
Contents

Higher Order Discontinuous Galerkin Methods for Flow and Transport in Porous Media <i>Peter Bastian</i>	1
Macroscopic Models of Fluids with Microstructure <i>Noel J. Walkington</i>	23
The Fictitious Boundary Method for the Implicit Treatment of Dirichlet Boundary Conditions with Applications to Incompressible Flow Simulations <i>Stefan Turek, Decheng Wan, Liudmila S. Rivkind</i>	37
Numerical Simulation of Three Dimensional Free Surface Flows with Bubbles <i>Alexandre Caboussat, Vincent Maronnier, Marco Picasso, Jacques Rappaz</i>	69
A Computational Comparison of Two FEM Solvers for Nonlinear Incompressible Flow <i>Jaroslav Hron, Abderrahim Ouazzi, Stefan Turek</i>	87
Algebraic Multigrid for Industrial Semiconductor Device Simulation <i>Tanja Clees, Klaus Stüben</i>	110
Simulation of Microwave and Semiconductor Laser Structures Including Absorbing Boundary Conditions <i>Georg Hebermehl, Friedrich-Karl Hübner, Rainer Schlundt, Thorsten Tischler, Horst Zscheile, Wolfgang Heinrich</i>	131

Finite Element Methods for Coupled Problems in Ferrohydrodynamics <i>Olga Lavrova, Gunar Matthies, Teodora Mitkova, Viktor Polevikov, Lutz Tobiska</i>	160
Iterative Substructuring Methods for Advection – Diffusion Problems in Heterogeneous Media <i>Paolo Zunino</i>	184
Efficient Preconditioning of Linear Systems Arising from the Discretization of Radiative Transfer Equation <i>Mohammed Seaïd, Axel Klar</i>	211
On Using Common Lisp for Scientific Computing <i>Nicolas Neuss</i>	237
The Discontinuous Galerkin Finite Element Method for Singularly Perturbed Problems <i>Hans-Görg Roos, Helena Zarin</i>	246
Black-Box Preconditioning for Mixed Formulation of Self-Adjoint Elliptic PDEs <i>Catherine Powell, David Silvester</i>	268

<http://www.springer.com/978-3-540-40887-1>

Challenges in Scientific Computing - CISC 2002

Proceedings of the Conference Challenges in Scientific
Computing Berlin, October 2-5, 2002

Baensch, E. (Ed.)

2003, VIII, 293 p., Hardcover

ISBN: 978-3-540-40887-1