

# PROGRAMMA AIMETA 2015

## Lunedì 14 settembre

8.00	Registrazione, S. Salvatore, Piazza Sarzano
9.20	Cerimonia di apertura S. Salvatore
10.00	<i>Relazione generale:</i> Mario Di Paola Fractional calculus in mechanics and dynamics <i>Presiede</i> Stefano Lenci (S.Salvatore)
10.40	Pausa caffè
11.10	Sessioni
13.10	Pausa pranzo
14.30	Sessioni
16.30	Pausa caffè
16.50	Sessioni
18.50	Cocktail nel Chiostro

## Martedì 15 settembre

8.00	Registrazione, Architettura aula 4C, IV piano
9.00	<i>Relazione generale:</i> Massimo Debenedetti Research and Innovation in Shipbuildings: the approach of Fincantieri <i>Presiede</i> Alessandro Bottaro (S.Salvatore)
9.40	<i>Relazione generale :</i> Luca Brandt Numerical simulations of particle suspensions <i>Presiede</i> Paolo Luchini (S.Salvatore)
10.20	Pausa caffè
10.40	Sessioni
12.40	Pausa pranzo
14.00	Sessioni
16.00	Pausa caffè
16.20	Sessioni
17.40	Assemblea AIMETA Aula 5H

## Mercoledì 16 settembre

8.00	Registrazione, Architettura aula 4C, IV piano
9.00	<i>Relazione generale:</i> Giorgio Metta iCub: a research platform for robotics & AI <i>Presiede</i> Pietro Fanghella (S.Salvatore)
9.40	<i>Relazione generale:</i> Massimo Guiggiani Transient Vehicle Dynamics <i>Presiede</i> Walter D'Ambrogio (S.Salvatore)
10.20	<i>Commemorazione di Piero Villaggio</i> Giampietro Del Piero <i>Presiede</i> Angelo Morro (S.Salvatore)
10.50	Pausa caffè
11.10	Sessione speciale Premi AIMETA (S. Silvestro)
12.50	Pausa pranzo
14.00	Sessioni
16.00	Pausa caffè
16.20	Sessioni
18.00	Riunione Gruppi AIMETA
19.30	Visita Museo del Mare
20.30	Cena Congressuale al Museo del Mare

## Giovedì 17 settembre

8.00	Registrazione, Architettura aula 4C, IV piano
9.00	Sessioni
10.40	Pausa caffè
11.10	<i>Relazione generale:</i> Claudia Comi On chemo-mechanical degradation phenomena in concrete <i>Presiede</i> Elio Sacco (S.Salvatore)
11.50	Sessioni
13.30	Pranzo

## SESSIONI ORDINARIE

<b>MG</b>	Meccanica Generale
<b>MF</b>	Meccanica dei Fluidi
<b>MSS</b>	Meccanica dei Solidi e delle Strutture
<b>MAM</b>	Meccanica Applicata alle Macchine

## MINISIMPOSI

<b>BIO</b>	Progressi in biomeccanica: dalla ricerca di base alle applicazioni
<b>DIN</b>	GADeS - Dinamica e stabilità di sistemi meccanici
<b>GIMC</b>	GIMC - Recenti progressi nella meccanica computazionale
<b>GMA</b>	GMA - Meccanica e materiali 2015
<b>GMA-ss1</b>	Sessione specialistica GMA: Materiali soffici attivi
<b>GMA-ss2</b>	Sessione specialistica GMA: Modellazione non locale dei materiali
<b>GMA-ss3</b>	Sessione specialistica GMA: Caratterizzazione del danno nei materiali compositi
<b>GMA-ss4</b>	Sessione specialistica GMA: Materiali per l'ingegneria tissutale
<b>MEMS</b>	Modelli e analisi di sistemi micro- e nano-elettro-meccanici (MEMS e NEMS)
<b>MORFO</b>	Meccanobiologia cellulare e morfogenesi della materia vivente
<b>MURA</b>	La modellazione delle murature: dalla teoria agli approcci numerici e semplificati
<b>ROB</b>	Robotica Mobile

## Organizzatori

*P. Bisegna, V. Parenti Castelli e G. Pedrizzetti*

*S. Carillo, W. D'Ambrogio e A. Luongo*

*S. Marfia, A. Pandolfi, A. Reali e G. Zavarise*

*L. Bardella, R. Massabò e P. Vena*

*A. Lucantonio e G. Noselli*

*A. Bacigalupo, F. Dal Corso e A. Piccolroaz*

*A. Langella e V. Lopresto*

*F. Barberis e A. Lagazzo*

*A. Corigliano, S. Lenci e S. Mariani*

*D. Ambrosi, P. Ciarletta e L. Preziosi*

*D. Addessi, G. Milani e E. Sacco*

*L. Bruzzone, G. Quaglia e G. Reina*

### Aule

		<b>Benvenuto</b>	<b>4D</b>	<b>4H</b>	<b>5H</b>	<b>4L</b>	<b>5L</b>	<b>5M</b>
<b>Lunedì</b>	11.10	MMS1	MF1	GIMC1	DIN1	GMA1	MG1	
	14.30	MMS2		GIMC2	DIN2	GMA2	MEMS1	MURA1
	16.50		MF2	GIMC3	DIN3	GMA3	GMA4-ss2	MURA2
<b>Martedì</b>	10:40	MMS3	BIO1	GIMC4	DIN4	GMA5-ss2	MEMS2	
	14:00	MURA3	MAM1		DIN5	GMA6-ss2	MEMS3	MORFO1
	16:20	MG2	MF3	DIN7	DIN6	GMA7	MEMS4	
<b>Mercoledì</b>	14:00	MURA4	MAM2	GIMC5	DIN8	GMA8	ROB1	MORFO2
	16:20	MMS4	MF4	BIO2	DIN9	GMA9	ROB2	
<b>Giovedì</b>	09:00	MMS5	MF5	BIO3	DIN10	GMA10-ss1	GMA11-ss3	
	11:50	MURA5	MF6	BIO4	DIN11	GMA12-ss1	GMA13-ss4	

## LUNEDÌ 14 SETTEMBRE, 11.10-13.10

### AULA 5L

<b>MG1 - Meccanica Generale</b>		<b>Presiede Mauro Fabrizio</b>
<b>11.10</b>	Commemorazione di Giuseppe Grioli	Mauro Fabrizio
<b>11.30</b>	Variational approach to generalized Timoshenko beam models based on the micropolar linear theory	Andrea Nobili, Angelo Marcello Tarantino
<b>11.50</b>	Nonlinear dynamic response of unshearable-inextensible nanocomposite beams to harmonic excitations	Marek Cetraro, Giovanni Formica, Walter Lacarbonara
<b>12.10</b>	Electric polarization in micromorphic continua	Maurizio Romeo

### AULA 4D

<b>MF1 - Meccanica dei fluidi</b>		<b>Presiede Maria Vittoria Salvetti</b>
<b>11.10</b>	BoostConv: finding unstable solutions of the equations of fluid motion	Flavio Giannetti, Paolo Luchini, Vincenzo Citro, Franco Auteri
<b>11.30</b>	Modelling of inherently non-linear Kelvin-Helmholtz instability	Francesco Capuano, Gennaro Coppola, Luigi de Luca
<b>11.50</b>	Non-modal stability analysis of the interface between two immiscible fluids superposed over periodically oscillating flat surface	Masoud Ghaderi, Krystyna Isakova, Jan O. Pralits, Rodolfo Repetto
<b>12.10</b>	On the dynamics of a flapping elastically bounded plate in a uniform flow with applications to energy harvesting	Stefano Olivieri, Andrea Mazzino
<b>12.30</b>	Stability & weakly nonlinear analysis of rotating sphere flows	Vincenzo Citro, Joel Tchoufag, Flavio Giannetti, David Fabre, Paolo Luchini
<b>12.50</b>	Zero inertia instabilities in rheopectic fluids	Simone Boi, Andrea Mazzino, Jan Oscar Pralits

### AULA BENVENUTO

<b>MSS1 - Meccanica dei solidi e delle strutture</b>		<b>Presiede Alberto Taliercio</b>
<b>11.10</b>	A discrete numerical model for single walled carbon nanotubes	Hossein Aminpour, Alessandra Genoese, Andrea Genoese, Nicola Luigi Rizzi, Ginevra Salerno
<b>11.30</b>	Bifurcation and stable post-critical response of a Mooney-Rivlin elastic body subject to a multiaxial stress state	Pilade Foti, Aguinardo Fraddosio, Salvatore Marzano, Mario Daniele Piccioni
<b>11.50</b>	Rational models for piezoelectric curved interfaces	Michele Serpilli
<b>12.10</b>	Structural analysis involving finite rotations based on total Lagrangian description and vector space operations	Salvatore Lopez
<b>12.30</b>	Reflection and transmission of shear waves from discontinuities in a plate	Annamaria Pau, Dimitra Achillopoulou

