YIC23

ECCOMAS
7th YOUNG
INVESTIGATORS
CONFERENCE

FEUP
19—21
JUNE
2023

CONFERENCE PROGRAM

U.PORTO
FEUP FACULDADE DE ENGENHARIA
UNIVERSIDADE DO PORTO

ECCOMAS

CONFERENCE

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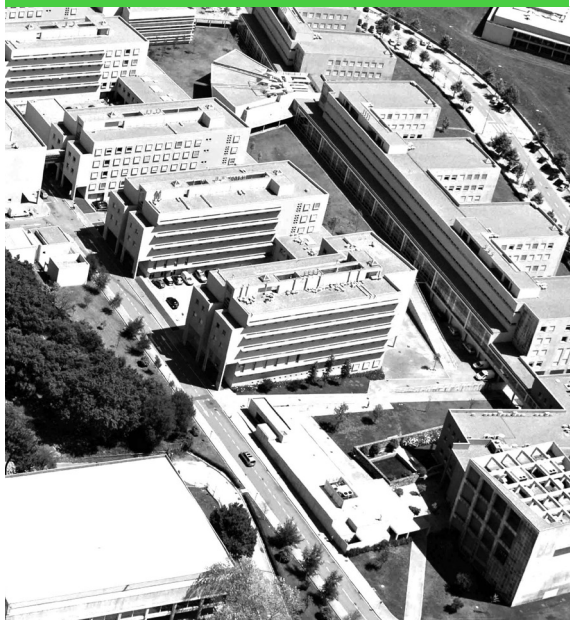
FEUP Faculty of Engineering of the University of Porto

RUA DR. ROBERTO FRIAS, S/N
4200-465 PORTO

GOOGLE MAPS



CONFERENCE DINNER

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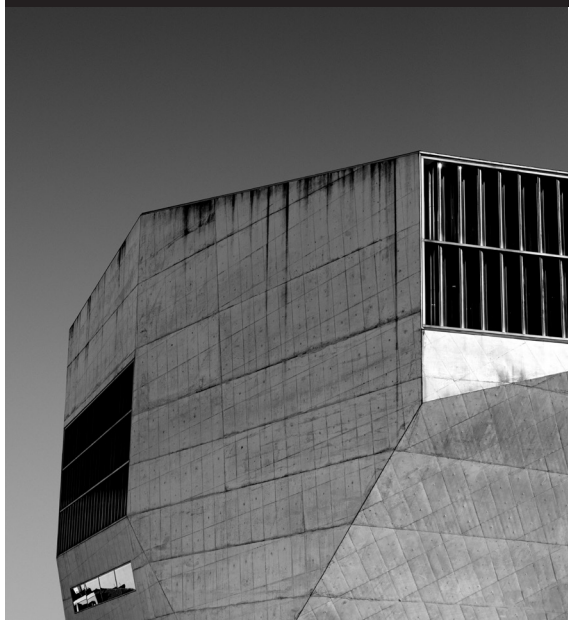
CASA DA MÚSICA

AV DA BOAVISTA, 604-610
4149-071 PORTO

GOOGLE MAPS



PUB CRAWL

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PRAÇA DOS POVEIROS

(subjected to registration)

PRAÇA DOS POVEIROS
4000-222 PORTO

GOOGLE MAPS

The goal of the ECCOMAS Young Investigators Conferences is to periodically bring together young researchers and students working in broad parts of computational science and engineering and provide them with a unique forum for knowledge exchange and initiation of future scientific collaboration.
The ECCOMAS YIC2023 conference includes a limited number of invited keynote lectures by senior researchers, contributed papers from both academia and/or industry and oral presentations from young researchers (PhD and post-graduate students, post-docs, etc.) from all European countries as well as from other countries around the world. The conference is organised and run by a team of young investigators and is supported by a senior scientists committee.

Wireless network
A wireless network is available in the conference buildings. All participants receive a personal user-id, password, and instructions to connect to the network upon registration.

To access to the network from a computer running Windows:
· Click on the network connections icon that is available on the inferior right side of the screen.
· Select the “feup.conferencias” options and press “Connect”;
· Next, open an internet browser (Microsoft Edge, Mozilla, Chrome, etc.). And if a message appears on the screen, you will have to select the “Proceed to website” option;
· Select “Conferencias” option;
· Click on “login” and enter the supplied credentials:

Username: **yic23**
Password: **yic23@feup**

Mobile phones
All conferences participants are kindly requested to switch the sound of their mobile phone during the presentations.

Coffee and Lunch breaks
Coffee and Lunch breaks take place during the hours mentioned in the conference program. Locations of the coffee and lunch breaks are indicated on the venue plan of FEUP.

Welcome Reception
On Monday 19 June 2023 at 18:00, a Welcome Reception is organised at FEUP at the same place where coffee and lunch breaks are organised. Please check the venue plan of FEUP.

Conference Dinner
On Tuesday 20 June 2023 at 19:00, the Conference Dinner takes place at “Casa da Música”, in Porto. For us, sustainability and ecology are important and so we suggest the metro service to get there, which has two stations near FEUP: “IPO” and “Pólo Universitário”. The participants should head towards “Santo Ovídio” on line D, change to line A, B, C or E at “Trindade” and take a new metro towards “Casa da Música”. Each participant must have a validated ticket and, when changing line, must revalidate the ticket. For more detailed information, please check the city map.

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Luís L. Ferrás, University of Porto, Portugal
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Maria Teresa de Risi, University Frederico II of Naples, Italy
Massimiliano Cremonesi, Politecnico di Milano, Italy
Miguel Bessa, TU Delft, The Netherlands
Mohammed Hussein, University of Qatar, Qatar
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Szymon Grès, Aarhus University, Denmark
Varvara Kouznetsova, Eindhoven University of Technology, The Netherlands
Vladislav A. Yastrebov, MINES ParisTech, France

PLENARY LECTURES

P01: Development of Space Rider's parafoil actuation winch
Spin.Works, Portugal

P02: New Frontiers in Earthquake Risk Assessment: How to Avoid a Disaster!
Vitor Silva, University of Aveiro, Portugal

P03: MoFEM: unlocking advanced capabilities with a new paradigm for a finite element library design
Andrei Shvarts, University of Glasgow, Scotland

SEMI-PLENARY Lectures by the ECCOMAS PhD Award winners:

Dr. Alice Cortinovis (Switzerland), nominated by Swiccomas, for the thesis "Fast deterministic and randomized algorithms for low-rank approximation, matrix functions, and trace estimation".
Dr. Tim Hageman (UK) nominated by UKACM, for the thesis "Fracture scale fluid flow models for the simulation of poroelasticity

MINISYMPOSIA

COMPUTATIONAL SOLIDS AND STRUCTURAL MECHANICS

CSSM00: General Symposium in Computational Solids And Structural Mechanics

CSSM02: Advanced numerical approaches applied to the analysis of railway infrastructures

CSSM03: Recent developments of reduced order modelling techniques in nonlinear and/or high-dimensional computational mechanics

CSSM04: Computational modeling of masonry structures: innovative approaches and open challenges

CSSM06: Computational treatment of polymer fracture across the scales

CSSM07: Uncertainty Quantification in Biomechanics

CSSM08: Diffuse-interface approaches for material modeling

CSSM10: Advanced numerical strategies and inverse methodologies for material characterization

CSSM12: Modelling approaches for continua with advanced microstructure

CSSM13: Wave propagation and structural dynamics

CSSM14: Multifield and multiscale computational modelling of complex biomechanical systems

CSSM16: Damage and Fracture of Composite Materials and Structures in Transportation Industry

CSSM17: Meshless Methods for Elastodynamic Problems

CSSM19: Shape Memory Alloy Phenomena: Experimental and Model Based Investigations

CSSM20: Multiscale Modeling, Homogenization and Microstructures in Solid Mechanics

CSSM21: Efficient modeling of complex materials across the scales

CSSM23: Reduced Order Modelling with Applications to Inverse Problems and Uncertainty Quantification

CSSM24: Contact Mechanics and Tribology

CSSM25: Challenges on the numerical simulation from small to large-scale Civil Engineering structures

COMPUTATIONAL FLUID MECHANICS

CFM00: General Symposium in Computational Fluid Mechanics

COMPUTATIONAL APPLIED MATHEMATICS

CAM00: General Symposium in Computational Applied Mathematics

CAM01: Uncertainty quantification of differential equations with random parameters: methods and applications

CAM02: Scientific Machine Learning techniques for complex engineering systems

CAM03: Monolithic and partitioned numerical models for coupled problems in biological applications

CAM04: Reproductive Soft Tissues Biomechanics

CAM05: Applied mathematical models for biological systems

CAM06: Recent Advances on modelling and simulations of Collective dynamics

CAM07: Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications

CAM08: Advancements in finite element approaches for mixed and multi-physics problems

CAM09: Emerging Numerical Techniques in Inverse Problems and Data Assimilation

SCIENTIFIC COMPUTING

SC02: Evolutionary dynamics in cancer growth and therapies: a multidisciplinary approach

