

Table of Contents – Part IV

Workshop on Advanced Methods of Digital Image Processing

The New Graphic Description of the Haar Wavelet Transform	1
<i>P. Porwik, A. Lisowska</i>	
On New Radon-Based Translation, Rotation, and Scaling Invariant Transform for Face Recognition	9
<i>T. Arodź</i>	
On Bit-Level Systolic Arrays for Least-Squares Digital Contour Smoothing	18
<i>J. Glasa</i>	
Bayer Pattern Demosaicking Using Local-Correlation Approach	26
<i>R. Lukac, K.N. Plataniotis, A.N. Venetsanopoulos</i>	
Edge Preserving Filters on Color Images	34
<i>V. Hong, H. Palus, D. Paulus</i>	
Segmentation of Fundus Eye Images Using Methods of Mathematical Morphology for Glaucoma Diagnosis	41
<i>K. Stępor, A. Świtonski, R. Chrastek, G. Michelson</i>	
Automatic Detection of Glaucomatous Changes Using Adaptive Thresholding and Neural Networks	49
<i>K. Stępor, L. Pawlaczyk, R. Chrastek, G. Michelson</i>	
Analytical Design of 2-D Narrow Bandstop FIR Filters	56
<i>P. Zahradník, M. Vlček</i>	
Analytical Design of Arbitrary Oriented Asteroidal 2-D FIR Filters	64
<i>P. Zahradník, M. Vlček</i>	
A $\{k, n\}$ -Secret Sharing Scheme for Color Images	72
<i>R. Lukac, K.N. Plataniotis, A.N. Venetsanopoulos</i>	

Workshop on Computer Graphics and Geometric Modelling (CGGM 2004)

Declarative Modelling in Computer Graphics: Current Results and Future Issues	80
<i>P.-F. Bonnefoi, D. Plemenos, W. Ruchaud</i>	
Geometric Snapping for 3D Meshes	90
<i>K.-H. Yoo, J.S. Ha</i>	
Multiresolution Approximations of Generalized Voronoi Diagrams	98
<i>I. Boada, N. Coll, J.A. Sellarès</i>	
LodStrips: Level of Detail Strips	107
<i>J.F. Ramos, M. Chover</i>	
Declarative Specification of Ambiance in VRML Landscapes	115
<i>V. Jolivet, D. Plemenos, P. Poulingeas</i>	
Using Constraints in Delaunay and Greedy Triangulation for Contour Lines Improvement	123
<i>I. Kolingerová, V. Strych, V. Čada</i>	
An Effective Modeling of Single Cores Prostheses Using Geometric Techniques	131
<i>K.-H. Yoo, J.S. Ha</i>	
GA and CHC. Two Evolutionary Algorithms to Solve the Root Identification Problem in Geometric Constraint Solving	139
<i>M.V. Luzón, E. Barreiro, E. Yeguas, R. Joan-Arinyo</i>	
Manifold Extraction in Surface Reconstruction	147
<i>M. Varnuška, I. Kolingerová</i>	
Expression of a Set of Points' Structure within a Specific Geometrical Model	156
<i>J.-L. Mari, J. Sequeira</i>	
Effective Use of Procedural Shaders in Animated Scenes	164
<i>P. Kondratieva, V. Havran, H.-P. Seidel</i>	
Real-Time Tree Rendering	173
<i>I. Remolar, C. Rebollo, M. Chover, J. Ribelles</i>	
A Brush Stroke Generation Using Magnetic Field Model for Painterly Rendering	181
<i>L.S. Yeon, Y.H. Soon, Y.K. Hyun</i>	

Reuse of Paths in Final Gathering Step with Moving Light Sources	189
<i>M. Sbert, F. Castro</i>	
Real Time Tree Sketching	197
<i>C. Campos, R. Quirós, J. Huerta, E. Camahort, R. Vivó, J. Lluch</i>	
Facial Expression Recognition Based on Dimension Model Using Sparse Coding	205
<i>Y.-s. Shin</i>	
An Application to the Treatment of Geophysical Images through Orthogonal Projections	213
<i>S. Romero, F. Moreno</i>	
A Derivative-Free Tracking Algorithm for Implicit Curves with Singularities	221
<i>J.F.M. Morgado, A.J.P. Gomes</i>	
Framework for Simulating the Human Behavior for Intelligent Virtual Agents. Part I: Framework Architecture	229
<i>F. Luengo, A. Iglesias</i>	
Framework for Simulating the Human Behavior for Intelligent Virtual Agents. Part II: Behavioral System	237
<i>F. Luengo, A. Iglesias</i>	
Point-Based Modeling from a Single Image	245
<i>P.-P. Vázquez, J. Marco, M. Sbert</i>	
Introducing Physical Boundaries in Virtual Environments	252
<i>P. Herrero, A. de Antonio</i>	
Thin Client Access to a Visualization Environment	258
<i>I. Fudos, I. Kyriazis</i>	
Interactive Visualization of Relativistic Effects with the Hardware Acceleration	264
<i>R. Mantiuk, K. Murawko-Wisniewska, D. Zdrojewska</i>	

Workshop on Computer Algebra Systems and Applications (CASA 2004)

Design of Interactive Environment for Numerically Intensive Parallel Linear Algebra Calculations	270
<i>P. Luszczek, J. Dongarra</i>	

Computer Algebra for Real-Time Dynamics of Robots with Large Numbers of Joints	278
<i>R. Bansevicius, A. Cepulkauskas, R. Kulvietiene, G. Kulvietis</i>	
Development of SyNRAC—Formula Description and New Functions.....	286
<i>H. Yanami, H. Anai</i>	
DisCAS: A Distributed-Parallel Computer Algebra System	295
<i>Y. Wu, G. Yang, W. Zheng, D. Lin</i>	
A Mathematica Package for Solving and Displaying Inequalities	303
<i>R. Ipanaque, A. Iglesias</i>	
Choleski-Banachiewicz Approach to Systems with Non-positive Definite Matrices with MATHEMATICA®	311
<i>R.A. Walentyński</i>	
A Closed Form Solution of the Run-Time of a Sliding Bead along a Freely Hanging Slinky	319
<i>H. Sarafian</i>	
Analytical Theory of Motion of a Mars Orbiter	327
<i>J.F. San Juan, S. Serrano, A. Abad</i>	
Computing Theta-Stable Parabolic Subalgebras Using LiE	335
<i>A.G. Noël</i>	
Graphical and Computational Representation of Groups	343
<i>A. Bretto, L. Gillibert</i>	
First Order ODEs: Mathematica and Symbolic-Numerical Methods.....	351
<i>C. D'Apice, G. Gargiulo, M. Rosanna</i>	
Evaluation of the Fundamental Physical Constants in <i>Mathematica</i>	358
<i>A.S. Siver</i>	
Symbolic Polynomial Interpolation Using Mathematica	364
<i>A. Yazici, I. Altas, T. Ergenc</i>	
Constant Weight Codes with Package CodingTheory.m in Mathematica.....	370
<i>I. Gashkov</i>	
Graph Coloring with webMathematica	376
<i>Ü. Ufuktepe, G. Bacak, T. Beseri</i>	
Construction of Solutions for Nonintegrable Systems with the Help of the Painlevé Test	382
<i>S.Y. Vernov</i>	

Computer Algebra Manipulations in Astronomy	388
<i>T. Ivanova</i>	

Workshop on New Numerical Methods for DEs: Applications to Linear Algebra, Control and Engineering

Higher Order Quadrature on Sparse Grids	394
<i>H.-J. Bungartz, S. Dirnstorfer</i>	
Application of Extrapolation Methods to Numerical Solution of Fredholm Integral Equations Related to Boundary Value Problems	402
<i>A. Sidi</i>	
Extrapolation Techniques for Computing Accurate Solutions of Elliptic Problems with Singular Solutions	410
<i>H. Koestler, U. Ruede</i>	
Vandermonde-Type Matrices in Two Step Collocation Methods for Special Second Order Ordinary Differential Equations	418
<i>S. Martucci, B. Paternoster</i>	
Direct Optimization Using Gaussian Quadrature and Continuous Runge-Kutta Methods: Application to an Innovation Diffusion Model	426
<i>F. Diele, C. Marangi, S. Ragni</i>	
The ReLPM Exponential Integrator for FE Discretizations of Advection-Diffusion Equations	434
<i>L. Bergamaschi, M. Caliari, M. Vianello</i>	
Function Fitting Two-Step BDF Algorithms for ODEs	443
<i>L.G. Ixaru, B. Paternoster</i>	
Pseudospectral Iterated Method for Differential Equations with Delay Terms	451
<i>J. Mead, B. Zubik-Kowal</i>	
A Hybrid Numerical Technique for the Solution of a Class of Implicit Matrix Differential Equation	459
<i>N. Del Buono, L. Lopez</i>	
A Continuous Approach for the Computation of the Hyperbolic Singular Value Decomposition	467
<i>T. Politi</i>	

Workshop on Parallel Monte Carlo Algorithms for Diverse Applications in a Distributed Setting

Using P-GRADE for Monte Carlo Computations in a Distributed Environment	475
<i>V.N. Alexandrov, A. Thandavan, P. Kacsuk</i>	
Calculating Activation Energies in Diffusion Processes Using a Monte Carlo Approach in a Grid Environment	483
<i>M. Calleja, M.T. Dove</i>	
Using Parallel Monte Carlo Methods in Large-Scale Air Pollution Modelling	491
<i>V.N. Alexandrov, Z. Zlatev</i>	
Parallel Importance Separation for Multiple Integrals and Integral Equations	499
<i>S. Ivanovska, A. Karaivanova</i>	
Investigation of the Sensitivity of the Monte Carlo Solution for the Barker-Ferry Equation with Sequential and Parallel Pseudo-Random Number Generators	507
<i>T.V. Gurov, P.A. Whitlock</i>	
Design and Distributed Computer Simulation of Thin p^+-i-n^+ Avalanche Photodiodes Using Monte Carlo Model	515
<i>M. Yakutovich</i>	
Convergence Proof for a Monte Carlo Method for Combinatorial Optimization Problems	523
<i>S. Fidanova</i>	
Monte Carlo Algorithm for Maneuvering Target Tracking and Classification	531
<i>D. Angelova, L. Mihaylova, T. Semerdjiev</i>	

Workshop on Modelling and Simulation of Multi-physics Multi-scale Systems

Coupling a Lattice Boltzmann and a Finite Difference Scheme	540
<i>P. Albuquerque, D. Alemani, B. Chopard, P. Leone</i>	
Accuracy versus Performance in Lattice Boltzmann BGK Simulations of Systolic Flows	548
<i>A.M. Artoli, L. Abrahamyan, A.G. Hoekstra</i>	