## LUNEDÌ 14 SETTEMBRE, 11.10-13.10

### AULA 5H

<b>DIN1 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Angelo Luongo</b>
<b>11.10</b>	Commemorazione di Francesco Benedettini	Giuseppe Rega
<b>11.30</b>	Experimental analysis and numerical simulations of two-way reinforced concrete slabs over different kinds of yielding supports under short-term dynamic loading	Luca Placidi, Bernardino Chiaia, Ali Kezmane, Oleg Kumpyak, Valerii Maksimov
<b>11.50</b>	Controlling the limit-cycle of the Ziegler column via piezoelectric dampers	Francesco D'Annibale, Giuseppe Rosi, Angelo Luongo
<b>12.10</b>	Global control of a noncontact atomic force microcantilever	Valeria Settimi, Giuseppe Rega, Stefano Lenci
<b>12.30</b>	Curvature effects on the eigenfrequencies of circular shells	Matteo Guidi, Annalisa Fregolent, Giuseppe Ruta
<b>12.50</b>	Nonlinear energy sink to control primary and subharmonic resonances of a Duffing oscillator	Daniele Zulli, Angelo Luongo

### AULA 4H

<b>GIMC1 - Recenti Progressi nella meccanica computazionale</b>		<b>Presiede Anna Pandolfi</b>
<b>11.10</b>	Shape memory and elastoplastic materials: from constitutive and numerical to fatigue modeling	Giulia Scalet (premio GIMC)
<b>11.30</b>	A multi-scale model of porous brittle damage materials	Maria Laura De Bellis, Gabriele Della Vecchia, Anna Pandolfi
<b>11.50</b>	Monolithic state update algorithm for 3D macroscopic SMA constitutive models based on active set strategy	Edoardo Artioli, Paolo Bisegna
<b>12.10</b>	Influence of the cement paste microstructure on chloride diffusivity	Pietro Carrara, Tao Wu, Laura De Lorenzis
<b>12.30</b>	A geometrical multiscale numerical method for coupled hygro-thermo-elastic problems in layered materials	Pietro Lenarda, Marco Paggi
<b>12.50</b>	A mixed-based approach for a nonuniform TFA homogenization technique	Federica Covezzi, Stefano de Miranda, Sonia Marfia, Elio Sacco

### AULA 4L

<b>GMA1 - Meccanica e materiali 2015</b>		<b>Presiede Roberta Massabò</b>
<b>11.10</b>	Multi-physics modelling of photovoltaic laminates	Marco Paggi
<b>11.30</b>	Applications of thin piezoelectric layers in MEMS harvesters and actuators	Raffaele Ardito, Luca D'Alessandro, Alberto Corigliano
<b>11.50</b>	Bertin surfaces and residual stress analysis in scintillating crystals	Fabrizio Daví, Daniele Rinaldi
<b>12.10</b>	Species diffusion coupled to elasticity in lithium ion batteries	Amabile Tatone, Chiara Mastrodicasa
<b>12.30</b>	From simulations to more sustainable cements: nano-mechanics of formation and ageing	Sophie-Anne Frith, Igor Shvab, Enrico Masoero
<b>12.50</b>	Modellazione del degrado nel calcestruzzo dovuto a formazione di ettringite secondaria	Nicola Cefis, Claudia Comi, Cristina Tedeschi

## LUNEDÌ 14 SETTEMBRE, 14.30-16.30

### AULA BENVENUTO

<b>MSS2 - Meccanica dei solidi e delle strutture</b>		<b>Presiede Antonio Tralli</b>
<b>14.30</b>	Fiber-reinforcement of concrete plates by topology optimization	Matteo Bruggi, Alberto Taliercio
<b>14.50</b>	Truly-mixed finite elements for the optimal design of structures on regular grids	Matteo Bruggi, Carlo Cinquini
<b>15.10</b>	Static and dynamic analyses of doubly-curved composite thick shells with variable radii of curvatures	Francesco Tornabene, Nicholas Fantuzzi, Michele Baccocchi, Erasmo Viola
<b>15.30</b>	Semi-analytic approach to the characterization of the linear static behaviour of shells in the shape of pavilion vaults	Angelo Di Egidio, Andrea Matteo de Leo, Alessandro Contento
<b>15.50</b>	Optimal complexity of self-similar tensegrities	D. De Tommasi, G.C. Marano, G. Puglisi, F. Trentadue
<b>16.10</b>	Analytical solutions for hierarchical strands with tensile-torsion coupling: interfacial stress transferring in rubber/cord composites	Massimiliano Fraldi, Gianpaolo Perrella, Arsenio Cutolo

### AULA 5H

<b>DIN2 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Stefano Lenci</b>
<b>14.30</b>	Nonlinear vibrations of reduced order models of thermomechanically coupled symmetric cross-ply laminates	Eduardo Saetta, Giuseppe Rega
<b>14.50</b>	Nonlinear non-stationary dynamics of weakly coupled pendula	Francesco Romeo, Leonid I. Manevitch
<b>15.10</b>	Nonlinear modal analysis of mechanical systems with hysteresis	Fabrizio Vestroni, Paolo Casini
<b>15.30</b>	On the influence of the constitutive modeling on the nonlinear dynamic response of shape memory alloys oscillators	Davide Bernardini, Giuseppe Rega
<b>15.50</b>	A new vibration absorber based on the hysteresis of shape memory-steel wire ropes	Biagio Carboni, Walter Lacarbonara
<b>16.10</b>	Nonlinear dynamics of shells under combined loads: experimental investigation	Antonio Zippo, Marco Barbieri, Matteo Strozzi, Francesco Pellicano

### AULA 4H

<b>GIMC2 - Recenti Progressi nella meccanica computazionale</b>		<b>Presiede Giorgio Zavarise</b>
<b>14.30</b>	Structural mechanics applications using strong formulation finite element method	Erasmo Viola, Francesco Tornabene, Nicholas Fantuzzi, Michele Baccocchi
<b>14.50</b>	Un solutore strutturale esplicito su GPU per elementi finiti di guscio	Andrea Bartezzaghi, Massimiliano Cremonesi, Nicola Parolini, Umberto Perego
<b>15.10</b>	A mesh morphing algorithm for level set finite element analysis	Lisa Grementieri
<b>15.30</b>	A new interval finite element method for the analysis of structures with interval uncertainties	Eugenia Romeo, Alba Sofi

## LUNEDÌ 14 SETTEMBRE, 14.30-16.30

### AULA 4L

<b>GMA2 - Meccanica e materiali 2015</b>		<b>Presiede Antonio De Simone</b>
<b>14.30</b>	Effects of the chiral microstructure on low frequency band-gaps in beam-lattices with local resonators	Andrea Bacigalupo, Luigi Gambarotta
<b>14.50</b>	A class of negative Poisson's ratio microstructured media	Michele Brun, Giorgio Carta, Luigi Cabras, Antonio Baldi, Gianluca Marongiu
<b>15.10</b>	Anisotropy and Granular Materials	Luigi La Ragione
<b>15.30</b>	Variational formulations for the linear viscoelastic problem in the time domain	Ornella Mattei, Angelo Carini
<b>15.50</b>	Analytical comparison between cohesive crack modeling and finite fracture mechanics for mode-I loading conditions	Rossana Dimitri, Marco Trullo, Pietro Cornetti, Laura De Lorenzis

### AULA 5L

<b>MEMS1 - Modelli e analisi di sistemi MEMS e NEMS</b>		<b>Presiede Alberto Corigliano</b>
<b>14.30</b>	Two-scale computational homogenization of piezoelectric textiles	Claudio Maruccio, Laura De Lorenzis, Joze Korelc
<b>14.50</b>	Ground states of mixture thin films undergoing large strain	Paolo Maria Mariano
<b>15.10</b>	Auxetic materials for MEMS: modeling, optimization and additive manufacturing	Valentina Zega, Matteo Bruggi, Marinella Levi, Alberto Corigliano
<b>15.30</b>	Analytical modeling of anisotropic friction between rough surfaces	Alice Berardo, Nicola M. Pugno
<b>15.50</b>	Modelling of nonlinear electrostatic generator for human movements energy harvesting	Francesco Cottone, Philippe Basset, Maurizio Mattarelli, Francesco Orfei