SC03: Structural Design Through Computational And Optimization Methods

INDUSTRIAL APPLICATIONS AND CHALLENGES

IAC00: General Symposium in Industrial Applications and Challenges

IAC01: Water Smart Systems: Computational Engineering Applications

IAC02: Numerical methods for Additive Manufacturing

IAC05: Design optimization in computational mechanics

Opening session

Plenary Session I

Coffee break

Parallel Session I

Lunch

Parallel Session II

Coffee break

Parallel Session II

Welcome Reception

Parallel Session IV + PhD Olympiads

Coffee break

Parallel Session V + PhD Olympiads

Lunch

Parallel Session VI + PhD Olympiads

Coffee break

Plenary Session II

Career Forum

Conference Banquet

Parallel Session VII + PhD Olympiads

Coffee break

Parallel Session VIII + PhD Olympiads

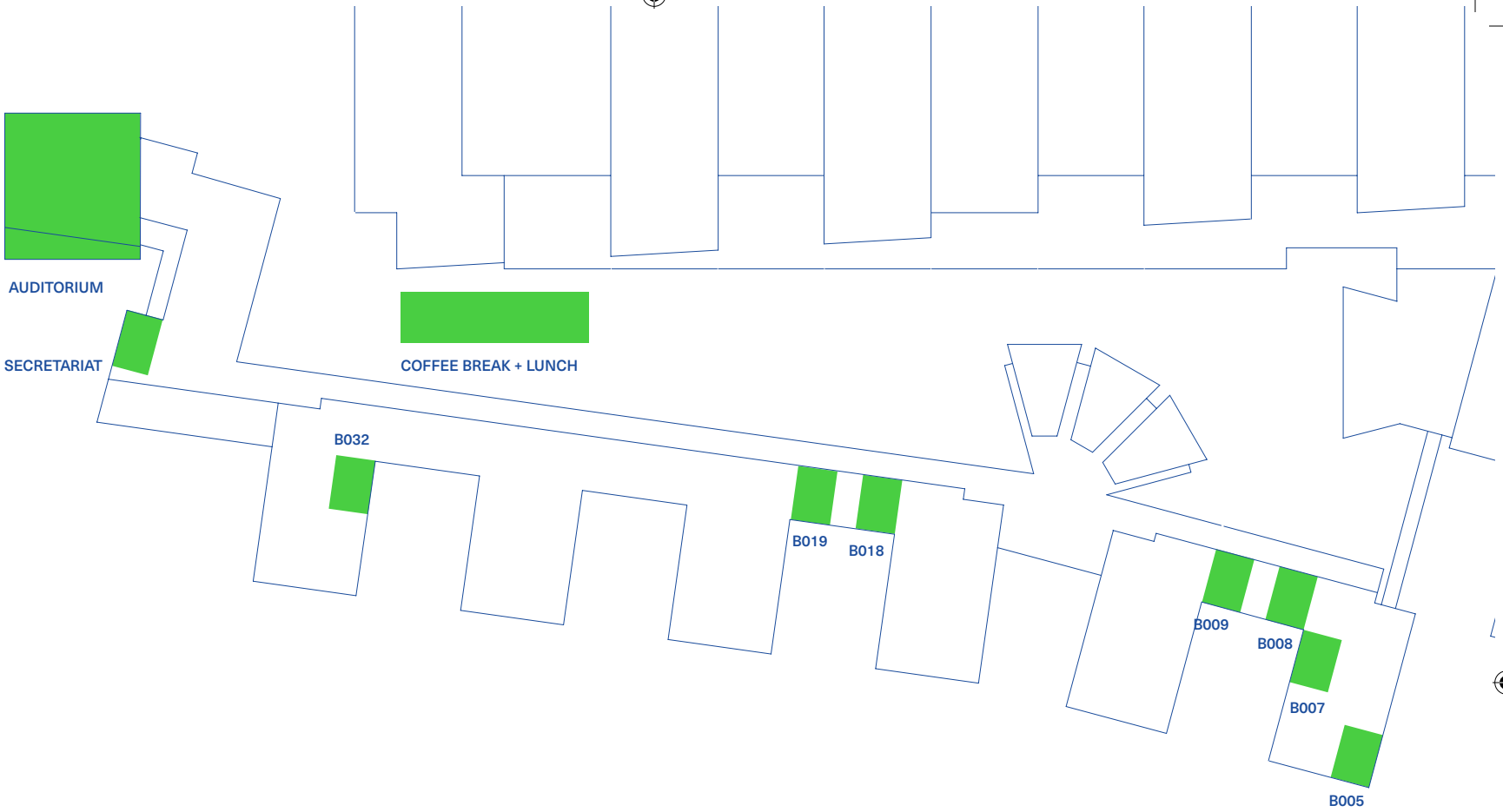
Lunch

Plenary Session II

Round Table

Closing session

Pub Crawl



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	AUDITORIUM	01 B008	02 B005	03 B009
09:00	**Opening session**			
09:15				
09:30	**Plenary Session: "Development of Space Rider's parafoil actuation winch": Spin.Works** Chair: Carolina Furtado			
09:45				
10:00				
10:15				
10:30	*Coffee Break*			
10:45				
11:00		CAM03 – Monolithic and partitioned numerical models for coupled problems in biological applications (I) *Chair: Ivan Fumagalli*	CAM02 – Scientific Machine Learning techniques for complex engineering systems (I) *Chair: Beatriz Moya, Quercus Hernández*	CAM08 – Advancements in finite element approaches for mixed and multi-physics problems *Chair: Ignatios Athanasiadis*
11:15				
11:30				
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12:00				
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12:30	*Lunch*			
14:00		CAM03 – Monolithic and partitioned numerical models for coupled problems in biological applications (II) *Chair: Ngoc Mai Monica Huynh*	CAM02 – Scientific Machine Learning techniques for complex engineering systems (II) *Chair: Alberto Badías, Quercus Hernández*	CAM01 – Uncertainty quantification of differential equations with random parameters: methods and applications (I) *Chair: Bjoern Sprungk*
14:15				
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15:30	*Coffee Break*			
15:45				
16:00		CAM07 – Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications (I) *Chair: Anna Ranno*	CAM02 – Scientific Machine Learning techniques for complex engineering systems (III) *Chair: Beatriz Moya, Carlos Bermejo*	CAM01 – Uncertainty quantification of differential equations with random parameters: methods and applications (II) *Chair: Chiara Piazzola*
16:15				
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18:00	**Welcome reception**			
20:00				

04 B018	05 B007	06 B032	07 B019
CSSM10 – Advanced numerical strategies and inverse methodologies for material characterization *Chair: João Henriques, Mafalda Gonçalves*	CSSM14 – Multifield and multiscale computational modelling of complex biomechanical systems (I) *Chair: Lorenzo Zoboli*	CSSM07 – Uncertainty Quantification in Biomechanics *Chair: Jude Hussain*	IAC00 – General Symposium in Industrial Applications and Challenges *Chair: André Furtado*
CSSM20 – Multiscale Modeling, Homogenization and Microstructures in Solid Mechanics (I) *Chair: Sonja Hellebrand*	CSSM14 – Multifield and multiscale computational modelling of complex biomechanical systems (II) *Chair: Lorenzo Zoboli*	CSSM08 – Diffuse-interface approaches for material modeling *Chair: Mohsen Rezaee-Hajidehi, Laurent Guin*	IAC01 – Water Smart Systems: Computational Engineering Applications *Chair: Ana Luísa Reis, Marlene Brás*
CSSM20 – Multiscale Modeling, Homogenization and Microstructures in Solid Mechanics (II) *Chair: Sonja Hellebrand*	CSSM00 – General Symposium in Computational Solids And Structural Mechanics *Chair: Sérgio Pereira*	CSSM02 – Advanced numerical approaches applied to the analysis of railway infrastructures *Chair: Cláudio Horas, Paulo Soares, João Lázaro*	SC02 – Evolutionary dynamics in cancer growth and therapies: a multidisciplinary approach *Chair: Giulia Chiari*

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ROOM	01 B008	02 B005	03 B009
	CAM03 – Monolithic and partitioned numerical models for coupled problems in biological applications (I) Chair: Ivan Fumagalli	**CAM02 – Scientific Machine Learning techniques for complex engineering systems (I)** Chair: Beatriz Moya, Quercus Hernández	**CAM08 – Advancements in finite element approaches for mixed and multi-physics problems** Chair: Ignatios Athanasiadis
11:00	**CAM03_01: Mathematical and computational modeling of the electro-mechano-fluid activity of the heart** *Michele Bucelli, Alberto Zingaro, Pasquale Claudio Africa, Ivan Fumagalli, Luca Dede', Alfio Quarteroni*	**CAM02_01: Response-surface-based Bayesian inversion for engineering applications** *Chiara Piazzola, Lorenzo Tamellini*	**CAM08_01: Consistent fractional-step methods for incompressible viscoelastic flows** *Douglas Ramalho Queiroz Pacheco, Ernesto Castillo*
11:15	**CAM03_02: Finite element discretization of fluid-structure interaction problems with fictitious domain approach** *Fabio Credali, Daniele Boffi, Lucia Gastaldi*	**CAM02_02: Explicable least-squares Petrov-Galerkin nonlinear manifold method with hyper-reduction** *Francesco Romor, Giovanni Stabile, Gianluigi Rozza*	**CAM08_02: Multiphysical simulation of flow-related impedance changes in arteries** *Vahid Badeli, Alireza Jafarinia, Alice Reinbacher-Köstinger, Thomas Hochrainer, Manfred Kaltenbacher*
11:30	**CAM03_03: fluid-structure interaction of slender bodies immersed in three-dimensional flows: a new approach for mathematical modelling and numerical approximation** *Fabien Lespagnol, Muriel Boulakia, Paolo Zunino, Céline Grandmont, Miguel-Angel Férnandez*	**CAM02_03: Sparse Data-Driven Quadrature Rules via l^p-Quasi-Norm Minimization** *Mattia*	**CAM08_03: A finite element approach to simulating columnar solidification for the prediction of macrosegregation in binary alloys** *Richard W. Olley, Ignatios Athanasiadis, Andrei G. Shvarts, Łukasz Kaczmarczyk, Chris J. Pearce*
11:45	**CAM03_04: Multiphysics and multiscale modeling of hemodynamics in arteries with in-stent restenosis** *Anna Ranno, Kiran Manjunatha, Felix Vogt, Stefanie Reese, Marek Behr*	**CAM02_04: Non-intrusive data-driven reduced-order modeling for time-dependent parametrized problems** *Junming Duan*	**CAM08_04: A finite element model updating approach for the characterisation of piezoelectric materials** *Ignatios Athanasiadis, Andrei Shvarts, Sakineh Fotouhi, Lukasz Kaczmarcz, Sandy Cohran, Chris Pearce*
12:00	**CAM03_05: Finite Element Simulation of the Human Left Ventricle with Implanted Left Ventricular Assist Device: From MRI Images to a Moving Computational Domain** *Maximilian Schuster, Norbert Hosters, Marek Behr*	**CAM02_05: Incorporating geometrical domain information into Gaussian Processes and Neural Networks for modelling physical fields** *Mariella Kast, Mengwu Guo, Jan Hesthaven,*	**CAM08_05: A two-scale thermo-hydro-mechanical model for supra-glacial lake driven fracture through ice-sheets** *Tim Hageman, Ravindra Duddu, Emilio Martinez-Paneda*
12:15	**CAM03_06: A comprehensive multiphysics mathematical model for cardiac perfusion** *Alberto Zingaro, Christian Vergara, Luca Dede', Francesco Regazzoni, Alfio Quarteroni*	**CAM02_06: Graph convolutional autoencoder architecture for model order reduction of parametrized PDEs** *Federico Pichi, Beatriz Moya, Jan S. Hesthaven,*	
12:30			

