

AIMETA 2024	
University of Naples "Federico II", Naples, Italy, September 2-6, 2024	
Monday, September 2, 2024	
8:30 ~	<i>Registration (Aula Magna)</i>
8:45-9:40	Opening ceremony (Aula Magna)
9:40-10:30	Opening lecture (Aula Magna)
10:30-11:20	<i>Welcome and coffee break (Biblioteca storica)</i>
11:20-13:00	Parallel sessions (MSO, MS02, MS08, MS13, MS14, MS15)
13:00-14:20	<i>Lunch (Biblioteca storica)</i>
14:20-16:00	Parallel sessions (MSO, MM, MS10, MS11, MS20, MS21)
16:00-16:30	<i>Coffee break (Biblioteca storica)</i>
16:30-17:10	Parallel sessions (MM, MS10, MS11, MS15, MS17, MS21)
Tuesday, September 3, 2024	
9:00-9:45	Invited lecture (Aula Magna)
9:50-10:50	Parallel sessions (MB, MG, MS01, MS04, MS05, MS06)
10:50-11:20	<i>Coffee break (Biblioteca storica)</i>
11:20-13:00	Parallel sessions (MS04, MS08, MS14, MS15, MS16, MS17)
13:00-14:30	<i>Lunch (Biblioteca storica)</i>
14:30-15:15	Invited lecture (Aula Magna)
15:20-16:00	Parallel sessions (MC, MM, MS04, MS06, MS11, MS15)
16:00-16:30	<i>Coffee break (Biblioteca storica)</i>
16:30-17:30	Parallel sessions (MC, MB, MS01, MS03, MS16, MS19)
17:30-18:30	Meeting of AIMETA groups (Aula Magna)
Wednesday, September 4, 2024	
9:00-9:45	Invited lecture (Aula Magna)
9:50-10:50	Parallel sessions (MST, MF, MS01, MS02, MS07, MS18)
10:50-11:20	<i>Coffee break (Biblioteca storica)</i>
11:20-13:00	Parallel sessions (MST, MF, MM, MS07, MS08, MS20)
13:00-14:30	<i>Lunch (Biblioteca storica)</i>
14:30-15:15	Invited lecture (Aula Magna)
15:20-16:00	Parallel sessions (MS02, MS11, MS17, MS20)
16:00-16:30	<i>Coffee break (Biblioteca storica)</i>

16:30-17:30	Parallel sessions (MST, MS02, MS03, MS09, MS19, MS20)
17:30-18:30	General meeting of AIMETA members (Aula Magna)
Thursday, September 5, 2024	
9:00-9:45	Invited lecture (Aula Magna)
9:50-10:50	Parallel sessions (MS01, MS02, MS04, MS05, MS11, MS20)
10:50-11:20	<i>Coffee break (Biblioteca storica)</i>
11:20-13:00	Parallel sessions (MS05, MS08, MS09, MS14, MS15, MS20)
13:00-14:30	<i>Lunch (Biblioteca storica)</i>
14:30-15:15	Invited lecture (Aula Magna)
15:20-16:00	Parallel sessions (MC, MA, MS11, MS14, MS15)
16:00-16:30	<i>Coffee break (Biblioteca storica)</i>
16:30-17:10	Parallel sessions (MC, MA, MF, MS06, MS14)
17:10-18:50	AIMETA Awards (Aula Magna)
20:15	<i>Social Dinner</i>
Friday, September 6, 2024	
9:10-10:50	Parallel sessions (MS01, MS02, MS05, MS08, MS12, MS16)
10:50-11:10	<i>Closing (Aula Magna)</i>
11:10-11:40	<i>Coffee break (Biblioteca storica)</i>

Sessioni tematiche e mini-simposi

- MSO** Meccanica dei Solidi
- MST** Meccanica delle Strutture/Dinamica
- MF** Meccanica dei Fluidi/Fluidodinamica
- MG** Meccanica Generale
- MA** Meccanica Applicata
- MB** Biomeccanica/Meccanobiologia
- MM** Meccanica dei Materiali/Compositi/Metamateriali
- MC** Meccanica Computazionale
- MS01** Sviluppi recenti sui metamateriali meccanici
- MS02** New challenges and trends for masonry: Theoretical and computational modelling
- MS03** Enhanced formulations for beams: New frontiers for advanced applications
- MS04** Shell and spatial structures
- MS05** Advanced fracture and phase-field approaches for failure mechanism modelling
- MS06** Architected, active, and origami-based materials
- MS07** Limit analysis, plasticity, instability, and bifurcation
- MS08** Advanced approaches in computational mechanics
- MS09** Stochastic mechanics and probability in engineering
- MS10** Recent advances in the analysis and design of slender structures
- MS11** Advances in multiscale mechanics and nanostructures
- MS12** Frontiers in computational multiscale approaches for complex materials
- MS13** Linear and nonlinear dynamical and thermodynamical systems
- MS14** Structural vibrations: Analysis and control
- MS15** Experimental dynamics and structural health monitoring
- MS16** Advances in the nonlinear mechanics of soft and active materials
- MS17** Advanced numerical methods in fluid dynamics
- MS18** Data-driven modelling in fluid dynamics
- MS19** Advances in turbulent flows with drops and bubbles
- MS20** Theoretical and Applied Biomechanics
- MS21** Adhesive contact of elastic and viscoelastic materials

Monday, September 2

Opening Lecture Aula Magna Leopoldo Massimilla - September 2, 9:40-10:30	
9:40-10:30	Alfio Quarteroni Politecnico di Milano

MSO-Meccanica dei Solidi Chair(s): <i>Luciano ROSATI</i> Aula Magna Leopoldo Massimilla - September 2, 11:20-13:00	
11:20-11:40	Pasquale Cesarano Università di Napoli Federico II A 3D mechanical study of the sea urchins skeleton microarchitecture
11:40-12:00	Stefano Sirotti Università degli Studi di Modena e Reggio Emilia A strain energy function for large volumetric deformations of elastomers
12:00-12:20	Fabio De Angelis Università di Napoli Federico II A variationally consistent approach in viscoplasticity with exact closed form solution of the constitutive problem
12:20-12:40	Riccardo Barsotti Università di Pisa Compression tests for investigating the anisotropic response of rammed earth specimens: some first experimental results
12:40-13:00	Alberto Sapora Politecnico di Torino Cracked tensile structures: An investigation on ligament size effects

Monday, September 2

MS02-New challenges and trends for masonry: Theoretical and computational modellingChair(s): *Daniela ADDESSI, Francesco CLEMENTI*

Aula Scipione Bobbio - September 2, 11:20-13:00

11:20-11:40	Francesca Nerilli Università Cusano	Lagrangian and IGA approaches for the study of nonlinear response of masonry domes
11:40-12:00	Luigi Massaro Università di Napoli Federico II	Structural characterization of the double-shell dome on the San Gennaro Chapel in Naples
12:00-12:20	Antonio Maria D'Altri Università di Bologna	On the simulation of rocking masonry walls through numerical dissipation
12:20-12:40	Danila Aita Politecnico di Milano	An atypical flat arch in Prato Cathedral: some remarks on the non-standard plastic behaviour of stone structures
12:40-13:00	Vincenzo Mallardo Università degli Studi di Ferrara	Soil's influence on the structural response of masonry arch bridges

MS15-Experimental dynamics and structural health monitoringChair(s): *Francesco LO IACONO, Francesco PELLICANO*

Room B - September 2, 11:20-13:00

11:20-11:40	Andrea Burlon Università Mediterranea di Reggio Calabria	A locally resonant metamaterial multiple beam system: an innovative concept for vibration attenuation
11:40-12:00	Stefano Mariani Università di Bologna	A novel temperature compensation method for anomaly detection in structural health monitoring
12:00-12:20	Lucia Falciano DEFA Ingegneria srl	Assessment By OMA Of a Building Supporting a Cell Tower
12:20-12:40	Vincenzo Gattulli Sapienza Università di Roma	Automated Operational Modal Analysis Using a Large Data Set from Continuous Monitoring

Monday, September 2

12:40-13:00	Silvia Monchetti Università degli Studi di Firenze	Bayesian Inference for Probabilistic Damage Identification
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MS08-Advanced approaches in computational mechanics Chair(s): <i>Stefano DE MIRANDA, Giovanni GARCEA</i> Room C - September 2, 11:20-13:00		
11:20-11:40	Gianmarco Vallero Politecnico di Torino	A new constitutive model for the solution of boundary value problems in snow mechanics
11:40-12:00	Andrea Panteghini Università di Brescia	Can Micropolar Cosserat Plasticity and Higher- Order Gradient Plasticity really avoid mesh sensitivity in strain softening materials?
12:00-12:20	Michele Marino Università degli Studi di Roma Torvergata	Convex yield functions with distortional hardening in data poor regimes: a model-data- driven approach
12:20-12:40	Fabio De Angelis Università di Napoli Federico II	Exact closed form solution of the elastoplasticity constitutive problem in three- dimensional solids without matrix inversions
12:40-13:00	Nasrin Rezaei Università Cusano	Procedure for the experimental identification of the strain Gradient characteristic length