### AULA 5M

<b>MURA1 - La modellazione delle murature</b>		<b>Presiede Elio Sacco</b>
<b>14.30</b>	The formulation of the principle of virtual works for bodies made of a rigid or elastic no tension material	Mario Como
<b>14.50</b>	Experimental insight in the mechanical behaviour of aged masonry specimens	Elena Gabrielli, Camilla Colla
<b>15.10</b>	Closed-form expressions for the macroscopic bending and twisting stiffness coefficients of brick masonry	Alberto Taliercio
<b>15.30</b>	Upper and lower bounds for the collapse load of masonry panels subjected to in-plane actions	Riccardo Barsotti, Stefano Bennati
<b>15.50</b>	Collapse modes of systems formed by pointed arches and piers by limit and elastic analysis	Danila Aita, Riccardo Barsotti, Stefano Bennati



## LUNEDÌ 14 SETTEMBRE, 16.50-18.50

### AULA 4D

<b>MF2 - Meccanica dei fluidi</b>		<b>Presiede Maurizio Brocchini</b>
<b>16.50</b>	On the stability of MHD equilibrium configurations with flows: a Hamiltonian approach	Tommaso Andreussi, Philip J. Morrison, Francesco Pegoraro
<b>17.10</b>	Development of a physical model for plasma synthetic jet actuators	Matteo Chiatto, Luigi de Luca
<b>17.30</b>	Wake control of a 3D bluff body	Costantino Sardu, Salvatore Sedda, Gaetano Iuso
<b>17.50</b>	Transitional regime control in a fully developed channel flow	Gaetano Iuso, Raffaele Baggi, Davide Lasagna
<b>18.10</b>	Direct numerical simulations and stability analysis of the engulfment regime in three-dimensional micromixers	Lorenzo Siconolfi, Andrea Fani, Simone Camarri, Maria Vittoria Salvetti
<b>18.30</b>	Reduction of the pressure drop in a two-dimensional channel through contoured transverse grooves	Alessandro Mariotti, Guido Buresti, Maria Vittoria Salvetti

### AULA 5H

<b>DIN3 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Sandra Carillo</b>
<b>17.00</b>	Models of porous media via the theory of mixtures	Angelo Morro
<b>17.30</b>	A model of phase transition for porous media in consolidation with coupled transport fluxes	Pietro Artale Harris, Emilio Nicola Maria Cirillo, Adrian Muntean, Giulio Sciarra
<b>17.50</b>	A finite element formulation for dynamic systems with frequency-independent material damping	Anna Reggio, Maria Laura De Bellis
<b>18.10</b>	Rayleigh waves in strongly elliptic thermoelastic materials with microtemperatures	Francesca Passarella, Vincenzo Tibullo, Giacomo Viccione

### AULA 4H

<b>GIMC3 - Recenti Progressi nella meccanica computazionale</b>		<b>Presiede Sonia Marfia</b>
<b>16.50</b>	Crack tracking algorithms for 3D LEFM based on weight function approximation schemes	Francesca Fantoni, Alberto Salvadori, Paul Wawrzynek, Vladislav Mantic
<b>17.10</b>	Simulazione di fenomeni di taglio e frattura in strutture sottili multistrato	Federica Confalonieri, Aldo Ghisi, Umberto Perego
<b>17.30</b>	High order triangular boundary elements for 3D fracture mechanics	Mattia Zammarchi, Francesca Fantoni, Alberto Salvadori
<b>17.50</b>	Combining damage, friction and interlocking in a 3D multiscale cohesive zone model	Roberto Serpieri, Marco Albarella, Giulio Alfano, Elio Sacco
<b>18.10</b>	A large displacement cohesive-frictional interface model with independent mode I and mode II fracture energies	Guido Borino, Francesco Parrinello, Giuseppe Marannano, Giovanni Schicchi
<b>18.30</b>	IGA-based cohesive zone modeling for mixed-mode debonding	Rossana Dimitri, Laura De Lorenzis, Giorgio Zavarise

## LUNEDÌ 14 SETTEMBRE, 16.50-18.50

### AULA 4L

<b>GMA3 - Meccanica e materiali 2015</b>		<b>Presiede Roberta Sburlati</b>
<b>16.50</b>	Frequency domain mechanical characterization of articular cartilage through atomic force microscopy-based dynamic nanoindentation tests	Matteo Taffetani, Dario Gastaldi, Roberto Raiteri, Pasquale Vena
<b>17.10</b>	In-line rheometry of PP-based WPC	Valentina Mazzanti, Francesco Mollica
<b>17.30</b>	Experimental and numerical investigation on the stress field induced by impact loadings in semi-flexible photovoltaic modules	Andrea Infuso, Mauro Corrado, Marco Paggi
<b>17.50</b>	Experimental tests on the separation of FRCM layers from a concrete substrate	Luigi Ascione, Geminiano Mancusi, Agostina Orefice
<b>18.10</b>	Low-velocity impact behavior of glass fabric composite laminates at low temperature	Pietro Russo, Valentina Lopresto, Antonio Langella
<b>18.30</b>	Experimental assessment of stress state in timber including cracks	Camilla Colla

### AULA 5L

<b>GMA4-ss2 Modellazione non locale dei materiali</b>		<b>Presiede Andrea Piccolroaz</b>
<b>16.50</b>	Asymptotic homogenization of periodic thermo-diffusive heterogeneous media	Andrea Bacigalupo, Lorenzo Morini, Andrea Piccolroaz
<b>17.10</b>	Modelling the torsion of thin metal wires by phenomenological distortion gradient plasticity	Lorenzo Bardella, Andrea Panteghini
<b>17.30</b>	Strain localization induced by non-convex energies in gradient single-crystal plasticity	Giovanni Lancioni, Gianluca Zitti
<b>17.50</b>	Regularizations of damage models by strain-gradient and damage- gradient approaches: a comparison	Stefano Vidoli, Jean-Jacques Marigo, Corrado Maurini, Duc Trung Le
<b>18.10</b>	Elastic-plastic plates on a nonlocal subgrade	A. Sorzia, L. Lanzoni, A. Nobili, E. Radi
<b>18.30</b>	Micropolar homogenization of spatially random composite: RVE size and scaling of elastic coefficients	Maria Laura De Bellis, Patrizia Trovalusci, Martin Ostoja-Starzewski

### AULA 5M

<b>MURA2 - La modellazione delle murature</b>		<b>Presiede Daniela Addessi</b>
<b>16.50</b>	Some explicit solutions for nonlinear elastic depressed masonry arches loaded until collapse	Danila Aita, Riccardo Barsotti, Stefano Bennati
<b>17.10</b>	A multi-scale model for masonry domes: sensitivity to microstructure. The case of San Saturnino.	Milorad Pavlovic, Emanuele Reccia, Antonio Cazzani, Antonella Cecchi
<b>17.30</b>	FEM analyses of a monumental building using a smeared approach for the fracture energy	Francesco Clementi, Valentina Gazzani, Marina Poiani, Pardo Antonio Mezzapelle, Stefano Lenci
<b>17.50</b>	Experimental and theoretical assessment of the mechanical response of the masonry vaults of the "La Sapienza" building in Pisa	Riccardo Barsotti, Stefano Bennati, Alessandro Mosca, Walter Salvatore
<b>18.10</b>	Limit analysis of masonry arches and applications	N. Cavalagli, V. Gusella, L. Severini
<b>18.30</b>	Collapse load of masonry assemblages with piers and spandrels	Andrea Caporale, Raimondo Luciano

## MARTEDÌ 15 SETTEMBRE, 10.40-12.40

### AULA BENVENUTO

<b>MSS3 - Meccanica dei solidi e delle strutture</b>		<b>Presidente Mario Di Paola</b>
<b>10.40</b>	Assessment of both residual stresses and material properties for structural diagnosis "in situ"	Vladimir Buljak, Giuseppe Cocchetti, Aram Cornaggia, Giulio Maier
<b>11.00</b>	Design of an optimal impact identification system: some experimental and numerical results	Vincenzo Mallardo
<b>11.20</b>	An identification approach to localize a foundation settlement	Vincenzo Mallardo, Claudio Alessandri, Antonio Tralli
<b>11.40</b>	A new paradigm for dynamic topology optimization: shaping the transfer function $H_o$ norm	Paolo Venini, Marco Pingaro