04 B018	05 B007	06 B032	07 B019	
CSSM10 – Advanced numerical strategies and inverse methodologies for material characterization Chair: João Henriques, Mafalda Gonçalves	**CSSM14 – Multifield and multiscale computational modelling of complex biomechanical systems (I)** Chair: Lorenzo Zoboli	**CSSM07 – Uncertainty Quantification in Biomechanics** Chair: Jude Hussain	**IAC00 – General Symposium in Industrial Applications and Challenges** Chair: André Furtado	
CSSM10_01: Constitutive model selection for sheet metal forming based on the analysis of identifiability of the material parameters *Mariana Conde, Sam Coppieters, António Gil de Andrade-Campos*	**CSSM14_01: Bone fracture risk prediction in silico: digital twins in healthcare** *Alessandra Aldieri, Chiara Garavelli , Antonino Amedeo La Mattina, Marco Palanca, Marco Viceconti*	**CSSM07_01: Personalized adaptation of computational bone remodelling models from medical images** *Enrique Nadal, Jorge Gutiérrez-Gil, Carlos Manuel Atienza, Manuel Tur, Juan José Ródenas*	**IAC00_02: Higher Order 3D-Shell Elements in Sheet Metal Forming Simulations: A Case Study** *Maximilian Schilling, Tobias Willmann, Manfred Bischoff*	11:00
CSSM10_02: The influence of symmetry boundary conditions in the design of heterogeneous mechanical tests using topology optimization *Mafalda Gonçalves, Sandrine Thuillier, António Andrade-Campos*	**CSSM14_02: Experimental calibration of an in silico mechano-biological model of bone healing inflammatory response with the support of genetic algorithm** *Edoardo Borgiani, Gabriele Nasello, Liesbet Geris,*	**CSSM07_02: Image-derived biomechanical properties of aortic walls in Marfan syndrome** *Claire Rosnel*	**IAC00_04: Application of LCA modelling methods as a tool to identify hotspots in the development of metal recycling processes** *Katarzyna Klejnowska, Magdalena Bogacka*	11:15
CSSM10_04: On the inverse calibration of sheet metal anisotropic plasticity constitutive models using the Arcan test and full-field measurements *João Henriques, António Andrade-Campos, José Xavier*	**CSSM14_03: An innovative computational workflow for the design of self-expanding femoral artery stents using topology optimization** *Dario Carbonaro, Francesco Mezzadri, Simona Perotto, Nicola Ferro, Giuseppe De Nisco, Diego Gallo, Claudio Chiastra, Alberto Luigi Audenino*	**CSSM07_03: Global sensitivity analysis of complex biomechanical models** *Sebastian Brandstaeter, Barbara Wirthl, Jonas Nitzler, Wolfgang A. Wall*	**IAC00_06: Application of process simulation software to design of hydrometallurgical process of germanium recovery** *Michał Drzazga*	11:30
CSSM10_05: identification of through-thickness work hardening variation of thick high strength steel using the virtual field method *Alessandro Lambrughi, Steven Cooreman, Sandrine Thuillier, Sam Coppieters*	**CSSM14_04: Multiphysics modelling of Vasodilation in Arteries** *Sauty B., Morin C., Avril S., Marino M.*	**CSSM07_04: A general Bayesian framework for calibrating constitutive models** *Maximilian P. Wollner, Michele Terzano, Malte Rolf-Pissarczyk, Gerhard A. Holzapfel*	**IAC00_07: Investigations on the Detection of Structural Failure Using the Redundancy Distribution** *Tamara Prokosch, Jonas Stiefelmaier, Manfred Bischoff*	11:45
CSSM10_06: On the constraints and consistency in implicit elastoplastic constitutive modelling using ANNs and indirect training *Rúben Lourenço, Elías Cueto, Pétia Georgieva, A. Andrade-Campos*	**CSSM14_05: An electromechanical heart-torso coupled model for the simulation of the ECG** *Elena Zappon*	**CSSM07_05: Development of representative artery models for stent fatigue testing** *Jude Mohamed Osman Hussain, Andrew McBride, Ankush Aggarwal, Robbie Brodie, Craig Maclean*	**IAC00_01: IGA-based topology optimization of compliant mechanisms** *Diego Villalba Rama, Mafalda Gonçalves, João Alexandre Dias de Oliveira, Antonio Gil Andrade-Campos, Robertt Valente*	12:00
CSSM10_03: On the ability of mechanical tests to calibrate anisotropic and rate dependent plasticity models *Thibault BARRET, Miguel Oliveira, Antonio Andrade-Campos, Sandrine Thuillier*	**CSSM14_06: Phase-field modeling of brittle fracture in heterogeneous bars** *Francesco Vicentini, Pietro Carrara, Laura De Lorenzis*			12:15
				12:30

DAY 01

ROOM	01 B008	02 B005	03 B009
	CAM03 – Monolithic and partitioned numerical models for coupled problems in biological applications (II) Chair: Ngoc Mai Monica Huynh	**CAM02 – Scientific Machine Learning techniques for complex engineering systems (II)** Chair: Alberto Badías, Quercus Hernández	**CAM01 – Uncertainty quantification of differential equations with random parameters: methods and applications (I)** Chair: Chiara Piazzola
14:00	**CAM03_07: Anderson acceleration for robust and scalable quasi-Newton methods** *Nicolás A. Barnafi*	**CAM02_07: Physics informed Generative Adversarial Networks for interactive structural shell design** *Beatriz Moya , Francisco Chinesta, Elías Cueto*	**CAM01_01: How parametric uncertainty affects tipping points of the Atlantic meridional overturning circulation** *Kerstin Lux, Peter Ashwin, Richard Wood, Christian Kuehn*
14:15	**CAM03_08: Boundary integral formulation and numerical experiments on the Cell-by-Cell model for electrophysiology** *Giacomo Rosilho de Souza, Simone Pezzuto, Rolf Krause*	**CAM02_08: Physics-augmented neural networks meet hyperelasticity: A guide how to enforce general physical requirements** *Lennart Linden, Karl Kalina, Jörg Brummund, Dominik Klein, Oliver Weeger, Markus Kästner*	**CAM01_02: A bi-fidelity collocation approach for kinetic epidemic models with random inputs** *Giulia Bertaglia, Liu Liu, Lorenzo Pareschi, Xueyu Zhu*
14:30	**CAM03_09: Scalable BDDC preconditioners for hybrid DG discretizations of cardiac microscopic models** *Ngoc Mai Monica Huynh*	**CAM02_09: Performing sensitivity analysis with physics-informed neural networks** *John M. Hanna, José V. Aguado, Sebastien Comas-Cardona, Ramzi Askri, Domenico Borzacchiello*	**CAM01_03: Uncertainty quantification and predictability analysis of the Elder problem** *Roman Khotyachuk, Klaus Johannsen*
14:45	**CAM03_10: Monolythic coupling of a viscoelastic surface and a viscous fluid** *Eloy Merlijn de Kinkelder, Sebastian Aland*	**CAM02_12: Machine Learning for Discovery and Solution of Partial Differential Equations** *Pin Zhang, Zhen-Yu Yin, Brian Sheil*	**CAM01_04: Dynamical Low Rank Approximations: SUPG stabilisation and time-stepping schemes** *Thomas Trigo Trindade, Fabio Nobile, Eva Vidličková, Yoshihito Kazashi*
15:00	**CAM03_11: Neural Networks as spectral approximators in evolution problems involving several time-scales. Application to glioblastoma progression.** *Jacobo Ayensa-Jiménez, Marina Pérez-Aliacar, Manuel Doblaré*	**CAM02_10: Scalar Field Prediction on Structural Analysis using Graph Neural Networks** *Ribeiro, J.A., Ribeiro, B.A., Ahmed, F., Tavares, S.M.O, Penedones, H., Sarmento, L., Belinha, J.*	**CAM01_05: Shape uncertainty quantification with localized basis functions** *Wouter van Harten, Laura Scarabosio*
15:15		**CAM02_11: SimuStruct: Simulated Structural Plate with Holes Dataset for Machine Learning Application** *Ribeiro, B.A., Ribeiro, J.A., Ahmed, F., Tavares, S.M.O, Penedones, H., Sarmento, L., Belinha, J.*	**CAM01_06: Hierarchical Sampling Techniques and Goal-Oriented Adaptive Finite Element for Elliptic PDE with Lognormal Coefficients** *Joakim Beck, Yang Liu, Erik von Schwerin, Raul Tempone*
15:30			

04 B018	05 B007	06 B032	07 B019	
CSSM20 – Multiscale Modeling, Homogenization and Microstructures in Solid Mechanics (I) Chair: Sonja Hellebrand	**CSSM14 – Multifield and multiscale computational modelling of complex biomechanical systems (II)** Chair: Lorenzo Zoboli	**CSSM08 – Diffuse-interface approaches for material modeling** Chair: Mohsen Rezaee-Hajidehi, Laurent Guin	**IAC01 – Water Smart Systems: Computational Engineering Applications** Chair: Ana Luísa Reis, Marlene Brás	
CSSM20_01: A Multi-Scale Framework for the Modelling of Intergranular Fracture in Polycrystalline Materials under Slip Plasticity and Martensitic Transformation *Miguel Vieira de Carvalho, Igor André Rodrigues Lopes, Francisco Manuel Andrade Pires*	**CSSM14_07: A microstructure-informed model of the white matter of human brain** *Michele Terzano, Saeideh Saeidi, Manuel P. Kainz, Misael Dalbosco, Gerhard A. Holzapfel*	**CSSM08_01: Analysis of Lueders bands and Portevin Le-Chatelier effect using experimental and computational data** *Marzena Mucha, Lars Rose, Balbina Wcisło, ANdreas Menzel, Jerzy Pamin*	**IAC01_02: Cost Reduction of Water Supply Systems Through Optimization Methodologies: A Comparative Study of Pump Scheduling Problem Formulations** *Marlene Brás, Ana Moura, António Andrade-Campos*	14:00
CSSM20_02: A second-order computational homogenisation approach for investigating porous materials *Wanderson F. dos Santos, Igor A. Rodrigues Lopes, Sergio P. B. Proença, Francisco M. Andrade Pires*	**CSSM14_08: Process design in extrusion-based bioprinting** *Francesco Chirianni, Giuseppe Vairo, Michele Marino*	**CSSM08_02: Homogenization of phase-field evolution laws based on unequally and nonlinearly weighted averaging operators** *Vincent von Oertzen, Bjoern Kiefer*	**IAC01_03: Energy storage using a hydraulic system a pump storage computacional model** *Flávio Silva, António Andrade-Campos*	14:15
CSSM20_03: Virtual elements in microstructural crystalline environments *Christoph Böhm*	**CSSM14_09: Constitutive modelling of hydrogels for tissue-developing bio-printing applications** *Lorenzo Zoboli, Pierfrancesco Gaziano, Alessio Gizzi, Giuseppe Vairo, Michele Marino*	**CSSM08_03: Twinning and plastic slip: a coupled modeling approach based on displacive transformation** *Mohsen Rezaee-Hajidehi, Przemysław Sadowski, Stanisław Stupkiewicz*	**IAC01_04: A Mixed-Integer Nonlinear Programming Model for Integrated Management of Resources in Water Supply Systems** *Ana L. Reis, A. Andrade-Campos, Carlos Henggeler Antunes, Marta A. R. Lopes*	14:30
CSSM20_04: Descriptor-based microstructure characterization and reconstruction – fixed inclusion shapes vs. free voxel formulation *Paul Seibert, Markus Husert, Alexander Raßloff, Karl Kalina, Markus Kästner*	**CSSM14_10: Phase-field modelling of cell motility within hydrogel scaffolds** *Pierfrancesco Gaziano, Michele Marino*	**CSSM08_04: A phase-field model for ferroelectrics with nonlinear kinetics and electro-mechanical couplings** *Laurent Guin, Hsu-Cheng Cheng, Dennis M. Kochmann*	**IAC01_05: On the use of Machine Learning models for prediction and optimization of water supply networks.** *Sara Mota, António Andrade-Campos*	14:45
CSSM20_05: Refined modeling of the interaction of adjacent grains inside a Tungsten polycrystal *Guillaume Hanon, Laurent Delannay*	**CSSM14_11: A multiscale model of aneurysm development in the Marfan mouse aorta** *Lauranne Maes, Nele Famaey*	**CSSM08_05: A non-isothermal phase-field model based on the grand entropy** *Ross Williams, Simon Bray, Andrew McBride*	**IAC01_06: Smart predictive digital twin in multiservice architecture for water supply systems** *Tiago C. Pereira, Ana L. Reis, António Andrade-Campos*	15:00
CSSM20_06: Composite Boxels with imperfect Interfaces (ComBI) with FFT-based solvers *Sanath Keshav, Felix Fritzen, Matthias Kabel*	**CAM00_05: Real-time four-chamber heart electromechanical simulations enable effective clinical translation of computational cardiology** *Matteo Salvador, Strocchi Marina, Regazzoni Francesco, Dede' Luca, Niederer Steven, Quarteroni Alfio*			15:15
				15:30

