ESMC 2018 BOLOGNA

UNIVERSITÀ DI TRENTO

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

ESMC 2018

10th European Solid Mechanics Conference

EUROPEAN MECHANICS SOCIETY

TECHNICAL PROGRAM

EUROPEAN MECHANICS SOCIETY

ESMC 2018 - Monday, July 2, 2018

8:30 Registration

9:30 Auditorium - Opening cerimony

10:00 Europa Auditorium - PLENARY LECTURE
Katia Bertoldi (Harvard University)
Chair: John Willis

10:45 Coffee Break

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
11:15	**7-6** 7-6 - Structural Analysis of Real Historic Buildings	**2-1** 2-1 - Cell Mechanics	**1-6** 1-6 - Multiscale Modelling of Polycrystalline Materials	**1-7** 1-7 - Shape Memory Alloys and Related Materials - Modelling, Numerical Algorithms and Applications		**5-7** 5-7 - Advances in Analytical and Discretization Methods for Discontinuities and Singularities	**GS-7** General Session: Mechanics of Materials	**1-5** 1-5 - Micro and Nano Mechanics Systems	**3-2** 3-2 - Homogenization Strategies for Multiphase and Active Materials	**7-4** 7-4 - Instabilities in Structural Mechanics and Fluid-Structure Interactions	**1-3** 1-3 - Architected Materials	**YRA** Young Researcher Awards Finalists	**5-1** 5-1 - Advanced Strategies for Computational Modelling of Material Failure	**GS-6** General Session: Experimental Mechanics	**9-2** 9-2 - Reaction Diffusion Problems in Mechanics	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-14** 3-14 - Symposium Honouring Professor Norman Fleck on the Occasion of his 60th Birthday	**3-13** 3-13 - Fatigue and Tribology	**GS-1** General Session: Biomechanics	**3-7** 3-7 - Nonlinear Elasticity

13:15 Lunch

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
14:45	**7-6** 7-6 - Structural Analysis of Real Historic Buildings	**2-1** 2-1 - Cell Mechanics	**1-6** 1-6 - Multiscale Modelling of Polycrystalline Materials	**1-7** 1-7 - Shape Memory Alloys and Related Materials - Modelling, Numerical Algorithms and Applications		**5-7** 5-7 - Advances in Analytical and Discretization Methods for Discontinuities and Singularities	**GS-7** General Session: Mechanics of Materials	**1-5** 1-5 - Micro and Nano Mechanics Systems	**3-2** 3-2 - Homogenization Strategies for Multiphase and Active Materials	**7-4** 7-4 - Instabilities in Structural Mechanics and Fluid-Structure Interactions	**1-3** 1-3 - Architected Materials	**YRA** Young Researcher Awards Finalists	**5-1** 5-1 - Advanced Strategies for Computational Modelling of Material Failure	**GS-6** General Session: Experimental Mechanics	**7-1** 7-1 - Beam, Plate and Shell Finite Elements based on non-Classical Theories of Structures	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-14** 3-14 - Symposium Honouring Professor Norman Fleck on the Occasion of his 60th Birthday	**3-13** 3-13 - Fatigue and Tribology	**GS-1** General Session: Biomechanics	**3-7** 3-7 - Nonlinear Elasticity

16:45 Coffee Break

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
17:15	**7-6** 7-6 - Structural Analysis of Real Historic Buildings	**2-1** 2-1 - Cell Mechanics	**1-6** 1-6 - Multiscale Modelling of Polycrystalline Materials			**5-7** 5-7 - Advances in Analytical and Discretization Methods for Discontinuities and Singularities	**GS-7** General Session: Mechanics of Materials	**1-5** 1-5 - Micro and Nano Mechanics Systems	**3-2** 3-2 - Homogenization Strategies for Multiphase and Active Materials	**7-4** 7-4 - Instabilities in Structural Mechanics and Fluid-Structure Interactions	**1-3** 1-3 - Architected Materials	**5-6** 5-6 - Mechanics in Energy Harvesting and Storage	**5-1** 5-1 - Advanced Strategies for Computational Modelling of Material Failure	**4-1** 4-1 - Experimental Micromechanics and Nanomechanics	**7-1** 7-1 - Beam, Plate and Shell Finite Elements based on non-Classical Theories of Structures	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-14** 3-14 - Symposium Honouring Professor Norman Fleck on the Occasion of his 60th Birthday	**3-13** 3-13 - Fatigue and Tribology	**6-1** 6-1 - Nonlinear Dynamics in Mechanical and Structural Systems	**3-7** 3-7 - Nonlinear Elasticity

19:15 Welcome Reception

GROUND FLOOR | FIRST FLOOR | SECOND FLOOR

EUROPEAN MECHANICS SOCIETY

ESMC 2018 - Tuesday, July 7, 2018

8:30 Registration

9:00

Europa Auditorium - PLENARY LECTURE
Ray Ogden (Glasgow University)
Chair: Luis Dorfmann

9:45 Coffee Break

10:15

Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
7-6 7-6 - Structural Analysis of Real Historic Buildings	**2-5** 2-5 - Cardiovascular Biomechanics and Mechanobiology: from Basics to Clinical Applications	**1-6** 1-6 - Multiscale Modelling of Polycrystalline Materials	**5-3** 5-3 - Geometry and Discretization		**3-8** 3-8 - Recent Advances in Damage Mechanics	**9-4** 9-4 - Modeling of Additive Manufacturing Processes	**1-5** 1-5 - Micro and Nano Mechanics Systems	**3-2** 3-2 - Homogenization Strategies for Multiphase and Active Materials	**7-3** 7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials		**5-6** 5-6 - Mechanics in Energy Harvesting and Storage	**2-2** 2-2 - Mechanics and Shape Control of Biological Membranes and Thin Structures	**4-1** 4-1 - Experimental Micromechanics and Nanomechanics	**6-3** 6-3 - Dynamic Failure and Phase Transition in Structured Media	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-14** 3-14 - Symposium Honouring Professor Norman Fleck on the Occasion of his 60th Birthday	**3-3** 3-3 - Material Instabilities	**1-9** 1-9 - Modelling of Fracture in Hard and Soft Materials	**3-7** 3-7 - Nonlinear Elasticity

12:15

Lunch

(Springer Lunch & Learn: Publishing Scientific Research, Nathalie Jacobs - Room Indaco)*

13:45

Europa Auditorium - PLENARY LECTURE
Odd Sture Hopperstad (Norwegian University of Science and Technology)
Chair: Claudia Comi

14:30

Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
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16:30 Coffee Break

17:00

Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
7-6 7-6 - Structural Analysis of Real Historic Buildings	**2-5** 2-5 - Cardiovascular Biomechanics and Mechanobiology: from Basics to Clinical Applications	**1-9** 1-9 - Modelling of Fracture in Hard and Soft Materials	**GS-4** General Session: Continuum Mechanics	**5-4** 5-4 - Models and Numerical Methods for Coupled Problems in Mechanics	**3-8** 3-8 - Recent Advances in Damage Mechanics	**GS-9** General Session: Structural Mechanics	**1-4** 1-4 - Mechanics of Textile Composite Reinforcements and Fibrous Materials	**1-10** 1-10 - Graphene and Related Materials and Systems	**7-3** 7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials	**1-3** 1-3 - Architected Materials	**5-6** 5-6 - Mechanics in Energy Harvesting and Storage	**9-4** 9-4 - Modeling of Additive Manufacturing Processes	**4-1** 4-1 - Experimental Micromechanics and Nanomechanics	**8-3** 8-3 - Inelastic Processes in Heterogeneous Materials: Formulations, Uncertainty Quantification, Computations	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-14** 3-14 - Symposium Honouring Professor Norman Fleck on the Occasion of his 60th Birthday	**3-3** 3-3 - Material Instabilities	**6-1** 6-1 - Nonlinear Dynamics in Mechanical and Structural Systems	**3-7** 3-7 - Nonlinear Elasticity

19:00 GROUND FLOOR | FIRST FLOOR | SECOND FLOOR

* The workshop will take place during the lunch break. Please, ask the reception desk for registration.

EUROPEAN MECHANICS SOCIETY

ESMC 2018 - Wednesday, July 4, 2018

8:30 — Registration

9:00 — Europa Auditorium - PLENARY LECTURE
Zhigang Suo (Harvard University)
Chair: Viggo Tvergaard

9:45 — Coffee Break

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
10:15	**3-9** 3-9 - The Physics of Dense Granular Media	**2-4** 2-4- Mechanics of Soft Biological Tissues	**1-9** 1-9 - Modelling of Fracture in Hard and Soft Materials			**6-2** 6-2 - Elastic Metamaterials	**3-11** 3-11 - Generalized Continua	**1-4** 1-4 - Mechanics of Textile Composite Reinforcements and Fibrous Materials	**1-10** 1-10 - Graphene and Related Materials and Systems	**7-3** 7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials	**8-2** 8-2 - Computational Homogenization of Nonlinear Composites	**GS-3** General Session: Computational Mechanics	**GS-5** General Session: Dynamics, Waves, and Metamaterials	**9-4** 9-4 - Modeling of Additive Manufacturing Processes	**GS-2** General Session: Composite Materials and Homogenization Theory	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-14** 3-14 - Symposium Honouring Professor Norman Fleck on the Occasion of his 60th Birthday	**3-3** 3-3 - Material Instabilities	**6-1** 6-1 - Nonlinear Dynamics in Mechanical and Structural Systems	**3-7** 3-7 - Nonlinear Elasticity
12:15																				

12:15 — Euromech Fellows

13:00 — Lunch

14:30 — Room Cobalto: **2-3** 2-3 - Mechanics of Silk: from Molecules to Orb-webs

16:30 — Coffee Break

17:00 — Room Cobalto: **2-3** 2-3 - Mechanics of Silk: from Molecules to Orb-webs

Social Program / Free afternoon

19:00 — GROUND FLOOR | FIRST FLOOR | SECOND FLOOR

EUROPEAN MECHANICS SOCIETY

ESMC 2018 - Thursday, July 5, 2018

8:30 Registration

9:00

Europa Auditorium - GENERAL LECTURE
Bernhard Schrefler (Università di Padova)
Chair: Gerhard A. Holzapfel

9:45 Coffee Break

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
10:15	**3-9** 3-9 - The Physics of Dense Granular Media	**2-4** 2-4- Mechanics of Soft Biological Tissues	**1-9** 1-9 - Modelling of Fracture in Hard and Soft Materials			**6-2** 6-2 - Elastic Metamaterials	**3-11** 3-11 - Generalized Continua	**8-2** 8-2 - Computational Homogenization of Nonlinear Composites	**3-6** 3-6 - Multi-Physics of Solids at Fracture	**1-8** 1-8 - Topology Optimization for Additive Manufacturing	**9-3** 9-3 - Variational Methods in Constitutive Modelling for Multi-physics Problems	**GS-3** General Session: Computational Mechanics	**2-3** 2-3 - Mechanics of Silk: from Molecules to Orb-webs	**GS-5** General Session: Dynamics, Waves, and Metamaterials	**2-6** 2-6 - Mechanics of Mineralised Tissues and Biomaterials	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-1** 3-1 - Contact Mechanics	**3-10** 3-10 - Mechanics of Generalized Continua with Cohesion-adhesion Interactions and their Applications to Size-dependent Thin Structures	**6-1** 6-1 - Nonlinear Dynamics in Mechanical and Structural Systems	**3-7** 3-7 - Nonlinear Elasticity

12:15 Lunch & Poster Session

13:45

Europa Auditorium - PLENARY LECTURE
Thomas Pardoen (Ecole Polytechnique de Louvain)
Chair: John Hutchinson

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
14:30	**3-9** 3-9 - The Physics of Dense Granular Media	**2-4** 2-4- Mechanics of Soft Biological Tissues	**1-9** 1-9 - Modelling of Fracture in Hard and Soft Materials			**6-2** 6-2 - Elastic Metamaterials	**1-1** 1-1 - Mechanics of Composite Materials	**8-2** 8-2 - Computational Homogenization of Nonlinear Composites	**3-6** 3-6 - Multi-Physics of Solids at Fracture	**1-8** 1-8 - Topology Optimization for Additive Manufacturing	**9-3** 9-3 - Variational Methods in Constitutive Modelling for Multi-physics Problems	**GS-3** General Session: Computational Mechanics		**GS-5** General Session: Dynamics, Waves, and Metamaterials		**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-1** 3-1 - Contact Mechanics	**3-10** 3-10 - Mechanics of Generalized Continua with Cohesion-adhesion Interactions and their Applications to Size-dependent Thin Structures	**6-1** 6-1 - Nonlinear Dynamics in Mechanical and Structural Systems	**3-7** 3-7 - Nonlinear Elasticity

16:30 Coffee Break

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
17:00	**3-9** 3-9 - The Physics of Dense Granular Media	**2-4** 2-4- Mechanics of Soft Biological Tissues	**7-2** 7-2 - Steel Structures: Mechanics, Simulation and Testing			**6-2** 6-2 - Elastic Metamaterials	**1-1** 1-1 - Mechanics of Composite Materials	**8-2** 8-2 - Computational Homogenization of Nonlinear Composites	**3-6** 3-6 - Multi-Physics of Solids at Fracture	**1-8** 1-8 - Topology Optimization for Additive Manufacturing	**9-1** 9-1 - Multi-scale Solids and Homogenization	**5-5** 5-5 - Non-local Models for Damage and Fracture	**7-5** 7-5 - New Concepts for Advanced Materials and Structures	**6-4** 6-4 - Nonlinear waves in solids	**1-2** 1-2 - The Virtual Concrete Lab: Modelling the Behaviour of Concrete from Fresh State to Long Term Durability	**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-1** 3-1 - Contact Mechanics	**3-10** 3-10 - Mechanics of Generalized Continua with Cohesion-adhesion Interactions and their Applications to Size-dependent Thin Structures	**6-1** 6-1 - Nonlinear Dynamics in Mechanical and Structural Systems	

19:00

20:30 Conference Dinner

GROUND FLOOR | FIRST FLOOR | SECOND FLOOR

EUROPEAN MECHANICS SOCIETY

ESMC 2018 - Friday, July 6, 2018

8:30 Registration

9:00 Europa Auditorium - Solid Mechanics Prize
Erik van der Giessen (University of Groningen)
Chair: Alan Needleman

9:45 Coffee Break

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
10:15	**3-9** 3-9 - The Physics of Dense Granular Media	**2-4** 2-4- Mechanics of Soft Biological Tissues	**7-2** 7-2 - Steel Structures: Mechanics, Simulation and Testing			**3-4** 3-4 - Mechanics of Granular Media: Experiments, Theory and Modelling	**5-2** 5-2 - Cohesive-zone Modelling – Advances and Challenges	**8-1** 8-1 - Micromechanics-based Nonlocal Continuum Models	**3-6** 3-6 - Multi-Physics of Solids at Fracture	**4-2** 4-2 - In-situ Mechanical Characterization of Materials	**9-1** 9-1 - Multi-scale Solids and Homogenization	**5-5** 5-5 - Non-local Models for Damage and Fracture	**3-11** 3-11 - Generalized Continua	**6-4** 6-4 - Nonlinear waves in solids		**3-5** 3-5- Mechanics and Physics of Solids and Structures	**3-1** 3-1 - Contact Mechanics	**3-10** 3-10 - Mechanics of Generalized Continua with Cohesion-adhesion Interactions and their Applications to Size-dependent Thin Structures		**7-5** 7-5 - New Concepts for Advanced Materials and Structures

12:15 Lunch

	Room Cobalto	Room Ciano A	Room Ciano B	Room Gialla A	Room Gialla B	Room Bianca A	Room Bianca B	Room Europa A	Room Europa B	Room Europa C	Room Indaco	Room Rossa A	Room Rossa B	Room Verde A	Room Verde B	Room Italia	Room Europa Auditorium	Room Celeste	Room Magenta A	Room Magenta B
13:45		**2-4** 2-4- Mechanics of Soft Biological Tissues	**7-2** 7-2 - Steel Structures: Mechanics, Simulation and Testing			**3-4** 3-4 - Mechanics of Granular Media: Experiments, Theory and Modelling	**5-2** 5-2 - Cohesive-zone Modelling – Advances and Challenges	**8-1** 8-1 - Micromechanics-based Nonlocal Continuum Models	**3-6** 3-6 - Multi-Physics of Solids at Fracture	**4-2** 4-2 - In-situ Mechanical Characterization of Materials	**9-1** 9-1 - Multi-scale Solids and Homogenization	**5-5** 5-5 - Non-local Models for Damage and Fracture	**3-11** 3-11 - Generalized Continua			**3-5** 3-5- Mechanics and Physics of Solids and Structures				**7-5** 7-5 - New Concepts for Advanced Materials and Structures

15:45 Closing Cerimony

GROUND FLOOR | FIRST FLOOR | SECOND FLOOR

Monday, July 2, 2018

	Plenary Lecture
DAY:	**Monday**
ROOM:	**Europa Auditorium**
TIME	**10.00-10.45**
CHAIR:	**John Willis**
	Nonlinear Architected materials
	Katia Bertoldi

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Monday**	
ROOM:	**Italia**	
TIME	**11.15-13.15**	
CHAIR:	**F. Dal Corso, S. Neukirch**	
	535	*Kirigami Actuators*
		Authors: Marcelo Dias , Michael McCarron , Daniel Rayneau-Kirk , Paul Hanakata , David Campbell , Harold Park , Douglas Holmes
		Presenting Author: Marcelo Dias
	319	*Structural boundary design and additive manufacturing for polymer structures*
		Authors: Grigor Nika , Sylvain Durbeq , Andrei Constantines
		Presenting Author: Grigor Nika
	1308	*Shaping compliant origami via snap-through instabilities*
		Authors: Anne Meeussen , Martin van Hecke
		Presenting Author: Anne Meeussen
	576	*Plastic fluctuations in a knitted fabric*
		Authors: Samuel Poincloux , Mokhtar Adda-Bedia , Frédéric Lechenault
		Presenting Author: Samuel Poincloux
	1258	*Nonlinear Bending of Dielectric Composite Beam Reinforced with Graphene Platelets (GPLs)*
		Authors: Chuang Feng , Yu Wang , Zhan Zhao , Jie Yang
		Presenting Author: Chuang Feng
	1112	*Instabilities and Pattern Formations in Soft Microstructured Materials*
		Authors: Stephan Rudykh , Viacheslav Slesarenko
		Presenting Author: Stephan Rudykh

MS:	**5-7 - Advances in Analytical and Discretization Methods for Discontinuities and Singularities**	
DAY:	**Monday**	
ROOM:	**Bianca A**	
TIME	**11.15-13.15**	
CHAIR:	**Benvenuti, Tralli**	
KEYNOTE	**276**	*The Virtual Element Method with curved edges*
		Authors: Lourenco Beirao da Ve , Alessandro Russo , Giuseppe Vacca
		Presenting Author: Lourenco Beirao da Veiga
INVITED	**240**	*hp Virtual Element Method and a posteriori error analysis*
		Authors: Lourenço Beirão da Ve , Lorenzo Mascotto , Gianmarco Manzini
		Presenting Author: Lorenzo Mascotto
INVITED	**312**	*Virtual Element Methods for Linear Elasticity Problems*
		Authors: Edoardo Artioli , Stefano de Miranda , Carlo Lovadina , Luca Patruno
		Presenting Author: Carlo Lovadina
INVITED	**371**	*Efficient quadrature rules over polyhedral meshes with applications to Discontinuous Galerkin methods*
		Authors: Paola F. Antonietti , Paul Houston , Giorgio Pennesi
		Presenting Author: Paola F. Antonietti

General Session:	**Mechanics of Materials**	
DAY:	**Monday**	
ROOM:	**Bianca B**	
TIME	**11.15-13.15**	
CHAIR:	**Tristan Seidlhofer, Adam Boyce**	
	355	*Material Model for Pulp Fibres and Parameter Evaluation Method* Authors: Tristan Seidlhofer, Ulrich Hirn, Manfred H. Ulz **Presenting Author: Tristan Seidlhofer**
	538	*Elasto-plastic indentation of a stiff layer on a foam substrate* Authors: Adam Boyce, Harika Tankasala, Vikram Deshpande, Norman Fleck **Presenting Author: Adam Boyce**
	545	*Stress-dependence of generalized stacking fault energies* Authors: Predrag Andric, Binglun Yin, William Curtin **Presenting Author: Predrag Andric**
	590	*Investigation of aging effects in die casting alloys* Authors: Maria Angeles Martinez Pag, Stefan Hartmann **Presenting Author: Maria Angeles Martinez Page**
	1227	*Irrecoverable deformation of metals coupled with DC* Authors: Andrew Rusinko, Varga Peter **Presenting Author: Rusinko Andrew**
	1316	*Identification of constitutive equations, deformation and damage micro-mechanisms of Ti-6Al-4V for aircraft engine fan blades* Authors: Miguel Ruiz de Sottc, Véronique Doquet, Patrice Longère, Jessica Papasidero **Presenting Author: Miguel Ruiz de Sotto**

MS:	**3-7 - Nonlinear Elasticity**	
DAY:	**Monday**	
ROOM:	**Magenta B**	
TIME	**11.15-13.15**	
CHAIR:	**Angela Mihai, Luis Dorfmann**	
KEYNOTE	**426**	*Effect of liquid crystal alignment on the mechanical behaviour of liquid crystal elastomers* Authors: Yongzhong Huo, Yang Zhang, Lihua Jin, Chen Xuan **Presenting Author: Yongzhong Huo**
	680	*A non-ellipticity result, or the impossible taming of the logarithmic strain measure* Authors: Patrizio Neff, Ionel-Dumitr Ghiba, Robert J. Martin **Presenting Author: Patrizio Neff**
	638	*The number of independent invariants for n symmetric second order tensors* Authors: MHBM Shariff **Presenting Author: MHBM Shariff**
	262	*Instability of loops under flexure and twist of Euler's elastica* Authors: Andrej Il'ichev **Presenting Author: Andrej Il'ichev**
	167	*An implicit constitutive relation to model the elastic and inelastic behaviour of rock* Authors: Roger Bustamante **Presenting Author: Roger Bustamante**

General Session:	**Biomechanics**	
DAY:	**Monday**	
ROOM:	**Magenta A**	
TIME	**11.15-13.15**	
CHAIR:	**Gabriele Greco, Sarah Johnson**	
	226	*Resonant frequencies of mouse chromosomes trough mechanical oscillatory model of mitotic spindle*
	Authors:	Andjelka Hedrih, Katica (Stevanovic) Hedrih
	Presenting Author:	**Andjelka Hedrih**
	354	*The adhesion of hairy octopus suckers.*
	Authors:	Gabriele Greco, Francesca Tramacere, Barbara Mazzolai, Nicola Pugno
	Presenting Author:	**Gabriele Greco**
	784	*In silico simulation of growth and remodeling in biological tissues*
	Authors:	M. M. A. Peyroteo, J. Belinha, J.A.C.F. Leite Moreira, R. N. Jorge
	Presenting Author:	**M. M. A. Peyroteo**
	914	*Modelling of cross-linking dynamics in actomyosin networks*
	Authors:	João Pedro Ferreira, Marco Parente, Renato Natal
	Presenting Author:	**João Pedro Ferreira**
	1081	*Biomechanical Characterization of Thrombus Material through Experimental and Computational Analysis*
	Authors:	Sarah Johnson, Michael Gilvarry, Patrick McGarry, Peter McHugh
	Presenting Author:	**Sarah Johnson**
	1352	*Patient-specific isogeometric analysis of thoracic aortic aneurysm*
	Authors:	Margherita Coda, Elena Faggiano, Michele Conti, Simone Morganti, Santi Trimarchi, Ferdinando Auricchio, Robert Leroy Taylor, Alessandro Reali
	Presenting Author:	**Margherita Coda**

MS:	**3-13 - Fatigue and Tribology**	
DAY:	**Monday**	
ROOM:	**Celeste**	
TIME	**11.15-13.15**	
CHAIR:	**Michele Ciavarella, Enrico Bertocchi**	
	300	*Fretting fatigue without fretting?*
	Authors:	Michele Ciavarella, Pietro D'antuono, Antonio Papangelo
	Presenting Author:	**Michele Ciavarella**
	1019	*Effect out-of-phase loadings on the life of the Al7050 and CA6NM: experimental and numerical analysis*
	Authors:	T. Doca, T. Gailliegue, J.A. Araújo
	Presenting Author:	**Thiago Doca**
	608	*The effect of normal load frequency on fretting fatigue behavior of Al7075-T6*
	Authors:	Farshad Abbasi, Gholamhoss Majzoobi
	Presenting Author:	Farshad Abbasi
	1010	*Slip amplitude assessment at the indenting edge of an interference-fitted shaft-hub connection subject to torsion*
	Authors:	Enrico Bertocchi, Sara Mantovani, Michele Ciavarella
	Presenting Author:	**Enrico Bertocchi**
	289	*The effect of secondary orientation on low cycle fatigue for nickel-based single crystal superalloy*
	Authors:	Zhiwu He, Wenhui Qiu, Hui-Ji Shi
	Presenting Author:	**Zhiwu He**

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**											
DAY:	**Monday**											
ROOM:	**Europa Auditorium**											
TIME	**11.15-13.15**											
CHAIR:	**John Willis, Martin Idiart**											
	541	*Rate-dependence of Necking Localization Based on a One-dimensional Model*										
		Authors:	Basile	Audoly	, John	Hutchinson						
		Presenting Author:	**John Hutchinson**									
	274	*Propagating bulges in cylindrical balloons: analysis based on a one-dimensional model.*										
		Authors:	Claire	Lestringant	, Basile	Audoly						
		Presenting Author:	**Claire Lestringant**									
	575	*There is nothing like a bending problem: on nature-inspired magnetically-actuated slender structures*										
		Authors:	Patrick	Onck								
		Presenting Author:	**Patrick Onck**									
	214	*Indentation Analyses for Plant Cells to Determine the Cell Wall Properties*										
		Authors:	Viggo	Tvergaard	, Alan	Needleman						
		Presenting Author:	**Viggo Tvergaard**									
	419	*Fretting wear of a friction grip used in an oil and gas well application*										
		Authors:	Alfred R.	Akisanya	, Jinde	Hao	, Brent	Harrald	, Richard D.	Neilson		
		Presenting Author:	**Alfred Akisanya**									
	375	*Creep crack growth by grain boundary cavitation under cyclic loading*										
		Authors:	Alan	Needleman	, Jian-Feng	Wen	, Ankit	Srivastava	, Amine	Benzerga	, Shan-Tung	Tu
		Presenting Author:	**Alan Needleman**									

MS:	**1-6 - Multiscale Modelling of Polycrystalline Materials**											
DAY:	**Monday**											
ROOM:	**Ciano B**											
TIME	**11:15-13.15**											
CHAIR:	**Curtin, Beyerlein**											
KEYNOTE	**979**	*Interface affected plasticity of Mg-layered composites*										
		Authors:	Irene	Beyerlein	, Milan	Ardeljan	, Manish	Jain	, Siddhartha	Pathak	, Marko	Knezevic
		Presenting Author:	**IRENE BEYERLEIN**									
INVITED	**728**	*Mechanisms and Modeling of Ductility in Mg Alloys*										
		Authors:	William	Curtin	, Zhaoxuan	Wu	, Rasool	Ahmad	, Binglun	Yin		
		Presenting Author:	**William Curtin**									
INVITED	**1472**	*Microstructural Predictions of Dynamic Thermo-Mechanical Intergranular and Transgranular Fracture Modes in H.C.P. Alloys*										
		Authors:	S.	Ziaei	, I.	Mohamed	, M.A.	Zikry				
		Presenting Author:	**M.A. Zikry**									
	790	*Grain boundary sliding during creep of polycrystalline austenitic 316H stainless steel: the role of crystal plasticity*										
		Authors:	Markian	Petkov	, Elsiddig	Elmukashfi	, Edmund	Tarleton	, Alan	Cocks		
		Presenting Author:	**Markian Petkov**									
	1066	*A SPH modelling approach for physics and solid mechanics of engineering materials*										
		Authors:	anxin	ma	, Damien	Tourret	, Javier	Llorca	, Javier	Segurado		
		Presenting Author:	**Anxin Ma**									

MS:	**1-5 - Micro and Nanomechanics Systems**													
DAY:	**Monday**													
ROOM:	**Europa A**													
TIME:	**11.15-13.15**													
CHAIR:	**Attilio Frangi, Vittorio Ferrari**													
KEYNOTE	**543**	*The properties and deformation mechanisms of direct-spun carbon nanotube mats*												
		Authors:	Joe	Stallard	, Wei	Tan	, Fiona	Smail	, Thurid	Gspann	, Adam	Boies	, Norman	Fleck
		Presenting Author:	**Joe Stallard**											
	391	*Exploiting nonlinear vibrations for material characterization at the nano-scale*												
		Authors:	Farbod	Alijani	, Banafsheh	Sajadi	, Dejan	Davidovikj	, Peter	Steeneken				
		Presenting Author:	**Farbod Alijani**											
	1022	*Terahertz vibration and resonance phenomena in proteins*												
		Authors:	Gianfranco	Piana	, Giuseppe	Lacidogna	, Alberto	Carpinteri						
		Presenting Author:	**Gianfranco Piana**											
	533	*Robustness of attractors in tapping mode atomic force microscopy*												
		Authors:	Pierpaolo	Belardinelli	, Abhilash	Chandrashek	, Urs	Staufer	, Farbod	Alijani				
		Presenting Author:	**Abhilash Chandrashekar**											

MS:	**3-2 - Homogenization Strategies for Multiphase and Active Materials**													
DAY:	**Monday**													
ROOM:	**Europa B**													
TIME:	**11:15-13:15**													
CHAIR:	**Kostas Danas, Pedro Ponte Castaneda**													
	836	*A new class of incremental variational estimates for the macroscopic response of elasto-viscoplastic composites*												
		Authors:	Michalis	Agoras										
		Presenting Author:	**Michalis Agoras**											
	303	*Homogenization in nonlinear viscoelasticity: estimates based on the second moments and fluctuations of the fields*												
		Authors:	Mohamed El Seck		, Mihail	Garajeu	, Renaud	Masson						
		Presenting Author:	**Renaud Masson**											
	818	*Micromechanical modelling of packing and size effects in particulate elasto-plastic composites*												
		Authors:	Michał	Majewski	, Katarzyna	Kowalczyk-G	, Paweł	Hołobut	, Michał	Kursa				
		Presenting Author:	**Michał Majewski**											
	177	*A methodology for the estimation of the effective yield function of isotropic composites with applications to TRIP steels*												
		Authors:	Ioanna	Papadioti	, Kostas	Danas	, Nikolaos	Aravas						
		Presenting Author:	**Ioanna Papadioti**											
	1311	*Heterogeneous microstructure informed computational unit cell modelling of the plastic behaviour of dual-phase steels*												
		Authors:	Karim	Ismail	, Laurence	Brassart	, Astrid	Perlade	, Pascal J.	Jacques	, Thomas	Pardoen		
		Presenting Author:	**Karim Ismail**											
	1445	*A finite strain incremental-secant homogenization model for elasto-plastic composites*												
		Authors:	Marieme Im	El Ghezal	, Ling	Wu	, Issam	Doghri	, Ludovic	Noels				
		Presenting Author:	**Issam Doghri**											

MS:	**1-3 - Architected Materials**	
DAY:	**Monday**	
ROOM:	**Indaco**	
TIME	**11.15-13.15**	
CHAIR:	**Raney, Bertoldi**	
	1173	*Stiffness, strength and fracture toughness of architected materials with spinodal topologies*
	Authors:	Meng-Ting Hsieh , Yunfei Zhang , Jens Bauer , Lorenzo Valdevit
	Presenting Author:	**Lorenzo Valdevit**
	1505	*Three-dimensional Architected Composite Materials for Supersonic Impact and Dynamic Applications*
	Authors:	Carlos Portela
	Presenting Author:	**Carlo Portela**
	1159	*Ultralight, Highly Compressible Nanoscale Lattice-Truss Materials*
	Authors:	Andrew Gross , Katia Bertoldi
	Presenting Author:	**Andrew Gross**
	358	*Enhancing the Ductility and Hardening Behaviour of Fibre Composites using 3D Architectures*
	Authors:	Lucas Meza , Jim Schormans , Joris Remmers , Vikram Deshpande
	Presenting Author:	**Lucas R Meza**
	698	*Multicore-Shell Printing of Stiff and Tough Lattice Structures*
	Authors:	Jochen Mueller , Jordan Raney , Kristina Shea , Jennifer Lewis
	Presenting Author:	**Jochen Mueller**
	606	*Thermally actuated hierarchical lattices*
	Authors:	Damiano Pasini , Amr Farag , Hang Xu
	Presenting Author:	**Damiano Pasini**

MS:	**7-6 - Structual Analysis of Real Historic Buildings**	
DAY:	**Monday**	
ROOM:	**Cobalto**	
TIME	**11.15-13.15**	
CHAIR:	**Maurizio Angelillo, Santiago Huerta**	
KEYNOTE	**410**	*The structural engineer's view of ancient buildings*
	Authors:	Jacques Heyman ,
	Presenting Author:	**Jacques Heyman**
	318	*The multiple neighboring solutions for the minimum thickness of a masonry arch*
	Authors:	Nicos Makris , Haris Alexakis
	Presenting Author:	**Nicos Makris**
	421	*A continuum approach to describe the collapse mechanisms of masonry walls*
	Authors:	Gianmarco de Felice , Marialaura Malena , Giovanni Tomaselli
	Presenting Author:	**Gianmarco de Felice**
	251	*Energy based fracture identification in masonry structures: the case study of the church of "Pietà dei Turchini"*
	Authors:	Antonino Iannuzzo
	Presenting Author:	**Antonino Iannuzzo**
	485	*Structural behaviour of the flying buttresses in the cathedral of Mallorca*
	Authors:	Paula Fuentes
	Presenting Author:	**Paula Fuentes**

	MS:	**7-4 - Instabilities in Structural Mechanics and Fluid-Structure Interactions**
	DAY:	**Monday**
	ROOM:	**Europa C**
	TIME	**11.15-13.15**
	CHAIR:	**Arnaud Lazarus, Claudio Mannini**
INVITED	**613**	*For Better or For Worse: Self-tuning of the buckling strength of active bilayer shells*
		Authors: Dong Yan, Anna Lee, Matteo Pezzulla, Francisco López Jiménez, Joel Marthelot, Douglas P. Holmes, Pedro M. Reis
		Presenting Author: Dong Yan
	696	*Stability of cylindrical magnets chains*
		Authors: Corinne Rouby, Jean Boisson, Olivier Doaré, Joosung Lee, Giuseppe Pennisi
		Presenting Author: Jean Boisson
	296	*Nonlinear Behaviour, Bifurcations and Instabilities of a Neo-Hookean Pyramidal Truss*
		Authors: Filipe Fonseca, Paulo Goncalves
		Presenting Author: Paulo Goncalves
	1058	*Controlling the Elastic Postbuckling Response of Axially Compressed Thin-walled Cylindrical Shells*
		Authors: Jun Guo, Rigoberto Burgueno
		Presenting Author: Rigoberto Burgueno
	379	*Kinematic Structural Stability of The Beck Column*
		Authors: Lerbet Jean, Challamel Noel, Nicot François, Darve Félix
		Presenting Author: Jean Lerbet
	1065	*Analysis of Thermally-Induced Vibration of Heated Cantilever Beam in Fluid Stream for Lab-on-Chip Applications*
		Authors: Hamid Naderan
		Presenting Author: Hamid Naderan
	742	*Dissipation induced energy harvesting and its effect on flow-induced instabilities of piezoelectric energy harvesters*
		Authors: Olivier Doaré, Sébastien Michelin, Yifan Xia
		Presenting Author: Olivier Doaré

	MS:	**5-1 - Advanced Strategies for Computational Modelling of Material Failure**
	DAY:	**Monday**
	ROOM:	**Rossa B**
	TIME	**11.15-13.15**
	CHAIR:	**Angelo Simone, Günther Meschke**
KEYNOTE	**660**	*Design of new materials and structures by Bayesian machine learning and genetic optimization*
		Authors: Miguel Bessa
		Presenting Author: Miguel Bessa
	180	*Stress-based gradient-enhanced damage models with vanishing length scale*
		Authors: Bram Vandoren, Angelo Simone
		Presenting Author: Bram Vandoren
	1466	*A displacement-based gradient-enhanced damage model with transient length scale*
		Authors: Jafar Amani, Rudy Geelen, Antonio Rodriguez-Fe, Bram Vandoren, John E. Dolbow, Angelo Simone
		Presenting Author: Angelo Simone
	1264	*Non-local damage to crack transition framework for ductile failure based on a cohesive band model*
		Authors: Van Dung Nguyen, Julien Leclerc, Ling Wu, Ludovic Noels
		Presenting Author: Van Dung Nguyen
	1561	*The open source implementation of an incredibly robust staggered phase-field solution for modeling brittle fracture in Abaqus both in 2D and 3D*
		Authors: Gergely Molnár, Anthony Gravouil
		Presenting Author: Gergeley Molnar

MS:	**2-1 - Cell Mechanics**	
DAY:	**Monday**	
ROOM:	**Ciano A**	
TIME	**11.15-13.15**	
CHAIR:	**Patrick McGarry, Paolo Bisegna**	
	988	*Mechanobiology of Invasive Cancer Cells*
INVITED		Authors: Rakefet Rozen , Martha B. Alvarez-Elizo , Yulia Merkher , Daphne Weihs
		Presenting Author: Daphne Weihs
	854	*Directing the morphology of myoblasts modulates their fusion*
INVITED		Authors: Celine Bruyere , Sylvain Gabriele
		Presenting Author: Celine Bruyere
	1114	*Investigation on the mechanisms of cell hardening under uniaxial stretching*
INVITED		Authors: Sabato Fusco , Valeria Panzetta , Paolo Netti
		Presenting Author: Sabato Fusco
	517	*Miniaturized elastomer-based pneumatic actuator to measure mechanical properties of cell monolayers*
INVITED		Authors: Francesca Sorba , Alexandre Poulin , Barthélemy Dunan , Michel Despont , Herbert Shea , Cristina Martin-Olmo
		Presenting Author: Francesca Sorba
	887	*Migration and differentiation of osteoclast precursors under gradient fluid shear stress*
INVITED		Authors: Bo Huo , Yan Gao , Chongyang Ye
		Presenting Author: Bo Huo
	456	*Substrate adhesive area confinement is a key determinant of cell velocity in collective migration*
INVITED		Authors: Danahe Mohammed , Guillaume Charras , Marie Versaevel , Joséphine Lantoine , Laura Alaimo , Céline Bruyère , Marine Luciano , Karine Glinel ,
		Presenting Author: Danahe Mohammed
	729	*A mechano-biological model of the coupling between cellular contractility and VEGFR2/VEGF interactions.*
INVITED		Authors: Valentina Damioli , Alberto Salvadori , Gian Paolo Beretta , Cosetta Ravelli , Stefania Mitola , Mattia Serpelloni
		Presenting Author: Valentina Damioli

