

SIMULATION OF CARDIOVASCULAR PROCEDURES AND DEVICES

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ABSTRACT

Realistic simulations, exploiting computational methods as structural FEA, FSI or CFD, have proved their effectiveness to optimize the design of minimally-invasive cardiovascular devices or to support the surgical procedure planning. A multidisciplinary approach is necessary to enhance the reliability and the use of such simulations in the clinical practice.

This mini-symposium would provide a meeting point for physicians, device manufactures, and (academic or industrial) engineers, who are investigating, through numerical simulations, the cardiovascular system with a particular focus on the treatment of endovascular and heart valve diseases.

Topics can include, but are not limited to, patient-specific analyses of hemodynamics, structural and/or fluid mechanics in percutaneous coronary or peripheral interventions such as stenting, mathematical and computation methods applied to the development and optimization of novel vascular and heart valve prostheses.

While the primary aim of the mini-symposium is to report on computational mechanics, related topics such as advanced experimental methods providing proper data for validation of computational models will be also welcome.

The submission of patient-specific analyses addressing real clinical cases and based on advanced medical image analysis is also encouraged.