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A Parallel New High Order Iterative Algorithm on Shared Memory Multiprocessors Parallel Computer

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ABSTRACT

A new fast high-order points iterative algorithm of $O(h^4)$ applied to linear systems arising from discretization of 2D Poisson problem was recently introduced by the writers. This algorithm shows drastic reduction in execution time as compared to the standard high-order points iterative algorithm. In this paper, the parallel implementation of the algorithm with optimal strategy on shared memory multiprocessors (SMP) was presented and discussed. The numerical results of the test problem are included.

ABSTRAK

Satu algoritma lelaran titik bertertib tinggi baru dan terpantas $O(h^4)$ yang diaplikasikan kepada sistem linear hasil daripada pengdiskretan masalah Poisson 2D telah diperkenalkan oleh penulis. Algoritma ini telah menunjukkan penurunan masa pelaksanaan yang drastik berbandingkan dengan algoritma lelaran titik bertertib tinggi piawai. Dalam makalah ini, implementasi algoritma selari tersebut dengan strategi optima pada multipemproses ingatan berkongsi (SMP) dibentangkan dan dibincangkan. Hasil berangka daripada masalah ujian akan disertakan.