Mesoscopic Modelling of Droplets on Topologically Patterned Substrates	556
<i>A. Dupuis, J.M. Yeomans</i>	
Soot Particle Deposition within Porous Structures Using a Method of Moments – Lattice Boltzmann Approach	564
<i>B.F.W. Gschaider, C.C. Honeger, C.E.P. Redl</i>	
Numerical Bifurcation Analysis of Lattice Boltzmann Models: A Reaction-Diffusion Example	572
<i>P. Van Leemput, K. Lust</i>	
Particle Models of Discharge Plasmas in Molecular Gases	580
<i>S. Longo, M. Capitelli, P. Diomedè</i>	
Fully Kinetic Particle-in-Cell Simulation of a Hall Thruster	588
<i>F. Taccogna, S. Longo, M. Capitelli, R. Schneider</i>	
Standard of Molecular Dynamics Modeling and Simulation of Relaxation in Dense Media	596
<i>A.Y. Kuksin, I.V. Morozov, G.E. Norman, V.V. Stegailov</i>	
Implicit and Explicit Higher Order Time Integration Schemes for Fluid-Structure Interaction Computations	604
<i>A. van Zuijlen, H. Bijl</i>	
Accounting for Nonlinear Aspects in Multiphysics Problems: Application to Poroelectricity	612
<i>D. Néron, P. Ladevèze, D. Dureisseix, B.A. Schrefler</i>	
Computational Modelling of Multi-field Ionic Continuum Systems	621
<i>J. Michopoulos</i>	
Formation of Dwarf Galaxies in Reionized Universe with Heterogeneous Multi-computer System	629
<i>T. Boku, H. Susa, K. Onuma, M. Umemura, M. Sato, D. Takahashi</i>	
A Multi-scale Numerical Study of the Flow, Heat, and Mass Transfer in Protective Clothing	637
<i>M.P. Sobera, C.R. Kleijn, P. Brasser, H.E.A. Van den Akker</i>	
Thermomechanical Waves in SMA Patches under Small Mechanical Loadings	645
<i>L. Wang, R.V.N. Melnik</i>	
Direct and Homogeneous Numerical Approaches to Multiphase Flows and Applications	653
<i>R. Samulyak, T. Lu, Y. Prykarpatsky</i>	

Molecular Dynamics and Monte Carlo Simulations for Heat Transfer in Micro and Nano-channels	661
<i>A.J.H. Frijns, S.V. Nede, A.J. Markvoort, A.A. van Steenhoven, P.A.J. Hilbers</i>	

Improved Semi-Lagrangian Stabilizing Correction Scheme for Shallow Water Equations	667
<i>A. Bourchtein, L. Bourchtein</i>	

Bose-Einstein Condensation Studied by the Real-Time Monte Carlo Simulation in the Frame of Java Applet	673
<i>M. Gall, R. Kutner, A. Majerowski, D. Żebrowski</i>	

Workshop on Gene, Genome, and Population Evolution

Life History Traits and Genome Structure: Aerobiosis and G+C Content in Bacteria	679
<i>J.R. Lobry</i>	

Differential Gene Survival under Asymmetric Directional Mutational Pressure	687
<i>P. Mackiewicz, M. Dudkiewicz, M. Kowalczyk, D. Mackiewicz, J. Banaszak, N. Polak, K. Smolarczyk, A. Nowicka, M.R. Dudek, S. Cebrat</i>	

How Gene Survival Depends on Their Length	694
<i>N. Polak, J. Banaszak, P. Mackiewicz, M. Dudkiewicz, M. Kowalczyk, D. Mackiewicz, K. Smolarczyk, A. Nowicka, M.R. Dudek, S. Cebrat</i>	

Super-tree Approach for Studying the Phylogeny of Prokaryotes: New Results on Completely Sequenced Genomes	700
<i>A. Calteau, V. Daubin, G. Perrière</i>	

Genetic Paralog Analysis and Simulations	709
<i>S. Cebrat, J.P. Radomski, D. Stauffer</i>	

Evolutionary Perspectives on Protein Thermodynamics	718
<i>R.A. Goldstein</i>	

The Partition Function Variant of Sankoff's Algorithm	728
<i>I.L. Hofacker, P.F. Stadler</i>	

Simulation of Molecular Evolution Using Population Dynamics Modelling	736
<i>S.V. Semovski</i>	

Lotka-Volterra Model of Macro-Evolution on Dynamical Networks	742
<i>F. Coppez, M. Droz, A. Lipowski</i>	
Simulation of a Horizontal and Vertical Disease Spread in Population	750
<i>M. Magdoń-Maksymowicz</i>	
Evolution of Population with Interaction between Neighbours	758
<i>M. Magdoń-Maksymowicz, A.Z. Maksymowicz</i>	
The Role of Dominant Mutations in the Population Expansion	765
<i>S. Cebrat, A. Pękański</i>	

Workshop on Computational Methods in Finance and Insurance

On the Efficiency of Simplified Weak Taylor Schemes for Monte Carlo Simulation in Finance	771
<i>N. Bruti Liberati, E. Platen</i>	
Time-Scale Transformations: Effects on VaR Models	779
<i>F. Lamantia, S. Ortobelli, S. Rachev</i>	
Environment and Financial Markets	787
<i>W. Szatczschneider, M. Jeanblanc, T. Kwiatkowska</i>	
Pricing of Some Exotic Options with <i>NIG</i> -Lévy Input	795
<i>S. Rasmus, S. Asmussen, M. Wiktorsson</i>	
Construction of Quasi Optimal Portfolio for Stochastic Models of Financial Market	803
<i>A. Janicki, J. Zwierny</i>	
Euler Scheme for One-Dimensional SDEs with Time Dependent Reflecting Barriers	811
<i>L. Słomiński, T. Wojciechowski</i>	
On Approximation of Average Expectation Prices for Path Dependent Options in Fractional Models	819
<i>B. Ziemkiewicz</i>	
Confidence Intervals for the Autocorrelations of the Squares of GARCH Sequences	827
<i>P. Kokoszka, G. Teyssière, A. Zhang</i>	
Performance Measures in an Evolutionary Stock Trading Expert System	835
<i>P. Lipiński, J.J. Korczak</i>	

Stocks' Trading System Based on the Particle Swarm Optimization Algorithm	843
<i>J. Nenortaite, R. Simutis</i>	
Parisian Options – The Implied Barrier Concept	851
<i>J. Anderluh, H. van der Weide</i>	
Modeling Electricity Prices with Regime Switching Models	859
<i>M. Bierbrauer, S. Trück, R. Weron</i>	
Modeling the Risk Process in the XploRe Computing Environment	868
<i>K. Burnecki, R. Weron</i>	

Workshop on Computational Economics and Finance

A Dynamic Stochastic Programming Model for Bond Portfolio Management	876
<i>L. Yu, S. Wang, Y. Wu, K.K. Lai</i>	
Communication Leading to Nash Equilibrium without Acyclic Condition (– S4 -Knowledge Model Case –)	884
<i>T. Matsuhisa</i>	
Support Vector Machines Approach to Credit Assessment	892
<i>J. Li, J. Liu, W. Xu, Y. Shi</i>	
Measuring Scorecard Performance	900
<i>Z. Yang, Y. Wang, Y. Bai, X. Zhang</i>	
Parallelism of Association Rules Mining and Its Application in Insurance Operations	907
<i>J. Tian, L. Zhu, S. Zhang, G. Huang</i>	
No Speculation under Expectations in Awareness	915
<i>K. Horie, T. Matsuhisa</i>	
A Method on Solving Multiobjective Conditional Value-at-Risk	923
<i>M. Jiang, Q. Hu, Z. Meng</i>	
Cross-Validation and Ensemble Analyses on Multiple-Criteria Linear Programming Classification for Credit Cardholder Behavior	931
<i>Y. Peng, G. Kou, Z. Chen, Y. Shi</i>	

Workshop on GeoComputation

A Cache Mechanism for Component-Based WebGIS	940
<i>Y. Luo, X. Wang, Z. Xu</i>	

A Data Structure for Efficient Transmission of Generalised Vector Maps	948
<i>M. Zhou, M. Bertolotto</i>	
Feasibility Study of Geo-spatial Analysis Using Grid Computing	956
<i>Y. Hu, Y. Xue, J. Wang, X. Sun, G. Cai, J. Tang, Y. Luo, S. Zhong, Y. Wang, A. Zhang</i>	
An Optimum Vehicular Path Solution with Multi-heuristics	964
<i>F. Lu, Y. Guan</i>	
An Extended Locking Method for Geographical Database with Spatial Rules	972
<i>C. Cheng, P. Shen, M. Zhang, F. Lu</i>	
Preliminary Study on Unsupervised Classification of Remotely Sensed Images on the Grid	981
<i>J. Wang, X. Sun, Y. Xue, Y. Hu, Y. Luo, Y. Wang, S. Zhong, A. Zhang, J. Tang, G. Cai</i>	
Experience of Remote Sensing Information Modelling with Grid Computing	989
<i>G. Cai, Y. Xue, J. Tang, J. Wang, Y. Wang, Y. Luo, Y. Hu, S. Zhong, X. Sun</i>	
Load Analysis and Load Control in Geo-agents	997
<i>Y. Luo, X. Wang, Z. Xu</i>	

Workshop on Simulation and Modeling of 3D Integrated Circuits

Challenges in Transmission Line Modeling at Multi-gigabit Data Rates	1004
<i>V. Heyfitch</i>	
MPI-Based Parallelized Model Order Reduction Algorithm	1012
<i>I. Balk, S. Zorin</i>	
3D-VLSI Design Tool	1017
<i>R. Bollapragada</i>	
Analytical Solutions of the Diffusive Heat Equation as the Application for Multi-cellular Device Modeling – A Numerical Aspect . . .	1021
<i>Z. Lisik, J. Wozny, M. Langer, N. Rinaldi</i>	
Layout Based 3D Thermal Simulations of Integrated Circuits Components	1029
<i>K. Slusarczyk, M. Kaminski, A. Napieralski</i>	

Simulation of Electrical and Optical Interconnections for Future VLSI ICs	1037
<i>G. Tosik, Z. Lisik, M. Langer, F. Gaffiot, I. O’Conor</i>	
Balanced Binary Search Trees Based Approach for Sparse Matrix Representation	1045
<i>I. Balk, I. Pavlovsky, A. Ushakov, I. Landman</i>	
Principles of Rectangular Mesh Generation in Computational Physics ...	1049
<i>V. Ermolaev, E. Odintsov, A. Sobachkin, A. Kharitonovich, M. Bevzushenko, S. Zorin</i>	

