Minisymposium 18
Advanced Discretization Methods in Computational Mechanics

Computational Mechanics is a critical and dynamic research field underpinning a wide range of engineering sectors, including Civil, Mechanical, Aerospace, Naval, Environmental, Biomedical, and Ocean Engineering, among others. The field is dedicated to advancing computational tools and innovative discretization methods that are efficient, accurate, and versatile enough to address complex problems and physical phenomena across disciplines.

Prominent examples of advanced discretization methods include (but are not limited to) **Isogeometric Analysis (IGA)**, **Isogeometric Collocation (IGA-C)**, **Isogeometric Boundary Elements (IGA-BEM)**, **Mimetic Finite Differences (MFD)**, **Virtual Elements (VEM)**, **Polygonal Finite Elements**, **Extended/Generalized Finite Element Methods (XFEM/GFEM)**, **Immersed Methods**, **Smoothed Particle Hydrodynamics (SPH)**, **Peridynamics** and **Meshfree** methods.

The **Italian Group of Computational Mechanics (GIMC)** and the **Greek Association of Computational Mechanics (GRACM)** are co-organizing **Minisymposium MS 18: Advanced Discretization Methods in Computational Mechanics**, providing a platform for discussing the latest advancements, challenges, applications, and opportunities in this cutting-edge domain.

The minisymposium welcomes contributions addressing both theoretical developments and practical numerical applications. Topics of interest include innovative methodologies for tackling complex engineering challenges, such as simulation of material and geometric nonlinearities, interface modeling, crack propagation tracking, regularized formulations, phase-field models, fluid-structure interaction, computational aspects in biomechanics and other multiphysics simulations of interest to the computational mechanics community. Submissions related to the integration of data-driven algorithms in Computational Mechanics are also strongly encouraged.

MS organizers
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