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Preconditioning for Constrained Optimization

Title:

Preconditioning

Author

PDE-constrained optimization

keywords:

Quadratic programming

Interior point methods

Abstract:

A crucial application of preconditioned iterative methods is to the solution of saddle point systems arising from constrained optimization problems. In this talk we focus on the interior point solution of quadratic programming problems, including those derived from PDE-constrained optimization problems with additional box constraints, where the dominant computational expense results from solving Newton systems of saddle point form. We discuss the development of rapid solvers for such problems, by constructing powerful approximations of the matrix (1,1)-block and Schur complement, and verify the potency of our methods using a range of test problems.

Time:

Mar 31, 10:29 GMT