Workshop on Computational Modeling and Simulation on Biomechanical Engineering

Inter-finger Connection Matrices	1056
<i>V.M. Zatsiorsky, M.L. Latash, F. Danion, F. Gao, Z.-M. Li, R.W. Gregory, S. Li</i>	
Biomechanics of Bone Cement Augmentation with Compression Hip Screw System for the Treatment of Intertrochanteric Fractures	1065
<i>S.J. Lee, B.J. Kim, S.Y. Kwon, G.R. Tack</i>	
Comparison of Knee Cruciate Ligaments Models Using Kinematics from a Living Subject during Chair Rising-Sitting	1073
<i>R. Stagni, S. Fantozzi, M. Davinelli, M. Lannocca</i>	
Computer and Robotic Model of External Fixation System for Fracture Treatment	1081
<i>Y.H. Kim, S.-G. Lee</i>	
Robust Path Design of Biomechanical Systems Using the Concept of Allowable Load Set	1088
<i>J.H. Chang, J.H. Kim, B.M. Kwak</i>	
A New Modeling Method for Objects with Branching Problem Using Non-uniform B-Spline	1095
<i>H.S. Kim, Y.H. Kim, Y.H. Choe, S.-M. Kim, T.-S. Cho, J.H. Mun</i>	
Motion Design of Two-Legged Locomotion Process of a Man	1103
<i>S. Novikava, K. Miatliuk, K. Jaworek</i>	
Adaptive Microcalcification Detection in Computer Aided Diagnosis	1110
<i>H.-K. Kang, S.-M. Kim, N.N. Thanh, Y.M. Ro, W.-H. Kim</i>	

Workshop on Information Technologies Enhancing Health Care Delivery

The Impact of Information Technology on Quality of Healthcare Services	1118
<i>M. Duplaga</i>	
Computer Generated Patient Plans Based on Patterns of Care	1126
<i>O.M. Winnem</i>	
On Direct Comparing of Medical Guidelines with Electronic Health Record	1133
<i>J. Zvárová, A. Veselý, P. Hanzlíček, J. Špidlen, D. Buchtela</i>	
Managing Information Models for E-health via Planned Evolutionary Pathways	1140
<i>H. Duwe</i>	
An Attributable Role-Based Access Control for Healthcare	1148
<i>D. Schwartzmann</i>	
Aspects of a Massively Distributed Stable Component Space	1156
<i>K. Schmaranz, D. Schwartzmann</i>	
Demonstrating Wireless IPv6 Access to a Federated Health Record Server	1165
<i>D. Kalra, D. Ingram, A. Austin, V. Griffith, D. Lloyd, D. Patterson, P. Kirstein, P. Conversin, W. Fritsche</i>	
Collaborative Teleradiology	1172
<i>K. Zieliński, J. Ciał, L. Czekierda, S. Zieliński</i>	

Workshop on Computing in Science and Engineering Academic Programs

Some Remarks on CSE Education in Germany	1180
<i>H.-J. Bungartz</i>	
The Computational Science and Engineering (CS&E) Program at Purdue University	1188
<i>T. Downar, T. Kozłowski</i>	
Adapting the CSE Program at ETH Zurich to the Bologna Process	1196
<i>R. Jeltsch, K. Nipp</i>	

Computational Engineering and Science Program at the University of Utah	1202
<i>C. DeTar, A.L. Fogelson, C.R. Johnson, C.A. Sikorski, T. Truong</i>	
A Comparison of C, MATLAB, and Python as Teaching Languages in Engineering	1210
<i>H. Fangohr</i>	
Teaching Computational Science Using VPython and Virtual Reality	1218
<i>S. Roberts, H. Gardner, S. Press, L. Stals</i>	
Student Exercises on Fossil Fuels, Global Warming, and Gaia	1226
<i>B.W. Rust</i>	
Teaching Scientific Computing	1234
<i>B.A. Shadwick</i>	
Creating a Sustainable High-Performance Scientific Computing Course ...	1242
<i>E.R. Jessup, H.M. Tufo</i>	
CSE without Math? A First Course in Modeling and Simulation	1249
<i>W. Wiechert</i>	
Author Index	1257

Table of Contents – Part I

Track on Parallel and Distributed Computing

Optimization of Collective Reduction Operations	1
<i>R. Rabenseifner</i>	
Predicting MPI Buffer Addresses	10
<i>F. Freitag, M. Farreras, T. Cortes, J. Labarta</i>	
An Efficient Load-Sharing and Fault-Tolerance Algorithm in Internet-Based Clustering Systems	18
<i>I.-B. Choi, J.-D. Lee</i>	
Dynamic Parallel Job Scheduling in Multi-cluster Computing Systems	27
<i>J.H. Abawajy</i>	
Hunting for Bindings in Distributed Object-Oriented Systems	35
<i>M. Ślawińska</i>	
Design and Implementation of the Cooperative Cache for PVFS	43
<i>I.-C. Hwang, H. Kim, H. Jung, D.-H. Kim, H. Ghim, S.-R. Maeng, J.-W. Cho</i>	

Track on Grid Computing

Towards OGSA Compatibility in Alternative Metacomputing Frameworks	51
<i>G. Stuer, V. Sunderam, J. Broeckhove</i>	
DartGrid: Semantic-Based Database Grid	59
<i>Z. Wu, H. Chen, Changhuang, G. Zheng, J. Xu</i>	
A 3-tier Grid Architecture and Interactive Applications Framework for Community Grids	67
<i>O. Ardaiz, K. Sanjeevan, R. Sanguesa</i>	
Incorporation of Middleware and Grid Technologies to Enhance Usability in Computational Chemistry Applications	75
<i>J.P. Greenberg, S. Mock, M. Katz, G. Bruno, F. Sacerdoti, P. Papadopoulos, K.K. Baldridge</i>	

An Open Grid Service Environment for Large-Scale Computational Finance Modeling Systems	83
<i>C. Wiesinger, D. Giczi, R. Hochreiter</i>	
The Migrating Desktop as a GUI Framework for the “Applications on Demand” Concept	91
<i>M. Kupczyk, R. Lichwała, N. Meyer, B. Palak, M. Płóciennik, M. Stroiński, P. Wolniewicz</i>	
Interactive Visualization for the UNICORE Grid Environment	99
<i>P. Bała, K. Benedyczak, A. Nowiński, K.S. Nowiński, J. Wypychowski</i>	
Efficiency of the GSI Secured Network Transmission	107
<i>B. Baliś, M. Bubak, W. Rząsa, T. Szepieniec</i>	
An Idle Compute Cycle Prediction Service for Computational Grids	116
<i>S. Hwang, E.-J. Im, K. Jeong, H. Park</i>	
Infrastructure for Grid-Based Virtual Organizations	124
<i>L. Hluchy, O. Habala, V.D. Tran, B. Simo, J. Astalos, M. Dobrucky</i>	
Air Pollution Modeling in the CrossGrid Project	132
<i>J.C. Mourinho, M.J. Martín, P. González, R. Doallo</i>	
The Genetic Algorithms Population Pluglet for the H2O Metacomputing System	140
<i>T. Ampula, D. Kurzyniec, V. Sunderam, H. Witek</i>	
Applying Grid Computing to the Parameter Sweep of a Group Difference Pseudopotential	148
<i>W. Sudholt, K.K. Baldrige, D. Abramson, C. Enticott, S. Garic</i>	
A Grid Enabled Parallel Hybrid Genetic Algorithm for SPN	156
<i>G.L. Presti, G.L. Re, P. Stornioło, A. Urso</i>	
An Atmospheric Sciences Workflow and Its Implementation with Web Services	164
<i>D. Abramson, J. Kommineni, J.L. McGregor, J. Katzfey</i>	
Twins: 2-hop Structured Overlay with High Scalability	174
<i>J. Hu, H. Dong, W. Zheng, D. Wang, M. Li</i>	
Dispatching Mechanism of an Agent-Based Distributed Event System	184
<i>O.K. Sahingoz, N. Erdogan</i>	
An Adaptive Communication Mechanism for Highly Mobile Agents	192
<i>J. Ahn</i>	

Track on Models and Algorithms

Knapsack Model and Algorithm for HW/SW Partitioning Problem	200
<i>A. Ray, W. Jigang, S. Thambipillai</i>	
A Simulated Annealing Algorithm for the Circles Packing Problem	206
<i>D. Zhang, W. Huang</i>	
Parallel Genetic Algorithm for Graph Coloring Problem	215
<i>Z. Kokosiński, M. Kołodziej, K. Kwarciany</i>	
Characterization of Efficiently Parallel Solvable Problems on a Class of Decomposable Graphs	223
<i>S.-Y. Hsieh</i>	
The Computational Complexity of Orientation Search in Cryo-Electron Microscopy	231
<i>T. Mielikäinen, J. Ravantti, E. Ukkonen</i>	

Track on Data Mining and Data Bases

Advanced High Performance Algorithms for Data Processing	239
<i>A.V. Bogdanov, A.V. Boukhanovsky</i>	
Ontology-Based Partitioning of Data Steam for Web Mining: A Case Study of Web Logs	247
<i>J.J. Jung</i>	
Single Trial Discrimination between Right and Left Hand Movement-Related EEG Activity	255
<i>S. Cho, J.A. Kim, D.-U. Hwang, S.K. Han</i>	
WINGS: A Parallel Indexer for Web Contents	263
<i>F. Silvestri, S. Orlando, R. Perego</i>	
A Database Server for Predicting Protein-Protein Interactions	271
<i>K. Han, B. Park</i>	
PairAnalyzer: Extracting and Visualizing RNA Structure Elements Formed by Base Pairing	279
<i>D. Lim, K. Han</i>	
A Parallel Crawling Schema Using Dynamic Partition	287
<i>S. Dong, X. Lu, L. Zhang</i>	

Hybrid Collaborative Filtering and Content-Based Filtering for Improved Recommender System	295
<i>K.-Y. Jung, D.-H. Park, J.-H. Lee</i>	
Object-Oriented Database Mining: Use of Object Oriented Concepts for Improving Data Classification Technique	303
<i>K. Waiyamai, C. Songsiri, T. Rakthanmanon</i>	
Data-Mining Based Skin-Color Modeling Using the ECL Skin-Color Images Database	310
<i>M. Hammami, D. Tsishkou, L. Chen</i>	
Maximum Likelihood Based Quantum Set Separation	318
<i>S. Imre, F. Balázs</i>	
Chunking-Coordinated-Synthetic Approaches to Large-Scale Kernel Machines	326
<i>F.J. González-Castaño, R.R. Meyer</i>	
Computational Identification of -1 Frameshift Signals	334
<i>S. Moon, Y. Byun, K. Han</i>	

Track on Networking

Mobility Management Scheme for Reducing Location Traffic Cost in Mobile Networks	342
<i>B.-M. Min, J.-G. Jee, H.S. Oh</i>	
Performance Analysis of Active Queue Management Schemes for IP Network	349
<i>J. Koo, S. Ahn, J. Chung</i>	
A Real-Time Total Order Multicast Protocol	357
<i>K. Erciyes, A. Şahan</i>	
A Rule-Based Intrusion Alert Correlation System for Integrated Security Management	365
<i>S.-H. Lee, H.-H. Lee, B.-N. Noh</i>	
Stable Neighbor Based Adaptive Replica Allocation in Mobile Ad Hoc Networks	373
<i>Z. Jing, S. Jinshu, Y. Kan, W. Yijie</i>	
Mobile-Based Synchronization Model for Presentation of Multimedia Objects	381
<i>K.-W. Lee, H.-S. Cho, K.-H. Lee</i>	

