

Abstract

SFB Workshop: Efficient Solvers in Biomedical Application

Mixed cG/dG Finite Element Methods for Solving the Bidomain Equations

In this talk we present a mixed cG/dG finite element method which is continuous in space and discontinuous in time for the solution of the cardiac bidomain equations. To this end we use existing results on existence and uniqueness for the quasi-stationary case, and apply them for the parabolic system. Further we will focus on a stability and error analysis and we present some first numerical results. Such an approach allows for rather general discretization in space and time including adaptive refinements, and the coupling with other physical fields such as mechano-electric feedback.