MS13-Linear and nonlinear dynamical and thermodynamical systems Chair(s): <i>Maurizio ROMEO, Elena VUK, Federico ZULLO</i> Room D - September 2, 11:20-13:00		
11:20-11:40	Ivana Bochicchio Università degli Studi di Salerno	A double beam model: well posedness and asymptotic behavior
11:40-12:00	Sandra Carillo Sapienza Università di Roma	Ageing in viscoelastic and magneto- viscoelastic materials

Monday, September 2

12:00-12:20	Antonio Sellitto Università degli Studi di Salerno	Electron and Phonon Temperatures: Application to the thermal-shock propagation in nano-wires
12:20-12:40	Valeria Settimi Università Politecnica delle Marche	Multiharmonic wave propagation in 2D mechanical metamaterials with inertia amplification
12:40-13:00	Maria Di Domenico Università degli Studi di Salerno	Thermal pulse propagation beyond the Maxwell-Cattaneo theory: nonlinear generalizations

MS14-Structural vibrations: Analysis and control Chair(s): <i>Andrea ARENA, Daniele ZULLI</i> Room E - September 2, 11:20-13:00		
11:20-11:40	Sasan Shahzamani Isfahan University of Technology	A dissipative bracing system using cable hysteretic bending behavior
11:40-12:00	Silvio Sorrentino Università degli Studi di Modena e Reggio Emilia	An investigation on the porpoising aeroelastic instability in race cars
12:00-12:20	Alessandro Cameli Università Politecnica delle Marche	Analysis of the influence of structural nonlinearities on the dynamic response of FOWTs through a Finite Element analysis
12:20-12:40	Meng Wang Sapienza Università di Roma	Biphasic mechanical metamaterials as elastoacoustic metafilters for sound and vibration mitigation
12:40-13:00	Francesca Pancella Università degli Studi dell'Aquila	Buckling of mono-axially compressed rectangular grids with and without skins

Monday, September 2

MSO-Meccanica dei Solidi		
Chair(s): <i>Davide BIGONI</i>		
Aula Magna Leopoldo Massimilla - September 2, 14:20-16:00		
14:20-14:40	Enrico Radi Università degli Studi di Modena e Reggio Emilia	Effects of couple tractions on contact problems at the microscale
14:40-15:00	Giovanna Ranocchii Università degli Studi di Firenze	Managing printability of raw earth
15:00-15:20	Marzieh Bastanfar Università degli Studi di Brescia	Modeling tin-based anodes for sodium-ion batteries
15:20-15:40	Luca Damiani Università degli Studi della Campania Luigi Vanvitelli	On the optimal design of column-capreoli connections in Vitruvian A-trusses for the regeneration of the built environment
15:40-16:00	Stefano Vozzella Università degli Studi di Genova	The limit value of the brittleness number of corroded cables

MS21-Adhesive contact of elastic and viscoelastic materials		
Chair(s): <i>Giuseppe CARBONE, Nicola MENGA</i>		
Aula Scipione Bobbio - September 2, 14:20-16:00		
14:20-14:40	Cosimo Mandriota Politecnico di Bari	A comprehensive theory of viscoelastic adhesion
14:40-15:00	Guido Violano Politecnico di Bari	An Assessment of Recent Viscoelastic Crack Propagation Theories
15:00-15:20	Michele Santeramo Politecnico di Bari	An innovative Boundary Element Methodology to assess adhesive contacts of randomly rough surfaces
15:20-15:40	Michele Mastropasqua Politecnico di Bari	Analysis of the effects of viscoelastic adhesion on the contact behaviour of rough profiles

15:40-16:00	Maria Rosaria Marulli Scuola IMT Alti Studi Lucca	High-fidelity simulations of adhesive rough contact problems using atomic force microscope data
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MM-Meccanica dei Materiali/Compositi/Metamateriali Chair(s): <i>Luca DESERI</i> Room B - September 2, 14:20-16:00		
14:20-14:40	Gianfranco Piana Politecnico di Torino	Assessing damage and repair of healable polymer-matrix composites by acoustic emission testing and THz time-domain spectroscopy
14:40-15:00	Ali Haydar Università degli Studi di Parma	A heat-flux based variational formulation for the thermal analysis of inhomogeneous transparent composites and its FE implementation
15:00-15:20	Luca Parente Sapienza Università di Roma	Effect of randomly distributed imperfections on the buckling response of soft lattice metamaterials
15:20-15:40	Pierfrancesco Gaziano Università degli Studi di Roma Torvergata	Equivalent elastic properties of bio-inspired staggered composites: A variational-based closed-form approach
15:40-16:00	Renato Zona Università degli Studi della Campania Luigi Vanvitelli	Metamaterials limit domain by multiscale approach and limit analysis

MS10-Recent advances in the analysis and design of slender structures Chair(s): <i>Antonio MADEO, Antonio FORMISANO</i> Room C - September 2, 14:20-16:00		
14:20-14:40	Enrico Babilio Università di Napoli Federico II	The inverse problem for Euler-Bernoulli beams with a generic initial configuration undergoing large displacements and rotations
14:40-15:00	Giovanni Migliaccio Università degli Studi dell'Aquila	The influence of taper on the stress fields in non-prismatic slender elements and the inadequacy of stepped beam models

Monday, September 2

15:00-15:20	Amedeo Manuello Bertetto Politecnico di Torino	Optimization of Arch Structures: Dimensionless, Numerical and Genetic Algorithm Solutions
15:20-15:40	Martina Rinaldi Università del Salento	Analytical study of the mixed-mode interfacial behavior in functionally graded coatings
15:40-16:00	Matteo Viscoti Università del Salento	Higher Order Formulations for Anisotropic Doubly-curved Shells Made of Smart Innovative Materials

MS20-Theoretical and Applied Biomechanics Chair(s): <i>Vincenzo PARENTI CASTELLI , Filippo RECROSI</i> Room D - September 2, 14:20-16:00		
14:20-14:40	Marta Zoppello Politecnico di Torino	The shape of the mitral annulus
14:40-15:00	Giulio Lucci Sapienza Università di Roma	Modeling and implementation of anisotropic viscoelasticity in biological tissues by a variational approach
15:00-15:20	Andrea Spagnoli Università degli Studi di Parma	Calibration of fiber dispersion models for human skin based on second harmonic generation microscopy and biaxial mechanical tests
15:20-15:40	Marcello Vasta Università degli Studi G. d'Annunzio Chieti	Evolution and remodelling of fiber distributions in homogenized constrained mixture models of soft tissue under uniaxial loading
15:40-16:00	Gaia Prezioso Università degli Studi di Palermo	Dissipation and free energy for quasi- fractional hereditary materials: application to fibrous tissues

Monday, September 2

MS11-Advances in multiscale mechanics and nanostructures		
Chair(s): <i>Raimondo LUCIANO, Francesco MAROTTI DE SCIARRA, Marzia Sara VACCARO</i>		
Room E - September 2, 14:20-16:00		
14:20-14:40	Fabrizio Davì Università Politecnica delle Marche	A continuum model for the Cherenkov phenomena in crystals
14:40-15:00	Lorenzo Leonetti Università della Calabria	A multiscale damage investigation in bioinspired composites based on a combined continuous/discontinuous homogenization scheme
15:00-15:20	Matteo Pellicciari Università degli Studi di Modena e Reggio Emilia	Bridging Scales in Graphene Modeling: From Molecular Mechanics to Continuum Theories
15:20-15:40	Valentina Adinolfi Università degli Studi di Salerno	On the multiscale mechanics of controllable seismic metaisolators
15:40-16:00	Federico Cluni Università degli Studi di Perugia	Eigensolution and dynamical response in peridynamics using a mixed operator approach

MS17-Advanced numerical methods in fluid dynamics		
Chair(s): <i>Carlo DE MICHELE, Alessandro AIELLO</i>		
Aula Magna Leopoldo Massimilla - September 2, 16:30-17:10		
16:30-16:50	Stefano Olivieri Università degli Studi di Genova	On the interaction between flapping wings and free-stream turbulence
16:50-17:10	Gennaro Coppola Università di Napoli Federico II	Structure-preserving discretization of compressible Euler equations

Monday, September 2

MS21-Adhesive contact of elastic and viscoelastic materials		
Chair(s): <i>Nicola MENGA, Carmine PUTIGNANO</i>		
Aula Scipione Bobbio - September 2, 16:30-17:10		
16:30-16:50	Guido Violano Politecnico di Bari	The Role of Roughness and Viscoelasticity in Adhesive Contacts
16:50-17:10	Marco Ceglie Politecnico di Bari	The role of tape viscoelasticity in peeling systems