Synchronization Scheme of Multimedia Streams in Mobile Handoff Control	389
<i>G.-S. Lee</i>	

Poster Papers

The Development of a Language for Specifying Structure of a Distributed and Parallel Application.....	397
<i>R. Dew, P. Horan, A. Goscinski</i>	
Communication Primitives for Minimally Synchronous Parallel ML.....	401
<i>F. Loulergue</i>	
Dependence Analysis of Concurrent Programs Based on Reachability Graph and Its Applications	405
<i>X. Qi, B. Xu</i>	
Applying Loop Tiling and Unrolling to a Sparse Kernel Code.....	409
<i>E. Herruzo, G. Bandera, O. Plata</i>	
A Combined Method for Texture Analysis and Its Application	413
<i>Y. Zhang, R. Wang</i>	
Reliability of Cluster System with a Lot of Software Instances	417
<i>M. Szymczyk, P. Szymczyk</i>	
A Structural Complexity Measure for UML Class Diagrams	421
<i>B. Xu, D. Kang, J. Lu</i>	
Parallelizing Flood Models with MPI: Approaches and Experiences	425
<i>V.D. Tran, L. Hluchy</i>	
Using Parallelism in Experimenting and Fine Tuning of Parameters for Metaheuristics	429
<i>M. Blesa, F. Xhafa</i>	
DEVMA: Developing Virtual Environments with Awareness Models	433
<i>P. Herrero, A. de Antonio</i>	
A Two-Leveled Mobile Agent System for E-commerce with Constraint-Based Filtering.....	437
<i>O.K. Sahingoz, N. Erdogan</i>	
ABSDM: Agent Based Service Discovery Mechanism in Internet	441
<i>S. Li, C. Xu, Z. Wu, Y. Pan, X. Li</i>	

Meta Scheduling Framework for Workflow Service on the Grids	445
<i>S. Hwang, J. Choi, H. Park</i>	
Resources Virtualization in Fault-Tolerance and Migration Issues	449
<i>G. Jankowski, R. Mikolajczak, R. Januszewski, N. Meyer, M. Stroiński</i>	
On the Availability of Information Dispersal Scheme for Distributed Storage Systems	453
<i>S.K. Song, H.Y. Youn, G.-L. Park, K.S. Tae</i>	
Virtual Storage System for the Grid Environment	458
<i>D. Nikolow, R. Słota, J. Kitowski, L. Skital</i>	
Performance Measurement Model in the G-PM Tool	462
<i>R. Wismüller, M. Bubak, W. Funika, T. Arodź, M. Kurdziel</i>	
Paramedir: A Tool for Programmable Performance Analysis	466
<i>G. Jost, J. Labarta, J. Gimenez</i>	
Semantic Browser: an Intelligent Client for Dart-Grid	470
<i>Y. Mao, Z. Wu, H. Chen</i>	
On Identity-Based Cryptography and GRID Computing	474
<i>H.W. Lim, M.J.B. Robshaw</i>	
The Cambridge CFD Grid Portal for Large-Scale Distributed CFD Applications	478
<i>X. Yang, M. Hayes, K. Jenkins, S. Cant</i>	
Grid Computing Based Simulations of the Electrical Activity of the Heart	482
<i>J.M. Alonso, V. Hernández, G. Moltó</i>	
Artificial Neural Networks and the Grid	486
<i>E. Schikuta, T. Weishäupl</i>	
Towards a Grid-Aware Computer Algebra System	490
<i>D. Petcu, D. Dubu, M. Paprzycki</i>	
Grid Computing and Component-Based Software Engineering in Computer Supported Collaborative Learning	495
<i>M.L. Bote-Lorenzo, J.I. Asensio-Pérez, G. Vega-Gorgojo, L.M. Vaquero-González, E. Gómez-Sánchez, Y.A. Dimitriadis</i>	
An NAT-Based Communication Relay Scheme for Private-IP-Enabled MPI over Grid Environments	499
<i>S. Choi, K. Park, S. Han, S. Park, O. Kwon, Y. Kim, H. Park</i>	

A Knowledge Fusion Framework in the Grid Environment	503
<i>J. Gou, J. Yang, H. Qi</i>	
A Research of Grid Manufacturing and Its Application in Custom Artificial Joint	507
<i>L. Chen, H. Deng, Q. Deng, Z. Wu</i>	
Toward a Virtual Grid Service of High Availability	511
<i>X. Zhi, W. Tong</i>	
The Measurement Architecture of the Virtual Traffic Laboratory	515
<i>A. Visser, J. Zoetebier, H. Yakali, B. Hertzberger</i>	
Adaptive QoS Framework for Multiview 3D Streaming	519
<i>J.R. Kim, Y. Won, Y. Iwadate</i>	
CORBA-Based Open Platform for Processes Monitoring. An Application to a Complex Electromechanical Process	523
<i>K. Cantillo, R.E. Haber, J.E. Jiménez, Á. Alique, R. Galán</i>	
An Approach to Web-Oriented Discrete Event Simulation Modeling	527
<i>E. Ochmańska</i>	
Query Execution Algorithm in Web Environment with Limited Availability of Statistics	532
<i>J. Jezierski, T. Morzy</i>	
Using Adaptive Priority Controls for Service Differentiation in QoS-Enabled Web Servers	537
<i>M.M. Teixeira, M.J. Santana, R.H. Carlucci Santana</i>	
On the Evaluation of x86 Web Servers Using Simics: Limitations and Trade-Offs	541
<i>F.J. Villa, M.E. Acacio, J.M. García</i>	
MADEW: Modelling a Constraint Awareness Model to Web-Based Learning Environments	545
<i>P. Herrero, A. de Antonio</i>	
An EC Services System Using Evolutionary Algorithm	549
<i>W.D. Lin</i>	
A Fast and Efficient Method for Processing Web Documents	553
<i>D. Szegő</i>	
Online Internet Monitoring System of Sea Regions	557
<i>M. Piotrowski, H. Krawczyk</i>	

Modeling a 3G Power Control Algorithm in the MAC Layer for Multimedia Support	561
<i>U. Pineda, C. Vargas, J. Acosta-Elías, J.M. Luna, G. Pérez, E. Stevens</i>	
Network Probabilistic Connectivity: Exact Calculation with Use of Chains	565
<i>O.K. Rodionova, A.S. Rodionov, H. Choo</i>	
A Study of Anycast Application for Efficiency Improvement of Multicast Trees	569
<i>K.-J. Lee, W.-H. Choi, J.-S. Kim</i>	
Performance Analysis of IP-Based Multimedia Communication Networks to Support Video Traffic	573
<i>A.F. Yaroslavtsev, T.-J. Lee, M.Y. Chung, H. Choo</i>	
Limited Deflection Routing with QoS-Support	577
<i>H. Kim, S. Lee, J. Song</i>	
Advanced Multicasting for DVBMT Solution	582
<i>M. Kim, Y.-C. Bang, H. Choo</i>	
Server Mobility Using Domain Name System in Mobile IPv6 Networks	586
<i>H. Sung, S. Han</i>	
Resource Reservation and Allocation Method for Next Generation Mobile Communication Systems	590
<i>J. Lee, S.-P. Cho, C. Kang</i>	
Improved Location Scheme Using Circle Location Register in Mobile Networks	594
<i>D.C. Lee, H. Kim, I.-S. Hwang</i>	
An Energy Efficient Broadcasting for Mobile Devices Using a Cache Scheme	598
<i>K.-H. Han, J.-H. Kim, Y.-B. Ko, W.-S. Yoon</i>	
On Balancing Delay and Cost for Routing Paths	602
<i>M. Kim, Y.-C. Bang, H. Choo</i>	
Performance of Optical Burst Switching in Time Division Multiplexed Wavelength-Routing Networks	607
<i>T.-W. Um, Y. Kwon, J.K. Choi</i>	
On Algorithm for All-Pairs Most Reliable Quickest Paths	611
<i>Y.-C. Bang, I. Hong, H. Choo</i>	

Performance Evaluation of the Fast Consistency Algorithms in Large Decentralized Systems	615
<i>J. Acosta-Elías, L. Navarro-Moldes</i>	
Building a Formal Framework for Mobile Ad Hoc Computing	619
<i>L. Yan, J. Ni</i>	
Efficient Immunization Algorithm for Peer-to-Peer Networks	623
<i>H. Chen, H. Jin, J. Sun, Z. Han</i>	
A Secure Process-Service Model	627
<i>S. Deng, Z. Wu, Z. Yu, L. Huang</i>	
Multi-level Protection Building for Virus Protection Infrastructure	631
<i>S.-C. Noh, D.C. Lee, K.J. Kim</i>	
Parallelization of the IDEA Algorithm	635
<i>V. Beletsky, D. Burak</i>	
A New Authorization Model for Workflow Management System Using the RPI-RBAC Model	639
<i>S. Lee, Y. Kim, B. Noh, H. Lee</i>	
Reducing the State Space of RC4 Stream Cipher	644
<i>V. Tomašević, S. Bojanić</i>	
A Pair-Wise Key Agreement Scheme in Ad Hoc Networks	648
<i>W. Cha, G. Wang, G. Cho</i>	
Visual Analysis of the Multidimensional Meteorological Data	652
<i>G. Dzemyda</i>	
Using Branch-Grafted R-trees for Spatial Data Mining	657
<i>P. Dubey, Z. Chen, Y. Shi</i>	
Using Runtime Measurements and Historical Traces for Acquiring Knowledge in Parallel Applications	661
<i>L.J. Senger, M.J. Santana, R.H.C. Santana</i>	
Words as Rules: Feature Selection in Text Categorization	666
<i>E. Montañés, E.F. Combarro, I. Díaz, J. Ranilla, J.R. Quevedo</i>	
Proper Noun Learning from Unannotated Corpora for Information Extraction	670
<i>S.-S. Kang</i>	
Proposition of Boosting Algorithm for Probabilistic Decision Support System	675
<i>M. Wozniak</i>	

Efficient Algorithm for Linear Pattern Separation	679
<i>C. Tadonki, J.-P. Vial</i>	
Improved Face Detection Algorithm in Mobile Environment	683
<i>S.-B. Rhee, Y.-H. Lee</i>	
Real-Time Face Recognition by the PCA (Principal Component Analysis) with Color Images	687
<i>J.O. Kim, S.J. Seo, C.H. Chung</i>	
Consistency of Global Checkpoints Based on Characteristics of Communication Events in Multimedia Applications	691
<i>M. Ono, H. Higaki</i>	
Combining the Radon, Markov, and Stieltjes Transforms for Object Reconstruction	695
<i>A. Cuyt, B. Verdonk</i>	
Author Index	699

