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ETNA
Kent State University
etna@mcs.kent.edu

PARALLEL, SYNCHRONOUS AND ASYNCHRONOUS TWO-STAGE MULTISPLITTING METHODS *

RAFAEL BRU†, VIOLETA MIGALLÓN‡, JOSÉ PENADÉS†, AND DANIEL B. SZYLD§

Abstract. Different types of synchronous and asynchronous two-stage multisplitting algorithms for the solution of linear systems are analyzed. The different algorithms which appeared in the literature are reviewed, and new ones are presented. Convergence properties of these algorithms are studied when the matrix in question is either monotone or an H-matrix. Relaxed versions of these algorithms are also studied. Computational experiments on a shared memory multiprocessor vector computer are presented.

Key words. asynchronous methods, two-stage iterative methods, linear systems, multisplittings, parallel algorithms.

AMS subject classifications. 65F10, 65F15.

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†Departament de Matemàtica Aplicada, Universitat Politècnica de València, E-46071 València, Spain (rbru@mat.upv.es). This research was partially supported by both Spanish CICYT grant number TIC91-1157-C03-01 and the ESPRIT III basic research programme of the EC under contract No. 9072 (project GEPPCOM).

‡Departament de Tecnologia Informàtica i Computació, Universitat d'Alacant, E-03080 Alacant, Spain (violeta@dtic.ua.es). (jpenades@dtic.ua.es). This research was supported by Spanish CICYT grant number TIC91-1157-C03-01.

§Department of Mathematics, Temple University, Philadelphia, Pennsylvania 19122-2585, USA (szyld@euclid.math.temple.edu). This research was supported by the National Science Foundation grant DMS-9201728.