

8:15-9:15 Registration

Session W1, Wednesday 09:15-10:30, Chair: Michael Ortiz

09:15–09:30 Opening

09:30-10:00 Basic products in hyperelasticity
Pablo Pedregal, University of Castilla-La Mancha, Spain

10:00-10:30 Recent advances in neural PDE solvers based on geometric and Topological Deep Learning
Elías Cueto, University of Zaragoza, Spain

10:30-11:00 Poster Session and Coffee Break

Session W2, Wednesday 11:00-13:00, Chair: Kerstin Weinberg

11:00-11:30 From calibration to validation in Computational Solid Mechanics
Stefan Hartmann, Clausthal University of Technology, Germany

11:30-12:00 Models for sharp fracture with Griffith propagation and strength-based nucleation
Christopher Larsen, WPI, USA

12:00-12:30 Fracture resistance of polyacrylamide–alginate hydrogels under monotonic and cyclic loading
Jesús Rodríguez Pérez, Universidad Rey Juan Carlos, Spain

12:30-13:00 Discussion of fracture models in periodic settings
Dorothee Knees, University of Kassel, Germany

13:00-14:30 Lunch Break and Poster Session

Session W3, Wednesday 14:30-16:00, Chair: Thomas Virazels

14:30-15:00 Rheology and rheological modeling
Holm Altenbach, Otto-von-Guericke-Universität Magdeburg, Germany

15:00-15:30 Macroscopic yield surfaces of porous solids with anisotropic matrix behavior
Guadalupe Vadillo, Carlos III University of Madrid, Spain

15:30-16:00 Thermomechanical investigation of dynamic shear fracture
Daniel Rittel, Technion, Israel

16:00-16:30 Coffee Break and Poster Session

Session W4, Wednesday 16:30-17:30, Chair: Alicia Salazar

16:30-17:00 Eigendamage: an eigendeformation model for the variational approximation of cohesive fracture
Bernd Schmidt, University of Augsburg, Germany

17:00-17:30 Real-time in situ X-ray imaging of pore compaction and spall fracture in plate impact tests on additively manufactured metals
Thomas Virazels, Carlos III University of Madrid, Spain

19:30-21:30 Welcome Cocktail, Casa Manzar

Session Th1, Thursday 09:00-10:30

Chair: Ignacio Romero

- 09:00-09:30 Shock-induced deformation and failure during pore collapse in PMMA
Guruswami Ravichandran, California Institute of Technology, USA
- 09:30-10:00 Towards a virtual corrosion lab: a new generation of mechanistic, electro-chemo-mechanical models for pitting and stress corrosion cracking
Emilio Martínez-Pañeda, University of Oxford, UK
- 10:00-10:30 From CT scans to simulation: an enriched finite cell method for microstructured materials and fracture
Alexander Düster, Hamburg University of Technology, Germany

10:30-11:00 Poster Session and Coffee Break**Session Th2, Thursday 11:00-13:00**

Chair: José Alfonso Artero

- 11:00-11:30 Rate-independent damage and delamination processes: connections via stochastic homogenization and dimension reduction
Marita Thomas, Clausthal University of Technology, Germany
- 11:30-12:00 Nucleation and propagation of brittle fracture as a constrained energy minimization problem
Óscar López-Pamies, University of Illinois Urbana-Champaign, USA
- 12:00-13:00 **Round Table**
Michael Ortiz, California Institute of Technology, USA
Christina Schenk, IMDEA Materials, Spain

**13:00-14:30 Group Photo
Lunch Break and Poster Session****Session Th3, Thursday 14:30-16:00**

Chair: Diego Infante García

- 14:30-15:00 Interfacial friction: from roughness effects to rupture front propagation
Demirkan Coker, Middle East Technical University, Turkey
- 15:00-15:30 Phase-field peridynamics for dynamic fracture at finite deformations
Christian Wieters, Karlsruhe Institute of Technology, Germany

15:30-19:00 Visit to the Enchanted City**20:00-22:30 Conference Dinner at Parador de Cuenca**

Session Fri1, Friday 09:00-10:30

Chair: Jesús Pernas Sánchez

- 09:00-09:30 Phase-field approximations for cohesive-zone fracture models
Sergio Conti, University of Bonn, Germany
- 09:30-10:00 Models and numerical methods for mixed-dimensionality problems in mechanics of solids and materials
Ignacio Romero, Technical University of Madrid, Spain
- 10:00-10:30 Gradient-extended modeling of deformable porous media across scales
Marc-André Keip, University of Stuttgart, Germany

10:30-11:00 Poster Session and Coffee Break**Session Fri2, Friday 11:00-13:00**

Chair: Jesús Rodríguez Pérez

- 11:00-11:30 Configurational forces and the Virtual Element Method (VEM): an efficient combination for accurate crack growth simulations under quasi-static and dynamic loading conditions
Andreas Ricoeur, University of Kassel, Germany
- 11:30-12:00 An analytical model for high-velocity impacts of highly deformable projectiles
Jorge López Puente, Carlos III University of Madrid, Spain
- 12:00-12:30 Current developments in micromagnetic simulation
Jörg Schröder, University of Duisburg-Essen, Germany
- 12:30-13:00 Thermodynamically compliant constitutive models for large strain thermoelastic and thermo-viscoelastic soft isotropic and anisotropic electro-active solids
Javier Bonet, Polytechnic University of Catalonia, Spain

