.Portal, L.A.G. Sousa, J.M.P. Dias | Multibody Dynamics Method w ith Superquadric Contact Detection Model Applied to Biomechanics |
| 15:40 | 324 | A.Page, J. A. Galvez, H. de Rosario, V. Mata, J. M. Baydal | Optimal Average Path of the Instantaneous Screw Axis in 3D Human Movements |
| 16:00 | 702 | J.K.Fayad, A.D. Bue, L. Agapito, P.M.Q. Aguiar | Human Body Modelling Using Quadratic Deformations |

**Session MS-02.2** Monday Afternoon **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 837 | P.Moreira, M. Silva, P. Flores | Ground Foot Interaction in Human Gait: Modelling and Simulation |
| 17:00 | 838 | N.B.Monteiro, M.T. Silva, J.O. Folgado, J.L. Melancia | A New Approach to Analyze the Stress Distribution on a Multilevel Cervical/Lumbar Intersomatic Fusion |
| 17:20 | 535 | C.Carpentier, J. M. Font-Llagunes J. Kövecses | Dynamic and Energetic Analysis of Impacts in Crutch Locomotion |
| 17:40 | 909 | M.Machado, D.Lopes,J.Ambrósio, P. Flores, J. Pombo, M. Silva | Development and Implementation of a Generic Methodology for Contact Dynamics of the Human Knee Joint |

**Session MS-02.3** Tuesday Afternoon **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 742 | P.C.Silva, M.T. Silva, J.M. Martins | Evaluation of the Contact Forces Developed in the Low er Limb/Orthosis Interface for Comfort Design |
| 15:20 | 625 | A.Carvalho, A. Suleman | Neural Netw ork Controller for an Anthropomorphic Hand Prosthesis |
| 15:40 | 740 | S. d'Orey, J. M. Martins, M. T. Silva | Analysis of the Cyclic Motion of Asymmetric Gait |
| 16:00 | 12 | N.Farhat, V. Mata, D. Rosa, J. Fayos, X. Peirau | Musculo-Skeletic Model For Knee Joint Forces Estimation in Sport Activities |

**Session MS-02.4** Tuesday Afternoon **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 774 | M.Raison, C. Detrembleur, P. Fisette, J.C. Samin | Muscle Overactuation Solving Method Based on a Multibody Approach Using a Refined Muscle Insertion Model |
| 17:00 | 279 | J.Ojeda, J. Mayo, J. Martínez-Reina | Influence of Different Aspects in Muscle Estimation |
| 17:20 | 766 | A.F.Pereira, M.T. Silva | Dynamic Calculation of the Musculoskeletal Loads in the Low er Limb and Consequent Application to the Structural Analysis of a Bone |

Mini-Symposium 03: **Composite Materials**

Organized by: Pedro Camanho

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-03.1 | Monday | Morning | 10:20 | 11:20 | VA.2 |
| MS-03.2 | Monday | Morning | 11:40 | 13:00 | VA.2 |
| MS-03.3 | Tuesday | Morning | 10:00 | 11:20 | O2.3 |
| MS-03.4 | Tuesday | Morning | 11:40 | 13:00 | O2.3 |

**Session MS-03.1** Monday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 953 | A.Makris,C.Ramault, D.Hemelrijck, E. Lamkanfi, W. Van Paepegem | Damage Assessment of Cruciform Type Specimens under Biaxial Loading Conditions |
| 10:40 | 212 | A.Rutecka, L. Dietrich, Z.L. Kow alew ski | Investigations of Fatigue Damage Development of A356+TiB2 Metal Matrix Composite |
| 11:00 | 320 | C.S.Lopes, P.P. Camanho, Z. Gürdal | Variable-Stiffness Composite Panels: Effects of Stiffness Variation on the Buckling and Failure Responses |

**Session MS-03.2** Monday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 816 | V.Monchiet, G. Bonnet | A Homogenization Approach for the Determination of the Effective Properties of Gradient Elastic Media |
| 12:00 | 768 | A.R.Melro, P.P. Camanho, F.M.A. Pires, S.T. Pinho | Simulation of the Micromechanical Non-Linear Behaviour of Long-Fibre Reinforced Polymers |
| 12:20 | 52 | Y.-S.Wang, W. Xu, D.-P. Wang | Nonlocal Elastic Analogy for Wave Propagation in Composites of Tw o-Dimensional Periodicity |
| 12:40 | 109 | M.-H.R.Jen, Y.-C. Sung, C.-W. Liu, F.-C. Hsu | Innovative Fabrication of Ti/Apc-2 Hybrid Composite Laminates and Their Mechanical Properties at Elevated Temperature |

**Session MS-03.3** Tuesday Morning **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 309 | S.Rjafiallah, S. Guessasma, L. Chaunier, D. Lourdin | Effective Properties of Starch-based Composites Subject to Interface Effect |
| 10:20 | 511 | H.Kalhori, H. Akhavan, H. Rokni D.T., A. Alibeigloo | Vibration Analysis of Functionally Graded Rectangular Plates Based on Mori-Tanaka Homogenization Scheme |
| 10:40 | 685 | M.A.Neto, W. Yu, T. Tang | Sensitivity Analysis and Optimization of Heterogeneous Materials Using the Variational Asymptotic Method for Unit Cell Homogenization |
| 11:00 | 586 | V.Maz'ya, A. Movchan, M. Nieves | Green's Kernels for Transmission Problems in Bodies w ith Small Inclusions |

**Session MS-03.4** Tuesday Morning **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 899 | P.A.Brühw iler, M. Barbezat, A. Necola, O. Bunk, P. Pötschke | Comparison of Quasistatic to Impact Mechanical Properties of Multiw alled Carbon Nanotube-Polycarbonate Composites |
| 12:00 | 261 | A.Apicella, G. Iannuzzo, G. Albertini | Proposed Design Platform for Intensive Structural Computational Analysis |

Mini-Symposium 04: **Computer Modeling of Industrial Forming Processes**

Organized by: Luís Menezes, Amílcar Ramalho

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-04.1 | Monday | Afternoon | 16:40 | 18:20 | O2.3 |

**Session MS-04.1** Monday Afternoon **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 310 | HLaurent,R.Grèze, M.C.Oliveira, A.Andrade-Campos,P.Y.Manach, | Springback of an Aluminium Alloy in Warm Forming Conditions using the Split-Ring Test |
| 17:00 | 500 | M.Skjoedt, M.B. Silva, N. Bay, P.A.F. Martins | Formalibity in Multistage Single Point Incremental Forming |
| 17:20 | 712 | M.Palengat, P. Latil, G. Chagnon, D. Favier, H. Louche, C. Plaideau | Thermomechanical Modelling of Cold Drawing Processes of Small Diameter Tubes |
| 17:40 | 876 | H.Aguir,J.L.Alves,M.Oliveira, L.F. Menezes,H.BelHadjSalah,R.Hamb | Identification of Anisotropic Parameters Using the Cylindrical Cup Deep Drawing Test and the Coupled Ann-Inverse Method |
| 18:00 | 663 | T.Zribi, A. Khalfallah, H. Belhadjsalah | Inverse Method for Flow Stress Parameters Identification of Tube Bulge Hydroforming Considering Anisotropy |

Mini-Symposium 05: **Contact Mechanics**

Organized by: Michel Raous, Manuel Marques

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-05.1 | Monday | Morning | 11:30 | 13:10 | MA |
| MS-05.2 | Tuesday | Afternoon | 15:00 | 16:20 | VA.3 |
| MS-05.3 | Tuesday | Afternoon | 16:40 | 18:20 | VA.3 |

**Session MS-05.1** Monday Morning **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:30 | 365 | M.Raous, G.D. Piero | A Unified Model for Adhesive Interfaces With Damage, Viscosity and Friction |
| 11:50 | 934 | M.D.P.M.Marques | On Some Frictional Contact Model Problems |
| 12:10 | 401 | .A.C.Martins, N. Rebrova, E. Shchepakina, V. Sobolev | Stability of Quasi-Static Paths in Contact Mechanics Problems |
| 12:30 | 187 | A.P.Costa | Wedged Equilibrium States and Divergence Instabilities in Some Frictional Contact Problems |
| 12:50 | 518 | C.Glocker | Curve Squealing of Trains: A Linear Stability Analysis |

**Session MS-05.2** Tuesday Afternoon **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 921 | J.Júdice | The Eingenvalue Complementarity Problem: Theory, Algorithms and Applications to Contact Problems |
| 15:20 | 516 | L.E.Andersson | Existence Results for Quasistatic Frictional Contact Problems and Frictional Wedging Problems |
| 15:40 | 334 | P.Ballard | Frictional Contact Problems for Thin Elastic Structures and Weak Solutions of Sweeping Process |
| 16:00 | 141 | G.Saxcé, M. Buliga, C. Vallée | Bipotentials for Unilateral Contact with Dry Friction: Fundamentals and Numerical Algorithms |

**Session MS-05.3** Tuesday Afternoon **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 767 | M.A.Agwa, A.P. Costa | On A Sufficient Condition for Solution Uniqueness of the Quasi-Static Incremental Frictional Contact Problem |
| 17:00 | 556 | A.Petrov, M. Schatzman | On the Numerical Approximation of a Viscoelastic Problem with Unilateral Constraints |
| 17:20 | 653 | A.D.Muradova, G.E. Stavroulakis | Postbuckling Analysis of Rectangular Plates Resting on a Nonlinear Elastic Foundation |
| 17:40 | 282 | J.R.Fernández, R. Martínez, J.M. Viaño | Numerical Analysis of a Contact Problem Involving an Strain-Adaptive Bone Remodelling Process |
| 18:00 | 514 | R.Laniel, P. Alart, S. Pagano | From Discrete to Continuous Numerical Identication of Wire-Reinforced Geomaterial |

