

Parallel Overlapping Mesh Algorithm

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Abstract

The paper presents parallelization of an overlapping mesh technique and its implementation in the case of inviscid compressible flows around complex geometries. The present overlapping grid technique is based on the solution of the the equations on each grid separately, with boundary conditions adjusted iteratively through a blended-function-based procedure. The load-balancing and parallel performance issues are investigated for several grid systems. A simple model has also been developed for describing the parallel efficiency of the simulations and it is shown that the model results agree well with the parallel performance experiments.