ROOM	01 B008	02 B005	03 B009
	CAM07 – Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications (I) Chair: Anna Ranno	**CAM02 – Scientific Machine Learning techniques for complex engineering systems (III)** Chair: Beatriz Moya, Carlos Bermejo	**CAM01 – Uncertainty quantification of differential equations with random parameters: methods and applications (II)** Chair: Chiara Piazzola
16:00	**CAM07_01: Computational modeling of pharmacokinetics and pharmacodynamics during in stent restenosis following drug-eluting stent implantation** *Kiran Manjunatha, Anna Ranno, Marek Behr, Felix Vogt, Stefanie Reese*	**CAM02_14: Reduced order models for time-dependent problems using the Laplace transform"** *Ricardo Reyes, Fernando Henriquez, Jan Hestahaven*	**CAM01_07: Convergence of adaptive empirical stochastic Galerkin FEM** *Martin Eigel, Nando Farchmin, Philipp Trunschke*
16:15	**CAM07_02: Domain Size Impact on the Simulation of Intracranial Aneurysm Haemodynamics** *Pablo Jeken Rico, Aurele Goetz, Aurelien Larcher, Elie Hachem*	**CAM02_15: A Thermodynamics-Informed Deep Learning Framework for Turbulent Flow Estimation** *Carlos Bermejo Barbanoj, Alberto Badías Herbera, David González Ibáñez, Francisco Chinesta Soria, Elías Cueto Prendes*	**CAM01_08: Uncertainty quantification for diffusion problems using the data-driven approach** *Adriana Kuliková, Dr Andrei G. Shvarts, Dr Łukasz Kaczmarczyk, Prof Chris J. Pearce*
16:30	**CAM07_03: The potential benefits of modelling arterial compliance for intracranial aneurysm risk assessment** *Aurèle Goetz, Pablo Jeken-Rico, Ramy Nemer, Aurélien Larcher, Elie Hachem*	**CAM02_16: AI-enhanced interactive simulators for virtual reality applications** *Quercus Hernández, Alberto Badías, Francisco Chinesta, Elías Cueto*	**CAM01_09: Efficient solution of the covariance eigenvalue problem for stationary random fields** *Chao Zhang, Oliver Ernst*
16:45	**CAM07_04: Development of a reduced-order model for understanding FL thrombosis in type B aortic dissection using a global sensitivity analysis and polynomial chaos expansion** *Gian Marco Melito, Alireza Jafarinia, Thomas Stephan Muller, Malte Rolf-Pissarczyk, Gerhard Holzapfel, Gunter Brenn, Thomas Hochrainer , Katrin Ellermann*	**CAM02_17: A consistent thermodynamic data driven method for dissipative thermomechanics** *David Portillo Garcia*	**CAM01_10: Bayesian inverse problems for hyperbolic conservation laws** *Duc-Lam Duong, Masoumeh Dashti*
17:00	**CAM07_05: Chronic type B aortic dissection remodeling assessed with patient-specific fluid-structure interaction models** *Malte Rolf-Pissarczyk, Kathrin Bäumler, Richard Schussnig, Thomas-Peter Fries, Dominik Fleischmann, Alison L. Marsden, Gerhard A. Holzapfel*	**CAM02_18: Towards the simulation of complex systems: Port-Metriplectic Neural Networks** *Alberto Badías, Quercus Hernández, Francisco Chinesta, Elías Cueto*	**CAM01_11: Subsampling in Ensemble Kalman Inversion** *Matei Hanu, Claudia Schillings, Jonas Latz*
17:15	**CAM07_06: Accelerated Dirichlet-Robin fluid-structure interaction in patient-specific hemodynamics** *Richard Schussnig, Malte Rolf-Pissarczyk, Kathrin Bäumler, Gerhard A. Holzapfel, Thomas-Peter Fries, Martin Kronbichler*	**CAM02_19: Polyconvex hyperelasticity and electro-elasticity with physics-augmented neural networks** *Dominik K. Klein, Rogelio Ortigosa, Jesús Martínez-Frutos, Oliver Weeger*	**CAM01_12: Learning the noise parameters of Bayesian inverse problems using normalizing flows** *Paul Hagemann, Johannes Hertrich, Gabriele Steidl*
17:30	**CAM07_07: Image-based computational fluid dynamics of mitral regurgitation in the left heart** *Lorenzo Bennati, Vincenzo Giambruno, Francesca Renzi, Giovanni Puppini, Giovanni Battista Luciani, Christian Vergara*		**CAM01_13: Langevin dynamics: Enrichment and Homotopy** *Robert Gruhlke, Martin Eigel, David Sommer, Claudia Schillings*
17:45	**CAM07_13: Modeling of stented arteries using mixed-dimensional interaction** *Ivo Steinbrecher, Nora Hagmeyer, Alexander Popp*		**CAM01_14: Dimension-independent Markov chain Monte Carlo on the sphere** *Bjoern Sprungk*

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CSSM20 – Multiscale Modeling, Homogenization and Microstructures in Solid Mechanics (II) Chair: Sonja Hellebrand	**CSSM00 – General Symposium in Computational Solids And Structural Mechanics** Chair: Sérgio Pereira	**CSSM02 – Advanced numerical approaches applied to the analysis of railway infrastructures** Chair: Cláudio Horas, Paulo Soares, João Lázaro	**SC02 – Evolutionary dynamics in cancer growth and therapies: a multidisciplinary approach** Chair: Giulia Chiari	
CSSM20_07: Inversely identifying material parameters for a multiscale framework to model creep deformation using Deep Material Networks *Argha Protim Dey, Fabian Welschinger, Matti Schneider, Sebastian Gajek, Thomas Boehlke*	**CSSM00_02: Constitutive Modelling and Validation of TRIP Steels** *R. P. Cardoso Coelho, M. Vieira de Carvalho, F. M. Andrade Pires*	**CSSM02_01: Modal identication of a portal frame railway bridge** *Josep Chordà Monsonís, Juan Carlos Sánchez Quesada, Antonio Romero, Emma Moliner, Pedro Galvín, María de los Dolores Martínez Rodrigo*	**SC02_01: Modeling the Role of the Stem Cell Niche in Blood Cancer Progression** *Thomas Stiehl*	16:00
CSSM20_08: FFT-based homogenization of non-local damage and size effects in composite materials *Marco Magri, Javier Segurado*	**CSSM00_05: Modeling technique for petiole-lamina connections of peltate leaves** *Stephan Ritzert, Hagen Holthusen, Domen Macek, Annabell Rjosk, Thea Lautenschläger, Christoph Neinhuis, Stefanie Reese*	**CSSM02_02: Railway induced vibrations in skewed double-track girder bridges** *Juan Carlos Sánchez Quesada, Antonio Romero Ordóñez, Pedro Galvín Barrera, Emmanuela Moliner Cabedo, María Dolores Martínez Rodrigo*	**SC02_02: Phenotypic plasticity as a vehicle for tumour progression: joint insights from experimental data and mathematical models.** *Carmen Ortega-Sabater*	16:15
CSSM20_09: Influence of fractal nature of pores on corrosion-driven fracture in cementitious materials *Mohit Pundir, Ueli Angst, David S Kammer*	**CSSM00_06: Prediction of crack evolution in TiN thin films deposited on different substrates based on cohesive elements** *Konrad Perzyński, Grzegorz Cios, Lukasz Madej*	**CSSM02_03: Catenary design by sequential parameter optimisation** *Jaime Gil, Santiago gregori, Manuel Tur, F. Javier Fuenmayor*	**SC02_03: Modelling the impact of intra-tumour heterogeneity on radiotherapy outcomes** *Giulia Celora, Helen Byrne, Panos*	16:30
CSSM20_10: Variationally consistent computational homogenization of chemo-mechanical properties of nano-porous battery electrode materials *David Rollin, Fredrik Larsson, Kenneth Runesson, Ralf Jänicke*	**CSSM00_07: The operator spectrum of linear elasticity least-squares finite elements methods** *Linda Alzaben, Fleurianne Bertrand, Daniele Boffi*	**CSSM02_04: Railway catenary shape-finding problem considering cantilevers and general track paths** *Nelson Aldaz, Santiago Gregori, Jaime Gil, Manuel Tur, Francisco Javier Fuenmayor*	**SC02_04: On optimal temozolomide scheduling for slowly growing gliomas** *Juan Jiménez-Sánchez*	16:45
CSSM20_11: A Fully-nonlocal Quasicontinuum Approach for Predicting Fracture in Periodic 3D Metamaterials *Kevin Kraschewski, Gregory P. Phlipot, Dennis M. Kochmann*	**CSSM00_08: Tuning Frequency Analysis of Energy Harvesting on Railway Bridges Using a Stochastic Process** *J.C. Cámara-Molina, A. Romero, P. Galvín, E. Moliner, M.D. Martínez-Rodrigo*	**CSSM02_05: Computation of radiated noise from railway systems using a BEM-based procedure** *Rocio Velazquez-Mata, Antonio Romero, Pedro Galvin*	**SC02_05: A multiscale model for combined therapy effects on glioma progression** *Martina Conte, Christina Surulescu, Dzierma Yvonne, Knobe Sven*	17:00
CSSM20_13: Characterization of TPMS foams using multiscale techniques *Ana Pais, Jorge Lino Alves, Jorge Belinha*	**CSSM00_09: An eXtended finite element method for the Nernst-Planck-Poisson equation** *Pawan Kumar, Narasimhan Swaminathan, Sundararajan Natarajan*	**CSSM02_06: Experimental characterization of a low-height acoustic barrier developed with numeric techniques** *João Lázaro, Pedro Alves Costa, Luís Godinho*	**SC02_06: Bridging the gap between individual cell movement and macroscopic cancer invasion models** *Dimitrios Katsaounis, Mark A.J. Chaplain, Nikolaos Sfakianakis*	17:15
CSSM20_14: On the modeling of the interfaces in PC/ABS ternary blends *Alexandre C. Amaro, A. Francisca C. Alves, Bernardo P. Ferreira, Miguel V. Carvalho, F. M. Andrade Pires*	**CSSM00_10: Thermodynamically consistent Recurrent Neural Networks to predict non linear behaviours of dissipative materials subjected to non-proportional loading paths** *Aymen Danoun, Pruliere Etienne, Chemisky Yves*	**CSSM02_08: Experimental validation of the Hybrid Methodology for induced vibrations assessment** *Paulo J. Soares, Pedro Alves Costa, Robert Arcos, Lúis Godinho*	**SC02_07: Growth dynamics of brain metastases** *Beatriz Ocaña Tienda, Julián Pérez Beteta, Ana Ortiz de Mendivil, Beatriz Asenjo, David Albillo, Luís A. Pérez-Romasanta, Estanislao Arana, Víctor M. Pérez-García*	17:30
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	AUDITORIUM	01 B008	02 B005	03 B009
09:00		CAM05 – Applied mathematical models for biological systems (I) *Chair: Luca Bellino, Vincenzo Fazio*	CAM02 – Scientific Machine Learning techniques for complex engineering systems (IV) *Chair: Alberto Badías, Carlos Bermejo*	CSSM06 – Computational treatment of polymer fracture across the scales *Chair: Maximilian Ries*
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09:45				CSSM16 – Damage and Fracture of Composite Materials and Structures in Transportation Industry *Chair: Federico Danzi*
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10:30	*Coffee Break*			
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11:00		CAM05 – Applied mathematical models for biological systems (II) *Chair: Giulio Lucci, Giada Fiandaca*	CAM07 – Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications (II) *Chair: Alberto Zingaro*	CSSM17 – Meshless Methods for Elastodynamic Problems *Chair: Robert Arcos, Javad Fakhraei*
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12:30	*Lunch*			
14:00		CAM09 – Emerging Numerical Techniques in Inverse Problems and Data Assimilation *Chair: Harshit Bansal*	CAM07 – Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications (III) *Chair: Maximilian Schuster*	CSSM13 – Wave propagation and structural dynamics *Chair: Dominik Itner, Jannis Bulling*
14:15				
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15:30	*Coffee Break*			
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16:00	**Plenary Session:** **"New Frontiers in Earthquake Risk Assessment: How to Avoid a Disaster!", Vitor Silva** Chair: André Furtado			
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17:00	**Career Forum**			
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04 B018	05 B007	06 B032	07 B019
CSSM04 – Computational modeling of masonry structures: innovative approaches and open challenges (I) *Chair: Paolo Di Re, Nicola A. Nodargi*	CSSM03 – Recent developments of reduced order modelling techniques in nonlinear and/or high-dimensional computational mechanics *Chair: Benjamin Hirzinger, Floriane Wurtzer*	PhD olympiads (I) *Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts*	IAC05 – Design optimization in computational mechanics (I) *Chair: Ihar Antonau*
CSSM04 – Computational modeling of masonry structures: innovative approaches and open challenges (II) *Chair: Nicola A. Nodargi, Cristina Gatta*	CSSM21 – Efficient modeling of complex materials across the scales *Chair: Martin Horák, Martin Doškář*	PhD olympiads (II) *Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts*	IAC05 – Design optimization in computational mechanics (II) *Chair: David Schmölz* CSSM19 – Shape Memory Alloy Phenomena – Experimental and Model Based Investigations *Chair: Stefan Descher*
CSSM04 – Computational modeling of masonry structures: innovative approaches and open challenges (III) *Chair: Cristina Gatta, Paolo Di Re*	CSSM12 – Modelling approaches for continua with advanced microstructure *Chair: Christoph Böhm*	PhD olympiads (III) *Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts*	IAC02 – Numerical methods for Additive Manufacturing *Chair: Massimo Carraturo, Matthias Hartmann*