MM-Meccanica dei Materiali/Compositi/Metamateriali		
Chair(s): <i>Angelo Rosario CAROTENUTO</i>		
Room B - September 2, 16:30-17:10		
16:30-16:50	Seyedhamidreza Torabi Università degli Studi di Trento	Comparative Analysis of Lattice Structures for Ti6Al4V Bone Scaffolds 3D printed via Selective Laser Melting: Mechanical Properties and Corrosion Resistance
16:50-17:10	Riccardo Cavuoto Università di Napoli Federico II	Paper sheet: a paradigm of nonlocal thin bodies

MS10-Recent advances in the analysis and design of slender structures		
Chair(s): <i>Antonio MADEO, Antonio FORMISANO</i>		
Room C - September 2, 16:30-17:10		
16:30-16:50	Claudio Boni Università degli Studi di Genova	An innovative concept design for pure-bending tests on thin glass
16:50-17:10	Francesco Salvatore Liguori Università della Calabria	A multi-level approach for the seismic vulnerability assessment of imperfection sensitive slender steel structures

Monday, September 2

MS15-Experimental dynamics and structural health monitoringChair(s): *Francesco LO IACONO, Francesco PELLICANO*

Room D - September 2, 16:30-17:10

16:30-16:50	Giulia Sansone Università della Calabria	Damage evolution and vibration characteristics degradation in RC structural elements using a coupled damage-plasticity model
16:50-17:10	Giuseppe Mugnos Università degli Studi di Enna "Kore"	Design of a seismic damper with a structural optimization process

MS11-Advances in multiscale mechanics and nanostructuresChair(s): *Raffaele BARRETTA, Raimondo LUCIANO, Marzia Sara VACCARO*

Room E - September 2, 16:30-17:10

16:30-16:50	Matteo Strozzi Università degli Studi di Modena e Reggio Emilia	Noncoaxial vibrations of triple-walled carbon nanotubes
16:50-17:10	Marzia Sara Vaccaro Università di Napoli Federico II	Nonlocal integral elasticity for soft nanobeams

Monday, September 2

Tuesday, September 3

Tuesday, September 3

Invited Lecture

Aula Magna Leopoldo Massimilla - September 3, 9:00-9:45

9:00-9:45	Davide Bigoni Università degli Studi di Trento
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MS06-Architected, active, and origami-based materials

Chair(s): Diego MISSERONI, Giovanni NOSELLI

Aula Magna Leopoldo Massimilla - September 3, 9:50-10:50

9:50-10:10	Roberto Marchello SISSA	Flutter instability in morphoelastic artificial structures
10:10-10:30	Claudio Intrigila Università degli Studi di Roma Torvergata	Mechanical response of multistable tensegrity-like lattice chains: experimental and numerical investigation

MB-Biomeccanica/Meccanobiologia

Chair(s): *Anna PANDOLFI, Alessio GIZZI*

Aula Scipione Bobbio - September 3, 9:50-10:30

9:50-10:10	Giovanna Guidoboni University of Maine	Linear coupled poromechanics of the Lamina Cribrosa
10:10-10:30	Anna Pandolfi Politecnico di Milano	A discrete-to-continuum model for the human cornea with application to keratoconus

MS01-Sviluppi recenti su metamateriali meccaniciChair(s): *Lorenzo MORINI, Luigi CABRAS*

Room B - September 3, 9:50-10:50

9:50-10:10	Michele Brun Università degli Studi di Cagliari	Demonstration of Negative Reflection
10:10-10:30	Golshan Farzi Università di Catania	Design of Hierarchical TPMS-based Metamaterials for Wave Control
10:30-10:50	Federico Bosia Politecnico di Torino	Elastic energy focusing using Graded Index metalenses

MG-Meccanica GeneraleChair(s): *Florinda CAPONE, Gaetano NAPOLI*

Room C - September 3, 9:50-10:50

9:50-10:10	Federico Zullo Università di Brescia	About nonlocal and nonlinear models of heat conduction
10:10-10:30	Claudia Binetti Politecnico di Bari	Thermal fluctuations effects in fracture and decohesion
10:30-10:50	Elena Vuk Università di Brescia	Vector-valued models of deformable ferroelectrics

MS04 - Shell and spatial structures

Chair(s): *Francesco MARMO, Stefano GABRIELE*

Room D - September 3, 9:50-10:50

9:50-10:10	Stefano Invernizzi Politecnico di Torino	Comparative Wind Analysis of MRA and i-MRA in the Design of Roofing Gridshells for Dakar Mosque
10:10-10:30	Paolo Fiscaro Università di Pisa	Design parameters of tethered cable nets for the active removal of space debris
10:30-10:50	Davide Pellecchia Università di Napoli Federico II	Investigating Modular Geodesic Gridshells: A Differential Geometry-Based Design Approach

MS05 - Advanced fracture and phase-field approaches for failure mechanism modelling

Chair(s): *Riccardo CAVUOTO, Francesco FREDDI*

Room E - September 3, 9:50-10:50

9:50-10:10	Umberto Perego Politecnico di Milano	Phase-field modeling of brittle fracture under cyclic loading without an elastic energy split
10:10-10:30	Antonino Favata Sapienza Università di Roma	A phase-field model for the brittle fracture of Euler-Bernoulli beams
10:30-10:50	Paolo S. Valvo Università di Pisa	An energetically orthogonal decomposition of the energy release rate for cracks at bimaterial interfaces

MS17-Advanced numerical methods in fluid dynamics

Chair(s): *Gennaro COPPOLA, Carlo DE MICHELE*

Aula Magna Leopoldo Massimilla - September 3, 11:20-13:00

11:20-11:40	Francesco Serafini Sapienza Università di Roma	Direct numerical simulations of turbulent polymer flows
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11:40-12:00	Alessandro Aiello Università di Napoli Federico II	Entropy-conservative numerical flux for arbitrary equations of state
12:00-12:20	Giulio Soldati Sapienza Università di Roma	FLEW: A DNS Solver for Compressible Flows in Generalized Curvilinear Coordinates
12:20-12:40	Darish Jeswin Dhas Università degli Studi di Udine	Flexible fibers in wall-bounded turbulence
12:40-13:00	Alessandro Ceci Sapienza Università di Roma	High-fidelity simulations of three-dimensional shock wave/boundary layer interactions on compression corners

MS16-Advances in the nonlinear mechanics of soft and active materials

Chair(s): *Giulio LUCCI, Giuseppe ZURLO*

Aula Scipione Bobbio - September 3, 11:20-13:00

11:20-11:40	Mario Argenziano Università degli Studi di Palermo	Mechanical principles of caterpillar locomotion: implications for soft robot design
11:40-12:00	Salvatore Di Stefano Politecnico di Bari	Multi-scale modelling of adhesive biological systems: the remodelling of focal adhesions
12:00-12:20	Andrea Mirandola Università degli Studi di Trento	Scaling laws for low-mismatched fiber-reinforced bilayers
12:20-12:40	Jacopo Ciambella Sapienza Università di Roma	Energy Transfer Mechanisms between Elastic Layers through a Growing Viscoelastic Interface
12:40-13:00	Michele Curatolo Università Roma Tre	Swelling dynamics: active vs passive gels

MS15-Experimental dynamics and structural health monitoring Chair(s): <i>Francesco LO IACONO, Francesco PELLICANO</i> Room B - September 3, 11:20-13:00		
11:20-11:40	Mariano Modano Università di Napoli Federico II	Dynamic Testing and Structural Identification of Innovative Panel Structures
11:40-12:00	Mariagrazia Elena Alberti Università degli Studi di Enna "Kore"	Experimental Analysis and Numerical Modelling of a Scaled Unreinforced Masonry Structure
12:00-12:20	Fabrizio Vestroni Sapienza Università di Roma	L'impiego delle curvature modali nell'identificazione del danno
12:20-12:40	Andrea Mileto Sapienza Università di Roma	Multi-parameter Identification of Moving Loads in Beam Road Bridges
12:40-13:00	Antonello Cutolo Università di Napoli Federico II	Multipoint and multiparameter optical fiber sensors for structural health and vibration measurements

MS14-Structural vibrations: Analysis and control Chair(s): <i>Andrea ARENA, Daniele ZULLI</i> Room C - September 3, 11:20-13:00		
11:20-11:40	Jacopo Brunetti Università degli Studi dell'Aquila	Characterization of a magnetoreological damper for semi-active suspension control
11:40-12:00	Valeria Settimi Università Politecnica delle Marche	Combined effect of wind and sea excitations on the internal resonance of FOWTs
12:00-12:20	Simone Scalisi Università di Catania	Dynamic identification of slender structures by means of stochastic subspace identification method
12:20-12:40	Manuel Ferretti Università degli Studi dell'Aquila	Effectiveness of Horizontal and Vertical Seismic Isolation in Safeguarding Rigid Blocks