### AULA 4D

<b>BIO1 - Progressi in biomeccanica</b>		<b>Presidente Vincenzo Parenti Castelli</b>
<b>10.40</b>	Numerical knee joint forces calculation for preclinical testing of total knee replacement	Alessandro Ruggiero, Domenico Guida, Saverio Affatato
<b>11.00</b>	Design and kinematics optimization of a novel underactuated hand exoskeleton	Mine Sarac, Massimiliano Solazzi, Edoardo Sotgiu, Antonio Frisoli
<b>11.20</b>	A 3D multibody approach to the study of human motion: jumps and gait analyses	G. Palmieri, M. Callegari, S. Fioretti, MC Palpacelli, F. Verdini
<b>11.40</b>	Real-time inverse kinematics algorithm of an asymmetric 3-RSR fingertip haptic device	Massimiliano Solazzi, Daniele Leonardis, Antonio Frisoli
<b>12.00</b>	A dynamic model to compute torques generated by the shoulder and the elbow during handcycling	Abdelmajid Ousdad, Ghazaleh Azizpour, Matteo Lancini, Giovanni Incerti, Giovanni Legnani.
<b>12.20</b>	Una nuova macchina di prova per la caratterizzazione di articolazioni umane e protesi articolari	Luca Luzi, Margherita Forlani, Nicola Sancisi, Michele Conconi, Vincenzo Parenti Castelli

### AULA 5H

<b>DIN4 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presidente Walter D'Ambrogio</b>
<b>10.40</b>	An energy based selection index for unstable modes in frictional systems	Jacopo Brunetti, Walter D'Ambrogio, Francesco Massi, Yves Berthier
<b>11.00</b>	Friction-induced vibrations in the motion of windscreen wipers	Giovanni Lancioni, Stefano Lenci, Ugo Galvanetto
<b>11.20</b>	The motion of a beam in contact with a rough plane surface	Stefano Bennati, Riccardo Barsotti, Flavio Quattrone
<b>11.40</b>	Dynamics and stability of carbon nanotubes	Matteo Strozzi, Marco Barbieri, Antonio Zippo, Francesco Pellicano
<b>12.00</b>	Postcritical behavior of the Nicolai beam	Angelo Luongo, Manuel Ferretti
<b>12.20</b>	Linear and nonlinear damping effects on the stability of discrete and continuous circulatory systems	Angelo Luongo, Francesco D'Annibale

## MARTEDÌ 15 SETTEMBRE, 10.40-12.40

### AULA 4H

<b>GIMC4 - Recenti Progressi nella meccanica computazionale</b>		<b>Presiede Elio Sacco</b>
<b>10.40</b>	Isogeometric collocation for plane strain incompressible elasticity	Simone Morganti, Laura De Lorenzis, John A. Evans, Thomas J.R. Hughes, Alessandro Reali
<b>11.00</b>	Isogeometric analysis: advanced structural biomechanics applications	A. Reali, F. Auricchio, M. Conti, M. Ferraro, T.J.R. Hughes, S. Morganti, R.L. Taylor
<b>11.20</b>	3D beam-column finite element with damage under non-uniform shear stress distribution	Paolo Di Re, Daniela Addressi, Filip C. Filippou
<b>11.40</b>	Mesoscale prediction of mechanical properties of concrete	Loredana Contrafatto, Massimo Cuomo, Salvatore Gazzo
<b>12.00</b>	A strong G1-continuity interpolation for Kirchhoff plate elements	Massimo Cuomo, Leopoldo Greco
<b>12.20</b>	Un approccio lagrangiano ad elementi finiti per la simulazione di frane a grande scala	Massimiliano Cremonesi, Francesco Ferri, Umberto Perego

### AULA 4L

<b>GMA5-ss2 Modellazione non locale dei materiali</b>		<b>Presiede Lorenzo Bardella</b>
<b>10.40</b>	Radial elasticity and nonlocal charge distribution of a single walled carbon nanotube	Elena Benvenuti
<b>11.00</b>	Non-classical molecular approaches of nineteenth century: the first step towards discrete-to-nonlocal field models	Patrizia Trovalusci
<b>11.20</b>	A lumped mass beam model for the wave propagation in anti-tetrachiral periodic lattices	Andrea Bacigalupo, Marco Lepidi
<b>11.40</b>	Dispersion and localization in structured Rayleigh beams	Andrea Piccolroaz, Alexander Movchan
<b>12.00</b>	Multi-physics process modeling of lithium ion battery cells	Davide Grazioli, Alberto Salvadori, Marco Magri, Marc G.D. Geers, Allan F. Bower
<b>12.20</b>	On modeling hydrogen diffusion and embrittlement in metals	M. Magri, D. Grazioli, A. Salvadori

### AULA 5L

<b>MEMS2 - Modelli e analisi di sistemi MEMS e NEMS</b>		<b>Presiede Attilio Frangi</b>
<b>10.40</b>	External feedback control of a noncontact AFM and its effects on global dynamics	Valeria Settimi, Giuseppe Rega
<b>11.00</b>	Global dynamics in atomic force microscope	Laura Ruzziconi, Mohammad Younis, Stefano Lenci
<b>11.20</b>	Electro-mechanical dynamic response of a MEMS device endowed with sub-micrometric gaps	Raffaele Ardito, Biagio De Masi, Fabrizio Cerini, Marco Ferrari, Vittorio Ferrari, Alfio Russo, Mikel Azpeitia Urquia, René I.P. Sedmik
<b>11.40</b>	A unified generalized thermoelastic model for the analysis of an electrically-actuated microbeam	Pierpaolo Belardinelli, Stefano Lenci
<b>12.00</b>	MEMS design for reliability: static and dynamic structural testing	Aurelio Somà, Giorgio De Pasquale

## MARTEDÌ 15 SETTEMBRE, 14.00-16.00

### AULA 4D

<b>MAM1 - Meccanica applicata alle macchine</b>		<b>Presiede Enrico Ciulli</b>
<b>14.00</b>	Development of an innovative wire actuator for quarter turn valves	L. Pugi, E. Galardi, N. Lucchesi, G. Pallini, L. Paolucci, A. Rindi
<b>14.20</b>	Design and simulation of a low cost, multi-role electric vehicle with four independently driven in-wheel motors	B. Allotta, L. Pugi, F. Grasso, M. Cipriani, M. Pratesi, M. Carmignani, A. Bartolomei
<b>14.40</b>	Reconfigurability of a class of parallel kinematics machines with lower mobility	M.C. Palpacelli, M. Callegari, D. Corinaldi, G. Palmieri
<b>15.00</b>	Kinematic calibration of a 2D rotation platform	M. Callegari, I. Fassi, G. Fontana, A. Gabrielli, G. Legnani, A. Ousdad, G. Palmieri, M.C. Palpacelli, S. Ruggeri
<b>15.20</b>	Feature-based estimation of the dynamic state of uncooperative space objects	Gabriele Biondi, Stefano Mauro, Tharek Mohtar, Stefano Pastorelli, Massimo Sorli

### AULA 5H

<b>DIN5 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Claudio Giorgi</b>
<b>14.00</b>	Lack of exponential stability in coupled Timoshenko bridge system with localized Kelvin-Voigt dissipation	Ivana Bochicchio, Jaime E. Muñoz Rivera, Maria Grazia Naso
<b>14.20</b>	Analysis of a dynamic contact problem related to a Timoshenko beam	Alessia Berti, Jaime E. Muñoz Rivera, Maria Grazia Naso
<b>14.40</b>	Electric conduction in tissues with micro-structure	M. Amar, D. Andreucci, R. Gianni
<b>15.00</b>	Magneto-viscoelasticity models: some recent results	Sandra Carillo
<b>15.20</b>	Propagation of harmonic plane waves along the symmetry axis in a piezoelectromagnetic monoclinic crystal	Adriano Montanaro
<b>15.40</b>	Buckling and nonlinear dynamics of elastically-coupled double beams	Ivana Bochicchio, Claudio Giorgi, Elena Vuk

### AULA 4L

<b>GMA6-ss2 Modellazione non locale dei materiali</b>		<b>Presiede Patrizia Trovalusci</b>
<b>14.00</b>	A simplified computational model for the identification of nonlocal parameters of homogenous materials equivalent to Cauchy composites	Andrea Bacigalupo, Marco Paggi, Francesco Dal Corso, Davide Bigoni
<b>14.20</b>	Correzione non locale alle proprietà elastiche globali di materiali compositi a microstruttura disordinata	Ilaria Monetto
<b>14.40</b>	Dynamic fracture criteria in couple stress elasticity	Lorenzo Morini, Andrea Piccolroaz, Gennady Mishuris
<b>15.00</b>	A strain-integral-based nonlocal finite element method	Aurora Angela Pisano, Paolo Fuschi, Dario De Domenico
<b>15.20</b>	Finite element simulation of pre-cracked micropolar media subjected to thermal shock with applications to refractories	Theodosios K. Papathanasiou, Francesco Dal Corso
<b>15.40</b>	Folding and stress channelling in Cosserat continua	Panos Gourgiotis, Davide Bigoni

