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Incomplete factorization constraint preconditioners for saddle-point matrices

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We consider the application of the conjugate gradient method to the solution of large symmetric, indefinite linear systems. Special emphasis is put on the use of constraint preconditioners and a new factorization that can reduce the number of flops required by the preconditioning step. Results concerning the eigenvalues of the preconditioned matrix and its minimum polynomial are given. Numerical experiments validate these conclusions.