12:40-13:00	Daniele Zulli Università degli Studi dell'Aquila	Internally constrained beam-like model of an elasto-plastic thin pipe
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MS04 - Shell and spatial structures

Chair(s): *Francesco MARMO, Stefano GABRIELE*

Room D - September 3, 11:20-13:00

11:20-11:40	Lucia Mariani Università di Catania	A First Parametric Analysis for Shells' Shape Morphing
11:40-12:00	Giuliano Picciani Università degli Studi G. d'Annunzio Chieti	A new kernel-based method for the computational analytical solution of linear planar plates
12:00-12:20	Arianna Venettoni Università Roma Tre	Generation and analysis of eccentricity lines on continuous shells
12:20-12:40	Eleonora Butterazzi Università degli Studi della Campania Luigi Vanvitelli	Linked double-shell domes: the case of the Chapel of the Treasure of San Gennaro
12:40-13:00	Riccardo Barsotti Università di Pisa	A numerical method for assessing the safety of masonry domes: some application cases

MS08-Advanced approaches in computational mechanics

Chair(s): *Umberto PEREGO, Sonia MARFIA*

Room E - September 3, 11:20-13:00

11:20-11:40	Gianluca Alaimo Università di Pavia	An investigation about the optimal choice of PieceWise Uniform Transformation Field Analysis strain localization tensors
11:40-12:00	Federico Califano Sapienza Università di Roma	Enforcing Physics in Hyperelasticity Modeling Using Kolmogorov - Arnold Networks

12:00-12:20	Matteo Tommaso Di Tullio Digital Twin Energy Analytics, Monza	Latest Enhancement in Mechanical Fatigue of Thin Elastic Structures: Rod Pumping System Case Study
12:20-12:40	Antonia Larese Università di Padova	Partitioned approaches for the simulation of mass movement hazards on flexible structures
12:40-13:00	Francesco Chirianni Università degli Studi di Roma Torvergata	Simulation of free-surface viscoelastic flows in extrusion-based bioprinting via an ALE-based finite element formulation

Invited Lecture

Aula Magna Leopoldo Massimilla - September 3, 14:30-15:15

14:30-15:15	Luca Biferale Università degli Studi di Roma Torvergata
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MC-Meccanica ComputazionaleChair(s): *Ferdinando AURICCHIO*

Aula Magna Leopoldo Massimilla - September 3, 15:20-16:00

15:20-15:40	Guido Borino Università degli Studi di Palermo	A Generalised Stress-Based Variational Formulation for Linear Poroelasticity Boundary Value Problems
15:40-16:00	Giulio Ferri Università degli Studi di Firenze	An efficient isogeometric formulation for the analysis of geometrically exact viscoelastic beams and beam structure

MM-Meccanica dei Materiali/Compositi/MetamaterialiChair(s): *Enrico BABILIO, Mario ARGENZIANO*

Aula Scipione Bobbio - September 3, 15:20-16:00

15:20-15:40	Luca Deseri Università degli Studi di Trento	Paradigms of linear elastic bodies undergoing disarrangements
15:40-16:00	Laura Galuppi Università degli Studi di Parma	Thermal analysis of transparent layered structural components in orbiting stations. Comparison of materials and compositions

MS15-Experimental dynamics and structural health monitoringChair(s): *Francesco LO IACONO, Francesco PELLICANO*

Room B - September 3, 15:20-16:00

15:20-15:40	Said Quqa Alma Mater Studiorum Università di Bologna	On experimental influence lines and their sensitivity to local damage for bridge condition monitoring
15:40-16:00	Francesco Cannizzaro Università di Catania	On the use of pulsating loads to locate cracks in beams

MS11-Advances in multiscale mechanics and nanostructuresChair(s): *Marko Čanadija, Francesco MAROTTI DE SCIARRA, Marzia Sara VACCARO*

Room C - September 3, 15:20-16:00

15:20-15:40	Roberto Fedele Politecnico di Milano	Estimation of homogenized moduli for nanostructured TiO₂ films by SEM images and Brillouin scattering
15:40-16:00	Ante Skoblar University of Rijeka	Free vibrations of a cantilever nanobeam submerged in a finite fluid domain

MS04 - Shell and spatial structuresChair(s): *Amedeo MANUELLO, Andrea MICHELETTI*

Room D - September 3, 15:20-16:00

15:20-15:40	Domenico Castello Università di Catania	An objective minimal constraint formulation for the analysis of the elastic pantographic grid structures
15:40-16:00	Marco Magri Università degli Studi di Ferrara	On the design of elastic textiles for optimal surface clothing

MS06-Architected, active, and origami-based materialsChair(s): *Diego MISSERONI, Giovanni NOSELLI*

Room E - September 3, 15:20-16:00

15:20-15:40	Lorenzo Morini Università degli Studi di Cagliari	One-dimensional generalized Fibonacci tilings: super band gaps and periodic approximants
15:40-16:00	Giuseppe Zurlo University of Galway	Designing prestress patterns through layered deposition

MC-Meccanica ComputazionaleChair(s): *Umberto PEREGO, Elio SACCO*

Aula Magna Leopoldo Massimilla - September 3, 16:30-17:30

16:30-16:50	Filippo Gerin Maffeis Engineering SPA, Solagna	Finite-element implementation of solid-shell models for laminated-glass components of insulating glass units
16:50-17:10	Caterina Fai Università di Catania	Higher Order Formulations for Anisotropic Doubly-curved Shells Made of Smart Innovative Materials
17:10-17:30	Erkin Yildiz Università di Brescia	Towards digital twins of Li-ion and Na-ion batteries

MB-Biomeccanica/MeccanobiologiaChair(s): *Anna PANDOLFI, Alessio GIZZI*

Aula Scipione Bobbio - September 3, 16:30-17:30

16:30-16:50	Alessio Gizzi Università Campus Bio- Medico di Roma	Computational modeling of multi-field subcutaneous insulin injection
16:50-17:10	Arsenio Cutolo Università di Napoli Federico II	Stress and axolotl skin auxeticity in regeneration mechanobiology

17:10-17:30	Luca Esposito Università degli Studi della Campania Luigi Vanvitelli	Patient-specific hip prosthesis optimization by accounting for 1-year remodeling process
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MS16-Advances in the nonlinear mechanics of soft and active materials

Chair(s): *Giulio LUCCI, Giuseppe ZURLO*

Room B - September 3, 16:30-17:30

16:30-16:50	Raffaella De Vita Virginia Polytechnic Institute and State University	Advancing maternal health through data-driven reduced-order models of vaginal tissue mechanics
16:50-17:10	Gaetano Napoli Università di Napoli Federico II	Isotropic-nematic transition on a sphere
17:10-17:30	Eric Puntel Università degli Studi di Udine	Mechanics of surface growth: investigations of stability and residual stress formation

MS19 - Advances in turbulent flows with drops and bubbles

Chair(s): *Alessio ROCCON*

Room C - September 3, 16:30-17:30

16:30-16:50	Jietuo Wang Politecnico di Bari	A two-dimensional model to predict infection risk maps induced by continuous speaking events
16:50-17:10	Daniele Rossi Sapienza Università di Roma	Evaluation of Sharp and Diffuse Interface Models in Direct Numerical Simulations of Multiphase Flows
17:10-17:30	Francesca Pelusi Istituto per le Applicazioni del Calcolo, CNR Roma	Intermittency and dynamical regimes in concentrated emulsions under Rayleigh-Bénard thermal convection

MS01-Sviluppi recenti su metamateriali meccanici

Chair(s): *Lorenzo MORINI, Antonio PALERMO*

Room D - September 3, 16:30-17:30

16:30-16:50	Flavia Guarracino Università degli Studi di Trento	Analysis of the dynamics of nonlocal and nonlinear stiffness-tuneable monoatomic chains respecting mass conservation
16:50-17:10	Rosaria Del Toro Università degli Studi G. d'Annunzio Chieti	Non local homogenization of periodic materials with visco-electro-elastic microstructure
17:10-17:30	David Faraci Politecnico di Milano	Towards the design of a temperature-independent MEMS resonator exploiting a thermo-elastic metamaterial

MS03 - Enhanced formulations for beams: New frontiers for advanced applications

Chair(s): *Daniela ADDESSI, Ferdinando AURICCHIO*

Room E - September 3, 16:30-17:40

16:30-17:00	Enrico Spacone Università degli Studi G. d'Annunzio Chieti	Frame elements for Reinforced Concrete and Prestressed Concrete structures including bond-slip effects
17:00-17:20	Paolo Di Re Sapienza Università di Roma	Finite difference integration for the computation of force-based beam transverse displacements
17:20-17:40	Giuseppe Giambanco Università degli Studi di Palermo	A phase-field approach for modelling localization in elasto-plastic beams

Wednesday, September 4

Invited Lecture	
Aula Magna Leopoldo Massimilla - September 3, 9:00-9:45	
9:00-9:45	<p>Laura Tedeschini Lalli Università degli Studi Roma Tre</p>

