

NUMERICAL METHODS APPLIED TO HUMAN-ROBOT INTERFACES

400 – BIOMECHANICS AND MECHANOBIOLOGY

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ABSTRACT

Artificial intelligence and recent developments in neurotechnology and nanotechnology permitted fast paced attachment of robotics interfaces to the human body. The development and performance of such interfaces may be assisted and predicted by proper numerical modelling and analysis.

This mini-symposium intends to explore the application of numerical methods that emulate the response of prosthetics, orthosis, exoskeletons and other devices responsible for bridging biological tissue and rehabilitation-augmentation robots. The broad spectrum of physics in human-robotic interfaces are explored, such as soft tissue mechanics, electrical stimuli, thermal dissipation and optics, dynamics between living bones and artificial implants.

From the invasive incorporation of prosthetics in amputees, such as osteo-integration to smart contact lenses to monitor and early diagnose pathologies, this session intends to present numerical analysis of cutting edge technology to achieve optimal integration of automation and artificial intelligence in the health segment.

The authors are invited to submit their work on human-robot interfaces for a 20 minutes oral presentation.

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