
Contents

Constraint Retraction for Dynamic Constraint Satisfaction Problems over Disjoint Real Intervals <i>Duong Tuan Anh</i>	1
Computational Methods for Large Distributed Parameter Estimation Problems in 3D <i>Uri M. Ascher, Eldad Haber</i>	15
Robust Parameter Estimation for Identifying Satellite Injection Orbits <i>Hans Georg Bock, Ekaterina Kostina, Johannes P. Schlöder, Gottlob Gienger, Siegmund Pallaschke, Gerald Ziegler</i>	37
On the Numerical Simulation of the Free Fall Problem <i>Sebastian Bönnisch, Vincent Heweline, Rolf Rannacher</i>	47
Searching the Web: a Semantics-Based Approach <i>Tru H. Cao, Ta H. D. Nguyen, Tran C. T. Qui</i>	57
Adaptive Computation with Perfectly Matched Layers for the Wave Scattering by Periodic Structures <i>Zhiming Chen, Haijun Wu</i>	69
Simulation and Optimization of Crawling Robots <i>Felix L. Chernousko</i>	85
Modelling of Snake-Like Locomotions <i>Felix L. Chernousko</i>	105
Simulation and Visualization of Plant Growth Using Lindenmayer Systems <i>Somporn Chuai-Aree, Willi Jäger, Hans Georg Bock, Suchada Siripant</i> ..	115

Modelling of Time-dependent 3D Weld Pool Due to a Moving Arc	
<i>Minh Do-Quang, Gustav Amberg</i>	127
Nonlinear Optimization in Gas Networks	
<i>Klaus Ehrhardt, Marc C. Steinbach</i>	139
Analysis and Exploitation of Jacobian Scarcity	
<i>Andreas Griewank, Olaf Vogel</i>	149
Exact Numerical Treatment of Finite Quantum Systems Using Leading-Edge Supercomputers	
<i>Georg Hager, Eric Jeckelmann, Holger Fehske, Gerhard Wellein</i>	165
Numerical Simulation of Solidification Processes in Continuous Casting Processing	
<i>Nguyen Hong Hai, Nguyen Van Thai, Pham Duc Thang</i>	179
Fast Closed Loop Control of the Navier-Stokes System	
<i>Michael Hinze, Daniel Wachsmuth</i>	189
Advanced Column Generation Techniques for Crew Pairing Problems	
<i>Tran Van Hoai, Gerhard Reinelt, Hans Georg Bock</i>	203
The Study of Pores and Free Volume in Amorphous Models	
<i>Pham Khac Hung, Vo Van Hoang, Hoang Van Hue, Le Van Vinh, Ngyuen Van Hong</i>	215
A Two-Stage, High-Accuracy, Finite Element Technique of the Two Dimensional Horizontal Flow Model	
<i>Nguyen The Hung</i>	225
Solenoidal Discrete Initialization for Magnetohydrodynamics	
<i>Rolf Jeltsch, Manuel Torrilhon</i>	235
Numerical Methods for Nonlinear Experimental Design	
<i>Stefan Körkel, Ekaterina Kostina</i>	255
Controlling the Continuos Positive Airway Pressure-Device Using Partial Observable Markov Decision Processes	
<i>Clemens Kreutz, Josef Honerkamp</i>	273
Implementing Hydrodynamic N-Body Codes on Reconfigurable Computing Platforms	
<i>Gerhard Lienhart</i>	287

Design of a Noncausal FIR Model Inverse as a Compensator in Repetitive Control
Richard W. Longman, Benjamas Panomruttanarug 297

Cutting Planes for the Optimisation of Gas Networks
Alexander Martin, Markus Möller 307

Clustering Algorithms for Parallel Car-Crash Simulation Analysis
Liquan Mei, Clemens A. Thole 331

A General-Purpose Finite Element Method for 3D Line Transfer Problems with Application on Galaxies in the Early Universe
Erik Meinköhn 341

Design and control of MEMS for microfluidic applications
Bijan Mohammadi 355

Open-loop Stable Control of Periodic Multibody Systems
Katja D. Mombaur, Hans Georg Bock, Johannes P. Schlöder, Richard W. Longman 369

Stability of Higher Order Repetitive Control
Sang June Oh, Richard W. Longman 383

An Approach to Parameter Estimation and Model Selection in Differential Equations
Michael R. Osborne 393

Comparison of Parallel Programming Models on Clusters of SMP Nodes
Rolf Rabenseifner, Gerhard Wellein 409

An Object-Oriented Approach to Specification and Composition of Web Services
Le Thanh Sach, Tru H. Cao, Le Nam Thang, Le Thanh Son 427

Applied Stochastic Integer Programming: Scheduling in the Processing Industries
Guido Sand, Sebastian Engell, A. Märkert, Rüdiger Schultz 441

Newton-Type Methods for Nonlinear Least Squares Using Restricted Second Order Information
Hubert Schwetlick 451

Balance Algorithm - a New Approach to Solving the Mapping Problem on Heterogeneous Systems
Nguyen Thanh Son, Tran Nguyen Hoang Huy, Nguyen Anh Kiet 461

SMBOpt: A Software Package for Optimal Operation of Chromatographic Simulated Moving Bed Processes <i>Abdelaziz Toumi, Sebastian Engell</i>	471
Partly Convex and Convex-Monotonic Optimization Problems <i>Hoang Tuy</i>	485
Efficient 1-Bit-Communication Cellular Algorithms <i>Hiroshi Umeo, Koshi Michisaka, Naoki Kamikawa, Yuichi Kinugasa</i>	509
Adaptive Finite Elements for Output-Oriented Model Calibration <i>Boris Vexler</i>	523
Simulation Study of Vehicle Platooning Maneuvers with Full-State Tracking Control <i>Danwei Wang, Minhtuan Pham, Cat T. Pham</i>	539
The Modeling of Spectral Lines <i>Rainer Wehrse</i>	549
Divergence Free High Order Filter Methods for the Compressible MHD Equations <i>H. C. Yee, Björn Sjögren</i>	559
Colour Figures	577



<http://www.springer.com/978-3-540-23027-4>

Modeling, Simulation and Optimization of Complex Processes

Proceedings of the International Conference on High Performance Scientific Computing, March 10-14, 2003, Hanoi, Vietnam

Bock, H.G.; Kostina, E.; Phu, H.X.; Rannacher, R. (Eds.)
2005, X, 597 p. 265 illus., 34 illus. in color., Softcover
ISBN: 978-3-540-23027-4