MST - Meccanica delle Strutture/Dinamica	
Chair(s): <i>Federico GUARRACINO</i>	
Aula Magna Leopoldo Massimilla - September 4, 9:50-10:50	
9:50-10:10	<p>Rosalinda Arcoraci Università di Catania</p> <p>Buckling analysis of damaged beams</p>
10:10-10:30	<p>Ida Mascolo Università di Napoli Federico II</p> <p>Buckling and post-buckling of circular rings: some differential geometry issues</p>
10:30-10:50	<p>Stefania Palumbo Università di Napoli Federico II</p> <p>Buckling meets nonlinear elasticity: some insights</p>

MS02-New challenges and trends for masonry: Theoretical and computational modelling	
Chair(s): <i>Francesco CLEMENTI, Gabriele MILANI</i>	
Aula Scipione Bobbio - September 4, 9:50-10:50	
9:50-10:10	<p>Gregorio Bertani Università di Bologna</p> <p>A multi-failure damage model for in-plane analysis of masonry panels</p>
10:10-10:30	<p>Francesco P. A. Portioli Università di Napoli Federico II</p> <p>Computational analysis of local failure mechanisms in historical masonry structures via rigid block models</p>

10:30-10:50	Giovanna Cera Università del Salento	Constitutive and computational aspects for modelling settlement-induced damage in masonry walls
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MF - Meccanica dei Fluidi/Fluidodinamica Chair(s): <i>Paolo GUALTIERI</i> Room B - September 4, 9:50-10:50		
9:50-10:10	Giovanni Corsi Scuola Superiore Sant'Anna di Pisa	A numerical study of buoyancy-driven motions of annular disks in a fluid
10:10-10:30	Roberta Santoriello Università degli Studi di Salerno	A sensitivity-based protocol for identifying non-viscous mechanisms causing fluid dynamic instabilities
10:30-10:50	Carlo Massimo Casciola Sapienza Università di Roma	Collapse of microbubbles over an elastoplastic wall

MS07 - Limit analysis, plasticity, instability, and bifurcation Chair(s): <i>Francesco MARMO, Antonio MADEO</i> Room C - September 4, 9:50-10:50		
9:50-10:10	Rosalba Ferrari Università degli Studi di Bergamo	Enhanced Computational Limit Analysis Algorithms for Large-Scale Truss-Frame Structures with Interaction Domains
10:10-10:30	Luigi Palizzolo Università degli Studi di Palermo	Yield domains of I-shaped steel cross-sections
10:30-10:50	Salvatore Sessa Università di Napoli Federico II	Investigating Bifurcation of Computational Solutions in Strain-Gradient Finite Element Analysis

Wednesday, September 4

MS18 - Data-driven modelling in fluid dynamics		
Chair(s): <i>Matteo CHIATTO, Luigi DE LUCA, Antonio COLANERA, Luca MAGRI</i>		
Room D - September 4, 9:50-10:50		
9:50-10:10	Antonio Colanera Politecnico di Torino	Leading coherent structures of gappy two-phase flow fields past a splitter plate
10:10-10:30	Ettore Saetta Università di Napoli Federico II	Multi-fidelity Autoencoders in Aerodynamics
10:30-10:50	Antonio Colanera Politecnico di Torino	Local reduced-order models

MS01-Sviluppi recenti su metamateriali meccanici		
Chair(s): <i>Antonio PALERMO, Luigi CABRAS</i>		
Room E - September 4, 9:50-10:50		
9:50-10:10	Diego Misseroni Università degli Studi di Trento	Origami-Inspired Metamaterials and Structures: Theory, Simulations and Experimental Validation
10:10-10:30	Giulio Ferri Università degli Studi di Firenze	Endowing programmable metamaterials with new capabilities by exploiting building blocks with tuneable curvature – a numerical study
10:30-10:50	Luis C. M. da Silva Politecnico di Milano	Anisotropic strength evaluation of an auxetic and a standard ultra-soft material by a heuristic RBSM approach for additive manufacturing

MST - Meccanica delle Strutture/Dinamica		
Chair(s): <i>Angelo LUONGO</i>		
Aula Magna Leopoldo Massimilla - September 4, 11:20-13:00		
11:20-11:40	Stefano Lenci Università Politecnica delle Marche	Advancements in hybrid systems identification: A machine learning approach utilizing coordinate transformation

11:40-12:00	Lorenzo Ledda Università di Catania	Free vibrations of symmetric functionally graded beams
12:00-12:20	Francesco Barsi Sapienza Università di Roma	Mechanical modelling of the bending behaviour of short wire ropes
12:20-12:40	Antonio Gesualdo Università di Napoli Federico II	On the role of elasticity in the dynamics of unilateral structures. The case of free oscillation of a masonry panel
12:40-13:00	Salvatore Benfratello Università degli Studi di Palermo	Seismic design of multisteped beam element steel frames

MS20-Theoretical and Applied Biomechanics

Chair(s): *Nicola SANCISI, Pierfrancesco GAZIANO*

Aula Scipione Bobbio - September 4, 11:20-13:00

11:20-11:40	Simone Borrelli Politecnico di Torino	Stabilization of lumbar metastasis: a biomechanical perspective for more effective surgical strategies
11:40-12:00	Cristina Falcinelli Università degli Studi G. d'Annunzio Chieti	Lower bound prediction of femur collapse load through a CT-based limit analysis strategy: a sensitivity analysis to modelling choices
12:00-12:20	Lorenzo Zoboli Università Campus Bio- Medico di Roma	Computational approaches for the advanced modelling of corrosion in Mg-based implants
12:20-12:40	Dario Carbonaro Politecnico di Torino	Multi-objective optimization of the biomechanical interaction of self-expandable transcatheter aortic valves
12:40-13:00	Pietro Lenarda Scuola IMT Alti Studi Lucca	In silico model of colon electromechanics for manometry prediction after laser tissue soldering

Wednesday, September 4

MF - Meccanica dei Fluidi/Fluidodinamica Chair(s): <i>Christian MARCHIOLI</i> Room B - September 4, 11:20-13:00		
11:20-11:40	Laura Denisa Antonuzzi Università degli Studi di Salerno	Effects of jet installation on screeching tone generation
11:40-12:00	Alessandro Della Pia Scuola Superiore Meridionale	From steady symmetric to chaotic regime: nonlinear manifold learning of fluidic pinball dynamics
12:00-12:20	Alessandro Argiuolo Università degli Studi di Salerno	Impact of Micro Vortex Generators on aerodynamic performance
12:20-12:40	Roberta Santoriello Università degli Studi di Salerno	Muscular tissue-driven swimming: a new BioBot
12:40-13:00	Andrea Palumbo Sapienza Università di Roma	Numerical study of the turbulent flow through perforated plates of small porosity

MS07 - Limit analysis, plasticity, instability, and bifurcation Chair(s): <i>Rosalba FERRARI, Francesco MARMO</i> Room C - September 4, 11:20-13:00		
11:20-11:40	Mattia Schiantella Università degli Studi di Perugia	Limit analysis for lattice structures load-bearing capacity assessment and influence of geometrical-mechanical defects
11:40-12:00	Nicola Cefis Politecnico di Milano	Production process, experimental characterization and finite element modeling of CARALL panels subjected to low velocity impact
12:00-12:20	Egidio Rizzi Università degli Studi di Bergamo	Self-standing bearing capacity of symmetric circular masonry arches at finite friction

Wednesday, September 4

12:20-12:40	Giuseppe Brandonisio Università di Napoli Federico II	Application of combined elastic and limit analysis for the seismic assessment of cathedral portal frames of R.C. churches
12:40-13:00	Francesco Trentadue Politecnico di Bari	Thrust in a symmetric masonry arch with frictional joints on spreading supports

MM - Meccanica dei Materiali/Compositi/Metamateriali

Chair(s): *Fernando FRATERNALI*

Room D - September 4, 11:20-13:00

11:20-11:40	Riccardo Barsotti Università di Pisa	Mechanical properties of blended cement mortars with low clinker content: some first experimental results
11:40-12:00	Daniele Calderoni Università di Catania	New sustainable Portland pozzolana cements with waste volcanic ash
12:00-12:20	Alice Bertolini Scuola IMT Alti Studi Lucca	Mechanical characterization of compacted waste sludge from paper industry
12:20-12:40	Nadir Albo Università di Napoli Federico II	Analysis of long-term residual safety of a reinforced concrete bridge
12:40-13:00	Giulia Misseri Università degli Studi di Firenze	Effect of matrix deformability in single shear and textile pull-out tests on FRCM systems

MS08-Advanced approaches in computational mechanics

Chair(s): *Stefano DE MIRANDA, Sonia MARFIA*

Room E - September 4, 11:20-13:00

11:20-11:40	Leonardo Leonetti Università della Calabria	Isogeometric hyperelastic shell models suitable for biomechanical applications
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Wednesday, September 4