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ROOM	01 B008	02 B005	03 B009
	CAM05 – Applied mathematical models for biological systems (I) Chair: Luca Bellino, Vincenzo Fazio	**CAM02 – Scientific Machine Learning techniques for complex engineering systems (IV)** Chair: Alberto Badías, Carlos Bermejo	**CSSM06 – Computational treatment of polymer fracture across the scales** Chair: Maximilian Ries
09:00	**CAM05_01: Mathematical and numerical modeling of axonal beading** *Davide Riccobelli*	**CAM02_20: A recurrent machine learning structure for few-shot constitutive model optimization: Application to Geomechanics** *Shaoheng Guan, Sascha Ranftl*	**CSSM06_01: Fracture in Polymers: Discrete-to-Continuum Coupling** *Felix Weber, Christof Bauer, Maximilian Ries, Wuyang Zhao, Sebastian Pfaller*
09:15	**CAM05_02: Interictal Spike Propagation Reconstruction in the Epileptic Brain: Mapping with Invasive versus Noninvasive Techniques** *Margherita Anna Grazia Matarrese, Eleonora Tamilia, M Scott Perry, Alessandro Loppini, Joseph R. Madsen, Steve M. Stufflebeam, Phillip L. Pearl, Simonetta Filippi*	**CAM02_21: Prediction of Flow Fields in Bioreactors with Physics-Informed Neural Networks** *Veronika Travnikova, Nico Dirkes, Eric von Lieres, Marek Behr*	**CSSM06_02: Multi-scale modeling of the nano-scale fractures in the amorphous polymers** *Saeed Norouzi, Florian Müller-Plathe*
09:30	**CAM05_04: Flow of cerebrospinal fluid in cranial subarachnoid space: a mathematical model** *Mariia Dvoriashyna, Alain Goriely*	**CAM02_23: A hybrid AI based approach for the optimization of composite coatings development through electroplating processes** *Santiago Muiños Landin, Andrea Gregores Coto, Christian Eike Precker*	**CSSM06_03: A coarse-grained molecular dynamics model to analyze fracture in polymer nanocomposites** *Maximilian Ries, Vincent Dötschel, Felix Weber, Sebastian Pfaller*
09:45	**CAM05_05: Uncertainty quantification and control of kinetic models of tumour growth with uncertain features** *Andrea Medaglia*	**CAM02_24: Improving Physics Informed Neural Network: alternative approaches to enforce Dirichlet boundary conditions** *Pintore Moreno, Berrone Stefano, Canuto Claudio, Sukumar Natarajan*	**CSSM16 – Damage and Fracture of Composite Materials and Structures in Transportation Industry** Chair: Federico Danzi
10:00	**CAM05_06: A Quantitative Systems Pharmacology approach to drive mRNA-vaccine design** *Giada Fiandaca, Natascia Zangani, Lorena Leonardelli, Gianluca Selvaggio, Stefano Giampiccolo, Luca Marchetti*	**CAM02_22: A Surrogate Model for Prediction of Vibrations Induced by Impact Pile Driving** *M. Abouelmaty. A, Colaço. A, Alves Costa. P*	09:45 **CSSM16_02: Bearing/Pull-through Failure Envelope of Composite Joints: Novel Experimental Setup and Numerical Validation** *Anna Volpi , Carolina Furtado, R. F Pinto, F. Danzi, G. Catalanotti, F. J Queirós de Melo, P. P. Camanho*
10:15	**CAM05_07: Multi-scale modelling of focal adhesions** *Salvatore Di Stefano, Ariel Ramírez Torres, Luca Bellino, Vincenzo Fazio, Giuseppe Florio, Giuseppe Puglisi*	**CAM00_03: Deep Neural Network Approximation for Shape Uncertainty Quantification in Acoustic and Electromagnetic Scattering** *Fernando Henriquez, Jürgen Dölz*	10:00 **CSSM16_03: Data-driven microstructure-generator for high-fidelity analyses of unidirectional composite laminates** *Renata Silva, Federico Danzi, Carolina Furtado, Igor Lopes, D. Fanteria, P. P. Camanho*
10:30			

04 B018

CSSM04 – Computational modeling of masonry structures: innovative approaches and open challenges (I)
Chair: Paolo Di Re, Nicola A. Nodargi

CSSM04_01: A multisurface damage plasticity model for masonry
Gregorio Bertani, Luca Patruno, Antonio Maria D'Altri, Giovanni Castellazzi, Stefano de Miranda

CSSM04_02: Multi-Unit discretization approach for nonlinear analysis of URM walls
Ylenia Di Lallo, Davide Rapone, Maria Giovanna Masciotta, Giuseppe Brando

CSSM04_03: Shell-3D multiscale model for masonry based on Uniform and Non-Uniform TFA procedures
Cristina Gatta, Daniela Addessi, Paolo Di Re, Elio Sacco

CSSM04_04: Phase field approach for the analysis of masonry structures: a comparison with pre-existing simulations
Andrea Rodella, Paolo Di Re, Cristina Gatta

SSM04_06: On the use of Finite and Discrete Macro-Element modelling approaches for the nonlinear static analysis of URM walls
Federica Vadalà, Luis C. M. da Silva, Ivo Caliò, Paulo B. Lourenço

CSSM04_07: Numerical simulation of masonry wall structures using macro and mesoscale models
Luca Bomben, Lorenzo Macorini, Corrado Chisari, Claudio Amadio, Bassam Izzuddin

05 B007

CSSM03 – Recent developments of reduced order modelling techniques in nonlinear and/or high-dimensional computational mechanics
Chair: Benjamin Hirzinger, Floriane Wurtzer

CSSM03_01: Model order reduction for stochastic eigenvalue problems
Zhibao Zheng

CSSM03_02: MORe DWR: Space-time goal oriented error control for incremental POD based ROM
Hendrik Fischer, Julian Roth, Amelie Fau, Thomas Wick

CSSM03_03: Model order reduction techniques for linear and nonlinear dynamical systems
Benjamin Hirzinger

CSSM03_04: A first illustration of a multimodel strategy for coupled multiphysics problems
Floriane Wurtzer, Pierre-Alain Boucard, Pierre Ladevèze, David Néron

CSSM03_05: Variational Reduced-Order Thermomechanical Finite Strain Shape Memory Alloy Model for Bistable Microactuators
Muhammad Babar Shamim, Marian Hörsting, Stephan Wulfinghoff

CSSM03_06: An efficient sampling method for reduced order modelling of composite laminates
Imran Omar, Iannucci Lorenzo

06 B032

PhD olympiads (I)
Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts

PHDOLP_04: Numerical simulation of heterogeneous materials combining Artificial Intelligence and physics-based modeling
Aymen Danoun, Pruliere Etienne, Chemisky Yves

09:25
PHDOLP_05: Predicting the long-term effects of mechanical overload to arterial tissue: a chemo-mechano-biological computational framework
Lauranne Maes, Jos Vander Sloten, Nele Famaey

09:50
PHDOLP_06: Mathematical and numerical modeling of cardiac electromechanics in ventricles with ischemic cardiomyopathy
Matteo Salvador

07 B019

IAC05 – Design optimization in computational mechanics (I)
Chair: Ihar Antonau

09:00 **IAC05_01: Tailored Stiffness for the Design of Adaptive Structures with Displacement Control: A Case Study.**
Axel Trautwein, Tamara Prokosch, Manfred Bischoff

09:15 **IAC05_02: Adaptation on Multi-Span Beams through Support Displacement**
Lisa Schwegmann