General Session:	**Experimental Mechanics**	
DAY:	**Monday**	
ROOM:	**Verde A**	
TIME	**11.15-13.15**	
CHAIR:	**Gaëtane Plassart, Christian Düreth**	
	525	*Effect of crosslinking and long-term storage on thiol-epoxy shape memory polymers by means of Depth Sensing Indentation methods*
		Authors: Silvia De la Flor , Alberto Belmonte , Vicente Lorenzo , Xavier Fernández-Francos
		Presenting Author: Silvia De la Flor
	583	*Damage mechanisms in a TATB-based PBX*
		Authors: Gaëtane Plassart , Didier Picart , Michel Gratton , Arnaud Frachon , Michaël Caliez
		Presenting Author: Gaëtane Plassart
	842	*High strain rate behaviour of ice silicate mixtures*
		Authors: Shruti Pandey , Ishan Sharma , P. Venkitanarayanan
		Presenting Author: Shruti Pandey
	1003	*Experimental and numerical characterisation of the fracture behaviour of novel specimens for superimposed out-of-plane stresses*
		Authors: Christian Düreth , Mike Thieme , Holger Böhm , Maik Gude
		Presenting Author: Christian Düreth
	1294	*Experimental approach for assessment of materials under extremely high hydrostatic pressures*
		Authors: Semion Zhutovsky , Yuri Karinski , David Yankelevsky , Vladimir Feldgun
		Presenting Author: Yuri Karinski

General Session: Young Researcher Awards Finalists
DAY: Monday
ROOM: Rossa A
TIME 11.15-13.15
CHAIR: Davide Bigoni, Alberto Corigliano

163 *Nonlinear deformation of multilayer electroactive tubes under different constraints*
Authors: Eliana Bortot
Presenting Author: Eliana Bortot

172 *Cell expansion and failure during solid-state nanofoaming*
Authors: Frederik Van Loock , Vikram Desphande , Norman Fleck
Presenting Author: Frederik Van Loock

295 *A Thermodynamically Consistent Model for Magnetic Hysterisis applied to Metallic Magnets and Particle-filled Magnetorheological Elastomers*
Authors: Dipayan Mukherjee , Kostas Danas
Presenting Author: Dipayan Mukherjee

607 *How does disorder make fracture surfaces rough in brittle materials?*
Authors: Mathias Lebihain , Jean-Baptiste Leblond , Laurent Ponson , Michel Bornert
Presenting Author: Mathias Lebihain

888 *Efficient two-scale simulations of engineering structures using the Hashin-Shtrikman type Finite Element method (HSFE)*
Authors: Fabiola Cavaliere , Stephan Wulfinghoff , Stefanie Reese
Presenting Author: Fabiola Cavaliere

MS: 9-2 - Reaction Diffusion Problem in Mechanics
DAY: Monday
ROOM: Verde B
TIME 11.15-13.15
CHAIR: Davì, Paggi, Ruiz-Bauer

1281 *An overview of reaction-diffusion systems for material degradation and mechanics with focus on their computational complexity*
Authors: Marco Paggi
Presenting Author: Marco Paggi

829 *Finite element modelling of crystallization and its effects on the mechanical performance of bio-erodible polymeric scaffolds (BPS)*
Authors: Rosa Shine , Peter E McHugh , William Ronan
Presenting Author: Rosa Shine

221 *Analysis of augmented mixed finite element methods for coupled stress-diffusion problems*
Authors: Gabriel Gatica , Bryan Gomez , Ricardo Ruiz Baier
Presenting Author: Ricardo Ruiz Baier

1168 *UV degradation of Poly(lactic acid)*
Authors: Shawn Chester
Presenting Author: Shawn Chester

217 *A Reaction-Diffusion-Drift Equation in the Continuum Physics of Scintillating Crystals*
Authors: Fabrizio Davì
Presenting Author: Fabrizio Davì

1259 *Existence results for a physiological electromechanical model of cardiac activity*
Authors: Mostafa Bendahmane , Fatima Mroué , Mazen Saad , Raafat Talhouk
Presenting Author: Fatima Mroué

MS:	**1-7 - Shape Memory Alloys and Related Materials - Modelling, Numerical Algorithms and Applications**	
DAY:	**Monday**	
ROOM:	**Gialla A**	
TIME	**11.15-13.15**	
CHAIR:	**Stefanie Reese, Frank Wendler**	
KEYNOTE	**1126**	*Behavior of NiTi Shape Memory Alloy under Complex Loading: Numerical Simulation and Comparison with XRD Tomography Experiments* Authors: Petr Sedlak, Miroslav Frost, Petr Šittner, Luděk Heller **Presenting Author: Petr Sedlak**
INVITED	**1517**	*On the phase-field modelling of displacive transitions* Authors: Alphonse Finel, Juba Hamma, Oguz Umut Salmaı, Yann Le Bouar **Presenting Author: Alphonse Finel**
INVITED	**952**	*Numerical Simulations of Localized Martensitic Transformation in Superelastic NiTi Structures* Authors: Miroslav Frost, Petr Sedlák, Petr Šittner **Presenting Author: Miroslav Frost**
	628	*Micromorphic model for modelling Lüders-like bands in shape memory alloys* Authors: Mohsen Rezaee Hajid, Stanislaw Stupkiewicz **Presenting Author: Stanislaw Stupkiewicz**

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Monday**	
ROOM:	**Italia**	
TIME	**14.45-16.45**	
CHAIR:	**B. Roman, N. Vandenberghe**	
	283	*Out-of-plane instability of mixed-mode I+III fatigue and brittle fracture*
		Authors: Tristan Cambonie , Alain Karma , Véronique Lazarus
		Presenting Author: Véronique Lazarus
	255	*Friction is Fracture: a new paradigm for the onset of frictional motion*
		Authors: Jay Fineberg , Ilya Svetlizky , Elsa Bayart
		Presenting Author: Jay Fineberg
	563	*Parameter window for assisted crack tip flipping: Studied by the shear extended Gurson model*
		Authors: Kim Lau Nielsen , Christian Lot Felter
		Presenting Author: Kim Lau Nielsen
	1326	*Linear (in)stability analysis prediction of the fault angle in damage models*
		Authors: Vincent Démery , Véronique Dansereau , Estelle Berthier , Jérôme Weiss , Laurent Ponson
		Presenting Author: Vincent Démery
	600	*On the stability of straight crack paths in brittle solids under mode I loading*
		Authors: Mohamad AbdulMajid , Laurent Ponson
		Presenting Author: Mohamad AbdulMajid
	871	*Triangular fracture patterns in polymeric materials reveal how crack fronts fragment under mixed mode loading*
		Authors: Vasudevan Aditya , Leblond Jean-Baptiste , Ponson Laurent
		Presenting Author: Laurent Ponson

MS:	**5-7 - Advances in Analytical and Discretization Methods for Discontinuities and Singularities**	
DAY:	**Monday**	
ROOM:	**Bianca A**	
TIME	**14.45-16.45**	
CHAIR:	**Benvenuti, Tralli**	
	851	*Virtual Elements for the Navier-Stokes problem on polygonal meshes*
INVITED		Authors: Lourenco Beirao da Ve , Carlo Lovadina , Giuseppe Vacca
		Presenting Author: Giuseppe Vacca
	984	*FETI-DP for the Virtual Element Method in three dimensions*
INVITED		Authors: Silvia Bertoluzza , Micol Pennacchio , Daniele Prada
		Presenting Author: Silvia Bertoluzza
	1245	*Towards an extended Virtual Element Method for 2D elastic problems with displacement discontinuities*
INVITED		Authors: Andrea Chiozzi , Elena Benvenuti , N. Sukumar , Gianmarco Manzini
		Presenting Author: Andrea Chiozzi
	549	*An enhanced XFEM for the discontinuous Poisson problem*
INVITED		Authors: Pawel Stapor
		Presenting Author: Pawel Stapor
	1405	*Virtual element approximations of a class of unilateral contact problems in linear elasticity*
INVITED		Authors: Andrea Chiozzi , Antonio Tralli
		Presenting Author: Andrea Chiozzi

General Session:	**Mechanics of Materials**	
DAY:	**Monday**	
ROOM:	**Bianca B**	
TIME	**14.45-16.45**	
CHAIR:	**Siamak Farajzadeh Khosroshahi, Freek Broere**	
	767	*Feasibility study of using SPECTRA for motorcyclists' helmet*
	Authors:	Siamak Farajzadeh K , Alessandro Cernicchi , Mauro Ricotta , Giovanni Meneghetti , Ugo Galvanetto
	Presenting Author:	**Siamak Farajzadeh Khosroshahi**
	856	*Torsion of a curved elastic-plastic guidewire*
	Authors:	Reyhaneh N. Shirazi , Marie Clancy , Caroline Higgins , Ivan Mooney , Peter E. McHugh , William Ronan
	Presenting Author:	**Reyhaneh N. Shirazi**
	860	*Correlation of Mechanical Properties with Fracture Surface Features in a Dual-Phase Steel*
	Authors:	Diego Avendaño-Rc , Lais Mujica-Roncı , Rodolfo Rodríguez-Baracaldo
	Presenting Author:	**Rodolfo Rodríguez-Baracaldo**
	910	*Deformation response of EPS foam under combined compression-shear loading: Experimental investigation and FEA numerical simulations*
	Authors:	Chen Ling , Jan Ivens , Michael Gilchrist
	Presenting Author:	**Chen Ling**
	936	*Eshelby Tensor Field for Circular Inclusion with Polynomial Eigenstrain Using Inversion Conformal Mapping*
	Authors:	Arun Agrawal , Parameswari Venkitanarayanan
	Presenting Author:	**Arun Agrawal**
	1118	*Mechanical Metamaterials as Rigid Body Mechanisms*
	Authors:	Freek Broeren , Volkert van der Wijk , Just Herder
	Presenting Author:	**Freek Broeren**

MS:	**3-7 - Nonlinear Elasticity**	
DAY:	**Monday**	
ROOM:	**Magenta B**	
TIME	**14.45-16.45**	
CHAIR:	**Thomas Pence, Alfio Grillo**	
KEYNOTE	**943**	*Swelling induced shearing twist in a transversely isotropic hyperelastic annulus*
	Authors:	Thomas Pence , Hasan Demirkopara
	Presenting Author:	**Thomas Pence**
	797	*Quasi-linear viscoelasticity for materials under finite deformation*
	Authors:	Valentina Balbi , Tom Shearer , William Parnell
	Presenting Author:	**Valentina Balbi**
	806	*Experimental validation of strain energy functions for porous elastomers*
	Authors:	Michael J. A. Smith , Zeshan Yousaf , William J. Parnell
	Presenting Author:	**Michael J. A. Smith**
	1301	*Stress-assisted chemical reactions and reaction blocking effects via chemical affinity tensor*
	Authors:	Alexander Freidin , Leah Sharipova
	Presenting Author:	**Alexander Freidin**
	1470	*A thermodynamically based anisotropic finite strain viscoelastic-viscoplastic-damage constitutive model for glassy polymers*
	Authors:	Muralidhar R Gudimetla , Issam Doghri
	Presenting Author:	**Muralidhar Reddy Gudimetla**

General Session:	**Biomechanics**																				
DAY:	**Monday**																				
ROOM:	**Magenta A**																				
TIME	**14.45-16.45**																				
CHAIR:	**Ana Herrera, Meisam Asgari**																				
	1375	*Stress Induced Calcium Kinetics in a 1D Brain Tissue Geometry*																			
		Authors:	Aayush	Kant	, Nikhil	Medhekar	, Tanmay	Bhandakkar													
		Presenting Author:	**Aayush Kant**																		
	1433	*Nanoscale elastic properties of cortical and trabecular femoral bones in adult mice*																			
		Authors:	Meisam	Asgari	, Jad	Abi-Rafeh	, Geoffrey	Hendy	, Damiano	Pasini											
		Presenting Author:	**Meisam Asgari**																		
	1508	*Human cerebral aneurysm tissue: experiment and implications for computational fluid dynamics*																			
		Authors:	Daniil	Parshin	, Alexander	Khe	, Iulia	Kuianova	, Nikolay	Maslov	, Alexander	Yunoshev	, Konstantin	Ovsyannikov	, Andrey	Dubovoy	, Alexander	Chupakhin			
		Presenting Author:	**Alexander Chupakhin**																		
	1564	*Micromechanics of fibers recruitment in human fibrous tissues*																			
		Authors:	Emanuela	Bologna	, Gioacchino	Allotta	, Luca	Deseri	, Massimilianc	Zingales											
		Presenting Author:	**Luca Deseri**																		
	1487	*Stress shielding in the femur after hip stem optimization*																			
		Authors:	Luca	Esposito	, Paolo	Bifulco	, Mario	Cesarelli	, Paolo	Gargiulo	, Luca	Cristofolini	, Massimilianc	Fraldi							
		Presenting Author:	**Luca Esposito**																		

MS:	**3-13 - Fatigue and Tribology**																				
DAY:	**Monday**																				
ROOM:	**Celeste**																				
TIME	**14.45-16.45**																				
CHAIR:	**Antonio Strozzi, Gianluca Costagliola**																				
	1015	*Influence of the distortion of the conrod big-end bore due to mounting on the tribological behaviour of the conrod/pin coupling*																			
		Authors:	Andrea	Ferretti	, Matteo	Giacopini	, Alessandro	Pulvirenti	, Daniele	Dini	, Stefano	Fantoni									
		Presenting Author:	**Alessandro Pulvirenti**																		
	455	*Modelling of a conrod small end as a curved beam, and fretting fatigue implications*																			
		Authors:	Antonio	Strozzi	, Enrico	Bertocchi	, Sara	Mantovani													
		Presenting Author:	**Antonio Strozzi**																		
	980	*Numerical modeling and experimental tests of friction of structured surfaces*																			
		Authors:	Gianluca	Costagliola	, Alice	Berardo	, Simone	Ghio	, Federico	Bosia	, Nicola	Pugno									
		Presenting Author:	**Gianluca Costagliola**																		
	1147	*Tribochemistry mechanisms in solid and boundary lubrication*																			
		Authors:	M. Clelia	Righi																	
		Presenting Author:	**M. Clelia Righi**																		

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**																		
DAY:	**Monday**																		
ROOM:	**Europa Auditorium**																		
TIME	**14.45-16.45**																		
CHAIR:	**John Hutchinson, Partick Onck**																		
	479	*Mechanics of swelling of cellulose foam*																	
		Authors:	Norman	Fleck	, Morad	Mirzajanzade	, Vikram	Deshpande											
		Presenting Author:	**Norman Fleck**																
	1136	*Design and Performance of Periodic Trusses*																	
		Authors:	Frank	Zok	, Matthew	Begley	, Ryan	Latture											
		Presenting Author:	**Frank Zok**																
	499	*A Quest for 2D Lattice Materials for Actuation*																	
		Authors:	Wiebe	Nelissen	, Cihan	Tekoglu	, Can	Ayas											
		Presenting Author:	**Can Ayas**																
	268	*On the fracture toughness of truss lattices treated as a quasi-continuum*																	
		Authors:	Dennis M.	Kochmann	, Greg	Phlipot													
		Presenting Author:	**Dennis M. Kochmann**																
	1162	*The influence of residual stresses on the fatigue resistance of non-crimp glass fibre reinforced epoxy polymer matrix composites*																	
		Authors:	Lars Pilgaard Mikkelsen																
		Presenting Author:	**Lars P. Mikkelsen**																
	411	*Contact problems in the context of couple stress elasticity*																	
		Authors:	Thanasis	Zisis	, Panos	Gourgiotis	, Haralambos	Georgiadis											
		Presenting Author:	**Thanasis Zisis**																

MS:	**1-6 - Multiscale Modelling of Polycrystalline Materials**																		
DAY:	**Monday**																		
ROOM:	**Ciano B**																		
TIME	**14.45-16:45**																		
CHAIR:	**Delannay, Bassani**																		
	1036	*Effects of Microstructural Evolution on Strain Localization and Ductile Failures*																	
INVITED		Authors:	John L.	Bassani	, Kaan	Inal	, Christoher P.	Kohar											
		Presenting Author:	**John L. Bassani**																
	1121	*Crystal plasticity modeling of cyclic plasticity in TWIP steel*																	
INVITED		Authors:	Delannay	Laurent	, Lin	Fengxiang	, Jacques	Pascal J.											
		Presenting Author:	**Laurent Delannay**																
	338	*Microscale modelling of damage evolution in martensitic steels*																	
		Authors:	Fengwei	Sun	, Edward	Meade	, Noel	O'Dowd											
		Presenting Author:	**Fengwei Sun**																
	473	*Meso to Macro Mechanics of Metallic Ductile Damage Under Dynamic Loading Conditions*																	
INVITED		Authors:	Curt	Bronkhorst	, Hansohl	Cho	, Hashem	Mourad	, George	Gray	, Veronica	Livescu	, Saryu	Fensin	, Sabine	Zentgraf	, Brandon	Runnels	
		Presenting Author:	**Curt Bronkhorst**																
	942	*Viscoplastic flow accounting for multilevel hierarchy of shear banding*																	
		Authors:	Ryszard	Pecherski															
		Presenting Author:	**Ryszard Pecherski**																
	998	*Multiscale modeling of titanium aluminide using mean-field and full-field models: towards fatigue lifetime prediction*																	
		Authors:	Pierre	Serrano	, Louise	Toualbi	, Pascale	Kanoute	, Alain	Couret									
		Presenting Author:	**Pierre Serrano**																

MS: 1-5 - Micro and Nanomechanics Systems
DAY: Monday
ROOM: Europa A
TIME: 14.45-16.45
CHAIR: Horacio Espinosa, Maria Pantano

279 *Phase field modeling of polarization behaviour in ferroelectric materials with defects for MEMS applications*
Authors: Patrick Fedeli , Marc Kamlah , Attilio Frangi
Presenting Author: Patrick Fedeli

1387 *Design and experimental validation of an auxetic phononic crystal for industrial micro-systems*
Authors: Valentina Zega , Alessandro Nastro , Luca D'Alessandrc , Marco Ferrari , Raffaele Ardito , Carlo Valzasina , Vittorio Ferrari , Alberto Corigliano
Presenting Author: Raffaele Ardito

1262 *A predictive reduced-order finite-elements model for geometrically nonlinear dynamical response of layered piezoelectric nanoplates*
Authors: Arthur Givois , Olivier Thomas , Jean-Françoi Deü
Presenting Author: Arthur Givois

1024 *Multiphysics modelling and experiments of an air-coupled Piezoelectric Micromachined Ultrasonic Transducer (PMUT)*
Authors: Gianluca Massimino , Raffaele Ardito , Francesco Procopio , Alberto Corigliano
Presenting Author: Gianluca Massimino

1305 *Scaling Effects of Micromechanical Piezoelectric-on-Silicon Radial Contour Mode Disk Resonators Transduced in Water*
Authors: Abid Ali , Joshua Lee
Presenting Author: Joshua Lee

634 *Numerical modelling of MEMS resonators*
Authors: Valentina Zega , Attilio Frangi , Andrea Guercilena , Gabriele Gattere
Presenting Author: Valentina Zega

MS: 3-2 - Homogenization Strategies for Multiphase and Active Materials
DAY: Monday
ROOM: Europa B
TIME: 14:45-16:45
CHAIR: Pedro Ponte Castaneda, Issam Doghri

384 *A viscoplastic model for porous single crystals containing ellipsoidal voids at finite strains*
Authors: Armel Mbiakop , Kostas Danas , Andrei Constantines
Presenting Author: Armel Mbiakop

870 *Slip transfer at grain boundaries in Al: experimental analysis and numerical simulations*
Authors: Reza Alizadeh , Sara Haouala , Thomas Bieler , Javier Segurado , Jon Molina-Aldar , Javier Llorca
Presenting Author: Reza Alizadeh

557 *A micromechanical model for ductile porous materials with isotropic and linear kinematic hardenable matrix under cyclic loading*
Authors: Long Cheng , Kostas Danas , Andrei Constantines , Djimedo Kondo
Presenting Author: Long Cheng

430 *Ductile rupture under cyclic loading conditions*
Authors: Al Mahdi Remmal , Jean-Baptiste Leblond , Stéphane Marie
Presenting Author: Al Mahdi Remmal

1134 *Additive tangent Mori-Tanaka approach: validation for elastic -viscoplastic composites under non-proportional loading*
Authors: Katarzyna Kowalczyk-G , Christophe Czarnota , Sebastien Mercier
Presenting Author: Katarzyna Kowalczyk-Gjewska

1446 *Porous plasticity: mean field homogenization models coupled with Gurson's solution*
Authors: Marieme Im El Ghezal , Issam Doghri
Presenting Author: Issam Doghri

MS: 1-3 - Architected Materials
DAY: Monday
ROOM: Indaco
TIME 14.45-16.45
CHAIR: Valdevit, Pasini

266 *Transition Waves in 2D Bistable Auxetic Structures*
Authors: Katia Bertoldi, Ahmad Rafsanjani, Bolei Deng, Vincent Tournat, Damiano Pasini, Dennis Kochmann
Presenting Author: Katia Bertoldi

1139 *Multistable Mechanical Metamaterials for 3D Positioning*
Authors: Yong Zhang, Qi Wang, Marcel Tichem, Fred van Keulen
Presenting Author: Yong Zhang

929 *Generating multistability through anisotropy*
Authors: Evripides Loukaides, Alexandros Ntrekos, Keith Seffen
Presenting Author: Evripides G. Loukaides

945 *Mechanics of a polymer network with bi-stable chains*
Authors: Roberto Brighenti, Federico Artoni
Presenting Author: Federico Artoni

1141 *Wave propagation through contact-based elastically asymmetric materials*
Authors: Vladislav Yastrebov
Presenting Author: Vladislav Yastrebov

MS: 7-6 - Structual Analysis of Real Historic Buildings
DAY: Monday
ROOM: Cobalto
TIME 14.45-16.45
CHAIR: Maurizio Angelillo, Santiago Huerta

1088 *Structural Analysis of Cracked Masonry Vaults and Domes*
Authors: John Ochsendorf
Presenting Author: John Ochsendorf

1083 *On the extension of limit analysis to predict dynamic collapse*
Authors: Matthew DeJong, Anjali Mehrotra
Presenting Author: Matthew DeJong

1409 *Dynamic behaviour of masonry circular arches with non-negligible tensile strength: impact of tensile strength and pre-existing cracks on collapse mechanisms*
Authors: Alejandra Albuerne, Dina D'Ayala
Presenting Author: Alejandra Albuerne

1096 *Displacement capacity of masonry structures modeled as a rigid body assembly*
Authors: Antonio Fortunato, Geminiano Mancusi, Fernando Fraternali
Presenting Author: Antonio Fortunato

787 *A Non-Smooth-Contact-Dynamics approach for the analysis of architectural masonry structures*
Authors: Valentina Beatini, Gianni Royer-Carfag, Alessandro Tasora
Presenting Author: Valentina Beatini

1150 *A damage model for the tensile behaviour of Masonry structures*
Authors: Massimilianc Lucchesi, Barbara Pintucchi, Nicola Zani
Presenting Author: Nicola Zani

MS:	**7-4 - Instabilities in Structural Mechanics and Fluid-Structure Interactions**	
DAY:	**Monday**	
ROOM:	**Europa C**	
TIME	**14.45-16.45**	
CHAIR:	**Jean Lerbet, Vasily Vedeneev**	
KEYNOTE	**1116**	*Analysis of stability and bifurcation in non-linear mechanics with dissipation* Authors: Claude Stolz **Presenting Author: Claude Stolz**
INVITED	**508**	*Thermodynamic approach to mechanical and flow instabilities* Authors: Carlos Daniel Díaz-Marín , Alejandro Jenkins **Presenting Author: Alejandro Jenkins**
	169	*Energy dissipation through multistable metamaterial under shear* Authors: Suihan Liu , Rigoberto Burgueno **Presenting Author: Suihan Liu**
	604	*Navigating among localized states in friction-excited mechanical systems* Authors: Antonio Papangelo , Michele Ciavarella , Norbert Hoffmann **Presenting Author: Antonio Papangelo**
	624	*Destabilizing external damping in theory and experiment* Authors: Oleg Kirillov , Davide Bigoni , Mirko Tommasini , Diego Misseroni , Giovanni Noselli **Presenting Author: Oleg Kirillov**

MS:	**5-1 - Advanced Strategies for Computational Modelling of Material Failure**	
DAY:	**Monday**	
ROOM:	**Rossa B**	
TIME	**14.45-16.45**	
CHAIR:	**Günther Meschke, Angelo Simone**	
	954	*The Marching Ridges algorithm: a robust tool for the continuous-to-discontinuous description of failure* Authors: Sylvia Feld-Payet **Presenting Author: Sylvia Feld-Payet**
	1209	*Fracture as material sink: Numerical implementation and application in dynamic crack growth* Authors: Anshul Faye , Yoav Lev , K. Y. Volokh **Presenting Author: Anshul Faye**
	1435	*Stress intensity factor crack velocity dependence for a moving crack. Numerical investigation.* Authors: Nikita Kazarinov , Roberta Springhetti , Vladimir Bratov , Yuri Petrov **Presenting Author: Nikita Kazarinov**
	773	*Microstructure based modelling of thermos-mechanical fatigue in cast iron* Authors: Aslan Mohammadpourshoorbakhlou , Varvara Kouznetsova , Marc Geers **Presenting Author: Aslan Mohammadpourshoorbakhlou**
	1431	*Efficient micromechanical modeling of fatigue in composites through time homogenization and reduced-order modeling* Authors: Iuri B C M Rocha , Frans P van der Mee , Lambertus J Sluys **Presenting Author: Iuri Rocha**

MS: 2-1 - Cell Mechanics
DAY: Monday
ROOM: Ciano A
TIME 14.45-16.45
CHAIR: Paolo Bisegna, Nicola A. Nodargi

KEYNOTE	**1503**	*Theoretical modelling of cell and tissue mechanics based on cytoskeletal dynamics* Authors: Marino Arroyo, Sohan Kale, Alejandro Torres-Sanch, Ernest Latorre, Xavier Trepat, Guillermo Vilanova, Adam Ouzeri **Presenting Author: Marino Arroyo**
INVITED	**1365**	*Alternative representation of the activation level in stress fibre directions for the bio-chemo-mechanical model of cell contractility* Authors: Christian R. Bahls, Duy Truong, Ursula van Rienen **Presenting Author: Christian R. Bahls**
INVITED	**1177**	*Thermodynamics of Cell Spreading on Ligand Coated Elastic Substrates* Authors: Eoin McEvoy, Vikram Deshpande, Patrick McGarry **Presenting Author: Patrick McGarry**
INVITED	**1070**	*A computational model of dynein-microtubule interaction for epithelial cell division orientation* Authors: Myles Kim **Presenting Author: Myles Kim**
INVITED	**1158**	*Finite element bendo-tensegrity model of eukaryotic cell in suspended and adherent state* Authors: Yogesh Bansod, Ursula van Rienen, Jiri Bursa **Presenting Author: Yogesh Bansod**

General Session: Experimental Mechanics
DAY: Monday
ROOM: Verde A
TIME 14.45-16.45
CHAIR: Luca Bartolini

	1299	*On the importance of analyses of two opposite faces for wedge splitting tests with DIC* Authors: Rafael Vargas, Jan Neggers, Rodrigo Bres Canto, José de Anch Rodrigues, François Hild **Presenting Author: Rafael Vargas**
	1342	*On the benefits of applying full-field Digital Image Correlation for dilatometric analysis of PTFE specimen during sintering* Authors: Vinicius Fioc Sciuti, Caiuã Caldei Melo, Rafael Vargas, Rodrigo Bres Canto **Presenting Author: Vinicius Fiocco Sciuti**
	1378	*Direct comparison of microindentation measurements in the frequency-domain and in the strain-rate domain* Authors: Luca Bartolini, Davide Iannuzzi, Giorgio Mattei **Presenting Author: Luca Bartolini**

General Session:	**Young Researcher Awards Finalists**	
DAY:	**Monday**	
ROOM:	**Rossa A**	
TIME	**14.45-16.45**	
CHAIR:	**Davide Bigoni, Pedro Camanho**	
	932	*Material modeling in additive manufacturing: Accounting for tailored grain structures using crystal plasticity*
	Authors:	Andreas Kergaßner , Julia Mergheim , Paul Steinmann
	Presenting Author:	**Andreas Kergaßner**
	982	*Subsurface Dislocation Activities under Frictional Slide: A Discrete Dislocation Analysis*
	Authors:	Yilun Xu , Daniele Dini , Daniel Balint
	Presenting Author:	**Yilun XU**
	1023	*Contact guidance of cells can be explained by cellular free-energy minimization and homeostasis*
	Authors:	Tommaso Ristori , Antonetta Buskermolen , Siamak Shishvan , Nicholas Kurniawan , Carlijn Bouten , Frank Baaijens , Sandra Loerakker , Vikram Deshpande
	Presenting Author:	**Tommaso Ristori**
	1064	*Towards low frequency 3D broadband filters via elastic metamaterials*
	Authors:	Luca D'Alessandro , Raffaele Ardito , Francesco Braghin , Alberto Corigliano
	Presenting Author:	**Luca D'Alessandro**
	1296	*Elastica compass, elastica catapult and soft robot arms*
	Authors:	Costanza Armanini , Francesco Dal Corso , Diego Misseroni , Davide Bigoni
	Presenting Author:	**Costanza Armanini**

MS:	**7-1 - Beam, Plate and Shell Finite Elements based on non-Classical Theories of Structures**	
DAY:	**Monday**	
ROOM:	**Verde B**	
TIME	**14.45-16.45**	
CHAIR:	**Erasmo Carrera, Francisco Chinesta**	
KEYNOTE	**1011**	*Cylindrical shell finite element based on the Reissner's Mixed Variational Theorem with a variable separation method*
	Authors:	Philippe Vidal , Laurent Gallimard , Olivier Polit
	Presenting Author:	**Philippe Vidal**
	531	*Effects of geometric nonlinearities on refined structural models of laminated beams*
	Authors:	Alfonso Pagani , Riccardo Augello , Erasmo Carrera
	Presenting Author:	**Alfonso Pagani**
	561	*Use of higher-order Legendre polynomials in node-dependent kinematic shell elements*
	Authors:	Guohong Li , Erasmo Carrera , Alberto Garcia de Mi , Alfonso Pagani , Enrico Zappino
	Presenting Author:	**Guohong Li**
	766	*A 2D-plate finite element 3D internally resolved*
	Authors:	Giacomo Quaranta , Fatima Daim , Mustapha Ziane , Emmanuelle Abisset-Chav , Jean-Louis Duval , Francisco Chinesta
	Presenting Author:	**Giacomo Quaranta**
	822	*The extended shell theory of Nth order: an unified formalism of classical and finite element modeling*
	Authors:	Sergey Zhavoronok , Alexey Kurbatov
	Presenting Author:	**Sergey Zhavoronok**

MS: 1-7 - Shape Memory Alloys and Related Materials - Modelling, Numerical Algorithms and Applications
DAY: Monday
ROOM: Gialla A
TIME 14.45-16.45
CHAIR: Stanislaw Stupkiewicz, Alphonse Finel

	900	*Shape Memory Alloy Film Damping*
INVITED		Authors: Manfred Kohl , Shahabeddin Ahmadi , Kiran Jacob , Eckhard Quandt , Frank Wendler
		Presenting Author: Frank Wendler
	558	*Development and experimental validation of a constitutive model for NiTi medical devices subjected to fatigue and plasticity*
		Authors: Lorenza Petrini , Francesca Berti , Elena Villa , Adelaide Nespoli , Francesco Migliavacca
		Presenting Author: Lorenza Petrini
	211	*A numerical investigation on the stabilizing effect of plastic deformations on the martensitic transformations in shape memory alloys*
INVITED		Authors: Junker Philipp , Hempel Philipp
		Presenting Author: Philipp Junker
	926	*A micromechanical model for polycrystalline shape memory alloy wires integrated into smart structures*
INVITED		Authors: Philippe Hannequart , Michael Peigney , Jean-Françoi Caron , Emmanuel Viglino
		Presenting Author: Philippe Hannequart
	825	*Modeling of the one-way and two-way shape-memory effect in semicrystalline polymers*
INVITED		Authors: Giulia Scalet , Stefano Pandini , Ferdinando Auricchio
		Presenting Author: Giulia Scalet

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Monday**	
ROOM:	**Italia**	
TIME	**17.15-19.15**	
CHAIR:	**J. Fineberg, L. Ponson**	
	616	*Tearing thin sheets : instabilities towards wavy and spiral crack paths*
		Authors: Benoit Roman, Eugenio Hamm, Iryna Sivak
		Presenting Author: Benoit ROMAN
	1086	*From tape multiple peeling to membrane delamination simulations*
		Authors: Daniele Liprandi, Gianluca Costagliola, Federico Bosia, Nicola Pugno
		Presenting Author: Daniele Liprandi
	245	*Buckle delamination of thin films on soft substrates: Mexican hat effect and blisters interaction*
		Authors: Guillaume PARRY, Romain BOIJOUX, Christophe COUPEAU
		Presenting Author: Guillaume PARRY
	1031	*Adhesion of soft elastic hemispherical shells*
		Authors: Miguel Trejo, Suomi Ponce, José Bico, Etienne Reyssat, Benoit Roman, Chung-Yuen Hui
		Presenting Author: José Bico
	810	*Mathematical structure of problem of vibration for a beam supporting arbitrary large pre-deformation*
		Authors: Le Marrec Loïc, Lerbet Jean, Rakotomana Lalaonirina
		Presenting Author: Le Marrec Loïc
	694	*The statistics of crack initiation in brittle samples*
		Authors: Vandenbergh Nicolas, Villermaux Emmanuel
		Presenting Author: Nicolas Vandenberghe

MS:	**5-7 - Advances in Analytical and Discretization Methods for Discontinuities and Singularities**	
DAY:	**Monday**	
ROOM:	**Bianca A**	
TIME	**17.15-19.15**	
CHAIR:	**Benvenuti, Tralli**	
	1163	*The X-Fem reloaded*
INVITED		Authors: Nunziante Valoroso, Alexandre Martin
		Presenting Author: Nunziante Valoroso
	846	*A New Stable Immersed Boundary Technique with Direct Essential Boundary Condition Enforcement*
INVITED		Authors: Sanne J. van den Boom, Alejandro M. Aragón, Fred van Keulen
		Presenting Author: Sanne J. van den Boom
	1005	*Mathematical Aspects of Coupled Processes in Fractured Media*
INVITED		Authors: Katja K. Hanowski, Oliver Sander
		Presenting Author: Katja K. Hanowski
	521	*The space-time kernel finite element method (kFEM)*
INVITED		Authors: Alessio Quaglino, Toby Simpson, Rolf Krause
		Presenting Author: Alessio Quaglino

General Session:	**Mechanics of Materials**
DAY:	**Monday**
ROOM:	**Bianca B**
TIME	**17.15-19.15**
CHAIR:	**Enrico Radi, Herve Louche**

644	*Brazilian test for the characterization of adhesively bonded joints*
Authors:	Enrico Radi , Eugenio Dragoni , Andrea Spaggiari
Presenting Author:	**Enrico Radi**
1317	*Anisotropy and temperature dependence of superelastic behavior of NiTi shape memory alloy thin walled tubes.*
Authors:	Estephanie N Grassi , Denis Favier Favier , Gregory Cha Chagnon
Presenting Author:	**Denis Favier**
1344	*Multiscale modeling of interfacial mechanical behavior for magnesium matrix nanocomposites*
Authors:	Xia Zhou , Shangyu Song , Guohui Qu
Presenting Author:	**Xia Zhou**
1379	*Membrane wrinkle model: application to an elastoplastic behavior*
Authors:	Hugo Le Meitour , Gérard Rio , Hervé Laurent , Frank Petitjean , Julien Troufflard , Anne-Sophie Lectez , Pascale Guigue , Nicolas Poupat
Presenting Author:	**Hugo, Le Meitour**
1408	*Thermomechanical analysis of the deformation in tension of a nanocrystalline superelastic NiTi thin wire*
Authors:	Henrique Martinni Ran , Denis Favier , Herve Louche
Presenting Author:	**Herve LOUCHE**
1453	*A squeezable shallow arch-based 2D structure as a shock absorber device*
Authors:	Fabio Bazzucchi , Giuseppe Ferro
Presenting Author:	**Fabio Bazzucchi**

MS:	**3-7 - Nonlinear Elasticity**
DAY:	**Monday**
ROOM:	**Magenta B**
TIME	**17.15-19.15**
CHAIR:	**Yibin Fu, Roger Bustamante**

159	*A consistent incompressible finite-strain shell model*
Authors:	Yuanyou Li , Jiong Wang , Hui-Hui Dai
Presenting Author:	**Yuanyou Li**
258	*Predicting Poynting effect in coupled shear and tension test in framework of isotropic hyperelasticity*
Authors:	Kamel Yaya , Hocine Bechir
Presenting Author:	**Kamel Yaya**
1426	*Numerical simulation and analysis of the propagation of phase and chemical transformations fronts*
Authors:	Aleksandr Morozov , Alexander Freidin , Wolfgang Mueller
Presenting Author:	**Aleksandr Morozov**
1220	*Tension of thin-walled tube stretched over rough cylinder*
Authors:	Alexey Kolesnikov , Alexander Popov
Presenting Author:	**Alexey Kolesnikov**
1454	*Large strain anisotropic elasticity of auxetic foams*
Authors:	Jacopo Ciambella
Presenting Author:	**Jacopo Ciambella**
1464	*Thermal lateral buckling of railway tracks: a simplified model*
Authors:	Mark Bradford , Guotao Yang
Presenting Author:	**Mark Bradford**

MS:	**6-1 -Nonlinear Dynamics in Mechanical and Structural Systems**	
DAY:	**Monday**	
ROOM:	**Magenta A**	
TIME	**17.15-19.15**	
CHAIR:	**Giuseppe Rega, Alois Steindl**	
KEYNOTE	**1180**	*Derivation of Nonlinear Damping from Linear Viscoelasticity by a Fractional Standard Solid Model and Application to Nonlinear Vibrations* Author: Marco Amabili **Presenting Author: Marco Amabili**
	223	*Auto-parametric response of a non-holonomic system under kinematic excitation* Authors: Jiri Naprstek , Cyril Fischer **Presenting Author: Jiri Naprstek**
	880	*Random bouncing ball dynamics under correlated excitation* Authors: Chaïma Zouabi , Joël Perret-Liaudı, Julien Scheibert **Presenting Author: Joël Perret-Liaudet**
	1016	*Analysis of explosive aspect ratio in the blast wave: From flat to spherical case* Authors: J.A. Artero-Guerr , J. Pernas-Sáncł , F. Teixeira-Dias , D. Varas , J. López-Puente **Presenting Author: J.A. Artero-Guerrero**
	227	*Trigger of coupled three singular points in dynamics of different mechanical systems each with one degree of freedom* Author: Katica R. (Ste Hedrih **Presenting Author: Katica R. (Stevanovic) Hedrih**

MS:	**3-13 - Fatigue and Tribology**	
DAY:	**Monday**	
ROOM:	**Celeste**	
TIME	**17.15-19.15**	
CHAIR:	**Andrei Constantinescu, José A Araujo**	
KEYNOTE	**244**	*Evolution of roughness during dry sliding: insights from atomistic and mesocale models* Author: Jean-Francoi Molinari **Presenting Author: Jean-Francois Molinari**
	1402	*Micromechanical modeling for the failure prediction in high-cycle fatigue* Authors: Pierre Baudoin , Eric Charkaluk , Andrei Constantines **Presenting Author: Andrei Constantinescu**
	1418	*On the multiaxial fatigue behaviour of notched Al 7050-T7451* Authors: Marcus V. C. Sá , Jorge L. A. Ferreira , Cosme R. M. da Silva , José A. Araújo **Presenting Author: José A Araújo**
	1481	*Numerical simulations of friction between functionally graded surfaces* Authors: Roberto Guarino , Gianluca Costagliola , Federico Bosia , Nicola Maria Pugno **Presenting Author: Roberto Guarino**
	1351	*3D anisotropic friction modelling of hierarchical surfaces* Authors: Alice Berardo , Nicola Pugno **Presenting Author: Alice Berardo**