11:40-12:00	Michele Torre Università di Pavia	Isogeometric simulations of muscular thin films
12:00-12:20	Davide Grazioli Università degli Studi di Padova	Multiscale computational characterization of flexible transparent electrodes based on metallic nanowire networks
12:20-12:40	Leopoldo Greco Università di Catania	New objective Cosserat rod high-order FE-formulation based on the spherical Bezier interpolation
12:40-13:00	Maria Laura De Bellis Università degli Studi G. d'Annunzio Chieti	Simulating the degradation of both stiffness and the distribution of collagen fibrils in a discrete model of corneal microstructure

Invited Lecture Aula Magna Leopoldo Massimilla - September 3, 14:30-15:15		
14:30-15:15	Raffaella De Vita Virginia Polytechnic Institute and State University	

MS20-Theoretical and Applied Biomechanics Chair(s): <i>Michele MARINO , Marcello VASTA</i> Aula Scipione Bobbio - September 4, 15:20-16:00		
15:20-15:40	Anne Bernheim Ilse Katz Institute for Nanoscale Science and Technology	Self-assembled active actomyosin gels spontaneously curve and wrinkle similar to biological cells and tissues
15:40-16:00	Alberto Salvadori Università di Brescia	A multiphysics model of blood clotting

MS02-New challenges and trends for masonry: Theoretical and computational modelling Chair(s): <i>Francesco CLEMENTI, Gabriele MILANI</i> Room B - September 4, 15:20-16:00		
15:20-15:40	Marcello Falco Università di Catania	A novel solid Element to enrich the Discrete Macro Element Method (DMEM)

15:40-16:00	Danila Aita Politecnico di Milano	Limit equilibrium of masonry vaulted structures with strength requirements: funicular analysis and stability area method
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MS17-Advanced numerical methods in fluid dynamics
Chair(s): *Gennaro COPPOLA, Alessandro AIELLO*
Room C - September 4, 15:20-16:00

15:20-15:40	Alessio Roccon Università degli Studi di Udine	Turbulent drag reduction in water-lubricated channel flow of highly viscous oil
15:40-16:00	Carlo De Michele Politecnico di Milano	Use of the harmonic mean in the discretization of the compressible flow equations

MS11-Advances in multiscale mechanics and nanostructures
Chair(s): *Raffaele BARRETTA, Marko Čanadija, Marzia Sara VACCARO*
Room E - September 4, 15:20-16:00

15:20-15:40	Rana Nazifi Charandabi Università degli Studi di Salerno	On the mechanical modelling of multiscale deployable tensegrities
15:40-16:00	Gianni Royer Carfagni Università degli Studi di Parma	Multiscale modelling of yarns made of Carbon NanoTube Fibers for structural applications

MST - Meccanica delle Strutture/Dinamica
Chair(s): *Salvatore SESSA, Nicolò VAIANA*
Aula Magna Leopoldo Massimilla - September 4, 16:30-17:30

16:30-16:50	Valerio De Biagi Politecnico di Torino	Assessing the impact damage on axially loaded columns with a simplified model
16:50-17:10	Ilaria Fiore Università di Catania	The statics of the multi-cracked Timoshenko circular arch

17:10-17:30	Renato Zona Università degli Studi della Campania Luigi Vanvitelli	Direct evaluation of collapse load of no tension material structures through limit analysis and FEM
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MS20-Theoretical and Applied Biomechanics Chair(s): <i>Paolo BISEGNA, Mattia SERPELLONI</i> Aula Scipione Bobbio - September 4, 16:30-17:30		
16:30-16:50	Manuela Teresa Raimondi Politecnico di Milano	Organisms-on-a-chip
16:50-17:10	Gennaro Vitucci Università degli Studi di Salerno	Microscopically motivated modelling of soft and damageable biomaterials
17:10-17:30	Angelo Rosario Carotenuto Università di Napoli Federico II	Exploring the role of multilamellar organization in arterial mechanotransduction

MS09 - Stochastic mechanics and probability in engineering Chair(s): <i>Alberto DI MATTEO, Francesco PAOLO PINNOLA</i> Room B - September 4, 16:30-17:30		
16:30-16:50	Rossella Laudani Università degli Studi di Messina	Probability transformation method for the random eigenvalue problem
16:50-17:10	Luca Roncallo Università degli Studi di Genova	Uncertainty propagation on the thunderstorm gust response factor for slender vertical structures via interval analysis
17:10-17:30	Alberto Di Matteo Università degli Studi di Palermo	Stochastic response of nonlinear systems under Gaussian white noise via Path Integral approach based on analytical asymptotic expansion

Wednesday, September 4

MS02-New challenges and trends for masonry: Theoretical and computational modellingChair(s): *Daniela ADDESSI, Francesco CLEMENTI*

Room C - September 4, 16:30-17:30

16:30-16:50	Mario Como Università degli Studi di Roma Torvergata	A new approach to the seismic analysis of no tension structures
16:50-17:10	Alessandra Paoloni Sapienza Università di Roma	Three-dimensional equivalent frame modeling of the shake-table test on a full-scale stone masonry building
17:10-17:30	Roberta Scungio Università degli Studi di Perugia	Numerical modelling and calibration of the seismic response of a full-scale unreinforced masonry vault

MS19 - Advances in turbulent flows with drops and bubblesChair(s): *Alessio ROCCON*

Room D - September 4, 16:30-17:30

16:30-16:50	Alessio Roccon Università degli Studi di Udine	Heat transfer in drop-laden turbulence
16:50-17:10	Simone Di Giorgio Sapienza Università di Roma	Mass transfer in bubble-laden turbulent channel flow
17:10-17:30	Alfredo Soldati Institute of Fluid Mechanics and Heat Transfer, Wien	Three-dimensional measurements of bubbles and droplets interface dynamics in homogeneous isotropic turbulence

MS03-Enhanced formulations for beams: New frontiers for advanced applicationsChair(s): *Daniela ADDESSI, Ferdinando AURICCHIO*

Room E - September 4, 16:30-17:30

16:30-16:50	Luca Parente Sapienza Università di Roma	A regularized shear-flexible beam element based on plastic damage models for reinforced and prestressed structures
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Wednesday, September 4

16:50-17:10	Emma La Malfa Ribolla Università degli Studi di Palermo	Shear-flexible geometrically exact beam element based on finite differences
17:10-17:30	Franco Ciminelli Sapienza Università di Roma	Parametric analysis and machine learning simulation for moment-curvature relation of degraded bridge pier sections

Thursday, September 5

Invited Lecture

Aula Magna Leopoldo Massimilla - September 3, 9:00-9:45

9:00-9:45	Elio Sacco Università degli Studi di Napoli Federico II
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MS02-New challenges and trends for masonry: Theoretical and computational modelling

Chair(s): *Daniela ADDESSI, Gabriele MILANI*

Aula Magna Leopoldo Massimilla - September 5, 9:50-10:50

9:50-10:10	Vincenzo Mallardo Università degli Studi di Ferrara	A closed-form solution for no-tension solids under biaxial bending
10:10-10:30	Maria Girardi Institute of Informaiton Science and Technologies "A. Faedo", CNR-ISTI Pisa	Masonry beams subjected to seismic loads: Coupling bending and normal force
10:30-10:50	Giulia Ferlito Università di Catania	Equivalent FRCM network modelling strategies for analysis of reinforced masonry bridges

MS20-Theoretical and Applied Biomechanics

Chair(s): *Giuseppe VAIRO, Alberto SALVADORI*

Aula Scipione Bobbio - September 5, 9:50-10:50

9:50-10:10	Annamaria Fracalvieri Politecnico di Bari	Analysis of hydrodynamic forces in jellyfish locomotion
10:10-10:30	Alessia Sportelli Politecnico di Bari	Modeling of the cardiovascular system in microgravity conditions

10:30-10:50	Gianni Pedrizzetti Università di Trieste	Evidence of diastolic mechanical dysfunction in hypertrophic cardiomyopathy in children
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MS11-Advances in multiscale mechanics and nanostructures

 Chair(s): *Raffaele BARRETTA, Marko Čanadija, Marzia Sara VACCARO*

Room B - September 5, 9:50-10:50

9:50-10:10	Giuseppe Ruta Sapienza Università di Roma	Modelling plane elasticity via discrete lattices
10:10-10:30	Carmelo Pannitteri Università di Catania	Large deformation behavior of plane periodic truss networks
10:30-10:50	Arturo Pascuzzo Università della Calabria	An efficient numerical strategy for reproducing crack propagation phenomena inside nano-filled composite structures

MS05 - Advanced fracture and phase-field approaches for failure mechanism modelling