## MARTEDÌ 15 SETTEMBRE, 14.00-16.00

### AULA 5L

<b>MEMS3 - Modelli e analisi di sistemi MEMS e NEMS</b>		<b>Presiede Stefano Lenci</b>
<b>14.00</b>	Improved piezoelectricity and ferroelectric phenomena in V-doped and Li-doped ZnO thin films	Marco Laurenti, Abil Asvarov, Alessandro Chiolerio
<b>14.20</b>	Spherical PZT-4 piezoceramic sensor with a protective coating layer	S.A. Atashipour, R. Sburlati
<b>14.40</b>	Analysis of damping forces exerted by single-component gases and mixtures in high-frequency MEMS devices	Silvia Lorenzani
<b>15.00</b>	Resonating nanofluidic channels for single nanoparticle detection in liquid	Carlo Ricciardi, Stefano Stassi, Candido Fabrizio Pirri
<b>15.20</b>	Hybrid technologies for chemoresistive gas sensors	V. Guidi, B. Fabbri, A. Gaiardo, A. Giberti, C. Malagù, G. Zonta, S. Gherardi, P. Bellutti, L. Lorenzelli

### AULA 5M

<b>MORFO1 - Meccanobiologia cellulare e morfogenesi della materia vivente</b>		<b>Presiede D. Ambrosi</b>
<b>14.00</b>	Time-dependent ECM mechanical properties characterization for cell culture by traction force microscopy	Sabato Fusco, Valeria Panzetta, Marta De Menna, Ida Musella, Paolo Antonio Netti
<b>14.20</b>	Mechanobiology of cell transcription factors simulated by a strain-dependent diffusive transport	Michele M. Nava, Roberto Fedele, Manuela T.Raimondi
<b>14.40</b>	Modeling vascular endothelial growth factor receptor-2 relocation and localization	Valentina Damioli, Cosetta Ravelli, Stefania Mitola, Alberto Salvadori
<b>15.00</b>	Mechanobiology of locomotion: from biological templates to bioinspired devices	Antonio De Simone
<b>15.20</b>	Force balance and bistable dynamics in cell motility	Davide Ambrosi, Anna Zanzottera
<b>15.40</b>	Planar swimming in ideal fluids	Marta Zoppello, Franco Cardin

### AULA BENVENUTO

<b>MURA3 - La modellazione delle murature</b>		<b>Presiede Maurizio Angelillo</b>
<b>14.00</b>	A finite element model for masonry structures: transition from nonlocal continuum damage to fracture	Claudia Tesei, Giulio Ventura
<b>14.20</b>	A general NURBS-based method for kinematic limit analysis of masonry vaults	Andrea Chiozzi, Gabriele Milani, Antonio Tralli
<b>14.40</b>	FE analysis of mechanical behaviour of masonry walls with irregular texture	Gaspere Giovinco, Raimondo Luciano, Giulia Misseri, Luisa Rovero
<b>15.00</b>	The FE-meshless multiscale approach applied to masonry structures	Antonino Spada, Giuseppe Giambanco, Emma La Malfa Ribolla
<b>15.20</b>	A kinematic enriched plane state formulation with damage and plasticity for masonry walls	Daniela Addessi, Elio Sacco

## MARTEDÌ 15 SETTEMBRE, 16.20-17.40

### AULA BENVENUTO

<b>MG2 - Meccanica Generale</b>		<b>Presiede Maurizio Romeo</b>
<b>16.20</b>	Design and modelling of an active thrust bearing	Federico Colombo, Daniela Maffiodo, Terenziano Raparelli
<b>16.40</b>	Discrete and continuum modeling of wave propagation in two-dimensional beam-lattices with lumped masses	Andrea Bacigalupo, Luigi Gambarotta
<b>17.00</b>	Canoeing efficiency monitoring via a special instrumented blade	Carlo E. Rottenbacher, Andrea Cristiani, Gian Mario Bertolotti, Alberto Ramponi, Giovanni Mimmi
<b>17.20</b>	ESPI analysis of GFRP material compression-tension constitutive behavior	Pietro Tabbuso, Salvatore Benfratello, Antonino Cirello, Luigi Palizzolo

### AULA 4D

<b>MF3 - Meccanica dei fluidi</b>		<b>Presiede Gaetano Iuso</b>
<b>16.20</b>	Direct numerical simulation of the first stages of formation of small scale bedforms under sea waves	Marco Mazzuoli, Aman Kidanemariam, Paolo Blondeaux, Giovanna Vittori, Markus Uhlmann
<b>16.40</b>	A 2d shallow water model for the hydrodynamics and morphodynamics of tidal meanders	N. Tambroni, R. Luchi, G. Seminara
<b>17.00</b>	Oscillatory flow close to a regular roughness	Marco Mazzuoli, Giovanna Vittori
<b>17.20</b>	The EsCoSed project: summertime-wintertime evolution of the Misa river estuarine environment	M. Brocchini, J. Calantoni, A. H. Reed, A. Sheremet, T. Staples, J. Smith, M. Postacchini, E. Braithwaite, T. Kooney, C. Lorenzoni, A. Russo, A. Mancinelli, L. Soldini, S. Corvaro, A. Coluccelli, P. Paroncini

### AULA 5H

<b>DIN6 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Antonio Cazzani</b>
<b>16.20</b>	A numerical approach to the dynamics analysis of marine cables	Giovanni Stabile, Claudio Borri, Hermann G. Matthies
<b>16.40</b>	Returning the physical meaning in solving higher order linear matrix differential equations with singular mass matrices	Vincenzo Como, Athanasios Pantelous, Francesco Pinnola, Antonina Pirrotta
<b>17.00</b>	Dynamic response of beams with dampers under moving loads	Salvatore Di Lorenzo, Giuseppe Failla, Antonina Pirrotta
<b>17.20</b>	Dynamic analysis of slender masonry tower: a simplified Bouc & Wen approach	Michele Betti, Luca Facchini, Andrea Vignoli

## MARTEDÌ 15 SETTEMBRE, 16.20-17.40

### AULA 4H

<b>DIN7 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Mauro Fabrizio</b>
<b>16.20</b>	Dynamic response of structures to thunderstorm winds	Giovanni Solari
<b>16.40</b>	Wind tunnel experiments on fluttering flat plates for parametric investigation of energy harvesting capability	Luca Pigolotti, Claudio Mannini, Gianni Bartoli
<b>17.00</b>	Interference of vortex-induced vibration and galloping: experiments and modeling for a rectangular cylinder	Claudio Mannini, Antonino M. Marra, Tommaso Massai, Gianni Bartoli
<b>17.20</b>	Vortex-induced vibration on a gravity damper component	Lorenzo Scappaticci, Nicola Bartolini, Francesco Castellani, Francesco Mariani, Francesco Risi

### AULA 4L

<b>GMA7 - Meccanica e materiali 2015</b>		<b>Presiede Giulio Ventura</b>
<b>16.20</b>	An energy-based approach to topology optimization using the Hu-Washizu variational principle	Paolo Venini, Marco Pingaro, Carlo Cinquini
<b>16.40</b>	Void-size effects on nanoporous strength properties via molecular dynamics simulations	Stella Brach, Luc Dormieux, Djimedo Kondo, Giuseppe Vairo
<b>17.00</b>	Computational homogenization for propagating discontinuities using X-FEM	Emanuela Bosco, Varvara Kouznetsova, Marc Geers
<b>17.20</b>	Caratterizzazione di giunzioni metallo-ceramiche mediante correlazione digitale di immagini	Roberto Fedele, Valentina Casalegno, Monica Ferraris

### AULA 5L

<b>MEMS4 - Modelli e analisi di sistemi MEMS e NEMS</b>		<b>Presiede Stefano Mariani</b>
<b>16.20</b>	Direct tensile testing of atomic layers	Maria F. Pantano, Giorgio Speranza, Nicola M. Pugno
<b>16.40</b>	An integrated MEMS-electronic-package modeling approach for system co-design	Alessandro Sanginario, Danilo Demarchi
<b>17.00</b>	Friction and adhesion properties from tearing of graphene: experiments and numerical simulations	Manoj Tripathi, Stefano Signetti, Nicola M. Pugno
<b>17.20</b>	Non-linear effects in micro-mirrors	Attilio Frangi, Roberto Carminati, Sebastiano Conti



