

A Fast, Parallel Performance of Fourth Order Iterative Algorithm on Shared Memory Multiprocessors (SMP) Architecture

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Abstract: The rotated fourth order iterative algorithm of $O(h^4)$ accuracy applied to linear system arising from the discretization of two dimensional Poisson problem was introduced by Othman, *et al.*, 2001 and it was shown to be the fastest as compared to the standard fourth order iterative algorithm, see Gupta, 1984. While the parallel standard fourth order iterative algorithm was implemented successfully by many researchers for solving a large scientific and engineering problems, see Abdullah and Ali 2000, Yousif and Evans, 1995 and Spatz and Carey, 1999. In this paper, the implementation of the parallel rotated fourth order iterative algorithm on SMP architecture is discussed. The performance results of all the parallel algorithms were compared in order to show their outstanding performances.

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