

THE HUMAN CIRCULATION AND ASSOCIATED DISEASES:

MODELS, METHODS AND SIMULATIONS.

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ABSTRACT

This mini-symposium aims to bring together experts in mathematical modeling, biomedical engineering, and computational science, alongside physiologists, to explore the interdisciplinary theme of human circulation and its associated diseases. Emphasis will be placed on innovative models, robust computational methodologies, and challenging medical applications.

On the **biofluid dynamics** front, we will highlight holistic approaches that encompass both the arterial and venous systems, as well as other fluid compartments, such as cerebrospinal fluid and lymph. Studies that examine the system-wide coordinated interaction of human circulation with other bodily systems—particularly the nervous or respiratory systems—are especially encouraged.

In terms of **applications**, presentations will address cardiovascular diseases like arterial hypertension, as well as neurological conditions, such as idiopathic intracranial hypertension. Presentations focusing on specific regions where circulation plays a critical role are also welcome. Notable examples include ocular hemodynamics, as well as blood flow to vital organs such as the heart, brain, and kidneys, alongside their associated pathologies.

Regarding **computational methodologies**, we welcome all approaches, with a particular interest in innovative techniques.