## MERCOLEDÌ 16 SETTEMBRE, 14.00-16.00

### AULA 4D

<b>MAM2 - Meccanica applicata alle macchine</b>		<b>Presiede Pietro Fanghella</b>
<b>14.00</b>	Aspetti teorici e implementativi nella modellazione predittiva dell'usura	Francesca Di Puccio, Lorenza Mattei, Enrico Ciulli
<b>14.20</b>	Nuovo apparato sperimentale per tenute meccaniche frontali	M. Cristina Valigi, Claudio Braccesi, Silvia Logozzo, Lorenzo Conti, Massimiliano Borasso
<b>14.40</b>	Correlazione sperimentale tra coefficiente di attrito e parametri morfologici e operativi in un freno a disco	Romulo Rodrigues
<b>15.00</b>	Macchine basate su elastomeri dielettrici per la conversione di energia del moto ondoso marino	Marco Fontana, Rocco Vertechy
<b>15.20</b>	Control design, simulation and validation of a turbo-machinery auxiliary plant	Roberto Conti, Pierluca D'Adamio, Emanuele Galardi, Enrico Meli, Daniele Nocciolini, Luca Pugi, Andrea Rindi, Marcello Giulio Lo Presti, Stefano Rossin
<b>15.40</b>	Variable kinematic 1D theories for dynamic analyses of rotors	Matteo Filippi, Erasmo Carrera

### AULA 5H

<b>DIN8 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Nicola Rizzi</b>
<b>14.00</b>	Approccio per sotto strutture nella modellazione di trave equivalente nella dinamica di edifici alti	Federico Cluni, Massimiliano Gioffrè, Vittorio Gusella
<b>14.20</b>	A nonlinear monodimensional beam model for the dynamic analysis of the mast pumping phenomenon in sailing boats	Marco Lepidi, Stefano Ghelardi, Cesare M. Rizzo
<b>14.40</b>	Effects of configurational forces on elastic structures: torsional locomotion and self-encapsulation of an elastic rod	D. Misseroni, D. Bigoni, F. Bosi, F. Dal Corso
<b>15.00</b>	A microstructured beam model for coarse modeling of a braced frame	Enrico Babilio
<b>15.20</b>	Damping modeling of frame-masonry shear-wall system	Simona Di Nino, Francesco D'Annibale, Angelo Luongo
<b>15.40</b>	An equivalent nonlinear beam model for the 3-D dynamic analysis of shear-type buildings	Giuseppe Piccardo, Federica Tubino, Angelo Luongo

## MERCOLEDÌ 16 SETTEMBRE, 14.00-16.00

### AULA 4H

<b>GIMC5 - Recenti Progressi nella meccanica computazionale</b>		<b>Presiede Alessandro Reali</b>
14.00	Hierarchical and component-wise 1D models for fluid-structure interaction problems	Alfonso Pagani, Erasmo Carrera
14.20	Numerical study of the flow around a rectangular cylinder 5:1 by using LES and RANS approaches	S. de Miranda, L. Patruno, M. Ricci, F. Ubertini
14.40	Preserving linear and angular momentum in WCSPH	Giacomo Viccione, Vincenzo Tibullo, Francesca Passarella
15.00	The 'I <sub>3</sub> ' generalization of the Galileo-Rankine tension criterion	Rocco Lagioia, Andrea Panteghini, Alexander Puzrin
15.20	A gradient-enhanced cohesive model	Nunziante Valoroso
15.40	Imperfection sensitivity analysis of cold-formed steel members in compression	V. Ungureanu, D. Dubina, A. Madeo, G. Zagari, G. Zucco, R. Zinno

### AULA 4L

<b>GMA8 - Meccanica e materiali 2015</b>		<b>Presiede Marco Paggi</b>
14.00	A simplified SMA model coupling normal and shear stresses	Sara Malagisi, Sonia Marfia, Elio Sacco
14.20	Bent-lamination of sandwich beams with viscoelastic interaction. Contact problem and shape optimization	Laura Galuppi
14.40	Thermo-visco-elastic modelling of photovoltaic laminates	Saheed Olalekan Ojo, Marco Paggi
15.00	Wave propagation in multilayered composites with interlayer damage through a homogenized structural model	Roberta Massabò, Serge Abrate, Marco Pelassa
15.20	An elastic interface model of the mixed bending-tension (MBT) test	Stefano Bennati, Paolo Fiscaro, Luca Taglialegne, Paolo S. Valvo
15.40	GFRP beams by bonding simple panels: a low-cost design strategy	F. Ascione, M. Lamberti, G. Mancusi, S. Spadea, F. Lebon, A. Maurel-Pantel

### AULA 5M

<b>MORFO2 - Meccanobiologia cellulare e morfogenesi della materia vivente</b>		<b>Presiede P. Ciarletta</b>
14.00	Multiscale-Multiphysics model for axon pathfinding and growth in neural development	Giacomo Aletti, Paola Causin, Giovanni Naldi
14.20	Mechanical control of the beads-on-string morphology in soft elastic cylinder	Matteo Taffetani, Pasquale Ciarletta
14.40	Snap-buckling of a confined stretchable thin elastic sheet	Gaetano Napoli, Stefano Turzi
15.00	Fung-type hyperelastic potentials in biomechanics: a review on theory and applications	Salvatore Federico, Alfio Grillo
15.20	A comparison of permeability models for articular cartilage	Alfio Grillo, Melania Carfagna, Alberto Stracuzzi, Salvatore Federico
15.40	Investigation of multiphase composites via asymptotic homogenization and its application to the bone hierarchical structure	Raimondo Penta, Alf Gerisch

## MERCOLEDÌ 16 SETTEMBRE, 14.00-16.00

### AULA BENVENUTO

<b>MURA4 - La modellazione delle murature</b>		<b>Presiede Mario Como</b>
<b>14.00</b>	Equilibrium of masonry vaults and open stairs	Maurizio Angelillo, Claudia Cennamo, Antonio Fortunato, Giorgio Frunzio, Antonio Gesualdo, Michelina Monaco
<b>14.20</b>	Advanced numerical models of masonry vaults	F. Fraternali, G. Teodosio, M. De Piano, G. Carpentieri, V.P. Berardi
<b>14.40</b>	Una generalizzazione dell'equazione costitutiva dei materiali masonry-like	Massimiliano Lucchesi, Barbara Pintucchi, Nicola Zani
<b>15.00</b>	Dynamics of rocking elements with horizontal restraints	Linda Giresini
<b>15.20</b>	Dynamic response of masonry walls with damage	Daniela Addessi, Cristina Gatta, Fabrizio Vestroni
<b>15.40</b>	Un modello a trave per l'analisi statica e dinamica di elementi in muratura	Massimiliano Lucchesi, Barbara Pintucchi, Nicola Zani

### AULA 5L

<b>ROB1 - Robotica mobile</b>		<b>Presiede Luca Bruzzone</b>
<b>14.00</b>	A new prototype of Epi.q robot family, obstacle climbing UGVs	Giuseppe Quaglia, Matteo Nisi
<b>14.20</b>	Experimental assessment of the climbing performance of Mantis 2.0, a hybrid leg-wheel mobile robot for surveillance	Luca Bruzzone, Pietro Fanghella
<b>14.40</b>	Un sistema robotico per rilievo e conservazione dei beni culturali	Franco Tedeschi, Giuseppe Carbone
<b>15.00</b>	Simplified model for real time dynamic analysis of planetary rovers	Giancarlo Genta, Marco Dolci
<b>15.20</b>	Towards wind-driven land vehicles	Mario Foglia, Giulio Reina, Giovanni Boschetti
<b>15.40</b>	Study and stability evaluation of a non-conventional articulated robotic system for side-slope activities	R. Vidoni, M. Bietresato, P. Boscariol, G. Carabin, F. Mazzetto, A. Gasparetto