Mini-Symposium 06: **Damage and Fracture**

Organized by: José César de Sá, K. Saanouni

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-06.1 | Tuesday | Morning | 11:40 | 13:10 | VA.2 |
| MS-06.2 | Tuesday | Afternoon | 15:00 | 16:20 | VA.2 |
| MS-06.3 | Wednesday | Morning | 10:00 | 11:40 | VA.2 |
| MS-06.4 | Wednesday | Afternoon | 15:00 | 16:20 | VA.2 |
| MS-06.5 | Wednesday | Afternoon | 16:40 | 18:30 | VA.2 |
| MS-06.6 | Thursday | Morning | 10:00 | 11:20 | VA.2 |
| MS-06.7 | Thursday | Morning | 11:40 | 13:00 | VA.2 |
| MS-06.8 | Friday | Morning | 10:00 | 11:40 | VA.2 |

**Session MS-06.1** Tuesday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 363 | K.Saanouni, M. Almansba, N.E. Hannachi | Damage-Gradient Based Non Local Formulations Revisited |
| 12:10 | 737 | S.Cleja-Tigoiu, V. Tigoiu | Strain Gradient Effect on Elasto-Plastic Damaged Materials at Large Deformations |
| 12:30 | 869 | F.X.C.Andrade, J. M.A.C. Sá, F.M.A. Pires, L. Malcher | Prediction of Ductile Failure in Metal Forming Considering an Internal Length Scale |
| 12:50 | 123 | J.Velde, U. Kow alsky, T. Zümendorf, D. Dinkler | 3D-Analysis of Steel Damage Under Dynamic Excitation |

**Session MS-06.2** Tuesday Afternoon **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 19 | M.Brünig, D. Albrecht, S. Gerke | Damage and Fracture Criteria Based on Different Micro-Mechanisms |
| 15:20 | 307 | J.Petruska, J. Hulka, J. Borkovec | Computational Simulation of Material Cutting Processes |
| 15:40 | 878 | A.Hor, J.-L. Lebrun, F. Morel | Experimental Study and Local Approach Modelling of Ductile Damage in Steels Over a Wide Temperature Range |
| 16:00 | 805 | L.Malcher, F.M.A. Pires, J.M.A.C. Sá, F.X.C. Andrade | Numerical Integration Algorithm of a New Model for Metal Plasticity and Fracture Including Pressure and Lode Angle Dependence |

**Session MS-06.3** Wednesday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 647 | B.D.Buco, M.Oliveira, J.Alves, L. Menezes, K.Ito,G.Uemura, N.Mori | Local Bifurcation and Instability Theory Applied to Formability Analysis |
| 10:20 | 839 | P.Teixeira, F.M.A. Pires, A.D. Santos, J.M.A.C. Sá, A.B. Rocha | Modelling Material Failure in Metal Forming Processes |
| 10:40 | 223 | A.N.D.Toan, B.P. Jingee, C.K. Youngsuk | Analytical and Numerical Approach to Predict the Fracture and Optimize the Press Formability of Incremental Sheet Forming for … |
| 11:00 | 209 | K.Naumenko, H. Altenbach, A. Kutschke | A Constitutive Model for Creep and Long-Term Strength in Advanced Heat Resistant Steels and Structures |
| 11:20 | 51 | N. Morozov | The Dynamical Fracture of Rocks |

**Session MS-06.4** Wednesday Afternoon **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 460 | S.Melin, P. Hansson | Characteristics of Short Fatigue Crack Grow th in the Vicinity of a Low Angle Grain Boundary |
| 15:20 | 581 | P.Evrard, M. Sauzay | FE Study of Strain Localization on Intergranular Fracture in Metallic Polycrystals |
| 15:40 | 114 | Y.Ochi, K. Masaki, T. Matsumura, Y. Sano | Laser and Shot Peening Effects on High Cycle Fatigue Property in Austenitic Stainless Steel |
| 16:00 | 122 | K.Shiozaw a, Y. Shimatani, T. Nakada | Effect of Inclusion Size and Residual Stress on Gigacycle Fatigue Properties of High Speed Tool Steel |

**Session MS-06.5** Wednesday Afternoon **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 526 | C.Comi, U. Perego | Anisotropic Damage Model for Concrete Affected by Alkali-Aggregate Reaction |
| 17:10 | 919 | M.A.M.Shzu, G. Doz | Dynamic Crack Grow th Analysis in Concrete Beams Using the Discrete Element Method |
| 17:30 | 137 | I.M.Dunaev, V.I. Dunaev | Macroscopic Criterion for Brittle Fracture of Solids |
| 17:50 | 642 | A.Piccolroaz, G. Mishuris, A.B. Movchan | Unsymmetrical Loading of Interfacial Cracks |

**Session MS-06.6** Thursday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 706 | H.Amor, J.-J. Marigoz, C. Maurini, N.K.H. Pham | A Regularized Variational Formulation of Fracture Mechanics w ith Unilateral Contact at Crack Lips |
| 10:20 | 574 | L.Contrafatto, M. Cuomo | A Variational Formulation of the Equilibrium Problem for a Damaging Continuum in the Context of the Strong Discontinuities Approach |
| 10:40 | 125 | R.Kienzler, L. Rohde, R. Schröder | On Path-Independent Integrals and it's Application to Defect Mechanics |
| 11:00 | 140 | E.D.Leonel, W.S Venturini | Analysis of Crack Grow th in Reinforced Solids Using Boundary Element Formulation |

**Session MS-06.7** Thursday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 478 | G.F.Santos, F.J. C. P. Soeiro, J.G.S. Silva | Structural Damage Assessment using a Global Optimization Technique |
| 12:00 | 799 | G.Zagari, S. Fortino, G. Dill–Langer | FEM Simulation of Crack Grow th in Glulam by Using a 3D Orthotropic–Viscoelastic Model and Cohesive Elements |
| 12:20 | 505 | T.Cohen, D. Durban | Dynamic Cavitation in Porous Plastic Solids |
| 12:40 | 138 | A.Amvrosieva, V. Musalimov | Fracturing Mechanism of the Push-Wire Connector |

**Session MS-06.8** Friday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 856 | C.C.Tasan, J.P.M. Hoefnagels, M.G.D. Geers | Indentation Based Damage Quantification Methodology Revisited |
| 10:20 | 632 | H.Itoga, H. Noguchi, S. Hamada | Effect of Crosshead Speed on Tensile Strength in High Pressure Hydrogen Gas Environment for High Strength Steel |
| 10:40 | 657 | .Kolluri, J.P.M. Hoefnagels, J.A.W. Dommelen, M.G.D. Geers | Refinements to the Miniature Mixed Mode Bending Device for Interface Delamination Characterization |
| 11:00 | 795 | H.Chai | Microstructural Aspects in Fracture of Human Teeth From Occlusal Loading |

Mini-Symposium 07: **Force Chain Fluctuations and Jamming in Dense Granular Flows**

Organized by: Corey S. O'Hern, Lou Kondic

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-07.1 | Tuesday | Afternoon | 15:00 | 16:20 | O2.2 |
| MS-07.2 | Tuesday | Afternoon | 16:40 | 18:20 | O2.2 |
| MS-07.3 | Wednesday | Morning | 10:00 | 11:40 | O2.2 |
| MS-07.4 | Wednesday | Afternoon | 15:00 | 16:20 | O2.2 |
| MS-07.5 | Wednesday | Afternoon | 16:40 | 18:20 | O2.2 |

**Session MS-07.1** Tuesday Afternoon **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 592 | R. P.Behringer, J. Zhang, T.S. Majmudar | Statistical Properties of Granular Materials Near Jamming |
| 15:20 | 300 | B.Chakraborty, S. Tew ari, A. Ferguson | Grow ing Length Scale and Dynamical Heterogeneities in Gravity-Driven Dense Granular Flow |
| 15:40 | 56 | S.Luding | Structure and Stress Anisotropy in Granulates w ith Friction and Adhesion |
| 16:00 | 290 | M.Schröter, J.-F. Metayer, T. Suntrup, H.L. Sw inney, C. Radin | Yield Stress and Dilatancy in Sheared Granular Matter |

**Session MS-07.2** Tuesday Afternoon **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 100 | J.Dijksman, G. Wortel, M.V. Hecke | TriboVibrheology: Shaking and Shearing of Granular Media |
| 17:00 | 236 | M.D.Shattuck, P.M. Reis, R. Ingale | Shaken, Not Stirred: Granular Equilibrium |
| 17:20 | 303 | K.E.Daniels, F. Lechenault, J.G. Puckett | State Variables in Equilibrating Granular Subsystems |
| 17:40 | 725 | Z.Zeravcic, W.V. Saarloos, D.R. Nelson | Localization of Vibrations in Granular Systems |
| 18:00 | 641 | K.Mischaikow | Quantifying and Classifying Spatial Temporal Patterns using Computational Topology |

**Session MS-07.3** Wednesday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 362 | L.Kondic, X. Fang, R.P. Behringer | On Energy Transport and Force Chains in Dense Granular Matter |
| 10:20 | 472 | N.P.Kruyt | Force Fluctuations in Quasi-Static Deformation of Granular Materials:Deviations from Mean-Field Behaviour |
| 10:40 | 616 | L.E.Silbert | Force Response in Granular Packings |
| 11:00 | 87 | M.Mailman, C.F. Schreck, C.S. O'Hern, B. Chakraborty | Jamming in Systems Composed of Frictionless Ellipse-Shaped Particles |
| 11:20 | 117 | P.G.Lind | Sequential Random Polydisperse Packings: Theory and Applications |

**Session MS-07.4** Wednesday Afternoon **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 638 | M.Sperl, E. Stärk | Random-Close Packing and Glass Transitions in Tw odimensional Binary |
| 15:20 | 274 | S.Henkes, M.V. Hecke, W.V. Saarloos | Soft Modes in Packings of Frictional Grains |
| 15:40 | 873 | E.Clément, R. Harich, G. Lumay | Mobility and Rheology in a Vibrated Granular Packing |
| 16:00 | 239 | J.-L.Barrat | Particle Based Modeling of the Elastic and Plastic Response of Amorphous Materials |
| 16:40 | 908 | V.Vitelli, N. Xu, M. Wyart, A.J. Liu, S.R. Nagel | Energy Propagation and Localization in Jammed Sphere Packings |