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**	
DAY:	**Monday**	
ROOM:	**Europa Auditorium**	
TIME	**17.15-19.15**	
CHAIR:	**Robert McMeeking, Kostas Danas**	
	1178	*Mechanics and chemistry of adhesion* Authors: Zhigang Suo **Presenting Author: Zhigang Suo**
	875	*Poroelastic toughening in polymer gels* Authors: Giovanni Noselli , Alessandro Lucantonio , Robert M McMeeking , Antonio DeSimone **Presenting Author: Giovanni Noselli**
	770	*Coating with colloids* Authors: Tobias Kraus **Presenting Author: Tobias Kraus**
	187	*Structural Batteries and Multifunctional Carbon Composite Materials* Authors: Dan Zenkert **Presenting Author: Dan Zenkert**
	489	*Static space-charge polarization in microstructured solid dielectrics* Authors: Martin Idiart , Cristian Bottero **Presenting Author: Martin Idiart**
	506	*Electro-mechanical theory for nematic continua with an application to Freedericksz instability in 3D liquid crystals* Authors: Nicolas TRIANTAFYLL , Konstantinos DANAS **Presenting Author: Nicolas Triantafyllidis**

MS:	**1-6 - Multiscale Modelling of Polycrystalline Materials**	
DAY:	**Monday**	
ROOM:	**Ciano B**	
TIME	**17:15-19:15**	
CHAIR:	**Lebensohn, Milton**	
KEYNOTE	**715**	*A new faster FFT approach using a novel algebra of subspace collections to computing the fields in composites* Authors: Graeme Milton , Herve Moulinec , Pierre Suquet **Presenting Author: Graeme. W. Milton**
	687	*Polycrystal plasticity models: synergy between full-field and homogenization-based approaches* Authors: Ricardo Lebensohn **Presenting Author: Ricardo Lebensohn**
	637	*From microstructure sensitive fatigue models to specimen fatigue life and scatter prediction in polycrystalline superalloys* Authors: Sergio Lucarini , Javier Segurado **Presenting Author: Sergio Lucarini**
INVITED	**278**	*Mesoscale Field Dislocation Mechanics solved by EVP-FFT: application to channel-type microstructures and polycrystals* Authors: Komlan S. Djaka , Stephane Berbenni , Vincent Taupin , Ricardo A. Lebensohn **Presenting Author: Stephane Berbenni**
	893	*Multi-scale modelling of sheet metal forming by coupling FEM with a CP-Spectral solver using the DAMASK modelling package* Authors: Fengbo Han , Martin Diehl , Franz Roters , Dierk Raabe **Presenting Author: Fengbo Han**

MS: 1-5 - Micro and Nanomechanics Systems
DAY: Monday
ROOM: Europa A
TIME: 17.15-19.15
CHAIR: Horacio Espinosa, Vittorio Ferrari

915 *Instrumented slider including an array of piezoelectric sensors to measure local micro-impact forces*
Authors: Camille Gregoire, Julien Scheibert, Thibaut Durand, Matthieu Guibert, Manuel Collet, Bernard Laulagnet, Joël Perret-Liaud
Presenting Author: **Camille Gregoire**

465 *A novel approach to mechanical design optimization of triaxial MEMS gyroscopes at device-level*
Authors: Daniele Giannini, Francesco Braghin, Matteo Brunetto, Luca Falorni, Gabriele Gattere, Luca Guerinoni, Mohammad Izadi, Ferruccio Resta
Presenting Author: **Daniele Giannini**

730 *Mutual subharmonic synchronization in a Disk Ring Gyroscope*
Authors: Andrea Guerrieri, Parsa Taheri-Tehra, Martial Defoort, Attilio Frangi, David A. Horsley
Presenting Author: **Andrea Guerrieri**

633 *A strategy to widen the linear range of elastic micro-springs*
Authors: Valentina Zega, Claudia Comi, Giacomo Langfelder, Luca Falorni
Presenting Author: **Valentina Zega**

MS: 3-2 - Homogenization Strategies for Multiphase and Active Materials
DAY: Monday
ROOM: Europa B
TIME: 17:15-19:15
CHAIR: Issam Doghri, Kostas Danas

1135 *Effective creep behaviour of random aggregates during sintering*
Authors: Laurence Brassart, Francis Delannay
Presenting Author: **Laurence Brassart**

807 *Estimating internal stresses in viscoelastic composites under thermo-mechanical loadings*
Authors: noel lahellec, hervé Moulinec, martin Idiart
Presenting Author: **Noel Lahellec**

1093 *Self-consistent estimates for the thermoelastic response of cracked polycrystals with hexagonal symmetry*
Authors: François Willot
Presenting Author: **François Willot**

482 *The stiffness and strength of epoxy-infilled carbon-nanotube mats*
Authors: Wei Tan, Harika Tankasala, Norman Fleck
Presenting Author: **Wei Tan**

951 *Highly porous layers of silica nano-spheres sintered by drying : Scaling up of the elastic properties*
Authors: Arnaud Lesaine, Daniel Bonamy, Georges Gauthier, Cindy Rountree, Véronique Lazarus
Presenting Author: **Arnaud Lesaine**

271 *Overall behaviours of multiferroic fibrous composites with interface stress*
Authors: Hsin-Yi Kuo, Kai-Hong Wang
Presenting Author: **Hsin-Yi Kuo**

MS:	**1-3 - Architected Materials**	
DAY:	**Monday**	
ROOM:	**Indaco**	
TIME	**17.15-19.15**	
CHAIR:	**Lucas Meza, Andrew Gross**	
	688	*Topology optimization of transient thermo-mechanical meta-materials* Authors: Max van der Kolk , Matthijs Langelaar , Fred van Keulen **Presenting Author: Max van der Kolk**
	577	*Homogenization-based multiscale design of truss metamaterials with controllable effective properties* Authors: Bastian Telgen , Raphael Glaesener , Ole Sigmund , Dennis M. Kochmann **Presenting Author: Bastian Telgen**
	676	*Size effects in elastomeric mechanical metamaterials with low scale separation* Authors: Maqsood Mohammed , Ondřej Rokoš , Ron Peerlings , Marc Geers **Presenting Author: Maqsood Mohammed Ameen**
	1110	*A closed form approximation of the linear effective moduli of periodic foams with octet microstructure* Authors: George Mejak **Presenting Author: George Mejak**
	314	*Crack growth resistance of three-phase two-dimensional lattice materials* Authors: Harika Tankasala , Norman Fleck **Presenting Author: Harika Tankasala**
	1082	*Wave propagation in 3D lattices and random foams* Authors: Alireza Bayat , Stavros Gaitanaros **Presenting Author: Gaitanaros Stavros**

MS:	**7-6 - Structual Analysis of Real Historic Buildings**	
DAY:	**Monday**	
ROOM:	**Cobalto**	
TIME	**17.15-19.15**	
CHAIR:	**Maurizio Angelillo, Santiago Huerta**	
KEYNOTE	**261**	*Statical Analysis of the Brunelleschi dome and of its supporting structures* Authors: Mario Como **Presenting Author: Mario Como**
	382	*Influence of geometry on seismic capacity of URM buttressed arches* Authors: Giuseppe Brandonisio , Antonello De Luca **Presenting Author: Giuseppe Brandonisio**
	1499	*On the micro-modelling of masonry structures* Authors: Antonio Mar D'Altri , Stefano de Miranda , Giovanni Castellazzi , Vasilis Sarhosis **Presenting Author: Antonio Maria D'Altri**
	762	*Masonry structures made of monolithic blocks with an application to spiral stairs* Authors: Fabiana De Serio **Presenting Author: Fabiana De Serio**
	337	*Analysis of 3D no-tension masonry-like walls* Authors: Matteo Bruggi , Alberto Taliercio **Presenting Author: Matteo Bruggi**

MS:	**7-4 - Instabilities in Structural Mechanics and Fluid-Structure Interactions**	
DAY:	**Monday**	
ROOM:	**Europa C**	
TIME	**17.15-19.15**	
CHAIR:	**Claud Stolz, Alexandro Jenkins**	
KEYNOTE	**701**	*Panel flutter: asymptotic global instability analysis and numerical calculations* Authors: Vasily Vedeneev **Presenting Author: Vasily Vedeneev**
INVITED	**341**	*Flutter-induced response of a two-degree-of-freedom plate for energy-harvesting applications* Authors: Luca Pigolotti , Claudio Mannini **Presenting Author: Luca Pigolotti**
	755	*Indentation of a floating elastic sheet: Geometry versus applied tension* Authors: Finn Box , Dominic Vella , Robert Style , Jerome Neufeld **Presenting Author: Finn Box**
	792	*Dynamic Instability of Flexible Filaments Hanging in Cross Flow* Authors: Jorge Silva-Leon , Andrea Cioncolini , Antonio Filippone **Presenting Author: Jorge Silva-Leon**
	1111	*Numerical investigation on the unsteady galloping instability of a rectangular cylinder in turbulent flow* Author: Claudio Mannini **Presenting Author: Claudio Mannini**
	1131	*Modal and stability analysis of structures in periodic elastic states: The role of Floquet Forms* Authors: Arnaud Lazarus , Barend Bentvelsen , Corrado Maurini **Presenting Author: Arnaud Lazarus**

MS:	**5-1 - Advanced Strategies for Computational Modelling of Material Failure**	
DAY:	**Monday**	
ROOM:	**Rossa B**	
TIME	**17.15-19.15**	
CHAIR:	**Günther Meschke, Angelo Simone**	
	1273	*Influence of Dislocation Pile-up on Initiation and Propagation of Cleavage Micro-cracks in Ferritic Steels* Authors: Ngoc Anh Giang , Meinhard Kuna , Geralf Hütter **Presenting Author: Ngoc Anh Giang**
	529	*Predicting ductile fracture in ferrous and nonferrous metals during upset forging using an ellipsoidal void model* Authors: Kazutake Komori **Presenting Author: Kazutake Komori**
	574	*A new approach in modelling beam-column joints suffered from repeated loading based on an innovative joint shear failure mechanism* Authors: Xuan-Hoa Tran , Yoshiro Kai **Presenting Author: Xuan Hoa Tran**
	1000	*Variational Interface Model in Solid and Hydraulic Fracturing Problems* Authors: Ildar Khisamitov , Günther Meschke **Presenting Author: Günther Meschke**

MS:	**2-1 - Cell Mechanics**	
DAY:	**Monday**	
ROOM:	**Ciano A**	
TIME	**17.15-19.15**	
CHAIR:	**Patrick McGarry, Federica Caselli**	
KEYNOTE	**1383**	*Modeling cell deformations in microflows*
	Authors:	Igor V. Pivkin
	Presenting Author:	**Igor V. Pivkin**
	1104	*A reduced model for active contraction in cardiac cells: towards computational efficiency in heart simulation*
INVITED	Authors:	Francesco Regazzoni , Luca Dedè , Alfio Quarteroni
	Presenting Author:	**Francesco Regazzoni**
	956	*An isogeometric analysis formulation for red blood cell electro-deformation modeling*
INVITED	Authors:	Nicola Anton Nodargi , Paolo Bisegna , Federica Caselli , Laura De Lorenzis
	Presenting Author:	**Nicola Antonio Nodargi**
	486	*Poroelastic model to explore cell migration under confinement*
INVITED	Authors:	Solenne Deveraux , Rachele Allena , Denis Aubry
	Presenting Author:	**Denis Aubry**
	1482	*Mechanics of cells through nonlinear tensegrity structures*
INVITED	Authors:	Stefania Palumbo , Arsenio Cutolo , Angelo Rosar Carotenuto , Luca Deseri , Nicola Maria Pugno , Massimilianc Fraldi
	Presenting Author:	**Stefania Palumbo**

MS:	**4-1 - Experimental Micromechanics and Nanomechanics**	
DAY:	**Monday**	
ROOM:	**Verde A**	
TIME	**17:15-19:15**	
	Gerhard Dehm, Jon Molina-Aldareguia	
	769	*Micro-scale fracture and fibre pushout testing of silicon carbide composites for extreme environments*
	Authors:	David Armstrong , Yevhen Zayachuk
	Presenting Author:	**David Armstrong**
	940	*Microstructure influence in cyclic microscale bending: From single-crystalline to ultrafine-grained materials*
	Authors:	Marlene Kapp , Cameron Howard , Daniel Kiener
	Presenting Author:	**Daniel Kiener**
	922	*The brittle-ductile transition of tungsten single crystals at the micro-scale*
	Authors:	Johannes Ast , Jakob Schwiedrzik , Juri Wehrs , Johann Michler , Xavier Maeder
	Presenting Author:	**Johannes Ast**
	881	*A novel material design route for hard coating applications: A combined ab initio and micromechanical study on Mo2BC*
	Authors:	Bernhard Voelker , Stephan Gleich , Hamid Bolvardi , Christoph Kirchlechner , Christina Scheu , Jochen M. Schneider , Rafael Soler , Gerhard Dehm
	Presenting Author:	**Bernhard Voelker**
	340	*Reliability of small scale elasto-plastic fracture mechanical testing*
	Authors:	Ashish Kuma Saxena , Christoph Kirchlechner , Gerhard Dehm
	Presenting Author:	**Ashish Kumar Saxena**
	949	*Characterization of thin adhesive joints under dynamic multiaxial loadings : experiments and modeling*
	Authors:	Anthony Janin , Andrei Constantines , Daniel Weisz-Patrau , Robert Neviere , Matthieu Stackler , William Albouy
	Presenting Author:	**Anthony Janin**

MS:	**5-6 - Mechanics in energy harvesting and storage**											
DAY:	**Monday**											
ROOM:	**Rossa A**											
TIME	**17.15-19.15**											
CHAIR:	**Alberto Salvadori**											
KEYNOTE	**579**	*Modeling and Simulation of Soft Energy Harvesters using Piezoelectric Polymers*										
		Authors:	Ralf	Denzer								
		Presenting Author:	**Ralf Denzer**									
	618	*Influence of shear on sensing and energy harvesting of ionic polymer metal composites*										
		Authors:	Alessandro	Leronni	, Lorenzo	Bardella	, Luca	Viviani				
		Presenting Author:	**Lorenzo Bardella**									
	1025	*Quantification of the shear flexoelectricity in ferroelectrics*										
		Authors:	Alice	Mocci	, Amir	Abdollahi	, Irene	Arias				
		Presenting Author:	**Alice Mocci**									
	363	*On the influence of leakage current and polarization domains in ferroelectric nanogenerators for energy harvesting*										
		Authors:	Franziska J.	Wöhler	, Ingo	Münch	, Werner	Wagner				
		Presenting Author:	**FranziskaJ. Wöhler**									

MS:	**7-1 - Beam, Plate and Shell Finite Elements based on non-Classical Theories of Structures**											
DAY:	**Monday**											
ROOM:	**Verde B**											
TIME	**17.15-19.15**											
CHAIR:	**Erasmo Carrera, Francisco Chinesta**											
	976	*Stochastic response of Euler-Bernoulli beams equipped with tuned mass dampers subjected to random moving loads*										
		Authors:	Salvatore	Di Lorenzo	, Mario	Di Paola	, Iain	Dunn	, Giuseppe	Failla	, Antonina	Pirrotta
		Presenting Author:	**Iain Dunn**									
	1526	*On the robustness of MITC9 shell elements based on CUF*										
		Authors:	Maria	Cinefra	, Michele	D'Ottavio	, Oliver	Polit	, Erasmo	Carrera		
		Presenting Author:	**Maria Cinefra**									
	925	*Node-dependent kinematics elements for the analysis of FGM rotating structures*										
		Authors:	Matteo	Filippi	, Enrico	Zappino	, Erasmo	Carrera				
		Presenting Author:	**Enrico Zappino**									
	974	*New methodology for the construction of Best theory diagrams using neural networks and multi-objective genetic algorithm*										
		Authors:	Jose Luis	Mantari	, Jorge	Yarasca	, Gianfranco	Canales				
		Presenting Author:	**Jorge Yarasca**									

Tuesday, July 3, 2018

	Plenary Lecture
DAY:	**Tuesday**
ROOM:	**Europa Auditorium**
TIME	**9.00-9.45**
CHAIR:	**Luis Dorfmann**
	Fibre dispersion moderated elasticity of soft biological tissues
	Ray W. Ogden

MS: 3-5 - Mechanics and Physics of Solids and Structures
DAY: Tuesday
ROOM: Italia
TIME 10.15-12.15
CHAIR: N. Triantafyllidis, M. Bacca

	1455	*Thermoviscoelastoplastic modeling of soft membranes* Authors: Federico Bosi, Sergio Pellegrino **Presenting Author: Federico Bosi**
	1348	*A nonlinear theory for fibre-reinforced magneto-elastic rods* Authors: Jacopo Ciambella, Antonino Favata, Giuseppe Tomassetti **Presenting Author: Giuseppe Tomassetti**
	349	*Stability Analysis of a Thermodynamically Consistent Model of Atomic Step Dynamics* Authors: Laurent Guin, Michel Jabbour, Nicolas Triantafyllidi: **Presenting Author: Laurent Guin**
	1420	*Limit design analysis of solids susceptible to the stress state type* Authors: Evgeny Lomakin, Boris Fedulov **Presenting Author: Evgeny Lomakin**
	208	*Onset of mechanical nonlinearities for amorphous polymers in their glass transition regime : experimental results and model* Authors: Helene Montes, François Lequeux, Sabine Cantournet **Presenting Author: Helene MONTES**
	1106	*Local yield stress statistics in model amorphous solids* Authors: Armand Barbot, Matthias Lerbinge, Anier Hernandez-G, Reinaldo Garcia-Garci:, Michael L. Falk, Damien Vandembrou, Sylvain Patinet **Presenting Author: Sylvain Patinet**

MS: 3-8 - Recent advances in damage mechanics
DAY: Tuesday
ROOM: Bianca A
TIME 10.15-12.15
CHAIR: Jean-Jacques Marigo, Michael Brünig

KEYNOTE	**901**	*An isotropic damage cohesive formulation for mixed-mode delamination* Authors: Federica Confalonieri, Umberto Perego **Presenting Author: Umberto Perego**
	534	*Numerical insight of a variational smeared approach to cohesive fracture* Authors: Francesco Freddi, Flaviana Iurlano **Presenting Author: Flaviana Iurlano**
	405	*Crack nucleation and scale effects in variational phase-field models of brittle fracture* Authors: Corrado Maurini, Blaise Bourdin, Tianyi Li, Erwan Tanne, Jean-Jacques Marigo **Presenting Author: Corrado Maurini**
	647	*A variational two-phase model for micro-cracking and strain localization in fiber-reinforced concretes* Authors: Roberto Alessi, Giovanni Lancioni, Stefano Vidoli **Presenting Author: Giovanni Lancioni**
	960	*Multi-scale analysis of alkali-silica reaction-induced damage with thermo-mechanical coupling* Authors: Mauro Corrado, Martina Colombo, Claudia Comi, Jean-Francoi Molinari **Presenting Author: Mauro Corrado**

MS:	**9-4 - Modeling of Additive Manufacturing Processes**	
DAY:	**Tuesday**	
ROOM:	**Bianca B**	
TIME	**10.15-12.15**	
CHAIR:	**S. Morganti, M. Carraturo**	
KEYNOTE	**1328**	*Microstructural modeling of additive manufacturing processes of Ti6Al4V alloys* Authors: Emilio Salsi, Michele Chiumenti, Miguel Cervera **Presenting Author: Emilio Salsi**
	1288	*Micro-scale finite element thermal analysis of metallic powder bed fusion through selective laser melting* Authors: Simone Ancellotti, Alberto Molinari, Matteo Benedetti, Vigilio Fontanari, Dario Pitassi, Valerio Luchin, Gianluca Zappini **Presenting Author: Simone Ancellotti**
	1283	*On the modelling and simulation of selective laser melting using a phase transformation approach* Authors: Thorsten Bartel, Isabelle Guschke, Andreas Menzel **Presenting Author: Thorsten Bartel**
	560	*Multiscale Thermomechanical Modelling of Powder Bed Fusion Manufacturing* Authors: Wenyou Zhang, Noel Harrison **Presenting Author: Wenyou Zhang**
	434	*Three-dimensional analysis of grain structure evolution under additive manufacturing conditions* Authors: Olga Zinovieva, Aleksandr Zinoviev, Vasily Ploshikhin **Presenting Author: Olga Zinovieva**

MS:	**3-7 - Nonlinear Elasticity**	
DAY:	**Tuesday**	
ROOM:	**Magenta B**	
TIME	**10.15-12.15**	
CHAIR:	**Patrizio Neff, Luis Dorfman**	
KEYNOTE	**1115**	*Energy-Minimizing States of Hihgly Deformable Elastic Surfaces* Authors: Timothy Healey **Presenting Author: Timothy Healey**
	203	*Magic angles for fibrous incompressible elastic materials* Authors: Jeremiah Mu Murphy **Presenting Author: Jerry Murphy**
	252	*Hyperelastic models with uncertain responses under multiaxial loads* Authors: L. Angela Mihai, Thomas E. Woolley, Alain Goriely **Presenting Author: Angela Mihai**
	327	*A theory of continuum dynamics on manifolds* Authors: Raz Kupferman, Elihu Olami, Reuven Segev **Presenting Author: Reuven Segev**
	678	*Polyconvexity vs. rank-one convexity for isochoric and incompressible energies in planar elasticity* Authors: Robert J. Martin, Ionel-Dumitr Ghiba, Patrizio Neff **Presenting Author: Robert Martin**

MS:	**1-9 - Modeling of Fracture in Hard and Sof materials**										
DAY:	**Tuesday**										
ROOM:	**Magenta A**										
TIME	**10.15-12.15**										
CHAIR:	**Guido Borino, Roberta Massabò**										
KEYNOTE	**1354**	*Complexity in virtual tests for composite materials: large structures and the microstructural scale*									
		Authors:	Jerry	Quek	, Brian	Cox	, Francesca	Vadalà			
		Presenting Author:	**Brian Cox**								
	837	*The Discontinuity-Enriched Finite Element Method (DE-FEM) for Modeling 3-D Problems in Fracture Mechanics*									
		Authors:	Jian	Zhang	, Alejandro	Aragon	, Fred	Keulen			
		Presenting Author:	**Jian Zhang**								
	827	*A Low Order Virtual Element Formulation for Phase Field Modelling of Brittle Fracture*									
		Authors:	Blaž	Hudobivnik	, Fadi	Aldakheel	, Ali	Hussein	, Peter	Wriggers	
		Presenting Author:	**Blaž Hudobivnik**								
	1026	*Impact-induced crack patterns in brittle materials: Evidence of a power law dependence with fracture energy*									
		Authors:	Jared	Rivera	, Jonathan	Berjikian	, Mathieu	Bauchy	, N. M. Anoop Krishnan		
		Presenting Author:	**N. M. Anoop Krishnan**								

MS:	**3-3 - Material Instabilities**										
DAY:	**Tuesday**										
ROOM:	**Celeste**										
TIME	**10.15-12.15**										
CHAIR:	**Ahmed Benallal & Henryk Petryk**										
KEYNOTE	**1415**	*Transformation Induced Instabilities in Pseudoelastic NiTi Structures*									
		Authors:	Karlos	Kazinakis	, Stelios	Kyriakides	, Dongjie	JIang	, Chad	Landis	
		Presenting Author:	**Stelios Kyriakides**								
INVITED	**493**	*Phase field approach for stress-induced phase transformations that satisfies crystal lattice instability conditions*									
		Authors:	Valery	Levitas							
		Presenting Author:	**Valery Levitas**								
INVITED	**847**	*The roles of length and time scales in phase transition instability*									
		Authors:	Qingping	SUN	, Mingpeng	LI					
		Presenting Author:	**Qingping SUN**								
	537	*Thermal effects on dynamic magnetic-field-induced martensite reorientation of single crystal Ni-Mn-Ga*									
		Authors:	Shaobin	Zhang	, Yongjun	He	, Ziad	Moumni			
		Presenting Author:	**Shaobin Zhang**								
	1438	*Crushing of Open-Cell Foams with Cell-Size Distributions*									
		Authors:	Stavros	Gaitanaros	, Stelios	Kyriakides	, Andrew	Kraynik			
		Presenting Author:	**Stavros Gaitanaros**								

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**	
DAY:	**Tuesday**	
ROOM:	**Europa Auditorium**	
TIME	**10.15-12.15**	
CHAIR:	**Marc Geers, Matthew Begley**	
	185	*Atomistic modeling of history-independent cyclic fatigue of nanotwinned metals governed by correlated necklace dislocations*
		Authors: Huajian Gao , Haofei Zhou
		Presenting Author: Huajian Gao
	1355	*Lattice continuum: creep, diffusion, dislocation climb and glide.*
		Authors: Sinisa Dj. Mesarovic
		Presenting Author: Sinisa Mesarovic
	1103	*A computational modelling study of dislocation pile-up--phase boundary interaction*
		Authors: Franz Bormann , Ron Peerlings , Marc Geers
		Presenting Author: Ron Peerlings
	376	*Cohesive-Length Scales and Mixed-Mode Fracture*
		Authors: Michael Thouless
		Presenting Author: Michael Thouless
	1171	*Creating Sandwich Core Topologies Using Fused Deposition Modeling And Electroforming Processes*
		Authors: Marc Zupan , Steven Storck
		Presenting Author: Marc Zupan
	513	*Controllable localized deformation in a two dimensional metamaterial*
		Authors: Yafei Zhang , Changqing Chen
		Presenting Author: Changqing Chen

MS:	**1-6 - Multiscale Modelling of Polycrystalline Materials**	
DAY:	**Tuesday**	
ROOM:	**Ciano B**	
TIME	**10:15-12:15**	
CHAIR:	**Giacomo Po, Anter El-Azab**	
KEYNOTE	**395**	*Continuum dislocation dynamics modelling of self-organized dislocation structures in crystals*
		Authors: Anter El-Azab
		Presenting Author: Anter El-Azab
INVITED	**873**	*On the effective mobility of BCC dislocations in 2D-Discrete Dislocation Plasticity*
		Authors: Tarun Katiyar , Erik van der Giess
		Presenting Author: Tarun Katiyar
INVITED	**832**	*Effect of grain size on the strength of FCC polycrystals: strain gradient and mean-free path contributions*
		Authors: Sarra Haouala , Sergio Lucarini , Javier Segurado , Javier Llorca
		Presenting Author: sarra haouala
	1461	*Discrete dislocation plasticity investigation of microstructural effects on strain rate sensitivity in titanium alloys*
		Authors: Sana Waheed , Zebang Zheng , Daniel S. Balint , Fionn P. E. Dunne
		Presenting Author: Sana Waheed

MS:	**1-5 - Micro and Nanomechanics Systems**	
DAY:	**Tuesday**	
ROOM:	**Europa A**	
TIME:	**10.15-12.15**	
CHAIR:	**Attilio Frangi, Maria Pantano**	
	285	*Mechanics of folding and collapsing of nanotubes*
	Authors:	Ming Li , Fengwei Li , Hao Li , Zhan Kang
	Presenting Author:	**Ming Li**
	666	*A model for the tensile properties of carbon nanotube fibres*
	Authors:	Juan Carlos Fernandez-Tı , Alvaro Ridruejo , Juan Jose Vilatela
	Presenting Author:	**Alvaro Ridruejo**
KEYNOTE	**1183**	*Mechanics of Metallic Nanowires – Stress Relaxation and Diffusion-Mediated Failure*
	Authors:	Horacio Espinosa , Rajaprakash Ramachandr , Yanming Wang , Amin Aghaei , Gunther Richter , Wei Cai
	Presenting Author:	**Horacio Espinosa**
	353	*Grain Growth at the Nanoscale: The Coupling of Stress and Grain Boundary Motion*
	Authors:	Quentin Sherman , Peter Voorhees
	Presenting Author:	**Peter Voorhees**
	281	*Investigation of the mechanics of the cell membrane for insertion into a living cell during tip-cell interactions*
	Authors:	Na Fan , Bei Peng , Hai Jiang
	Presenting Author:	**Bei Peng**

MS:	**3-2 - Homogenization Strategies for Multiphase and Active Materials**	
DAY:	**Tuesday**	
ROOM:	**Europa B**	
TIME:	**10.15-12.15**	
CHAIR:	**Nick Triantafyllidis, Pedro Ponte Castaneda**	
	192	*A general result for the magnetoelastic response of isotropic suspensions of iron and ferrofluid particles in rubber, with applications to spherical and cylindrical specimens*
	Authors:	Oscar Lopez-Pamie , Victor Lefevre , Kostas Danas
	Presenting Author:	**Oscar Lopez-Pamies**
	840	*Multiscale continuum modeling of magnetorheological elastomers*
	Authors:	Philipp Metsch , Karl Alexand Kalina , Jörg Brummund , Markus Kästner
	Presenting Author:	**Philipp Metsch**
	487	*Magnetomechanical macroscopic instabilities in magnetorheological elastomer composites with periodic microstructures*
	Authors:	Artemii Goshkoderia , Stephan Rudykh
	Presenting Author:	**Artemii Goshkoderia**
	972	*Finite Element Simulations and Nonlinear Homogenization of Hyperelastic Fibre Reinforced Elastomer Composites*
	Authors:	Tilen Ceglar , Heinz Pettermann
	Presenting Author:	**Tilen Ceglar**
	1123	*Numerical and experimental study on effective elastic properties of 3D printed controlled random porous material numerically generated*
	Authors:	Othmane Zerhouni , Gabriella Tarantino , Konstantinos Danas
	Presenting Author:	**Othmane ZERHOUNI**
	1400	*The influence of viscosity and plasticity on the chemical reaction front propagation in solids*
	Authors:	Svetlana Petrenko , Eric Charkaluk
	Presenting Author:	**Svatlana Petrenko**

MS:	**7-6 - Structual Analysis of Real Historic Buildings**	
DAY:	**Tuesday**	
ROOM:	**Cobalto**	
TIME	**10.15-12.15**	
CHAIR:	**Maurizio Angelillo, Santiago Huerta**	
KEYNOTE	**522**	*Masonry arch and vault analysis. A historical outline, from Leonardo da Vinci to Discrete Elements* Authors: Karl-Eugen Kurrer **Presenting Author: Karl-Eugen Kurrer**
	1385	*A numerical approach for the determination of the thrust curve for masonry arches of complex shape* Authors: Eleonora Ricci , Aguinaldo Fraddosio , Mario Daniel Piccioni , Elio Sacco **Presenting Author: Eleonora Ricci**
	672	*Studying the Dome of Pisa Cathedral via a modern reinterpretation of Durand-Claye's method* Authors: Danila Aita , Riccardo Barsotti , Stefano Bennati **Presenting Author: Danila Aita**
	488	*Structural response of masonry vaults via lumped stress method* Authors: Mariella De Piano , Valentino Pa Berardi , Fernando Fraternali , Luciano Feo , Rosa Penna **Presenting Author: Mariella De Piano**
	263	*Equilibrium of masonry helical structures under vertical and horizontal forces: the spiral stair of Certosa di Padula* Authors: Antonio Gesualdo **Presenting Author: Antonio Gesualdo**

MS:	**7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials**	
DAY:	**Tuesday**	
ROOM:	**Europa C**	
TIME	**10.15-12.15**	
CHAIR:	**Fernando Fraternali, Julian Rimoli**	
KEYNOTE	**233**	*Meta-materials with locally addressable properties: from self-folding to autonomous propulsion* Authors: Chiara Daraio **Presenting Author: Chiara Daraio**
	182	*On the band-gap structure of tensegrity metamaterials* Authors: Ada Amendola , Anastasiia Krushynska , Chiara Daraio , Nicola M. Pugno , Fernando Fraternali **Presenting Author: Ada Amendola**
	282	*Buckling Tensegrity-Based Metamaterials for Dynamic Applications* Authors: Kirsti Pajunen , Paul Johanns , Julian Rimoli , Raj Pal , Chiara Daraio **Presenting Author: Kirsti Pajunen**
	1130	*On the nonlinear dynamics of spatial cellular tensegrities* Authors: Andrea Micheletti , Attilio Pizzigoni , Giuseppe Ruscica **Presenting Author: Giuseppe Ruscica**
	249	*Lattice models to interpret the experimental response of innovative structural materials* Authors: Ida Mascolo , Mariano Modano , Francesco Fabbrocino , Ilenia Farina , Francesco Colangelo **Presenting Author: Ida Mascolo**

MS:	**2-2 - Mechanics and Shape Control of Biological Membranes and Thin Structures**	
DAY:	**Tuesday**	
ROOM:	**Rossa B**	
TIME	**10.15-12.15**	
CHAIR:	**DeSimone, Arroyo, Noselli**	
	610	*Active superelasticity revealed by three-dimensional epithelial sheets of controlled size and shape* Authors: Ernest Latorre, Sohan Kale, Laura Casares, Manuel Gomez-Gonz, Marina Uroz, Léo Valon, Benoit Ladoux, Marino Arroyo **Presenting Author: Ernest Latorre**
	1256	*Theoretical and computational modelling of epithelial wound closure* Authors: Lisandro Roldan, Jose Muñoz, Pablo Sáez **Presenting Author: Pablo Sáez**
	1144	*An ALE formulation for the 3D flow and shape dynamics of cellular membranes* Authors: Roger Sauer, Amaresh Sahu, Yannick Omar, Kranthi Mandadapu **Presenting Author: Roger Sauer**
	1006	*Building a three-dimensional model for the cell cortex from the bottom-up: bringing elasticity, remodeling and active forces together* Authors: Alejandro Torres-Sánch, Guillermo Vilanova, Marino Arroyo **Presenting Author: Alejandro Torres-Sánchez**
	748	*The interaction of cells with the surrounding environment, a statistical mechanics perspective* Authors: Andrea Vigliotti, Siamak S. Shishvan, Vikram S. Deshpande **Presenting Author: Andrea Vigliotti**
	1045	*Dynamics of membrane-protein interactions* Authors: Caterina Tozzi, Nikhil Walani, Marino Arroyo **Presenting Author: Caterina Tozzi**
	1562	*Surfactant transport during the rheological relaxation of two-dimensional dry foams* Authors: Francesca Zaccagnino, Somon Cox **Presenting Author: Francesca Zaccagnino**

MS:	**2-5 - Cardiovascular Biomechanics and Mechanobiology: from Basics to Clinical Applications**	
DAY:	**Tuesday**	
ROOM:	**Ciano A**	
TIME	**10.15-12.15**	
CHAIR:	**A. Veneziani, C. Cyron**	
KEYNOTE	**843**	*Coupling strategies for electro-mechanics in the heart* Authors: Marco Favino, Simone Pezzuto, Sonia Pozzi, Seif Ben Bader, Alessio Quaglino, Rolf Krause **Presenting Author: Marco Favino**
INVITED	**160**	*The heart: the only pump the failure of which cannot be assessed through stress analysis.* Authors: Jacques M. Huyghe, Peter H.M. Bovendeerd **Presenting Author: Jacques M. Huyghe**
INVITED	**467**	*A Computational Approach for Estimation of the In Vivo Mechanical Material Properties of the Heart Wall from Untagged Images* Authors: Jing Xu, Marc Simon, Timothy Wong, John Brigham **Presenting Author: John Brigham**
INVITED	**946**	*Modeling and high-performance simulation of open-irrigated-catheter cardiac radiofrequency ablation* Authors: Massimilianc Leoni, Argyrios Petras, Luca Gerardo-Gio, Johan Jansson, Johan Hoffman **Presenting Author: Massimiliano Leoni**
	1057	*The Hidden Side Effects of Endovascular Aortic Stenting on Cardiac Function: Shifting the Problem Upstream.* Authors: Jamie Concannon, Niamh Hynes, Sherif Sultan, Christof Karmonik, Patrick McGarry, Peter McHugh **Presenting Author: Jamie Concannon**
	1018	*Predicting and understanding collagen remodeling in human native heart valves during early development* Authors: Tommaso Ristori, Carlijn Bouten, Frank Baaijens, Sandra Loerakker **Presenting Author: Tommaso Ristori**

MS:	**4-1 - Experimental Micromechanics and Nanomechanics**	
DAY:	**Tuesday**	
ROOM:	**Verde A**	
TIME	**10:15-12:15**	
CHAIR:	**Sandra Korte-Kerzel, Jeffrey M. Wheeler**	
KEYNOTE	**362**	*High Temperature Performance of Metallic and Metal-Ceramic Nanoscale Multilayers* Authors: Javier LLorca **Presenting Author: Javier LLorca**
	609	*Microscale Tribology of Pearlite Steel and the Deformation of Cementite* Authors: Steffen Brinckmann , Caroline Fink , Haleh Taghinejadi , Gerhard Dehm **Presenting Author: Steffen Brinckmann**
	1059	*Enhanced strain rate sensitivity of nanotwinned Cu under high temperature indentation-creep* Authors: Yang Lingwey , Miguel Monclus , Chuanyun Wang , Lei Lu , Jon Molina-Aldar **Presenting Author: Miguel Monclus**
	595	*Anneal hardening and high temperature strain rate sensitivity of nanostructured metals and their relation to intergranular dislocation accommodation* Authors: Verena Maier-Kiener , Daniel Kiener , Reinhard Pippan , Oliver Renk **Presenting Author: Oliver Renk**
	520	*Hardness and elastic modulus mapping to investigate the microstructural/micromechanical relation in cBN-TiN composites* Authors: Joan Josep Roa , Hossein Besharatloo , Kurt Johanns , Warren C. Oliver , Luis Llanes **Presenting Author: Joan Josep Roa Rovira**

MS:	**5-6 - Mechanics in energy harvesting and storage**	
DAY:	**Tuesday**	
ROOM:	**Rossa A**	
TIME	**10.15-12.15**	
CHAIR:	**Ralf Denzer, Angelo Simone**	
	878	*Energy harvesting using array of rotating pendulums suspended from axially vibrating rigid rod* Authors: George Vathakkattil , Shaikh Faruq Ali , Sayan Gupta , Vikram Pakrashi **Presenting Author: George Vathakkattil Joseph**
	1210	*Energy harvesting from bridge vibrations with piezoelectric devices - Analysis of a case study bridge* Authors: Jacopo Bonari , Davide Colonna , Paolo S. Valvo **Presenting Author: Jacopo Bonari**
	374	*Compression sensing of ionic polymer metal composites: influence of the material properties in the polymer/metal interphases* Authors: Valentina Volpini , Lorenzo Bardella **Presenting Author: Valentina Volpini**
	724	*Viscoelasticity-ionic transport interaction in solid polymer electrolytes* Authors: Davide Grazioli , Andrea Panteghini , Angelo Simone **Presenting Author: Davide Grazioli**
	803	*Mechanical response of polymer electrolyte membranes subject to hydration-dehydration cycles* Authors: Paola Nardinocchi , Eric Puntel , Marco Rossi , Thomas Wallmersper **Presenting Author: Marco Rossi**
	1033	*Chemical and Thermal Stresses in Proton-conducting Membranes* Authors: John Berger , Alexis Dubois , Kasra Taghikhani , Sandrine Ricote , Robert Kee **Presenting Author: John Berger**

