

Hybird mpi/ open-mp acceleration approach for high-order schemes for cfd

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20503247&lokasi=lokal>

Abstrak

ABSTRACT

The paper presents a hybrid MPI+ OpenMP (Message Passing Interface/Open Multi-Processor) algorithm used for parallel programs based on the high-order compact method. The main tools used to implement parallelism in computations are OpenMP and MPI which differ in terms of memory on which they are based. OpenMP works on shared-memory and the MPI on distributed-memory whereas the hybrid model is based on a combination of those methods. The tests performed and described in this paper present significant advantages provided by a combination of the MPI/OpenMP approach. The test computations needed for verifying possibilities of MPI, Open-MP and Hybrid of both tools were carried out using an academic high-order SAILOR solver. The obtained results seem to be very promising to accelerate simulations of fluid flows as well as for application using high order methods