

Implementation of ADETRAN Language Using Message Passing Interface

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Abstract : This paper describes the Message Passing Interface (MPI) implementation of ADETRAN language, and its evaluation on SX-ACE supercomputers. ADETRAN language includes pdo statement that specifies the data distribution and parallel computations and pass statement that specifies the redistribution of arrays. Two methods for implementation of pass statement are discussed and the performance evaluation using Splitting-Up CG method is presented. The effectiveness of the parallelization is evaluated and the advantage of one dimensional distribution is empirically confirmed by using the results of experiments.

Keywords : iterative methods, array redistribution, translator, distributed memory

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