MS:	**6-3 - Dynamic Failure and Phase Transition in Structured Media**	
DAY:	**Tuesday**	
ROOM:	**Verde B**	
TIME	**10.15-12.15**	
CHAIR:	**Michael Nieves, Andrea Piccolroaz**	
KEYNOTE	**397**	*Design of Fault-Tolerant Energy Absorbing Lattices*
	Authors:	Michael Ryvkin , Andrej Cherkaev , Stephan Rudykh , Viacheslav Slesarenko
	Presenting Author:	**Michael Ryvkin**
	256	*The Topology and Mechanics of the Formation of Fracture Surface Patterns*
INVITED	Authors:	Itamar Kolvin , Jay Fineberg , Mokhtar Adda-Bedia
	Presenting Author:	**Jay Fineberg**
	1042	*Crucial role of `non-essential' multifield approximations in lattice dynamics and dynamic phase transitions*
INVITED	Authors:	Miguel Charlotte , Lev Truskinovsky
	Presenting Author:	**miguel CHARLOTTE**
	1312	*The numerical simulation of the multi-stage damage behavior of the HR2 steel thick-walled cylinder expanded by explosive load*
	Authors:	Yuxi Jiang , Songqing Jiang , Wentao Liu
	Presenting Author:	**Yuxi Jiang**
	964	*A bottom-up approach for brittle fracture from molecular to continuum*
INVITED	Authors:	Sandeep Patil , Yousef Heider , Bernd Markert
	Presenting Author:	**Bernd Markert**

MS:	**5-3 - Geometry and Discretization**	
DAY:	**Tuesday**	
ROOM:	**Gialla A**	
TIME	**10.15-12.15**	
CHAIR:	**A. Reali**	
	1357	*Prostate enlargement due to benign prostatic hyperplasia provides mechanical protection against prostate cancer*
	Authors:	Guillermo Lorenzo , Pablo Dominguez-F , Alessandro Reali , Hector Gomez
	Presenting Author:	**Guillermo Lorenzo**
	664	*Force Equilibrium in a Spectral Finite Element Method*
	Authors:	K Olesen , B Gervang , J N Reddy , M Gerritsma
	Presenting Author:	**Bo Gervang**
	917	*A hybrid equilibrium formulation devoid of spurious kinematic modes. Part I: Lower order approximation.*
	Authors:	Varun Jain , Yi Zhang , Marc Gerritsma
	Presenting Author:	**Varun Jain**
	911	*A hybrid equilibrium formulation devoid of spurious kinematic modes. Part II: High order approximation.*
	Authors:	Yi Zhang , Varun Jain , Marc Gerritsma
	Presenting Author:	**Yi Zhang**

	Plenary Lecture
DAY:	**Tuesday**
ROOM:	**Europa Auditorium**
TIME	**13.45-14.30**
CHAIR:	**Claudia Comi**
	Modelling of strain localization in ductile materials
	Odd Sture Hopperstad

MS:	**3-5 - Mechanics and Physics of Solids and Structures**											
DAY:	**Tuesday**											
ROOM:	**Italia**											
TIME	**14.30-16.30**											
CHAIR:	**B. Davidovitch, S. Rubinstein**											
	1037	*Forceless Sadowsky strips are spherical*										
		Authors:	Gert	van der Heijc	, Eugene	Starostin						
		Presenting Author:	**Gert van der Heijden**									
	1448	*Shape of an heavy ribbon held curved at one extremity*										
		Authors:	Gwenn	Boedec	, Julien	Deschamps						
		Presenting Author:	**Gwenn Boedec**									
	1303	*Stability of a magnetic ring subject to a point dipole*										
		Authors:	Tuan	Hoang	, Eliot	Fried						
		Presenting Author:	**Tuan Hoang**									
	1298	*Bistable mechanisms for strips with controlled clamped ends*										
		Authors:	Alessandro	Cazzolli	, Francesco	Dal Corso	, Davide	Bigoni				
		Presenting Author:	**Alessandro Cazzolli**									
	1295	*The dynamics of structures with configurational forces*										
		Authors:	Francesco	Dal Corso	, Costanza	Armanini	, Diego	Misseroni	, Davide	Bigoni		
		Presenting Author:	**Francesco Dal Corso**									
	747	*Open Trefoil Knots with no self-contact*										
		Authors:	Sebastien	Neukirch	, Paul	Grandgeorge	, Derek	Moulton				
		Presenting Author:	**Sebastien Neukirch**									

MS:	**3-8 - Recent advances in damage mechanics**											
DAY:	**Tuesday**											
ROOM:	**Bianca A**											
TIME	**14.30-16.30**											
CHAIR:	**Claudia Comi, Umberto Perego**											
	765	*Gradient damage models for large deformation*										
		Authors:	Blandine	Crabbé	, Jean-Jacques	Marigo	, Eric	Chamberlanc	, Joachim	Guilié		
		Presenting Author:	**Blandine Crabbé**									
	555	*Gradient Damage Models Applied to Dynamic Fragmentation*										
		Authors:	Arthur	Geromel Fisc	, Jean-Jacques	Marigo						
		Presenting Author:	**Arthur Geromel Fischer**									
	1165	*Constraint regularization for a non-smooth damage model*										
		Authors:	Nunziante	Valoroso	, Claude	Stolz						
		Presenting Author:	**Claude Stolz**									
	359	*Damage and failure mechanisms in ductile metals at negative stress triaxialities*										
		Authors:	Michael	Brünig	, Steffen	Gerke	, Marco	Schmidt				
		Presenting Author:	**Michael Brünig**									
	1501	*Revisiting Gurson-Tvergaard-Needleman model to develop a thermodynamically consistent damage model*										
		Authors:	Eva M	Andres	, Javier	Segurado	, Ignacio	Romero				
		Presenting Author:	**Eva M Andres**									
	944	*Prediction of precipitate coarsening induced damage in welded 9Cr piping systems at high temperature*										
		Authors:	Cathal	Ó Murchú	, Padraic	E. O'Donoghı	, Sean	B. Leen	, Richard	A. Barrett		
		Presenting Author:	**Padraic E. O'Donoghue**									

General Session:	**Structural Mechanics**	
DAY:	**Tuesday**	
ROOM:	**Bianca B**	
TIME	**14.30-16.30**	
CHAIR:	**Alberto Di Matteo, Pedro Dias Simão**	
	273	*On lay-up chioce of anisotropic composite plates under bucking and post-buckling conditions*
	Authors:	Sergey Selyugin
	Presenting Author:	**Sergey Selyugin**
	556	*Free vibration analysis of arbitrary graded piezoelectric beam using a modified state space differential quadrature method*
	Authors:	Balavishnu Udayakumar , K.V. Nagendra Gopal
	Presenting Author:	**Balavishnu Udayakumar**
	751	*Free vibration response and damping behaviour of viscoelastic sandwich panels using multi-scale asymptotic expansion method*
	Authors:	Guruprasad Hegde , K.V.Nagendra Gopal
	Presenting Author:	**Guruprasad Hegde**
	886	*Meshfree LEM approach for laminated plates of arbitrary shape*
	Authors:	Alberto Di Matteo , Giuseppe Battaglia , Giorgio Micale , Antonina Pirrotta
	Presenting Author:	**Alberto Di Matteo**
	997	*Instability of split elastic structures*
	Authors:	Andrii Iakovliev , Srinandan Dasmahapatra , Atul Bhaskar
	Presenting Author:	**Andrii Iakovliev**
	248	*Multi-axial Stress Sensor for Structural Health Monitoring*
	Authors:	Mohammad Abbasi Gavarti , Francesco Braghin , Daniele Caltabiano , Gabriele Bertagnoli , Elio Guidetti
	Presenting Author:	**Mohammad Abbasi Gavarti**

MS:	**3-7 - Nonlinear Elasticity**	
DAY:	**Tuesday**	
ROOM:	**Magenta B**	
TIME	**14.30-16.30**	
CHAIR:	**Patrizio Neff, Reuven Segev**	
	413	*Deformations of a hyperelastic helical spring*
	Authors:	Les Sudak , Taisiya Sigaeva , Alexey M. Kolesnikov
	Presenting Author:	**Les Sudak**
	497	*An experimental study of localized bulging in pressurized cylindrical tubes guided by newly emerged theoretical results*
	Authors:	Shibin Wang , Zhiming Guo , Lei Zhou , Linan Li , Yibin Fu
	Presenting Author:	**Yibin Fu**
	586	*The nonlinear elasticity of hyperelastic models for stretch-dominated structures*
	Authors:	Alexander Safar , L. Angela Mihai
	Presenting Author:	**Alexander Safar**
	733	*Finitely deforming thin-wall composite spheres*
	Authors:	Gidon Weil , Gal deBotton
	Presenting Author:	**Gidon Weil**
	1049	*Elastic shear wave propagation in finitely deformed compressible hyperelastic layered composite*
	Authors:	Jian li , Stephan Rudykh
	Presenting Author:	**Jian LI**
	1268	*On the compressibility of rubber: experiments and theoretical considerations*
	Authors:	Robert Plachy , Stefan Scheiner , Krzysztof W. Luczynski , Armin Holzner , Christian Hellmich
	Presenting Author:	**Robert Plachy**

MS:	**6-1 -Nonlinear Dynamics in Mechanical and Structural Systems**	
DAY:	**Tuesday**	
ROOM:	**Magenta A**	
TIME	**14.30-16.30**	
CHAIR:	**Jon Juel Thomsen, Olivier Thomas**	
KEYNOTE	**380**	*Structural transformations under dynamic loading* Authors: Dmitry Indeitsev , Dmitry Skubov , Dmitry Vavilov **Presenting Author: Dmitry Vavilov**
	492	*On the stochastic resonance phenomenon in parametrically excited mechanical systems* Authors: Iliya Blekhman , Vladislav Sorokin **Presenting Author: Vladislav Sorokin**
	463	*On the effect of longitudinal vibrations on systems with dry friction* Authors: Simon Kapelke , Wolfgang Seemann **Presenting Author: Wolfgang Seemann**
	568	*Stability loss of Axially Moving Strings and Beams* Author: Alois Steindl **Presenting Author: Alois Steindl**
	774	*Roughness-generated vertical dynamic excitation of sliding rough surfaces: experimental, numerical and analytical approaches* Authors: Nicolas Ponthus , Joël Perret-Liaudı, Julien Scheibert , Anders Malthe-Sorei , Kjetil Thogersen **Presenting Author: Nicolas Ponthus**

MS:	**3-3 - Material Instabilities**	
DAY:	**Tuesday**	
ROOM:	**Celeste**	
TIME	**14.30-16.30**	
CHAIR:	**Henryk Petryk & Ahmed Benallal**	
INVITED	**727**	*On the connections between imperfection and bifurcation analyses in simulation of ductile failure* Authors: david morin , Odd Sture Hopperstad , Ahmed Benallal **Presenting Author: David Morin**
	1290	*The dynamics of a shear band* Authors: Diana Giarola , Domenico Capuani , Davide Bigoni **Presenting Author: Diana Giarola**
	1310	*Description of dynamic shear localization and failure in viscoplastic structures* Authors: Hannah Lois Dorothy , Patrice Longere , Andre Dragon **Presenting Author: Hannah Lois Dorothy**
INVITED	**1434**	*Finite element simulation of Luders bands in polycrystalline aggregates* Authors: Matthieu Maziere **Presenting Author: Matthieu Maziere**
	994	*Observation and modeling of Portevin-Le Chatelier instabilities in a cobalt-based superalloy* Authors: Edi Fernandes Pe, Vincent Marcadon , David Lévêque , Pascale Kanoute , Lionel Marcin , Florent Coudon , Samuel Forest **Presenting Author: Edi Fernandes Pereira**

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**	
DAY:	**Tuesday**	
ROOM:	**Europa Auditorium**	
TIME	**14.30-16.30**	
CHAIR:	**Nicolas TRIANTAFYLLIDIS, Ron Peerlings**	
	478	*Acoustic metafoams: enabling multi-functional sound attenuation*
	Authors:	Marc Geers , Miroslawa Lewinska , Kamil Chrzaszcz , Hans van Dommel , Varvara Kouznetsova , Johan Hoefnagels , Albert Poortinga
	Presenting Author:	**Marc Geers**
	1167	*High-contrast periodic lattices: bandgaps and spatial filtering*
	Authors:	Valery Smyshlyaev
	Presenting Author:	**Valery Smyshlyaev**
	706	*Vibroacoustic wave transport phenomena in periodic materials*
	Authors:	Srikantha Phani
	Presenting Author:	**Srikantha Phani**
	440	*MULTISCALE MODELING OF SOUND ABSORPTION IN DOUBLE-POROSITY MATERIALS*
	Authors:	X. W. Ma , X. W. Liu , S. W. Ren , F. X. Xin , Tian Jian Lu
	Presenting Author:	**Tian Jian Lu**
	716	*Theoretical Analysis of Metal Tubes under Expansion*
	Authors:	Yuzhe Liu , Xinming Qiu , T.X Yu
	Presenting Author:	**Xinming Qiu**
	1282	*Non-linear Elastic Response of Hierarchical Cellular Materials*
	Authors:	Matthew Begley
	Presenting Author:	**Matthew Begley**

MS:	**1-6 - Multiscale Modelling of Polycrystalline Materials**	
DAY:	**Tuesday**	
ROOM:	**Ciano B**	
TIME	**14:30-16:30**	
CHAIR:	**Cazacu Upadhyay**	
	394	*Prediction of plastic anisotropy in yield stresses and Lankford coefficients of textured polycrystalline sheets using a new single crystal model*
INVITED	Authors:	Oana Cazacu , Nitin Chandola , Benoit Revil-Baudar
	Presenting Author:	**Oana Cazacu**
	509	*Biaxial load path change response of 316L stainless steel: multi-scale modeling and in-situ cruciform experiments*
INVITED	Authors:	Manas Upadhyay , Tobias Panzner , Steven van Petegem , Anirban Patra , Wei Wen , Carlos Tome , Ricardo Lebensohn , Helena van Swygenh
	Presenting Author:	**Manas Upadhyay**
	308	*Representative volume element size determination for viscoplastic polycrystalline materials*
	Authors:	Justin Dirrenberger , Shaobo Yang , Eric Monteiro , Nicolas Ranc
	Presenting Author:	**Justin Dirrenberger**
	1510	*A Microstructure-Informed Thermo-Elastic-Plastic Constitutive Model for Ferrite-Pearlite Steel: Application to Machining Process*
	Authors:	Jifeng Li , Ignacio Romero , Javier Segurado
	Presenting Author:	**Jifeng Li**
	1509	*Physically-based modelling of the mechanical behavior of martensitic steels. Comparison with experimental data.*
	Authors:	Maxime Sauzay , Pierre-Franç Giroux , Diogo Gonçalvès , Jia Chao Chen , Stefan Holmlström
	Presenting Author:	**Maxime Sauzay**

MS:	**1-4 - Mechanics of Textile Composite Reinforcements and Fibrous Materials**	
DAY:	**Tuesday**	
ROOM:	**Europa A**	
TIME	**14.30-16.30**	
CHAIR:	**Lomov S., Orgeas L.**	
	170	*Numerical simulation of fiber orientation change and defect generation during preforming process of CFRP*
		Authors: Masaaki Nishikawa , Naoko Takahashi , Naoki Matsuda , Masaki Hojo
		Presenting Author: Masaaki Nishikawa
	367	*Finite element simulation of the transverse compression of carbon tows: influence of disorder within the filament assembly*
		Authors: Moustacas Hélène , Durville Damien , Wielhorski Yanneck
		Presenting Author: Moustacas Hélène
	368	*Mechanics of random fiber networks with inter-fiber adhesion*
		Authors: Catalin Picu , Vineet Negi , Ahmed Sengab
		Presenting Author: Catalin Picu
	544	*Influence of Twisting Process on Mechanical Properties of Filament Yarns : Experimental and Numerical Study*
		Authors: Aurélien Sibellas , Damien Durville , Eric Marie , Jérôme Adrien
		Presenting Author: Aurélien Sibellas
	587	*Hygro-thermo-mechanics of fibrous networks: from effective properties to scale effects.*
		Authors: Emanuela Bosco , Ron Peerlings , Marc Geers
		Presenting Author: Emanuela Bosco
	1200	*Investigation of mechanical properties of tufted composites: influence of the tufting process parameters*
		Authors: Cahn Hiu , Xavier Legrand , peng Wang , Lingshan Liu
		Presenting Author: Xavier Legrand

MS:	**3-2 - Homogenization Strategies for Multiphase and Active Materials**	
DAY:	**Tuesday**	
ROOM:	**Europa B**	
TIME:	**14:30-16:30**	
CHAIR:	**Kostas Danas, Nick Triantafyllidis**	
	989	*Shortening, lengthening and thickening of dielectric composite elastomer actuators*
		Authors: Massimilianc Gei , Roberta Springhetti , Lorenzo Morini
		Presenting Author: Massimiliano gei
	215	*Nonlinear Electroelastic Deformations of Soft Layered Composites Containing Space Charges, with Application to Electrets*
		Authors: Victor Lefevre , Guillaume D'Hondt , Oscar Lopez-Pamie
		Presenting Author: Victor Lefevre
	526	*The coupling between the chains network and the electromechanical response of the polymer*
		Authors: Nir Alboteanu , Gal deBotton
		Presenting Author: Nir Alboteanu
	443	*An analytical network-averaging model for eletroelasticity in dielectric elastomers*
		Authors: Vu Ngoc Khiêm , Sugeng Waluyo , Mokarram Hossain , Mikhail Itskov
		Presenting Author: Vu Ngoc Khiêm
	1137	*Finite Element Homogenization of Nanoporous Piezoelectric Composites with Uncoupled Surface Effects*
		Authors: Andrey Nasedkin , Anna Nasedkina , Alexandr Kornievsky
		Presenting Author: Anna Nasedkina

MS: 1-3 - Architected Materials
DAY: Tuesday
ROOM: Indaco
TIME 14.30-16.30
CHAIR: Patrick Onck, D. Pasini

1013 *Form-finding in elastic gridshells*
Authors: Changyeob Baek , Andrew O. Sageman-Fuı , Mohammad Jawed , Pedro M. Reis
Presenting Author: Changyeob Baek

927 *Three-dimensional self-morphing of triangular planar lattices triggered by distributed beam expansion*
Authors: Lorenzo Guiducci , Peter Fratzl , John Dunlop
Presenting Author: Lorenzo Guiducci

744 *Selective pattern transformation via Euler buckling of hierarchical beams*
Authors: Gabriella Tarantino , Kostas Danas
Presenting Author: Gabriella Tarantino

498 *Piezoelectric polymer thin films with architected cuts*
Authors: Lichen Fang , Jing Li , Zeyu Zhu , Sung Hoon Kang
Presenting Author: Sung Hoon Kang

MS: 7-6 - Structual Analysis of Real Historic Buildings
DAY: Tuesday
ROOM: Cobalto
TIME 14.30-16.30
CHAIR: Maurizio Angelillo, Santiago Huerta

852 *Resistance of flat vaults with respect to their stereotomy*
Authors: Mathias Fantin , Maurizio Brocato , Thierry Ciblac
Presenting Author: Thierry Ciblac

334 *The dome and the buttress system of San Francesco di Paola in Naples. A stability analysis.*
Authors: Concetta Cusano , Claudia Cennamo , Maurizio Angelillo
Presenting Author: Concetta Cusano

919 *Lower-bound limit analysis of historical masonry vaults of general shape and under general loads*
Authors: Aguinaldo Fraddosio , Nicola Lepore , Mario Daniel Piccioni
Presenting Author: Nicola Lepore

265 *A Computer Code Producing Statically Admissible Stress Fields for Masonry Vaults*
Authors: Elena De Chiara , Antonio Fortunato
Presenting Author: Elena De Chiara

1425 *A No-Tension Model for the brick masonry vaults of San Barbaziano Church in Bologna*
Authors: Michela Monaco , Immacolata Bergamasco
Presenting Author: Michela Monaco

383 *Load tests on the masonry vaults of Palazzo Caracciolo D'Avellino in Naples: from numerical prediction to experimental results*
Authors: Giuseppe Brandonisio , Antonello De Luca
Presenting Author: Antonello De Luca

MS:	**7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials**														
DAY:	**Tuesday**														
ROOM:	**Europa C**														
TIME	**14.30-16.30**														
CHAIR:	**Fernando Fraternali, Chiara Daraio**														
	1372	*Programmable Deployment of Tensegrity Structures by Stimulus-Responsive Polymers*													
		Authors:	Glaucio	Paulino	, Ke	Liu	, Jiangtao	Wu	, Jerry	Qi					
		Presenting Author:	**Glaucio Paulino**												
	614	*On the post-buckling response of tensegrity-based metamaterials*													
		Authors:	Julian J.	Rimoli	, Hossein	Salahshoor	, Raj Kumar	Pal							
		Presenting Author:	**Julian J. Rimoli**												
	351	*Tensegrity D-bar Systems for Energy Storage*													
		Authors:	Raman	Goyal	, Edwin	Peraza Hern	, Robert	Skelton							
		Presenting Author:	**Raman Goyal**												
	403	*Effective properties of auxetic multilattice structures*													
		Authors:	Igor	Berinskii											
		Presenting Author:	**Igor Berinskii**												
	661	*Three-dimensional lattice materials with programmable thermal expansion*													
		Authors:	Hang	Xu	, Amr	Farag	, Damiano	Pasini							
		Presenting Author:	**Hang Xu**												
	301	*Nonlinear wave dispersion analysis in 1-D metamaterials made of tensegrity units*													
		Authors:	Geminiano	Mancusi	, Luciano	Feo	, Agostina	Orefice	, Ida	Mascolo	, Ada	Amendola	, Fernando	Fraternali	
		Presenting Author:	**Ida Mascolo**												

MS:	**2-2 - Mechanics and Shape Control of Biological Membranes and Thin Structures**														
DAY:	**Tuesday**														
ROOM:	**Rossa B**														
TIME	**14.30-16.30**														
CHAIR:	**DeSimone, Arroyo, Noselli**														
	477	*Baromorphs - Dynamically controlled bio-inspired shape-morphing*													
		Authors:	Emmanuel	Siéfert	, José	Bico	, Etienne	Reyssat	, Benoit	Roman					
		Presenting Author:	**Emmanuel Siéfert**												
	757	*Computational design of non-Euclidean gel plates*													
		Authors:	Alessandro	Lucantonio	, Antonio	DeSimone									
		Presenting Author:	**Alessandro Lucantonio**												
	775	*Friction-Restricted Growth and Buckling of Elastic Fibers*													
		Authors:	Peter L.	Varkonyi	, Marcell G.	Horvath	, Andras A.	Sipos							
		Presenting Author:	**Peter L. Varkonyi**												
	1543	*A new concept of tissue engineering scaffold, based on Shellular*													
		Authors:	Jiafei	Gu	, Shiyi	Tan	, Kiju	Kang							
		Presenting Author:	**Jiafei Gu**												
	1255	*A simple analytical model for estimating the role of synovial fluid in articular joints*													
		Authors:	Gennaro	Vitucci	, Gennady	Mishuris									
		Presenting Author:	**Gennaro Vitucci**												
	299	*Scale- and surface chemistry dependent mechanical properties of mucus layers as studied with atomic force microscopy*													
		Authors:	Seunghwan	Lee	, Nikolaos	Nikogeorgos									
		Presenting Author:	**Seunghwan Lee**												

MS:	**2-5 - Cardiovascular Biomechanics and Mechanobiology: from Basics to Clinical Applications**	
DAY:	**Tuesday**	
ROOM:	**Ciano A**	
TIME	**14.30-16.30**	
CHAIR:	**A. Veneziani, C. Cyron**	
KEYNOTE	**750**	*A novel flow-tissue multiscale strategy for analysing vascular physiopathology*
	Authors:	Daniele Bianchi, Alessio Gizzi, Michele Marino, Giuseppe Vairo
	Presenting Author:	**Michele Marino**
	867	*Homogenized Constrained Mixture Approach to Predict Arterial Growth and Remodeling: A Finite Element Implementation*
INVITED	Authors:	S. Jamaleddin Mousavi, Stéphane Avril
	Presenting Author:	**S. Jamaleddin Mousavi**
	690	*Fluid-Structure Interaction of Woven Dacron Aortic Prostheses with Simple Interrupted Suture*
	Authors:	Eleonora Tubaldi, Michael P. Paidoussis, Marco Amabili
	Presenting Author:	**Eleonora Tubaldi**
	573	*A Chemo-mechano-biological Approach for the Computational Modelling of In-stent Restenosis*
INVITED	Authors:	Meike Gierig, Michele Marino, Peter Wriggers
	Presenting Author:	**Meike Gierig**
	176	*Three-Dimensional Riemannian Stress-Free Configuration of Arteries*
INVITED	Authors:	Keiichi Takamizawa
	Presenting Author:	**Keiichi Takamizawa**

MS:	**4-1 - Experimental Micromechanics and Nanomechanics**	
DAY:	**Tuesday**	
ROOM:	**Verde A**	
TIME	**14:30-16:30**	
CHAIR:	**Javier Llorca, Christoph Kirchlechner**	
	1101	*Plasticity in complex crystals – On the role of building blocks in intermetallics and layered compounds*
	Authors:	Sandra Korte-Kerzel, Sebastian Schröders, Stefanie Sandlöbes, James Gibson, Robert Thompson, Philip Howie, William Clegg
	Presenting Author:	**Sandra Korte-Kerzel**
	472	*Size Effect in Nickel-Cobalt Alloys*
	Authors:	Yuan Xian, Bin Gan, Jeffrey M. Wheeler
	Presenting Author:	**Jeffrey M. Wheeler**
	348	*In-situ TEM study on deformation behaviors of CrMnFeCoNi single crystal high entropy alloys*
	Authors:	Subin Lee, Christian Liebscher, Gerhard Dehm
	Presenting Author:	**Subin Lee**
	1108	*Nanoindentation and micropillar compression tests: study of the mechanical hysteresis of the MAX phase Ti2AlN*
	Authors:	Christophe TROMAS, Wilgens SYLVAIN, Anne JOULAIN, Ludovic THILLY, Patrick VILLECHAISE, Marc LEGROS
	Presenting Author:	**Christophe TROMAS**
	527	*Effect of the microstructure in the plasticity of sub-micron Al and Be wires*
	Authors:	Frédéric Mompiou, Marc Legros
	Presenting Author:	**Frédéric Mompiou**
	785	*Characterization of the anisotropy of the duplex stainless steels by means of the micromechanical evaluation*
	Authors:	Hossein Besharatloo, Joan Josep Roa, Gemma Fargas, Antonio Manuel mate, Luis Miguel llanes
	Presenting Author:	**Hossein Besharatloo**

MS:	**5-6 - Mechanics in energy harvesting and storage**	
DAY:	**Tuesday**	
ROOM:	**Rossa A**	
TIME	**14.30-16.30**	
CHAIR:	**Alberto Salvadori**	
	921	*Quantitative electrochemical strain microscopy*
	Authors:	Bernhard Roling , Stephan Bradler , Andre Schirmeisen , Valon Lushta
	Presenting Author:	**Bernhard Roling**
	254	*Diffusion induced super bending of bilayered Li-ion battery electrodes and application to in-situ measurement of elastic properties*
	Authors:	Junqian Zhang , Dawei Li
	Presenting Author:	**Junqian Zhang**
KEYNOTE	**1360**	*Mechanical Degradation and Optimization of Solid Electrolyte Interphases in Li Ion Batteries*
	Authors:	Brian W. Sheldon , Ravi Kumar , Wei Zhang , Jung Hwi Cho
	Presenting Author:	**Brian W. Sheldon**
	511	*Mechanical and structural degradation of LiNixMnyCozO2 cathode in Li-ion batteries*
	Authors:	Kejie Zhao
	Presenting Author:	**Kejie Zhao**
	551	*A micromechanical model for the lithiation of active particles in Li-ion battery electrodes*
	Authors:	Marco Magri , Alberto Salvadori
	Presenting Author:	**Marco Magri**

MS:	**6-3 - Dynamic Failure and Phase Transition in Structured Media**	
DAY:	**Tuesday**	
ROOM:	**Verde B**	
TIME	**14:30-16:30**	
CHAIR:	**Gennady Mishuris, Bernd Markert**	
	389	*Crack propagation in dissimilar discrete structures*
INVITED	Authors:	Nikolai Gorbushin , Gennady Mishuris
	Presenting Author:	**Nikolai Gorbushin**
	1076	*Some Wiener-Hopf problems related to fault propagation in elastic structures*
INVITED	Authors:	Pavlos Livasov , Gennady Mishuris
	Presenting Author:	**Pavlos Livasov**
	1380	*Crack dynamics in a bimaterial lattice*
INVITED	Authors:	Andrea Piccolroaz , Nikolai Gorbushin , Gennady Mishuris
	Presenting Author:	**Andrea Piccolroaz**
	1052	*Analytical and numerical studies of failure in 1D flexural systems*
INVITED	Authors:	Marta Garau , Ian Jones , Gennady Mishuris , Michael Nieves
	Presenting Author:	**Marta Garau**
	392	*Transition waves in flexural systems with rotational inertia*
INVITED	Authors:	Michael Nieves , Marta Garau , Michele Brun
	Presenting Author:	**Michael Nieves**

MS:	**5-3 - Geometry and Discretization**	
DAY:	**Tuesday**	
ROOM:	**Gialla A**	
TIME	**14.30-16.30**	
CHAIR:	**G. Lorenzo**	
	1302	*A cost-effective isogeometric approach for composite structures based on a stress recovery procedure*
	Authors:	Alessandro Reali , John-Eric Dufour , Pablo Antolin , Alessia Patton , Giancarlo Sangalli , Josef Kiendl , Ferdinando Auricchio
	Presenting Author:	**Alessandro Reali**
	238	*Hybrid High-Order methods for finite deformations of hyperelastic materials*
	Authors:	Mickaël Abbas , Alexandre Ern , Nicolas Pignet
	Presenting Author:	**Nicolas Pignet**
	1506	*Adaptive simulation of plates and shells with hierarchical B-Splines.*
	Authors:	Luca Coradello , Annalisa Buffa , Rafael Vazquez
	Presenting Author:	**Luca Coradello**

MS:	**5-4 - Models and Numerical Methods for Coupled Problems in Mechanics**	
DAY:	**Tuesday**	
ROOM:	**Gialla B**	
TIME	**14:30-16:30**	
CHAIR:	**I. Romero, A. Lew**	
KEYNOTE	**983**	*Numerical solution of the flexoelectric coupling based on an immersed boundary B-spline framework*
	Authors:	David Codony , Onofre Marco , Sonia Fernández-M , Irene Arias
	Presenting Author:	**David Codony**
	589	*A coupled electrothermal model for simulating lightning strike damage in unidirectional composite laminates*
	Authors:	Nikolaos Tselentis , Konstantinos Tserpes
	Presenting Author:	**Konstantinos Tserpes**
	1122	*Coupled thermo-electro-mechanical problem for inelastic non-linear structures with active viscoelastic layers*
	Authors:	Igor Guz , Yaroslav Zhuk , Maria Kashtalyan
	Presenting Author:	**Igor Guz**
	1197	*An experimentally validated, electro-visco-hyperelastic analysis of soft dielectric elastomer materials*
	Authors:	Arpit Srivastava , Sumit Basu
	Presenting Author:	**Arpit Srivastava**
	1194	*High-Order Methods for Brittle Crack Propagation in 2D*
	Authors:	Adrian Lew
	Presenting Author:	**Adrian Lew**

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Tuesday**	
ROOM:	**Italia**	
TIME	**17.00-19.00**	
CHAIR:	**P. Reis, P.-T. Brun**	
	481	*Gauss-Euler elastica*
	Authors:	Benny Davidovitch , Yiwei Sun , Gregory M Grason
	Presenting Author:	**Benny Davidovitch**
	559	*Spontaneous spiraling of an elastic sheet under uniaxial compression with confinement and friction*
	Authors:	Stéphanie Deboeuf , Suzie Protière , Eytan Katzav
	Presenting Author:	**Stéphanie Deboeuf**
	425	*Inverse design of a suspended Kirchhoff rod: From theory to practice*
	Authors:	Victor Romero , Florence Bertails-Desc , Alexandre Derouet-Jour , Arnaud Lazarus
	Presenting Author:	**Victor Romero**
	373	*The Interaction of Two D-Cones Along a Stretching Ridge*
	Authors:	Andrew B. Croll , Sean Gunderson
	Presenting Author:	**Andrew B. Croll**
	503	*Deformation of perforated elastic sheets due to the hydrodynamic loading by a viscous fluid*
	Authors:	Matteo Pezzulla , Elizabeth Strong , Hussain Karimi , Pedro Reis
	Presenting Author:	**Matteo Pezzulla**
	684	*Anomalous dynamics of snap-through instabilities*
	Authors:	Michael Gomez , Derek E. Moulton , Dominic Vella
	Presenting Author:	**Michael Gomez**

MS:	**3-8 - Recent advances in damage mechanics**	
DAY:	**Tuesday**	
ROOM:	**Bianca A**	
TIME	**17.00-19.00**	
CHAIR:	**Jean-Jacques Marigo, Flaviana Iurlano**	
	361	*A stress-state-dependent anisotropic continuum damage model for concrete*
	Authors:	Alexander Michalski , Michael Brünig
	Presenting Author:	**Alexander Michalski**
	1314	*Rate-dependent regularization for material softening*
	Authors:	Kai Langenfeld , Philipp Junker , Jörn Mosler
	Presenting Author:	**Kai Langenfeld**
	1498	*Viscoelastic damage model for shales sheared at different strain rates*
	Authors:	Marte Gutierrez , Zhankun Hou , Chunhe Yang , Abdulhadi Almrabat
	Presenting Author:	**Marte Gutierrez**
	1237	*Modelling of Damaged Laminated and Sandwich Shell Structures by means of Higher-order Shear Deformation Theories*
	Authors:	Francesco Tornabene , Nicholas Fantuzzi , Michele Bacciocchi
	Presenting Author:	**Michele Bacciocchi**
	894	*Ductile to brittle failure transition under bending deformation of martensitic stainless steels*
	Authors:	Alvise Miotti Bettar , Colin Laville , Jean-Denis Mithieux , Coralie Parrens , Pascal Jacques , Pardoen Thomas , Laurent Delannay
	Presenting Author:	**Alvise Miotti Bettanini**
	1046	*Micromechanics-based non-local damage theory: Application to the prediction of localization and precursor statistics*
	Authors:	Estelle Berthier , Vincent Démery , Laurent Ponson
	Presenting Author:	**Laurent Ponson**

General Session:	**Structural Mechanics**	
DAY:	**Tuesday**	
ROOM:	**Bianca B**	
TIME	**17.00-19.00**	
CHAIR:	**Luca Taglialegne**	
	999	*Post-buckling analysis of beam-type structural systems under tensile axial loads*
	Authors:	Pedro Dias Simão , Vítor Dias da Silva
	Presenting Author:	**Pedro Dias Simão**
	1339	*Analytical evaluation of the stress fields in tapered box girders*
	Authors:	Stefano Bennati , Laura De Lorenzis , Luca Taglialegne , Paolo S. Valvo
	Presenting Author:	**Luca Taglialegne**
	1447	*The flexural mechanics of thin creased strips*
	Authors:	Martin Walker
	Presenting Author:	**Martin Walker**
	1222	*Hysteretic dissipation in carbon nanotube nanocomposites*
	Authors:	Giovanni Formica , Michela Talò , Biagio Carboni , Giulia Lanzara , Walter Lacarbonara
	Presenting Author:	**Giovanni Formica**

MS:	**3-7 - Nonlinear Elasticity**	
DAY:	**Tuesday**	
ROOM:	**Magenta B**	
TIME	**17.00-19.00**	
CHAIR:	**Nicholas Hill, Krishna Garikipati**	
	257	*Improvement of identification of material parameters of HGO-model*
	Authors:	Hocine Bechir , Kamel Yaya
	Presenting Author:	**Hocine Bechir**
	592	*Post-buckling analysis of a bilayer growing tubular tissue: semi-analytical solution and experiment*
	Authors:	Yang Liu , Lishuai Jin , Zongxi Cai
	Presenting Author:	**Yang Liu**
	772	*Fast Parameter Inference in a Computational Model of the Left-Ventricle using Emulation*
	Authors:	Xiaoyu Luo , Vinny Davies , Umberto Noe , Hao Gao , Benn Macdonald , Alan Lazarus , Colin Berry , Dirk Husmeier
	Presenting Author:	**Xiaoyu Luo**
	1001	*Homogenized governing equations for evolving tissues*
	Authors:	Salvatore Di Stefano , Raimondo Penta , Ariel Ramírez Torr , Alfio Grillo
	Presenting Author:	**Salvatore di Stefano**
	781	*Magnetorheological elastomers: modeling and identification of the constitutive behavior*
	Authors:	Jean-Pierre VOROPAIEFF , Laurence BODELOT , Kostas DANAS , Nicolas TRIANTAFYLL
	Presenting Author:	**Jean-Pierre VOROPAIEFF**
	639	*Magnetorheological elastomers: an experimental approach dedicated to constitutive laws parameters identification*
	Authors:	Laurence Bodelot , Jean-Pierre Voropaieff , Kostas Danas , Nicolas Triantafyllidi
	Presenting Author:	**Laurence Bodelot**

MS:	**6-1 -Nonlinear Dynamics in Mechanical and Structural Systems**	
DAY:	**Tuesday**	
ROOM:	**Magenta A**	
TIME	**17.00-19.00**	
CHAIR:	**Sergey Sorokin, Stefano Lenci**	
	1053	*Time-frequency analysis of slender frames with elasto-plastic base under seismic excitation*
	Authors:	Luis Fernand Paullo Muño , Paulo Gonçalves
	Presenting Author:	**Luis Fernando Paullo Muñoz**
	470	*CAD/CAE integrated strategy for nonlinear dynamics of suspension bridges*
	Authors:	Giovanni Formica , Franco Milicchio , Mauro Murer
	Presenting Author:	**Mauro Murer**
	841	*Nonlinear dynamic interactions in a beam-cable-beam model*
	Authors:	Francesco Potenza , Umberto Di Sabatino , Vincenzo Gattulli , Marco Lepidi
	Presenting Author:	**Francesco Potenza**
	1204	*Nonlinear vibrations of hyperelastic spherical membranes*
	Authors:	Renata Soares , Pedro Felipe Amaral , Frederico Silva , Paulo Gonçalves
	Presenting Author:	**Renata Soares**
	1272	*Elastic wave propagation in weakly nonlinear periodic structures*
	Authors:	Hvatov Alexander , Sorokin Sergey
	Presenting Author:	**Sergey Sorokin**
	1218	*Fast computation of forced response in multi-degree-of-freedom nonlinear mechanical systems using integral equations*
	Authors:	Shobhit Jain , Thomas Breunung , George Haller
	Presenting Author:	**Shobhit Jain/Thomas Breunung**

MS:	**3-3 - Material Instabilities**	
DAY:	**Tuesday**	
ROOM:	**Celeste**	
TIME	**17.00-19.00**	
CHAIR:	**Henryk Petryk & Ahmed Benallal**	
	1143	*Post-bifurcation analysis of 3D and continuous 2D lattices structures*
INVITED	Authors:	Christelle Combescure , Ryan S. Elliott , Nick Triantafyllidi
	Presenting Author:	**Christelle Combescure**
	1346	*Grain Boundaries in Polycrystalline Plasticity*
INVITED	Authors:	Tuncay Yalcinkaya , Izzet Ozdemir
	Presenting Author:	**Tuncay Yalcinkya**
	1172	*Subcritical graphene ruga structure: crinkle the molecular zipper*
INVITED	Authors:	Kyung-Suk Kim
	Presenting Author:	**Kyung-Suk Kim**
	791	*Crease nucleation in soft solids: analytic insights.*
	Authors:	pasquale ciarletta
	Presenting Author:	**Pasquale Ciarletta**
	510	*Geometrical instabilities in the highly inhomogeneous developing brain*
	Authors:	Silvia Budday , Paul Steinmann
	Presenting Author:	**Silvia Budday**

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**	
DAY:	**Tuesday**	
ROOM:	**Europa Auditorium**	
TIME	**17.00-19.00**	
CHAIR:	**Huajian Gao, Vikram Deshpande**	
	1340	*Slip surfaces, tensile buckling, and shear bands*
	Authors:	Davide Bigoni
	Presenting Author:	**Davide Bigoni**
	892	*Multiscale homogenization models and predictions for porous viscoplastic polycrystals incorporating microstructure evolution*
	Authors:	Dawei Song , Pedro Ponte Castaf
	Presenting Author:	**Pedro Ponte Castañeda**
	809	*On size dependent yield surfaces for porous metals*
	Authors:	Christian F. Niordson , Viggo Tvergaard
	Presenting Author:	**Christian F. Niordson**
	439	*Microstructured magnetorheological elastomers: numerical modelling, experiments and tailored instabilities*
	Authors:	Kostas Danas
	Presenting Author:	**Kostas Danas**
	673	*Scale-free intermittency in transformational plasticity*
	Authors:	Lev Truskinovsky
	Presenting Author:	**Lev Truskinovsky**
	1184	*The Generation of Stress and Fracture in the Storage Particles of Lithium-Ion Batteries*
	Authors:	Robert McMeeking
	Presenting Author:	**Robert McMeeking**

MS:	**1-9 - Modeling of Fracture in Hard and Sof materials**	
DAY:	**Tuesday**	
ROOM:	**Ciano B**	
TIME	**17.00-19.00**	
CHAIR:	**Roberta Massabò, Konstantin Volokh**	
	1188	*Damage in elastomers: Nucleation, growth and healing of cavities, and micro-cracks*
INVITED	Authors:	Ravi-Chandar Krishnaswamy
	Presenting Author:	**Ravi-Chandran Krishnaswarny**
	1284	*A 3D cohesive interface for the delamination analysis of a stiff film on a soft elastic substrate and the wrinkling/buckling deformation modes*
INVITED	Authors:	Guido Borino , Francesco Parrinello
	Presenting Author:	**Guido Borino**
	242	*Fracture as material sink*
	Authors:	Konstantin Volokh
	Presenting Author:	**Konstantin Volokh**
	332	*Effect of Solvent Diffusion on the Crack Velocity in a Reversible Hydrogel*
	Authors:	Olivier Ronsin , Imen Naassaoui , Tristan Baumberger
	Presenting Author:	**Tristan Baumberger**
	652	*Supershear Propagation of Frictional Rupture Fronts*
	Authors:	David Kammer
	Presenting Author:	**David Kammer**

MS: 1-4 - Mechanics of Textile Composite Reinforcements and Fibrous Materials
DAY: Tuesday
ROOM: Europa A
TIME 17.00-19.00
CHAIR: Boisse P., Lomov S.

