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On parallel multisplitting block iterative methods for linear systems arising in the numerical solution of Euler equations.

Summary: The paper studies the convergence of some parallel multisplitting block iterative methods for the solution of linear systems arising in the numerical solution of Euler equations. Some sufficient conditions for convergence are proposed. As special cases the convergence of the parallel block generalized accelerated overrelaxation (BGAOR), the parallel block AOR (BAOR), the parallel block generalized successive overrelaxation (BGSOR), the parallel block SOR (BSOR), the extrapolated parallel BAOR and the extrapolated parallel BSOR methods are presented. Furthermore, the convergence of the parallel block iterative methods for linear systems with special block tridiagonal matrices arising in the numerical solution of Euler equations are discussed. Finally, some examples are given to demonstrate the convergence results obtained in this paper.

Keywords: generalized $H$-matrices; multisplitting; parallel multisplitting; block iterative method; extrapolation; convergence; parallel computation; Euler equation; accelerated overrelaxation; successive overrelaxation
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