**Session MS-07.5** Wednesday Afternoon **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 226 | B.Tighe, E. Woldhuis, J. Remmersy, M.Hecke, W.Saarloos | Local Forces and Rheology in Disordered Media Near Jamming |
| 17:00 | 961 | S.Slotterback, J. Weiss, W. Losert | Three Dimensional Imaging of Segregation in Granular Flow s |
| 17:20 | 411 | I.Goldhirsch | Coarse Graining from the Grain Scale |
| 17:40 | 130 | H.J.Herrmann, M.P. Almeida, J. R. Parteli, J.S. Andrade Jr | Particle Drag Along the Surface |

Mini-Symposium 08: **Image Processing and Visualization in Solid Mechanics Processes**

Organized by: João Tavares, M. Audette

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-08.1 | Wednesday | Morning | 10:00 | 11:40 | O2.1 |
| MS-08.2 | Wednesday | Afternoon | 15:00 | 16:20 | O2.1 |

**Session MS-08.1** Wednesday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 263 | A.Jumpasut, N.Petrinic, B.C.Elliott, C.R. Siviour, M.R. Arthington | An Investigation of the Effects of Lighting Conditions on Target Detection in Impact Engineering Experiments |
| 10:20 | 308 | V.Trummer,E.Marques,F.Chaves, J.M.Tavares,L.Silva,P. de Castro | Analysis of the Crack Grow th Behavior in a Double Cantilever Beam Adhesive Fracture Test using Digital Image Processing Techniques |
| 10:40 | 443 | .Gentil, C. Garbe, M. Parente, P. Martins, R.N. Jorge | Analysis of the Middle Ear Ligaments |
| 11:00 | 490 | C.Garbe, F. Gentil, M.P.L. Parente, P.A.L.S. Martins, R.N. | Dynamic Analysis of Tympanic Membrane Layers |
| 11:20 | 517 | T.Roza,C.Saleme,RJorge, M. Barbosa,M.Parente, A.Filho, T. | Establishment of the Moment of Inertia of Female Pelvic Floor Muscles by using Manual Segmentation |

**Session MS-08.2** Wednesday Afternoon **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 602 | J.Assis, I. Lima, G.Carvalho, R. Einsfeld,J.Pessôa,R.Breder,R. Lopes | Concrete Matrix Porosity Study by Microtomography Images |
| 15:20 | 659 | A.J.C.Arteiro, M.L. Parente, R.M.N. Jorge, T. Mascarenhas | Construction of a 3D Model for the Female Pelvic Organs |
| 15:40 | 667 | J.Xavier, P. Custódio, J. Morais, R. Guedes | Assessing Mechanical Properties of a Polymer Material by a Video Extensometer Technique |
| 16:00 | 736 | N.Ribeiro,P.Fernandes,D.S.Lopes J.O. Folgado, P.R. Fernandes | 3-D Solid and Finite Element Modeling of Biomechanical Structures - A Softw are Pipeline |

Mini-Symposium 09: **Macro-Micro-Nano Approaches in Material Mechanics**

Organized by: Georges Cailletaud, Reinhard Pippan

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-09.1 | Wednesday | Afternoon | 15:00 | 16:20 | VA.5 |
| MS-09.2 | Wednesday | Afternoon | 16:40 | 18:00 | VA.5 |
| MS-09.3 | Thursday | Morning | 10:00 | 11:20 | VA.3 |
| MS-09.4 | Thursday | Morning | 11:40 | 13:00 | VA.3 |
| MS-09.5 | Friday | Morning | 10:00 | 11:20 | VA.1 |

**Session MS-09.1** Wednesday Afternoon **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 18 | F.D.Fischer, J. Svoboda, D. Vollath | Formation of Hollow Nanospheres from Metallic Solid Nanospheres |
| 15:20 | 98 | J.Avsec | Nanofluid and Ferrofluid Slip Flow in Rectangular and Circular Microchannels |
| 15:40 | 154 | F.Fritzen, T. Böhlke, K. Jöchen | Homogenziation of Three-Dimensional Micro-Heterogeneous Materials Using Nonuniform Transformation Fields |
| 16:00 | 256 | M.Mázdziarz, T.Young, P.Dłużew ski, T. Wejrzanow skiy, | Molecular-Statics Modeling of Nanoindentation of Mono and Polycrystalline Copper |

**Session MS-09.2** Wednesday Afternoon **Room: VA.5**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 278 | J.LLorca, J. Segurado | Simulation of Void Grow th in FCC Single Crystals and Polycrystals Using Discrete Dislocation Dynamics |
| 17:00 | 293 | H.M.Shodja, L. Pahlevani, S.M. Tabatabaei, A. Ostadhossein | An Atomistic Study of Ultra-Thin Ag Film Doped w ith Cu Atoms Within Cuboidal Domains |
| 17:20 | 364 | F.Wendler, B. Nestler | A phase-Field Model for Cellular Materials: Microstructure Evolution in Dry and Wet Foams |
| 17:40 | 379 | L.Delannay | Modelling of the Back-Stresses Induced by Next-Neighbour Grain Interaction in TWIP Steel |

**Session MS-09.3** Thursday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 386 | S.Nezamabadi, H. Zahrouni, J. Yvonnetr, M. Potier-Ferry | Multiscale Microbuckling Analysis of Elastoplastic Long Fiber Composites |
| 10:20 | 464 | F.Barbe, R. Quey, A. Musienko | Morphological Characterization of Stress and Strain Localization in 3D High Resolution Elastoplastic Polycrystals |
| 10:40 | 476 | S.Wurster, C. Motz, R. Pippan | Micrometer-sized Tungsten Specimen Testing Using Ion Slicing and Focused Ion Beam Techniques |
| 11:00 | 497 | K.Danas, V. Deshpande, N.A. Fleck | The Role of Surface Coatings in Size Effects: Discrete Dislocations vs.Strain-Gradient Crystal Plasticity |

**Session MS-09.4** Thursday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 515 | M.Rester, C. Motz, R. Pippan | The Evolution of the Microstructure During Indentation and It's Impact on the Indentation Size Effect |
| 12:00 | 559 | I.Ertürk, J. Bielen, J.A.W.V. Dommelen, M.G.D. Geers | A Strain Gradient Crystal Plasticity Based Creep Model for Electrostatically Loaded Free-Standing Thin Films |
| 12:20 | 580 | M.I.Idiart, O.L.- Pamies | An Exact Result for the Macroscopic Response Porous Neo-Hookean Solids |

**Session MS-09.5** Friday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 741 | U.Schmidt, P. Steinmann, S. Ricker, P. Greil, T. Fey, B.C. | Computational Homogenization of Heterogeneous Solids Obeying Coupled (Mechanical/Non-Mechanical) Material Behaviour in 3-D |
| 10:20 | 783 | A.Di Carlo, M. Paoluzziy, M.R. Crivellari | A Reappraisal of the Andersen-Parrinello-Rahman Method in a Multi-Scale Perspective |
| 10:40 | 860 | G.Cailletaud, S. Basseville, F. Curtit, Y.Guilhem, A.Musienko, | Numerical Simulations of Cracks in Polycrystalline Aggregates |
| 11:00 | 124 | G.Monnet | Multiscale Simulations: How Can Dislocation Dynamics Simulations Account for Atomic Simulation Results |

Mini-Symposium 10: **Mechanics of Cellular and Network-like (Bio)Materials**

Organized by: Patrick R. Onck, Michelle L. Oyen

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-10.1 | Monday | Afternoon | 15:00 | 16:20 | O2.1 |
| MS-10.2 | Monday | Afternoon | 16:40 | 18:00 | O2.1 |
| MS-10.3 | Tuesday | Afternoon | 16:40 | 18:20 | O2.1 |

**Session MS-10.1** Monday Afternoon **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 718 | M.Durand, G. Gurtner | Architecture of Stiff Elastic Networks |
| 15:20 | 436 | R.Jänicke, S. Diebels | Micromorphic Continua: Macro Level versus Two-Level FEM |
| 15:40 | 533 | L.Mezeix, Y. Ping, C. Bouvet, D. Poquillon | Fiber Networks Made of Entangled Cross-Linked Fibers. Effects of the Fiber Length and of Mixing Different Fibers on Compression Properties |
| 16:00 | 643 | S.Roux, J.-N. Périé, F. Hild | 3D Digital Image Correlation Technique Applied to in Situ Loaded Foam-Like Materials |

**Session MS-10.2** Monday Afternoon **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 645 | I.Duarte, F. Teixeira-Dias, A. Graça, V. Miranda | Deformation Mechanisms of Closed-Cell Aluminium Alloy Foams under Uniaxial Compression |
| 17:00 | 672 | N.Tuncer, E. Maire, L. Salvo, G. Arslan | Pore Structure-Compressive Property Relationship in Titanium Foams |
| 17:20 | 404 | T.K.Bader, K. Hofstetter, Ch. Hellmich, J. Eberhardsteiner | Homogenization and Localization in a Multiscale Microporomechanical Model for Wood Strength |
| 17:40 | 859 | I.Burgert, P. Fratzl | The Orientation of Cellulose Microfibrils in Cell Walls Enables Plants to Function as Sophisticated Mechanical Devices |

**Session MS-10.3** Tuesday Afternoon **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 527 | A.E.X.Brown, R.I. Litvinov, D.E. Discher, P.K. Purohit, J.W. Weisel | Fibrin Networks Sustain Large Extensions Due to Unfolding Proteins |
| 17:00 | 807 | G.Žagar, P.R. Onck, E.V. Giessen | Small Strain Mechanics of Cross-Linked Biopolymer Networks |
| 17:20 | 847 | L.Porcar, K. Weigandt, D. Pozzo | Relating The Structure and Mechanical Properties of Fibrin Clots With SANS/USANS |
| 17:40 | 624 | A.A.Spector, K.R. Schumacher, A.S.Popel,B.Anvari,W.E.Brownell | Computational Modeling of Tether Pulling Experiment to Probe Cellular Membranes |
| 18:00 | 894 | A. D'Amore, J.A. Stella, D.E. Schmidt,W.R.Wagner, M.S.Sacks | Micro Scale Based Mechanical Models for Electrospun Poly (Ester Urethane) Urea Scaffolds |