653 *Longitudinal compression and Poisson ratio of fiber yarns in meso FE modeling of textile composite reinforcements*
Authors: Dawei Wang, Naim Naouar, Emmanuelle Vidal-Salle, Philippe Boisse
Presenting Author: Philippe Boisse

815 *Meso-scale modelling of tetraxial textiles mechanical behaviour*
Authors: Mehdi Ghazimoradi, Naim Naouar, Valter Carvelli, Philippe Boisse
Presenting Author: Valter Carvelli

828 *MICRO SCALE MODEL OF FIBERS IN A TEMPERATURE DEPENDENT MATRIX*
Authors: Stefan Hesseler, Scott Stapleton, Lars Appel, Thomas Gries
Presenting Author: Stefan Hesseler

907 *A behaviour model of textile structures: development, identification, and implementation.*
Authors: Oussama Haji, Audrey Hivet, Laurent Orgeas, Artan Sinoimeri, Gilles Hivet, Eric Blond
Presenting Author: Oussama Haji

941 *Microstructure of textiles quantified based on micro-CT image*
Authors: Ilya Straumit, Martine Wevers, Stepan Lomov
Presenting Author: Stepan Lomov

MS: 1-10 - Graphene and Related Materials and Systems
DAY: Tuesday
ROOM: Europa B
TIME 17.00-.19.00
CHAIR: Costas Galiotis, Nicola Pugno

1473 *Investigation of fracture behavior of graphene using in-situ tensile test under scanning electron microscope*
Authors: Bongkyun Jang, Byungwoon Kim, Jae-Hyun Kim, Hak-Joo Lee, Takashi Sumigawa, Takayuki Kitamura
Presenting Author: Bongkyun Jang

234 *Influence of liquid substrates on the mechanics of single-layer graphene*
Authors: Hervé Elettro, Francisco Melo
Presenting Author: Hervé Elettro

441 *An anisotropic hyperelastic material model for graphene-based structures*
Authors: Reza Ghaffari, Thang Xuan Duong, Roger A. Sauer
Presenting Author: Reza Ghaffari

850 *Coarse-grain simulation of single-layer molybdenum disulfide elastic properties*
Authors: Artem Panchenko, Ekaterina Podolskaya, Igor Berinskii
Presenting Author: Artem Panchenko

865 *Characterization of Graphene via Atomistic Reduced Order Modelling*
Authors: Banafsheh Sajadi, Sander Wahls, Farbod Alijani
Presenting Author: Banafsheh Sajadi

1152 *Lubricating properties of graphene*
Authors: M. Clelia Righi, Paolo Restuccia
Presenting Author: M. Clelia Righi

MS:	**1-3 - Architected Materials**	
DAY:	**Tuesday**	
ROOM:	**Indaco**	
TIME	**17.00-19.00**	
CHAIR:	**Kang, Zavattieri**	
	448	*Additively manufactured cellular metals with full phononic band gap*
		Authors: Maximilian Wormser , Carolin Körner
		Presenting Author: Maximilian Wormser
	920	*Conformation of an elastic loop structure connected with multiple revolute hinges and its measurement*
		Authors: Hiro Tanaka , Takamasa Nanjo , Yoji Shibutani
		Presenting Author: Hiro Tanaka
	753	*The shape memory effect in polymeric lattices*
		Authors: Andrea Vigliotti , Angela Ferrigno
		Presenting Author: Andrea Vigliotti
	1307	*Reduced stiffness of the axisymmetric motion in cylindrical origami metamaterials*
		Authors: Giuseppe Radaelli , Just Herder , Farbod Alijani
		Presenting Author: Giuseppe Radaelli
	793	*Failure of elastic-brittle and visco-plastic lattice materials*
		Authors: Philipp Seiler , Vikram Deshpande , Norman Fleck
		Presenting Author: Philipp Seiler
	571	*Metallic lattice structures manufactured by laser metal deposition.*
		Authors: Yanis Balit , Eric Charkaluk , Andrei Constantinescu
		Presenting Author: Yanis Balit

MS:	**7-6 - Structual Analysis of Real Historic Buildings**	
DAY:	**Tuesday**	
ROOM:	**Cobalto**	
TIME	**17.00-19.00**	
CHAIR:	**Maurizio Angelillo, Santiago Huerta**	
	250	*Limit Analysis of cloister vaults: the case study of Palazzo Caracciolo di Avellino*
		Authors: Maurizio Angelillo , Giuseppe Brandonisio , Elena De Chiara , Antonello De Luca
		Presenting Author: Maurizio Angelillo
	442	*Geometry and statics: Borromini's design for the dome of Sant'Agnese in Agone, Rome*
		Authors: Elena De Chiara
		Presenting Author: Elena De Chiara
	1048	*An innovative ambient identification method for use on real historic buildings*
		Authors: Cristiano Bilello , Chiara Masnata , Antonina Pirrotta
		Presenting Author: Antonina Pirrotta

MS:	**7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials**	
DAY:	**Tuesday**	
ROOM:	**Europa C**	
TIME	**17.00-19.00**	
CHAIR:	**Fernando Fraternali, Ada Amendola**	
KEYNOTE	**1522**	*Bionicomposites* Author: Nicola Pugno **Presenting Author: Nicola Pugno**
	1373	*Tensegrity Topology Optimization on Arbitrary Ground Structures* Authors: Ke Liu , Glaucio H. Paulino **Presenting Author: Ke Liu**
	849	*Parametric design of V-Expander tensegrity chains* Authors: Aguinaldo Fraddosio , Gaetano Pavone , Mario Daniel Piccioni **Presenting Author: Gaetano Pavone**
	194	*A tensegrity approach to the mechanics of masonry vaults* Authors: Valentino Pa Berardi , Mariella De Piano , Rosa Penna , Luciano Feo **Presenting Author: Mariella De Piano**
	183	*Novel lattices metamaterials with extremal response* Authors: Zbigniew Bieniek , Ida Mascolo , Ada Amendola , Mariella De Piano , Chiara Daraio , Fernando Fraternali **Presenting Author: Zbigniew Bieniek**

MS:	**9-4 - Modeling of Additive Manufacturing Processes**	
DAY:	**Tuesday**	
ROOM:	**Rossa B**	
TIME	**17.00-19.00**	
CHAIR:	**F. Auricchio, E. Salsi**	
	1444	*Numerical model for thermal analysis of the Laser Beam Melting process* Authors: Arnaud Francois **Presenting Author: Arnaud Francois**
	720	*Phase field simulations of Powder Bed-based Additive Manufacturing* Authors: Liangxing Lu , Yong Wei Zhang , Sridhar Narayanaswa **Presenting Author: Sridhar Narayanaswamy**
	1286	*Process Simulation and Virtual Testing of Additively Manufactured Grid Structures* Authors: Gebhardt Ulrike , Kästner Markus , Blobel Swen , Berner Matthias , Gärtner Roland , Kühn Uta **Presenting Author: Ulrike Gebhardt**
	977	*Macroscopic simulation of selective beam melting processes by means of adaptivity and domain decomposition* Authors: Dominic Soldner , Paul Steinmann , Julia Mergheim **Presenting Author: Dominic Soldner**
	1240	*Distributed-Memory Computations and Their Application to the Simulation of the Additive Manufacturing Processes* Authors: Serge Sidorov , Pan Michaleris , Erik Denlinger , Michael Gouge , Jeff Irwin **Presenting Author: Serge Sidorov**
	754	*Thermal simulation of Additive Manufacturing Processes using immersed multi-level isogeometric analysis* Authors: Massimo Carraturo , Stefan Kollmannsbe , Ernst Rank , Ferdinando Auricchio , Alessandro Reali **Presenting Author: Massimo Carraturo**

MS: 2-5 - Cardiovascular Biomechanics and Mechanobiology: from Basics to Clinical Applications
DAY: Tuesday
ROOM: Ciano A
TIME 17.00-19.00
CHAIR: C. Cyron, A. Veneziani

	1186	*When the ``Boundary'' is Critical: Defective/Missing Data for Computational Hemodynamics*
INVITED	Authors:	Alessandro Veneziani
	Presenting Author:	**Alessandro Veneziani**
	1004	*Spatially resolved distensibility of healthy and diseased aortic walls determined from temporally resolved 3D ultrasound measurements*
INVITED	Authors:	Andreas Wittek , Wojciech Derwich , Thomas Schmitz-Rixe , Christopher Blase
	Presenting Author:	**Andreas Wittek**
	795	*Can the in-vivo aortic strain field explain the initiation of dissecting abdominal aneurysms in mice?*
INVITED	Authors:	Lydia Aslanidou , Mauro Ferraro , Bram Trachet , Patrick Segers , Nikos Stergiopulos
	Presenting Author:	**Bram Trachet**
	1164	*Biomechanical factors influencing aortic intra-mural dissection.*
	Authors:	Brian FitzGibbon , Niamh Hynes , Sherif Sultan , Peter McHugh , Patrick McGarry
	Presenting Author:	**Brian FitzGibbon**
	934	*In-vitro study of cannula flow in the ECMO circuit*
INVITED	Authors:	Julien Lemètayer , Matthias Kollert , Laszlo Fuchs , Mikael Broman , Lisa Prahl Wittbe
	Presenting Author:	**Lisa Prahl Wittberg**
	844	*Novel strategies for patient-specific modelling of arteriovenous fistula for hemodialysis*
INVITED	Authors:	Michela Bozzetto , Paolo Brambilla , stefano rota , bogdan ene-iordache , andrea remuzzi
	Presenting Author:	**Michela Bozzetto**

MS: 4-1 - Experimental Micromechanics and Nanomechanics
DAY: Tuesday
ROOM: Verde A
TIME 17:00-19:00
CHAIR: Christophe Tromas, Miguel Monclús

	1552	*In situ manipulation and testing of dislocations in 2D materials*
KEYNOTE	Authors:	Erdmann , Peter Schweizer , Christian Dolle
	Presenting Author:	**Erdmann Spiecker**
	814	*Nondestructive 3D information on dislocation density and elastic strain in deforming micro-fatigue specimen*
	Authors:	Jean-Baptiste Molin , Loic Renversade , Nataliya V. M Malyar , Olivier Ulrich , Jean-Sebasti Micha , Christoph Kirchlechner
	Presenting Author:	**Christoph Kirchlechner**
	763	*Investigating the Local Fatigue Properties of Materials in Small Dimensions by Dynamic Micropillar Compression*
	Authors:	Benoit Merle
	Presenting Author:	**Benoit Merle**
	923	*In-situ micromechanical study of crack nucleation and propagation in Ni-based superalloys*
	Authors:	Marcos Jiménez , Jon Molina-Aldareguia
	Presenting Author:	**Jon Molina-Aldareguia**
	602	*Pathways for reliable lead-free solder joints: micro-fracture properties of Au-Sn based solder*
	Authors:	Chaowei Du , Rafael Soler , Kurt Matoy , Johannes Zechner , Gregor Langer , Christoph Kirchlechner , Gerhard Dehm
	Presenting Author:	**Chaowei Du**
	181	*In Situ Stable Fracture of Ceramic and Metal Ceramic Interfaces on the Micron Scale*
	Authors:	Giorgio Sernicola , Ben Britton , Finn Giuliani
	Presenting Author:	**Finn Giuliani**

MS:	**5-6 - Mechanics in energy harvesting and storage**	
DAY:	**Tuesday**	
ROOM:	**Rossa A**	
TIME	**17.00-19.00**	
CHAIR:	**Angelo Simone**	
	650	*The Local Role of Oxygen in Unsafe Energy Storage using LiMO2 based Batteries*
	Authors:	Faisal Alamgir , Dong-Chan Lee
	Presenting Author:	**Faisal M. Alamgir**
	811	*Fracture mechanism of lithiated silicon using atomistic simulations*
	Authors:	Seyed Mosta Khosrowneja , William Curtin
	Presenting Author:	**Seyed Mostafa Khosrownejad**
	1176	*Multi-Scale Modeling for Design of Lithium-ion Battery Components*
	Authors:	Elham Sahraei , Emanuela Bosco
	Presenting Author:	**Elham Sahraei**
	626	*A computational homogenization approach for (Li-ion) battery cells*
	Authors:	Alberto Salvadori , Marco Magri , Tanmay Dev , Buket Boz
	Presenting Author:	**Alberto Salvadori**
	1252	*Electrochemical properties of fiber-based electrodes for structural battery applications*
	Authors:	Mingzhao Zhuo , Davide Grazioli , Angelo Simone
	Presenting Author:	**Mingzhao Zhuo**
	1185	*Piezoelectrochemical Phenomena for Low Frequency Energy Harvesting*
	Authors:	Craig Arnold
	Presenting Author:	Craig Arnold

MS:	**8-3 - Inelastic Processes in Heterogeneous Materials: Formulations, Uncertainty Quantification, Computations**	
DAY:	**Tuesday**	
ROOM:	**Verde B**	
TIME	**17.00 - 19.00**	
CHAIR:	**Matthies, Moshagen**	
KEYNOTE	**1516**	*Stochastic approach to heterogeneous dynamic systems*
	Authors:	Adnan Ibrahimbego , Joseph Rocca , Nikolaos Limnios
	Presenting Author:	**Adnan Ibrahimbegovic**
	777	*Multi-Scale Material Models via Probabilistic Coupling*
	Authors:	Hermann Matthies
	Presenting Author:	**Hermann G. Matthies**
	918	*Scale Switching Computations for Heterogeneous Inelastic Materials*
	Authors:	Thilo Moshagen , Herrmann Matthies , Adnan Ibrahimbego
	Presenting Author:	**Thilo Moshagen**
	291	*Spectral Representation for Solutions of Maxwell's Equations in a Two-Constituent Composite Medium*
	Authors:	David J. Bergman , Asaf Farhi
	Presenting Author:	**David J. Bergman**
	1416	*Statistical simulation of ply cracking in general and thin-ply laminates under in-plane and bending loads: A variational approach*
	Authors:	Mohammad Hajikazemi , Wim Van Paepegem
	Presenting Author:	**Mohammad Hajikazemi**

General Session: Continuum Mechanics
DAY: Tuesday
ROOM: Gialla A
TIME 17.00-19.00
CHAIR: Arnaud Lazarus, Amy Getchell

264 *Nonlinear Bright Solitary SH Waves in a Heterogeneous Medium*
Authors: Dilek Demirkus
Presenting Author: Dilek Demirkuş

552 *On Love-type surface waves in a nonlocal elastic layer with voids*
Authors: Gurwinderpa Kaur , Dilbag Singh , S.K. Tomar
Presenting Author: Gurwinderpal Kaur

1074 *The elasto-granular length for determining the bending behaviour of a flexible fiber interacting with a dense granular medium*
Authors: Nicolas Algarra , Arnaud Lazarus , Damien Vandembrou , Evelyne Kolb
Presenting Author: Arnaud Lazarus

1157 *Role of Pore Fluid Rheology on the Mechanical Response of a Granular Material using Laponite RD Dispersions*
Authors: Amy Getchell , Hailie Swanson , Marika Santagata
Presenting Author: Amy Getchell

1338 *Knot formation in a twisted rubber cylinder*
Authors: Ali Althobaiti , Yibin Fu
Presenting Author: Ali Althobaiti

1458 *Optimizing deformed configurations in elastic materials*
Authors: Gareth Wyn Jones
Presenting Author: Gareth Wyn Jones

MS: 5-4 - Models and Numerical Methods for Coupled Problems in Mechanics
DAY: Tuesday
ROOM: Gialla B
TIME 17:00-19:00
CHAIR: A. Lew, I. Romero

1456 *Monolithic approach to the coupling of the contact between rough surfaces with the interfacial fluid flow*
Authors: Andrei G. Shvarts , Vladislav A. Yastrebov
Presenting Author: Andrei G. Shvarts

1404 *Impact of interfacial irregularity on polarised shear wave in an electro-elastic stratum over a substrate*
Authors: Abhishek Kur Singh , Santan Kumar , Amares Chattopadhyay
Presenting Author: Abhishek Kumar Singh

746 *Inverse Formulation of Thermoelastic Problems in Engineering Applications*
Authors: Florian Zwicke , Stefanie Elgeti
Presenting Author: Florian Zwicke

1062 *Novel variational updates for strongly coupled thermomechanical problems including mass transport*
Authors: Eva M. Andrés , Ángel Ortiz-Toranz , Ignacio Romero
Presenting Author: Ignacio Romero

1480 *Equivalent Static Wind Loads: similarities between envelope reconstruction and linear classification problems*
Authors: Luca Patruno , Mattia Ricci , Stefano de Miranda , Francesco Ubertini
Presenting Author: Luca Patruno

1492 *Numerical and Experimental Approaches to Soft Matter Dry and Lubricated Contact Mechanics*
Authors: Carmine Putignano , Giuseppe Carbone
Presenting Author: Carmine Putignano

Wednesday, July 4, 2018

	Plenary Lecture
DAY:	**Wednesday**
ROOM:	**Europa Auditorium**
TIME	**9.00-9.45**
CHAIR:	**Viggo Tvergaard**
	Chemistry of fatigue
	Zhigang Suo

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Wednesday**	
ROOM:	**Italia**	
TIME	**10.15-12.15**	
CHAIR:	**M. Potier-Ferry, D. Moulton**	
	641	*Buckling of precisely imperfect shells: New results on an old problem*
		Authors: Pedro Reis, Anna Lee, Francisco López Jiménez, Joel Marthelot, John Hutchinson
		Presenting Author: Pedro Reis
	1319	*Elastic buckling of perfect cylinders under axial loading*
		Authors: Gabriel Rossetto, Roberta Springhetti, Davide Bigoni
		Presenting Author: Gabriel Rossetto
	657	*Snap-through in pressurless spherical caps*
		Authors: Matteo Taffetani, Xin Jiang, Douglas Holmes, Dominic Vella
		Presenting Author: Matteo Taffetani
	731	*From turbulence transition to the buckling of a soda can*
		Authors: Tobias M. Schneider
		Presenting Author: Tobias M. Schneider
	635	*Plate Models for Buckling Analysis*
		Authors: David Robinson, Draga Pihler-Puzović, Matthias Heil
		Presenting Author: David George Robinson
	645	*How strong is a soda can: The stability landscape for shell buckling*
		Authors: Shmuel Rubinstein, Emmanuel Virot, Tobias Schneider
		Presenting Author: Shmuel Rubinstein

MS:	**6-2 - Elastic Metamaterials**	
DAY:	**Wednesday**	
ROOM:	**Bianca A**	
TIME	**10.15-12.15**	
CHAIR:	**Prof. S. Guenneau, Prof. A.B. Movchan**	
KEYNOTE	**206**	*A Spin on Elastic Metamaterials*
		Authors: Ian Jones
		Presenting Author: Ian Jones
KEYNOTE	**1145**	*Invariant hyperelastic metamaterials and phononic media*
		Authors: William Parnell, Pu Zhang
		Presenting Author: William Parnell
INVITED	**235**	*Dynamics of strongly inhomogeneous periodic and thin elastic structures*
		Authors: Julius Kaplunov
		Presenting Author: Julius Kaplunov
INVITED	**1465**	*Multiscale structure of optimally designed viscoelastic composites*
		Authors: Elena Cherkaev
		Presenting Author: Elena Cherkaev

MS:	**3-11 - Generalized Continua**	
DAY:	**Wednesday**	
ROOM:	**Bianca B**	
TIME	**10.15-12.15**	
CHAIR:	**Panos Gourgiotis, Victor Eremeyev**	
KEYNOTE	**679**	*Band Gaps for Wave Propagation in 2-D Periodic Composite Structures Incorporating Microstructure Effects* Authors: Gongye Zhang , Xin-Lin Gao , Shurong Ding **Presenting Author: Xin-Lin Gao**
	782	*Frequency dependent acoustic beam focusing and steering in hexagonal lattices using a strain gradient model* Authors: Giuseppe Rosi , Nicolas Auffray **Presenting Author: Giuseppe Rosi**
	1323	*Can generalized continuum theories forecast size effects in materials with periodic inclusions?* Authors: Marcus Wheel **Presenting Author: Marcus Wheel**
	1285	*Antiplane problems of flexoelectric materials: a screw dislocation moving with constant velocity* Authors: Antonios Giannakopou , Thanasis Zisis **Presenting Author: Antonios Giannakopoulos**

MS:	**3-7 - Nonlinear Elasticity**	
DAY:	**Wednesday**	
ROOM:	**Magenta B**	
TIME	**10.15-12.15**	
CHAIR:	**Roger Bustamante, Yibin Fu**	
KEYNOTE	**1274**	*Electro-viscoelastic behaviour of dielectric elastomers - experiment and microsphere-based modelling* Authors: Andreas Menzel , Sara Thylander , Matti Ristinmaa **Presenting Author: Andreas Menzel**
	207	*Tunable band gaps in a compressible dielectric elastomer thin cylinder with periodically applied voltages* Authors: Bin Wu , Weiqiu Chen **Presenting Author: Weiqiu Chen**
	1422	*Catastrophe Modeling of Soft Materials and Structures* Authors: Yu-Xin Xie , Zhigang Suo , Yibin Fu **Presenting Author: Yu-Xin Xie**
	309	*Nonlinear behaviours of dielectric elastomers under electromechanical coupling loadings* Authors: Tongqing Lu , Zhigang Suo , Tiejun Wang **Presenting Author: Tongqing Lu**
KEYNOTE	**1097**	*A computational study of the mechanisms of growth-driven folding patterns on shells, with application to the developing brain* Authors: Sarah Verner , Krishna Garikipati **Presenting Author: Krishna Garikipati**

MS:	**6-1 -Nonlinear Dynamics in Mechanical and Structural Systems**								
DAY:	**Wednesday**								
ROOM:	**Magenta A**								
TIME	**10.15-12.15**								
CHAIR:	**Oded Gottlieb, Francesco Pellicano**								
KEYNOTE	**685**	*Periodic orbit optimization in dynamical systems with delay*							
		Authors:	Zaid	Ahsan	, Harry	Dankowicz	, Jan	Sieber	
		Presenting Author:	**Harry Dankowicz**						
	651	*Chaos control applied to shape memory alloy systems using thermal actuation*							
		Authors:	Dimitri	Costa	, Marcelo	Savi	, Aline	de Paula	
		Presenting Author:	**Marcelo Savi**						
	1228	*Discrete time partial control of a chaotic system in the presence of white Gaussian noise*							
		Authors:	Vipin	Agarwall	, Balakumar	Balachandraı			
		Presenting Author:	**Balakumar Balachandran**						
	1217	*Modelling of drill-string dynamics for stick-slip suppression*							
		Authors:	Mohammad	Khodadadi D	, Marcin	Kapitaniak	, Marian	Wiercigroch	
		Presenting Author:	**Mohammad Khodadadi Dehkordi**						
	267	*Nonlinear energy sink for passive control of cable's large amplitude vibrations*							
		Authors:	Tieding	Guo	, Lianhua	Wang	, Houjun	Kang	
		Presenting Author:	**Tieding Guo**						

MS:	**3-3 - Material Instabilities**								
DAY:	**Wednesday**								
ROOM:	**Celeste**								
TIME	**10.15-12.15**								
CHAIR:	**Ahmed Benallal & Henryk Petryk**								
KEYNOTE	**553**	*Influence of a smooth elastic-inelastic transition model on control of localization*							
		Authors:	Forest	Samuel	, Rubin	Miles B.			
		Presenting Author:	**Forest Samuel**						
INVITED	**491**	*Thermodynamic stability in dissipative materials – the concept and consequences*							
		Authors:	Henryk	Petryk					
		Presenting Author:	**Henryk Petryk**						
	494	*Divergence stability and the Second Order Work criterion*							
		Authors:	Jean	Lerbet	, François	Nicot	, Noël	Challamel	, Félix	Darve
		Presenting Author:	**Jean Lerbet**							
	938	*Prediction of loss of uniqueness in elastic-plastic tubes at finite deformation : competition between buckling and shear band localization.*								
		Authors:	Moubine	AL KOTOB	, Samuel	FOREST	, Matthieu	MAZIERE	, Tonya	Rose
		Presenting Author:	**Moubine AL KOTOB**							

MS:	**3-14 - Symposium honouring Prof. Fleck on the occasion of his 60th birthday**							
DAY:	**Wednesday**							
ROOM:	**Europa Auditorium**							
TIME	**10.15-12.15**							
CHAIR:	**Norman Fleck, Frank Zok**							
	307	*Failure modes of bolt and nut assemblies under tensile loading*						
		Authors:	Magnus	Langseth	, Erik	Grimsmo	, Arild	Clausen
		Presenting Author:	**Magnus Langseth**					
	536	*Friction between a dry fibre bundle and rough or smooth surfaces*						
		Authors:	Sutcliffe	Michael	, Daniel	Mulvihill	, Olga	Smerdova
		Presenting Author:	**Michael Sutclife**					
	515	*Bayesian inference of the spatial distribution of material properties*						
		Authors:	Vikram	Deshpande	, Andrea	Vigliotti	, Gabor	Csanyi
		Presenting Author:	**Vikram Deshpande**					
	445	*Nonlocal response of composites allowing for three-point statistics*						
		Authors:	John	Willis				
		Presenting Author:	**John Willis**					

MS:	**1-9 - Modeling of Fracture in Hard and Sof materials**							
DAY:	**Wednesday**							
ROOM:	**Ciano B**							
TIME	**10.15-12.15**							
CHAIR:	**Francesco Ascione, Sridhar Narayanaswamy**							
	1289	*A generalized interface model to account for anisotropic plasticity and damage at grain boundaries*						
		Authors:	Shahed	Rezaei	, Stephan	Wulfinghoff	, Stefanie	Reese
		Presenting Author:	**Shahed Rezaei**					
	202	*A fracture problem with a surface energy in the Steigmann-Ogden form*						
		Authors:	Anna	Zemlyanova				
		Presenting Author:	**Anna Zemlyanova**					
INVITED	**1279**	*Crack bridging model - from nano to macroscale*						
		Authors:	Mikhail	Perelmuter	, Ivan	Lebedev		
		Presenting Author:	**Mikhail perelmuter**					
	890	*Failure and phase transitions in solid ceramics under uniaxial shock compression*						
		Authors:	Sergey	Grigoryev	, Sergey	Dyachkov	, Anatoly	Parshikov	, Vasily	Zhakhovsky
		Presenting Author:	**Sergey Grigoryev**					
	1072	*Recent outcomes on the fracture propagation in brittle materials as a standard dissipative process.*						
		Authors:	Francesca	Fantoni	, Alberto	Salvadori	, Paul	Wawrzynek
		Presenting Author:	**Francesca Fantoni**					

MS:	**1-4 - Mechanics of Textile Composite Reinforcements and Fibrous Materials**	
DAY:	**Wednesday**	
ROOM:	**Europa A**	
TIME	**10.15-12.15**	
CHAIR:	**Boisse P., Hojo M.**	
	1091	*Thermo-chemo-mechanically coupled model of resin infusion process in porous media*
	Authors:	Ruoyu Huang
	Presenting Author:	**Ruoyu Huang**
	1160	*Aegagropilae: mechanical and structural properties of a natural fiber cluster*
	Authors:	Sébastien Moulinet , Gautier Verhille , Nicolas Vandenbergł , Mokhtar Adda-Bedia , Patrice Le Gal
	Presenting Author:	**Sébastien Moulinet**
	1384	*Toughening mechanisms and damage development in nanocomposites with spatially distributed nanotubes as revealed by modelling*
	Authors:	Qiang Liu , Stepan Lomc , Larissa Gorbá
	Presenting Author:	**Qiang Liu**
	1388	*Feasibility Study of HPPE Composite Bar applied to Concrete*
	Authors:	Hsien Hua Lee , T.-Y. Wu
	Presenting Author:	**Hsien Hua Lee**
	1527	*Analysis of taylored fiber placement carbon fiber panels manufactured by infusion*
	Authors:	Cassius Riul , Edgar Sato , Eric Olifiers , Gerson Marinucci
	Presenting Author:	**Gerson Marinucci**
	293	*Fabrication and mechanical characterization of electrospun scaffolds for tendon and ligament repair*
	Authors:	Alberto Sensini , Maria Letizia Focarete , Chiara Gualandi , Juri Belcari , Andrea Zucchelli , Carlo Gotti , Alexander Kao , Gianluca Tozzi
	Presenting Author:	**Luca Cristofolini**

MS:	**1-10 - Graphene and Related Materials and Systems**	
DAY:	**Wednesday**	
ROOM:	**Europa B**	
TIME	**10.15-12.15**	
CHAIR:	**Costas Galiotis, Nicola Pugno**	
	1187	*A Van der Waals Dislocation Framework for Moire Engineering in 2D Materials*
	Authors:	Harley Johnson , Brian McGuigan , Pascal Pochet
	Presenting Author:	**Harley Johnson**
	1381	*Experimental characterization of carbon microfibres wettability*
	Authors:	Ilaria Corridori , Claudio Della Volpe , Stefano Siboni , Nicola Pugno
	Presenting Author:	**Ilaria Corridori**
	1410	*Fabrication, testing and modelling of the mechanics of graphene and graphene oxide composite electrospun nanofibers*
	Authors:	David Novel , Alessandro Pegoretti , Nicola Pugno
	Presenting Author:	**David Novel**
	1421	*Fluid-structure interactions in graphene nano-hydrodynamics*
	Authors:	Giulia Salussolia , Catherine Kamal , Simon Gravelle , Nicola Pugno , Lorenzo Botto
	Presenting Author:	**Lorenzo Botto**
	1449	*Multiscale modelling of planar fiber networks: current results for mechanics of paper, and potential applications to related materials*
	Authors:	Pedro Migue J. S. Godinho , Marina Jajcinovic , Wolfgang Bauer , Christian Hellmich
	Presenting Author:	**Pedro Godinho**
	1548	*3D metamaterial with programmable anisotropic properties*
	Authors:	Soroush Kamrava , Ashkan Vaziri
	Presenting Author:	**Ashkan Vaziri**

MS:	**8-2 -Computational Homogenization of Nonlinear Composites**	
DAY:	**Wednesday**	
ROOM:	**Indaco**	
TIME	**10.15-12.15**	
CHAIR:	**Djimédo Kondo, Stephan Wulfinghoff**	
KEYNOTE	**1041**	*Model Order Reduction and Computational Homogenisation of Magnetorheological Elastomers* Authors: Benjamin Brands , Julia Mergheim , Paul Steinmann **Presenting Author: Benjamin Brands**
	1148	*TFA homogenisation procedure for porous materials* Authors: Federica Covezzi , Stefano de Miranda , Sonia Marfia , Elio Sacco **Presenting Author: Federica Covezzi**
	1343	*Homogenization method for a proposed model describing the melting of a nuclear fuel material* Authors: Veronica D'Ambrosi , Jean-Marie Gatt , Frederic Lebon , Jerome Julien , Daniel Parrat , Christophe Destouches **Presenting Author: Veronica D'Ambrosi**
	723	*Computational homogenization of nonlinear fibre-reinforced composite materials with the Virtual Element Method* Authors: Edoardo Artioli , Sonia Marfia , Elio Sacco **Presenting Author: Edoardo Artioli**
	625	*Effects of various microscopic boundary conditions on the macroscopic response of MREs in computational homogenization* Authors: Reza Zabihyan , Julia Mergheim , Jean-Paul Pelteret , Benjamin Brands , Paul Steinmann **Presenting Author: Reza Zabihyan**

MS:	**3-9 - The Physics of Dense Granular Media**	
DAY:	**Wednesay**	
ROOM:	**Cobalto**	
TIME	**10:15 - 12:15**	
CHAIR:	**Behringer, Dahmen**	
	1030	*Origins of Shear Jamming* Authors: Dong Wang , Hu Zheng , Robert Behringer **Presenting Author: Robert Behringer**
	717	*Shear Jamming of Frictional Spheres under Oscillatory Shear* Authors: Michio Otsuki , Hisao Hayakawa **Presenting Author: Michio Otsuki**
	1251	*Yielding and rheology near random loose packing* Authors: Greg Farrell , Narayanan Menon **Presenting Author: Narayanan Menon**
	681	*Jamming of non-circular and deformable particles* Authors: Mark D. Shattuck , Arman Boromand , Alexandra Signoriello , Corey S. O'Hern **Presenting Author: Mark D. Shattuck**
	703	*Dense packing of cell mono-layers: Jamming of deformable polygons* Authors: Arman Boromand , Alexandra Signoriello , Fangfu Ye , Mark Shattuck , Corey O'Hern **Presenting Author: Arman Boromand**
	1356	*Mechanisms of deformation and flow in dense granular matter* Authors: Sinisa Dj. Mesarovic **Presenting Author: Sinisa Mesarovic**

MS: 7-3 - Mechanics of Tensegrity Structures and Multifunctional Lattice Materials
DAY: Wednesday
ROOM: Europa C
TIME 10.15-12.15
CHAIR: Fernando Fraternali, Robert E. Skelton

304 *2-D lattice structures and band gaps. A numerical analysis.*
Authors: Agostina Orefice , Raffaele Miranda , Geminiano Mancusi
Presenting Author: Agostina Orefice

593 *A nonlinear model for the out-of-plane behaviour of single-layer graphene sheets*
Authors: Alessandra Genoese , Andrea Genoese , Nicola L. Rizzi , Ginevra Salerno
Presenting Author: Andrea Genoese

General Session: Dynamics, Waves and Metamaterials
DAY: Wednesday
ROOM: Rossa B
TIME 10.15-12.15
CHAIR: Domenico Tallarico, Ashwin Sridhar

325 *The coupled-mode interface and nested Bloch waves*
Authors: Davide Bigoni , Domenico Tallarico , Natalia V. Movchan , Alexander B. Movchan , Francesco Dal Corso
Presenting Author: Domenico Tallarico

436 *Numerical method to calculate 1D-impact problems for rods of non constant cross sections and its inverse solution*
Authors: Jens Burgert , Wolgang Seemann
Presenting Author: Jens Burgert

474 *Multiscale modeling of complex emergent elastodynamics in metamaterials*
Authors: Ashwin Sridhar , Varvara Kouznetsova , Marc Geers
Presenting Author: Ashwin Sridhar

578 *Interactions of highly nonlinear solitary waves with plastically compressible solids*
Authors: Andreas Schiffer , Eunho Kim , Tae-Yeon Kim
Presenting Author: Andreas Schiffer

596 *Near-resonance asymptotic model for wave propagation in an orthotropic half-plane*
Authors: Andrea Nobili , Danila Prikazchikov
Presenting Author: Andrea Nobili

876 *Impact on floating elastic films: wrinkle coarsening and the role of fluid inertia*
Authors: Doireann O'Kiely , Finn Box , Ousmane Kodio , Alfonso Castrejon-Pit , Jonathan Whiteley , Dominic Vella
Presenting Author: Doireann O'Kiely

MS:	**2-4 - Mechanics of Soft Biological Tissues**						
DAY:	**Wednesday**						
ROOM:	**Ciano A**						
TIME	**10.15-12.15**						
CHAIR:	**Gerhard A. Holzapfel, Ray W. Ogden**						
KEYNOTE	**1253**	*Excluding Fibers under Compression with a Discrete Fiber Dispersion Model*					
		Authors:	Kewei	Li	, Ray W.	Ogden	, Gerhard A. Holzapfel
		Presenting Author:	**Kewei Li**				
	404	*Stretch-dependent remodeling of collagen-like dispersed fibers*					
		Authors:	Heiko	Topol	, Hasan	Demirkopara	, Thomas Pence
		Presenting Author:	**Heiko Topol**				
	237	*On the preservation of fibre direction during hyperelastic mass-growth of a finite fibre-reinforced tube*					
		Authors:	Konstantinos	Soldatos			
		Presenting Author:	**Konstantinos Soldatos**				
	1092	*The Generalised Structure Tensor approach for the mixed invariant I8*					
		Authors:	Andrey V.	Melnik	, Xiaoyu	Luo	, Ray W. Ogden
		Presenting Author:	**Andrey V. Melnik**				
	232	*Soft collagenous tissues: brittle or tough?*					
		Authors:	Kevin	Bircher	, Alexander	Ehret	, Edoardo Mazza
		Presenting Author:	**Edoardo Mazza**				

MS:	**9-4 - Modeling of Additive Manufacturing Processes**						
DAY:	**Wednesday**						
ROOM:	**Verde A**						
TIME	**10.15-12.15**						
CHAIR:	**F. Auricchio, E. Salsi**						
	352	*Modeling of Stress-Driven Deformations in Direct Laser Writing*					
		Authors:	Anton	Bauhofer	, Chiara	Daraio	
		Presenting Author:	**Anton Bauhofer**				
	364	*Computational large strain curing framework of extrusion based Additive Manufacturing Processes*					
		Authors:	Philipp	Hartmann	, Christian	Weißenfels	, Peter Wriggers
		Presenting Author:	**Philipp Hartmann**				
	654	*Imperfection sensitivity of three-dimensional lattices built with selective laser sintering*					
		Authors:	Lu	Liu	, Damiano	Pasini	
		Presenting Author:	**Lu Liu**				
	1320	*Multiphysics numerical modelling of architectured lattice structures*					
		Authors:	Gregory	Antoni			
		Presenting Author:	**Gregory Antoni**				

