

Overlapping Mesh Technique for Compressible Flows - Parallel Implementation

J. Rokicki, D. Drikakis, J. Majewski, and J. Zoltak

Abstract

In this paper, parallelization of the Chimera overlapping-mesh technique and its implementation in conjunction with an implicit Riemann solver is presented. The parallelization of the method is based on the PVM approach. Computations are performed for compressible flows over multi-element airfoils. Efficiency results are presented for fairly complex domains consisting of a large number of meshes overlapping each other in an almost arbitrary manner, including multiple overlaps. The parallel performance of the method is investigated on the Cray CS6400 and Cray T3E computing platforms.