 Chair(s): *Stefano VIDOLI, Elena BENVENUTI*

Room C - September 5, 9:50-10:50

9:50-10:10	Sonia Marfia Università Roma Tre	A nonlocal orthotropic damage-plastic model for 3D printed materials
10:10-10:30	Marianna Puccia Università degli Studi di Palermo	Experimental and numerical analysis of fracture in sandstone rocks
10:30-10:50	Lorenzo Mingazzi Università degli Studi di Parma	Multi-physics model for reinforced concrete carbonation cracking

MS01-Sviluppi recenti su metamateriali meccaniciChair(s): *Antonio PALERMO, Lorenzo MORINI*

Room D - September 5, 9:50-10:50

9:50-10:10	Chiara Pancella Università degli Studi dell'Aquila	Analysis and design of a chiral metamaterial
10:10-10:30	Paolo Badino Università di Genova	An enhanced continualization scheme for the constitutive characterization of mechanical metamaterials
10:30-10:50	Francesca Fantoni Università di Brescia	Multifield identification of multilayered discrete systems

MS04 - Shell and spatial structuresChair(s): *Amedeo MANUELLO, Andrea MICHELETTI*

Room E - September 5, 9:50-10:50

9:50-10:10	Claudia Chianese Università di Napoli Federico II	Accounting for the effect of different velaroidal stress functions on the shape finding of funicular shells with predefined support extension
10:10-10:30	Erica Lenticchia Politecnico di Torino	Ferrocement Specimen Assessment under Flexural Conditions: Digital Image Correlation and Acoustic Emission monitoring
10:30-10:50	Giambattista Romano Università di Napoli Federico II	Strain-gradient homogenization for gridshell analysis

MS05-Advanced fracture and phase-field approaches for failure mechanism modellingChair(s): *Riccardo CAVUOTO, Luca DESERI*

Aula Magna Leopoldo Massimilla - September 5, 11:20-13:00

11:20-11:40	Roberta Massabò Università di Genova	T-stress and crack path stability in strips
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11:40-12:00	Andrea Rodella Sapienza Università di Roma	A preliminary numerical investigation on sharp-interface cohesive models with a relaxed bulk energy
12:00-12:20	Elisabetta Monaldo Università Roma Tre	Crack growth investigation via an enhanced DodeQuad virtual element
12:20-12:40	Marco Nale Università degli Studi di Ferrara	An enhanced corotational Virtual Element Method for discrete blocks with damaging-frictional interfaces
12:40-13:00	Francesco Freddi Università degli Studi di Parma	Fracture and craquelure in paintings: a numerical approach

MS20-Theoretical and Applied Biomechanics

Chair(s): *Gianni PEDRIZZETTI, Lorenzo ZOBOLI*

Aula Scipione Bobbio - September 5, 11:20-13:00

11:20-11:40	Chiara Bernard Università di Napoli Federico II	Chemo-mechanical modelling of G-proteins activation-induced remodelling of lipidic membranes
11:40-12:00	Alessandra Bonfanti Politecnico di Milano	Rupture strength of living cell monolayers
12:00-12:20	Gino Antonio Reho Università degli Studi di Ferrara	Modelling the mechanobiology of cell-substrate adhesion through elastic- damaging cohesive laws
12:20-12:40	Emanuela Jacchetti Politecnico di Milano	Mechanobiology of cell migration: unveiling the role of focal adhesion and actin network in cancer cells
12:40-13:00	Mattia Serpelloni Università di Brescia	Mechanobiology of cell migration: how cells generate forces for motility

MS15-Experimental dynamics and structural health monitoring		
Chair(s): <i>Francesco LO IACONO, Francesco PELLICANO</i>		
Room B - September 5, 11:20-13:00		
11:20-11:40	Mauro Corrado Politecnico di Torino	Prestressing wire breakage monitoring using sound event detection with experimental and numerical datasets
11:40-12:00	Nicola Cavalagli Università degli Studi di Perugia	Stress wave propagation analysis for the characterisation of heterogeneous materials considering dispersive phenomena
12:00-12:20	Mariacristina Spizzuoco Università di Napoli Federico II	Structural Health Monitoring of Urban Monuments: Application to the Case of Four Days of Naples Memorial
12:20-12:40	Marco Civera Politecnico di Torino	The fast relaxed vector fitting (FRVF) method and its applications for dynamic identification and structural health monitoring
12:40-13:00	Luciana Di Gennaro Università degli Studi della Campania Luigi Vanvitelli	The use of optical fibers in ancient masonry Buildings: the case study of Santa Maria delle Grazie

MS09 - Stochastic mechanics and probability in engineering		
Chair(s): <i>Francesco PAOLO PINNOLA, Antonina PIRROTTA</i>		
Room C - September 5, 11:20-13:00		
11:20-11:40	Roberta Santoro Università degli Studi di Messina	Interval Frequency Response of multi-cracked structural systems with Uncertain Damage under Stochastic Excitations
11:40-12:00	Chiara Pepi Università degli Studi di Perugia	Size effect in single graphene sheets accounting for random defects
12:00-12:20	Alberto Di Matteo Università degli Studi di Palermo	Nonstationary Stochastic Response Determination of Linear Oscillators With Fractional Derivative Elements of Rational Order
12:20-12:40	Maria Eleonora Pipistrelli Università degli Studi di Perugia	Spherical harmonic-based random fields for shot-earth material

12:40-13:00	Salvatore Russotto Università degli Studi di Palermo	Self-similarity: from classical moments to complex moments
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MS14-Structural vibrations: Analysis and control

Chair(s): *Andrea ARENA, Daniele ZULLI*

Room D - September 5, 11:20-13:00

11:20-11:40	Luca Rosafalco Politecnico di Milano	Keep Kalman and do SINDy: identification of non-linear MEMS systems
11:40-12:00	Luca Patruno Alma Mater Studiorum Università di Bologna	Long-span bridge analysis using Computational Fluid Dynamics
12:00-12:20	Giuseppe Perna Sapienza Università di Roma	Numerical analysis of the response of base-isolated MDOF systems constrained by two deformable devices under seismic excitations
12:20-12:40	Angelo Luongo Università degli Studi dell'Aquila	On the Effects of the Precritical Nonlinearities on Buckling of Flexible Systems

MS08-Advanced approaches in computational mechanics

Chair(s): *Giovanni GARCEA, Elio SACCO*

Room E - September 5, 11:20-13:00

11:20-11:40	Nicola A. Nodargi Università degli Studi di Roma Torvergata	A variational-based non-smooth contact dynamics formulation for the seismic analysis of historical masonry structures
11:40-12:00	Massimiliano Cremonesi Politecnico di Milano	An optimized PFEM fluid solver based on a PFEM-VEM agglomeration technique
12:00-12:20	Gregorio Bertani Università di Bologna	Assumed-stress finite element for the analysis of in-plane masonry structures through a multi-failure elasto-plastic model

12:20-12:40	Silvio Salvatore Terravecchia Università degli Studi di Palermo	Computational aspects in 2D Mindlin's plate analysis by SGBEM with domain inelastic action
12:40-13:00	Vito Diana Università di Genova	Peridynamic modeling of microstructured materials

Invited Lecture Aula Magna Leopoldo Massimilla - September 3, 14:30-15:15		
14:30-15:15	Alessandro Gaspardo Università degli Studi di Udine	

MC-Meccanica Computazionale Chair(s): <i>Umberto PEREGO, Ferdinando AURICCHIO</i> Aula Magna Leopoldo Massimilla - September 5, 15:20-16:00		
15:20-15:40	Marco Paggi Scuola IMT Alti Studi Lucca	When Tribology and Mechanics meet Archaeology: the case of Upper Paleolithic ground stone tools
15:40-16:00	Daniele Pellegrini Institute of Information Science and Technologies "A. Faedo", ISTI-CNR, Pisa	High-temperature behavior of historical masonry structures

MA-Meccanica Applicata Chair(s): <i>Francesco TIMPONE</i> Aula Scipione Bobbio - September 5, 15:20-16:00		
15:20-15:40	Francesco Marafini Sapienza Università di Roma	Control of a 2 DoFs oscillating platform using pneumatic actuators
15:40-16:00	Luciana Nasca Imperial College London	High-performance tires: modeling the pneumatic-rim system with lubricating fluid film in the presence of a squeeze contact

MS11-Advances in multiscale mechanics and nanostructuresChair(s): *Raimondo LUCIANO, Francesco MAROTTI DE SCIARRA, Marzia Sara VACCARO*

Room B - September 5, 15:20-16:00

15:20-15:40	Valentina Zega Politecnico di Milano	Biaxial bending: a key ingredient for the design of high-performance MEMS accelerometers
15:40-16:00	Daniele Ussorio Università di Napoli Federico II	On the nonlocal dynamics of nanobeams on nano-foundations

MS15-Experimental dynamics and structural health monitoringChair(s): *Francesco LO IACONO, Francesco PELLICANO*