Mini-Symposium 12: **Modeling of Biological Materials**

Organized by: Gerhard Holzapfel, Markus Böl, S. Bordas

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-12.1 | Monday | Morning | 10:20 | 11:30 | O2.1 |
| MS-12.2 | Monday | Morning | 11:40 | 13:00 | O2.1 |
| MS-12.3 | Tuesday | Morning | 10:00 | 11:20 | O2.1 |
| MS-12.4 | Tuesday | Morning | 11:40 | 13:00 | O2.1 |
| MS-12.5 | Tuesday | Afternoon | 15:00 | 16:20 | O2.1 |

**Session MS-12.1** Monday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 491 | P.N.Watton, Y. Ventikos, G.A. Holzapfel | Constitutive Modelling of Arterial Tissue for Cerebral Aneurysmal Disease |
| 10:50 | 694 | M.Luca | Mathematical and Numerical Models for the Deformation of Cerebral Aneurysm Walls |
| 11:10 | 341 | D.Balzani, S. Brinkhues, G.A. Holzapfel | Comparative Study of Polyconvex Strain-Energy Functions used for the Modeling of Damage Hysteresis in Overstretched Arterial Walls |

**Session MS-12.2** Monday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 347 | A.E.Ehret, M. Itskov, G. Weinhold | A Viscoelastic Model for Soft Biological Tissues Including Collagen Fibre Distribution - Computational Aspects |
| 12:00 | 376 | Z.Guo | Fibre-Matrix Interaction in Soft Tissue |
| 12:20 | 420 | A. DiCarlo, P. Nardinocchi, T. Svatoň, L. Teresi | Modelling the Active Response of Excitable Tissues: a Fibred Caricature of the Left Ventricle |
| 12:40 | 958 | G.A.Holzapfel, R.W. Ogden | A New Structurally-Based Framew ork for the Material Characterization of Passive Myocardium |

**Session MS-12.3** Tuesday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 321 | S.Rausch, W.A. Wall | Parameter Identification for Modelling Alveolar Tissue on Different Scales |
| 10:20 | 786 | B.Notarberardino, P.G Young, L. Hao, I.G Turner | Image-Based Simulation for the Mechanical Characterization of Scaffolds |
| 10:40 | 777 | PMartins, EPeña, Begoña, MDoblaré, T.Mascarenhas, | Mechanical Characterization of Vaginal Tissue using a “Tissue Specific” Model |
| 11:00 | 465 | M.Böl, A.E. Ehret, M. Itskov | On a Constitutive Continuum Model for the Active Behaviour of Skeletal Muscles |

**Session MS-12.4** Tuesday Morning **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 257 | J.Stålhand, A. Klarbring, G.A. Holzapfel | A Unified Theory for the Three-Dimensional Mechanochemical Contraction of Smooth Muscles |
| 12:00 | 424 | M.Kalda, P. Peterson, M. Vendelin | Mechanoenergetics of Actomyosin Interaction Analyzed by a Cross-Bridge Model |
| 12:20 | 924 | M.P.L.Parente, R.M.N. Jorge, A. Fernandes, T. Mascarenhas | On the Use of Different Material Properties to Simulate The Biomechanical Behavior of the Pelvic Floor Muscles During Vaginal |
| 12:40 | 301 | S.Givli, H. Giang, K. Bhattacharya | Modeling Multi-Phase Biological Membranes: Instabilities Driven by Coupling Betw een Shape and Composition |

**Session MS-12.5** Tuesday Afternoon **Room: O2.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 600 | M.Galli, M.L. Oyen, A.J. Bushby | Mapping of Bone Poroelastic Properties by Nanoindentation |
| 15:20 | 343 | J.Botsis, M. Bergomi, J. Cugnoni, H.W.A. Wiskott, U.C. Belser | The Effects of the Fluid on the Mechanical Response of the Periodontal Ligament in Tension and Compression |
| 15:40 | 22 | M.Kroon | Strengthening and Remodelling of Collagenous Netw orks |
| 16:00 | 170 | R.Grytz, G. Meschke | Glaucoma and Computational Tw o-Scale Modeling and Remodeling of the Optic Nerve Head |

Mini-Symposium 13: **Modelling, Simulation and Testing of Composite and Adaptive Structures**

Organized by: Cristovão M. Soares, Jan Blachut

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-13.1 | Wednesday | Morning | 10:00 | 11:20 | VA.1 |
| MS-13.2 | Wednesday | Afternoon | 16:40 | 18:00 | VA.1 |
| MS-13.3 | Thursday | Morning | 10:00 | 11:20 | VA.1 |
| MS-13.4 | Thursday | Morning | 11:40 | 13:00 | VA.1 |

**Session MS-13.1** Wednesday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 28 | G.M.Kulikov, S.V. Plotnikova | Effective Geometrically Exact Piezoelectric Solid-Shell Element Based on 3D Analytical Integration |
| 10:20 | 33 | J.SMoita, A.L.Araújo, P.G.Martins, C.M.M. Soares, | Analysis of Active-Passive Plate Structures using a Simple and Efficient Finite Element Model |
| 10:40 | 50 | M.Johlitz, S. Diebels | Determination of Nano-Filled Polymers' Effective Mechanical Behaviour |
| 11:00 | 97 | J.V.A.Santos | Vibration Based Evaluation of Singlew alled Carbon Nanotubes Elastic Moduli |

**Session MS-13.2** Wednesday Afternoon **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 151 | A.P.Christoforou, A.S. Yigit | Dynamic Similitude of Impact Response in Composite Structures |
| 17:00 | 175 | J.A.W.V.Dommelen, M. Samimi, M.G.D. Geers | An Enriched Cohesive Zone Model for Delamination in Brittle Interfaces |
| 17:20 | 205 | C.M.Roque, A.J.Ferreira, A.M. Neves,C.M.M.Soares, R.M.Jorge | Transient Analysis of Composite and Funcionally Graded Plates By Radial Basis Functions in a Pseudospectral Framew ork |
| 17:40 | 242 | T.Jungblut, H. Atzrodt, T. Drögemüller, S. Herold | Transient Simulation of a Hybrid Test Rig for Broadband Loading |

**Session MS-13.3** Thursday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 358 | E.Magnucka-Blandzi | Strength and Vibrations of Sandw ich Beams w ith a Metal Foam Core in Three Non-Linear Hypotheses |
| 10:20 | 419 | P.Kere, M. Lyly | Reissner-Mindlin-Von KáRmá N Type Shell Facet Model for Buckling Simulation of Imperfect Cylindrical Composite Shells |
| 10:40 | 557 | M.Krommer, Y. Vetyukov | Optimal Strain-Type Sensors for Shell Structures: Sensing of Kinematic Quantities in the Vicinity of a Large Pre-Deformation and ... |
| 11:00 | 561 | G.Formica, W. Lacarbonara | Eshelby-Like Equivalent Continuum Modeling of Carbon Nanotube-Based Composites |

**Session MS-13.4** Thursday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 572 | A.L.Araújo, C.M.M. Soares, C.A.M. Soares, J. Herskovits | Inverse Estimation of Elastic, Viscoelastic and Piezoelectric Properties of Anisotropic Sandw ich Adaptive Structures |
| 12:00 | 610 | J.Blachut | Buckling of Shallow Spherical Caps from Composites |
| 12:20 | 938 | F.Moleiro, C.M.M. Soares, C.A.M. Soares, J.N. Reddy | Analysis of Multilayered Composite Plates by Layerw ise Mixed Least-Squares Finite Element Models |
| 12:40 | 977 | U.Gabbert, S. Ringw elski, C. Willberg, J.M. Perez | Piezoelectric Smart Structures to Control Vibration and Noise and Simultaneously Monitoring the Structural Health |

Mini-Symposium 14: **Multibody Dynamics**

Organized by: Paulo Flores, Javier Cuadrado

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-14.1 | Tuesday | Morning | 10:00 | 11:20 | VA.4 |
| MS-14.2 | Tuesday | Morning | 11:40 | 13:00 | VA.4 |
| MS-14.3 | Wednesday | Morning | 10:00 | 11:40 | VA.4 |
| MS-14.4 | Wednesday | Afternoon | 16:40 | 18:20 | VA.4 |

**Session MS-14.1** Tuesday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 252 | F.J.González, M. González, A. Mikkola | Combined Use of Matlab/Simulink and Multibody Simulation Softw are Based on C++ |
| 10:20 | 781 | J.Frączek, M. Wojtyra | Interdisciplinary Applications of Multibody Modeling and Simulations |
| 10:40 | 929 | D.S.Lopes, M.T. Silva, J. Ambrósio | A Mathematical Framew ork for Contact Detection betw een Quadric and Superquadric Surfaces |
| 11:00 | 311 | N.Bolotnik, M. Pivovarov, I. Zeidis, K. Zimmermann, S.F. Jatsun | Dynamics of Vibration Driven Systems |

**Session MS-14.2** Tuesday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 318 | P.Flores, R. Leine, C. Glocker | Application of the Nonsmooth Dynamics Formulation to Model and Analyze the Contact-Impact Events in Slider-Crank and Cam-Follow er |
| 12:00 | 923 | C.M.Pereira, J. Ambrósio, A.L. Ramalho | A Methodology for the Generation of Models for Multibody Chain Drives |
| 12:20 | 879 | R.Portal, L. Sousa, J. Dias, N. Santos | Contact Detection of Convex Superquadric Using Optimization Techniques w ith Graphical User Interface |
| 12:40 | 136 | I.I.Kosenko, E.B. Aleksandrov | Implementation of the Contensou–Erismann Tangent Forces Model in the Hertz Contact Problem |

