

Minisymposium Abstract

Biofluids and Coupled Problems in Biomechanics

8th World Congress on Computational Mechanics

5th European Congress on Computational Methods in Applied Sciences and Engineering

Venice, Italy, July 30–June 5, 2008

<http://www.iacm-eccomascongress2008.org>

This minisymposium aims to bring together experts in high-performance simulation of fluid and structural mechanics and specialists in modeling physiology of complex biofluids in order to address challenging analysis and design problems in biomedicine and in biomedical engineering.

Topics include computational methods and models for:

- simulation of microstructured fluids
- flow-induced deformation of vesicles and cells
- flow-induced physiological changes in blood—hemolysis, thrombosis, cell adhesion
- flow and transport in tissues and scaffolds
- flow and transport in lungs
- fluid-structure interaction and biological multi-physics problems
- turbulent flows of non-Newtonian liquids
- data visualization specific to complex fluids

Of particular interest are methods for coupling microscopic and macroscopic behavior across length and time scales. Contributions describing applications such as flows in actual devices and systems are encouraged.

Our goal is to provide a forum for discussion and exchange of ideas that will lead to the development of more realistic physical and physiological models, and their inclusion in large-scale simulations.

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