

# PROGRAMME 2022

Rectors:

E. Guazzelli (Paris)

A. Soldati (Vienna)

W. A. Wall (Munich)

In 2022 the following Sessions of the International Centre for Mechanical Sciences (CISM) will take place at the seat of CISM in Udine (Italy) and remotely

## THE CHARLES DOERING SESSION

### Composite Manufacturing Processes: Analyses, Modelling and Simulations

May 2 - 6

Invited Lecturers:

Philippe Boisse (Lyon, France), Christophe Binetruy (Nantes, France), Pierpaolo Carlone (Salerno, Italy), Luise Kärger (Karlsruhe, Germany), Kyosev Yordan (Dresden, Germany), Stepan V. Lomov (Leuven, Belgium).

Coordinators: P. Boisse and L. Kärger

### Physically Based Modelling of Superconductors and their Most Advanced Applications

May 16 - 20

Invited Lecturers:

Daniela Boso (Padua, Italy), Luca Bottura (Geneva, Switzerland), René Flükiger (Geneva, Switzerland), Błażej Skoczeń (Cracow, Poland), Józef Spalek (Cracow, Poland), Stefan Russenschuck (Geneva, Switzerland).

Coordinator: B. Skoczeń

### Electro- and Magneto-Mechanics of Soft Solids: Experiments, Modeling, and Instabilities

June 6 - 10

Invited Lecturers:

Kostas Danas (Palaiseau, France), Yibin Fu (Staffordshire, UK), Massimiliano Gei (Trieste, IT), Marc-André Keip (Stuttgart, Germany), Oscar Lopez-Pamies (Urbana, IL, USA), Pedro Reis, (Lausanne, Switzerland).

Coordinators: K. Danas and O. Lopez-Pamies

### Instability and Bifurcation of Solids Including Coupled Field Phenomena

25th CISM-IUTAM International Summer School

June 13 - 17

Invited Lecturers:

Martine Ben Amar (Paris, France), Davide Bigoni (Trento, Italy), Michel Destrade (Galway, Ireland), Luis Dorfmann (Medford, MN, USA), Yibin Fu (Staffordshire, UK), Ray Ogden (Glasgow, UK).

Coordinators: L. Dorfmann and R. Ogden

### Architected Materials: Design Principles and Effective Properties

June 20 - 24

Invited Lecturers:

François Bartelat (Colorado Boulder, CO, USA), Jean-François Ganghoffer (Metz, France), Muamar Kadic (Besançon, France), Daphne Klotsa (Chapel Hill, NC, USA), Catalin Picu (Troy, NY, USA), Hilal Reda (Beirut, Lebanon).

Coordinators: J. F. Ganghoffer and C. Picu

### Exploiting the Use of Strong Nonlinearity in Dynamics and Acoustics

CISM-AIMETA Advanced School

June 27 - July 1

Invited Lecturers:

Bruno Cochelin (Paris, France), Oleg Gendelman (Haifa, Israel), Gaetan Kerschen (Liege, Belgium), Malte Krack (Stuttgart, Germany), Giuseppe Rega (Rome, Italy), Alexander Vakakis (Urbana, IL, USA), Fabrizio Vestroni (Rome, Italy).

Coordinators: O. V. Gendelman and A. F. Vakakis

### Convection and Deformation in Porous Media: Geophysical and Biological Flows

26th CISM-IUTAM International Summer School

July 11 - 15

Invited Lecturers:

Pietro de Anna (Lausanne, Switzerland), Marco De Paoli (Vienna, Austria), Xiaojing (Ruby) Fu (Pasadena, USA), Duncan Hewitt (London, UK), Matteo Icardi (Nottingham, UK), Sylvie Lorthois (Toulouse, France), Chris MacMinn (Oxford, UK).

Coordinators: M. De Paoli and C. MacMinn

### Materials and Electro-Mechanical and Biomedical Devices Based on Nanofibers

July 18 - 22

Invited Lecturers:

Karen De Clerck (Ghent, Belgium), Tomasz A. Kowalewski & Filippo Pierini (Warsaw, Poland), Marco Lauricella (Rome, Italy), Dario Pisignano (Pisa, Italy), Alexander L. Yarin (Chicago, USA), Eyal Zussman (Haifa, Israel).

Coordinators: T. A. Kowalewski and A. L. Yarin

### Fluid Flow and Phase Change of a Solid

July 25 - 29

Invited Lecturers:

Michael Berhanu & Sylvain Courrech du Pont (Paris, France), Pierre-Yves Lagrée (Paris, France), Cyprien Soulaire (Paris, France), M. Grae Worster (Cambridge, UK), Piotr Szymczak (Warsaw, Poland), Laurence Rongy (Bruxelles, Belgium).