13:00-14:30 Lunch Break and Closing

Poster Presentations

1. Macroscopic Coulomb force vs. Maxwell stress theory: consistencies and discrepancies
*Lennart Behlen**, Daniel Wallenta and Andreas Ricoeur,
University of Kassel
2. Real-time in situ X-ray imaging of dynamic shear fracture in porous metals
*M.N.T. Galvao**, A. R. Vishnu, J. García Molleja, J. A. Rodríguez-Martínez, F. Sket
Carlos III University of Madrid
3. A GPU-accelerated ADMM solver for large-scale lower-bound finite element limit analysis
*Yunfei Gao**, Chris M. Martin and Paul Goulart
University of Oxford
4. Implicit FFT framework for nonlinear dynamics in heterogeneous solids
*Menglei Li**, Bing Wang and Javier Segurado
Harbin Institute of Technology
5. Augmented immersed interface method for fractional scattering: the interface traction as the discriminating quantity
*José M. Cortés**, Inas Faris, Antonio Callejas, Guillermo Rus, University of Granada
6. A torsional shear wave bioreactor for controlled mechanostimulation of three-dimensional melanoma spheroids
*Manuel Hurtado**, Daniel Martínez-Moreno, Antonio Callejas, Juan A. Marchal, Juan M. Melchor,
Guillermo Rus,
University of Granada
7. Data-driven discovery of convex strain energy functions and HGO material parameters using TensOpSciML, a tensor calculus framework for scientific machine learning
*Rubén Muñoz-Sierra**, Jacobo Ayensa-Jiménez, and Manuel Doblaré,
University of Zaragoza
8. A Riemannian geometric mean for textured piezoelectric polycrystals: energetically admissible and unit-invariant one-point estimate
*Julieta L. Buroni** and Federico C. Buroni, University of Seville
9. Tensor-Network Spectral Galerkin methods for computational mechanics
*Juan José Rodríguez-Aldavero**, Ángel De La Rosa and Juan José García-Ripoll,
Institute of Fundamental Physics (IFF-CSIC)
10. Enhancing marine concrete performance: experimental study of polymer-modified concrete
*Zhenyi Yan**, Shanshan Cheng, Willson Masih, Gonzalo Ruiz, Rena C. Yu, Ángel De La Rosa,
John Summerscales, Lee Durndell and Jiayi Jin,
University of Plymouth
11. Atomistic modeling of early tricalcium silicate hydration toward silicate chain formation
*Ye Yuan**, Rena C. Yu, Pilar Ariza and Gonzalo Ruiz,
University of Castilla-La Mancha

12. Synergistic effect of steel and PVA fiber hybridization on the workability, pore structure, and mechanical performance of Ultra-High-Performance Concrete
J.D. Ruiz Martínez, J.D. Ríos, E.M. Pérez-Soriano, H. Cifuentes, C. Leiva, University of Seville*
13. Complete cubic polynomial transformation for regularizing nearly hyper-singular integrals
Juan J. Granados and Rafael Gallego, University of Granada*
14. Discrete constraint-driven generation of dense 2D particulate RVEs
K. Al Zoubi, E. Puertas and R. Gallego, University of Granada*
15. Enhancing out-of-distribution generalization of Minimal State Cell network using physics-informed learning
Hodei Azurmendi Hormaetxe, Borja Erice Echavarri, and Aitor Duo Zubiaurre, Mondragon University*
16. Characterisation of anisotropy and time-dependent environmental degradation of 3D-printed Onyx
Itxaro Sukia, Aritz Esnaola, Maria Lißner, Jon Aurrekoetxea and Borja Erice, Mondragon University*
17. Influence of adhesive degradation on the dynamic response of piezoelectric haptic actuators
Amalia Prieto-Sánchez, María J. Seva, Iván Ubero-Martínez, María S. Commisso, Luis Rodríguez-Tembleque, Federico C. Buroni, University of Seville*
18. A spring-layer imperfect interface with thermal opening for effective thermomechanical properties
María A. García-Polonio, Luis Rodríguez-Tembleque, and Federico C. Buroni, University of Seville*
19. On the micro-polar origin of the two shear coefficients in Timoshenko beam theory
Roberto Palma and Rafael Gallego, University of Granada*
20. From idealized crack-tip fields to finite specimens: geometric iso-failure transfer in nonlocal fracture mechanics
A. E. Gómez-Ovalle and A. Díaz, University of Burgos*
21. Exploring acoustoelastic nonlinearity for the characterisation of microstructural changes in tissue-mimicking phantoms
Inas Faris, José M. Cortés, Inma Pulido and Guillermo Rus, University of Granada*
22. Real-variable surface Green's function for image stresses of buried dislocation loop sources in anisotropic half-spaces
Federico C. Buroni, University of Seville*
23. Modified Brazilian test for tensile characterization of SFRC using advanced monitoring techniques
Willson Masih, Gonzalo Ruiz, Sohanth T. Maganty, Awadhesh Sharma, Sonalisa Ray, Vivek Vishwakarma, Ángel De La Rosa and Rena C. Yu, University of Castilla-La Mancha*
24. Bayesian identification of patient-specific mechanical properties in abdominal aortic aneurysms from MRI Data
Estefanía Peña, University of Zaragoza
25. AI-driven predictive optimization framework for railway infrastructure maintenance
Daniela Henríquez, Zacarías Grande, Elisa Poveda, University of Castilla-La Mancha*