Table of Contents – Part II

Track on Numerical Algorithms

Hierarchical Matrix-Matrix Multiplication Based on Multiprocessor Tasks	1
<i>S. Hunold, T. Rauber, G. Rünger</i>	
Improving Geographical Locality of Data for Shared Memory Implementations of PDE Solvers	9
<i>H. Löf, M. Nordén, S. Holmgren</i>	
Cache Oblivious Matrix Transposition: Simulation and Experiment	17
<i>D. Tsifakis, A.P. Rendell, P.E. Strazdins</i>	
An Intelligent Hybrid Algorithm for Solving Non-linear Polynomial Systems	26
<i>J. Xue, Y. Li, Y. Feng, L. Yang, Z. Liu</i>	
A Jacobi–Davidson Method for Nonlinear Eigenproblems	34
<i>H. Voss</i>	
Numerical Continuation of Branch Points of Limit Cycles in MATCONT	42
<i>A. Dhooge, W. Govaerts, Y.A. Kuznetsov</i>	
Online Algorithm for Time Series Prediction Based on Support Vector Machine Philosophy	50
<i>J.M. Górriz, C.G. Puntonet, M. Salmerón</i>	
Improved A-P Iterative Algorithm in Spline Subspaces	58
<i>J. Xian, S.P. Luo, W. Lin</i>	
Solving Differential Equations in Developmental Models of Multicellular Structures Expressed Using L-systems	65
<i>P. Federl, P. Prusinkiewicz</i>	
On a Family of A-stable Collocation Methods with High Derivatives	73
<i>G.Y. Kulikov, A.I. Merkulov, E.Y. Khrustaleva</i>	
Local Sampling Problems	81
<i>S.-Y. Yang, W. Lin</i>	

Recent Advances in Semi-Lagrangian Modelling of Flow through the Strait of Gibraltar	89
<i>M. Seaïd, M. El-Amrani, A. Machmoum</i>	
Efficiency Study of the “Black-Box” Component Decomposition Preconditioning for Discrete Stress Analysis Problems	97
<i>M.D. Mihajlović, S. Mijalković</i>	
Direct Solver Based on FFT and SEL for Diffraction Problems with Distribution	105
<i>H. Koshigoe</i>	
Non-negative Matrix Factorization for Filtering Chinese Document	113
<i>J. Lu, B. Xu, J. Jiang, D. Kang</i>	
On Highly Secure and Available Data Storage Systems	121
<i>S.J. Choi, H.Y. Youn, H.S. Lee</i>	

Track on Finite Element Method

A Numerical Adaptive Algorithm for the Obstacle Problem	130
<i>F.A. Pérez, J.M. Cascón, L. Ferragut</i>	
Finite Element Model of Fracture Formation on Growing Surfaces	138
<i>P. Federl, P. Prusinkiewicz</i>	
An Adaptive, 3-Dimensional, Hexahedral Finite Element Implementation for Distributed Memory	146
<i>J. Hippold, A. Meyer, G. Rünger</i>	
A Modular Design for Parallel Adaptive Finite Element Computational Kernels	155
<i>K. Banas</i>	
Load Balancing Issues for a Multiple Front Method	163
<i>C. Denis, J.P. Boufflet, P. Breïtkopf, M. Vayssade, B. Glut</i>	
Multiresolutional Techniques in Finite Element Method Solution of Eigenvalue Problem	171
<i>M. Kamiński</i>	

Track on Neural Networks

Self-Organizing Multi-layer Fuzzy Polynomial Neural Networks Based on Genetic Optimization	179
<i>S.-K. Oh, W. Pedrycz, H.-K. Kim, J.-B. Lee</i>	

Information Granulation-Based Multi-layer Hybrid Fuzzy Neural Networks: Analysis and Design	188
<i>B.-J. Park, S.-K. Oh, W. Pedrycz, T.-C. Ahn</i>	
Efficient Learning of Contextual Mappings by Context-Dependent Neural Nets.....	196
<i>P. Ciskowski</i>	
An Unsupervised Neural Model to Analyse Thermal Properties of Construction Materials	204
<i>E. Corchado, P. Burgos, M. Rodríguez, V. Tricio</i>	
Intrusion Detection Based on Feature Transform Using Neural Network	212
<i>W. Kim, S.-C. Oh, K. Yoon</i>	

Track on Applications

Accelerating Wildland Fire Prediction on Cluster Systems	220
<i>B. Abdalhaq, A. Cortés, T. Margalef, E. Luque</i>	
High Precision Simulation of Near Earth Satellite Orbits for SAR-Applications	228
<i>M. Kalkuhl, K. Nöh, O. Löffeld, W. Wiechert</i>	
Hybrid Approach to Reliability and Functional Analysis of Discrete Transport System	236
<i>T. Walkowiak, J. Mazurkiewicz</i>	
Mathematical Model of Gas Transport in Anisotropic Porous Electrode of the PEM Fuel Cell	244
<i>E. Kurgan, P. Schmidt</i>	
Numerical Simulation of Anisotropic Shielding of Weak Magnetic Fields	252
<i>E. Kurgan</i>	
Functionalization of Single-Wall Carbon Nanotubes: An Assessment of Computational Methods	260
<i>B. Akdim, T. Kar, X. Duan, R. Pachter</i>	
Improved Sampling for Biological Molecules Using Shadow Hybrid Monte Carlo	268
<i>S.S. Hampton, J.A. Izaguirre</i>	
A New Monte Carlo Approach for Conservation Laws and Relaxation Systems	276
<i>L. Pareschi, M. Seaid</i>	

A Parallel Implementation of Gillespie's Direct Method	284
<i>A.M. Ridwan, A. Krishnan, P. Dhar</i>	
Simulation of Deformable Objects Using Sliding Mode Control with Application to Cloth Animation	292
<i>F. Rum, B.W. Gordon</i>	
Constraint-Based Contact Analysis between Deformable Objects	300
<i>M. Hong, M.-H. Choi, C. Lee</i>	
Prediction of Binding Sites in Protein-Nucleic Acid Complexes	309
<i>N. Han, K. Han</i>	
Prediction of Protein Functions Using Protein Interaction Data	317
<i>H. Jung, K. Han</i>	
Interactions of Magainin-2 Amide with Membrane Lipids	325
<i>K. Murzyn, T. Róg, M. Pasenkiewicz-Gierula</i>	
Dynamics of Granular Heaplets: A Phenomenological Model	332
<i>Y.K. Goh, R.L. Jacobs</i>	
Modelling of Shear Zones in Granular Materials within Hypoplasticity	340
<i>J. Tejchman</i>	
Effective Algorithm for Detection of a Collision between Spherical Particles	348
<i>J.S. Leszczynski, M. Ciesielski</i>	
Vorticity Particle Method for Simulation of 3D Flow	356
<i>H. Kudela, P. Regucki</i>	
Crack Analysis in Single Plate Stressing of Particle Compounds	364
<i>M. Khanal, W. Schubert, J. Tomas</i>	
A Uniform and Reduced Mathematical Model for Sucker Rod Pumping	372
<i>L. Liu, C. Tong, J. Wang, R. Liu</i>	
Distributed Computation of Optical Flow	380
<i>A.G. Dopico, M.V. Correia, J.A. Santos, L.M. Nunes</i>	
Analytical Test on Effectiveness of MCDF Operations	388
<i>J. Kong, B. Zhang, W. Guo</i>	
An Efficient Perspective Projection Using VolumePro TM	396
<i>S. Lim, B.-S. Shin</i>	

Reconstruction of 3D Curvilinear Wireframe Model from 2D Orthographic Views	404
<i>A. Zhang, Y. Xue, X. Sun, Y. Hu, Y. Luo, Y. Wang, S. Zhong, J. Wang, J. Tang, G. Cai</i>	
Surface Curvature Estimation for Edge Spinning Algorithm	412
<i>M. Cermak, V. Skala</i>	
Visualization of Very Large Oceanography Time-Varying Volume Datasets	419
<i>S. Park, C. Bajaj, I. Ihm</i>	
Sphere-Spin-Image: A Viewpoint-Invariant Surface Representation for 3D Face Recognition	427
<i>Y. Wang, G. Pan, Z. Wu, S. Han</i>	
Design and Implementation of Integrated Assembly Object Model for Intelligent Virtual Assembly Planning	435
<i>J. Fan, Y. Ye, J.-M. Cai</i>	
Adaptive Model Based Parameter Estimation, Based on Sparse Data and Frequency Derivatives	443
<i>D. Deschrijver, T. Dhaene, J. Broeckhove</i>	
Towards Efficient Parallel Image Processing on Cluster Grids Using GIMP	451
<i>P. Czarnul, A. Ciereszko, M. Frączak</i>	
Benchmarking Parallel Three Dimensional FFT Kernels with ZENTURIO	459
<i>R. Prodan, A. Bonelli, A. Adelman, T. Fahringer, C. Überhuber</i>	
The Proof and Illustration of the Central Limit Theorem by Brownian Numerical Experiments in Real Time within the Java Applet	467
<i>M. Gall, R. Kutner, W. Wesela</i>	
An Extended Coherence Protocol for Recoverable DSM Systems with Causal Consistency	475
<i>J. Brzezinski, M. Szychowiak</i>	
2D and 3D Representations of Solution Spaces for CO Problems	483
<i>E. Nowicki, C. Smutnicki</i>	
Effective Detector Set Generation and Evolution for Artificial Immune System	491
<i>C. Kim, W. Kim, M. Hong</i>	

Artificial Immune System against Viral Attack.....	499
<i>H. Lee, W. Kim, M. Hong</i>	
Proposal of the Programming Rules for VHDL Designs	507
<i>J. Borgosz, B. Cyganek</i>	
A Weight Adaptation Method for Fuzzy Cognitive Maps to a Process Control Problem.....	515
<i>E. Papageorgiou, P. Groumpos</i>	
A Method Based on Fuzzy Logic Technique for Smoothing in 2D.....	523
<i>A. Çinar</i>	
Proportional-Integral-Derivative Controllers Tuning for Unstable and Integral Processes Using Genetic Algorithms.....	532
<i>M.A. Paz-Ramos, J. Torres-Jimenez, E. Quintero-Marmol-Marquez</i>	
Enabling Systems Biology: A Scientific Problem-Solving Environment ...	540
<i>M. Singhal, E.G. Stephan, K.R. Klicker, L.L. Trease, G. Chin Jr., D.K. Gracio, D.A. Payne</i>	

Poster Papers

Depth Recovery with an Area Based Version of the Stereo Matching Method with Scale-Space Tensor Representation of Local Neighborhoods	548
<i>B. Cyganek</i>	
Symbolic Calculation for Frölicher-Nijenhuis \mathbb{R} -Algebra for Exploring in Electromagnetic Field Theory	552
<i>J. de Cruz Guzmán, Z. Oziewicz</i>	
Spherical Orthogonal Polynomials and Symbolic-Numeric Gaussian Cubature Formulas.....	557
<i>A. Cuyt, B. Benouahmane, B. Verdonk</i>	
The Berlekamp-Massey Algorithm. A Sight from Theory of Pade Approximants and Orthogonal Polynomials	561
<i>S.B. Gashkov, I.B. Gashkov</i>	
An Advanced Version of the Local-Global Step Size Control for Runge-Kutta Methods Applied to Index 1 Differential-Algebraic Systems	565
<i>G.Y. Kulikov</i>	
INTEGRATOR: A Computational Tool to Solve Ordinary Differential Equations with Global Error Control	570
<i>G.Y. Kulikov, S.K. Shindin</i>	

