

Efficient numerical methods in computational biomechanics

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Short Description

The numerical simulation of biomechanical problems is an important tool to understand complex biological and physiological phenomena, to prevent and treat diseases, finally improving health. However, modelling and simulation are often challenging in a biomechanical context, due to complex geometries, multiple temporal and spatial scales, or complex coupled multi-physics problems that might even contain interactions between various objects, such as organs, chemicals, cells and collagen bundles. This mini-symposium aims to bring together researchers working in the field of modelling and simulation of biomechanical problems, such as (but not restricted to) cardiovascular, pulmonary and cellular processes, tumor growth or wound healing. Due to the complexity of the problems, efficient numerical algorithms are required, such as multiscale methods, adaptivity, parallelization or data-driven and machine-learning techniques.