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A CLASS OF ASYNCHRONOUS MATRIX MULTI-SPLITTING MULTI-PARAMETER RELAXATION ITERATIONS

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摘要
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A CLASS OF ASYNCHRONOUS MATRIX MULTI-SPLITTING MULTI-PARAMETER RELAXATION ITERATIONS

Zhong-zhi Bai(1),De-ren Wang(2),D.J. Evans(3)

(1)ICMSEC, Chinese Academy of Sciences, Beijing 100080, China;(2)Department of Mathematics, Shanghai University (Jiading Campus);(3)Department of Computer Studies, Loughborough University of Technology Loughborough, U.K.

Abstract A class of asynchronous matrix multi-splitting multi-parameter relaxation methods, including the asynchronous matrix multisplitting SAOR, SSOR and SGS methods as well as the known asynchronous matrix multisplitting AOR, SOR and GS methods, etc., is proposed for solving the large sparse systems of linear equations by making use of the principle of sufficiently using the delayed information. These new methods can greatly execute the parallel computational efficiency of the MIMD-systems, and are shown to be convergent when the coefficient matrices are H-matrices. Moreover, necessary and sufficient conditions ensuring the convergence of these methods are concluded for the case that the coefficient matrices are L-matrices.

Key words System of linear equations asynchronous iteration matrix multisplitting relaxation convergence.

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