**Session MS-14.3** Wednsday Morning **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 280 | S.Huber, P. Eberhard | Development of a High Speed Test Bench for Seat Belt Systems |
| 10:20 | 204 | M.Carvalho, J. Ambrósio | Optimal Identification of Multibody Vehicle Models for Crash Analysis |
| 10:40 | 633 | T.Shiiba, Y. Ueno, R. Kaw auchi, W. Murata | Tire-Suspension HILS System w ith Real-Time Multibody Analysis |
| 11:00 | 283 | P.Somoiag, V. NuŃu, C.-E. Moldoveanu | Theoretical and Experimental Researches Concerning Launching Devices Stability during Firing |
| 11:20 | 76 | X.Rui, B. Rong, G. Wang, F. Yang | Advances in Discrete Time Transfer Matrix Method for Controlled Multibody System |

**Session MS-14.4** Wednsday Afternoon **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 735 | J.P.Meijaard, W.B.J. Hakvoort | Modelling of Fluid-Conveying Flexible Pipes in Multibody Systems |
| 17:00 | 488 | .Linn, H. Lang | A Multibody System Type Modelling Approach to Geometrically Exact Rods using Geometric Finite Differences |
| 17:20 | 254 | A.A.Burov, A.D. Guerman, Sulikashvili | Dynamics of a Tetrahedral Constellation of Satellites-Gyrostats |
| 17:40 | 152 | K.S.Ivanov | Research of System Motion w ith Principle of Virtual Works |
| 18:00 | 89 | C.H.Liu | Locating Direct Kinematic Singular Positions of Parallel Manipulators |

Mini-Symposium 15: **Multiscale Modeling of Ductile and Brittle Damage in Solids: Recent Progresses and New Trends**

Organized by: Cristian Dascalu, D. Kondo

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-15.1 | Monday | Afternoon | 15:00 | 16:20 | VA.2 |
| MS-15.2 | Monday | Afternoon | 16:40 | 18:00 | VA.2 |
| MS-15.3 | Tuesday | Morning | 10:00 | 11:20 | VA.2 |
| MS-15.4 | Tuesday | Afternoon | 16:40 | 18:20 | VA.2 |

**Session MS-15.1** Monday Afternoon **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 107 | J.J.Marigo, C. Pideri | The Effective Behaviour of (Heterogeneous) Elastic Bodies Containing Defects Localized on a Surface |
| 15:20 | 126 | D.Halm, S. Dartois, C. Nadot-Martin, A. Dragon, A. Fanget | Micromechanical Modelling of Discrete Damage Evolution inHighly-Filled Particulate Microstructures. Numerical Illustration of Local Damage ... |
| 15:40 | 186 | J.-B.Leblond, M. Gologanu | Tow ard a Gurson-Type Model for Porous Ductile Materials Containing Arbitrary Ellipsoidal Voids |
| 16:00 | 258 | P.Bésuelle,S.Hall,N.Lenoir, J.Desrues,G.Viggiani,M.Bornert, | Investigation of Localized Deformation in Granular Materials By Means of X-ray CT and Grain Scale Digital Volume Correlation |

**Session MS-15.2** Monday Afternoon **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 344 | O.Lloberas Valls, D.J. Rixen, A. Simone, L.J. Sluys | A Domain Decomposition Approach to Multiscale Analysis for Structures w ith Softening Materials |
| 17:00 | 549 | M.Geers, E.Coenen, I.Özdemir, V.Kouznetsova, W.Brekelmans | Scale Transitions for Localized and Thermo-Mechanical Damage |
| 17:20 | 567 | L.Truskinovsky | Criticality in Martensites |
| 17:40 | 651 | I.Monetto | On Micromechanics-Based Nonlocal Modeling of Elastic Matrices Weakened by Voids |

**Session MS-15.3** Tuesday Morning **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 674 | D.Kondo, J. Lin, W. Chen, V. Monchiet, J-F. Shao | On Anisotropic Modelling of Poroplastic Behavior of Media Containing Saturated Microcracks |
| 10:20 | 880 | T.Pardoen, F.Scheyvaerts, C.Tekoglu, L.Lecarme, D.Fabrègue, P.Onck | Recent Progress in Micromechanics-Based Modeling of Void Coalescence |
| 10:40 | 697 | J.Mergheim | A Multiscale Approach for the Simulation of Ductile Fracture |
| 11:00 | 732 | F.Hild, H. Leclerc, J.-N. Périé, St. Roux | On the Identification of Damage Law s Using Full-Field Measurements |

**Session MS-15.4** Tuesday Afternoon **Room: VA.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 852 | C.Dascalu | A Two-Scale Model for Damage in Solids: Material Lengths and Size Effects |
| 17:00 | 695 | S.Ghosh, D. Paquet, V. Dakshinamurthy | Multi-Scale Characterization and Modeling of Ductile Failure in Cast Aluminum Alloys |
| 17:20 | 884 | L.Gorbatikh, S.V. Lomov, I. Verpoest | Mechanics of Intra-Hierarchical Interactions: New Concepts to Design Failure Resistant Materials |
| 17:40 | 887 | B.A.Schrefler, D.P. Boso, M.J. Lefik | Thermo-Mechanical Analysis of Non Linear Hierarchical Composites Using the Generalized Self Consistent Like (GSCL) Method |
| 18:00 | 947 | J.Faleskog, M. Stec | Onset of Macroscopic Ductile/Brittle Fracture Due to Debonding/Cracking of Brittle Particles |

Mini-Symposium 16: **Nonlinear Effects in Magneto- and Electro-Active Materials**

Organized by: Luis Dorfmann, Ray Ogden

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-16.1 | Thursday | Morning | 10:00 | 11:20 | O2.2 |
| MS-16.2 | Friday | Morning | 10:00 | 11:20 | O2.3 |

**Session MS-16.1** Thursday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 39 | D.K.Vu, P. Steinmann | Numerical Simulation of Nonlinear Electroelastostatics |
| 10:20 | 74 | R.Bustamante | A Simple Constitutive Inequality for Isotropic Magneto-Sensitive Elastomers |
| 10:40 | 156 | G.A.Maugin | On Modelling Electromagnetomechanical Interactions in Deformable Solids |
| 11:00 | 445 | R.W.Ogden | Aspects of the Propagation of Waves in a Finitely Deformed Magneto-Sensitive Elastic Solid |

**Session MS-16.2** Friday Morning **Room:O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 457 | M.Gei, A. Lew insteiny, G. Botton | On the Macroscopic Response of Electroactive Composites in Finite Elasticity |
| 10:20 | 661 | F.Vogel, P. Steinmanny | Modeling and Simulation of Magneto-Sensitive Elastomers |
| 10:40 | 765 | A.Dorfmann, R. Bustamante, R.W. Ogden | Nonlinear Electroelasticity: Finite Deformations, Incremental Equations and Stability |
| 11:00 | 862 | O.Hubert, R. Waberi, S. Lazreg, R. Billardon | Measurement and Tw o-Scales Modeling of the DE Effect |

Mini-Symposium 17: **Nonlinear Localization and Targeted Energy Transfer in Dynamical Systems and Engineering**

Organized by: Oleg Gendelman, Alexander Vakais, L. Bergman

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-17.1 | Monday | Afternoon | 15:00 | 16:20 | O2.2 |

**Session MS-17.1** Monday Afternoon **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 148 | T.Bar, O. Gendelman | Targeted Energy Transfer and Quasiperiodic Response Regimes in Van – Der – Pol Oscillator w ith Attached Nonlinear Energy Sink |
| 15:30 | 747 | R.Bellet, B. Cochelin, P. Herzog, P.-O. Mattei | An Experimental Set-up for the Study of Targeted Energy Transfer Phenomena in Acoustics |
| 16:00 | 877 | S.Bellizzi, B. Cochelin, C. Pinhede | Experimental Study of a Nonlinear Energy Sink based on a Clamped Clamped thin Blade |

Mini-Symposium 18: **Nonlinear Vibrations and Acoustics**

Organized by: Pedro Ribeiro, José Antunes

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-18.1 | Monday | Morning | 10:20 | 11:20 | O2.2 |
| MS-18.2 | Monday | Morning | 11:40 | 13:00 | O2.2 |
| MS-18.3 | Monday | Afternoon | 16:40 | 18:00 | O2.2 |
| MS-18.4 | Tuesday | Morning | 10:00 | 11:20 | O2.2 |
| MS-18.5 | Tuesday | Morning | 11:40 | 13:20 | O2.2 |

**Session MS-18.1** Monday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 146 | V.Schaedlich, N.S. Ferguson | Application of Differential Transformation to Nonlinear Transient Systems |
| 10:40 | 930 | B.Cochelin, C. Vergez, S. Karkar | MANLAB, an Interactive Series-Expansion Approach for Continuation - Focus on Periodic Solutions |
| 11:00 | 172 | J.Bensoam | A Reciprocal Variational Approach to the Two-Body Frictionless Contact Problem in Elastodynamics |

**Session MS-18.2** Monday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 431 | E.R.Ferreira, P. Boulanger | Two-dimensional Wave Motion in Deformed neo-Hookean Elastic Materials |
| 12:00 | 597 | S.Stoykov, P. Ribeiro | Vibrations of Rotating Timoshenko Beams by the p-version Finite Element Method |
| 12:20 | 639 | A.Mamandi, M.H. Kargarnovin | Nonlinear Coupled Vibrations Analysis of an Inclined Beam Under the Act of a Moving Force |
| 12:40 | 670 | Y.H.Cho, K. Lee, Y. Park, T. Koh | Geometric Effect of a Railway Contact Wire on Dynamic Interaction Between a Pantograph and an Overhead Line |

**Session MS-18.3** Monday Afternoon **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 773 | P.Ribeiro | The Effect of Bauschinger in the Large Amplitude Vibration of Beams |
| 17:00 | 854 | O.Gottlieb, A. Cohen, L. Ioffe | Self-Excited Vibration of a String on an Elastic Foundation Subject to a Nonlinear Feed-Forward Force |
| 17:20 | 469 | A.Lazarus, E.Langre, P.Manneville, P. | A Model for the Self-Oscillations of a Nanowire by Field Emission |
| 17:40 | 935 | V.Debut, X. Delaune, J. Antunes | Identification of Nonlinear Interaction Forces Acting on Continuous Systems Using Remote Measurements of the Vibratory Responses |

