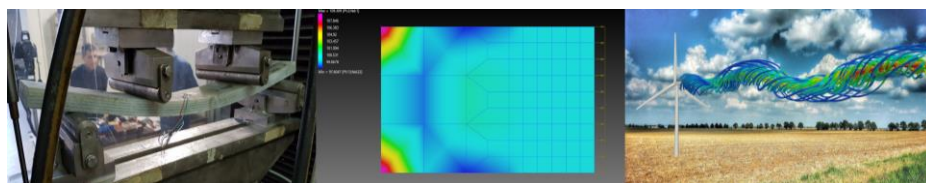


WECM'23 – 2nd Workshop on Experimental and Computational Mechanics

(Pisa, Italy, 20–22 September 2023) + Final Meeting of the “Canaletto” DIACMEC Project



«Fatti non foste a viver come bruti,
ma per seguir virtute e canoscenza»
«You were not made to live like brutes,
but to follow virtue and knowledge»

Dante ALIGHIERI
(Inferno, XXVI, 119–120)

General Programme (revision 17 of 21 September 2023)

Wednesday 20 September 2023		Thursday 21 September 2023		Friday 22 September 2023	
MS Teams: https://tinyurl.com/4xxmxt7t		MS Teams: https://tinyurl.com/ytpyncrm		MS Teams: https://tinyurl.com/475248kj	
		9:00 – 9:45	Keynote Lecture 2 Prof. Jerzy Warmański	9:00 – 9:45	Keynote Lecture 4 Prof. Anna Castellano
		9:45 – 10:30	Session 2A Stability and Dynamics (3 presentations)	9:45 – 11:00	Session 3A Civil Engineering (5 presentations)
		10:30 – 10:48	Session 2B Posters (9 short presentations)		
		10:48 – 11:15	Coffee Break	11:00 – 11:30	Coffee Break
		11:15 – 13:00	Session 2C Damage Mechanics (7 presentations)	11:30 – 12:15	Session 3B Aerospace Engineering (3 presentations)
				12:15 – 13:00	Closing Ceremony
13:00 – 14:00	Registration	13:00 – 14:30	Lunch + Group Picture		
14:00 – 14:30	Opening Ceremony				
14:30 – 15:15	Keynote Lecture 1 Prof. Tomasz Sadowski	14:30 – 15:15	Keynote Lecture 3 Prof. Flavio Giannetti		
15:15 – 16:00	Session 1A Mechanics of Materials (3 presentations)	15:15 – 16:15	Session 2D Fluid Dynamics (4 presentations)		
16:00 – 16:30	Coffee Break	16:15 – 16:45	Coffee Break		
16:30 – 17:30	Session 1B Technological Applications (4 presentations)	16:45 – 18:00	Session 2E Hemodynamics (5 presentations)		
17:30 – 18:30	Visit to “Hello World!” Exhibition				
18:30 – 20:30	Final Meeting Canaletto DIACMEC Project (Project Participants)	19:30 – 23:00	Social Dinner		

