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ETNA
Kent State University
etna@mcs.kent.edu

NUMERICAL EXPERIMENTS WITH ALGEBRAIC MULTILEVEL PRECONDITIONERS*

GÉRARD MEURANT†

Abstract. This paper numerically compares different algebraic multilevel preconditioners to solve symmetric positive definite linear systems with the preconditioned conjugate gradient algorithm on a set of examples arising mainly from discretization of second order partial differential equations. We compare several different smoothers, influence matrices and interpolation schemes.

Key words. multilevel preconditioner, conjugate gradient.

AMS subject classifications. 65F10, 65F50.

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†CEA/DIF, DCSA/ED, BP 12, 91680 Bruyères le Chatel, France. E-mail: gerard.meurant@cea.fr