Computing the Heart Beat: The Role of Computer Models in Basic Research and Clinical Applications

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Despite the overwhelming wealth of biological and clinical data available in the post-genomic era, gaining mechanistic insight into cardiac function remains to be a challenge. Computational models are increasingly considered as a powerful adjunct to harness these data, thus allowing the quantitative observation of cause-effect relationship at a level of biophysical detail not achievable with experimental techniques alone.

An overview of capabilities and limitations of state of the art organ scale computer models of cardiac electrophysics will be given and selected concurrent modeling applications in basic research (impaired calcium handling and metabolism in arrhythmogenesis) and clinical research (patient-specific therapeutic optimization) will be discussed.

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Cardiology Science Lunch Berlin
a weekly exchange of insights and ideas in cardiovascular medicine

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