

PROGRAMME 2025

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Rectors:

E. Guazzelli (Paris)

A. Soldati (Vienna)

W. A. Wall (Munich)

In 2025, the following sessions will take place at Palazzo Antonini-Mangilli-del Torso, the seat of CISM, in Udine, Italy, and remotely.

JUAN CARLOS LASHERAS SESSION

Instabilities in Turbulence
CISM-EUROMECH Advanced Course

April 7 - 11

Invited Lecturers:

Dwight Barkley (Coventry, UK), Berengere Dubrulle (Paris, FR), Detlef Lohse (Enschede, NL), Peter Schmid (Thuwal, Makkah, SA), Olga Shishkina (Göttingen, DE), Laurette Tuckerman (Paris, FR).

Coordinators: Detlef Lohse and Olga Shishkina.

Opportunities and Challenges of Quantum Computing in Computational Mechanics

10th CISM-ECCOMAS Advanced Course

May 5 - 9

Invited Lecturers:

Boyang Chen (Delft, NL), Frank Gaitan (College Park, USA), Fabian Key (Vienna, AT), Oleksandr Kyriienko (Sheffield/Exeter, UK), Matthias Möller (Delft, NL), Mayu Muramatsu (Yokohama, JP).

Coordinators: Matthias Möller and Fabian Key.

Wrinkling – Theoretical Foundations, Experimental Characterization and Numerical Modeling

May 19 - 23

Invited Lecturers:

Valentina Balbi (Galway, IE), Yibin Fu (Staffordshire, UK), Nahiene Hamila (Brest, FR), Rui Huang (Austin, USA), Georges Limbert (Southampton UK and Cape Town, ZA), Franz G. Rammerstorfer (Vienna, AT).

Coordinators: Franz Rammerstorfer and Valentina Balbi.

Gravity Currents in the Environment

28th CISM-IUTAM Summer School

May 26 - 30

Invited Lecturers:

Claudia Cenedese (Woods Hole, USA), Jim McElwaine (Durham, UK), Eckart Meiburg (Santa Barbara, USA), Benjamin Kneller (Aberdeen, UK), Gert Lube (Palmerston North, NZ), Bruce Sutherland (Edmonton, CAN).

Coordinators: Eckart Meiburg and Benjamin Kneller.

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

June 9 - 13

Invited Lecturers:

Pedro Camanho (Porto, PT), Pietro Cornetti (Turin, IT), Aurélien Doitrand (Villeurbanne, FR), Vladislav Mantič (Sevilla, ES), Philipp Weissgraeber (Rostock, DE), Yosibash Zohar (Tel-Aviv, IL).

Coordinators: Aurélien Doitrand and Vladislav Mantič.

Recent Advancements in Multiscale and Multiphysics Modelling of Complex Materials

June 23 - 27

Invited Lecturers:

Nicholas Fantuzzi (Bologna, IT), Somnath Ghosh (Baltimore, USA), Heng Hu (Wuhan, CN), (Paris, FR), Tomasz Sadowski (Lublin, PL), Siegfried Schmauder (Stuttgart, DE), Patrizia Trovalusci (Rome, IT).

Coordinator: Tomasz Sadowski and Patrizia Trovalusci.

Architected Materials and Metamaterials: Design Principles and Effective Properties

June 30 - July 4

Invited Lecturers:

Justin Dirrenberger (Paris, FR), Jean-François Ganghoffer (Metz, FR), Catalin Picu (Troy, USA), Luca Placidi (Rome, IT), Hilal Reda (Beirut, LB), Tomas Sigmund (West Lafayette, USA).

Coordinator: Jean-François Ganghoffer and Catalin Picu.

Mechanics to Build and Program Soft Robots

July 7 - 11

Invited Lecturers:

Katia Bertoldi (Cambridge, USA), Martin Brandenbourger (Marseille, FR), Pierre-Thomas Brun (Princeton, USA), Martin Van Hecke (Leiden, NL), Barbara Mazzolai (Genoa, IT), Wim Van Rees (Cambridge, USA).

Coordinator: Joel Marthelot and Pierre-Thomas Brun.

Modelling Techniques for the Development of Artificial Organs

July 14 - 18

Invited Lecturers:

Katharine Helen Fraser (Bath, UK), Manuel Garcia-Villalba (Vienna, AT), Marcus Granegger (Vienna, AT), Martin Schweiger (Zürich, CH), Bernhard Semlitsch (Vienna, AT), Lisa Prah-Wittberg (Stockholm, SE), Adrian Wisniewski (Berlin, DE).

Coordinators: Marcus Granegger and Bernhard Semlitsch.

Non-Spherical Particles in Turbulence

July 21 - 25

Invited Lecturers:

Cristian Marchioli (Udine, IT), Mona Rahmani (Vancouver, CAN), Marco Edoardo Rosti (Okinawa, JP), Martin Sommerfeld (Halle, DE), René van Hout (Haifa, IL), Gautier Verhille (Marseille, FR), Anthony Wachs (Vancouver, CAN).