## MERCOLEDÌ 16 SETTEMBRE, 16.20-18.00

### AULA 4D

<b>MF4 - Meccanica dei fluidi</b>		<b>Presiede Paolo Luchini</b>
<b>16.20</b>	Cavitation-bubble collapse near solid boundaries	Francesco Magaletti, Mirko Gallo, Luca Marino, Carlo Massimo Casciola
<b>16.40</b>	Numerical investigation of supersonic cavity-induced acoustic oscillations	Emanuele Martelli, Renato Paciorri, Barbara Betti
<b>17.00</b>	Short-time nonlinear optimal perturbations in plane Poiseuille flow	Mirko Farano, Stefania Cherubini, Jean-Christophe Robinet, Pietro De Palma
<b>17.20</b>	Singularity in transonic liquid sheet flows	Michele Girfoglio, Fortunato De Rosa, Gennaro Coppola, Luigi de Luca
<b>17.40</b>	Aerodynamic force and Lamb vector field in an oscillating flat plate flow	Mario Ostieri, Benedetto Mele, Renato Tognaccini

### AULA BENVENUTO

<b>MSS4 - Meccanica dei solidi e delle strutture</b>		<b>Presiede Erasmo Viola</b>
<b>16.20</b>	Considerations on the plastic buckling paradox in the analysis of plates and shells	Rabee Shamass, Giulio Alfano, Federico Guarracino
<b>16.40</b>	Shakedown analysis of 3D frames for complex statical and seismic load combinations	Leonardo Leonetti, Raffaele Casciaro, Giovanni Garcea
<b>17.00</b>	Shakedown limit load multiplier for structures under seismic loads	Luigi Palizzolo, Salvatore Benfratello, Mario Di Paola, Pietro Tabbuso
<b>17.20</b>	On the mass damper effects on the rocking motion of non-symmetric rigid blocks	Andrea Matteo de Leo, Angelo Di Egidio
<b>17.40</b>	Base isolation versus top isolation	Cristiano Fabrizio, Angelo Di Egidio

### AULA 4H

<b>BIO2 - Progressi in biomeccanica</b>		<b>Presiede Paolo Bisegna</b>
<b>16.20</b>	Kinematics analysis and optimization of a 4-UPU parallel manipulator	Massimiliano Gabardi, Massimiliano Solazzi, Antonio Frisoli
<b>16.40</b>	A multiscale model for the mechanical behavior of macromolecular biomaterials	Domenico De Tommasi, Giuseppe Puglisi, Giuseppe Saccomandi
<b>17.00</b>	Cell electrodeformation towards deformability cytometry	Federica Caselli, Paolo Bisegna
<b>17.20</b>	Theoretical and numerical analysis of the corneal air puff tests	Irene Simonini, Maurizio Angelillo, Anna Pandolfi
<b>17.40</b>	Un modello delle trazioni generate sulla retina durante il processo di sineresi vitreale	Federica Di Michele, Rodolfo Repetto, Amabile Tatone

## MERCLEDÌ 16 SETTEMBRE, 16.20-18.00

### AULA 5H

<b>DIN9 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Angelo Morro</b>
<b>16.20</b>	Inverse dynamic substructuring as the identification of a set of disconnection forces	Walter D'Ambrogio, Annalisa Fregolent
<b>16.40</b>	Static and dynamic characterization of a low-cost MEMS sensor for structural monitoring purposes	Francesco Lo Iacono, Giacomo Navarra, Maria Oliva
<b>17.00</b>	On modal identification of structures from earthquake response signals by a refined frequency domain decomposition approach	Fabio Pioldi, Egidio Rizzi
<b>17.20</b>	Structural health monitoring applications with wireless sensors on an historical masonry building	Daniela Isidori, Alessio Pierdicca, Enrico Concettoni, Cristina Cristalli, Jessica Angeloni, Francesco Clementi, Stefano Lenci
<b>17.40</b>	A new research facility: the Laboratory of Earthquake engineering and Dynamic Analysis (L.E.D.A.)	Giacomo Navarra, Francesco Lo Iacono, Maria Oliva, Giovanni Tesoriere

### AULA 4L

<b>GMA9 - Meccanica e materiali 2015</b>		<b>Presiede Pasquale Vena</b>
<b>16.20</b>	A micromechanical analysis of porous shape memory alloys	Valentina Sepe, Ferdinando Auricchio, Sonia Marfia, Elio Sacco
<b>16.40</b>	Micromechanical estimates of the interaction energy for shape memory alloys based on a two-phase microstructure	Davide Bernardini, Renato Masiani
<b>17.00</b>	Strength properties of nanoporous materials: limit analysis and non linear homogenization approaches	Stella Brach, Luc Dormieux, Djimedo Kondo, Giuseppe Vairo
<b>17.20</b>	A micromechanical model to predict the interphase zone effect on thermal properties in composites reinforced by spherical inclusions	Roberta Sburlati, Maria Kashtalyan
<b>17.40</b>	The modeling of interfaces in hydrocarbon wells by damage poromechanics	Carlo Callari, Valentina Fasano

### AULA 5L

<b>ROB2 - Robotica mobile</b>		<b>Presiede Giuseppe Quaglia</b>
<b>16.20</b>	Design and testing of a modular autonomous underwater vehicle	Benedetto Allotta, Fabio Bartolini, Roberto Conti, Riccardo Costanzi, Jonathan Gelli, Niccolò Monni, Marco Natalini, Luca Pugi, Alessandro Ridolfi
<b>16.40</b>	Autonomous underwater vehicles: a new accurate navigation strategy	B. Allotta, A. Caiti, R. Costanzi, F. Di Corato, F. Fanelli, D. Fenucci, E. Meli, A. Ridolfi
<b>17.00</b>	Avionic perception—action model for UAV aimed at avalanche buried searching	Matteo Ragni

## GIOVEDÌ 17 SETTEMBRE, 9.00-10.40

### AULA 4D

<b>MF5 - Meccanica dei fluidi</b>		<b>Presiede Guido Buresti</b>
<b>9.00</b>	Mechanisms for wave generation in a turbulent air-water flow	Francesco Zonta, Miguel Onorato, Alfredo Soldati
<b>9.20</b>	An innovative approach for the simulation of particle-laden flows: exact regularized point particle method	P. Gualtieri, F. Battista, C.M. Casciola
<b>9.40</b>	Turbulence modulation due to inertial particles: exact regularized point particle method	Francesco Battista, Paolo Gualtieri, Carlo Massimo Casciola
<b>10.00</b>	Experiments and DNS of a round jet with turbulent inlet	Giorgia Sinibaldi, Francesco Battista, Paolo Gualtieri, Luca Marino, Giovanni Paolo Romano, Carlo Massimo Casciola

### AULA BENVENUTO

<b>MSS5 - Meccanica dei solidi e delle strutture</b>		<b>Presiede Carlo Cinquini</b>
<b>9.00</b>	Stima dei residui della soluzione omogeneizzata di un mezzo eterogeneo con tessitura casuale	Federico Cluni, Vittorio Gusella
<b>9.20</b>	Full analytical solutions of Cerrutis problem for linearly varying pressures over polygonal domains	Francesco Marmo, Salvatore Sessa, Luciano Rosati
<b>9.40</b>	Effect of brittle fracture in a metacconcrete slab under shock loading	Stephanie J. Mitchell, Michael Ortiz, Anna Pandolfi
<b>10.00</b>	How to follow quasi-static crack growth in 2D elastic bodies through standard FEM	Giovanni Formica, Franco Milicchio
<b>10.20</b>	GBT members buckling analysis within the implicit corotational framework	Stefano de Miranda, Antonio Madeo, Domenico Melchionda, Francesco Ubertini

### AULA 4H

<b>BIO3 - Progressi in Biomeccanica</b>		<b>Presiede Gianni Pedrizzetti</b>
<b>9.00</b>	Modello matematico di reclutamento di vasi nella microcircolazione coronarica	Alice Saracco, Matteo Bauckneht, Rodolfo Repetto, Gianmario Sambuceti e Marco Storace
<b>9.20</b>	Autoregulatory mechanisms in eye retina circulation	Paola Causin, Francesca Malgaroli
<b>9.40</b>	On the impact of cardiovascular ageing on the coronary circulation	Andrea Guala, Michele Scalseggi, Luca Ridolfi
<b>10.00</b>	Analisi numerica delle differenze fluidodinamiche tra condotto rettilineo ed elicoidale in presenza di una stenosi	Luigino Zovatto, Gianni Pedrizzetti
<b>10.20</b>	Effect of a central hole in an intraocular lens on pressure and corneal nutrient uptake	Peyman Davvala Khongar, Rodolfo Repetto, Jan Pralits

