

Seventh Mississippi State - UAB Conference on Differential Equations - Computational Simulations, November 1–3, 2007, Doubletree Hotel, Birmingham, AL, USA

Coauthors: Roy Koomullil

**STUDY OF DATA INTERPOLATION FOR OVERSET MESHES:  
FLOW-FIELDS WITH DISCONTINUITIES**

NITIN BHAGAT

Overset approach based on generalized mesh topology is an emerging research area for the simulation of bodies in relative motion. One of the critical research issues that need to be addressed in this methodology is interpolation accuracy of flow variables between different overlapping meshes. A formal study focusing on this issue has been published by the authors using a smooth variation of flow variables in the domain and meshes with various topologies and resolutions. However, many of the transonic and supersonic applications involve flow fields with discontinuities such as shockwaves and contact discontinuities. The present study addresses the accuracy of information transfer across overlapping regions with discontinuities using conservative and primitive variable based interpolation. The results will be presented from the simulation of a moving shock through an overlapping region and from a shock-wedge interaction.

UNIVERSITY OF ALABAMA AT BIRMINGHAM  
*E-mail address:* `nitin@uab.edu`