Room C - September 5, 15:20-16:00

15:20-15:40	Adriana Brancaccio Università degli Studi della Campania Luigi Vanvitelli	X-band contactless detection of steel bars in concrete aggregates
15:40-16:00	Francesco Lo Iacono Università degli Studi di Enna "Kore"	Shaking table experimental characterization of a large scale vertical isolation system

MS14-Structural vibrations: Analysis and controlChair(s): *Andrea ARENA, Daniele ZULLI*

Room D - September 5, 15:20-16:00

15:20-15:40	Andrea De Flaviis Università degli Studi dell'Aquila	Parameter identification of a nonlinear Euler-Bernoulli beam with geometrical and material nonlinearities through Hilbert-Huang Transform
15:40-16:00	Alessio Colombo Politecnico di Milano	Reduced order modelling of fully coupled electro-mechanical systems through invariant manifolds with applications to microstructures

MC-Meccanica ComputazionaleChair(s): *Elio SACCO, Sonia MARFIA*

Aula Magna Leopoldo Massimilla - September 5, 16:30-17:10

16:30-16:50	Domenico Magisano Università della Calabria	An efficient large displacement shell model with warping for laminated structures
16:50-17:10	Francesco Parrinello Università degli Studi di Palermo	An updated Lagrangian hybrid equilibrium element formulation for finite displacement elasticity problems

MA-Meccanica ApplicataChair(s): *Vincenzo PARENTI CASTELLI*

Aula Scipione Bobbio - September 5, 16:30-17:10

16:30-16:50	Marco Fava Università di Bologna	Manufacturing and Characterization of Compliant Cardan Joints Obtained by a New Combined Fabrication Process
16:50-17:10	Giandomenico Di Massa Università di Napoli Federico II	Study on wheel slip identification of a six wheeled rover

MS06-Architected, active, and origami-based materialsChair(s): *Diego MISSERONI, Giovanni NOSELLI*

Room B - September 5, 16:30-17:10

16:30-16:50	Luigi Cabras Università di Trieste	Dynamics of elastic lattices with sliding constraints
16:50-17:10	Davide Riccobelli Politecnico di Milano	Shape morphing of self-encapsulating droplets

MF - Meccanica dei Fluidi/FluidodinamicaChair(s): *Paolo GUALTIERI*

Room C - September 5, 16:30-17:10

16:30-16:50	Nicolò Giuseppe Di Novo Università degli Studi di Trento	Single Droplet Self-Ejection: the Effect of Dynamic Contact Angles and Applications
16:50-17:10	Matteo Omilli Università degli Studi di Trento	Structured surfaces for anti-frosting and dew harvesting

MS14-Structural vibrations: Analysis and controlChair(s): *Andrea ARENA, Daniele ZULLI*

Room D - September 5, 16:30-17:10

16:30-16:50	Giovanni Migliaccio Università degli Studi dell'Aquila	The influence of internal and external nonlinear damping forms on the dynamics of a generalized Beck's beam
16:50-17:10	Andrea Arena Sapienza Università di Roma	Nonlinear model of two-dimensional textile metamaterials: wavefrequency characterization and direct resonance response

Friday, September 6

MS02-New challenges and trends for masonry: Theoretical and computational modelling

Chair(s): *Daniela ADDESSI, Francesco CLEMENTI*

Aula Magna Leopoldo Massimilla - September 6, 9:10-10:50

9:10-9:30	Francesco Clementi Università Politecnica delle Marche	'Pros and Cons' aspects of continuous and discontinuous methods in modelling the dynamics of a masonry church
9:30-9:50	Simona Di Nino Università degli Studi dell'Aquila	A Surface Stress Model (SSM)-based numerical approach for the analysis of coated masonry walls
9:50-10:10	Stefano Belliazi Università di Napoli Federico II	FRCM effects on shear sliding failure of masonry walls using DIC analyses
10:10-10:30	Nicola Grillanda Università degli Studi di Ferrara	Rigid-plastic limit analysis of masonry structures based on homogenization and adaptive mesh refinement
10:30-10:50	Luis Carlos Martins Da Silva Politecnico di Milano	Scaling a running-bond masonry topology: in-plane mechanical response, yield domain and orthotropic shear strength

MS12-Frontiers in computational multiscale approaches for complex materials

Chair(s): *Marco PINGARO, Patrizia TROVALUSCI*

Aula Scipione Bobbio - September 6, 9:10-10:50

9:10-9:30	Enrico Masoero Politecnico di Milano	Discrete simulations of chemo-mechanical evolution in complex microstructures
9:30-9:50	Cristina Gatta Sapienza Università di Roma	Fracture propagation analysis of polycrystalline random composites coupling virtual elements and interface finite elements

Friday, September 6

9:50-10:10	Salvatore Gazzo Università di Catania	Membrane and flexural behaviour of network materials by Discrete Homogenization technique
10:10-10:30	Marco Colatosti Sapienza Università di Roma	Numerical modelling of composite materials as micropolar continua
10:30-10:50	Greta Ongaro Sapienza Università di Roma	Peridynamics and Extended Finite Element Method-Based Approaches for Mixed-mode Crack Propagation in Materials and Structures

MS16-Advances in the nonlinear mechanics of soft and active materials Chair(s): <i>Giulio LUCCHI, Giuseppe ZURLO</i> Room B - September 6, 9:10-10:50		
9:10-9:30	Filippo Recrosi Università di Chieti-Pescara	Pattern formation due to the interactions between active particles and an elastic medium
9:30-9:50	Sairam Pamulaparathi Venkata University of Galway	Designing instabilities in functionally-graded soft auxetic structures
9:50-10:10	Silvia Monchetti Università degli Studi di Firenze	Programming the swelling-induced shape change in hydrogels
10:10-10:30	Matteo Ruggieri Università degli Studi Roma Tre	Viscoelastic Magnetorheological Elastomer-Based Laminate for Tuneable Vibration Absorber
10:30-10:50	Eoin McEvoy University of Galway	A Cell-Based and Neural-Network-Accelerated Model for Force-Sensitive Tumour Growth

Friday, September 6

MS01-Sviluppi recenti su metamateriali meccanici		
Chair(s): <i>Lorenzo MORINI, Luigi CABRAS</i>		
Room C - September 6, 9:10-10:50		
9:10-9:30	Massimiliano Gei Università degli Studi di Trieste	Dynamical features of canonical one-dimensional meta-materials: periodicity of the spectrum and topological interface modes
9:30-9:50	Giorgio Carta Università di Cagliari	Prestrain-induced tunability of topologically-protected waveguiding in auxetic nonlinear metamaterials
9:50-10:10	Jacopo Maria De Ponti Politecnico di Milano	Localized Topological States via Counter-Propagating Wave Mode Conversion in Sc-doped AlN Microelectromechanical devices
10:10-10:30	Antonio Palermo Università di Bologna	Investigating Time-Modulated Metamaterials Using a Multiple Scattering Approach
10:30-10:50	Vinicius F. Dal Poggetto French National Centre for Scientific Research	Topological bound modes in discrete hexagonal lattices

MS05 - Advanced fracture and phase-field approaches for failure mechanism modelling		
Chair(s): <i>Roberta MASSABÒ, Francesco FREDDI</i>		
Room D - September 6, 9:10-10:50		
9:10-9:30	Nico Stortini Sapienza Università di Roma	A phase-field viscoelastic model for the description of crack propagation in elastomers
9:30-9:50	Sofia Damian Università degli Studi di Trento	Unexplored behaviors in dimensionally-reduced peridynamic plates
9:50-10:10	Simone Palladino Università degli Studi della Campania Luigi Vanvitelli	Crack Propagation in hollowed structures by accounting for Poisson's effect
10:10-10:30	Francesca Roscini Università Cusano	An elasto-plastic damage spring model with a hemivariational approach and aimed for the nonlinear behavior of the pull-out test

10:30-10:50	Francesco Ascione Università degli Studi di Salerno	Numerical and mechanical modelling of a ductile joint between fibre reinforced materials
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MS08-Advanced approaches in computational mechanics
Chair(s): *Stefano DE MIRANDA, Sonia MARFIA*
Room E - September 6, 9:10-10:50

9:10-9:30	Andrea Chiozzi Università degli Studi di Ferrara	A multimaterial topology optimization approach for large-scale additive manufacturing of spinodal material architectures
9:30-9:50	Lorenzo Zoboli Università Campus Bio-Medico di Roma	Mechanical assessment of fusion magnets featuring an external casing structure
9:50-10:10	Ester Sallicandro Università degli Studi del Sannio	Euler-Lagrange analysis of freestanding objects subjected to dynamic excitations. Insights from the half-disk model
10:10-10:30	Caterina Biscaro Università degli Studi di Padova	HPC Analysis of External Sulphate Attack on Concrete at the Meso-Level
10:30-10:50	Ettore Barbieri Japan Agency for Marine- Earth Science and Technology	Algorithms for Aggregation, Percolation, and Thermoelasticity in Pyroresistivity of Conductive Polymer Composites

Friday, September 6