

Domain Decomposition Methods for Cardiac Electro-Mechanics

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SFB Workshop on Efficient Solvers in Biomedical Applications

ABSTRACT

In this talk we will present a structural model for the nonlinear elastic behavior of cardiac tissue and outline the main equations of strongly and weakly coupled electro-mechanics. The resulting nonlinear models lead to very complex and time-consuming algorithms. Hence parallel methods are very well suited to treat such problems. We outline the main ideas of domain decomposition methods and show their application to the cardiac model. Numerical examples are included where we compare different solution strategies for the elasticity problem. Finally, we give first examples of the coupled problem.