Reconstruction of Signal from Samples of Its Integral in Spline Subspaces	574
<i>J. Xian, Y. Li, W. Lin</i>	
The Vectorized and Parallelized Solving of Markovian Models for Optical Networks	578
<i>B. Bylina, J. Bylina</i>	
A Parallel Splitting up Algorithm for the Determination of an Unknown Coefficient in Multi Dimensional Parabolic Problem	582
<i>D.S. Daoud, D. Subasi</i>	
A-Posteriori Error Analysis of a Mixed Method for Linear Parabolic Problem	586
<i>M.I. Asensio, J.M. Cascón, L. Ferragut</i>	
Analysis of Parallel Numerical Libraries to Solve the 3D Electron Continuity Equation.....	590
<i>N. Seoane, A.J. García-Loureiro</i>	
Parallel Solution of Cascaded ODE Systems Applied to ^{13}C -Labeling Experiments.....	594
<i>K. Nöh, W. Wiechert</i>	
A k -way Graph Partitioning Algorithm Based on Clustering by Eigenvector.....	598
<i>T.-Y. Choe, C.-I. Park</i>	
Network of Networks	602
<i>J. de Cruz Guzmán, Z. Oziewicz</i>	
MSL: An Efficient Adaptive In-Place Radix Sort Algorithm	606
<i>F. El-Aker, A. Al-Badarnah</i>	
Parallel Chip Firing Game Associated with n -cube Edges Orientations	610
<i>R. Ndoundam, C. Tadonki, M. Tchuenta</i>	
A Fast Multifrontal Solver for Non-linear Multi-physics Problems	614
<i>A. Bertoldo, M. Bianco, G. Pucci</i>	
Modelling of Interaction between Surface Waves and Mud Layer	618
<i>L. Balas</i>	
Computational Modelling of Pulsating Biological Flow	622
<i>X.S. Yang, R.W. Lewis, H. Zhang</i>	
Effect of Heterogeneity on Formation of Shear Zones in Granular Bodies	626
<i>J. Tejchman</i>	

Effect of Structural Disorder on the Electronic Density of States in One-Dimensional Chain of Atoms	630
<i>M. Wołoszyn, B.J. Spisak</i>	
The Estimation of the Mathematical Exactness of System Dynamics Method on the Base of Some Economic System	634
<i>E. Kasperska, D. Słota</i>	
Size of the Stable Population in the Penna Bit-String Model of Biological Aging	638
<i>K. Malarz, M. Sitarz, P. Gronek, A. Dydejczyk</i>	
Velocity Field Modelling for Pollutant Plume Using 3-D Adaptive Finite Element Method	642
<i>G. Montero, R. Montenegro, J.M. Escobar, E. Rodríguez, J.M. González-Yuste</i>	
Organization of the Mesh Structure	646
<i>T. Jurczyk, B. Głut</i>	
Kernel Maximum Likelihood Hebbian Learning	650
<i>J. Koetsier, E. Corchado, D. MacDonald, J. Corchado, C. Fyfe</i>	
Discovery of Chemical Transformations with the Use of Machine Learning	654
<i>G. Fic, G. Nowak</i>	
Extraction of Document Descriptive Terms with a Linguistic-Based Machine Learning Approach	658
<i>J. Fernández, E. Montañés, I. Díaz, J. Ranilla, E.F. Combarro</i>	
Application of Brain Emotional Learning Based Intelligent Controller (BELBIC) to Active Queue Management	662
<i>M. Jalili-Kharaajoo</i>	
A Hybrid Algorithm Based on PSO and SA and Its Application for Two-Dimensional Non-guillotine Cutting Stock Problem	666
<i>J.Q. Jiang, Y.C. Liang, X.H. Shi, H.P. Lee</i>	
Evolving TSP Heuristics Using Multi Expression Programming	670
<i>M. Oltean, D. Dumitrescu</i>	
Improving the Performance of Evolutionary Algorithms for the Multiobjective 0/1 Knapsack Problem Using ε -Dominance	674
<i>C. Groşan, M. Oltean</i>	
Genetic Evolution Approach for Target Movement Prediction	678
<i>S. Baik, J. Bala, A. Hadjarian, P. Pachowicz</i>	

Adaptive Transfer Functions in Radial Basis Function (RBF) Networks	682
<i>G.A. Hoffmann</i>	
Disturbance Rejection Control of Thermal Power Plant Using Immune Algorithm	687
<i>D.H. Kim, J.H. Cho</i>	
The Design Methodology of Fuzzy Controller Based on Information Granulation (IG)-Based Optimization Approach	691
<i>S.-K. Oh, S.-B. Roh, D.-Y. Lee</i>	
PID Controller Tuning of a Boiler Control System Using Immune Algorithm Typed Neural Network	695
<i>D.H. Kim</i>	
A Framework to Investigate and Evaluate Genetic Clustering Algorithms for Automatic Modularization of Software Systems	699
<i>S. Parsa, O. Bushehrian</i>	
An Artificial Immune Algorithms Apply to Pre-processing Signals	703
<i>M. Świącicki, W. Wajs, P. Wais</i>	
Identification and Control Using Direction Basis Function Neural Network	708
<i>M. Jalili-Kharaajoo</i>	
A New Dynamic Structure Neural Network for Control of Nonlinear Systems	713
<i>M. Jalili-Kharaajoo</i>	
Proposing a New Learning Algorithm to Improve Fault Tolerance of Neural Networks	717
<i>M. Jalili-Kharaajoo</i>	
Nonlinear Parametric Model Identification and Model Based Control of <i>S. cerevisiae</i> Production	722
<i>B. Akay</i>	
The Notion of Community in United States Computational Science Education Initiatives	726
<i>M.E. Searcy, J.T. Richie</i>	
Author Index	731

Table of Contents – Part III

Workshop on Programming Grids and Metasystems

High-Performance Parallel and Distributed Scientific Computing with the Common Component Architecture	1
<i>D.E. Bernholdt</i>	
Multiparadigm Model Oriented to Development of Grid Systems	2
<i>J.L.V. Barbosa, C.A. da Costa, A.C. Yamin, C.F.R. Geyer</i>	
The Effect of the 2 nd Generation Clusters: Changes in the Parallel Programming Paradigms	10
<i>J. Porras, P. Huttunen, J. Ikonen</i>	
JavaSymphony, a Programming Model for the Grid	18
<i>A. Jugravu, T. Fahringer</i>	
Adaptation of Legacy Software to Grid Services	26
<i>B. Baliś, M. Bubak, M. Węgiel</i>	
Grid Service Registry for Workflow Composition Framework	34
<i>M. Bubak, T. Gubala, M. Kapalka, M. Malawski, K. Rycerz</i>	
A-GWL: Abstract Grid Workflow Language	42
<i>T. Fahringer, S. Pllana, A. Villazon</i>	
Design of Departmental Metacomputing ML	50
<i>F. Gava</i>	
A Grid-Enabled Scene Rendering Application	54
<i>M. Caballer, V. Hernández, J.E. Román</i>	
Rule-Based Visualization in a Computational Steering Collaboratory	58
<i>L. Jiang, H. Liu, M. Parashar, D. Silver</i>	
Placement of File Replicas in Data Grid Environments	66
<i>J.H. Abawajy</i>	
Generating Reliable Conformance Test Suites for Parallel and Distributed Languages, Libraries, and APIs	74
<i>L. Garstecki</i>	
A Concept of Replicated Remote Method Invocation	82
<i>J. Brzezinski, C. Sobaniec</i>	

Workshop on First International Workshop on Active and Programmable Grids Architectures and Components

Discovery of Web Services with a P2P Network	90
<i>F. Forster, H. De Meer</i>	
Achieving Load Balancing in Structured Peer-to-Peer Grids	98
<i>C. Pairet, P. García, A.F.G. Skarmeta, R. Mondéjar</i>	
A Conceptual Model for Grid-Adaptivity of HPC Applications and Its Logical Implementation Using Components Technology	106
<i>A. Machì, S. Lombardo</i>	
Global Discovery Service for JMX Architecture	114
<i>J. Midura, K. Balos, K. Zielinski</i>	
Towards a Grid Applicable Parallel Architecture Machine	119
<i>K. Skala, Z. Sojat</i>	
A XKMS-Based Security Framework for Mobile Grid into the XML Web Services	124
<i>N. Park, K. Moon, J. Jang, S. Sohn</i>	
A Proposal of Policy-Based System Architecture for Grid Services Management	133
<i>E. Magaña, E. Salamanca, J. Serrat</i>	
Self-Management GRID Services – A Programmable Network Approach	141
<i>L. Cheng, A. Galis, A. Savanović, B.J. Blažič, J. Bešter</i>	
Application-Specific Hints in Reconfigurable Grid Scheduling Algorithms	149
<i>B. Volckaert, P. Thysebaert, F. De Turck, B. Dhoedt, P. Demeester</i>	
Self-Configuration of Grid Nodes Using a Policy-Based Management Architecture	158
<i>F.J. García, Ó. Cánovas, G. Martínez, A.F.G. Skarmeta</i>	
Context-Aware GRID Services: Issues and Approaches	166
<i>K. Jean, A. Galis, A. Tan</i>	
Security Issues in Virtual Grid Environments	174
<i>J.L. Muñoz, J. Pegueroles, J. Forné, O. Esparza, M. Soriano</i>	
Implementation and Evaluation of Integrity Protection Facilities for Active Grids	179
<i>A. Savanović, D. Gabrijelčič, B.J. Blažič, J. Bešter</i>	

A Convergence Architecture for GRID Computing and Programmable Networks	187
<i>C. Bachmeir, P. Tabery, D. Marinov, G. Nachev, J. Eberspächer</i>	
Programmable Grids Framework Enabling QoS in an OGSA Context	195
<i>J. Soldatos, L. Polymenakos, G. Kormentzas</i>	
Active and Logistical Networking for Grid Computing: The E-toile Architecture	202
<i>A. Bassi, M. Beck, F. Chanussot, J.-P. Gelas, R. Harakaly, L. Lefèvre, T. Moore, J. Plank, P. Primet</i>	
Distributed Resource Discovery in Wide Area Grid Environments	210
<i>T.N. Ellahi, M.T. Kechadi</i>	
Trusted Group Membership Service for JXTA	218
<i>L. Kawulok, K. Zielinski, M. Jaeschke</i>	