Coordinators: Cristian Marchioli and René Van Hout.

JERALD LAVERNE ERICKSEN SESSION

Morphing Structural Materials From Biology to Physics to Architecture

September 1 - 5

Invited Lecturers:

Eran Sharon (Jerusalem, IL), Peter Fratzl (Potsdam, DE), Arielle Blonder (Haifa, IL), Karola Dierichs (Potsdam, DE), Sylvain Lefebvre (Nancy, FR), Benoit Roman (Paris, FR), Shu Yang (Philadelphia, USA).

Coordinators: Peter Fratzl and Eran Sharon.

Lagrangian Approaches to Multiphysics Two-phase Flows

September 8 - 12

Invited Lecturers:

Jacek Pozorski (Gdansk, PL), Alex Liberzon (Tel Aviv, IL), Jochen Fröhlich (Dresden, DE), Alessandra S. Lanotte (Lecce, IT), Alfredo Soldati (Vienna, AT), Mickaël Bourgoïn (Lyon, FR).

Coordinators: Jacek Pozorski and Alfredo Soldati.

Advances in Wind Energy in the Era of Artificial Intelligence

September 15 - 19

Invited Lecturers:

Baniotopoulos Charalampos (Birmingham, UK), Claudio Borri (Florence, IT), Kaoshan Dai (Chengdu, CN), Hassan Hemida (Birmingham, UK), Ruediger Hoeffler (Bochum, DE), Enzo Marino (Florence, IT), Teng Wu (Buffalo, USA).

Coordinators: Charalampos Baniotopoulos and Enzo Marino.

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

CISM-EUROMECH Advanced Course

September 22 - 26

Invited Lecturers:

A. John Hart (Cambridge, USA), Bianca Maria Colosimo (Milan, IT), Jürgen Eckert (Leoben, AT), Andrey Gusarov (Erlangen, DE), Neil Hodge (Livermore, USA), Christoph Meier (München, DE).

Coordinators: A. John Hart and Christoph Meier.

Machine Learning for Solid Mechanics

11th CISM-AIMETA Advanced Course

September 29 - October 3

Invited Lecturers:

Antonio De Simone (Pisa, IT), Kaushik Bhattacharya (Pasadena, USA), Carola Bibiane Schoenlieb (Cambridge, UK), Nikola Kovachki (Nvidia Research Labs, USA), Laurent Stainier (Nantes, FR), Dirk Mohr (Zürich, CH).

Coordinators: Kaushik Bhattacharya and Antonio De Simone.

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

October 06 - 10

Invited Lecturers:

Benoît Blaysat (Clermont-Ferrand, FR), Nele Famaey (Heverlee, BE), Jean-Charles Passieux (Toulouse, FR), Claudia Redenbach (Kaiserslautern-Landau, DE), Julien Réthoré (Nantes, FR), José Xavier (Caparica, PT).

Coordinators: Julien Réthoré and José Xavier.

The Dynamics of Rolling and Balancing in Micromobility Vehicles

October 13 - 17

Invited Lecturers:

Denes Takacs (Budapest, HU), Gabor Orosz (Ann Arbor, USA), Florian Klingner (Vienna, AT), Arend Schwab (Delft, NL), Yizhar Or (Haifa, IL), Caishan Liu (Beijing, CN).

Coordinators: Gabor Orosz and Denes Takacs.

Emerging Discretization Methods in Solid Mechanics

October 20 - 24

Invited Lecturers:

Laura De Lorenzis (Zurich, CH), Jörg Schröder (Duisburg-Essen, DE), Peter Wriggers (Hannover, DE), Jože Korelc (Ljubljana, SL), Antonio Gil (Swansea, UK), Jan Niklas Fuhg (Austin, USA).

Coordinators: Peter Wriggers and Jörg Schröder.

EVENTS

CISM-Città di Udine International Fellowships

Award Ceremony

The following researchers have been selected as the 2025 Scientific Ambassadors of the City of Udine:

- Eva Kanso (USA) and Pietro Cicuta (UK)

- Harry Alston (FR) and Luca Cocconi (DE)

Udine, May 8

Recent advances in the mechanics of solids and structures: from methodological innovations based on Machine Learning and inverse problems, to applications in robotics and metamaterials

CISM-IISc Joint Advanced School

Bengaluru, India - July 21 - 25

Invited Lecturers:

A. De Simone (CISM), L. De Lorenzis (CH), D. Misseroni (I), V. Dabade (IN), R. Chaunsali (IN), A. Joshi (IN).

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.

All CISM courses and events of 2025, along with detailed programmes, admission rules, and online application forms, can be found at www.cism.it or by scanning the QR code at the bottom of this poster.

