IWR Interdisciplinary Center for Scientific Computing

UNIVERSITÄT HEIDELBERG ZUKUNFT SEIT 1386

IWR COLLOQUIUM SUMMER SEMESTER 2024

Prof. Christian Wieners

Institute for Applied and Numerical Mathematics, Karlsruhe Institute of Technology (KIT)

Efficient and Robust Coupling Methods for Electro-Mechanical Models of the Human Heart

Computational modeling of the cardiovascular system can help to understand the relevant mechanisms and help to tailor treatments for heart diseases.
We introduce a fully coupled PDE system for electrophysiology and cardiac mechanics combined with ODEs of ionic concentrations, the blood pressure in the cardiac chambers and a model for the circulatory system.
The model is realized in the parallel software system M++, and we show that the full model for a heartbeat is scaling very well on modern HPC systems.

Also streamed via Zoom

May 8, 2024 · 16:15
Mathematikon · Conference Room / 5th Floor
Im Neuenheimer Feld 205 · 69120 Heidelberg
www.iwr.uni-heidelberg.de/events/iwr-colloquium

HGS MathComp Mixer
Prior to the IWR-Colloquium: Get-together for all members of the HGS MathComp
15:30 · Mathematikon · Common Room / 5th Floor