General Session: Computational Mechanics
DAY: Wednesday
ROOM: Rossa A
TIME 10.15-12.15
CHAIR: Hamid Reza Bayat, Domenico Magisano

429 *A locking-free symmetric hybrid discontinuous Galerkin method for large deformations*
Authors: Hamid Reza Bayat , Stephan Wulfinghoff , Stefanie Reese
Presenting Author: **Hamid Reza Bayat**

547 *An alternative numerical technique for solving boundary value problems involving viscoelastic materials*
Authors: Ananthapadr S , Saravanan U
Presenting Author: **Ananthapadmanabhan Sreekumar**

566 *The threshold displacement energy of deformed beta-SiC*
Authors: Xiaoxiong Song , Lisha Niu
Presenting Author: **Xiaoxiong Song**

588 *An efficient return mapping scheme for yield functions expressed as Minkowski sum: applications in nonlinear analysis of 3D frames*
Authors: Giovanni Garcea , Domenico Magisano , Francesco Liguori , Leonardo Leonetti
Presenting Author: **Domenico Magisano**

658 *Ductile Crack Initiation under Mixed Mode Loading*
Authors: Rasmus Andersen , Brian Legarth , Kim Nielsen
Presenting Author: **Rasmus Andersen**

903 *A fully thermodynamically coupled model for thermo-viscoplasticity with application to thermal buckling*
Authors: Katharina Martin , Stefanie Reese
Presenting Author: **Katharina Martin**

General Session: Composite Materials and Homogenization Theory
DAY: Wednesday
ROOM: Verde B
TIME 10.15-12.15
CHAIR: Luca Lanzoni, Luciano Rosati

469 *Overall elastic properties of a plate containing inhomogeneities of irregular shape*
Authors: Luca Lanzoni , Enrico Radi , Igor Sevostianov
Presenting Author: **Luca Lanzoni**

1208 *Impact of the process on dispersion and consequences on mechanical properties of PMMA with embedded silica*
Authors: Anne-Sophie Caro-Bretelle , Alexandra Siot , Romain Leger , Claire Longuet , Belkacem Otazaghine , Nathalie Azema
Presenting Author: **Anne-Sophie Caro**

1324 *Simulation of high-temperature creep in directionally solidified NiAl-Mo eutectics*
Authors: Daniel Wicht , Jürgen Albiez , Matti Schneider , Thomas Böhlke
Presenting Author: **Daniel Wicht**

1358 *Analytical expression of the Eshelby tensor for polyhedral inclusions*
Authors: Giulio Zuccaro , Daniela De Gregorio , Salvatore Trotta , Salvatore Sessa , Francesco Marmo , Luciano Rosati
Presenting Author: **Luciano Rosati**

1474 *Micro-Mechanical Analysis of Piezo-Fiber Reinforced Composites using Variational Asymptotic Method*
Authors: Akshay Kumar , Ajinkya Vishr Sirsat , Srikant Sekha Padhee
Presenting Author: **Srikant Sekhar Padhee**

MS:	**2-3 - Mechanics of Silk: from Molecules to Orb-webs**																				
DAY:	**Wednesday**																				
ROOM:	**Cobalto**																				
TIME	**14.30-16.30**																				
CHAIR:	**Frauke Graeter, Nicola Pugno**																				
KEYNOTE	**407**	*Making biomimetic spider silk*																			
		Authors:	Jan	Johansson	, Anna	Rising															
		Presenting Author:	**Anna Rising and Jan Johansson**																		
	408	*Understanding the effect of extensional flow on native silk proteins*																			
		Authors:	Andreas	Koeppel	, Chris	Holland															
		Presenting Author:	**Andreas Koeppel**																		
	433	*Insights into the flow processing of silks*																			
		Authors:	Chris	Holland	, Pete	Laity	, Jamie	Sparkes	, Anastasia	Brif	, Andreas	Koeppel	, Quan	Wan	, Nicola	Stehling	, Richard	Hodgkinson			
		Presenting Author:	**Chris Holland**																		
	1368	*Multiscale simulation of directed spider dragline silk self-assembly by flow*																			
		Authors:	Ana	Herrera	, Martin	Mojica-Bena	, Anil	Kumar Dassa	, Ulrich	Schwarz	, Mattias	Goksor	, Caroline B.	Adiels	, Frauke	Graeter					
		Presenting Author:	**Ana Herrera**																		
	1270	*Experimental studies of spider silk micro-fiber formation using optical tweezers and microfluidics*																			
		Authors:	Martin	Mojica-Bena	, Ana Maria	Herrera	, Frauke	Graeter	, Caroline	Adiels											
		Presenting Author:	**Martin Mojica Benavides**																		

MS:	**2-3 - Mechanics of Silk: from Molecules to Orb-webs**																				
DAY:	**Wednesday**																				
ROOM:	**Cobalto**																				
TIME	**17.00-19.00**																				
CHAIR:	**Frauke Graeter, Nicola Pugno**																				
	799	*Straining Flow Spinning: A versatile technique for the production of bioinspired silk fibers*																			
		Authors:	José	Pérez-Rigueiı	, Alfonso Marí	Gañán-Calvo	, Manuel	Elices	, Gustavo Víct	Guinea											
		Presenting Author:	**José Pérez-Rigueiro**																		
	967	*Inhomogeneity of Longitudinal Mechanical Properties in Spider Silk Revealed by Cryo-SEM*																			
		Authors:	Nicola	Stehling	, Christopher	Holland	, Cornelia	Rodenburg													
		Presenting Author:	**Nicola Stehling**																		
	1151	*Structure and dynamics of silkworm silk and spider silk*																			
		Authors:	Igor	Krasnov	, Imke	Greving	, Malte	Blankenburg	, Martin	Müller											
		Presenting Author:	**Martin Müller**																		
	484	*Foundation of the outstanding toughness of biomimetic spider silk*																			
		Authors:	Martin	Humenik	, Aniela	Heidebrecht	, Christopher	Thamm	, Joschka	Bauer	, Friedrich	Kremer	, Thomas	Scheibel							
		Presenting Author:	**Martin Humenik**																		
	507	*Failure Mechanisms of Spider Silk Inspired Fibers Made by Instability-Assisted 3D Printing*																			
		Authors:	Shibo	Zou	, Daniel	Therriault	, Frédérick P.	Gosselin													
		Presenting Author:	**Shibo Zou**																		
	858	*Emerging order in silk fibers*																			
		Authors:	Johannes	Wagner	, Imke	Greving	, Konstantinos	Gkagkas	, Martin	Mueller	, Tilo	Seydel	, Eduardo	Cruz-Chu	, Frauke	Graeter					
		Presenting Author:	**Frauke Gräter**																		

Thursday, July 5, 2018

General Lecture	
DAY:	**Thursday**
ROOM:	**Europa Auditorium**
TIME	**9.00-9.45**
CHAIR:	**Gerhard A. Holzapfel**
	Dynamics of fracturing saturated porous media
	Bernhard Schrefler

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Thursday**	
ROOM:	**Italia**	
TIME	**10.15-12.15**	
CHAIR:	**D. Vella, F. Bosi**	
	1271	*Biological and bio-inspired motility at microscopic scales: locomotion by shape control*
	Authors:	Antonio DeSimone, Marino Arroyo, Giovanni Noselli
	Presenting Author:	**Antonio DeSimone**
	630	*Dragonfly-inspired deployable structures: how to inflate and stay flat?*
	Authors:	Joel Marthelot, P.-T. Brun
	Presenting Author:	**P.-T. Brun**
	642	*Swimming through buckling*
	Authors:	Adel Djellouli, Philippe Marmottant, Henda Djeridi, Catherine Quilliet, Gwennou Coupier
	Presenting Author:	**Catherine Quilliet**
	869	*Morphorods: instabilities and pattern formation in growing elastic rods*
	Authors:	Derek Moulton, Alain Goriely, Thomas Lessinnes
	Presenting Author:	**Derek Moulton**
	702	*Shear visco-elasticity of hydrogels*
	Authors:	Mattia Bacca, Robert McMeeking
	Presenting Author:	**Mattia Bacca**
	776	*Bouncing, screaming, floating: motion control with vaporizing soft solids*
	Authors:	Scott Waitukaitis, Martin van Hecke
	Presenting Author:	**Scott Waitukaitis**

MS:	**6-2 - Elastic Metamaterials**	
DAY:	**Thursday**	
ROOM:	**Bianca A**	
TIME	**10.15-12.15**	
CHAIR:	**Prof. S. Guenneau, Dr. D. Misseroni**	
KEYNOTE	**1570**	*Conversion of waves by trees*
	Authors:	Jean Jacques Marigo
	Presenting Author:	**Jean Jacques Marigo**
KEYNOTE	**328**	*Mechanics of inter-modal tunneling in nonlinear metamaterials*
	Authors:	R. Ganesh, Weijian Jiao, Stefano Gonella
	Presenting Author:	**Stefano Gonella**
	834	*Wave localisation near semi-infinite and finite clusters of resonators in flexural plates*
	Authors:	Alexander Movchan, Richard Craster, Stewart Haslinger, Ian Jones, Natasha Movchan, Ross McPhedran, Giorgio Carta
	Presenting Author:	**Alexander Movchan**
	939	*Waves coupling and localisation in a geometrically chiral elastic lattice*
	Authors:	Natasha Movchan, Domenico Tallarico, Alexander Movchan, Daniel Colquitt
	Presenting Author:	**Natasha Movchan**

MS:	**3-11 - Generalized Continua**									
DAY:	**Thursday**									
ROOM:	**Bianca B**									
TIME	**10.15-12.15**									
CHAIR:	**Antonios Giannakopoulos, Markus Wheel**									
KEYNOTE	**272**	*On the wave dispersion in microstructured solids*								
		Authors:	Arkadi	Berezovski	, Francesco	dell'Isola				
		Presenting Author:	**Arkadi Berezovski**							
	280	*On weak solutions within the reduced linear strain gradient elasticity*								
		Authors:	Victor	Eremeyev	, Francesco	dell'Isola				
		Presenting Author:	**Victor Eremeyev**							
	322	*A micromorphic approach to nematic liquid crystals*								
		Authors:	Maurizio	Romeo						
		Presenting Author:	**Maurizio Romeo**							
	906	*Nonlocal micropolar dislocation based fracture mechanics*								
		Authors:	Mahmoud	Mousavi						
		Presenting Author:	**Mahmoud Mousavi**							
	269	*Interaction integral method for extracting stress intensity factors and couple-stress intensity factors of a crack in micropolar materials*								
		Authors:	Hongjun	Yu	, Meinhard	Kuna				
		Presenting Author:	**Hongjun Yu**							

MS:	**3-7 - Nonlinear Elasticity**									
DAY:	**Thursday**									
ROOM:	**Magenta B**									
TIME	**10.15-12.15**									
CHAIR:	**Luis Dorfmann, Xiaoyu Luo**									
	1133	*Necking of an electroelastic plate*								
		Authors:	Luis	Dorfmann	, Yibin	Fu				
		Presenting Author:	**Luis Dorfmann**							
	1478	*Spatially resolved distortions in growing media*								
		Authors:	Alfio	Grillo	, Salvatore	Di Stefano	, Ariel	Ramirez-Torr	, Raimondo	Penta
		Presenting Author:	**Alfio Grillo**							
	1149	*Discrete-to-continuum modelling of cells to tissue*								
		Authors:	Nicholas	Hill	, Roxanna	Barry	, Peter	Stewart		
		Presenting Author:	**Nicholas Hill**							
	805	*Modeling bone remodeling based on chemical affinity tensor*								
		Authors:	Yanina	Izmaylova	, Alexander	Freidin				
		Presenting Author:	**Yanina Izmaylova**							
	734	*Compatible Morphing and the Heart Function*								
		Authors:	Stefano	Gabriele	, Paola	Nardinocchi	, Luciano	Teresi	, Valerio	Varano
		Presenting Author:	**Luciano Teresi**							

MS: 6-1 -Nonlinear Dynamics in Mechanical and Structural Systems
DAY: Thursday
ROOM: Magenta A
TIME 10.15-12.15
CHAIR: Harry Dankowicz, Katica Hedrih

KEYNOTE	**1166**	*Identification of nonlinear modes based on normal form and experimental continuation. Application to the acoustics of chinese gongs* Authors: Olivier THOMAS, Vivien DENIS, Marguerite JOSSIC, Christophe GIRAUD-AUD, Baptiste CHOMETTE, Adrien MAMOU-MA **Presenting Author: Olivier THOMAS**
	213	*Non-linear vibration modes of beams and cables on elastic media subjected to linearly varying normal forces* Authors: Carlos Mazzilli, Eduardo Ribeiro, Stefano Lenci, Lucio Demeio **Presenting Author: Carlos Mazzilli**
	1389	*Nonlinear parametric modeling of compression roller batteries and experimental validation* Authors: Andrea Arena, Biagio Carboni, Walter Lacarbonara **Presenting Author: Andrea Arena**
	205	*On the coupling between axial and transversal vibration in a rectilinear Euler-Bernoulli beam* Authors: Stefano Lenci, Francesco Clementi **Presenting Author: Stefano Lenci**
	528	*Motion Control of a Flexible Underactuated Manipulator by Utilizing of Resonance of a Flexible Arm* Authors: Satoshi Kobayashi, Hiroshi Yabuno **Presenting Author: Satoshi Kobayashi**

MS: 3-10 - Mechanics of Generalized Continua with - Mechanics of Cohesion-adhesion Interactions and their Applications to Sizedependent Thin Structures
DAY: Thursday
ROOM: Celeste
TIME 10.15-12.15
CHAIR: Chairman Sergey Lurie, Chairman Yuriy Povstenko

KEYNOTE	**393**	*Interpretation of Nanoindentation Tests Using Mechanics of Adhesive Contact* Authors: Feodor M. Borodich, Boris A. Galanov **Presenting Author: Feodor M. Borodich**
INVITED	**1436**	*Stress fields in an elastic cylinder with a long polygonal prismatic inclusion subjected to dilatational eigenstrain* Authors: Stanislav Krasnitckii, Andrey Smirnov, Mikhail Gutkin **Presenting Author: Stanislav Krasnitckii**
	1029	*Surface elasticity effect on diffusional growth of surface defects in strained solids* Authors: Gleb M. Shuvalov, Sergey A. Kostyrko **Presenting Author: Gleb M. Shuvalov**
	417	*General approach to some problems of nanomechanics* Authors: Mikhail Grekov **Presenting Author: Mikhail Grekov**

MS: 3-1 - Contact Mechanics
DAY: Thursday
ROOM: Europa Auditorium
TIME 10.15 -12.15
CHAIR: Michel Raous, Zoe Clark

KEYNOTE	**821**	*An atomic interaction based continuum model for frictional contact* Authors: Thang Duong , Roger Sauer **Presenting Author: Roger A. Sauer**
	1392	*Alternative Treatment of Large Deformation Contact using VEM* Authors: Peter Wriggers , Wilhelm Rust **Presenting Author: Peter Wriggers**
	1406	*Numerical modeling of the debonding process of mixed-mode composite double cantilever beams* Authors: Rossana Dimitri , Giorgio Zavarise **Presenting Author: Rossana Dimitri**
	1457	*A non-local fractional-order interface mechanical model* Authors: Gioacchino Alotta , Rossana Dimitri , Francesco Pa Pinnola , Giorgio Zavarise , Massimilianc Zingales **Presenting Author: Francesco Paolo Pinnola**
	199	*An accelerated Uzawa method for frictionless contact problems* Authors: Yoshihiro Kanno **Presenting Author: Yoshihiro Kanno**

MS: 1-9 - Modeling of Fracture in Hard and Sof materials
DAY: Thursday
ROOM: Ciano B
TIME 10.15-12.15
CHAIR: Irene Arias, Luigi Gambarotta

INVITED	**599**	*The bridged crack model with multiple fibres: Scale effects and local instabilities* Authors: Alberto Carpinteri , Federico Accornero **Presenting Author: Federico Accornero**
	627	*Effective toughness of heterogeneous elasto-plastic materials* Authors: Stella Brach , Blaise Bourdin , Kaushik Bhattacharya **Presenting Author: Stella Brach**
	1132	*Manifestations of flexoelectricity in the fracture mechanics of dielectrics and ferroelectrics* Authors: Amir Abdollahi , Irene Arias **Presenting Author: Amir Abdollahi**
	759	*Influence of a small flaw on the strength of ceramics* Authors: Dominique Leguillon , Eric Martin , Raul Bermejo **Presenting Author: Dominique Leguillon**
	452	*Effect of interface thicknesses on the phase field modeling of crack propagation in heterogeneous materials.* Authors: Herve HENRY **Presenting Author: Herve HENRY**
	909	*A homogenized approach for delamination fracture in layered beams* Authors: Hossein Darban , Roberta Massabò **Presenting Author: Hossein Darban**

MS:	**8-2 -Computational Homogenization of Nonlinear Composites**	
DAY:	**Thursday**	
ROOM:	**Europa A**	
TIME	**10.15-12.15**	
CHAIR:	**Federica Covezzi, Elio Sacco**	
KEYNOTE	**1399**	*Multiscale modeling using finite elements, fast Fourier transforms and proper orthogonal decomposition*
		Authors: Stefanie Reese , Julian Kochmann , Bob Svendsen , Stephan Wulfinghoff
		Presenting Author: Stefanie Reese
	1203	*Homogenization of composite materials comprising bimodular phases*
		Authors: Elisabetta Monaldo , Antoine Lucchetta , Stella Brach , Djimedo Kondo , Giuseppe Vairo
		Presenting Author: Elisabetta Monaldo
	863	*Space-time model order reduction for dissipative cyclic problems*
		Authors: Felix Fritzen , Mohammad Hassani
		Presenting Author: Felix Fritzen
	344	*Model Order Reduction of Nonlinear Homogenization Problems Using a Hashin-Shtrikman Type Finite Element Method*
		Authors: Stephan Wulfinghoff , Fabiola Cavaliere , Stefanie Reese
		Presenting Author: Stephan Wulfinghoff
	705	*Two-stage data-assisted mechanical homogenization*
		Authors: Oliver Kunc , Felix Fritzen
		Presenting Author: Oliver Kunc

MS:	**3-6 - Multi-Physics of Solids at Fracture**	
DAY:	**Thursday**	
ROOM:	**Europa B**	
TIME	**10.15-12.15**	
CHAIR:	**B. Schefler, G. Mishuris**	
KEYNOTE	**1515**	*Numerical simulation of hydraulic fracture growth: advances and remaining challenges*
		Authors: Brice Lecampion
		Presenting Author: Brice Lecampion
	955	*Hydraulic fracturing in fully-saturated porous materials: Phase-field modelling and experimental validation*
		Authors: Bernd Markert , Yousef Heider
		Presenting Author: Bernd Markert
	546	*Methods for modelling the planar fractures*
		Authors: Natalia Zavialova , Aleksandr Bikov , Ilia Perepechkin , Sergei Negodiaev
		Presenting Author: Natalia Zavialova
	1040	*Poro-elastic coupling in processes of wellbore failure and hydraulic fracturing*
		Authors: Sergey Golovin , Aleksei Baykin
		Presenting Author: Sergey Golovin
	823	*Effect of dilatancy on the nucleation of dynamic rupture due to fluid injection*
		Authors: Federico Ciardo , Brice Lecampion
		Presenting Author: Federico Ciardo

MS:	**9-3 - Variational Methods in Constitutive Modelling for Multi-physics Problems**	
DAY:	**Thursday**	
ROOM:	**Indaco**	
TIME	**10.15-12.15**	
CHAIR:	**Kerstin Weinberg, Marcello Vasta**	
KEYNOTE	**830**	*Seismic attenuation and velocity dispersion in random fracture networks*
	Authors:	Marco Favino , Jürg Hunziker , Klaus Holliger , Rolf Krause
	Presenting Author:	**Marco Favino**
	1008	*The Schwarz Alternating Method for Concurrent Multiscale in Finite Deformation Solid Mechanics*
INVITED	Authors:	Alejandro Mota , Irina Tezaur , Coleman Alleman
	Presenting Author:	**Alejandro Mota**
	655	*A novel FSI framework based on the variational IB Method*
INVITED	Authors:	Dr. Maria Giu Nestola , Barna Becsek , Hadi Zolfaghari , Prof. Domini Obrist , Prof. Dr. Rolf Krause
	Presenting Author:	**Maria Giuseppina Chiara Nestola**
	1329	*A coupled approach for diffused fracturing in porous brittle materials*
INVITED	Authors:	Gianluca Caramiello , Andrea Montanino , Gabriele Della Vecchia , Anna Pandolfi
	Presenting Author:	**Andrea Montanino**
	668	*Modelling the coupling between plastic activity and allotropic transformation in iron*
INVITED	Authors:	Nicolas Bruzy , Michel Coret , Bertrand Huneau , Laurent Stainier
	Presenting Author:	**Laurent Stainier**

MS:	**3-9 - The Physics of Dense Granular Media**	
DAY:	**Thursday**	
ROOM:	**Cobalto**	
TIME	**10:15 - 12:15**	
CHAIR:	**O'Hern, Chakraborty**	
	241	*Meso-scale models for amorphous plasticity*
	Authors:	Botond Tyukodi , Kareem Abdelshafy , Damien Vandembrou , Craig Maloney
	Presenting Author:	**Craig E Maloney**
	709	*Universal slip dynamics in dense granular materials and bulk metallic glasses: Theory compared to experiments*
	Authors:	Karin Dahmen , Dmitry Denisov , Kinga Lorincz , Wendelin Wright , Todd Hufnagel , Aya Nawano , Xiaojun Gu , Jonathan Uhl
	Presenting Author:	**Karin Dahmen**
	1182	*When granular materials are easy*
	Authors:	Ken Kamrin , Hesam Askari , James Slonaker , Stephen Townsend , Qiong Zhang
	Presenting Author:	**Ken Kamrin**
	947	*Force transmission in granular materials*
	Authors:	KP Krishnaraj , Prabhu Nott
	Presenting Author:	**Krishnaraj KP**
	1518	*Micromechanical study of the elastic stiffness in frictional granular solids*
	Authors:	Kianoosh Taghizadeh , Vanessa Magnanimo , Stefan Luding
	Presenting Author:	**Kianoosh Taghizadeh**
	691	*Comparison of the Force Network Topology of the 2D and 3D Granular Systems*
	Authors:	Lenka Kovalcinova , Angelo Taranto , Lou Kondic
	Presenting Author:	**Lenka Kovalcinova**

MS:	**1-8 - Topology Optimization for Additive Manufacturing**	
DAY:	**Thursday**	
ROOM:	**Europa C**	
TIME	**10.15-12.15**	
CHAIR:	**Can Ayas, Pierre Duysinx**	
	736	*Large-scale topology optimization for additive manufacturing using a virtual skeleton*
	Authors:	Yoram Mass , Oded Amir
	Presenting Author:	**Yoram Mass**
	839	*Imposing minimum gap in topology optimization through maximum size constraints: powder-removal-adapted designs*
	Authors:	Eduardo Fernández , Maxime Collet , Pablo Alarcon , Simon Bauduin , Pierre Duysinx
	Presenting Author:	**Pierre Duysinx**
	689	*Topology optimization with overhang filter considering accessibility of supports*
	Authors:	Emiel van de Ven , Matthijs Langelaar , Can Ayas , Robert Maas , Fred van Keulen
	Presenting Author:	**Emiel van de Ven**
	831	*Controlling local overheating in additive manufacturing parts using topology optimization*
	Authors:	Rajit Ranjan , Yabin Yang , Can Ayas , Matthijs Langelaar , Fred Van Keulen
	Presenting Author:	**Rajit Ranjan**
	1423	*Multi-material continuum topology optimization with arbitrary volume and mass constraints*
	Authors:	Emily Sanders , Miguel Aguilo , Glaucio Paulino
	Presenting Author:	**Emily Sanders**
	697	*Optimal structures of multilateral composites*
	Authors:	Andrej Cherkaev , Grzegorz Dzierzanowskii
	Presenting Author:	**Andrej Cherkaev**

MS:	**2-3 - Mechanics of Silk: from Molecules to Orb-webs**	
DAY:	**Thursday**	
ROOM:	**Rossa B**	
TIME	**10.15-12.15**	
CHAIR:	**Frauke Graeter, Nicola Pugno**	
	1497	*Silk as a Functional Component in Strong Flexible Bionanocomposites*
	Authors:	Vladimir Tsukruk
	Presenting Author:	**Vladimir Tsukruk**
	1521	*A mechanical method to increase the toughness performances of silk fibers*
	Authors:	Alice Berardo , Maria Pantano , Nicola Pugno
	Presenting Author:	**Nicola Pugno**
	1523	*Spiders web: an example of structure composed by multi-functional materials.*
	Authors:	Gabriele Greco , Barbara Mazzolani , Nicola Pugno
	Presenting Author:	**Gabriele Greco**
	1524	*Weibull statistics applied to spider silk.*
	Authors:	Gabriele Greco , Barbara Mazzolani , Nicola Pugno
	Presenting Author:	**Gabriele Greco**
	1525	*Spider weight dragging and lifting mechanics*
	Authors:	Nicola Pugno
	Presenting Author:	**Nicola Pugno**

MS:	**2-4 - Mechanics of Soft Biological Tissues**	
DAY:	**Thursday**	
ROOM:	**Ciano A**	
TIME	**10.15-12.15**	
CHAIR:	**Bjørn Skallerud, Daniel Haspinger**	
KEYNOTE	**786**	*A calcium dependent multiscale contractility model of fibroblast - substrate interactions under cyclic stretch* Authors: Siddhartha Jaddivada , Namrata Gundiah **Presenting Author: Namrata Gundiah**
	1238	*The interrelation between smooth muscle orientation and intracellular filament structure in the human abdominal aorta: a numerical analysis* Authors: Daniel Ch. Haspinger , Sae-Il Murtada , Justyna A. Niestrawska , Gerhard A. Holzapfel **Presenting Author: Daniel Ch. Haspinger**
	1560	*Simulation of the uterine contractions and foetus expulsion using a chemo-mechanical constitutive model* Authors: Maria Vila Pouca , João Ferreira , Dulce Oliveira , Marco Parente , Renato Natal Jorge **Presenting Author: Maria Vila Pouca**
	1495	*Modelling of soft tissue and reduced muscle activation in the soft palate related to obstructive sleep apnea* Authors: Hongliang Liu , Victorien Prot , Bjørn Skallerud **Presenting Author: Bjørn Skallerud**
	1367	*Pattern formation by cells acting as strain-cued automata* Authors: Brian Cox **Presenting Author: Brian Cox**

General Session:	**Dynamics, Waves and Metamaterials**	
DAY:	**Thursday**	
ROOM:	**Verde A**	
TIME	**10.15-12.15**	
CHAIR:	**Annamaria Pau, Robert Davey**	
	905	*The role of the strain energy order in the model of prestressed plates in acoustoelastic theory* Authors: Annamaria Pau , Fabrizio Vestroni **Presenting Author: Annamaria Pau**
	908	*Validation and analysis of bird substitute impact on Hopkinson tube* Authors: Jesus Pernas-Sanch , Jose Alfonso Artero-Guerr , David Varas , Jorge Lopez-Puente **Presenting Author: Jesus Pernas-Sanchez**
	933	*An Efficient Semi-Analytical Scheme for Determining the Scattering of Lamb Waves in a Wave-Guide with Discontinuous Depth* Authors: Robert Davey , Raphael Assier , David Abrahams , Rich Hewitt **Presenting Author: Robert Davey**
	1297	*Stochastic response of uncertain-but-bounded linear fractional dynamical systems* Authors: Giulio Cottone , Roberta Santoro **Presenting Author: Roberta Santoro**
	1336	*GRIN metalenses for shear-polarized surface waves* Authors: Antonio Palermo , Farhad Zeighami , Alessandro Marzani **Presenting Author: Farhad Zeighami**

General Session:	**Computational Mechanics**	
DAY:	**Thursday**	
ROOM:	**Rossa A**	
TIME	**10.15-12.15**	
CHAIR:	**Foucault de Francqueville, Bobby Huxford**	
	904	*Representative volume elements for the finite element simulation of isotropic composites highly filled with monosized spheres*
	Authors:	Foucault de Francque, Julie Diani, Pierre Gilormini, Aude Vandenbrouc
	Presenting Author:	**Foucault de Francqueville**
	1035	*Continuum modelling of extrinsic toughening and fibre bridging*
	Authors:	Bobby Huxford, Benjamin P. Russell, William Ronan
	Presenting Author:	**Bobby Huxford**
	1050	*Anisotropic crack path prediction in polycrystalline materials using graph theoretic approaches*
	Authors:	Siddhartha Srivastava, Veera Sundararagh
	Presenting Author:	**Siddhartha Srivastava**
	1073	*Functional approach to error control and adaptive algorithms for Reissner-Mindlin plates*
	Authors:	Maksim Frolov, Olga Chistiakova
	Presenting Author:	**Maksim Frolov**
	1153	*Nonlinear Finite Element Implementation of Invariant Free Hyperelasticity*
	Authors:	Daniel O'Shea, David Kellermann, Mario Attard
	Presenting Author:	**Daniel O'Shea**

MS:	**2-6 - Mechanics of Mineralised Tissue and Biomaterials**	
DAY:	**Thursday**	
ROOM:	**Verde B**	
TIME	**10:15 - 12:15**	
CHAIR:	**Anna Tampieri, Marco Viceconti**	
KEYNOTE	**519**	*A multiscale model of the skeleton to predict the absolute risk of femoral neck fracture*
	Authors:	Marco Viceconti, Sachin Prabhu H. R., Pinaki Bhattacharya
	Presenting Author:	**Marco Viceconti**
INVITED	**292**	*Multifaceted experimental approach to investigate the biomechanics of the natural, diseased and treated vertebrae*
	Authors:	Luca Cristofolini
	Presenting Author:	**Luca Cristofolini**
	253	*Mathematical Modeling of technologies for the design of innovative functional bio-coatings for dental implants*
	Authors:	Alla Balueva, Ilia Dashevskiy
	Presenting Author:	**Alla Balueva**
	738	*Femur mechanics via a CT-based computational model accounting for bone non-linear constitutive response*
	Authors:	Cristina Falcinelli, Alessio Gizzi, Alberto Di Martino, Giuseppe Vairo
	Presenting Author:	**Cristina Falcinelli**
	855	*Bamboo: Evolutionally perfected damage tolerant structural material*
	Authors:	Sayaad Mannan, Venkitanara Parameshwa, Sumit Basu
	Presenting Author:	**Sumit Basu**

	Plenary Lecture
DAY:	**Thursday**
ROOM:	**Europa Auditorium**
TIME	**13.45-14.30**
CHAIR:	**John Hutchinson**
	Solid mechanics on a chip
	Thomas Pardoen

MS:	**3-5 - Mechanics and Physics of Solids and Structures**
DAY:	**Thursday**
ROOM:	**Italia**
TIME	**14.30-16.30**
CHAIR:	**A. DeSimone, M. Dias**

	756	*Elastocapillary contact between droplets and highly bendable membranes*
		Authors: Dominic Vella, Thomas Chandler, Benny Davidovitch
		Presenting Author: Dominic Vella
	1146	*Elasto-capillarity for the creation of liquid-solid fibers and membranes*
		Authors: Paul Grandgeorge, Aurélie Hourlier-Fargette, Sébastien Neukirch, Natacha Krins, Arnaud Antkowiak
		Presenting Author: Paul Grandgeorge
	1009	*Reconfigurable Textures by Dynamic Elastocapillary Self-Assembly*
		Authors: Sameh Tawfick
		Presenting Author: Sameh Tawfick
	643	*Passive Elastic Structure Interacting with Grains in Motion*
		Authors: Martin Brandenbourger, Alex Hindelang, Wyatt Perry, Douglas Holmes
		Presenting Author: Martin Brandenbourger
	416	*Surface Elasticity of Strained Soft Solids*
		Authors: Qin Xu, Robert Style, Eric Dufresne
		Presenting Author: Qin Xu
	450	*Partial wetting of a highly bendable sheet*
		Authors: Fabian Brau, S. Ganga Prasath, Benny Davidovitch
		Presenting Author: Fabian Brau

MS:	**6-2 - Elastic Metamaterials**
DAY:	**Thursday**
ROOM:	**Bianca A**
TIME	**14.30-16.30**
CHAIR:	**Prof. A.B. Movchan, Dr. D. Misseroni**

	1512	*Universality of the Frequency Spectrum of Laminates*
		Authors: Ben Lustig, Gal Shmuel
		Presenting Author: Gal Shmuel
	189	*How to advantageously manage the ellipticity of Rayleigh waves in artificially structured soils?*
		Authors: Stephane Brulé, Stefan Enoch, Sebastien Guenneau
		Presenting Author: Stephane Brulé
	1407	*Can one reproduce a ``gyrobeam'' with a chiral elastic structure?*
		Authors: Michael Nieves, Giorgio Carta, Ian Jones, Natasha Movchan, Alexander Movchan
		Presenting Author: Michael Nieves
	699	*Porous mechanical metamaterials as aggregates of elastic charges*
		Authors: Gabriele Librandi, Michael Moshe, Yoav Lahini, Katia Bertoldi
		Presenting Author: Gabriele Librandi
	343	*Dispersion and band-gaps in micromorphic media and metamaterials*
		Authors: Angela Madeo, Marco Valeri d'Agostino, Alexios Aivaliotis, Gabriele Barbagallo, Patrizio Neff
		Presenting Author: Angela Madeo
	950	*The fluid-loaded metawedge: Converting flexural waves into sound*
		Authors: E. A. Skelton, R. V. Craster, A. Colombi, D. J. Colquitt
		Presenting Author: Dr Daniel J Colquitt

MS: 1-1 - Mechanics of Composite Materials
DAY: Thursday
ROOM: Bianca B
TIME 14.30-16.30
CHAIR: Pedro Camanho, Josep Costa

991 *A 3D tomographic investigation to elucidate how thin-ply laminates improve the interlaminar shear strength and the effect of toughening the interfaces with veils*
Authors: Santiago García Rodríg, Josep Costa Balanz , Vicky Singery , Aravind Sasikumar
Presenting Author: Santiago García Rodríguez

1014 *An isotropic damage cohesive model for mixed-mode delamination with large openings and fiber bridging*
Authors: Federica Confalonieri , Umberto Perego
Presenting Author: Federica Confalonieri

1075 *Guided Wave Techniques for Damage Detection and Property Characterization in Composite Aerospace Structures*
Authors: Margherita Capriotti , Ranting Cui , Francesco Lanza di Scal
Presenting Author: Francesco Lanza di Scalea

1085 *Measuring the delamination fracture toughness of cylindrical specimens via the Double Drum Peel (DDP): a new test concept*
Authors: Federica Daghia , Christophe Cluzel , Louis Hébrard , François Churlaud , Benoît Courtemanch
Presenting Author: Federica Daghia

1117 *Modelling of an epoxy matrix based on the shear transformation zone framework*
Authors: Jérémy Chevalier , Xavier Morelle , Pedro Camanho , Frédéric Lani , Thomas Pardoen
Presenting Author: Jérémy Chevalier

1229 *Mathematical simulation of a rigid indenter interaction with a layered composite system considering viscoelasticity*
Authors: Valentin Mozharovsky, Natalya Maryina , Dmitry Kuzmenkov
Presenting Author: Valentin Mozharovsky

MS: 3-7 - Nonlinear Elasticity
DAY: Thursday
ROOM: Magenta B
TIME 14.30-16.30
CHAIR: Nicholas Hill, Luis Dorfmann

512 *Wrinkle-ridge-sagging transitions in soft shells sliding on rigid cylinders*
Authors: Fan Xu , Yifan Yang , Hui-Hui Dai
Presenting Author: Fan Xu

897 *Homogenized mechanical behavior of two-phase neo-Hookean laminates: Macroscopic instabilities and post-bifurcation response*
Authors: Joshua Furer , Pedro Ponte Castañ
Presenting Author: Pedro Ponte Castañeda

1079 *Multiscale homogenization of active nonlinear elastic composites*
Authors: Ariel Ramirez-Torr, Raimondo Penta , Alfio Grillo , Reinaldo Rodriguez-Ra, Josè Merodio
Presenting Author: Raimondo Penta

399 *On the dynamic dilatation of a compressible Rivlin's cube beyond its elastic limit*
Authors: Kostas Soldatos
Presenting Author: Kostas Soldatos

896 *The constitutive relations of initially stressed incompressible Mooney- Rivlin materials*
Authors: Abramo Agosti , Artur L. Gower , Pasquale Ciarletta
Presenting Author: Abramo Agosti

1376 *An invariant-free formulation of anisotropic hyperelasticity*
Authors: David Kellermann , Mario Attard ,
Presenting Author: David Kellermann

MS:	**6-1 -Nonlinear Dynamics in Mechanical and Structural Systems**	
DAY:	**Thursday**	
ROOM:	**Magenta A**	
TIME	**14.30-16.30**	
CHAIR:	**Marcelo Savi, Dmitry Indeitsev**	
KEYNOTE	**700**	*The spatio-temporal bifurcation structure in magnetic resonance force microscopy*
	Authors:	Oded Gottlieb , Evyatar Hacker
	Presenting Author:	**Oded Gottlieb**
	752	*Thermal Effects on Dynamic of Circular Cylindrical Shell*
	Authors:	Antonio Zippo , Francesco Pellicano
	Presenting Author:	**Francesco Pellicano**
	957	*Dynamic regimes in nonlinearly coupled electromechanical system*
	Authors:	Valeria Settimi , Francesco Romeo
	Presenting Author:	**Valeria Settimi**
	451	*Nonlinear behaviour of a three-dimensional multiphysics beam under parametric excitation and internal resonances*
	Author:	Vinciane Guillot , Alireza Ture Savadkı , Claude-Henr Lamarque
	Presenting Author:	**Vinciane Guillot**
	780	*Calibrated model of flexible structure VIVs*
	Authors:	Victoria Kurushina , Ekaterina Pavlovskaia , Marian Wiercigroch
	Presenting Author:	**Victoria Kurushina**

MS:	**3-10 - Mechanics of Generalized Continua with - Mechanics of Cohesion-adhesion Interactions and their Applications to Sizedependent Thin Structures**	
DAY:	**Thursday**	
ROOM:	**Celeste**	
TIME	**14.30-16.30**	
CHAIR:	**Chairman Feodor M.Borodich, Chairman Yury Solyaev**	
INVITED	**1080**	*On revision of bending theories of size-dependent elastic hyperfine systems across length scales of gradient and adhesive nature*
	Authors:	Sergey Lurie
	Presenting Author:	**Sergey Lurie**
INVITED	**162**	*Fractional heat conduction in solids connected by thin intermediate layer: nonperfect thermal contact*
	Authors:	Yuriy Povstenko , Tamara Kyrylych
	Presenting Author:	**Yuriy Povstenko**
	1012	*Stress concentration analysis of nanosized thin film coating with rough interface*
	Authors:	Sergey Kostyrko , Mikhail Grekov , Holm Altenbach
	Presenting Author:	**Sergey Kostyrko**
INVITED	**735**	*The Effect of Inclusion on Plate Buckling under Tension*
	Authors:	Nikita Morozov , Svetlana Bauer , Stanislava Kashtanova , Boris Semenov
	Presenting Author:	**Staislava Kashtanova**
	924	*Elastic second-strain gradient Euler-Bernoulli cantilever beams*
	Authors:	Fabien Amiot
	Presenting Author:	**Fabien Amiot**
	218	*Stability and Stiffness Properties of a Nanoplate in the Strain-Consistent Elastic Model with Surface Stresses*
	Authors:	Anatolii Bochkarev
	Presenting Author:	**Anatolii Bochkarev**

