

# Centre International des Sciences Mécaniques International Centre for Mechanical Sciences

## PRELIMINARY PROGRAMME 2025

### Juan Carlos Lasheras Session

#### Instabilities in Turbulence

*Coordinators:* Detlef Lohse (Enschede, Netherlands), Olga Shishkina (Göttingen, Germany) **April 7 - 10**

#### Opportunities and Challenges of Quantum Computing in Computational Mechanics

*Coordinators:* Matthias Möller (Delft, The Netherlands), Fabian Key (Vienna, Austria) **May 5 - 9**

#### Wrinkling – Theoretical Foundations, Experimental Characterization and Numerical Modeling

*Coordinators:* Valentina Balbi (Galway, Ireland), Franz G. Rammerstorfer (Vienna, Austria) **May 19 - 23**

#### Gravity Currents in the Environment

*Coordinators:* Eckart Meiburg (Santa Barbara, USA), Benjamin Kneller (Aberdeen, United Kingdom) **May 26 - 30**

#### Crack Initiation and Failure in Complex Structures: Finite Fracture Mechanics and Related Fracture Models

*Coordinators:* Aurélien Doitrand (Villeurbanne, France), Manti Vladislav (Sevilla, Spain) **June 9 - 13**

#### Recent Advancements in Multiscale and Multiphysics Modelling of Complex Materials

*Coordinators:* Tomasz Sadowski (Lublin, Poland), Patrizia Trovalusci (Rome, Italy) **June 23 - 27**

#### Architected Materials and Metamaterials: Design Principles and Effective Properties

*Coordinators:* Jean-François Ganghoffer (Metz, France), Catalin Picu (Troy, NY, USA) **June 30 - July 4**

#### Mechanics to Build and Program Soft Robots

*Coordinators:* Pierre-Thomas Brun (Princeton, NJ, USA), Joel Marthelot (Marseille, France) **July 7 - 11**

#### Modelling Techniques for the Development of Artificial Organs

*Coordinators:* Granegger Marcus (Vienna, Austria), Semlitsch Bernhard (Vienna, Austria) **July 14 - 18**

#### Non-Spherical Particles in Turbulence

*Coordinators:* Rene Van Hout (Haifa, Israel), Cristian Marchioli (Udine, Italy) **July 21 - 25**

### Jerald LaVerne Ericksen Session

#### Morphing Structural Materials – From Biology to Physics to Architecture

*Coordinators:* Peter Fratzi (Potsdam, Germany), Eran Sharon (Jerusalem, Israel) **September 1 - 5**

#### Lagrangian Approaches to Multiphysics Two-phase Flows

*Coordinator:* Jacek Pozorski (Gdansk, Poland) **September 8 - 12**

#### Advances in Wind Energy in the Era of Artificial Intelligence

*Coordinators:* Charalampos Bariotopoulos (Birmingham, United Kingdom), Enzo Marino (Florence, Italy) **September 15 - 19**

#### Metal Additive Manufacturing: Fundamentals, Modeling, Materials, and Implementation

*Coordinators:* A. John Hart (Cambridge, MA, USA), Christoph Meier (München, Germany) **September 22 - 26**

#### Machine Learning for Solid Mechanics

*Coordinators:* Kaushik Bhattacharya (Pasadena, CA, USA), Antonio De Simone (Pisa, Italy) **September 29 - October 3**

#### Image-Based Mechanics: an Overview of Experimental and Numerical Approaches

*Coordinators:* Julien Réthoré (Nantes, France), José Xavier (Lisboa, Caparica, Portugal) **October 6 - 10**

#### The Dynamics of Rolling and Balancing in Micromobility Vehicles

*Coordinators:* Gabor Orosz (Ann Arbor, MI, USA), Denes Takacs (Budapest, Hungary) **October 13 - 17**

#### Emerging Discretization Methods in Solid Mechanics

*Coordinators:* Peter Wriggers (Hannover, Germany), Jörg Schröder (Essen, Germany) **October 20 - 24**