Workshop on Next Generation Computing

An Implementation of Budget-Based Resource Reservation for Real-Time Linux	226
<i>C.S. Liu, N.C. Perng, T.W. Kuo</i>	
Similarity Retrieval Based on SOM-Based R*-Tree	234
<i>K.H. Choi, M.H. Shin, S.H. Bae, C.H. Kwon, I.H. Ra</i>	
Extending the Power of Server Based Computing	242
<i>H.L. Yu, W.M. Zhen, M.M. Shen</i>	
Specifying Policies for Service Negotiations of Response Time	250
<i>T.K. Kim, O.H. Byeon, K.J. Chun, T.M. Chung</i>	
Determination and Combination of Quantitative Weight Value from Multiple Preference Information	258
<i>J.H. Yoo, B.G. Lee, H.S. Han</i>	
Forwarding Based Data Parallel Handoff for Real-Time QoS in Mobile IPv6 Networks	266
<i>H.Y. Jeong, J. Lim, J.D. Park, H. Choo</i>	
Mobile Agent-Based Load Monitoring System for the Safety Web Server Environment	274
<i>H.J. Park, K.J. Jyung, S.S. Kim</i>	
A Study on TCP Buffer Management Algorithm for Improvement of Network Performance in Grid Environment	281
<i>Y. Jeong, M. Noh, H.K. Lee, Y. Mun</i>	

Workshop on Practical Aspects of High-Level Parallel Programming (PAPP 2004)

Evaluating the Performance of Skeleton-Based High Level Parallel Programs	289
<i>A. Benoit, M. Cole, S. Gilmore, J. Hillston</i>	
Towards a Generalised Runtime Environment for Parallel Haskell	297
<i>J. Berthold</i>	
Extending Camelot with Mutable State and Concurrency	306
<i>S. Gilmore</i>	
EVE, an Object Oriented SIMD Library	314
<i>J. Falcou, J. Sérot</i>	
Petri Nets as Executable Specifications of High-Level Timed Parallel Systems	322
<i>F. Pommereau</i>	
Parallel I/O in Bulk-Synchronous Parallel ML	331
<i>F. Gava</i>	

Workshop on Parallel Input/Output Management Techniques (PIOMT04)

File Replacement Algorithm for Storage Resource Managers in Data Grids	339
<i>J.H. Abawajy</i>	
Optimizations Based on Hints in a Parallel File System	347
<i>M.S. Pérez, A. Sánchez, V. Robles, J.M. Peña, F. Pérez</i>	
Using DMA Aligned Buffer to Improve Software RAID Performance	355
<i>Z. Shi, J. Zhang, X. Zhou</i>	
mNFS: Multicast-Based NFS Cluster	363
<i>W.-G. Lee, C.-I. Park, D.-W. Kim</i>	
Balanced RM2: An Improved Data Placement Scheme for Tolerating Double Disk Failures in Disk Arrays	371
<i>D.-W. Kim, S.-H. Lee, C.-I. Park</i>	
Diagonal Replication on Grid for Efficient Access of Data in Distributed Database Systems	379
<i>M. Mat Deris, N. Bakar, M. Rabiei, H.M. Suzuri</i>	

Workshop on OpenMP for Large Scale Applications

Performance Comparison between OpenMP and MPI on IA64 Architecture	388
<i>L. Qi, M. Shen, Y. Chen, J. Li</i>	
Defining Synthesizable OpenMP Directives and Clauses	398
<i>P. Dziurzynski, V. Beletsky</i>	
Efficient Translation of OpenMP to Distributed Memory	408
<i>L. Huang, B. Chapman, Z. Liu, R. Kendall</i>	
ORC-OpenMP: An OpenMP Compiler Based on ORC	414
<i>Y. Chen, J. Li, S. Wang, D. Wang</i>	

Workshop on Tools for Program Development and Analysis in Computational Science

Performance Analysis, Data Sharing, and Tools Integration in Grids: New Approach Based on Ontology	424
<i>H.-L. Truong, T. Fahringer</i>	
Accurate Cache and TLB Characterization Using Hardware Counters....	432
<i>J. Dongarra, S. Moore, P. Mucci, K. Seymour, H. You</i>	
A Tool Suite for Simulation Based Analysis of Memory Access Behavior	440
<i>J. Weidendorfer, M. Kowarschik, C. Trinitis</i>	
Platform-Independent Cache Optimization by Pinpointing Low-Locality Reuse	448
<i>K. Beyls, E.H. D'Hollander</i>	
Teuta: Tool Support for Performance Modeling of Distributed and Parallel Applications	456
<i>T. Fahringer, S. Pillana, J. Testori</i>	
MPI Application Development Using the Analysis Tool MARMOT	464
<i>B. Krammer, M.S. Müller, M.M. Resch</i>	
Monitoring System for Distributed Java Applications	472
<i>W. Funika, M. Bubak, M. Smętek</i>	
Automatic Parallel-Discrete Event Simulation	480
<i>M. Marín</i>	

Workshop on Modern Technologies for Web-Based Adaptive Systems

Creation of Information Profiles in Distributed Databases as a n -Person Game	488
<i>J.L. Kulikowski</i>	
Domain Knowledge Modelling for Intelligent Instructional Systems	497
<i>E. Pecheanu, L. Dumitriu, C. Segal</i>	
Hybrid Adaptation of Web-Based Systems User Interfaces	505
<i>J. Sobecki</i>	
Collaborative Web Browsing Based on Ontology Learning from Bookmarks	513
<i>J.J. Jung, Y.-H. Yu, G.-S. Jo</i>	
Information Retrieval Using Bayesian Networks	521
<i>L. Neuman, J. Kozłowski, A. Zgrzywa</i>	
An Application of the DEDS Control Synthesis Method	529
<i>F. Čapkovič</i>	
Using Consistency Measures and Attribute Dependencies for Solving Conflicts in Adaptive Systems	537
<i>M. Malowiecki, N.T. Nguyen, M. Zgrzywa</i>	
Logical Methods for Representing Meaning of Natural Language Texts . . .	545
<i>T. Batura, F. Murzin</i>	
Software Self-Adaptability by Means of Artificial Evolution	552
<i>M. Nowostawski, M. Purvis, A. Gecow</i>	
Professor:e – An IMS Standard Based Adaptive E-learning Platform	560
<i>C. Segal, L. Dumitriu</i>	

Workshop on Agent Day 2004 – Intelligent Agents in Computing Systems

Towards Measure of Semantic Correlation between Messages in Multiagent System	567
<i>A. Pieczyńska-Kuchtiak, R. Katarzyniak</i>	
Modelling Intelligent Virtual Agent Skills with Human-Like Senses	575
<i>P. Herrero, A. de Antonio</i>	

Reuse of Organisational Experience Harnessing Software Agents	583
<i>K. Krawczyk, M. Majewska, M. Dziewierz, R. Słota, Z. Balogh, J. Kitowski, S. Lambert</i>	
The Construction and Analysis of Agent Fault-Tolerance Model Based on π -Calculus	591
<i>Y. Jiang, Z. Xia, Y. Zhong, S. Zhang</i>	
REMARK – Reusable Agent-Based Experience Management and Recommender Framework	599
<i>Z. Balogh, M. Laclavik, L. Hluchy, I. Budinska, K. Krawczyk</i>	
Behavior Based Detection of Unfavorable Resources	607
<i>K. Cetnarowicz, G. Rojek</i>	
Policy Modeling in Four Agent Economy	615
<i>A. Woźniak</i>	
Multi-agent System for Irregular Parallel Genetic Computations	623
<i>J. Momot, K. Kosacki, M. Grochowski, P. Uhruski, R. Schaefer</i>	
Strategy Extraction for Mobile Embedded Control Systems Apply the Multi-agent Technology	631
<i>V. Srovnal, B. Horák, R. Bernatík, V. Snášel</i>	
Multi-agent Environment for Dynamic Transport Planning and Scheduling	638
<i>J. Kozlak, J.-C. Créput, V. Hilaire, A. Koukam</i>	
Agent-Based Models and Platforms for Parallel Evolutionary Algorithms	646
<i>M. Kisiel-Dorohinicki</i>	
A Co-evolutionary Multi-agent System for Multi-modal Function Optimization	654
<i>R. Dreżewski</i>	

Workshop on Dynamic Data Driven Applications Systems

Dynamic Data Driven Applications Systems: A New Paradigm for Application Simulations and Measurements	662
<i>F. Darema</i>	
Distributed Collaborative Adaptive Sensing for Hazardous Weather Detection, Tracking, and Predicting	670
<i>J. Brotzge, V. Chandresakar, K. Droegemeier, J. Kurose, D. McLaughlin, B. Philips, M. Preston, S. Sekelsky</i>	

Rule-Based Support Vector Machine Classifiers Applied to Tornado Prediction	678
<i>T.B. Trafalis, B. Santosa, M.B. Richman</i>	
Adaptive Coupled Physical and Biogeochemical Ocean Predictions: A Conceptual Basis	685
<i>P.F.J. Lermusiaux, C. Evangelinos, R. Tian, P.J. Haley, J.J. McCarthy, N.M. Patrikalakis, A.R. Robinson, H. Schmidt</i>	
Dynamic-Data-Driven Real-Time Computational Mechanics Environment	693
<i>J. Michopoulos, C. Farhat, E. Houstis</i>	
A Note on Data-Driven Contaminant Simulation	701
<i>C.C. Douglas, C.E. Shannon, Y. Efendiev, R. Ewing, V. Ginting, R. Lazarov, M.J. Cole, G. Jones, C.R. Johnson, J. Simpson</i>	
Computational Aspects of Data Assimilation for Aerosol Dynamics	709
<i>A. Sandu, W. Liao, G.R. Carmichael, D. Henze, J.H. Seinfeld, T. Chai, D. Daescu</i>	
A Framework for Online Inversion-Based 3D Site Characterization	717
<i>V. Akçelik, J. Bielak, G. Biros, I. Epanomeritakis, O. Ghattas, L.F. Kallivokas, E.J. Kim</i>	
A Note on Dynamic Data Driven Wildfire Modeling	725
<i>J. Mandel, M. Chen, L.P. Franca, C. Johns, A. Puhalskii, J.L. Coen, C.C. Douglas, R. Kremens, A. Vodacek, W. Zhao</i>	
Agent-Based Simulation of Data-Driven Fire Propagation Dynamics	732
<i>J. Michopoulos, P. Tsompanopoulou, E. Houstis, A. Joshi</i>	
Model Reduction of Large-Scale Dynamical Systems	740
<i>A. Antoulas, D. Sorensen, K.A. Gallivan, P. Van Dooren, A. Grama, C. Hoffmann, A. Sameh</i>	
Data Driven Design Optimization Methodology Development and Application	748
<i>H. Zhao, D. Knight, E. Taskinoglu, V. Jovanovic</i>	
A Dynamic Data Driven Computational Infrastructure for Reliable Computer Simulations	756
<i>J.T. Oden, J.C. Browne, I. Babuška, C. Bajaj, L.F. Demkowicz, L. Gray, J. Bass, Y. Feng, S. Prudhomme, F. Nobile, R. Tempone</i>	
Improvements to Response-Surface Based Vehicle Design Using a Feature-Centric Approach	764
<i>D. Thompson, S. Parthasarathy, R. Machiraju, S. Lawrence</i>	

