CONTENTS

Page

P. Bastian, *Dynamic Load Balancing for Parallel Adaptive Multigrid Methods on Unstrured Meshes*..... 1

S. Bikker, W. Koschel, *Domain Decompositon Methods and Adaptive Flow Simulation on Unstructured Meshes*..... 13

M. Buffat, *Parallel Simulation of Compressible Turbulent Flows Using Non-Structured Domains Partitioning and Object Oriented Programming*..... 26

H. Bungartz, W. Huber, *First Experiments with Turbulence Simulation on Workstation Networks Using Sparse Grid Methods*..... 36

J. Burmeister, R. Paul, *Time- Adaptive Solution of Discrete Parabolic Problems with Time-Parallel Multigrid Methods*..... 49

F. Durst, H. J. Leister, M. Schäfer, E. Schreck, *Efficient 3-D Flow Prediction on Parallel High-Performance Computers*..... 59

K. Engel, F. Eulitz, M. Faden, S. Pokorny, *Numerical Simulation of the Unsteady Turbomachinery Flow on a MIMD Computer*..... 66

Y. Escaig, G. Touzot, D. Vandromme, *A Hierarchical Domain Decomposition Method for the Parallel Treatment of Linear Problems*..... 76

J. Hofhaus, M. Meinke, *Parallel Solution Schemes for the Navier-Stokes Equations*..... 88

K. Kremer, *The Massively Parallel Computer System of the DFG Priority Research Programme "Flow Simulation on Supercomputers" at RWTH Aachen*..... 97

St. Lanteri, *Unstructured CFD Computations on M.I.M.D. Systems*..... 112

M. Lenke, A. Bode, Th. Michl, S. Wagner, *NSFLEX 90 - A 3d Euler and Navier-Stokes Solver in Fortran 90*..... 125

Ž. Lilek, M. Perić, E. Schreck, *Parallelization of Implicit Methods for Flow Simulation*..... 135

F. Lohmeyer, O. Vornberger, *Flow Simulation with FEM on Massively Parallel Systems*..... 147

Th. Michl, S. Wagner, M. Lenke, A. Bode, *Big Computations with a 3-D Parallel Navier-Stokes Solver on Different Multiprocessors*..... 157

S. Nölting, H. Friz, *An Integrated Concept for the Parallelization of Finite Element Simulations of Flow Problems*..... 167

F. Schieweck, L. Tobiska, *A Parallelization Strategy for a Navier-Stokes Multigrid Solver Based on Macroelements*..... 176

I. Vervisch, J. Réveillon, S. Melen, D. Vandromme, *Turbulent Combustion Modeling with Complex Chemistry on SIMD Architecture*..... 188