MS:	**3-1 - Contact Mechanics**	
DAY:	**Thursday**	
ROOM:	**Europa Auditorium**	
TIME	**14:30 - 16:30**	
CHAIR:	**Roger Sauer, Rossana Dimitri**	
	1341	*Indentation of thin adhesive beams*
	Authors:	S. Krishnan , Ishan Sharma , Sovan Das
	Presenting Author:	**S. Krishnan**
	290	*Axisymmetric finite element model for the analysis of heat dynamics of friction and wear during repeated braking*
	Authors:	Aleksander Yevtushenko , Piotr Grzes
	Presenting Author:	**Piotr Grzes**
	329	*Some observations in the asymptotic analysis of PCMI problem*
	Authors:	Hyung-Kyu Kim
	Presenting Author:	**Hyung-Kyu Kim**
	1291	*A mixed BEM-asperity model to predict pull-off force of fractal surfaces*
	Authors:	Guido Violano , Giuseppe Demelio , Luciano Afferrante
	Presenting Author:	**Guido Violano**
	1491	*Boundary element approaches to contact mechanics of viscoelastic rough surfaces*
	Authors:	Carmine Putignano , Giuseppe Carbone
	Presenting Author:	**Carmine Putignano**
	817	*Approximate closed-form solution to Hertzian indentation of an elastic half-plane with surface tensions*
	Authors:	Jing Jin Shen
	Presenting Author:	**Jing Jin Shen**

MS:	**1-9 - Modeling of Fracture in Hard and Sof materials**	
DAY:	**Thursday**	
ROOM:	**Ciano B**	
TIME	**14:30-16:30**	
CHAIR:	**David Kammer, Mikhail Perelmuter**	
	333	*Multiscale Damage Models for Composite Laminates*
INVITED	Authors:	Su Zhoucheng , Jerry Quek , Brian Cox , Sridhar Narayanaswa
	Presenting Author:	**Sridhar Narayanaswamy**
	1292	*The role of friction in the 3ENF and 4ENF delamination tests: an analytical solution*
INVITED	Authors:	Francesco Parrinello , Guido Borino
	Presenting Author:	**Francesco Parrinello**
	431	*Fracture modeling of adhesive connection by an imperfect soft interface model*
INVITED	Authors:	Francesco Ascione , Marco Lamberti , Frédéric Lebon , Aurélien Maurel-Pant , Maria Letizia Raffa
	Presenting Author:	**Francesco Ascione**
	1140	*Influence of shear on interface fracture of sandwich beams*
	Authors:	Roberta Massabò , Luca Barbieri
	Presenting Author:	**Roberta Massabò**
	833	*Evaluation of facesheet-to-core interface strength in sandwich panels in the dynamic debonding propagation analysis*
	Authors:	Vyacheslav Burlayenko , Tomasz Sadowski , Svetlana Dimitrova
	Presenting Author:	**Vyacheslav Burlayenko**
	1250	*Crack front fingering in failure of heterogeneous brittle solids*
	Authors:	Manish Vasoya , Véronique Lazarus , Laurent Ponson
	Presenting Author:	**Laurent Ponson**

MS:	**8-2 -Computational Homogenization of Nonlinear Composites**	
DAY:	**Thursday**	
ROOM:	**Europa A**	
TIME	**14.30-16.30**	
CHAIR:	**Felix Fritzen, Stefanie Reese**	
KEYNOTE	**725**	*Nonlinear compressive failure analysis of unidirectional fiber reinforced composite materials* Authors: Domenico Bruno, Fabrizio Greco, Raimondo Luciano, Paolo Nevone Blasi, Andrea Pranno **Presenting Author: Fabrizio Greco**
	648	*Strength properties of nanoporous materials: Molecular Dynamics simulations and Limit Analysis homogenization* Authors: Giuseppe Vairo, Stella Brach, Kokou Anoukou, Djimedo Kondo **Presenting Author: Giuseppe Vairo**
	1198	*Multiscale modeling of the out-of-plane response of masonry walls* Authors: Daniela Addessi, Elio Sacco, Paolo Di Re **Presenting Author: Daniela Addessi**
	1397	*Advancements on the FE·Meshless CH for the analysis of heterogeneous periodic materials* Authors: Emma La Malfa Ribo, Antonino Spada, Giuseppe Giambanco **Presenting Author: Emma La Malfa Ribolla**
	838	*A simple Cosserat Finite Element for masonry modelled by discrete elements* Authors: Daniele Baraldi, Antonella Cecchi **Presenting Author: Daniele Baraldi**

MS:	**3-6 - Multi-Physics of Solids at Fracture**	
DAY:	**Thursday**	
ROOM:	**Europa B**	
TIME	**14.30-16.30**	
CHAIR:	**A. Linkov, B. Merkert**	
	1095	*A dynamical interpretation of the fracking by the Statistical Central Force Model* Authors: Pietro Favia, Carlo Peruzzo, Francesco Pesavento, Bernhard A. Schrefler **Presenting Author: Carlo Peruzzo**
	201	*Water-Induced Failure Mechanics for Concrete: Micro-Mechanical Model, Experimental Observation and Phase-field coupling* Authors: Fadi Aldakheel, Peter Wriggers **Presenting Author: Fadi Aldakheel**
	243	*Penny-shaped hydraulic fracture accounting for shear stress induced by the fluid* Authors: Daniel Peck, Michal Wrobel, Gennady Mishuris **Presenting Author: Daniel Peck**
	853	*Redirection of a crack driven by viscous fluid* Authors: Monika Perkowska, Andrea Piccolroaz, Michal Wrobel, Gennady Mishuris **Presenting Author: Gennady Mishuris**
	385	*Singular crack-tip plastic fields in non-associative solids* Authors: Panos Papanastasiou, David Durban **Presenting Author: Panos Papanastasiou**

MS:	**9-3 - Variational Methods in Constitutive Modelling for Multi-physics Problems**	
DAY:	**Thursday**	
ROOM:	**Indaco**	
TIME	**14:30-16:30**	
CHAIR:	**Anna Pandolfi, Laurent Stainier**	
	861	*A constitutive model of anode charging and discharging in lithium-ion batteries*
INVITED	Authors:	Kerstin Weinberg , Marek Werner
	Presenting Author:	**Kerstin Weinberg**
	1413	*A Variational Framework for Thermo-Mechanics of Gradient-Extended Dissipative Solids*
INVITED	Authors:	Stephan Teichtmeiste , Aref Nateghi , Marc-André Keip
	Presenting Author:	**Stephan Teichtmeister**
	1493	*A visco-hyperelastic model based on variational constitutive updates including coupled mechanical-chemical degradation*
INVITED	Authors:	Vinícius Rios Fuck , Paulo Bastos de Castro , Jan-Michel C Farias , Eduardo Albe Fancello
	Presenting Author:	**Eduardo Alberto Fancello**
	1382	*The microstructure evolution caused by the strain-induced crystallization in polymers*
INVITED	Authors:	Sandra Klinge , Serhat Aygün
	Presenting Author:	**Sandra Klinge**
	808	*Onsager's variational principle to model soft and biological matter*
INVITED	Authors:	Nikhil Walani , Alejandro Torres Sanch , Dimitri Kaurin , Caterina Tozzi , Sohan Kale , Marino Arroyo
	Presenting Author:	**Nikhil Walani**
	435	*Theoretical and computational modeling of hyperelastic fiber-reinforced soft materials via a multivariate statistical approach*
INVITED	Authors:	Marcello Vasta , Alessio Gizzi , Anna Pandolfi
	Presenting Author:	**Marcello Vasta**

MS:	**3-9 - The Physics of Dense Granular Media**	
DAY:	**Thursday**	
ROOM:	**Cobalto**	
TIME	**14:30 - 16:30**	
CHAIR:	**Kondic, Kamrin**	
	284	*Stress anisotropy in quasi-statically sheared granular packings*
	Authors:	Corey OHern , Sheng Chen , Weiwei Jin , Thibault Bertrand , Mark Shattuck
	Presenting Author:	**Corey OHern**
	414	*Shear-induced transitions in dry grains and suspensions*
	Authors:	Bulbul Chakraborty
	Presenting Author:	**Bulbul Chakraborty**
	532	*Jamming with cohesion: A sticky problem*
	Authors:	Brian Tighe
	Presenting Author:	**Brian Tighe**
	714	*Size Segregation in an Erodible Bed under Shear Flow*
	Authors:	Nicholas Ouellette , Marios Galanis
	Presenting Author:	**Nicholas Ouellette**
	804	*Deformation of a 3D granular media caused by fluid invasion*
	Authors:	Marie-Julie Dalbe , Ruben Juanes
	Presenting Author:	**Marie-Julie Dalbe**
	390	*Force networks in granular systems in stick-slip regime*
	Authors:	Lou Kondic , Chao Cheng , Lenka Kovalcinova , Miroslav Kramar , Konstantin Mischaikow
	Presenting Author:	**Lou Kondic**

MS:	**1-8 - Topology Optimization for Additive Manufacturing**	
DAY:	**Thursday**	
ROOM:	**Europa C**	
TIME	**14:30-16:30**	
CHAIR:	**Pierre Duysinx, Can Ayas**	
	457	*Mechanical failure of wall structures in 3D printing processes*
	Authors:	Akke Suiker
	Presenting Author:	Akke Suiker
	1443	*The design of a lattice-based periodic microstructure model towards 3D printable optimized structures*
	Authors:	Chikwesiri Imediegwu ,
	Presenting Author:	**Chikwesiri Imediegwu**
	1241	*Generative Design of Lightweight Lattice Structures in Autodesk Nastran*
	Authors:	David Weinberg , Nam-Ho Kim , Kosala Bandara
	Presenting Author:	**david weinberg**
	824	*Design for additive manufacturing with distortion constraints*
	Authors:	Grzegorz Misiun , Emiel van den Ven , Can Ayas , Matthijs Langelaar , Bert Geijselaers , Ton van den Boo, Fred van Keulen
	Presenting Author:	**Grzegorz Misiun**
	732	*Topology optimization of 2.5D parts using the SIMP method with a variable thickness approach*
	Authors:	Volkan Kandemir , Oguz Dogan , Ulas Yaman
	Presenting Author:	**Volkan Kandemir**
	286	*Robust topology optimization of phononic crystals considering material properties uncertainty during manufacturing process*
	Authors:	Xiaopeng Zhang , Akihiro Takezawa , Zhan Kang
	Presenting Author:	**Xiaopeng Zhang**

MS:	**2-4 - Mechanics of Soft Biological Tissues**	
DAY:	**Thursday**	
ROOM:	**Ciano A**	
TIME	**14.30-16.30**	
CHAIR:	**Bram Trachet, Osman Gültekin**	
KEYNOTE	**1017**	*Synchrotron-based pressure inflation to characterize the unfolding of aortic lamellae in mouse carotid arteries*
	Authors:	Bram Trachet , Mauro Ferraro , Lydia Aslanidou , Patrick Segers , Nikos Stergiopulos
	Presenting Author:	**Bram Trachet**
	1248	*Biomechanical properties of human subclavian and iliac arteries subjected to extension, inflation and torsion*
	Authors:	Gerhard Sommer , Gloria Hohenberger, Tina U. Cohnert , Gerhard A. Holzapfel
	Presenting Author:	**Gerhard Sommer**
	1437	*Wall shear stress as a regulator of cerebral artery diameter*
	Authors:	Shin-ichiro Sugiyama , Teiji Tominaga , Makoto Ohta
	Presenting Author:	**Shin-ichiro Sugiyama**
	1353	*Anisotropic Growth of Arterial Walls During the Restenosis Process*
	Authors:	Xuyan Liu , Behrooz Fereidoonne , Bjørn Skallerud , Gerhard Holzapfel
	Presenting Author:	**Xuyan, Liu**
	1232	*A Phase-field Approach to Model Aortic Dissections*
	Authors:	Osman Gültekin , Hüsnü Dal , Gerhard A. Holzapfel
	Presenting Author:	**Osman Gültekin**

General Session:	**Dynamics, Waves and Metamaterials**	
DAY:	**Thursday**	
ROOM:	**Verde A**	
TIME	**14.30-16.30**	
CHAIR:	**Antonio Palermo, Lucchesi Massimiliano**	
	1396	*Dynamics of Rayleigh-like waves in granular media coupled with resonant metasurfaces* Authors: Antonio Palermo, Sebastian Krödel, Kathryn H. Matlack, Rachele Zaccherini, Vasilis K. Dertimanis, Eleni N. Chatzi, Alessandro Marzani, Chiara Daraio **Presenting Author: Antonio Palermo**
	1483	*Study of wave propagation in periodic arrangements of slender beams rigidly joined to a thin plate* Authors: Oscar Serrano, Ramon Zaera, Jose Fernandez-Sa **Presenting Author: Oscar Serrano**
	1496	*The generalized density evolution equation for the dynamic analysis of slender masonry structures* Authors: Barbara Pintucchi, Massimilianc Lucchesi, Nicola Zani **Presenting Author: Lucchesi Massimiliano**
	1257	*Green's Tensors of Motion Equations of Two-Components Biot's Media* Authors: Lyudmila Alexeyeva, Yergali Kurmanov **Presenting Author: Lyudmila Alexeyeva**
	1535	*Singular boundary integral equations of boundary value problems of the dynamics of elastic mediums* Authors: Lyudmila Alexayeva, Zakiryanova Gulmira **Presenting Author: Lyudmila Alexeyeva**

General Session:	**Computational Mechanics**	
DAY:	**Thursday**	
ROOM:	**Rossa A**	
TIME	**14.30-16.30**	
CHAIR:	**Ulrike Zwiers, Daniel Riddoch**	
	1156	*Reviewing the Lagrangian formulation of dynamical models with a pure-rolling constraint* Authors: Ulrike Zwiers **Presenting Author: Ulrike Zwiers**
	1318	*Atomic basis functions in computational modelling of engineering problems by solution structure method* Authors: Vedrana Kozulić, Blaž Gotovac **Presenting Author: Vedrana Kozulić**
	1507	*Response of a mass-spring system under coulomb damping and harmonic base excitation* Authors: Daniel Riddoch, Alice Cicirello, David Hills **Presenting Author: Daniel Riddoch**
	1511	*Modeling indentation of monazite single crystals using a new numerical framework* Authors: Kristian Juul, Christopher Nellemann, Kim Nielsen, Christian Niordson, Jeffrey Kysar **Presenting Author: Kristian Juul**

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Thursday**	
ROOM:	**Italia**	
TIME	**17.00-19.00**	
CHAIR:	**F. Brau, S. Rudykh**	
	1020	*Peristaltic elastic instability in an inflated cylindrical channel*
	Authors:	Nontawit Cheewaruan, John Biggins
	Presenting Author:	**Nontawit Cheewaruangroj**
	598	*On the stability of soft incompressible spheres with residual stresses*
	Authors:	Davide Riccobelli , Pasquale Ciarletta
	Presenting Author:	**Davide Riccobelli**
	758	*Cusp-shaped elastic creases and furrows*
	Authors:	Anupam Pandey , Stefan Karpitschka , Jens Eggers , Jacco Snoeijer
	Presenting Author:	**Anupam Pandey**
	682	*Bifurcation of coated deformable stuctures under finite bending: a novel method to estimate mechanical properties of nanocrystal films*
	Authors:	Mayank Sinha , Alborz Izadi , Rebecca Anthony , Sara Roccabianca
	Presenting Author:	**Mayank Sinha**
	726	*Spontaneous formation of hexagonal patterns in elastic layers subjected to a homogeneous volume force*
	Authors:	Serge Mora , Aditi Chakrabarti , Jean-Marc Fromental , Ty Phou , Franck Richard , Yves Pomeau , Basile Audoly
	Presenting Author:	**Serge Mora**
	992	*Pattern formation in curved film-substrate systems*
	Authors:	Michel Potier-Ferry , Fan Xu , Radhi Abdelmoula
	Presenting Author:	**Michel Potier-Ferry**

MS:	**6-2 - Elastic Metamaterials**	
DAY:	**Thursday**	
ROOM:	**Bianca A**	
TIME	**17.00-19.00**	
CHAIR:	**Prof. S. Guenneau, Prof. A.B. Movchan**	
	209	*Shear wave propagation and band gaps in finitely deformed layered dielectric elastomers*
	Authors:	Pavel I. Galich , Stephan Rudykh
	Presenting Author:	**Pavel I. Galich**
	693	*Observation of topologically protected helical edge states in an elastic waveguide*
	Authors:	Marco Miniaci , Raj Kumar Pal , Bruno Morvan , Massimo Ruzzene
	Presenting Author:	**Marco Miniaci**
	191	*Dissipative elastic metamaterials: when and how viscoelasticity matters*
	Authors:	Anastasiia O. Krushynska , Antonio S. Gliozzi , Federico Bosia , Simone Ghio , Marco Scalerandi , Nicola M. Pugno
	Presenting Author:	**Anastasiia O. Krushynska**
	342	*Transparent relaxed micromorphic description of anisotropy in meta-materials*
	Authors:	Marco Valeri d'Agostino , Alexios Aivaliotis , Gabriele Barbagallo , Patrizio Neff , Angela Madeo
	Presenting Author:	**Marco Valerio d'Agostino**
	835	*Metamaterial devices for nonlinear elastic wave applications*
	Authors:	Federico Bosia , Antonio Gliozzi , Marco Miniaci , Anastasiia Krushynska , Marco Scalerandi , Bruno Morvan , Nicola Pugno
	Presenting Author:	**Federico Bosia**
	1028	*Invisibility cloak for structured plates*
	Authors:	Diego Misseroni , Alexander B. Movchan , Natasha V. Movchan , Ian S. Jones , Daniel J. Colquitt
	Presenting Author:	**Diego Misseroni**

MS: 1-1 - Mechanics of Composite Materials
DAY: Thursday
ROOM: Bianca B
TIME 17.00-19.00
CHAIR: Pedro Camanho, Josep Costa

1246 *Numerical analysis and strength prediction of thin-ply composites*
Authors: Albertino Arteiro , Pedro P. Camanho
Presenting Author: Albertino Arteiro

1390 *Modeling Fiber Kinking and Debonding in Fiber Reinforced Composites using Geometrically Nonlinear Cohesive Elements*
Authors: Samira Hosseini , Stefan Löhnert , Peter Wriggers
Presenting Author: Samira Hosseini

1419 *Deformation and failure of brittle heterogeneous honeycomb solids*
Authors: Deepak Kumar , Anuradha Banerjee
Presenting Author: Deepak Kumar

MS: 6-1 -Nonlinear Dynamics in Mechanical and Structural Systems
DAY: Thursday
ROOM: Magenta A
TIME 17.00-19.00
CHAIR: Marco Amabili, Carlos Mazzilli

743 *Dynamic Instability of Viscoelastic Cylindrical Shells with Internal Flowing Fluid*
Authors: Zenon Del Prado , Paulo Gonçalves
Presenting Author: Zenon Del Prado

1201 *Evaluation of dynamic integrity of trusses by a Monte Carlo method procedure*
Authors: Frederico Silva , Kaio Benedetti , Paulo Gonçalves
Presenting Author: Frederico Silva

710 *Estimating bolt tightness from measured vibrations: Influence of boundary nonlinearity*
Authors: Si Mohamed Sah , Jon Juel Thomsen , Marie Brons , Alexander Fidlin , Dmitri Tcherniak
Presenting Author: Si Mohamed Sah

231 *Experimental identification of constitutive laws for friction-induced vibration and stability analysis*
Authors: Alessandro Cabboi , Jim Woodhouse , Tore Butlin
Presenting Author: Alessandro Cabboi

1119 *On the features of acoustic metamaterials with hyperelastic locally resonant inclusions*
Authors: Priscilla B. Silva , Varvara G. Kouznetsova , Michael J. Leamy , Marc G. D. Geers
Presenting Author: Priscilla B. Silva

990 *A novel mechanical piezoelectric system for acoustic energy harvesting*
Authors: Valerio De Biagi , Fabio Bazzucchi
Presenting Author: Valerio De Biagi

MS: 3-10 - Mechanics of Generalized Continua with - Mechanics of Cohesion-adhesion Interactions and their Applications to Sizedependent Thin Structures
DAY: Thursday
ROOM: Celeste
TIME 17.00-19.00
CHAIR: Chairman Feodor M.Borodich, Chairman Sergey Lurie

KEYNOTE	**800**	*On thermal processes in one-dimensional harmonic diatomic lattice* Authors: Ekaterina Podolskaya , Anton Krivtsov , Denis Tsvetkov **Presenting Author: Ekaterina Podolskaya**
INVITED	**1051**	*Delamination Modelling of Self-adhesive Polyethylene Films with Traction-separation Law and Digital Images of T-peeling* Authors: Behnaz Bagheri , Stefan Schulze , Konstantin Naumenko , Holm Altenbach **Presenting Author: Behnaz Bagheri**
	447	*Gradient elastic medium with surface energy: mathematical model and wave processes analysis* Authors: Alexey Malkhanov , Vladimir Erofeev **Presenting Author: Alexey Malkhanov**
	1374	*Thermal processes in a one- and two-dimensional crystal with regard for the nonlocality* Authors: Olga Loboda , Anton Krivtsov **Presenting Author: Olga Loboda**
	1078	*Energy oscillations in nonlinear one-dimensional crystal* Authors: Maksim Simonov , Anton Krivtsov , Kristina Matsyuk **Presenting Author: Maksim Simonov**

MS: 3-1 - Contact Mechanics
DAY: Thursday
ROOM: Europa Auditorium
TIME 17:00 - 19:00
CHAIR: Peter Wriggers, Mariana De Souza

KEYNOTE	**324**	*Unsymmetrical contacts in partial slip subject to varying normal load* Authors: David Hills **Presenting Author: David Hills**
	737	*A Comparative Study of the Process Zones At Crack Tips and at the Edges of Incomplete Contacts* Authors: Zoe Clark , David Hills **Presenting Author: Zoe Clark**
	453	*Regular roughness effect on additional compliance of contacting bodies* Authors: Irina Goryacheva , Ivan Tsukanov **Presenting Author: Irina Goryacheva**
	305	*A general procedure for solving half-plane partial slip contact problems* Authors: David A. Hills , Rangarajan Ramesh **Presenting Author: David A. Hills**

MS:	**7-2 - Steel Structures: Mechanics, Simulation and Testing**	
DAY:	**Thursday**	
ROOM:	**Ciano B**	
TIME	**17.00-19.00**	
CHAIR:	**Leroy Gardner, Nuno Silvestre**	
KEYNOTE	**1304**	*The mechanics of open built-up sections* Authors: Kim Rasmussen **Presenting Author: Kim Rasmussen**
	1300	*Tapered mono-symmetric thin-walled beams: critical issues in the evaluation of cross-section resistance.* Authors: Giuseppe Balduzzi , Elio Sacco , Ferdinando Auricchio , Josef Füssl **Presenting Author: Giuseppe Balduzzi**
	995	*Towards a refined description of the plastic buckling problem of a cylindrical shell under axial compression* Authors: Jean Legendre , Philippe Le Grognec , Cédric Doudard , Sylvain Moyne **Presenting Author: Philippe Le Grognec**
	671	*Service behaviour of slim floor beams: an experimental study* Authors: Nadia Baldassino , Giacomo Roverso , Gianluca Ranzi , Riccardo Zandonini **Presenting Author: Gianluca Ranzi**
	1565	*Behaviors of circular steel tube confined reinforced concrete columns at elevated temperatures and after exposure* Authors: Hua Yang , Faqi Liu , Sumei Zhang **Presenting Author: Hua Yang**

MS:	**8-2 -Computational Homogenization of Nonlinear Composites**	
DAY:	**Thursday**	
ROOM:	**Europa A**	
TIME	**17.00-19.00**	
CHAIR:	**Sonia Marfia, Giuseppe Vairo**	
	454	*Crimped fibers in microstructured soft materials: theoretical and computational modelling of flexible composites* Authors: Michele Marino , Peter Wriggers **Presenting Author: Michele Marino**
	931	*Short Fiber Reinforced Thermoplastic Composite Modelling using Full Field Computing, Application to Glass Fiber Reinforced PEEK* Authors: Boris Burgarella , Aurélien Maurel-Pantı , Noel Lahellec , Jean-Luc Bouvard , Noelle Billon **Presenting Author: Aurélien Maurel-Pantel**
	569	*An incremental variational procedure for elasto-plastic composites with combined isotropic and linear kinematic hardening* Authors: Antoine Lucchetta , François Auslender , Michel Bornert , Djimédo Kondo **Presenting Author: Antoine Lucchetta**
	970	*Homogenization estimates for the time harmonic response of particulate composites with a fractional viscoelastic matrix* Authors: Valentin Gallican , Renald Brenner **Presenting Author: Valentin Gallican**
	370	*Effect of heterogeneity on the elastic-plastic transition and the operation of the transformation toughening mechanism* Authors: Catalin Picu , Stefan Sorohan , Vineet Negi , Zehai Wang , Dan Constantinescu **Presenting Author: Catalin Picu**
	366	*Automatic derivation of material laws for simulating structrual components* Authors: Matthias Kabel , Jonathan Köbler **Presenting Author: Matthias Kabel**

MS:	**3-6 - Multi-Physics of Solids at Fracture**	
DAY:	**Thursday**	
ROOM:	**Europa B**	
TIME	**17.00-19.00**	
CHAIR:	**B. Schlefler, G. Mishuris**	
KEYNOTE	**1554**	*Modeling multi-scale processes in hydraulic fracture propagation*
	Authors:	Anthony Peirce
	Presenting Author:	**Anthony Peirce**
	1452	*A numerical perspective of cohesive zone models for the simulation of hydraulic fracture propagation*
	Authors:	Lorenzo Benedetti , Dong Liu , Brice Lecampion
	Presenting Author:	**Lorenzo Benedetti**
	438	*Finite element modelling of hydraulic fracture processes using quasi-zero-thickness interface elements*
	Authors:	Ignasi de-Pouplana , Eugenio Oñate
	Presenting Author:	**Ignasi de-Pouplana**
	1233	*Early-time solution for a leak-off dominated hydraulic fracture*
	Authors:	Bin Chen , D Roger J Owen , Chenfeng Li
	Presenting Author:	**Chenfeng Li**
	239	*A novel explicit method for simulation of hydraulic fractures*
	Authors:	Aleksandr Linkov , Alexey Stepanov
	Presenting Author:	**Aleksandr Linkov**

MS:	**9-1 - Multi-scale Solids and Homogenization**	
DAY:	**Thursday**	
ROOM:	**Indaco**	
TIME	**17.00-19.00**	
CHAIR:	**Natasha Movchan, Daniel Colquitt**	
KEYNOTE	**708**	*Exact relations for Green's functions in linear PDE and boundary field equalities: a generalization of conservation laws*
	Authors:	Graeme Milton , Daniel Onofrei
	Presenting Author:	**Graeme. W. Milton**
	745	*Homogenisation of chains involving inertial amplification*
INVITED	Authors:	Luke Bennetts , Malte Peter , Paul Dylejko , Alex Skvortsov
	Presenting Author:	**Luke Bennetts**
	222	*Waves in slowly varying band-gap media: Method of matched multiple-scale asymptotic expansions*
INVITED	Authors:	Ory Schnitzer
	Presenting Author:	**Ory Schnitzer**
	1529	*Dance of the crawling waves: dynamic homogenization at finite wavelengths and finite frequencies*
	Authors:	Bojan Guzina , Shixu Meng , Othman Oudghiri-Idrissi
	Presenting Author:	**Bojan B. Guzina**
	572	*High-frequency homogenisation and applications to experiments on elastic plates*
INVITED	Authors:	G Lefebvre , T Antonakakis , Y Achaoui , R Craster , S Guenneau , P Sebbah
	Presenting Author:	**Richard Craster**

MS:	**3-9 - The Physics of Dense Granular Media**								
DAY:	**Thursday**								
ROOM:	**Cobalto**								
TIME	**17:00 - 19:00**								
CHAIR:	**Shattuck, Menon**								
326	*Critical scaling of granular materials near the yielding transition*								
	Authors:	Abram	Clark						
	Presenting Author:	**Abram Clark**							
224	*Granular flows through an orifice: Can one unclog a hopper by gently shaking the grains?*								
	Authors:	Alexandre	NICOLAS	, Angel	GARCIMARTI	, Iker	ZURIGUEL		
	Presenting Author:	**Alexandre NICOLAS**							
518	*Looking inside granular jumps down inclines thanks to dynamic X-ray radiography*								
	Authors:	Ségolène	Méjean	, François	Guillard	, Thierry	Faug	, Itai	Einav
	Presenting Author:	**Ségolène Méjean**							
562	*Granular flow in confined geometries: jamming, clogging, and instability*								
	Authors:	Ko	Okumura						
	Presenting Author:	**Ko Okumura**							
866	*Size segregation fluxes in oscillating shear cells*								
	Authors:	Tomas	Trewhela	, Christophe	Ancey	, John Mark N Gray			
	Presenting Author:	**Tomas Trewhela**							
722	*Structure of cohesive frictional granular materials*								
	Authors:	Saurabh	Singh	, John C.	Miers	, Christopher J	Saldana	, Tejas G.	Murthy
	Presenting Author:	**Tejas G. Murthy**							

MS:	**1-8 - Topology Optimization for Additive Manufacturing**								
DAY:	**Thursday**								
ROOM:	**Europa C**								
TIME	**17.00-19.00**								
CHAIR:	**Pierre Duysinx, Can Ayas**								
490	*Combined topology and layer-wise scanning direction optimization for minimum part distortion in selective laser melting*								
	Authors:	Dirk	Munro	, Can	Ayas	, Matthijs	Langelaar	, Fred	van Keulen
	Presenting Author:	**Dirk Munro**							
1462	*On topology optimization of periodic multi-material viscoelastic microstructures using a fractional viscoelastic material model*								
	Authors:	Oliver	Giraldo-Lond	, Glaucio H.	Paulino				
	Presenting Author:	**Oliver Giraldo-Londono**							

MS:	**7-5 - New Concepts for Advanced Materials and Structures**	
DAY:	**Thursday**	
ROOM:	**Rossa B**	
TIME	**17.00-19.00**	
CHAIR:	**Michele Brun, Vincent Pagneux**	
KEYNOTE	**883**	*Nonlinear elastic waves in architected auxetic soft solids*
	Authors:	Tournat Vincent , Deng Bolei , Raney Jordan R. , Bertoldi Katia
	Presenting Author:	**Vincent TOURNAT**
	591	*Wave propagation and topological modes in quasiperiodic elastic media*
INVITED	Authors:	Raj Kumar Pal , Massimo Ruzzene
	Presenting Author:	**Massimo Ruzzene**
	993	*Topological rotational waves in mechanical granular graphene*
INVITED	Authors:	Li-Yang Zheng , Georgios Theocharis , Vincent Tournat , Vitalyi Gusev
	Presenting Author:	**Li-Yang Zheng**
	611	*Polarization Control of Elastic Waves with Metamaterials*
INVITED	Authors:	Guancong Ma
	Presenting Author:	**Guancong Ma**
	1549	*Parity-Time Synthetic Phononic Media and non-Hermitian Valley Transport*
INVITED	Authors:	Johan Christensen
	Presenting Author:	**Johan Christensen**

MS:	**2-4 - Mechanics of Soft Biological Tissues**	
DAY:	**Thursday**	
ROOM:	**Ciano A**	
TIME	**17.00-19.00**	
CHAIR:	**Patrick McGarry, Gerhard Sommer**	
	1370	*Viscoelastic Modeling of the Passive Myocardium*
	Authors:	Gerhard A. Holzapfel , Osman Gültekin , Gerhard Sommer
	Presenting Author:	**Gerhard A. Holzapfel**
	1175	*A Micro-structural Model of the Ventricular Myocardium*
	Authors:	Eoin McEvoy , Patrick McGarry
	Presenting Author:	**Patrick McGarry**
	985	*Understanding the frequency response of the myocardial tissue using rheology and MR-Elastography*
	Authors:	Myrianthi Hadjicharalaı , Gerhard Sommer , Adela Capilnasiu , Ayse Sila Dokumaci , Daniel Fovargue , Ralph Sinkus , Gerhard Holzapfel , David Nordsletten
	Presenting Author:	**Myrianthi Hadjicharalambous**
	670	*Dynamic depth-controlled indentation mapping reveals regional variations of viscoelastic properties in mouse hippocampal tissue*
	Authors:	Nelda Antonovaite , Steven V. Beekmans , Wytse J. Wadman , Elly M. Hol , Davide Iannuzzi
	Presenting Author:	**Nelda Antonovaite**
	335	*Functional Optimality of Sulcus Pattern Formations*
	Authors:	Stefanie Heyden , Michael Ortiz
	Presenting Author:	**Stefanie Heyden**
	889	*A computational platform for the personalized clinical treatment of glioblastoma multiforme*
	Authors:	Abramo Agosti , Clara Cattaneo , Chiara Giverso , Davide Ambrosi , Pasquale Ciarletta
	Presenting Author:	**Pasquale Ciarletta**

MS:	**6-4 - Nonlinear waves in solids**	
DAY:	**Thursday**	
ROOM:	**Verde A**	
TIME	**17.00-19.00**	
CHAIR:	**Alexey Porubov, Vladimir Erofeev**	
KEYNOTE	**548**	*Weakly-nonlinear approach to scattering of solitons by delamination*
	Authors:	Karima Khusnutdinova, Matthew Tranter
	Presenting Author:	**Karima Khusnutdinova**
	603	*Detecting delamination with the help of solitons*
	Authors:	Matthew Tranter, Karima Khusnutdinova
	Presenting Author:	**Matthew Tranter**
	216	*Solitary waves modelled by the Boussinesq-type equations and the importance of inertia*
	Authors:	Tanel Peets, Kert Tamm, Jüri Engelbrecht
	Presenting Author:	**Tanel Peets**
	567	*Inelastic interaction and splitting of strain solitons propagating in a rod*
	Authors:	Vladimir Erofeev, Vladimir Kazhaev, Igor Pavlov, Alexey Malkhanov
	Presenting Author:	**Vladimir Erofeev**
	659	*Nonlinear Surface Waves in a Half Space Covered by an Uneven Layer*
	Authors:	Mevlut Teymur, Ekin Deliktas
	Presenting Author:	**Mevlut Teymur**

MS:	**5-5 - Non-local Models for Damage and Fracture**	
DAY:	**Thursday**	
ROOM:	**Rossa A**	
TIME	**17.00-19.00**	
CHAIR:	**Ugo Galvanetto, Erkan Oterkus**	
KEYNOTE	**707**	*Crack-path instabilities in glass as a way of determining the peridynamic horizon size in thermally-driven fracture*
	Authors:	Florin Bobaru, Zhanping Xu, Guanfeng Zhang, Ziguang Chen
	Presenting Author:	**Florin Bobaru**
	313	*An energy based peridynamic state-based failure criterion*
	Authors:	Christian Willberg, Lasse Wiedemann, Martin Rädel
	Presenting Author:	**Christian Willberg**
	336	*Quasi-static crack propagation problems solved with a sequentially linear approach*
	Authors:	Mirco Zaccariotto, Tao Ni, Ugo Galvanetto
	Presenting Author:	**Mirco Zaccariotto**
	323	*Applying a variable grid size to a Peridynamic model*
	Authors:	Arman Shojaei, Farshid Mossaiby, Mirco Zaccariotto, Ugo Galvanetto
	Presenting Author:	**Arman Shojaei**
	962	*Spectral methods for peridynamic models*
	Authors:	Bacim Alali, Nathan Albin
	Presenting Author:	**Bacim Alali**

MS:	**1-2 - The Virtual Concrete Lab: Modelling the Behaviour of Concrete from Fresh State to Long Term Durability**	
DAY:	**Thursday**	
ROOM:	**Verde B**	
TIME	**17.00-19.00**	
CHAIR:	**Günter Hofstetter, Liberato Ferrara**	
KEYNOTE	**872**	*A multiscale framework for the behavior of concrete at earl-age* Authors: Madura Pathirage , Gianluca Cusatis , Giovanni Di Luzio , Enrico Masoero **Presenting Author: Giovanni Di Luzio**
	570	*From experimental investigations to numerical modelling of shotcrete* Authors: Matthias Neuner , Magdalena Schreter , Tobias Corder , Günter Hofstetter **Presenting Author: Matthias Neuner**
	581	*A comparison of fully coupled multi-phase creep formulations for young shotcrete* Authors: Peter Gamnitzer , Matthias Neuner , Günter Hofstetter **Presenting Author: Peter Gamnitzer**
	930	*Preliminary study of the fiber distribution in fiber reinforced concrete through computational fluid dynamics model* Authors: Massimilianc Cremonesi , Liberato Ferrara **Presenting Author: Massimiliano Cremonesi**
	978	*Computational simulation of fiber distribution and orientation during casting of fiber reinforced cementitious materials* Authors: Vladislav Gudzulic , Rodolfo Williams , Günther Meschke **Presenting Author: Rodolfo Williams**
	1207	*Modelling chemical transport in cementitious media* Authors: Brubeck Freeman , Peter Cleall , Anthony Jefferson **Presenting Author: Brubeck Freeman**

Friday, July 6, 2018

	Solid Mechanics Prize
DAY:	**Friday**
ROOM:	**Europa Auditorium**
TIME	**9.00-9.45**
CHAIR:	**Alan Needleman**
	Micromechanics and emergence in time
	Erik van der Giessen

MS:	**3-5 - Mechanics and Physics of Solids and Structures**	
DAY:	**Friday**	
ROOM:	**Italia**	
TIME	**10.15-12.15**	
CHAIR:	**S. Patinet, G. Tomassetti**	
	432	*High–power mechanics in gel structures driven by physics*
	Authors:	Michele Curatolo , Paola Nardinocchi , Luciano Teresi
	Presenting Author:	**Michele Curatolo**
	636	*The Magnetostriction Tensor Using Walpole's Representation*
	Authors:	Salvatore Federico , Giancarlo Consolo , Giovanna Valenti
	Presenting Author:	**Salvatore Federico**
	848	*Two-field surface pattern control via marginally stable magnetorheo- logical elastomers*
	Authors:	Erato Psarra , Laurence Bodelot , Konstantinos Danas
	Presenting Author:	**Erato Psarra**
	504	*THE p-n junction under nonuniform strains: general theory and application to photovoltaics*
	Authors:	Laurent Guin , Michel Jabbour , Nicolas Triantafyllidi
	Presenting Author:	**Nicolas Triantafyllidis**
	969	*Disappearance of stretch-induced wrinkles of thin films: a pseudo-elastic model accounting for Mullins effect*
	Authors:	Andras A. Sipos , Eszter Feher , Timothy J. Healey
	Presenting Author:	**Andras A. Sipos**
	311	*Emergent Strain-Stiffening in Interlocked Granular Chains*
	Authors:	Paul Rambach , Denis Dumont , Maurine Houze , Thomas Salez , Sylvain Patinet , Pascal Damman
	Presenting Author:	**Paul Rambach**