Detailed Programme

<p style="text-align: center;">Wednesday 20 September 2023 MS Teams: https://tinyurl.com/4xxmxt7t</p>	
14:00 – 14:30	<p>Opening Ceremony Chairmen: P.S. Valvo, S. Samborski</p>
14:30 – 15:15	<p>Keynote Lecture 1 Chairman: S. Samborski</p> <p>Online presentation: T. Sadowski*, D. Pietras, E. Postek, R. Gieleta, M. Chmielewski <i>Numerical modelling and experimental verification of gradual degradation of 2-phase ceramic and metal-ceramic composites under slow and high strain rates</i></p>
15:15 – 15:30	<p>Session 1A – Mechanics of Materials Chairman: S. Samborski</p> <p>Online presentation: T. Sadowski, K. Łosiewicz* <i>Comparison of two-phase ceramic composites fracture toughness obtained from nanoindentation and scratch tests</i></p> <p>M. Budka*, T. Sadowski, P. Golewski <i>Inclusion of a quartz sand protective layer in polymer matrix composites as a strategy to improve environmental resistance and mechanical properties</i></p> <p>Online presentation: W. Zbyszyński*, D. Pietras, T. Sadowski, M. Pingaro <i>Evaluation of the interface layer impact on fracture energy of the 3D printed multi-layered mortar composite</i></p>
15:30 – 15:45	
15:45 – 16:00	
16:00 – 16:30	<p>Coffee Break</p>
16:30 – 16:45	<p>Session 1B – Technological Applications Chairman: R. Rusinek</p> <p>S. Kharchenko*, S. Samborski, Ł. Kłoda, F. Kharchenko <i>Oscillations of perforated plates with volumetric ruffles</i></p> <p>S. Kharchenko, S. Samborski, F. Kharchenko* <i>Factors of technological efficiency and reliability of elastic cleaners of vibrating sieves</i></p> <p>S. Kapyś*, Ł. Garbacz <i>Characteristic of selected properties of PHB modified by nigella oil cake</i></p> <p>Ł. Garbacz*, S. Kapyś <i>Characteristics of modern polymer-mineral composites made from waste materials</i></p>
16:45 – 17:00	
17:00 – 17:15	
17:15 – 17:30	
17:30 – 18:30	<p>Visit to “Hello World!” Exhibition</p> <p>The exhibition – hosted in the basement of the Conference Centre “Le Benedettine” – illustrates the evolution of computation tools from ancient mechanical machines to modern electronic computers.</p> <p>Further information (in Italian): https://www.msc.sma.unipi.it/mostra-hello-world/</p>
18:30 – 20:30	<p>Final Meeting of the “Canaletto” DIACMEC Project</p> <p>Meeting of the Italian and Polish research teams involved in the project titled “Damage Identification in Advanced Composite Materials with Elastic Couplings” (DIACMEC). The DIACMEC Project is funded by the Italian Ministry of Foreign Affairs and International Cooperation (MAECI) and the Polish National Agency for Academic Exchange (NAWA) under the Executive Protocol “Canaletto” for Scientific and Technological Cooperation between Italy and Poland for years 2022–2023.</p>

Thursday 21 September 2023
MS Teams: <https://tinyurl.com/ytpyncrm>

9:00 – 9:45	<p>Keynote Lecture 2 Chairman: R. Paroni</p> <p>J. Warmański* <i>Nonlinear phenomena in multi-stable mechanical systems</i></p>
9:45 – 10:00	<p>Session 2A – Stability and Dynamics Chairman: R. Paroni</p> <p>J. Latański*, J. Dubicka-Nowak, J. Warmański <i>Dynamics of composite beam with embedded active elements with nonlinear constitutive behaviour</i></p>
10:00 – 10:15	<p>M. Picchi Scardaoni* <i>On paving the plane, plates, and origami</i></p>
10:15 – 10:30	<p>M. Coppedè*, R. Paroni, M. Picchi Scardaoni <i>Energy estimates for tape spring devices</i></p>
10:30 – 10:32	<p>Session 2B – Posters Chairman: D. Fanteria</p> <p>Online presentation: M. Szala*, E. Jonda, L. Łatka, M. Walczak <i>Effect of mechanical properties on cavitation erosion resistance of composite coatings manufactured via HVOF</i></p>
10:32 – 10:34	<p>M. Kłonica* <i>Comparative tests of shear strength of adhesive lap joints (316L steel) after thermal shocks</i></p>
10:34 – 10:36	<p>M. Mohaseb Karimlou*, D. Fanteria, P.S. Valvo, S. Samborski, J. Rzeczkowski <i>Mode III interlaminar fracture toughness of advanced composite materials: experimental testing and numerical modelling</i></p>
10:36 – 10:38	<p>K. Falkowicz*, P. Różyło, H. Dębski, S. Samborski <i>Experimental and numerical failure analysis of compressed thin-walled composite plate element with advanced damage models</i></p>
10:38 – 10:40	<p>M. Gasenge*, C. Hoareau, L. Rouleau, J.-F. Deü, P.S. Valvo <i>Experimental characterization and theoretical modeling of damping properties in CFRP composite structures</i></p>
10:40 – 10:42	<p>S. Kharchenko*, S. Samborski, F. Kharchenko, I. Korzec <i>Method for identifying the sizes and shapes of biological objects</i></p>
10:42 – 10:44	<p>D. Kostyła*, P. Węgierek, M. Lech, A. Zielonka <i>Fiber optic sensor for pressure measurement</i></p>
10:44 – 10:46	<p>Online presentation: O. Miroshnyk*, O. Moroz, T. Shchur, A. Chepizhyi, S. Halko <i>Smart grid operation modes with electrical energy storage system</i></p>
10:46 – 10:48	<p>P. Podolak*, P. Jakubczak, J. Bieniaś <i>Numerical simulation of damage propagation in fibre metal laminates subjected to compression after impact</i></p>
10:48 – 11:15	<p>Coffee Break</p>