**Session MS-18.4** Tuesday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 298 | N.W.Mureithi, K. Huynh, A. Pham | A simple discrete model of the Forced Karman Wake |
| 10:20 | 121 | Z.Prado, P.B. Gonçalves, M.P. Païdoussis | Dynamic Instability of Imperfect Orthotropic Cylindrical Shells with Internal Flowing Fluid |
| 10:40 | 915 | A.A.Lakis, M.H. Toorani | Non-Linear Axial Flow-Induced Vibrations of Composite Cylindrical Shells |
| 11:00 | 936 | P.Piteau, J. Antunes, L. Borsoi | Experimental Validation of a Nonlinear Bulk-Flow Squeeze-Film Theoretical Model |

**Session MS-18.5** Tuesday Morning **Room: O2.2**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 286 | Y.Wang, S. Ziada | Self-Excited Vibration of Multi-Ring Disk Valves due to Fluid-Structure-Sound Interaction |
| 12:00 | 761 | G.J.Bennett, H. Rice | Nonlinear Vibro-Acoustic Behaviour in a Circular Membrane Oscillator |
| 12:20 | 134 | L.F.C.Vargas, J.M.G.S. Oliveira, F.J.P. Lau | Development of a Wind Turbine Noise Prediction Model |
| 12:40 | 920 | D.Tonon, G. Nakiboglu, S. Belfroid, J.F.H. Willems, A. | Whistling of Corrugated Pipes |
| 13:00 | 918 | B.Ricaud, P. Guillemain, J. Kergomard, F. Silva, C. Vergez | Bifurcations and Periodic Regimes in Woodwind Instruments |

Mini-Symposium 19: **Nonsmooth Dynamics**

Organized by: Remco Leine, Frederic Dubois

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-19.1 | Monday | Afternoon | 15:00 | 16:20 | MA |
| MS-19.2 | Monday | Afternoon | 16:40 | 18:00 | MA |

**Session MS-19.1** Monday Afternoon **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 652 | M.Möller, R.I. Leine, C. Glocker | An Efficient Approximation of Orthotropic Set-Valued Force Laws of Normal Cone Type |
| 15:20 | 466 | F.Kuss, F. Lebon | Error Estimation and Mesh Adaptation for Signorini-Coulomb Problems Using E-FEM |
| 15:40 | 143 | T.Schindler, R. Zander, K. Grundl, R. Missel, H. Ulbrich | Spatial MFR-FE Sheave with NURBS-Based Contact Description |
| 16:00 | 229 | F.Dubois, M. Jean | Frictional Contact Numerical Models for Numerous Collections of Rigid or Deformable Bodies |

**Session MS-19.2** Monday Afternoon **Room: MA**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 16 | R.I.Leine | Measurements of the Finite-Time Singularity of the Euler Disk |
| 17:00 | 94 | I.-C.Morărescu, B. Brogliato | Passivity-Based Control of Flexible-Joint Complementarity Lagrangian Systems |
| 17:20 | 757 | R.Perales, G. Saussine, F. Radjai | Optimization of the Tamping Process to Reduce Track Settlement |
| 17:40 | 779 | A.A.Kireenkov | About Self-Excited Oscillations in the Mechanical Systems with Combined Kinematics |

Mini-Symposium 20: **Optimization Methodologies and FE Numerical Simulation Applied to Metal Forming Industrial**

Organized by: R. A. Fontes Valente, A. A. Campos, J.-P. Ponthc

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-20.1 | Monday | Morning | 10:20 | 11:40 | O2.3 |
| MS-20.2 | Monday | Morning | 11:50 | 13:10 | O2.3 |
| MS-20.3 | Monday | Afternoon | 15:00 | 16:20 | O2.3 |

**Session MS-20.1** Monday Morning **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 322 | S.Mueller, S. Gall, W. Reimers | Extrusion of Hybrid Mg/Al Profiles and the Simulation Thereof |
| 10:40 | 423 | J.F.Caseiro, A.A. Campos | An Evolutionary-Inspired Optimization Algorithm Suitable for Solid Mechanics Engineering Inverse Problems |
| 11:00 | 430 | R. DeCarvalho, R.A.F. Valente, A. Andrade-Campos | Optimization Strategies for Non-Linear Material Parameters Identification in Metal Forming Problems |
| 11:20 | 468 | A.Andrade-Campos | Development of an Optimization Framework for Parameter Identification and Shape Optimization Problems in Engineering |

**Session MS-20.2** Monday Morning **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:50 | 475 | F.Tondini, P. Bosetti, S. Bruschi | Heat Transfer Coefficient Identification in Hot Stamping Processes |
| 12:10 | 666 | N.Grzegorz, N. Iwona | Shape Optimization of Airfoil's Cooling Passages |
| 12:30 | 681 | S.Germain, M. Scherer, P. Steinmann | On Inverse Form Finding for Hyperelasticity in Logarithmic Strain Space |
| 12:50 | 710 | M.P.Henriques, R.J.A. Sousa, R.A. F. Valente | Numerical Simulation of Wrinkling Deformation in Sheet Metal Forming |

**Session MS-20.3** Monday Afternoon **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 907 | T.M.Rocha, J.F. Meireles, J. Ambrósio, A.C. Pinho | Updating of Coarse Finite Elements Structural Models for Dynamic Analysis Identified by Complex Model Results |
| 15:20 | 971 | W.Zhuang, S. Wang, D. Balint, J. Lin | Micro-Mechanics Modelling for Forming Microtubular Components |
| 15:40 | 972 | J.Lin, D. Balint | Development and Determination of Unified Viscoplastic Constitutive Equations for Predicting Microstructure Evolution in Hot/Warm Forming |
| 16:00 | 973 | J.I.V.Sena, R.J.A. Sousa, F.J.P. Simões, R.A.F. Valente, J.J. | Finite Element Analysis of Incrementally Formed Parts |

Mini-Symposium 23: **Probabilistic Models for Measurements and Analyses in Mechanics of Materials**

Organized by: François Hild, K. Sobczyk

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-23.1 | Wednesday | Afternoon | 16:40 | 18:00 | O2.3 |
| MS-23.2 | Thursday | Morning | 11:40 | 12:40 | O2.3 |

**Session MS-23.1** Wednesday Afternoon **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 13 | T.T.Do, C. Soize, J.-V. Heck | Constitutive Equation for the Screw-Attachment in Plasterboards. Probabilistic Model and its Experimental Identification |
| 17:00 | 370 | A.Cecchi, K. Sab | In-Plane and Out-of-Plane Homogenization for Random 2D Lattices. Application to Brickwork Panels |
| 17:20 | 434 | .Rupil, N. Malésys, L. Vincent, F. Hild | Contribution of Mechanical Fatigue Experiments to the Improvement of a Probabilistic Model for the Formation of Crack Networks in Thermal |
| 17:40 | 437 | K.Sobczyk | Random Material Grain Microstructure and it's Effects on Cracking |

**Session MS-23.2** Thursday Morning **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 534 | V.Maurel, M. Harvey, L. Rémy | Full Field Analysis of Alumina Spallation Improved by Statistical Model |
| 12:00 | 721 | C.G.Nogueira, W.S. Venturini, A. Chateauneuf | Reliability Analysis of Reinforced Concrete Beams Taking into Account Stirrup and Dowel Action Contributions |
| 12:20 | 729 | D.Schwarzer, C. Proppe | Stochastic Description of the Mechanical Properties of Metal Foam Obtained by Mesoscopic Modeling |

Mini-Symposium 24: **Kinetics, Control and Vibrorheology – KINCONVIB 20(**

Organized by: Katica Hedrih

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-24.1 | Wednesday | Afternoon | 15:00 | 16:10 | O2.3 |
| MS-24.2 | Thursday | Morning | 10:00 | 11:10 | O2.3 |

**Session MS-24.1** Wednesday Afternoon **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 327 | I.I.Blekhman | On Vibrational Nano-Mechanics and Nano-Vibrorheology |
| 15:30 | 340 | T.Nestorović, U. Gabbert | Control Methods in Vibroacoustics – Active Noise and Vibration Suppression |
| 15:50 | 294 | K.R.S.Stevanović, J.D. Simonovic | Energy Transfer Throught the Double Circular Plate Nonconservative System Dynamics |

**Session MS-24.2** Thursday Morning **Room: O2.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 845 | J.C.Sartorelli, W. Lacarbonara | Bifurcations of a Parametrically Excited Double Pendulum |
| 10:30 | 315 | K.R.S.Stevanović, A.N. Hedrih | Transfer of Energy of Oscillations through the Double DNA Chain Helix |
| 10:50 | 348 | K.R.S.Stevanović | Free and Forced Vibrations of the Heavy Material Particle along Line w ith Friction: Direct and Inverse Task of the Theory of Vibrorhelogy |

Mini-Symposium 25: **Multiscale Modeling of Ductile and Brittle Damage in Solids: Recent Progresses and New Trends**

Organized by: Ajit Mal, Fabrizio Ricci

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-25.1 | Monday | Afternoon | 15:00 | 16:20 | VA.6 |
| MS-25.2 | Tuesday | Morning | 10:00 | 11:20 | VA.6 |
| MS-25.3 | Tuesday | Morning | 11:40 | 13:00 | VA.6 |
| MS-25.4 | Tuesday | Afternoon | 16:40 | 18:20 | VA.6 |

**Session MS-25.1** Monday Afternoon **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 77 | J.Engelbrecht, A. Ravasoo | Nondestructive Characterization of Functionally Graded Materials |
| 15:20 | 180 | S.Banerjee, A. Mal | Theoretical Modeling of Wave Propagation in Honeycomb Composites |
| 15:40 | 202 | K.Mauritsson | Dynamic Equations for a Fully Anisotropic, Piezoelectric Plate |
| 16:00 | 217 | A.Boström, M. Golub, O. Kvasha | Propagation of SH Waves in a Layered Plate with Interface Damage |

