

CONTENTS

I. DEVELOPMENT OF SOLUTION TECHNIQUES	1
W. Borchers, S. Kräutle, R. Pasquetti, R. Peyret, R. Rautmann: Multi-Domain Finite Element – Spectral Chebyshev Parallel Navier-Stokes Solver for Viscous Flow Problems.....	3
F. Deister, F. Waymel, E. H. Hirschel, F. Monnoyer: Self-Organizing Hybrid Cartesian Grid Generation and Application to External and Internal Flow Problems ...	18
D. Hänel, A. Dervieux, O. Gloth, L. Fournier, S. Lanteri, R. Vilsmeier: Development of Navier-Stokes Solvers on Hybrid Grids	30
II. CRYSTAL GROWTH AND MELTS	47
O. Czarny, P. Droll, M. El Ganaoui, B. Fischer, M. Hainke, L. Kadinski, P. Kaufmann, R. Krastev, E. Mešić, M. Metzger, I. Raspo, E. Serre, P. Bontoux, F. Durst, G. Müller, M. Schäfer: High Performance Computer Codes and their Application to Optimize Crystal Growth Processes, III	49
I. Ginzburg, G. Wittum, S. Zaleski: Adaptive Multigrid Computations of Multi-phase Flows.....	77
E. Zienicke, N. Seehafer, B.-W. Li, J. Schumacher, H. Politano, A. Thess: Voltage-Driven Instability of Electrically Conducting Fluids	97
III. FLOWS OF REACTING GASES, SOUND GENERATION	113
R. Baron, S. Paxion, O. Gicquel, N. Simous, P. Bastian, D. Thévenin: Development of a 3D Parallel Multigrid Solver for Fast and Accurate Laminar Steady Flame Computations	115
R. Fortenbach, E. Frénod, R. Klein, C.D. Munz, E. Sonnendrücker: Multiple Scale Considerations for Sound Generation in Low Mach Number Flow	129
M. Herrmann, B. Binniger, N. Peters, J. Réveillon, L. Vervisch: Modeling Partially Premixed Turbulent Combustion	139
C. Huhn, W. Koschel: Supercritical Mixing of Flows with High Density Gradient.....	159
J. Yan, F. Thiele M. Buffat: Turbulence Model Sensitivity Study for Bluff Body Stabilized Flames	173

IV. TURBULENT FLOWS	189
J. Fröhlich, W. Rodi, A. Dewan, J. P. Fontes: Large-Eddy Simulation of the Flow Around the Free End of a Circular Cylinder.....	191
M. Griebel, F. Koster: Multiscale Methods for the Simulation of Turbulent Flows	203
I. Hadžić, M. Perić, M. Schmid, G. Deng, E. Guilmeneau, P. Queutey, M. Visonneau: Computation of Turbulent Flows with Separation.....	215
J. Krömer, W. Schröder, M. Meinke, P. Comte, C. Brun, M. Haberkorn: LES of Transitional Boundary Layers and Wakes with Trailing Edge Blowing	230
M. Manhart, R. Friedrich, G. Deng, J. Piquet: Direct Versus Statistical Simulation of Accelerated/Retarded and Separating/Reattaching Turbulent Boundary Layers	244
K. Schneider, M. Farge: Coherent Vortex Simulation (CVS) of 2D Bluff Body Flows Using an Adaptive Wavelet Method with Penalisation.....	261
H. Wengle, R. Schiestel, I. Befeno, A. Meri: Large-Eddy Simulations of the Spatial Development of a Shearless Turbulence Mixing Layer	271