**6<sup>th</sup> European Conference on Computational Mechanics (Solids, Structures and Coupled Problems) (ECCM 6)**
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# DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS

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## ABSTRACT

This minisymposium aims to bring together computer modeling experts in the fields of cardiovascular and pulmonary biomechanics. Both theoretical and applied work will be showcased. 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.

Topics include - but are not limited to - computational methods and models for:

- Fluid-structure interaction in cardiovascular and respiratory mechanics

- Computational methods for medical device modeling and performance evaluation

- Parameter estimation & inverse problems in cardiovascular mechanics

- Computer methods for disease research and surgical planning

- Cardiovascular tissue growth and remodelling

- Flow-induced physiological changes in blood - hemolysis, thrombosis, cell adhesion

- Flow and transport in tissues and scaffolds.

- System level modeling techniques for cardiovascular and pulmonary circulation

- Flow and transport in lungs

- Machine learning techniques in computational biomedical engineering

- Uncertainty quantification for complex problems in biomechanics