**Session MS-25.2** Tuesday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 270 | Z.Liu, Z. Wang, Z. Li | New Application of Non-Destructive Control—Smti on Concrete Structure |
| 10:20 | 297 | D.A.Sotiropoulos | Brewster Angles, Elastic Interfacial Waves, and the Effect of Pre-Stress |
| 10:40 | 345 | K.Mauritsson, A. Boström, P.D. Folkow | Dynamic Equations for an Anisotropic Elastic Plate using Power Series Expansions |
| 11:00 | 417 | H.Alonso, P. Ribeiro, P. Rocha | On-Line Damage Detection using a Dynamical Neural Network |

**Session MS-25.3** Tuesday Morning **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 455 | A.M.Samsonov, G.V. Dreiden, K.Khusnutdinova, I.V. Semenova | Bulk Nonlinear Waves in Bars: Splitting Leads to Fission |
| 12:00 | 474 | M.Mićunović, A. Grillo, I. Muha, G. Wittum | Two Dimensional Plastic Waves in Quasi Rate Independent Viscoplastic Materials |
| 12:20 | 522 | C.Meola, G.M. Carlomagno | Health Monitoring of Composites with Infrared Thermography |
| 12:40 | 536 | K.-M.Lee | A Simple Hybrid Method in Inverse Scattering Problem |

**Session MS-25.4** Tuesday Afternoon **Room: VA.6**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 892 | A.Bhaskar | Group Velocity as an Eigen-Sensitivity Problem |
| 17:00 | 895 | F.Ricci, E. Monaco, S. Banerjee, A. K. Mal | Vibration and Ultrasonic Methodologies for Damage Detection |
| 17:20 | 898 | F.Ricci, E. Monaco, S. Tancredi, D. Lucariello, L. Lecce, A.K. Mal | Scanning Laser Vibrometry and Finite Element Analysis of Lamb Waves for Damage Detection |
| 17:40 | 900 | C.Toscano, F. Lenzi | Impact Behavior of Damped Composite |
| 18:00 | 957 | I.Bovio, L. Lecce | Structural Health Monitoring by Means of Acoustics Sources and Laser Vibrometer System |

Mini-Symposium 26: **Stability and Nonlinear Behavior of Steel Structures**

Organized by: Dinar Camotim, Miroslav Skaloud

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-26.1 | Monday | Morning | 10:20 | 11:20 | VA.1 |
| MS-26.2 | Monday | Morning | 11:40 | 13:00 | VA.1 |
| MS-26.3 | Monday | Afternoon | 15:00 | 16:20 | VA.1 |
| MS-26.4 | Monday | Afternoon | 16:40 | 18:00 | VA.1 |
| MS-26.5 | Tuesday | Morning | 10:00 | 11:20 | VA.1 |
| MS-26.6 | Tuesday | Morning | 11:40 | 13:00 | VA.1 |
| MS-26.7 | Tuesday | Afternoon | 15:00 | 16:20 | VA.1 |
| MS-26.8 | Tuesday | Afternoon | 16:40 | 18:40 | VA.1 |
| MS-26.9 | Wednesday | Morning | 10:00 | 11:40 | VA.1 |

**Session MS-26.1** Monday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:20 | 627 | V. M.Zeinoddini, B. W. Schafer | Imperfection Models for Cold-Formed Steel From Rules of Thumb to Random Fields |
| 10:50 | 656 | M.Eisenberger, I. Shufrin | Buckling of Plates by the Multi Term Extended Kantorovich Method |

**Session MS-26.2** Monday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 329 | N.Silvestre, S. Ádány, D. Camotim, B.W. Schafer | Comparing the GBT and cFSM Matrix Procedures: from Different Roots to Similar Solutions |
| 12:00 | 922 | M.Škaloud, M. Zörnerová | The Post-Buckled Behaviour in Thin-Walled Construction and Its Partial "Erosion" Under Repeated Loading |

**Session MS-26.3** Monday Afternoon **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 604 | E.M.Batista | Stability of Steel Cold-Formed Columns and Beams: Integrating Effective Width and Direct Strength Methods for Design |
| 15:20 | 680 | J.Jönsson, M.J. Andreassen | Distortional Modes of Thin-Walled Beams |
| 15:40 | 794 | A.Andrade, P. Providência, D. Camotim | A Finite-Element Tool for the Lateral-Torsional Buckling Analysis of Tapered I-Beams |
| 16:00 | 762 | A.Taras, R. Greiner | Consistent Analytical Description of Buckling Curves for Lateral-Torsional Buckling of Steel Members |

**Session MS-26.4** Monday Afternoon **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 538 | M.A.Bradford, Y.-L. Pi | Elastic Postbuckling of Arches with Rotational End Restraints under Radial Loading |
| 17:00 | 763 | I.M.Cristutiu, Zs. Nagy | Imperfection Sensitivity Analysis of Pitched Roof Portal Frames |
| 17:20 | 744 | M.Ritto-Corrêa, R.M. Gonçalves, D.R.Z. Camotim | On the Application of the Geometrically Exact Beam Theory to Tapered Members |
| 17:40 | 665 | J.Jönsson | Diaphragm Action in Thin-Gauge Steel SKANDEK Roof Elements - Modeling and Experimental Investigation |

**Session MS-26.5** Tuesday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 954 | K.J.R.Rasmussen, B. Gilbert | Advanced Analysis and Design of Steel Storage Racks |
| 10:30 | 611 | L.Dunai | Stability Behavior of Non-Conventional Cold-Formed Steel Structures |

**Session MS-26.6** Tuesday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 433 | L.Gardner, F. Wang | Influence of Strain Hardening on the Behaviour and Design of Steel Structures |
| 12:00 | 484 | D.Camotim, P.B. Dinis | Mode Interaction in Cold-Formed Steel Lipped Channel Columns |

**Session MS-26.7** Tuesday Afternoon **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 564 | C.Basaglia, D. Camotim, N. Silvestre | Buckling Behaviour Of Laterally Restrained Pitched-Roof Steel Frames |
| 15:20 | 583 | R.G.Beale, M.H.R. Godley | Numerical Modelling of Full-Scale Tube and Fitting Scaffold Tests |
| 15:40 | 101 | P. L.Grognec, P. Casari, D. Choqueuse | Elastoplastic Collapse of Cylindrical Tubes under External Pressure |
| 16:00 | 734 | R.Jiao, S. Kyriakides | Wrinkling and Collapse of Tubes Due to Axial Cycling |

**Session MS-26.8** Tuesday Afternoon **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 883 | N.Lopes, P.V. Real, L.S. Silva | Stainless Steel Beam-Columns Interaction Curves With and Without Lateral Torsional Buckling |
| 17:00 | 644 | M.A.Serna, E. Bayo, J.R. Ibañez | Imperfections for Global Analysis of Frames: EC3 Draw backs and Energy Based Procedure |
| 17:20 | 916 | A.M.S.Freitas, F.T. Souza, M.S.R. Freitas | Non-linear Analysis of Drive-in Base Plates |
| 17:40 | 482 | P.B.Dinis, N. Silvestre, D. Camotim | On the Local and Global Post-Buckling Behaviour and Strength of Thin-Walled Angle Columns and Beams |
| 18:00 | 519 | R.R.Araujo, L.Silva, S.A.Andrade, P. Vellasco, J. | Structural Evaluation of Steel Columns w ith Reinforced Bar Stays |
| 18:20 | 614 | H.Degée, C. Dufoing, D. Jehin | Geometrically Non Linear Dynamic Behavior of Steel Storage Racks Subjected to Earthquake Loading |

**Session MS-26.9** Wednesday Morning **Room: VA.1**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 392 | M.Škaloud, J. Melcher, J. Kala, Z. Kala | The Possibility of Making Web Tolerances Less Stringent as a Prerequisite for Achieving Economic-Fabrication Steel Girders |
| 10:20 | 753 | D.Lane, G. Heijden | Stability Index of Elastic Rods w ith Discontinuous Bending Stiffness: Applications to Carbon Nanotubes |
| 10:40 | 582 | G.Queiroz, R. J. Pimenta, L. A. C. Mata | Partial Resistance Composite Connections In Unbraced Frames |
| 11:00 | 513 | G.Queiroz, S.S.R. Pereira, L.A.C. Mata, M. Carmo | Influence of Friction at the Slab/Steel-Profile Interface and of the Flexibility of Shear Connectors in Steel-Concrete Composite Beams |
| 11:20 | 622 | F. N. Leitão, J. Silva, P. Vellasco, S. Andrade, L. Lima | Fatigue Analysis of Composite Highw ay Bridges |

Mini-Symposium 27: **Stability of Solids Under Finite Deformation**

Organized by: Michel Destrade, G. Saccomandi

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-27.1 | Wednesday | Morning | 10:00 | 11:40 | VA.3 |
| MS-27.2 | Wednesday | Afternoon | 16:40 | 18:20 | VA.3 |

**Session MS-27.1** Wednesday Morning **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 10:00 | 32 | C.D.Coman, M. Destrade | Euler-Type Buckling Instabilities in the Pure Bending of a Thick Rubber Block |
| 10:20 | 86 | O.Lopez-Pamies | Onset of Cavitation in Hyperelastic Solids under Arbitrary Loading Conditions |
| 10:40 | 106 | H-H.Dai, F.F. Wang | Asymptotic Bifurcation Solutions for Compressions of a Clamped 2D Nonlinearly Elastic Rectangle: Transition Region and Barrelling to a |
| 11:00 | 394 | S.Neukirch, B. Audoly, N. Clauvelin | Twisting an Open Knotted Elastic Rod |
| 11:20 | 407 | Z.Liu, R. Quintanilla | Analyticity of Solutions in Type III Thermoelastic Plates |

