

Workshop title: Biofluid Mechanics

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Introduction

Introduction to biological flows
Physiology of circulatory flow in human body

Fluid Mechanics in Cardiovascular system

Pulsatile flows
Wave propagation and Monod-Korteweg expression
Modeling of blood vessels
Peristaltic motion of blood flows
Fluid mechanics of arterial bifurcation and curved arteries
Blood rheology and flow properties of blood

Blood flow modeling in cardiovascular system

Electric analogy of blood flow in an artery
Electric analogy of blood flow in cardiovascular system

Modeling of respiratory system

Basics of gas distribution and exchange in the human lung
Basics of particle distribution and deposition in the human lung

Mass transport in blood flow

Mass transfer through the membranes
Compartment modeling of mass transport in cardiovascular system