MS:	**3-4 - Mechanics of Granular Media: Experiments, Theory and Modelling**	
DAY:	**Friday**	
ROOM:	**Bianca A**	
TIME	**10.15-12.15**	
CHAIR:	**Alessandro Gajo, Ken Kamrin, Stefan Luding**	
KEYNOTE	**1530**	*Mechanics of Granular Media: Experiments, Theory and Modelling Organizers Intro: From particles to continuum theory and applications*
	Authors:	Alessandro Gajo , Ken Kamrin , Stefan Luding
	Presenting Author:	**Ken Kamrin**
	1363	*Multiple contact compression and fracture of grains*
	Authors:	Patrick Richard , Riccardo Artoni , Aurélien Neveu , Yannick Descantes
	Presenting Author:	**Patrick Richard**
	1325	*Multi-scale analysis of failure in highly porous cohesive granular materials*
	Authors:	Tijan Mede , Guillaume Chambon , Pascal Hagenmuller , François Nicot
	Presenting Author:	**Tijan Mede**
	859	*Rheology of Dense Granular Fluids: Theory & Experiment*
	Authors:	Till Kranz , Olfa Lopez , Matthias Sperl
	Presenting Author:	**Till Kranz**
	424	*Theory for the rheology of dense non-Browninan suspensions*
	Authors:	Hisao Hayakawa , Koshiro Suzuki
	Presenting Author:	**Hisao Hayakawa**
	826	*Dilation-driven secondary flows in sheared granular systems*
	Authors:	Peter Dsouza , KP Krishnaraj , Prabhu Nott
	Presenting Author:	**Peter Dsouza**

MS:	**5-2 - Cohesive-zone Modelling – Advances and Challenges**	
DAY:	**Friday**	
ROOM:	**Bianca B**	
TIME	**10.15-12.15**	
CHAIR:	**Albert Turón, Giulio Alfano, Bent F. Sørensen**	
KEYNOTE	**1306**	*Are mode II and mode III fracture energies real material properties? A response based on a 3D DCB FEA with frictional multiplane CZMs*
	Authors:	Roberto Serpieri , Elio Sacco
	Presenting Author:	**Roberto Serpieri**
	462	*Mixed-mode debonding of sandwich panels exhibiting fiber bridging*
	Authors:	Daniel Höwer , Bradley A. Lerch , Brett A. Bednarcyk , Evan J. Pineda , Stefanie Reese , Jaan-Willem Simon
	Presenting Author:	**Daniel Höwer**
	1054	*On characterising fracture resistance in mode-I delamination*
	Authors:	Leo Škec , Giulio Alfano , Gordan Jelenić
	Presenting Author:	**Leo Škec**
	1211	*Discontinuous cohesive laws for modelling mixed-mode delamination*
	Authors:	Paolo S. Valvo , Bent F. Sørensen
	Presenting Author:	**Paolo S. Valvo**
	1313	*Computational framework for analyzing size effects due to material interfaces*
	Authors:	Tim Heitbreder , Jörn Mosler
	Presenting Author:	**Tim Heitbreder**

MS:	**7-5 - New Concepts for Advanced Materials and Structures**	
DAY:	**Friday**	
ROOM:	**Magenta B**	
TIME	**10.15-12.15**	
CHAIR:	**Michele Brun, Vincent Pagneux**	
	623	*Waves in space-time microstructures: The theory of field patterns*
INVITED	Authors:	Ornella Mattei , Graeme Milton
	Presenting Author:	**Ornella Mattei**
	540	*Broadband non-reciprocity in active-feedback mechanical metamaterials*
INVITED	Authors:	Corentin Coulais
	Presenting Author:	**Corentin Coulais**
	377	*Generalized Fibonacci structures: a new paradigm for the design of quasicrystalline waveguides and thin films*
INVITED	Authors:	Lorenzo Morini , Massimilianc Gei
	Presenting Author:	**Lorenzo Morini**
	1214	*Applications of Elliptical Microstructure in Novel Acoustical Devices.*
INVITED	Authors:	William Rowley , William Parnell , David Abrahams , Ruth Voisey
	Presenting Author:	**William D. Rowley**
	632	*An Asymptotic Dynamic Model for an Elastic Metasurface*
INVITED	Authors:	Peter Wootton , Daniel Colquitt , Julius Kaplunov
	Presenting Author:	**Peter Wootton**
	845	*Harnessing Geometry to Manipulate Vector Soliton in Architected Materials: from Splitters to Diodes*
INVITED	Authors:	Bolei Deng , Pai Wang , Qi He , Vincent Tournat , Katia Bertoldi
	Presenting Author:	**Bolei Deng**

MS: 3-10 - Mechanics of Generalized Continua with - Mechanics of Cohesion-adhesion Interactions and their Applications to Sizedependent Thin Structures
DAY: Friday
ROOM: Celeste
TIME 10.15-12.15
CHAIR: Chairman Sergey Lurie, Chairman Mikhail Grekov

KEYNOTE	**360**	*Size-dependent piezoelectric gradient beams: analytical solutions and numerical 3D FE validation* Authors: Yury Solyaev , **Presenting Author: Yury Solyaev**
INVITED	**459**	*Evaluation of mechanical and adhesive properties of thin elastic layers* Authors: Nikolay Perepelkin , Feodor Borodich **Presenting Author: Nikolay Perepelkin**
	165	*Nonlocal interactions in elastic materials* Authors: Victoria Presnetsova , Sergey Romashin , Larisa Frolenkova , Vladimir Shorkin , Svetlana Yakushina **Presenting Author: Vladimir S. Shorkin**
INVITED	**1440**	*Entropy production for the one dimensional ballistic heat equation* Authors: Aleksei Sokolov , Anton Krivtsov , Wolfgang Müller **Presenting Author: Aleksei Sokolov**
	877	*Stress-strain state of an elastic body with almost circular nanoinclusion* Authors: Aleksandra Vakaeva , Mikhail Grekov **Presenting Author: Aleksandra Vakaeva**
	1216	*The problem of eigenvalues of material properties tensors and velocities of wave propagation in the structures* Authors: Mikhail Nikabadze , Armine Uluhanyan , Sergey Lurie **Presenting Author: Mikhail Nikabadze**

MS: 3-1 - Contact Mechanics
DAY: Friday
ROOM: Europa Auditorium
TIME 10.15-12.15
CHAIR: Irina Goryacheva, Carmine Putignano

	1427	*Frictional mechanical contact excited by random signals* Authors: Vladislav Aleshin , Antonio Papangelo , Michele Ciavarella **Presenting Author: Vladislav Aleshin**
	912	*Real contact area reduction under shear and the value of static friction* Authors: Julien Scheibert , Riad Sahli , Gaël Pallares , Christophe Ducottet , Imed Eddine Ben Ali , Samer Al Akhrass , Matthieu Guibert **Presenting Author: Julien Scheibert**
	874	*Onset of frictional sliding in patterned interfaces* Authors: Mariana De Souza , Davy Dalmas , Julien Scheibert **Presenting Author: Mariana De Souza**
	460	*Axisymmetric Cracks in a Half-Space* Authors: Jhonatan Da Lopes , David Hills **Presenting Author: Jhonatan Lopes**
	1398	*Effect of interfacial tangential tractions on contact area in adhesive sliding contacts* Authors: Nicola Menga , Giuseppe Carbone , Daniele Dini **Presenting Author: Nicola Menga**

MS:	**7-2 - Steel Structures: Mechanics, Simulation and Testing**	
DAY:	**Friday**	
ROOM:	**Ciano B**	
TIME	**10.15-12.15**	
CHAIR:	**Kim Rasmussen, Lin-hai Han**	
	1221	*Elastic local buckling stresses for full structural steel cross-sections*
	Authors:	Leroy Gardner , Andreas Fieber , Lorenzo Macorini
	Presenting Author:	**Leroy Gardner**
	788	*Imperfection sensitivity of rectangular hollow section struts subject to local-global mode interaction*
	Authors:	Ahmer Wadee , Jiajia Shen
	Presenting Author:	**Ahmer Wadee**
	1044	*Spatial buckling of steel members – on the influence of torsional loads*
	Authors:	Markus Knobloch , Rebekka Winkler
	Presenting Author:	**Markus Knobloch**
	161	*Analysis of buckling-restrained braces: results and open problems*
	Authors:	Francesco Genna
	Presenting Author:	**Francesco Genna**
	471	*Buckling and Postbuckling of Cylindrical Panels for Steel Brigde Girders*
	Authors:	Nuno Silvestre , António P. C. Duarte , João Pedro Martins , Luis Simões da Sil
	Presenting Author:	**Nuno Silvestre**

MS:	**8-1 - Micromechanics-based Nonlocal Continuum Models**	
DAY:	**Friday**	
ROOM:	**Europa A**	
TIME	**10.15-12.15**	
CHAIR:	**Lorenzo Bardella, Samuel Forest**	
KEYNOTE	**446**	*Some forms and properties of models of strain-gradient plasticity*
	Authors:	John Willis ,
	Presenting Author:	**John Willis**
INVITED	**310**	*Discontinuous grain-boundary slip interactions within a finite-deformation gradient crystal plasticity theory dependent on dislocation transport*
	Authors:	Hannes Erdle , Thomas Böhlke
	Presenting Author:	**Hannes Erdle**
INVITED	**449**	*A grain boundary model for gradient-extended geometrically nonlinear crystal plasticity*
	Authors:	Atefeh Alipour , Stephan Wulfinghoff , Stefanie Reese
	Presenting Author:	**Atefeh Alipour**
INVITED	**1442**	*A homogenized model for unidirectional composites accounting for fiber breakage and matrix plasticity at large deformations*
	Authors:	Konstantinos Poulios , Christian F. Niordson
	Presenting Author:	**Konstantinos Poulios**
	584	*On the mechanical response due to higher-order boundary conditions in distortion gradient plasticity based on dislocation density tensor*
	Authors:	Andrea Panteghini , Lorenzo Bardella
	Presenting Author:	**Andrea Panteghini**

MS:	**3-6 - Multi-Physics of Solids at Fracture**	
DAY:	**Friday**	
ROOM:	**Europa B**	
TIME	**10.15-12.15**	
CHAIR:	**A. Linkov, B. Markert**	
	816	*Modeling and computational homogenization of fluid transport in fractured porous media using a diffuse interface formulation*
	Authors:	Nele Pollmann , Ralf Jänicke , Fredrik Larsson , Kenneth Runesson
	Presenting Author:	**Nele Pollmann**
	1043	*A mini-frac analysis via the direct simulation of a hydraulic fracture in poroelastic medium*
	Authors:	Aleksei Baykin , Sergey Golovin , Ekaterina Lgotina
	Presenting Author:	**Aleksei Baykin**
	1063	*Numerical model reduction of pressure diffusion in fluid-saturated porous media with fractures*
	Authors:	Ralf Jänicke , Fredrik Larsson , Kenneth Runesson
	Presenting Author:	**Ralf Jänicke**
	1331	*Experimental and theoretical modelling of processes near producing wells; influence of elastic, strength and permeability anisotropy*
	Authors:	Vladimir Karev , Dmitry Klimov , Yuri Kovalenko , Konstantin Ustinov
	Presenting Author:	**Konstantin Ustinov**
	1094	*Influence of the stresses change on hydraulic fracture formation*
	Authors:	Sergey Turuntaev , Evgeny Zenchenko , Maria Trimonova , Petr Zenchenko , Nikolay Baryshnikov , Akbota Aigozhieva
	Presenting Author:	**Sergey Turuntaev**

MS:	**9-1 - Multi-scale Solids and Homogenization**	
DAY:	**Friday**	
ROOM:	**Indaco**	
TIME	**10.15-12.15**	
CHAIR:	**Natasha Movchan, Ross McPhedran**	
	1223	*Linking Scales in the Sea Ice System*
INVITED	Authors:	Kenneth Golden
	Presenting Author:	**Kenneth Golden**
	1224	*Bloch wave excitation at the edge of a periodic lattice*
INVITED	Authors:	Ian Thompson , Rachel Brougham
	Presenting Author:	**Ian Thompson**
	1335	*Multi-scale modelling of irreversible behaviour of fibre networks subjected to moisture cycles*
	Authors:	Priyam Samantray , Ron Peerlings , Marc Geers , Thierry J. Massart
	Presenting Author:	**Priyam Samantray**
	1349	*Floquet-Bloch waves in periodic networks of the Rayleigh beams*
INVITED	Authors:	Luigi Cabras , Andrea Piccolroaz , Alexander B. Movchan
	Presenting Author:	**Luigi Cabras**
	683	*Internal variables in homogenization of viscoelastic materials*
INVITED	Authors:	Elena Cherkaev
	Presenting Author:	**Elena Cherkaev**
	204	*Asymptotic analysis of 3D equations in non-local elasticity for thin plates*
INVITED	Authors:	Julius Kaplunov , Ludmila Prikazchikova
	Presenting Author:	**Julius Kaplunov**

MS:	**3-9 - The Physics of Dense Granular Media**	
DAY:	**Friday**	
ROOM:	**Cobalto**	
TIME	**10:15 - 12:15**	
CHAIR:	**Maloney, Tighe**	
	306	*Quantifying flow and stress in ice m\'{e}lange, the world's largest granular material* Authors: Justin Burton , Jason Amundson , Ryan Cassotto , Chin-Chang Kuo , Michael Dennin **Presenting Author: Justin C. Burton**
	1362	*Shear localization and effective wall friction in confined granular flows* Authors: Riccardo Artoni , Patrick Richard **Presenting Author: Riccardo Artoni**
	1359	*Complex Dynamics of Granular Chains: from wave guiding (ordered) to localisation and chaos (disordered)* Authors: Georgios Theocharis , Vassos Achilleos , Charalampos Skokos , Florian Allein , Vincent Tournat , Vitaliy Gusev **Presenting Author: Georgios Theocharis**
	1350	*Lower Limits of Shear Jamming* Authors: Yiqiu Zhao , Jonathan Bares , Robert Behringer **Presenting Author: Yiqiu Zhao**

MS:	**4-2 - In situ Characterisation of materials**	
DAY:	**Friday**	
ROOM:	**Europa C**	
TIME	**10.15-12.15**	
CHAIR:	**T. Pardoen, E. Maire**	
KEYNOTE	**868**	*In situ observation and analysis of sliding contact damage in thin films with low adhesion* Authors: Davy Dalmas , Aymar Quarre de Bc , Jean-Yvon Faou **Presenting Author: Davy Dalmas**
	483	*Use of X-ray Tomography for the Study of Ductile Damage in Metals* Authors: David Wilkinson , Javad Samei , Michael Nemcko , Arnaud Weck **Presenting Author: David Wilkinson**
	542	*Experimental Orientation Density Functions of Twisted Filament Yarns* Authors: Aurélien Sibellas , Damien Durville , Eric Marie , Jérôme Adrien **Presenting Author: Aurélien Sibellas**
	898	*Observation of plastic deformation mechanisms of polycrystalline Al at room and elevated temperature by in-situ SEM experiments* Authors: Alexandre El Sabbagh , Alexandre Dimanov , Jean Raphanel , Michel Bornert **Presenting Author: Alexandre El Sabbagh**

MS: 3-11 - Generalized Continua
DAY: Friday
ROOM: Rossa B
TIME 10.15-12.15
CHAIR: Giuseppe Rosi, Elena Grekova

1345 *Interaction of shear cracks in couple stress elasticity*
Author: Panos Gourgiotis
Presenting Author: Panos Gourgiotis

819 *Investigation of the mechanics of stretching- and bending-dominated truss lattices treated as generalized continua*
Authors: Raphael Glaesener , Greg Phlipot , Dennis Kochmann
Presenting Author: Raphael Glaesener

381 *Analytical solutions for micropolar elastic rectangle*
Authors: Yuri Grigor'ev
Presenting Author: Yuri Grigor'ev

798 *On exact dynamic continuity conditions in the theory of irregular shell structures reinforced by beams along junctions*
Authors: Violetta Konopińska-Zmysłowska
Presenting Author: Violetta Konopińska-Zmysłowska

1266 *A study on Love-type wave and new type of dispersive wave propagation in irregular/imperfectly bonded micropolar layer over half-space*
Authors: Mriganka Shekhar Chaki , Sayantan Guha , Abhishek Kumar Singh
Presenting Author: Mriganka Shekhar Chaki

MS: 2-4 - Mechanics of Soft Biological Tissues
DAY: Friday
ROOM: Ciano A
TIME 10.15-12.15
CHAIR: Christian J. Cyron, Edoardo Mazza

458 *On the relation between microscale and macroscale in volumetric growth of soft biological tissues*
Authors: Christian J. Cyron , Fabian A. Braeu , Roland C. Aydin
Presenting Author: Christian J. Cyron

514 *Interfibrillar and intramolecular damage accumulation causes fatigue of soft fibrous tissues: a multi-scale constitutive modeling approach*
Authors: Kevin Linka , Markus Hillgärtner , Mikhail Itskov
Presenting Author: Kevin Linka

656 *Mechanical characterisation of very soft tissues at high strain rates and large deformation using micro-indentation*
Authors: David MacManus , Jeremiah Murphy , Michael Gilchrist
Presenting Author: David MacManus

768 *Blood perfusion in a mathematical model of fibrotic liver tissue*
Authors: Maryam Argungu , Filippo Recrosi , Rodolfo Repetto , Jennifer Tweedy
Presenting Author: Filippo Recrosi

771 *Impaired hemodynamics in the Lamina Cribrosa induced by large tissue deformations*
Authors: Filippo Recrosi , Amabile Tatone , Rodolfo Repetto , Giovanna Guidoboni
Presenting Author: Amabile Tatone

MS: 6-4 - Nonlinear waves in solids
DAY: Friday
ROOM: Verde A
TIME 10.15-12.15
CHAIR: Alexey Porubov, Karima Khusnutdinova

480 *Nonlinear Acoustic Wedge Waves*
Authors: Pavel D. Pupyrev, Alexey M. Lomonosov, Peter Hess, Elena S. Sokolova, Alexander S. Kovalev, Andreas P. Mayer
Presenting Author: Andreas Mayer

427 *On the Impact Response of a 1-D Chain Constructed From Masses and Bistable Springs*
Authors: Shmuel Katz, Sefi givli
Presenting Author: Shmuel Katz

1235 *Effect of discrete breathers on energy flow in nonlinear chains*
Authors: Sergey Dmitriev, Daxing Xiong, Elena Korznikova
Presenting Author: Sergey Dmitriev

1236 *Influence of delocalized short wave modes on the nonlinear dynamics of graphene*
Authors: Elena Korznikova, Stepan Shcherbinin, George Chechin, Sergey Dmitriev
Presenting Author: Elena Korznikova

935 *Propagation of compaction waves in the open-cell copper foams*
Authors: Zdzislaw Nowak, Marcin Nowak, Ryszard Pecherski
Presenting Author: Zdzislaw Nowak

378 *Control of nonlinear waves in solids*
Authors: Alexey Porubov, Ilya Antonov, Roman Bondarenkov
Presenting Author: Alexey Porubov

MS: 5-5 - Non-local Models for Damage and Fracture
DAY: Friday
ROOM: Rossa A
TIME 10.15-12.15
CHAIR: Erkan Oterkus, Ugo Galvanetto

270 *Finite Element Implementation of Peridynamics*
Authors: Erkan Oterkus, Zhenghao Yang, Mingyang Li, Selda Oterkus
Presenting Author: Erkan Oterkus

1129 *Higher order peridynamics of large deformation hyperelasticity*
Authors: Gábor Ladányi, Viktor Gonda
Presenting Author: Gábor Ladányi

1315 *A gradient-enhanced damage model motivated by engineering approaches to ductile failure of steels*
Authors: Andreas Seupel, Meinhard Kuna
Presenting Author: Andreas Seupel

987 *A gradient-extended anisotropic damage model with crack-closure utilizing a micromorphic approach*
Authors: Marek Fassin, Stephan Wulfinghoff, Stefanie Reese
Presenting Author: Marek Fassin

1034 *Non-local interactions across damaged bands and near notches or free-edges in isotropic Eikonal Non-Local damage models*
Authors: Giuseppe Rastiello, Cédric Giry, Fabrice Gatuingt, Rodrigue Desmorat
Presenting Author: Giuseppe Rastiello

320 *Simulation of two-dimensional sloshing phenomenon by Peridynamic differential operator mesh-free method*
Authors: Soheil Bazazzadeh, Arman Shojaei, Mirco Zaccariotto, Ugo Galvanetto
Presenting Author: Soheil Bazazzadeh

Session: Poster Session
DAY: Thursday
ROOM: Poster Area - Ground Floor
TIME 12.15-13.45

437 *Flow investigation in a horizontal chemical vapour deposition chamber with a heated substrate*
Authors: Ming-Han Hsieh, Yao-Hsien Liu, Chih-Yung Huang
Presenting Author: Chih-Yung Huang

475 *Numerical analysis and experimental validation of forming tool module with variable stiffness blank-holder*
Authors: Nuno Peixinho, Sérgio Costa, Vitor Blanco
Presenting Author: Nuno Peixinho

580 *Evaluation of the elastic stiffnesses of multi-directional laminates by bending tests*
Authors: Paolo Fisicaro, Paolo S. Valvo, Claudia Borri
Presenting Author: Paolo Fisicaro

1100 *Mechanical characterization of Italian bamboo*
Authors: Marco Fabiani, Lando Mentrasti, Silvia Greco, Luisa Molari, Lorenzo Bar
Presenting Author: Luisa Molari

1332 *A computational study of the ballistic performance of UHMW-PE composites: looking beyond fibre properties*
Authors: R. Varun Raj, R.H.J Peerlings, Vikram Deshpande
Presenting Author: R. Varun Raj

1366 *Characterizing the pyroelectric coefficient for macro-fiber composites*
Authors: Krystal Acosta, William Wilkie, Daniel Inman
Presenting Author: Krystal Acosta

1391 *The application of model of nonlinear oscillations to hemodynamics*
Authors: Nikita Denisenko, Alexander Cherevko, Alexander Khe, Daniil Parshin, Alexander Chupakhin
Presenting Author: Nikita Denisenko

1395 *Study on the damage evolution equation and spallation of metal*
Authors: jiedong cao
Presenting Author: jiedong cao

1429 *Some problems of mathematical modelling of anterior abdominal wall in the context of repair of hernia*
Authors: Izabela Lubowiecka, Katarzyna Szepietowska
Presenting Author: Izabela Lubowiecka

1451 *Modification of the creep behavior of an oxidized titanium alloy. Experiments and modeling*
Authors: Dominique Poquillon, Coralie Parrens
Presenting Author: Dominique Poquillon

1500 *A length-dependent characteristics of fundamental vibration mode of Aβ intermediate oligomer*
Authors: Hyunsung Choi, Sungsoo Na
Presenting Author: Hyunsung Choi

1540 *Effects of minimal surface on mechanical properties of 3D shell architectures*
Authors: Anna Na, Seung Chul Han, Kiju Kang
Presenting Author: Anna Na

1541 *A very thin sandwich panel of monolithic foil*
Authors: Yoon Cahng Jeong, Dae Han Choi, Kiju Kang
Presenting Author: Yoon Chang Jeong

Session: Poster Session
DAY: Thursday
ROOM: Poster Area - Ground Floor
TIME 12.15-13.45

1542 *Design of Shellular pressure vessel*
Authors: Cheng Han Wu, Kiju Kang
Presenting Author: Cheng Han Wu

1544 *An auxetic material composed of 3D shell architectures*
Authors: Seung Chul Han, Yoon Chang Jeong, Anna Na, Kiju Kang
Presenting Author: Seung Chul Han

1545 *Behaviour of silica Shellular under internal or external hydrostatic pressure*
Authors: Tatiana Kolesnikova, Kiju Kang
Presenting Author: Tatiana Kolesnikova

1546 *A new design of a polymer electrolyte membrane fuel cell with a 3D architectured membrane electrodes assembly*
Authors: Hoang Xuan Nguyer, Kiju Kang
Presenting Author: Xuan Hoang Nguyen

1553 *Artificial spider silk production on a microfluidic chip*
Authors: Nathalie Gonska, Nathaniel D. Robinson, Laurent Barbe, Maria Tenje, Jan Johansson, Anna Rising
Presenting Author: Nathalie Gonska

1563 *An evaluation of the Gent and Gent-Gent material models using inflation of a plane membrane*
Authors: Lei Zhou, Shibin Wang, Linan Li, Yibin Fu
Presenting Author: Zhou Lei

1566 *Dispersion, localization and standing modes of in-plane Floquet-Bloch waves in Rayleigh beam lattices*
Authors: Giovanni Bordiga, Luigi Cabras, Andrea Piccolroaz
Presenting Author: Giovanni Bordiga

1567 *Meta-structural plates for the cloaking of flexural waves*
Authors: Marco Rossi, Daniele Veber, Massimilianc Gei
Presenting Author: Marco Rossi

1571 *Peridynamics of thin films undergoing through thickness delamination*
Authors: Riccardo Cavuto, Kaushik Dayal, Luca Deseri
Presenting Author: Riccardo Cavuto

1572 *Frictional properties of viscoelastic materials at high sliding velocities*
Authors: Elena Missale, Gianluca Costagliola, Federico Bosia, Nicola Pugno
Presenting Author: Elena Missale

1573 *Leaning masonry structures: An efficient procedure for the stability analysis*
Authors: Antonio Mar D'Altri, Gabriele Milani, Stefano de Miranda, Giovanni Castellazzi, Vasilis Sarhosis
Presenting Author: Antonio Maria D'Altri

1574 *Stag beetle elytra: localized shape-retaining, puncture and wear-resistant*
Authors: Lakshminath Kundanati, Roberto Guarino, Nicola Maria Pugno
Presenting Author: Lakshminath Kundanati

1575 *Dielectric elastomer driven resonating inchworm-like robot with unidirectional claws*
Authors: Luigi Calabrese, Massimilianc Gei, Danilo De Rossi, Nicola Maria Pugno, Gualtiero Fantoni
Presenting Author: Luigi Calabrese

MS: 3-5 - Mechanics and Physics of Solids and Structures
DAY: Friday
ROOM: Italia
TIME 13.45-15.45
CHAIR: S. Patinet, G. Tomassetti

1213 *Elastic, Viscoelastic and Porelastic Effects in the Wetting of Soft Gels*
Authors: Menghua Zhao , Julien Dervaux , Tetsu Narita , François Lequeux , Laurent Limat , Matthieu Roché
Presenting Author: Laurent Limat

1471 *Simple modelling of biological and artificial composites consisting of soft and hard elements: from nacre, spider-web, to Kirigami*
Authors: Ko Okumura
Presenting Author: Ko Okumura

1267 *Large strain rheology plays a key role in the peeling of a soft adhesive*
Authors: Matteo Ciccotti , Julien Chopin , Richard Villey , Etienne Barthel , Costantino Creton , David J. Yarusso
Presenting Author: Matteo Ciccotti

MS: 3-4 - Mechanics of Granular Media: Experiments, Theory and Modelling
DAY: Friday
ROOM: Bianca A
TIME 13.45-15.45
CHAIR: Alessandro Gajo, Ken Kamrin, Stefan Luding

1411 *Towards a universal description of cohesive-particle flows*
Authors: Casey LaMarche , Peiyuan Liu , Kevin Kellogg , Christine Hrenya
Presenting Author: Christine Hrenya

288 *Collapse of Granular Column: Influence of Particle Shape and Polydispersity*
Authors: Denis Dumont , Paul Rambach , Pascal Damman
Presenting Author: Denis Dumont

339 *Non-spherical granular flows down an incline, morphology and rheological response*
Authors: Raúl Cruz Hidalgo , Balázs Szabó , Katalin Gillemot , Tamás Börzsönyi , Thomas Weinhart
Presenting Author: Raúl Cruz Hidalgo

350 *Anisotropic inertia rheology of ellipsoidal grains*
Authors: Ben Nadler , Francois Guillard , Itai Einav
Presenting Author: Ben Nadler

1519 *Experimental and numerical study of the effects of granular mixture composition on the elastic moduli*
Authors: Kianoosh Taghizadeh , Holger Steeb , Vanessa Magnanim , Stefan Luding
Presenting Author: Kianoosh Taghizadeh

MS:	**5-2 - Cohesive-zone Modelling – Advances and Challenges**	
DAY:	**Friday**	
ROOM:	**Bianca B**	
TIME	**13.45-15.45**	
CHAIR:	**Albert Turón, Giulio Alfano, Bent F. Sørensen**	
	1280	*A mechanical model for the peeling of a busbar from a solar cell*
	Authors:	Nicola Dardano, Claudia Borri, Marco Paggi
	Presenting Author:	**Nicola Dardano**
	1212	*Recent advances in the development of rate-dependent cohesive-zone models based on fractional viscoelasticty*
	Authors:	Leo Skec, Giulio Alfano, Gordan Jelenic
	Presenting Author:	**Giulio Alfano**
	1321	*Effect of Cohesive Law Parameters on Instability of Crack Growth*
	Authors:	Bent F. Sørensen, Stergios Goutianos, Helmuth Toftergaard
	Presenting Author:	**Bent F. Sørensen**
	1327	*Experimental and numerical characterisation of the Ti6Al4V-concrete interface via pull-out tests*
	Authors:	Diletta Maracci, Giulio Alfano, Roberto Serpieri, Stefano Lenci
	Presenting Author:	**Diletta Maracci**
	1463	*Fractional viscoelastic mixed-mode fracture: A PPR-based rate-dependent cohesive zone model using fractional calculus*
	Authors:	Oliver Giraldo-Lond, Glaucio H. Paulino, William G. Buttlar
	Presenting Author:	**Oliver Giraldo-Londono**

MS:	**7-5 - New Concepts for Advanced Materials and Structures**	
DAY:	**Friday**	
ROOM:	**Magenta B**	
TIME	**13.45-15.45**	
CHAIR:	**Michele Brun, Vincent Pagneux**	
	749	*Mechanical energy flux in the wave motion of beam lattice models for non-dissipative periodic materials*
INVITED	Authors:	Marco Lepidi, Andrea Bacigalupo
	Presenting Author:	**Marco Lepidi**
	1361	*Reduced-Order Modelling and Adjoint Sensitivity Analysis for Geometric Nonlinear Topology Optimization Problems*
	Authors:	Yi Zhang, Dirk Munro, Fred van Keulen, Xiaoqian Chen
	Presenting Author:	**Dirk Munro**
	1239	*Study on auxetic structures for vibration isolation applications*
	Authors:	Adrien Pyskir, Manuel Collet, Zoran Dimitrijevic, Claude-Henri Lamarque
	Presenting Author:	**Adrien Pyskir**
	718	*A 2D microstructure with auxetic out-of-plane behavior and non-auxetic in-plane behavior*
INVITED	Authors:	Cesare Davini, Antonino Favata, Andrea Micheletti, Roberto Paroni
	Presenting Author:	**Antonino Favata**
	1125	*Auxetic microstructured media*
INVITED	Authors:	Michele Brun, Giorgio Carta, Antonio Baldi, Luigi Cabras, Alice Mocci
	Presenting Author:	**Michele Brun**

MS:	**7-2 - Steel Structures: Mechanics, Simulation and Testing**	
DAY:	**Friday**	
ROOM:	**Ciano B**	
TIME	**13.45-15.45**	
CHAIR:	**Ahmer Wadee, Markus Knobloch**	
	1555	*Analytical behavior of special-shaped CFST stub columns under axial compression*
	Authors:	Fa-cheng Wang , Lin-hai Han
	Presenting Author:	**Lin-hai Han**
	1557	*Flexural-torsional buckling behaviour of fixed-ended and pin-ended cold-formed stainless steel angle section columns*
	Authors:	Lulu Zhang , Ou Zhao , Kang-Hai Tan
	Presenting Author:	**Ou Zhao**
	764	*Residual stress patterns on cold-formed normal strength and high strength steel polygonal hollow sections*
	Authors:	Jiong-Yi ZHU , Han FANG , Tak-Ming CHAN
	Presenting Author:	**Tak-Ming CHAN**
	220	*Experimental investigation of round-ended concrete-filled double skin tubular short columns*
	Authors:	Mostafa Hassanein , Ahmed El Hadidy , Mahmoud El-Boghdadi , Aya Handousa
	Presenting Author:	**Mostafa Hassanein**
	621	*The Brazier effect for elastic and plastic pipe beams with foam cores*
	Authors:	Daniele Zulli , Angelo Luongo
	Presenting Author:	**Daniele Zulli**
	958	*Generating fundamental buckling mode shapes using finite elements*
	Authors:	Jurgen Becque , Xilin Li
	Presenting Author:	**Jurgen Becque**

MS:	**8-1 - Micromechanics-based Nonlocal Continuum Models**	
DAY:	**Friday**	
ROOM:	**Europa A**	
TIME	**13.45-15.45**	
CHAIR:	**Samuel Forest, Lorenzo Bardella**	
	554	*Generalized enriched continuum emerging from the homogenization of locally resonant metamaterials*
INVITED	Authors:	Varvara Kouznetsova , Ashwin Shridhar , Lei Liu , Marc Geers
	Presenting Author:	**Varvara Kouznetsova**
	1098	*Rigorous homogenization results leading to generalized continua models*
INVITED	Authors:	Houssam Abdoul Anziz , Pierre Seppecher
	Presenting Author:	**Houssam Abdoul Anziz**
	1084	*Enhanced micromorphic modelling of Bloch waves propagation in blocky periodic materials*
INVITED	Authors:	Andrea Bacigalupo , Luigi Gambarotta
	Presenting Author:	**Andrea Bacigalupo**
	1309	*Mindlin second-gradient elastic properties from hexagonal lattice*
INVITED	Authors:	Gianluca Rizzi , Daniele Veber , Francesco Dal Corso , Davide Bigoni
	Presenting Author:	**Gianluca Rizzi**
	1056	*A Cosserat framework for dynamic recrystallization*
	Authors:	Anna Ask , Samuel Forest , Benoit Appolaire , Kais Ammar , Oguz Umut Salman
	Presenting Author:	**Anna Ask**

MS:	**3-6 - Multi-Physics of Solids at Fracture**	
DAY:	**Friday**	
ROOM:	**Europa B**	
TIME	**13.45-15.45**	
CHAIR:	**B. Markert, G. Mishuris**	
KEYNOTE	**476**	*On the effect of a mode-dependent fracture toughness upon the instability of coplanar crack propagation in mode I+III* Authors: Jean-Baptiste Leblond, Alain Karma, Laurent Ponson, Aditya Vasudevan **Presenting Author: Jean-Baptiste Leblond**
	1263	*Theoretical modelling of thermal fracture of functionally graded coatings on a homogeneous substrate* Authors: Vera Petrova, Siegfried Schmauder **Presenting Author: Vera Petrova**
	1393	*Simulation of 3D thermo-mechanical crack face contact with the XFEM* Authors: Stefan Loehnert, Artsem B. Kunin, Peter Wriggers **Presenting Author: Stefan Loehnert**
	386	*Mechanochemical corrosion of long tubes under own weight* Authors: Yulia Pronina, Irina Stareva **Presenting Author: Yulia Pronina**
	761	*Damage assessment using clustered acoustic emission signals in flax/epoxy quasi-unidirectional woven laminates* Authors: Malika Kersani, Stepan Lomov, Ahcène Bouabdallah **Presenting Author: Malika Kersani**

MS:	**9-1 - Multi-scale Solids and Homogenization**	
DAY:	**Friday**	
ROOM:	**Indaco**	
TIME	**13.45-15.45**	
CHAIR:	**Natasha Movchan, Ross McPhedran**	
INVITED	**247**	*Roto-flexural waves in elastic beams with gyro-hinges* Authors: Giorgio Carta, Michael Nieves, Ian Jones, Natasha Movchan, Alexander Movchan **Presenting Author: Giorgio Carta**
	663	*Dispersive and effective properties of a two-dimensional periodic medium at low frequencies* Authors: Yuri Godin, Boris Vainberg **Presenting Author: Yuri Godin**
	1107	*A novel multiscale approach in modeling of ductile damage in heterogeneous materials* Authors: Tomislav Lesicar, Filip Putar, Jurica Soric, Zdenko Tonkovic **Presenting Author: Tomislav Lesicar**
	356	*A hierarchical atomistic-on-continuum framework to compute minimum energy paths for a chain of bi-stable elements* Authors: Manfred Ulz **Presenting Author: Manfred Ulz**
	601	*Adaptive scale information exchange in the CADD framework at finite temperature* Authors: Patrick Wurm, Manfred H. Ulz **Presenting Author: Patrick Wurm**
	1559	*Homogenization of photonic quasicrystals : An asymptotic analysis* Authors: Elena Cherkaev, Sebastien Guenneau, Niklas Wellander, Frederic Zolla **Presenting Author: Sebastien Guenneau**

MS: 4-2 - In situ Characterisation of materials
DAY: Friday
ROOM: Europa C
TIME 13.45-15.45
CHAIR: T. Pardoen, E. Maire

KEYNOTE

1189 *On the heterogenity of deformation in polycrystalline metals evaluated through in situ microscopy*
Authors: Krishnaswam Ravi-Chandai, Andrew Gross
Presenting Author: Krishnaswamy Ravi-Chandar

1322 *In situ identification of the failure mechanisms in self-reinforced poly(lactic acid) composites*
Authors: Stergios Goutianos, Bent F. Sørensen, Lien Van der Schueren
Presenting Author: Stergios Goutianos

500 *Nanomechanical Measurements of Carbon Nanotube-Metal Interfaces*
Authors: Chenglin Yi Yi, Christopher I Dmuchowski, Feilin Gou Gou, Xiaoming Chen, Changhong K Ke
Presenting Author: Changhong Ke

MS: 3-11 - Generalized Continua
DAY: Friday
ROOM: Rossa B
TIME 13.45-15.45
CHAIR: Victor Eremeyev

1071 *Enhanced continua models for solid-like granular media*
Authors: Elena Grekova, Francisco Ruíz Botello
Presenting Author: Elena Grekova

692 *Micromagnetics of Galfenol*
Authors: Vivekanand Dabade, Raghavendra Venkatramai, Richard James
Presenting Author: Vivekanand Dabade

619 *Effect of Surface Stresses on Stability of Elastic Cylindrical Tube Under Combined Loading*
Authors: Denis Sheydakov, Irina Mikhailova
Presenting Author: Denis Sheydakov

MS: 2-4 - Mechanics of Soft Biological Tissues
DAY: Friday
ROOM: Ciano A
TIME 13.45-15.45
CHAIR: Nino Horvat, Christopher Blase

965 *Numerical modeling of effects of thrombus with variable thickness on fusiform abdominal aortic aneurysm growth*
Authors: Nino Horvat , Lana Virag , Igor Karšaj
Presenting Author: Nino Horvat

1127 *Dual 3D printed material mimicking mechanical behaviour of healthy and aneurysmal arterial tissue*
Authors: Marija Smoljkić , Lana Virag , Ante Jurčević , Kristijan Kubik , Ivan Grabić , Damir Godec , Igor Karšaj
Presenting Author: Marija Smoljkić

1475 *Morphological Analysis of Calcification in Abdominal Aortic Aneurysm*
Authors: Zinan He , Rosaire Mongrain , Simon Lessard , Gilles Soulez
Presenting Author: Zinan He

986 *Validation of an inverse approach for in vivo identification of AAA wall properties based on 4D ultrasound strain imaging*
Authors: Andreas Wittek , Wojciech Derwich , Thomas Schmitz-Rixe , Christopher Blase
Presenting Author: Christopher Blase

1179 *Comparison of Experimental and Numerical Results for Dynamics of Thoracic Human Aortas*
Authors: Marco Amabili , Ivan Breslavsky , Giovanni Ferrari , Eleonora Tubaldi , Prabakaran Balasubrama , Ali Kassab , Rosaire Mongrain , Goffredo Arena
Presenting Author: Marco Amabili

MS: 5-5 - Non-local Models for Damage and Fracture
DAY: Friday
ROOM: Rossa A
TIME 13.45-15.45
CHAIR: Erkan Oterkus, Ugo Galvanetto

1090 *Peridynamics modeling of dynamic fracture in solids*
Authors: George Gazonas , Raymond Wildman
Presenting Author: George Gazonas

1364 *Peridynamics guided crack growth in isogeometric analysis*
Authors: Erdogan Madenci , Mehmet Dorduncu , Nam Phan
Presenting Author: Erdogan Madenci