COMPUTATIONAL BIOMECHANICS AND APPLICATIONS

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ABSTRACT

Computational Biomechanics is an exciting and challenging area of Computational Mechanics. Computational modeling and simulation of living tissues allow for new insights as well as quantitative analyses from the molecular up to the organ level. Reliable predictions support clinical diagnoses and treatment of diseases, as well as the design of new biomedical devices.

The mini-symposium on Computational Biomechanics and Applications has the aim of presenting and discussing recent developments in Biomechanical and Biomedical Engineering numerical simulation techniques, either in terms of mathematical modeling, computer simulation and validation. The mini-symposium includes, but it is not limited to, works related with several topics in biomechanics, such as:

- biomechanics of the musculoskeletal system

- joint biomechanics - hip/knee/ankle/shoulder/hand

- soft tissue - ligaments/tendons/cartilage/skin

- implants/orthotics/prosthetics

- orthopedic biomechanics

- cardiovascular and hemodynamic bio-fluids

- respiratory biomechanics

- oral-facial biomechanics

- tissue biomechanics

- tissue engineering

- sports biomechanics