Thursday 21 September 2023 (cont'd)MS Teams: <https://tinyurl.com/ytpyncrm>

	Session 2C – Damage Mechanics Chairman: D. Fanteria
11:15 – 11:30	S. Samborski*, J. Rzczkowski, J. Skoczylas, J. Paśnik, I. Korzec <i>Damage identification of composites conducted by acoustic emission technique with special emphasis on FFT and wavelet analysis</i>
11:30 – 11:45	I. Korzec*, J. Rzczkowski, S. Samborski <i>Detection of delamination in fiber reinforced polymer composites based on acoustic emission</i>
11:45 – 12:00	J. Rzczkowski*, S. Samborski, D. Fanteria, P.S. Valvo <i>Experimental and numerical study of delamination in composite laminates with bending-twisting elastic couplings</i>
12:00 – 12:15	Online presentation: P. Tsokanas*, L.F.M. da Silva, P. Fiscaro, P.S. Valvo <i>On the conditions for pure-mode fracture</i>
12:15 – 12:30	H. Zarei*, M. Buchignani, S. Giangrandi, M. Paggi <i>Failure analysis and mechanical behavior of coupled laminates for packaging</i>
12:30 – 12:45	C. Santus, L. Romanelli*, T. Grossi, P. Neri <i>Analysis on the determination of Chaboche and Bouc-Wen parameters for a quenched and tempered steel</i>
12:45 – 13:00	M. Drożdżiel-Jurkiewicz*, P. Jakubczak, J. Bieniaś <i>Influence of surface treatment on the adhesive fracture energy of titanium-based laminates using T-peel tests</i>
13:00 – 14:30	Lunch + Group Picture
	Keynote Lecture 3 Chairman: S. Camarri
14:30 – 15:15	F. Giannetti*, J. Sierra-Ausin <i>Feedback mechanism of sound generation in a rounded impinging jet: tonal vs broad-band noise</i>
	Session 2D – Fluid Dynamics Chairman: S. Camarri
15:15 – 15:30	Online presentation: S. Bikić*, L. Bubnjević, A. Gavrilov, R. Al Afif, M. Radojčin <i>Calibration of gas leak detector</i>
15:30 – 15:45	P.G. Ledda*, M. Pezulla, E. Jambon-Puillet, P.T. Brun, F. Gallaire <i>Gravity-driven coatings on three-dimensional curved substrates</i>
15:45 – 16:00	G. Lunghi*, S. Brusco, A. Mariotti, G. Piccardo, M.V. Salvetti <i>The accelerating and decelerating flow around a square cylinder</i>
16:00 – 16:15	E. Luzzati*, A. Mariotti, M.V. Salvetti <i>Development of an actuator line model for variable pitch vertical axis turbines</i>
16:15 – 16:45	Coffee Break

Thursday 21 September 2023 (cont'd)

