

## COMPUTATIONAL MODELS FOR SOFT TISSUES

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**Key words:** Biomechanics, Soft Tissues, Constitutive models.

### ABSTRACT

Computational Biomechanics is a field that is expanding and developing at remarkable speed. One of the most promising subjects of development is the numerical simulation applied to living organs, mainly the biomechanical behaviour of soft tissues. However, for its success, several research topics should be considered like as, image processing and analysis, optimization, geometric modelling, numerical modelling, material modelling, material constitutive laws, experimental methodologies combined with numerical methods, and their applications on real environments must be addressed. For high-level Computational Biomechanics based tasks are successfully, new algorithms have to be continually developed and improved and their outputs must be evaluated by expertise users, physiologists as medical doctors, for example.

The main goal of the proposed symposium is to attract scientists from even a wider variety of scientific areas, across a broader field of topics and from more diverse geographical locations. Participants in this symposium should present and discuss their proposed methods in the corresponding fields bringing the state of the art and the future developments and evaluation in computational biomechanics of soft tissues. This symposium should be a good opportunity for them to refine their ideas for future work and to establish possible cooperation.

The topics of the session are related to computational biomechanics of soft tissues (skin, vessels, ligaments, tendons, muscles, organs, etc.), including: Numerical methods applied to soft tissues (FE and Meshless methods); Modelling of biological soft tissues; Image processing and analysis applied to soft tissues; Constitutive models for soft tissue structures; Multi-scale modelling of soft tissues; Neural biomechanics; Grid Computing and high performance computing for biomechanics of soft tissues