## GIOVEDÌ 17 SETTEMBRE, 9.00-10.40

### AULA 5H

<b>DIN10 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Giuseppe Rega</b>
<b>9.00</b>	Comparison between GBT and GE in linear and buckling analyses of thin-walled beams	G. Garcea, R. Gonçalves, A. Bilotta, D. Manta, R. Bebbiano, L. Leonetti, D. Magisano, D. Camotim
<b>9.20</b>	Elastodynamic analysis of damaged open thin-walled beams subjected to axial load	Gianfranco Piana, Egidio Lofrano, Riccardo Malvano, Amedeo Manuello, Giuseppe Ruta
<b>9.40</b>	Nonlinear generalized beam theory for post-buckling analysis of thin-walled members	Giuseppe Piccardo, Alberto Ferrarotti, Angelo Luongo
<b>10.00</b>	Buckling of thin walled beams due to in plane cross-sections deformation	Stefano Gabriele, Andrea Genoese, Nicola L. Rizzi, Valerio Varano
<b>10.20</b>	Natural frequencies and mode shapes for strongly curved beams by an isogeometric strategy	Antonio Cazzani, Flavio Stochino, Emilio Turco

### AULA 4L

<b>GMA10-ss1 Materiali soffici attivi</b>		<b>Presiede Giovanni Noselli</b>
<b>9.00</b>	Local and global instabilities in soft electrostrictive devices	Massimiliano Gei, Eliana Bortot, Roberta Springhetti
<b>9.20</b>	Thin-gel swelling	Paola Nardinocchi, Paolo Podio-Guidugli
<b>9.40</b>	Swelling-induced elastic instabilities in geometric composites	Paola Nardinocchi, Matteo Pezzulla, Eric Puntel
<b>10.00</b>	Fracture in swelling polymer gels	Alessandro Lucantonio, Giovanni Noselli, Robert McMeeking, Antonio De Simone
<b>10.20</b>	Optimized Design of Surface Mechanical Testing Procedures	Gregory Favaro (Anton Paar)

### AULA 5L

<b>GMA11-ss3 Caratterizzazione del danno nei materiali compositi</b>		<b>Presiede Valentina Lopresto</b>
<b>9.00</b>	Adhesive debonding detection of FRP reinforcement by the ultrasonic non-destructive technique	Emma La Malfa Ribolla, Giuseppe Fileccia Scimemi, Antonino Spada, Giuseppe Giambanco
<b>9.20</b>	A novel progressive failure constitutive model for composite laminates	Aniello Riccio, Carlo Di Costanzo
<b>9.40</b>	The ultrasonic behavior of damaged composite materials	Anna Castellano, Pilade Foti, Aguinaldo Fraddosio, Salvatore Marzano, Mario Daniele Piccioni
<b>10.00</b>	Debonding and fracture of hybrid laminates with cohesive interfacial law	Roberto Alessi, Jacopo Ciambella, Achille Paolone
<b>10.20</b>	The use of textile materials and fiber reinforced composites for blast protection of airplanes	Donato Zangani, Alessandro Bozzolo (RINA/D'Appolonia), Andrew Tyas, Jim Warren

## GIOVEDÌ 17 SETTEMBRE, 11.50-13.30

### AULA 4D

<b>MF6 - Meccanica dei fluidi</b>		<b>Presiede Alfredo Soldati</b>
<b>11.50</b>	Flagellated microswimmers at no-slip and free-slip interfaces	D. Pimponi, M. Chinappi, P. Gualtieri, C. M. Casciola
<b>12.10</b>	Fluid flow over and through a regular bundle of fibres	Giuseppe A. Zampogna, Alessandro Bottaro
<b>12.30</b>	Design criteria for submerged superhydrophobicity	Alberto Giacomello, Matteo Amabili, Carlo Massimo Casciola
<b>12.50</b>	Wall nano-confinement in micro-channel flows	Benedetto Mele, Renato Tognaccini

### AULA 4H

<b>BIO4 - Progressi in Biomeccanica</b>		<b>Presiede Rodolfo Repetto</b>
<b>11.50</b>	Shape of the interface between a tamponade fluid and aqueous humor in vitrectomised eyes	Krystyna Isakova, Rodolfo Repetto, Jan O. Pralits, Mario R. Romano
<b>12.10</b>	Theoretical model of the flow in the posterior chamber with iridotomy	Mariia Dvoriashyna, Rodolfo Repetto, Jennifer H. Siggers
<b>12.30</b>	Computer-based analysis of rhegmatogenous retinal detachment	Damiano Natali, Jan O. Pralits, Rodolfo Repetto, Jennifer H. Siggers, Tom H. Williamson

### AULA 5H

<b>DIN11 - Dinamica e stabilità di sistemi meccanici</b>		<b>Presiede Giuseppe Piccardo</b>
<b>11.50</b>	Generalized equivalent spectral model for pedestrian-induced forces on footbridges	Alberto Ferrarotti, Federica Tubino
<b>12.10</b>	Identificazione dinamica stocastica di funi danneggiate per mezzo di un approccio perturbativo	Egidio Lofrano, Giuseppe Ruta, Marcello Vasta
<b>12.30</b>	PDF response of nonlinear systems under Levy white noise through path integral method	Gioacchino Alotta, Alberto Di Matteo, Mario Di Paola, Antonina Pirrotta
<b>12.50</b>	Explicit frequency response function in reliability analysis of structural systems with interval uncertainties under stationary stochastic excitations	Giuseppe Muscolino, Roberta Santoro, Alba Sofi
<b>13.10</b>	Control-structure interaction effects in active mass driver systems with electric torsional servomotor	Ilaria Venanzi, Filippo Ubertini, Laura Ierimonti, Gabriele Comanducci



## GIOVEDÌ 17 SETTEMBRE, 11.50-13.30

### AULA 4L

<b>GMA12-ss1 Materiali soffici attivi</b>		<b>Presiede Alessandro Lucantonio</b>
<b>11.50</b>	Shape control of soft active materials: applications to bio-inspired locomotion	Antonio De Simone
<b>12.10</b>	Thermoresponsive shape memory features of electrospun non-wovens prepared from crosslinked poly( $\epsilon$ -caprolactone)	Stefano Pandini, Silvia Agnelli, Andrea Merlettini, Chiara Gualandi, Maria Letizia Focarete, Maurizio Toselli, Katia Paderni, Massimo Messori
<b>12.30</b>	Statistical characterization of soft materials with distributed fibers	Alessio Gizzi, Anna Pandolfi, Marcello Vasta
<b>12.50</b>	Hydraulic fracture and toughening in epithelial layers	Giovanni Noselli, Alessandro Lucantonio, Marino Arroyo, Antonio De Simone
<b>13.10</b>	Large strain elasticity of open cells auxetic foams	Jacopo Ciambella, Abderrezak Bezazi, Giuseppe Saccomandi, Fabrizio Scarpa

### AULA 5L

<b>GMA13-ss4 Materiali per l'ingegneria tissutale</b>		<b>Presiede Alberto Lagazzo</b>
<b>11.50</b>	DMA characterization of colloidal microparticles for biomedical applications	Laura Pastorino, Alberto Lagazzo, Fabrizio Barberis, Marco Capurro
<b>12.10</b>	Bioactive scaffolds for articular tissue engineering applications	Silvia Scaglione, Alessandra Marrella, Marta Cavo
<b>12.30</b>	Insertion torque and primary stability of dental implants	Alberto Lagazzo, Fabrizio Barberis, Marco Migliorati, Marco Capurro
<b>12.50</b>	Poro-elastic behavior of a polyurethane liver phantom by indentation tests	Valeria Baronti, Fabrizio Barberis, Marco Capurro, Rodolfo Repetto
<b>13.10</b>	Injectable monetite cements for bone tissue engineering	Giuseppe Cama, Borzo Gharibi, Lucy Di Silvio, Marco Capurro, Sanjukta Deb, Peter Dubrue

### AULA BENVENUTO

<b>MURA5 - La modellazione delle murature</b>		<b>Presiede Danila Aita</b>
<b>11.50</b>	A simplified finite element discretization approach to model historical monumental buildings	Giovanni Castellazzi, Antonio Maria D'Altri
<b>12.10</b>	Approcci semplificati per valutare gli effetti del retrofit strutturale di volte murarie	Gian Piero Lignola, Andrea Prota, Gaetano Manfredi
<b>12.30</b>	Numerical modelling of masonry panels reinforced with natural grid textiles	Michela Basili, Giancarlo Marcari, Fabrizio Vestroni
<b>12.50</b>	Failure mechanisms of strengthening systems: natural fiber reinforced based-cementitious mortar and masonry substrate	Renato S. Olivito, Rosamaria Codispoti