MS Teams: <https://tinyurl.com/ytpyncrm>

	Session 2E – Hemodynamics Chairwoman: M.V. Salvetti
16:45 – 17:00	S. Garzia*, M.A. Scarpolini, M. Mazzoli, S. Celi <i>Synthetic aided deep learning segmentation of 4D flow image data for CFD simulations</i>
17:00 – 17:15	M. Mazzoli*, M.A. Scarpolini, B.M. Fanni, S. Celi <i>A combined statistical shape model and CFD simulations framework for hemodynamic investigation</i>
17:15 – 17:30	F. Dell’Agnello*, M.A. Scarpolini, K. Capellini, E. Vignali, E. Gasparotti, F. Cademartiri, S. Celi <i>Effects of wall motion on the hemodynamics of the aorta</i>
17:30 – 17:45	J. Singh*, K. Capellini, B.M. Fanni, A. Mariotti, M.V. Salvetti, S. Celi <i>Numerical simulations to predict the onset of atherosclerotic plaques in carotid arteries</i>
17:45 – 18:00	M. Morello*, M.N. Antonuccio, A. Mariotti, M.V. Salvetti, S. Celi <i>CFD simulations of different grades of severity of aortic coarctations: analysis of the flow patterns and effect of outlet boundary conditions</i>

19:30 – 23:00	Social Dinner The Social Dinner will be served on Thursday 21 September 2023 at 19:30 (7:30 pm) at the restaurant “GUI Pizzeria & Bistrot” with address: Lungarno Mediceo, 15, 56127 Pisa (PI). You can find it on Google Maps at the following link: https://maps.app.goo.gl/Ua3Dy1rCvf8gGU8R6
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<p style="text-align: center;">Friday 22 September 2023 MS Teams: https://tinyurl.com/475248kj</p>	
9:00 – 9:45	<p>Keynote Lecture 4 Chairman: L. Rosati</p> <p>A. Castellano* <i>Linear and nonlinear ultrasonic techniques for mechanical characterization of materials</i></p>
9:45 – 10:00	<p>Session 3A – Civil Engineering Chairman: L. Rosati</p> <p>Online presentation: F. Guarracino, I. Mascolo* <i>Static and dynamic buckling of rings: a critical review of classical approaches</i></p>
10:00 – 10:15	<p>A. Castellano, A. Fraddosio*, M.D. Piccioni, T. Kundu <i>Non-linear ultrasonic approach for the characterization of Mode II debonding behavior of FRCM reinforcements for masonry constructions</i></p>
10:15 – 10:30	<p>D. Aita*, M. Bruggi <i>Anti-funicular networks in masonry vaults with stereotomy, friction and strength requirements: a multi-constrained min/max problem validated through Durand-Claye's method</i></p>
10:30 – 10:45	<p>I. Vangelisti*, P. Di Re, J. Ciambella, A. Paolone <i>In situ dynamic measurements and finite element analysis of a composite steel-concrete highway girder bridge</i></p>
10:45 – 11:00	<p>Online presentation: M. Assad, R. Hawileh*, G. Karaki <i>Finite element modelling of RC walls under fire exposure</i></p>
11:00 – 11:30	<p style="text-align: center;">Coffee Break</p>
11:30 – 11:45	<p>Session 3B – Aerospace Engineering Chairman: L. Lazzeri</p> <p>C. Guidi*, M.M. Saravia, F. Paganucci, S. Camarri <i>Integrated data analysis for the experimental assessment of anomalous electron transport in Hall thrusters</i></p>
11:45 – 12:00	<p>L. Leporini*, V. Giannetti, S. Camarri, T. Andreussi, B. Jorns <i>Investigation of the plume mode in hollow cathodes via a 1D fluid model</i></p>
12:00 – 12:15	<p>P. Fiscaro*, A. Pasini, P.S. Valvo <i>Deployable cable nets for active removal of derelict rocket bodies</i></p>
12:15 – 13:00	<p>Closing Ceremony Chairmen: P.S. Valvo, S. Samborski</p> <p>During the Closing Ceremony, the names of the Best Papers and Best Poster Awards winners will be announced.</p>