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Block Preconditioners for PDEs Arising from the Bidomain Model of the Electrical Activity in the Heart

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In this talk we will study block preconditioners based on the Jacobi, Gauss-Seidel and symmetric Gauss-Seidel block algorithms for two alternative formulations of the Bidomain equations, that model the electrical activity in the heart. Numerical experiments and theoretical results show that the two formulations behave differently with respect to the different algorithms. Some, but not all of the algorithms are order optimal with respect to the spatial and the time discretization parameters.