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Hoang Xuan Phu · Rolf Rannacher
Editors

Modeling, Simulation and Optimization of Complex Processes

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on High Performance Scientific Computing,
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With 231 Figures, and 34 Tables

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Preface

This volume contains a selection of papers referring to lectures presented at the International Conference on High Performance Scientific Computing held at the Hanoi Institute of Mathematics, Vietnamese Academy of Science and Technology (VAST), March 10–14, 2003. The conference has been organized by the Hanoi Institute of Mathematics, SFB 359 "Reactive Flows, Transport and Diffusion", Heidelberg, Ho Chi Minh City University of Technology and Interdisciplinary Center for Scientific Computing (IWR), Heidelberg.

High Performance Scientific Computing is an interdisciplinary area that combines many fields such as mathematics, computer science and scientific and engineering applications. It is a key high-technology for competitiveness in industrialized countries as well as for speeding up development in emerging countries. High performance scientific computing develops methods for computer aided simulation and optimization for systems and processes. In practical applications in industry and commerce, science and engineering, it helps to save resources, to avoid pollution, to reduce risks and costs, to improve product quality, to shorten development times or simply to operate systems better.

The conference had about 200 participants from countries all over the world. The scientific program consisted of more than 100 talks, 10 of them invited plenary talks given by internationally leading experts in the field. Topics were mathematical modelling, numerical simulation, methods for optimization and control, parallel computing, symbolic computing, software development, applications of scientific computing in physics, chemistry, biology and mechanics, environmental and hydrology problems, transport, logistics and site location, communication networks, production scheduling, industrial and commercial problems.

The submitted manuscripts have been carefully reviewed and 42 of the contributions have been selected for publication in this proceedings volume. We would like to thank all contributors and referees.

We would like also to use the opportunity to thank the sponsors whose support significantly contributed to the success of the conference: The German

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Heidelberg, July 2004

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Contents

Constraint Retraction for Dynamic Constraint Satisfaction Problems over Disjoint Real Intervals
Duong Tuan Anh 1

Computational Methods for Large Distributed Parameter Estimation Problems in 3D
Uri M. Ascher, Eldad Haber 15

Robust Parameter Estimation for Identifying Satellite Injection Orbits
Hans Georg Bock, Ekaterina Kostina, Johannes P. Schlöder, Gottlob Gienger, Siegmar Pallaschke, Gerald Ziegler 37

On the Numerical Simulation of the Free Fall Problem
Sebastian Bönisch, Vincent Heuveline, Rolf Rannacher 47

Searching the Web: a Semantics-Based Approach
Tru H. Cao, Ta H. D. Nguyen, Tran C. T. Qui 57

Adaptive Computation with Perfectly Matched Layers for the Wave Scattering by Periodic Structures
Zhiming Chen, Haijun Wu 69

Simulation and Optimization of Crawling Robots
Felix L. Chernousko 85

Modelling of Snake-Like Locomotions
Felix L. Chernousko 105

Simulation and Visualization of Plant Growth Using Lindenmayer Systems
Somporn Chuai-Aree, Willi Jäger, Hans Georg Bock, Suchada Siripant .. 115

Modelling of Time-dependent 3D Weld Pool Due to a Moving Arc
Minh Do-Quang, Gustav Amberg 127

Nonlinear Optimization in Gas Networks
Klaus Ehrhardt, Marc C. Steinbach 139

Analysis and Exploitation of Jacobian Scarcity
Andreas Griewank, Olaf Vogel 149

Exact Numerical Treatment of Finite Quantum Systems Using Leading-Edge Supercomputers
Georg Hager, Eric Jeckelmann, Holger Fehske, Gerhard Wellein 165

Numerical Simulation of Solidification Processes in Continuous Casting Processing
Nguyen Hong Hai, Nguyen Van Thai, Pham Duc Thang 179

Fast Closed Loop Control of the Navier-Stokes System
Michael Hinze, Daniel Wachsmuth 189

Advanced Column Generation Techniques for Crew Pairing Problems
Tran Van Hoai, Gerhard Reinelt, Hans Georg Bock 203

The Study of Pores and Free Volume in Amorphous Models
Pham Khac Hung, Vo Van Hoang, Hoang Van Hue, Le Van Vinh, Ngyuen Van Hong 215

A Two-Stage, High-Accuracy, Finite Element Technique of the Two Dimensional Horizontal Flow Model
Nguyen The Hung 225

Solenoidal Discrete Initialization for Magnetohydrodynamics
Rolf Jeltsch, Manuel Torrilhon 235

Numerical Methods for Nonlinear Experimental Design
Stefan Körkel, Ekaterina Kostina 255

Controlling the Continuos Positive Airway Pressure-Device Using Partial Observable Markov Decision Processes
Clemens Kreutz, Josef Honerkamp 273

Implementing Hydrodynamic N-Body Codes on Reconfigurable Computing Platforms
Gerhard Lienhart 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
Abdelaziz Toumi, Sebastian Engell 471

Partly Convex and Convex-Monotonic Optimization Problems
Hoang Tuy 485

Efficient 1-Bit-Communication Cellular Algorithms
Hiroshi Umeo, Koshi Michisaka, Naoki Kamikawa, Yuichi Kinugasa 509

Adaptive Finite Elements for Output-Oriented Model Calibration
Boris Vexler 523

Simulation Study of Vehicle Platooning Maneuvers with Full-State Tracking Control
Danwei Wang, Minhtuan Pham, Cat T. Pham 539

The Modeling of Spectral Lines
Rainer Wehrse 549

Divergence Free High Order Filter Methods for the Compressible MHD Equations
H. C. Yee, Björn Sjögreen 559

Colour Figures 577