**Session MS-27.2** Wednesday Afternoon **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:40 | 634 | A.Gupta | On the Role of Dislocation Distribution in the Propagation of Elastic-Plastic Waves |
| 17:00 | 746 | S.Roccabianca, D. Bigoni, M. Gei | Bifurcations of Non-Linear Elastic Multilayers under Finite Flexure |
| 17:20 | 940 | J.Dervaux, M.B. Amar, Y. Couder | Shape Instability In Growing Tumors |
| 17:40 | 945 | S.P.Pearce, Y.B. Fu | Characterisation and Stability of Localised Bulging/Necking in Inflated Membrane Tubes |
| 18:00 | 974 | K.Bertoldi, T. Mullin, M.C. Boyce | The use of Instabilities to Create Materials with Tunable Properties |

Mini-Symposium 28: **Progress In Thermomechanics of Materials**

Organized by: André Chrysochoos, Daniel Rittel

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-28.1 | Wednesday | Afternoon | 15:00 | 16:20 | VA.3 |

**Session MS-28.1** Wednesday Afternoon **Room: VA.3**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 350 | R.Caborgan, J.-M. Muracciole, B. Wattrisse, A. Chrysochoos | Energy Analysis for the Cyclic Behavior of Rubber-Like Materials using Thermo-Mechanical Full-Field Measurements |
| 15:20 | 352 | E.Charkaluk, L. Bodelot, R. Seghir | Shakedow n, Dissipation and Fatigue of Metals |
| 15:40 | 353 | P.Schlosser, H. Louche, D. Favier, L. Orgéas | Estimation of Strain and Heat Source Fields during Localised Superelastic Tensile Tests on NiTi Sheet Samples |
| 16:00 | 452 | A.Yevtushenko, M. Kuciej | Initiating of the Thermal Cracking in Friction Elements during Braking |

Mini-Symposium 29: **Vehicle Dynamics**

Organized by: Werner Schiehlen, Georg Rill

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| MS-29.1 | Tuesday | Afternoon | 15:00 | 16:30 | VA.4 |
| MS-29.2 | Tuesday | Afternoon | 16:50 | 18:30 | VA.4 |
| MS-29.3 | Wednesday | Afternoon | 15:00 | 16:20 | VA.4 |

**Session MS-29.1** Tuesday Afternoon **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 224 | B.Esterl, H. Gehrke, T. Butz, C. Chucholowski | Real-Time Simulation of Vehicle-Trailer Structures with Complex Coupling Devices |
| 15:30 | 395 | J.Edelmann, M. Plöchl, P. Lugner | MBS-Model and Dynamics of a Tilting Vehicle |
| 15:50 | 276 | G.Rill, W. Hirschberg | Dynamic Tire Forces with Smooth Transition to Stand-Still |
| 16:10 | 828 | F.Braghin, F. Cheli, S. Melzi, E. Sabbioni, F. Mancosu, M. | Development of a Cyber Tire to Enhance Performances of Active Control Systems |

**Session MS-29.2** Tuesday Afternoon **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 16:50 | 285 | W.Schiehlen, P. Eberhard, C. Henninger, T. Kurz | Symbolical Equations of Motion for Vehicle System Analysis and Synthesis |
| 17:10 | 906 | M.D.Dourado, J.F. Meireles, J. Ambrósio, A.C. Pinho | Development of Reduced Finite Elements Models of Structures for Application to Road Vehicles |
| 17:30 | 207 | R.Pastorino, M.A. Naya, J.A. Pérez, J. Cuadrado | X-by-Wire Vehicle Prototype: a Steer-by-Wire System With Geared PM Coreless Motors |
| 17:50 | 976 | J.Ezzine, F. Tedesco | Mixed Sensitivity H1control Approach for Regulation of Active Suspension on Half-Car Model with Seat-Passengers |
| 18:10 | 449 | K.Flídrová, D. Lenoir, N. Vasseur, L. Jézéquel | Reduction of Finite Element Models for Explicit Car Crash Simulations |

**Session MS-29.3** Wednesday Afternoon **Room: VA.4**

| Time | ID | Authors | Title |
|---|---|---|---|
| 15:00 | 949 | J.Pombo, H.Desprets, R.Verardi, J. | Wheel Wear Evolution and its Influence on the Dynamic Behaviour Of Railway Vehicles |
| 15:20 | 248 | S.Herkt, K. Dreßler, R. Pinnau | Model Reduction of Nonlinear Problems in Structural Mechanics |
| 15:40 | 827 | F.Cheli, S. Melzi | Rheological Model of a Side Buffer for Freight Trains |
| 16:00 | 905 | J.Ambrósio, F. Rauter, J. Pombo, M. Pereira | Flexible Pantograph Model for the Contact Dynamics of the Pantograph-Catenary Interaction Problem |

General Session: **Poster Session**

| Session | Date | | From | To | Room |
|---|---|---|---|---|---|
| Poster | Wednesday | Morning | 11:40 | 13:00 | Hall |

**Poster Session** Wednesday Morning **Hall**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 11 | T.Y. Chen, T.S. Chang | Design of a Micro-Machining System Using Cutting Edge Optimization Methods |
| 11:40 | 80 | C.A.J. Miranda, E. Maneschy, P. Rodrigues | Structural Integrity Assessment of Angra 1 Steam Generator Tubing Using Deterministic and Statistic Methods – Past and Present |
| 11:40 | 96 | V.A. Naletova, K. Zimmermann, I. Zeidis, V.A. Turkov, S.Kalmykov | Dynamics of a Prolate Magnetizable Elastic Body in a Cylindrical Channel |
| 11:40 | 225 | K. Grysa, A. Maciag, M. Sokala | Wave Functions in Solving Direct and Inverse Problems of Elastokinetics |
| 11:40 | 275 | R.J. Guimarães, J.A. Pacheco, J.F. Meireles, J.F. Fonseca | A Bending Cell for Small Batches |
| 11:40 | 281 | B.J. Dias, J.F. Meireles, L. Matias, R. Alve | Cylindrical Parts Circularity Affectation by the Grinding Machine Dynamic Behaviour |
| 11:40 | 372 | N. Trišović, T. Maneski, A. Sedmak, D. Šumarac | Modification of the Dynamics Characteristics in the Structural Dynamic Reanalysis |
| 11:40 | 374 | D. Balkan, Z. Mecitoğlu | Dynamic Response of Sandwich Plates with Viscoelastic Core under Blast Load |
| 11:40 | 402 | A. Morenko, M. Smithy | Remarks on the Interaction of a Plane Acoustic Wave with Single and Triple Layered Spherical Shells |
| 11:40 | 442 | A. Zerarka, B. Nine | The Particle Swarm Optimization Approach Applied to the Von-Kàrmàn Equation |
| 11:40 | 444 | H. Sanzi, G. Elvira, M. Kloster, E. Asta, M. Zalazar | Thermal Cycle Evaluation of a GMAW Welding on Pipeline Steel Plates Computational and Analytical Solutions Compared with Experimental ... |
| 11:40 | 489 | K.Komori | Proposal and use of a Void Model for the Evaluation of Ductile Fracture in Sheet Metal Forming |
| 11:40 | 509 | Y. Natanzon, Z. Łodziana | Quantum Mechanical Calculations of Elastic Properties of Doped Tetragonal Yttria-Stabilized Zirconium Dioxide |
| 11:40 | 555 | N. Morita, D. Iwashita | Analysis of Shear-Type Borehole Shifts Induced during Lost Circulations using the Dual Boundary Method |
| 11:40 | 603 | V.I. Monine, S.M. Iglesias, J.T. Assis | Computer Simulation Applied to Analysis of Superficial Stress Gradients |
| 11:40 | 664 | S.Kruch | Multi-Scale Analysis of Structures Reinforced with Metal Matrix Composites |
| 11:40 | 677 | E.K. Bezoyan | About one Theory of Anisotropic Nonhomogeneous Viscoelastic Bodies |
| 11:40 | 700 | S. Santos, A.M.R.A. Vieira, M.P.L. Parente, R.M. Natal Jorge | Experimental Study of Grinding Titanium Alloy Ti-6AL-4V |
| 11:40 | 726 | H. Herrmann | Mesoscopic Simulation of Growth of Microcracks |
| 11:40 | 758 | S. Tavares, V. Richter-Trummer, P. Moreira, P. de Castro | Fatigue behavior of lightweight integral panels |
| 11:40 | 798 | H. Kalhori, A. Shooshtari | Numerical and Experimental Investigation for Dimension Effect on Mechanical Behavior of a Metallic Curved Micro-Cantilever Beam |

**Poster Session** Wednesday Morning **Hall**

| Time | ID | Authors | Title |
|---|---|---|---|
| 11:40 | 801 | E. Bernardini, N. Cavalagli, F. Cluni, V. Gusella | Homogenization in Generalized Plane State for the Masonry Strength Domain Evaluation |
| 11:40 | 804 | Cs. Asszonyi, T. Fülöp, P. Ván | Objectivity and continuum mechanics |
| 11:40 | 806 | N. Cavalagli, F. Cluni, V. Gusella | Interface Analysis of Periodic and non-Periodic Masonry |
| 11:40 | 808 | M.I.Baritz, L.D. Cotoros, L. Cristea | Biomechanical Analysis of Human Locomotion During Changing the Gait Level |
| 11:40 | 833 | A.R. Tóth, K. Bagi | DEM Analysis of a Structural Solution for Lunar Base |
| 11:40 | 944 | M. Posch, P. Řeřicha | Fatigue Live of the Quasi-Brittle Material of the Mortar with Opening Cracks During Loading |
| 11:40 | 962 | T.S.Igic, D.T. Turnic, N.Z. Markovic | Design of a System for Control, Monitoring, Regulation and Data Acquisition (CMRA) on Civil Engineering Objects, Constructions and ... |
| 11:40 | 965 | M.H. Pol, A. Bidi, S. Azizy, A.V. Hoseini | Investigation of the Dependency of the Stress Concentration Factor on Plate Length in Notched Plates under Bending |