

Parallel block backward differentiation formulas for solving large systems of ordinary differential equations.

ABSTRACT

In this paper, parallelism in the solution of Ordinary Differential Equations (ODEs) to increase the computational speed is studied. The focus is the development of parallel algorithm of the two point Block Backward Differentiation Formulas (PBBDF) that can take advantage of the parallel architecture in computer technology. Parallelism is obtained by using Message Passing Interface (MPI). Numerical results are given to validate the efficiency of the PBBDF implementation as compared to the sequential implementation.

Keyword: Ordinary differential equations; Differential Equations; Parallel.