09:30 **IAC05_03: Optimizing Flow Channels in Profile Extrusion Dies via Reinforcement Learning**
Daniel Wolff, Clemens David Fricke, Marco Kemmerling, Stefanie Elgeti

09:45 **IAC05_04: Towards the Optimization of Injection Molding Processes**
Blanca Ferrer Fabón, Marek Behr

10:00 **IAC05_05: Topology optimization using a Fast-Fourier-Transformation based solver with compability projection**
Jödicke, Indre, Leute, Richard, Junge, Till, Pastewka, Lars

10:15 **IAC05_07: Bead Patterns in Free-Form Shape Optimization**
Bastian Devresse, Armin Geiser, David Schmölz, Kai-Uwe Bletzinger

10:30

ROOM	01 B008	02 B005	03 B009
	CAM05 – Applied mathematical models for biological systems (II) Chair: Giulio Lucci, Giada Fiandaca	**CAM07 – Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications (II)** Chair: Alberto Zingaro	**CSSM17 – Meshless Methods for Elastodynamic Problems** Chair: Robert Arcos, Javad Fakhraei
11:00	**CAM05_09: Poynting Effect in Weakly-Compressible Porous Cylinders in Torsion** *Griffen Small, Harold Berjamin, Valentina Balbi*	**CAM07_08: Unified continuum fluid-structure interaction simulation of treatment for mitral regurgitation** *Joel Kronborg, Johan Hoffman*	**CSSM17_01: Static bending and free vibration of Euler-Bernoulli beams using Fragile Point Method** *Abinash Malla, Sundararajan Natarajan*
11:15	**CAM05_10: Elasticity and force inclination effects for peeling phenomena** *Binetti Claudia, Bellino Luca, Florio Giuseppe, Puglisi Giuseppe*	**CAM07_09: Patient-Specific Image-Based Computational Fluid Dynamic Model of the Right Heart** *Francesca Renzi, Marco Fedele, Giambruno Vincenzo, Quarteroni Alfio, Giovanni Puppini, Giovanni Battista Luciani, Christian Vergara*	**CSSM17_02: A 2.5D hybrid SBM-MFS methodology for acoustic wave propagation problems** *Javad Fakhraei, Robert Arcos , Teresa Pamies, Jordi Romeu*
11:30	**CAM05_11: A three-dimensional elasto-plastic, biphasic model of multicellular aggregates** *Salvatore Di Stefano, Alessandro Giammarini, Chiara Giverso, Alfio Grillo*	**CAM07_10: Computational hemodynamics and fluid-structure interaction for native and prosthetic cardiac valves** *Ivan Fumagalli, Francesca Renzi, Rebecca Polidori, Eleonora S. Dacatra, Luca Dede', Christian Vergara, Alfio Quarteroni*	**CSSM17_03: Robustness study of a hybrid SBM-MFS methodology for the simulation of acoustic and elastodynamic problems** *Robert Arcos, Arnau Clot, Hassan Liravi, Javad Fakhraei, Kenny F. Conto*
11:45	**CAM05_12: A Hamilton principle-based model for diffusion driven growth** *Felix Klempt, Meisam Soleimani, Philipp Junker*	**CAM07_11: Predicting left atrium stasis patterns from a data-augmented patient-specific geometry database in atrial fibrillation conditions** *Jorge Dueñas Pamplona, Javier Garcia Garcia, José Sierra Pallares, Conrado Ferrera, Francisco Castro*	**CSSM17_04: An efficient three-dimension piled foundation model based on the singular boundary method for solving ground-borne vibration problems.** *Kenny F. Conto, Robert Arcos, Arnau Clot, Hassan Liravi*
12:00	**CAM05_13: Instability Analysis of Functionally-Graded Thin Auxetic Materials** *Sairam Pamulaparthi Venkata, Michel Destrade, Valentina Balbi, Dino Accoto, Giuseppe Zurlo*	**CAM07_16: A multi-scale hybrid reduced order model for cardiovascular applications** *Pierfrancesco Siena, Audrey Gossard, Michele Girfoglio, Gianluigi Rozza*	
12:15	**CAM05_08: Using the SPH to Simulate the Process of Cell Proliferation** *Maria Inês Barbosa, Jorge Belinha, Renato Natal Jorge, Ana Xavier*	**CAM07_17: A data-driven reduced-order model for real-time predictions applied to cardiovascular disease** *Caterina Balzotti, Pierfrancesco Siena, Michele Girfoglio, Gianluigi Rozza*	
12:30			

04 B018

CSSM04 – Computational modeling of masonry structures: innovative approaches and open challenges (II)
Chair: Nicola A. Nodargi, Cristina Gatta

CSSM04_08: Preliminary Seismic fragility analysis of a URM building typology in Faial Island - Azores
Vasco Bernardo, Shaghayegh Karimzadeh, Daniel Caicedo, Paulo B. Lourenço

CSSM04_09: Modelling of Connection Failure in Seismic Assessment of Masonry Structures
Daniela Fusco, Francesco Messali, Jan G. Rots, Daniela Addessi, Stefano Pampanin

CSSM04_10: Tuning the failure of topologically interlocked structures
Ioannis Koureas, Mohit Pundir, Shai Feldfogel, David Kammer

CSSM04_11: The effects of material properties on the behavior and the failure of Topologically Interlocked Structures
Shai Feldfogel, Konstantinos Karapiperis, Jose Andrade, David S. Kammer

CSSM04_12: Nonlinear analysis of masonry structures reinforced with the CAM system
Paolo Di Re, Mattia Greco, Egidio Lofrano

05 B007

CSSM21 – Efficient modeling of complex materials across the scales
Chair: Martin Horák, Martin Doškář

CSSM21_01: Modeling coupled chemo-mechanical fracture in DAMASK
Sharan Roongta, Pratheek Shanthraj, Martin Diehl, Franz Roters

CSSM21_02: Assessing the Effectiveness of Tensor-Train-Based Preconditioners For Numerical Homogenization
Lennart Risthaus, Matti Schneider

CSSM21_03: Local reduced modes for multiscale simulations of pattern-transforming mechanical metamaterials
Martin Doškář, Ondřej Rokoš, Ron H.J. Peerlings, Marc G.D. Geers, Jan Zeman

CSSM21_04: Predicting post-bifurcated patterns of architectured materials using group theory
Rachel Azulay, Christelle Combescure, Justin Dirrenberger

CSSM21_06: Pneumatic actuation of a square lattice metamaterial to control macroscopic stiffness
Ondřej Faltus, Jan Zeman, Ron Peerlings, Milan Jirásek, Ondřej Rokoš, Martin Horák, Martin Doškář

CSSM21_05: Beam lattice metamaterials with internal contact and instabilities
Martin Horák

06 B032

PhD olympiads (II)
Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts

PHDOLP_07: Generalised Newtonian Fluids in Cardiovascular Fluid–Structure Interaction
Richard Schussnig

11:25
PHDOLP_08: Existence Results for Ferromagnetic Elastomers
Marco Bresciani, Manuel Friedrich, Carlos Mora-Corral

11:50
PHDOLP_11: Dynamic response of arching masonry walls subjected to blast loads
Idan E. Edri

07 B019

IAC05 – Design optimization in computational mechanics (II)
Chair: Ihar Antonau

11:00 **IAC05_08: Extended Vertex Morphing parameterizations for node-based shape optimization with engineering specifications**
David Schmölz, Ihar Antonau, Armin Geiser, Reza Najian Asl, Kai-Uwe Bletzinger

11:15 **IAC01_09: Generalized approach to manufacturing constraints for node-based shape optimization using Vertex Morphing**
Ihar Antonau, David Schmölz , Kai-Uwe Bletzinger

11:30 **IAC05_10: Design of an optical space instrument using thermo-mechanical topology optimization**
Sanne van den Boom, Floris van Kempen, Ren´e Hazelebach, Gerard Otter, Ivan Ferrario, Walter Zimbeck, Benjamin Stewart, Zachary Post,

11:45 **CSSM19 – Shape Memory Alloy Phenomena – Experimental and Model Based Investigations**
Chair: Stefan Descher

11:45 **CSSM19_01: An energy based material model for Shape Memory Alloys**
Cem Erdogan, Tobias Bode, Philipp Junker

12:00 **CSSM19_03: Numerical investigation of fiber suspensions in ball probe rheometers**
Florian Gerland, Thomas Schomberg, Olaf Wünsch

12:15 **CSSM19_05: The influence of latent heat on inductive heating of shape memory alloy fibers**
Stefan Descher, Philipp Krooß, Detlef Kuhl, Sebastian Wolf

ROOM

	01 B008	02 B005	03 B009
	CAM09 – Emerging Numerical Techniques in Inverse Problems and Data Assimilation Chair: Harshit Bansal	**CAM07 – Full and Reduced Order Models for Multiphysics and Multiscale Simulations in Cardiovascular Applications (III)** Chair: Maximilian Schuster	**CSSM13 – Wave propagation and structural dynamics** Chair: Dominik Itner, Jannis Bulling
14:00	**CAM09_01: Edge-preserving inversion with heavy-tailed Bayesian neural networks priors** *Angelina Senchukova, Felipe Uribe, Jana de Wiljes, Lassi Roininen*	**CAM07_19: Modeling and Simulation of Prothrombin Activation Pathways in Pathological Blood Coagulation** *Tobias Bongartz, Alessia Piergentili, Giulia Rossetti, Marek Behr*	**CSSM13_01: Dynamic multifield continualization method for magneto-electro-elastic layered periodic materials** *Rosaria Del Toro, Maria Laura De Bellis, Andrea Bacigalupo*
14:15	**CAM09_02: Convergence rates of non-stationary and deep Gaussian process regression** *Conor Osborne, Aretha Teckentrup*	**CAM07_20: Strain-Based Blood Damage Modeling in Eulerian Frame** *Nico Dirkes, Marek Behr*	**CSSM13_02: Image-based wave propagation analysis in large domains with irregular geometry using the SBFEM** *Sharath Nattoji-Shara, Carolin Birk, Hauke Gravenkamp*
14:30	**CAM09_03: Reduced Kalman inversion in multiscale models via deep learning** *Yankun Hong, Harshit Bansal, Karen Veroy*	**CAM07_21: Anisotropic electrical conductivity of blood: a new model for numerical computations of impedance cardiography signals** *Alireza Jafarinia, Vahid Badeli, Gian Marco Melito, Alice Reinbacher-K¨ ostinger, Günter Brenn, Mandfred Kaltenbacher, Thomas Hochrainer*	**CSSM13_03: Introduction of Octree meshes in regular prismatic structures using a combination of the Mortar Method and the Scaled Boundary Finite Element Method to simulate Ultrasonics Guided Waves** *Daniel Lozano, Jannis Bulling*
14:45	**CAM09_05: Model order reduction for varying boundary optimal control problems** *Maria Strazzullo, Fabio Vicini*	**CAM07_22: Quantitative assessment of the variability of FFRCT due to minimal uncertainty in lumen segmentation threshold** *Daniel Fernández-Martínez, Jose M. Montanero, María Reyes González-Fernández, Juan Manuel Nogales-Asensio, Conrado Ferrera*	**CSSM13_04: Comparison and validation of extended spectral element methods for structural health monitoring applications** *Sergio Nicoli, Konstantinos Agathos, Pawel Kudela, Eleni Chatzi*
15:00	**CAM09_06: Parameter recovery for eigenvalue problems in linear elasticity** *Hanz Martin Cheng*	**CAM07_14: Sensitivity analysis and parameter estimation of a lumped parameter cardiovascular model during extracorporeal life support** *Jan-Niklas Thiel, Ana Martins Costa, Bettina Wiegmann, Jutta Arens, Michael Neidlin*	**CSSM13_05: Characterization of damage in steel plates by an inverse algorithm** *Jannis Bulling, Benjamin Jurgelucks, Jens Prager, Andrea Walther*
15:15	**CAM09_07: Ensemble Kalman–Bucy filters for finite and infinite dimensional signals** *Sebastian Ertel*	**CAM07_15: Physiological Control Mechanisms in the Fontan Circulation** *Zan Ahmad, Charles Puelz, Charles S. Peskin*	**CSSM13_06: Mesh-convergence and gradient-enhanced models in blast simulations of concrete structures** *Sjard Mathis Rosenbusch, Daniel Balzani, Jörg F. Unger*
15:30			

