

C O N T E N T S

R.E. BANK, J. XU (Invited lecture I): A hierarchical basis multigrid method for unstructured grids	1
H.T.M. VAN DER MAAREL, P.W. HEMKER (Invited lecture II): Structured adaptive finite-volume multigrid for compressible flows	14
O. AXELSSON, I.E. KAPORIN: On the solution of nonlinear equations for nondifferentiable mappings	38
R. BECKER, R. RANNACHER: Finite element solution of the incompressible Navier-Stokes equations on anisotropically refined meshes	52
J. BEY, G. WITTUM: Downwind numbering: A robust multigrid method for convection-diffusion problems on unstructured grids	63
G. ENGL: A fast solver for gas flow networks	74
P.A. FARRELL, A.F. HEGARTY, J.J.H. MILLER, E. O'RIORDAN, G.I. SHISHKIN: On the design of piecewise uniform meshes for solving advection-dominated transport equations to a prescribed accuracy	86
M. GEIBEN: Numerical simulation of three-dimensional non-stationary compressible flow in complex geometries	96
U. GROH, ST. MEINEL, A. MEYER: On the numerical simulation of coupled transient problems on MIMD parallel systems	109
M. HAHNE, E.P. STEPHAN, W. THIES: Fast solvers for coupled FEM-BEM equations I	121
M. HILGENSTOCK, J. GROENNER, E. VON LAVANTE: Numerical simulations of compressible Navier-Stokes equations with nonequilibrium chemistry	131
GH. JUNCU: Preconditioned cg-like methods and defect correction for solving steady incompressible Navier-Stokes equations	142
A. KAPURKIN, G. LUBE: A domain decomposition method for singularly perturbed elliptic problems	151
E. KATZER: A parallel subspace decomposition method for elliptic and hyperbolic systems	163
S. MÜLLER, A. PROHL, R. RANNACHER, S. TUREK: Implicit time- discretization of the nonstationary incompressible Navier-Stokes equations	175
C.W. OOSTERLEE, H. RITZDORF, A. SCHÜLLER, B. STECKEL: Experiences with a parallel multiblock multigrid solution technique for the Euler equations	192

M. RAW: A coupled algebraic multigrid method for the 3d Navier-Stokes equations	204
H. REICHERT, G. WITTUM: Robust multigrid methods for the incompressible Navier-Stokes equations	216
A. REUSKEN: A new robust multigrid method for 2d convection-diffusion problems	229
M. RUMPF: Adapting meshes by deformation. Numerical examples and applications	241
F. SCHIEWECK: Multigrid convergence rates of a sequential and a parallel Navier-Stokes solver	251
O. STEINBACH: Parallel iterative solvers for symmetric boundary element domain decomposition methods	263
R. VERFÜRTH: The equivalence of a posteriori error estimators	273
List of participants	284
How to contact the authors by email	289