Coordinators: M. Berhanu, S. Courrech du Pont and P. Szymczak

## THE KURT MAGNUS SESSION

### Mechanics of Smart and Bio-Hybrid Gels: Experiments, Theory, Numerical Simulation

August 29 - September 2

Invited Lecturers:

Mattia Bacca (Vancouver, Canada), Anne Bernheim (Be'er Sheva, Israel), Antonio De Simone (Trieste, Italy), Nancy Forde (Burnaby, Canada), Alessandro Lucantonio (Pisa, Italy), Robert M. McMeeking (Santa Barbara, CA, USA), Zhigang Suo (Cambridge, MA, USA).

Coordinators: M. Bacca and A. Lucantonio

### Sports Physics and Technology

27th CISM-IUTAM International Summer School

September 19 - 23

Invited Lecturers:

Lyderic Bocquet (Paris, France), Christophe Clanet (Palaiseau, France), Caroline Cohen (Paris, France), Pietro Enrico di Prampero (Udine, Italy), Andy Harland (Loughborough, UK), Anette (Peko) Hosoi (Cambridge, MA, USA).

Coordinators: C. Clanet and A. Hosoi

### Mechanics of Strongly Inhomogeneous Multi-Component and Multi-Layered Structures

October 3 - 7

Invited Lecturers:

Holm Altenbach (Magdeburg, Germany), Claude Boutin (Lyon, France), Weiqiu Chen (Zhejiang, P.R. China), dell'Isola, Francesco (L' Aquila, Italy), Danila Prikazchikov (Keele, UK), Konstantin Volokh (Haifa, Israel).

Coordinators: H. Altenbach and D. Prikazchikov

### Data-Driven Mechanics: Constitutive Model-Free Approach

CISM-ECCOMAS Advanced School

October 10 - 14

Invited Lecturers:

Manuel Doblaré (Zaragoza, Spain), Stefanie Reese (Aachen, Germany), Michael Ortiz (Pasadena, CA, USA), Julien Réthoré (Nantes, France), Carola-Bibiane Schönlieb (Cambridge, UK), Laurent Stainier (Nantes, France).

Coordinators: M. Ortiz and L. Stainier

## INTERNATIONAL ADVANCED PROFESSIONAL TRAINING

### Mechanics, Tribology and Manufacturing Processes

May 9 - 13

Invited Lecturers:

Niels Bay (Lyngby, Denmark), Leonardo De Chiffre (Lyngby, Denmark), Laurent Dubar (Le Mont Houy, Valenciennes, France), Pierre Montmitonnet (Sophia Antipolis, France), Jean-Philippe Ponthot (Liège, Belgium).

Coordinators: N. Bay and P. Montmitonnet

### Na-Tech Risk Management of Hazardous Facilities and Mitigation Techniques for Resilience Enhancement

September 5 - 9

Invited Lecturers:

Oreste S. Bursi (Trento, Italy), Valerio Cozzani (Bologna, Italy), Ana Maria Cruz (Kyoto, Japan), Elisabeth Krausmann (Ispra, Italy), Roberto Nascimbene (Pavia, Italy), Fabrizio Paolacci (Rome, Italy).

Coordinators: V. Cozzani and F. Paolacci

## EVENTS

### Complex Flows and Complex Fluids

Joint CISM-JMBC Course

April 4 - 8

Invited Lecturers:

Roberto Benzi (Rome, Italy), D. Lohse (Twente, The Netherlands), Elisabeth Guazzelli (Paris, France), Peter Schall (Amsterdam, The Netherlands), Jacco Snoeijer (Twente, The Netherlands), Federico Toschi (Eindhoven, The Netherlands).

Coordinators: T. Federico, G.J. Heijst and A. Soldati

## NATIONAL ADVANCED PROFESSIONAL TRAINING

National Advanced Professional Training (APT) in the fields of Structural and Geotechnical Engineering, Surveying, Environmental, Bioengineering and Industrial Engineering will be given in Italian. Related information is available on [www.cism.it](http://www.cism.it).

### Admission to Courses

On-line applications should be submitted no later than one month before the course.

A limited number of participants from universities and research centres who are not supported by their own institutions, can be offered board and/or lodging. Application for support must be sent to CISM Secretariat ([cism@cism.it](mailto:cism@cism.it)) no later than two months before the course.

Detailed programmes, admission rules and on-line application forms are available on [www.cism.it](http://www.cism.it).