04 B018

CSSM04 – Computational modeling of masonry structures: innovative approaches and open challenges (III)
Chair: Cristina Gatta, Paolo Di Re

CSSM04_13: An adaptive virtual element approach to upper bound limit analysis of cracked structures
Andrea Chiozzi, Nicola Grillanda

CSSM04_14: Analysis of out-of-plane loaded masonry walls via discontinuity layout optimization
Nicola Grillanda, Linwei He, Matthew Gilbert

CSSM04_16: Identifying Thrust Layouts in Masonry Gravity Structures
K Isuru Nanayakkara, Andrew Liew, Matthew Gilbert

CSSM04_17: Parametric analysis of multi-ring arches
Bledian Nela, Marco Pingaro, Emanuele Reccia, Patrizia Trovalusci

CSSM04_18: Dynamic analysis of multi-block masonry structures under ground motion excitation
Nicola A. Nodargi, Paolo Bisegna

05 B007

CSSM12 – Modelling approaches for continua with advanced microstructure
Chair: Christoph Böhm

CSSM12_01: Analysis of Creep in Composites with the Scaled Boundary Finite Element Method
Johanna Eisenträger, Junqi Zhang, Sascha Eisenträger, Chongmin Song

CSSM12_02: Multiscale modeling of heterogeneous structures based on a localized model order reduction approach
Philipp Diercks, Annika Robens-Radermacher, Karen Veroy, Jörg F. Unger

CSSM12_03: Computational modelling of stress gradient continua
Tobias Kaiser, Andreas Menzel, Samuel Forest

CSSM12_04: How to integrate Galerkin weak forms during preprocessing
Tobias Bode

CSSM12_05: Buckling analysis of a beam made of Gyroid cells
Donato D'Aprile, Simone Morganti, Arsenio Cutolo, Massimiliano Fraldi, Ferdinando Auricchio

CSSM12_06: Failure by design of architected interfaces: Towards a unified theory for elastic foundations
Adrianos E.F. Athanasiadis, Michal K. Budzik, Dilum N. Fernando, Marcelo A. Dias

06 B032

PhD olympiads (III)
Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts

PHDOLP_09: Control and optimization of physical systems: quantum dynamics and magnetic confinement in stellarators
Rémi Robin

14:25
PHDOLP_10: Mixed-dimensional finite element formulations for beam-to-solid interaction
Ivo Steinbrecher

14:50
PHDOLP_15: Towards Data-driven Multi-scale Optimization of Thermoplastic Blends: Microstructural Generation, Constitutive Development and Clustering-based Reduced-Order Modeling
Bernardo P. Ferreira

07 B019

IAC02 – Numerical methods for Additive Manufacturing
Chair: Massimo Carraturo, Matthias Hartmann

14:00 **IAC02_01: Numerical and experimental characterization of 3D printed lattice structures**
Massimo Carraturo, Gianluca Alaimo, Alessandro Reali, Ferdinando Auricchio

14:15 **IAC02_02: Parametric shape optimization for combined additive-subtractive manufacturing**
Lorenzo Tamellini

14:30 **IAC02_03: Establishing and optimising structure-property linkages based on statistical descriptors**
Raßloff, Alexander, Seibert, Paul, Schmidt, Benjamin, Kalina, Karl Alexander, Kästner, Markus

14:45 **IAC02_04: Numerical and Experimental Investigation of Residual Stresses in the Fused Filament Fabrication Process**
Dr.-Ing. Mehul Lukhi, Dr.-Ing. Christoph Mittermeie, Univ.-Prof. Dr.-Ing. Josef Kiendl

15:00 **IAC02_05: Application of Multi-fidelity Surrogate Models to Metal Additive Manufacturing**
Mihaela Chiappetta, Chiara Piazzola, Massimo Carraturo, Lorenzo Tamellini, Alessandro Reali, Ferdinando Auricchio

15:15 **IAC02_07: Numerical power prediction for WAM produced wall structures on vertical substrate plates**
Haunreiter Fabio, Drexler Hugo, Kronsteiner Johannes, Alois Birgmann

15:30

	AUDITORIUM	01 B008	02 B005	03 B009
09:00				
09:15		CAM06 – Recent Advances on modelling and simulations of Collective dynamics *Chair: Marta Menci, Nadia Loy*	CAM04 – Reproductive Soft Tissues Biomechanics *Chair: Elisabete Silva*	SC03 – Structural Design Through Computational And Optimization Methods *Chair: Pedro Fernandes*
09:30				
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10:45	*Coffee Break*			
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12:15	**Semi-Plenary Presentation**	**Semi-Plenary Presentation: "Fast deterministic and randomized algorithms-for low-rank approximation, matrix functions, and trace estimation", Alice Cortinovis**		
12:30				
	Lunch			
14:00	**Plenary Session:** **"MoFEM: unlocking advanced capabilities with a new paradigm for a finite element library design", Andrei Shvarts** Chair: Igor Lopes			
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15:00	**Round Tables:** **"Pathways to Success: Funding the next Generation of Researchers"**			
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16:30	**Closing session**			
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04 B018	05 B007	06 B032	07 B019
CSSM25 – Challenges on the numerical simulation from small to large-scale Civil Engineering structures *Chair: Cláudio Horas, Rui Valente*	CSSM24 – Contact Mechanics and Tribology *Chair: Vladislav Yastrebov, Sacha Wattel*	PhD olympiads (IV) *Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts*	CFM00 – General Symposium in Computational Fluid Mechanics (I) *Chair: TBD*
CSSM23 – Reduced Order Modelling with Applications to Inverse Problems and Uncertainty Quantification *Chair: Konstantinos Agathos*	CSSM24 – Contact Mechanics and Tribology *Chair: Rodrigo Carvalho, Laura Bagur*	PhD olympiads (V) *Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts*	CFM00 – General Symposium in Computational Fluid Mechanics (II) *Chair: TBD*
	Semi-Plenary Presentations by the ECCOMAS PhD Award winners: "Fracture scale fluid flow models for the simulation of poroelasticity", Tim Hageman	**Semi-Plenary Presentations**	
		Round Tables "From manuscript to publication: Unlocking publishing opportunities for Early Career Scholars"	

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ROOM

	01 B008	02 B005	03 B009
	CAM06 – Recent Advances on modelling and simulations of Collective dynamics Chair: Marta Menci, Nadia Loy	**CAM04 – Reproductive Soft Tissues Biomechanics** Chair: Elisabete Silva	**SC03 – Structural Design Through Computational And Optimization Methods** Chair: Pedro Fernandes
09:15	**CAM06_02: A hybrid model of Tumors-on-chip: a numerical study** *Elio Campanile, Gabriella Bretti, Roberto Natalini, Marta Menci*	**CAM04_01: Development of New Surgical Mesh Geometries with Different Mechanical Properties Using the Design Freedom of 3D Printing** *Sebastian Sterk, Elisabete Silva, Antonio Augusto Fernandes*	**SC03_01: Advances in the use of machine learning techniques to accelerate the topology optimisation process on structural problems** *Antolín Martínez Martínez, Enrique Nadal Soriano, José Manuel Navarro Jiménez, Olivier Allix, Juan José Ródenas García*
09:30	**CAM06_03: A kinetic study of contact guidance and steric hindrance interplay during cell migration** *Martina Conte, Nadia Loy*	**CAM04_02: A machine learning-based prediction of pelvic floor stress during vaginal delivery** *Rita Moura, Dulce Oliveira, Marco Parente, Renato Natal Jorge*	**SC03_02: Artificial intelligence methods for preliminary sizing of aircraft structures** *Daniel Gómez Ordoño, Raúl Carlos Llamas Sandín*
09:45	**CAM06_04: Privacy and Cooperation in Multi-Agent Distributed Systems** *Camilla Fioravanti, Gabriele Oliva*	**CAM04_03: Biomechanics of the fetal membrane as a multilayer biological structure** *Daniel Fidalgo, Michelle Oyen, Dulce Oliveira, Marco Parente, Renato Natal, Kristin Myers*	**SC03_04: Polymer creep modulus prediction by leveraging CAMPUS database and gradient boosting** *Héctor Lobato, Carlos Cernuda, Aitor Arriaga, Kepa Zulueta, Aizeti Burgoa*
10:00	**CAM06_05: Robust control of interacting multi-agent systems under uncertainty** *Chiara Segala, Giacomo Albi, Michael Herty*	**CAM04_05: The inverse FEM analysis for the estimation of biomechanical properties of the continent and incontinent woman bladder** *Pedro Agostinho, Elisabete Silva, Sofia Brandão, Teresa Mascarenhas, António Augusto Fernandes*	**SC03_05: Topology optimization of an exhaust bracket** *Kepa Zulueta Uriondo, Iñaki Madina Odriozola*
10:15	**CAM06_06: Understanding the Dynamics of Misinformation Spread: Kinetic Approaches to Fake News Modeling** *Jonathan Franceschi, Mattia Zanella, Lorenzo Pareschi*	**CAM04_06: A finite element analysis of breast compression in mammography** *Mariana Carvalho, Alessandro Arduino, Marco Parente, Renato Natal Jorge, João Ferreira*	
10:30			
10:45			

DAY 03

YIC23 ECCOMAS 7th YOUNG INVESTIGATORS CONFERENCE

PARALLEL SESSIONS WEDNESDAY· 21 JUNE 2023 09:00—10:30

04 B018

CSSM25 – Challenges on the numerical simulation from small to large-scale Civil Engineering structures
Chair: Cláudio Horas, Rui Valente

CSSM25_02: Design of truss and frame structures using alternative performance indicators
Nicolai Grünvogel, David Forster, Malte von Scheven, Manfred Bischoff