An Experiment for the Virtual Traffic Laboratory: Calibrating Speed Dependency on Heavy Traffic (A Demonstration of a Study in a Data Driven Traffic Analysis)	771
<i>A. Visser, J. Zoetebier, H. Yakali, B. Hertzberger</i>	
SAMAS: Scalable Architecture for Multi-resolution Agent-Based Simulation	779
<i>A. Chaturvedi, J. Chi, S. Mehta, D. Dolk</i>	
Simulation Coercion Applied to Multiagent DDDAS	789
<i>Y. Loitière, D. Brogan, P. Reynolds</i>	
O'SOAP – A Web Services Framework for DDDAS Applications	797
<i>K. Pingali, P. Stodghill</i>	
Application of Grid-Enabled Technologies for Solving Optimization Problems in Data-Driven Reservoir Studies	805
<i>M. Parashar, H. Klie, U. Catalyurek, T. Kurc, V. Matossian, J. Saltz, M.F. Wheeler</i>	
Image-Based Stress Recognition Using a Model-Based Dynamic Face Tracking System	813
<i>D. Metaxas, S. Venkataraman, C. Vogler</i>	
Developing a Data Driven System for Computational Neuroscience	822
<i>R. Snider, Y. Zhu</i>	
Karhunen–Loeve Representation of Periodic Second-Order Autoregressive Processes	827
<i>D. Lucor, C.-H. Su, G.E. Karniadakis</i>	

Workshop on HLA-Based Distributed Simulation on the Grid

Using Web Services to Integrate Heterogeneous Simulations in a Grid Environment	835
<i>J.M. Pullen, R. Brunton, D. Brutzman, D. Drake, M. Hieb, K.L. Morse, A. Tolk</i>	
Support for Effective and Fault Tolerant Execution of HLA-Based Applications in the OGSA Framework	848
<i>K. Rycerz, M. Bubak, M. Malawski, P.M.A. Sloot</i>	
Federate Migration in HLA-Based Simulation	856
<i>Z. Yuan, W. Cai, M.Y.H. Low, S.J. Turner</i>	
FT-RSS: A Flexible Framework for Fault Tolerant HLA Federations	865
<i>J. Lüthi, S. Großmann</i>	

Design and Implementation of GPDS	873
<i>T.-D. Lee, S.-H. Yoo, C.-S. Jeong</i>	
HLA_AGENT: Distributed Simulation of Agent-Based Systems with HLA	881
<i>M. Lees, B. Logan, T. Oguara, G. Theodoropoulos</i>	
FedGrid: An HLA Approach to Federating Grids	889
<i>S. Vuong, X. Cai, J. Li, S. Pramanik, D. Suttles, R. Chen</i>	

Workshop on Interactive Visualisation and Interaction Technologies

Do Colors Affect Our Recognition Memory for Haptic Rough Surfaces? ..	897
<i>Z. Luo, A. Imamiya</i>	
Enhancing Human Computer Interaction in Networked Hapto-Acoustic Virtual Reality Environments on the CeNTIE Network	905
<i>T. Adriaansen, A. Krumm-Heller, C. Gunn</i>	
Collaborative Integration of Speech and 3D Gesture for Map-Based Applications	913
<i>A. Corradini</i>	
Mobile Augmented Reality Support for Architects Based on Feature Tracking Techniques	921
<i>M. Bang Nielsen, G. Kramp, K. Grønbæk</i>	
User Interface Design for a Navigation and Communication System in the Automotive World	929
<i>O. Preißner</i>	
Target Selection in Augmented Reality Worlds	936
<i>J. Sands, S.W. Lawson, D. Benyon</i>	
Towards Believable Behavior Generation for Embodied Conversational Agents	946
<i>A. Corradini, M. Fredriksson, M. Mehta, J. Königsmann, N.O. Bernsen, L. Johannesson</i>	
A Performance Analysis of Movement Patterns	954
<i>C. Sas, G. O'Hare, R. Reilly</i>	
On the Motivation and Attractiveness Scope of the Virtual Reality User Interface of an Educational Game	962
<i>M. Virvou, G. Katsionis, K. Manos</i>	

A Client-Server Engine for Parallel Computation of High-Resolution Planes	970
<i>D.P. Gavidia, E.V. Zudilova, P.M.A. Sloot</i>	
A Framework for 3D Polysensometric Comparative Visualization	978
<i>J.I. Khan, X. Xu, Y. Ma</i>	
An Incremental Editor for Dynamic Hierarchical Drawing of Trees	986
<i>D. Workman, M. Bernard, S. Pothoven</i>	
Using Indexed-Sequential Geometric Glyphs to Explore Visual Patterns	996
<i>J. Morey, K. Sedig</i>	
Studying the Acceptance or Rejection of Newcomers in Virtual Environments	1004
<i>P. Herrero, A. de Antonio, J. Segovia</i>	
Open Standard Based Visualization of Complex Internet Computing Systems	1008
<i>S.S. Yang, J.I. Khan</i>	
General Conception of the Virtual Laboratory	1013
<i>M. Lawenda, N. Meyer, T. Rajtar, M. Okoń, D. Stokłosa, M. Stroiński, L. Popenda, Z. Gdaniec, R.W. Adamiak</i>	
Individual Differences in Virtual Environments	1017
<i>C. Sas</i>	
Ecological Strategies and Knowledge Mapping	1025
<i>J. Bidarra, A. Dias</i>	
Need for a Prescriptive Taxonomy of Interaction for Mathematical Cognitive Tools	1030
<i>K. Sedig</i>	

Workshop on Computational Modeling of Transport on Networks

Evolution of the Internet Map and Load Distribution	1038
<i>K.-I. Goh, B. Kahng, D. Kim</i>	
Complex Network of Earthquakes	1046
<i>S. Abe, N. Suzuki</i>	
Universal Features of Network Topology	1054
<i>K. Austin, G.J. Rodgers</i>	

Network Brownian Motion: A New Method to Measure Vertex-Vertex Proximity and to Identify Communities and Subcommunities	1062
<i>H. Zhou, R. Lipowsky</i>	
Contagion Flow through Banking Networks	1070
<i>M. Boss, M. Summer, S. Thurner</i>	
Local Search with Congestion in Complex Communication Networks	1078
<i>A. Arenas, L. Danon, A. Díaz-Guilera, R. Guimerà</i>	
Guided Search and Distribution of Information Flow on Complex Graphs	1086
<i>B. Tadić</i>	
Network Topology in Immune System Shape Space	1094
<i>J. Burns, H.J. Ruskin</i>	
An Evolutionary Approach to Pickup and Delivery Problem with Time Windows	1102
<i>J.-C. Créput, A. Koukam, J. Kozlak, J. Lukasik</i>	
Automatic Extraction of Hierarchical Urban Networks: A Micro-Spatial Approach	1109
<i>R. Carvalho, M. Batty</i>	

Workshop on Modeling and Simulation in Supercomputing and Telecommunications

Design and Implementation of the Web-Based PSE <i>GridGate</i>	1117
<i>K. Kang, Y. Kang, K. Cho</i>	
Performance Evaluation of ENUM Directory Service Design	1124
<i>H.K. Lee, Y. Mun</i>	
A Single Thread Discrete Event Simulation Toolkit for Java: STSimJ	1131
<i>W. Chen, D. Wang, W. Zheng</i>	
Routing and Wavelength Assignments in Optical WDM Networks with Maximum Quantity of Edge Disjoint Paths	1138
<i>H. Choo, V.V. Shakhov</i>	
Parallelism for Nested Loops with Non-uniform and Flow Dependences	1146
<i>S.-J. Jeong</i>	
Comparison Based Diagnostics as a Probabilistic Deduction Problem	1153
<i>B. Polgár</i>	

Dynamic Threshold for Monitor Systems on Grid Service Environments	1162
<i>E.N. Huh</i>	

Multuser CDMA Parameters Estimation by Particle Filter with Resampling Schemes	1170
<i>J.-S. Kim, D.-R. Shin, W.-G. Chung</i>	

Workshop on QoS Routing

Routing, Wavelength Assignment in Optical Networks Using an Efficient and Fair EDP Algorithm	1178
<i>P. Manohar, V. Sridhar</i>	

Route Optimization Technique to Support Multicast in Mobile Networks	1185
<i>K. Park, S. Han, B.-g. Joo, K. Kim, J. Hong</i>	

PRED: Prediction-Enabled RED	1193
<i>M.G. Chung, E.N. Huh</i>	

An Efficient Aggregation and Routing Algorithm Using Multi-hop Clustering in Sensor Networks	1201
<i>B.-H. Lee, H.-W. Yoon, T.-J. Lee, M.Y. Chung</i>	

Explicit Routing for Traffic Engineering in Labeled Optical Burst-Switched WDM Networks	1209
<i>J. Zhang, H.-J. Lee, S. Wang, X. Qiu, K. Zhu, Y. Huang, D. Datta, Y.-C. Kim, B. Mukherjee</i>	

A Mutual Authentication and Route Optimization Method between MN and CN Using AAA in Mobile IPv6	1217
<i>M. Kim, H.K. Lee, Y. Mun</i>	

Studies on a Class of AWG-Based Node Architectures for Optical Burst-Switched Networks	1224
<i>Y. Huang, D. Datta, X. Qiu, J. Zhang, H.-K. Park, Y.-C. Kim, J.P. Heritage, B. Mukherjee</i>	

Self-Organizing Sensor Networks	1233
<i>D. Bein, A.K. Datta</i>	

Workshop on Evolvable Hardware

The Application of GLS Algorithm to 2 Dimension Irregular-Shape Cutting Problem	1241
<i>L. Budzyńska, P. Kominek</i>	
Biologically-Inspired: A Rule-Based Self-Reconfiguration of a Virtex Chip	1249
<i>G. Tufte, P.C. Haddow</i>	
Designing Digital Circuits for the Knapsack Problem	1257
<i>M. Oltean, C. Groşan, M. Oltean</i>	
Improvements in FSM Evolutions from Partial Input/Output Sequences	1265
<i>S.G. Araújo, A. Mesquita, A.C.P. Pedroza</i>	
Intrinsic Evolution of Analog Circuits on a Programmable Analog Multiplexer Array	1273
<i>J.F.M. Amaral, J.L.M. Amaral, C.C. Santini, M.A.C. Pacheco, R. Tanscheit, M.H. Szwarcman</i>	
Encoding Multiple Solutions in a Linear Genetic Programming Chromosome	1281
<i>M. Oltean, C. Groşan, M. Oltean</i>	
Evolutionary State Assignment for Synchronous Finite State Machines . . .	1289
<i>N. Nedjah, L. de Macedo Mourelle</i>	
Author Index	1297

<http://www.springer.com/978-3-540-22129-6>

Computational Science — ICCS 2004

4th International Conference, Kraków, Poland, June 6–9,
2004, Proceedings, Part IV

Bubak, M.; Albada, G.D. van; Sloot, P.M.A.; Dongarra, J.
(Eds.)

2004, CXXXII, 1278 p. In 2 volumes, not available
separately., Softcover

ISBN: 978-3-540-22129-6