PRIFYSGOL ABERYSTWYTH UNIVERSITY

Aberystwyth, Wales, UK, June 7–9, 2023

Mathematics and Mechanics of Solids and Structures

Scientific challenges and methodologies for future societal development

Workshop to celebrate 150 years since the formation of Wales' first university

*Supported by **Aberystwyth University** and the EU Framework HORIZON2020 programmes:*

- ❑ *ERC AdG project "**Beyond** **hyperelasticity**: a virgin land of extreme materials"*
- ❑ *MSCA RISE project "**Effect**ive **Fact**orisation techniques for matrix-functions: Developing theory, numerical methods and impactful applications"*
- ❑ *MSCA ITN EID project "**Re-Fracture2:** Modelling and optimal design of refractories for high temperature industrial applications for a low carbon society"*

Objectives

More than ever, Solid and Structural Mechanics are facing nowadays exciting challenges posed by a constantly changing society. The aim of this workshop is to bring together researchers and scholars in mathematical and mechanical modelling and numerical simulation of multi-scale and multi-physics phenomena, composite materials and structures, metamaterials and architected materials. The workshop covers recent advances in mathematical analysis and modern numerical techniques applicable to a wide range of physical, engineering and societal problems.

Topics include:

- Waves in inhomogeneous and periodic structures
- Wiener-Hopf methods with applications
- Multi-scale contact mechanics with adhesion
- Modelling of ceramics, composites and metamaterials
- Nonlinear analysis and inverse problems
- Simulation of tribological contacts
- State-of-the-art and challenges in constitutive modelling of materials
- Instabilities and nonlinear dynamics of deformable solids
- Characterization of material behavior at high-temperatures

Organising Committee:

Profs. Gennady Mishuris, Davide Bigoni, Andrea Piccolroaz

Call for papers:

Anyone interested in participating should e-mail an abstract (in English) to the organiser by April 15, 2023.

Contact:

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