CSSM25_04: The story behind a blind prediction of a 3-storey infilled reinforced concrete building
André Furtado, Hugo Rodrigues, António Arêde, Humberto Varum

CSSM25_07: Modal strain-based SHM of steel railway bridges
Dimitrios Anastasopoulos, Edwin P.B. Reynders

CSSM25_08: Model for steel fibre reinforced concrete panels subjected to in-plane shear stresses
Rui Valente, Mário Pimentel

CSSM25_09: Investigating the fatigue behaviour of Puddle Iron Retrofitting solutions through Experimental and Numerical approaches
João Arrojado, Anis Mohabedine, José A.F.O. Correia, Diogo Ribeiro, Anna Racokzy

CSSM25_10: Probabilistic Fatigue Analysis of Metallic Bridge Riveted Connection under Linear and Non-Linear Accumulation Rules
António Mourão, João Nuno Silva, Cláudio Horas, José A.F.O. Correia, Túlio Bittencourt, Rui Calçada

05 B007

CSSM24 – Contact Mechanics and Tribology
Chair: Vladislav Yastrebov, Sacha Wattel

CSSM24_01: Numerical techniques towards competitive partitioned solution strategies for thermomechanical contact problems
António M. Couto Carneiro, José L. P. Vila-Chã, Rodrigo Pinto Carvalho, Bernardo P. Ferreira, Francisco M. Andrade Pires

CSSM24_03: Fast Boundary Element Methods for fault mechanics and earthquake control
Laura Bagur, Stéphanie Chaillat, Jean-François Semblat, Ioannis Stéfanou, Pierre Romanet

CSSM24_05: Contact-dominated architected materials
Konstantinos Karapiperis, Dennis M. Kochmann

CSSM24_06: Isogeometric contact within machining applications
Eugen Salzmann, Florian Zwicke, Stefanie Elgeti
CSSM24_08: Non-linear Elasticity and Contact of Zinc-Phosphate Tribofilms
Lucas Frérot, Lars Pastewka

CSSM24_07: Constriction resistance of rough surfaces in contact
Paul Beguin, Vladislav A. Yastrebov

06 B032

PhD olympiads (IV)
Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts

PHDOLP_01: A discontinuity-enriched finite element method for the computational design of phononic crystals
Sanne J. van den Boom, Alejandro M. Aragon, Fred van Keulen

09:40
PHDOLP_12: The direct parametrisation method for invariant manifolds: developments and application to large dimensional finite element models of MEMS structures
Andrea Opreni

10:05
PHDOLP_13: Efficient algorithms for three-dimensional computational mesh generations and air pollution simulations based on hypergraph grammars
Krzysztof Podsiadło

07 B019

CFM00 – General Symposium in Computational Fluid Mechanics (I)
Chair: TBA

09:15 **CFM00_01: An IMEX-DG solver for the compressible Navier-Stokes equations for non-ideal gases**
Giuseppe Orlando, Paolo Francesco Barbante, Luca Bonaventura

09:30 **CFM00_02: A high-order continuous Lagrange--Galerkin method for compressible flows**
Manuel Colera, Jaime Carpio, Rodolfo Bermejo

09:45 **CFM00_03: Simulation of Centrifugal Buoyancy-Induced Flow in Sealed and Open Rotating Compressor Cavities Using the Lattice-Boltzmann Method**
Paul Werner, Jean-François Boussuge, Christophe Scholtes, Pierre Sagaut

10:00 **CFM00_05: A mixed Lagrangian-Eulerian formulation for Particle Finite Element Method**
Cheng Fu, Massimiliano Cremonesi, Umberto Perego

10:15 **CFM10_06: Multipoint Shape Optimization of a Pump-Turbine Using the Adjoint Method**
Alexander Huscava, Bernhard Semlitsch

10:30

10:45

ROOM

01 B008

02 B005

03 B009

11:15

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12:00

12:15

12:30

DAY 03

YIC23 ECCOMAS 7th YOUNG INVESTIGATORS CONFERENCE

PARALLEL SESSIONS

WEDNESDAY· 21 JUNE 2023

11:00—12:30

04 B018

CSSM23 – Reduced Order Modelling with Applications to Inverse Problems and Uncertainty Quantification
Chair: Konstantinos Agathos

CSSM23_01: Projection-based model reduction for creep behavior in prestressed concrete
Agouzal Eki, Argaud Jean-Philippe, Bergmann Michel, Ferté Guilhem, Taddei Tommaso

CSSM23_03: Online adaptation of the parametric reduced order model of a gas bearings supported rotor
Dimitri Goutaudier, Fabio Nobile, Jürg Schiffmann

CSSM23_04: A grey-box framework for flaw localization exploiting Ultrasonic Guided Waves
Paul Sieber, Sergio Nicoli, Konstantinos Agathos, Pawel Kudela, Wieslaw Ostachowicz, Eleni Chatzi

CSSM23_05: Data-Driven Model-Order Reduction of a Nonlinear Finite-Element Model based on DIC Measurements
Frederik Nordtorp Kristiansen, Anton Lykke Klausen, Gaetano Miraglia, Giuseppe Abbiati

05 B007

CSSM24 – Contact Mechanics and Tribology
Chair: Rodrigo Carvalho, Laura Bagur

CSSM24_08: Non-linear Elasticity and Contact of Zinc-Phosphate Tribofilms
Lucas Frérot, Lars Pastewka

CSSM24_09: Data-driven finite-thickness cohesive elements for frictional interfaces
Sacha Wattel, Joaquin Garcia-Suarez, Jean-François Molinari

CSSM24_10: Numerical generation of random rough surfaces using Generative Adversarial Networks
Tiago Silva Sabino, António Couto Carneiro, Rodrigo Pinto Carvalho, Francisco Andrade Pires

CSSM24_11: Rough Contact of Inelastic Materials: Viscous Effects
Vladislav A. Yastrebov

06 B032

PhD olympiads (V)
Chair: Konrad Perzyński, José César de Sá, Andrei Shvarts

PHDOLP_14: Numerical Study on Thermodiffusive Instabilities in Laminar and Turbulent Hydrogen Flames
Lukas Berger, Heinz Pitsch

11:40
PHDOLP_16: Study of the effect of the tumour microenvironment on cell response using a combined simulation and machine learning approach. Application to the evolution of Glioblastoma.
Jacobo Ayensa-Jiménez

07 B019

CFM00 – General Symposium in Computational Fluid Mechanics (II)
Chair: TBA

11:15 **CFM00_07: Experimentally validated 3-D coupled model of freezing in small-scale freeze-dryer**
Edyta Piechnik, Jacek Smołka , Michal Palacz, Ignat Tolstorebrov, Trygve M. Eikevik, Michal Stebel, Michal Haida, Andrzej J. Nowak

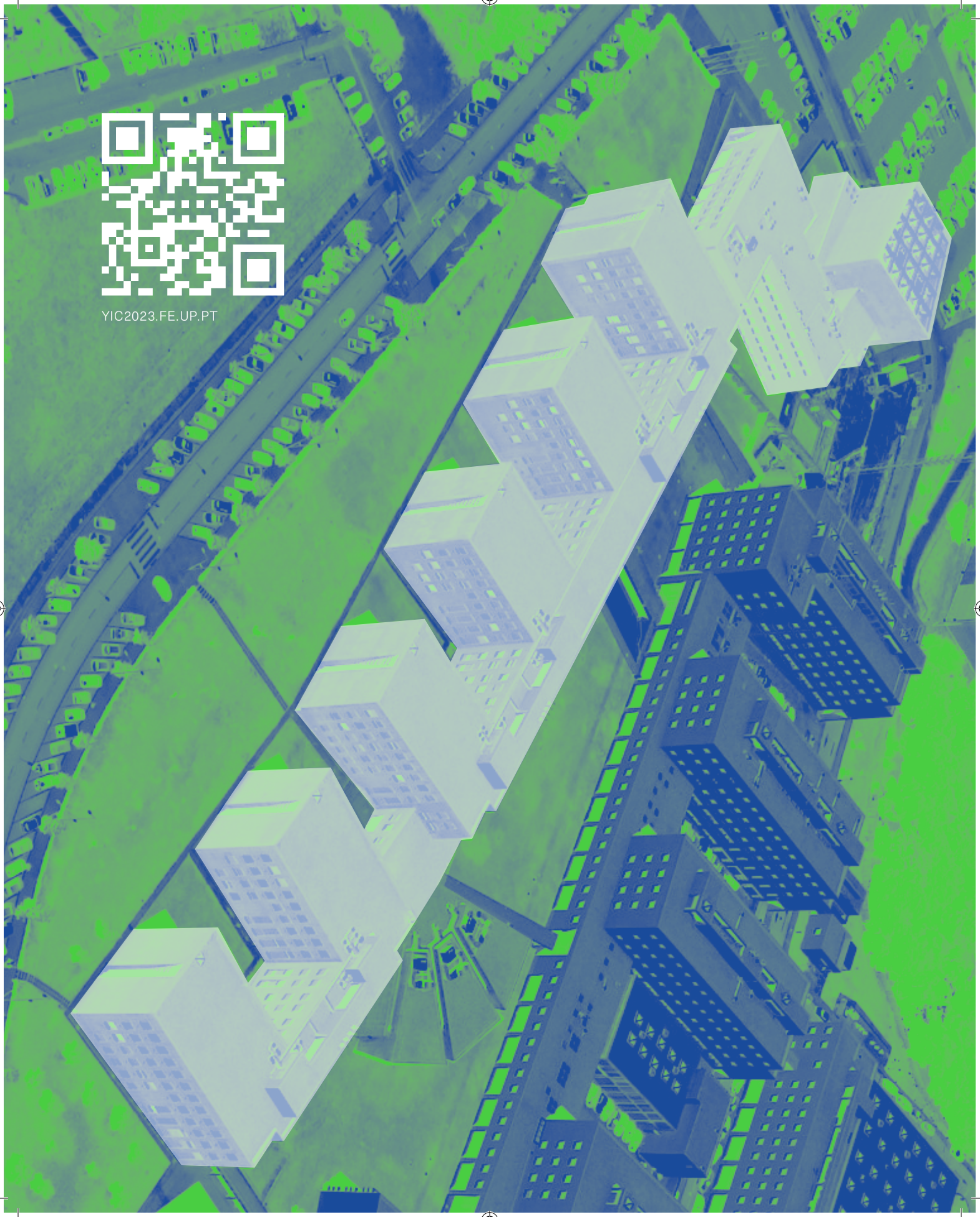
11:30 **CFM00_09: Use of combined electromagnetic fields for improved welding process**
Imants Kaldre

11:45 **CAM00_01: Implicit fully well-balanced methods for the shallow water model: a Lagrangian-Projection approach**
Celia Caballero-Cárdenas, Manuel Jesús Castro-Díaz, Tomás Morales de Luna, María de la Luz Muñoz-Ruiz

12:00 **CFM00_08: Effect of Vapour Bubble Initial Displacement on Droplet Impact onto Liquid Films**
Daniel Vasconcelos, André Silva, Jorge Barata

12:15

12:30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