

### **Minisymposium on GPU Computing**

1. Paolo Bientinesi, Francisco Igual, Daniel Kressner and Enrique S. Quintana-Orti, Reduction to Condensed Forms for Symmetric Eigenvalue Problems on Multi-core Architectures
2. Hagen Peters, Norbert Luttenberger and Ole Schulz-Hildebrandt, Fast in-place sorting with CUDA based on bitonic sort
3. Bernardo M. Rocha, Fernando O. Campos, Gernot Plank, Rodrigo W. dos Santos, Manfred Liebmann and Gundolf Haase, Simulations of the Electrical Activity in the Heart with Graphic Processing Units
4. Michael Replinger and Philipp Slusallek, Stream Processing on GPUs Using Distributed Multimedia Middleware
5. Kamil Rocki, Parallel minimax tree searching on GPU
6. Christian Lessig and Paolo Bientinesi, On Parallelizing the MRRR Algorithm for Data-Parallel Coprocessors
7. Florian Stock and Andreas Koch, A Fast GPU Implementation for Solving Sparse Ill-Posed Linear Equation Systems
8. Pedro Alonso, Victor J. Sanchez and Isabel Perez, A GPU approach to the simulation of spatio-temporal dynamics in ultrasonic resonators
9. Przemyslaw Plaszewski, Pawel Maciol and Krzysztof Banas, Finite element numerical integration on GPUs
10. DaQi Ren and Reiji Suda, Power Model of Large-Scale Matrix Multiplication on Multi-core CPUs and GPUs Platform

### **Minisymposium on Cell/B.E. Technologies**

11. Francesco Belletti, Marco Guidetti, Andrea Maiorano, Filippo Mantovani, Sebastiano Schifano and Raffaele Tripiccone, Monte Carlo Simulations of Spin Glass Systems on the Cell Broadband Engine
12. Joppe Bos and Marcelo Kaihara, Montgomery Multiplication on the Cell
13. Maciej Cytowski, Maciej Remiszewski and Igor Soszynski, Astronomical period searching on the Cell Broadband Engine
14. Jens Breitbart and Gaurav Khanna, An Exploration of CUDA and CBEA for Einstein@Home(18)
15. Dmitry Mikushin and Viktor Stepanenko, The implementation of regional atmospheric model for CBEA-based clusters
16. Adam Smyk and Marek Tudruj, Optimization of FDTD Computations in a Streaming Model Architecture
17. Raul de la Cruz, Mauricio Araya-Polo and Jose Maria Cela, Introducing the Semi-stencil Algorithm
18. Krzysztof Rojek and Lukasz Szustak, Adaptation of Double Precision Matrix Multiplication to the Cell Broadband Engine Architecture
19. Filip Kruzel and Krzysztof Banas, Finite element numerical integration on PowerXCell processors

### **Workshop on Memory Issues on Multi- and Manycore Platforms**

20. Michael Bader, Towards Cache-Oblivious Multicore Implementations of LU and ILU Decomposition on Dense and Sparse Matrices
21. Daisuke Takahashi, An Implementation of Parallel 3-D FFT with 2-D Decomposition on a Massively Parallel Cluster of Multi-Core Processors

22. Eryk Laskowski, Lukasz Masko and Marek Tudruj, Multi-CMP Module System Based on a Look-Ahead Configured Global Network
23. Stefan Lankes, Boris Bierbaum and Thomas Bemmerl, Affinity-on-next-touch: an extension to the linux kernel for numa architectures
24. Wolfgang Eckhardt and Tobias Weinzierl, A Blocking Strategy on Multicore Architectures for Dynamically Adaptive PDE Solvers
25. Jan Treibig and Georg Hager, Introducing a Performance Model for Bandwidth-Limited Loop Kernels
26. Dominik Bartuschat, Markus Stuermer and Harald Koestler, An orthogonal matching pursuit algorithm for image denoising on the Cell Broadband Engine
27. Ami Marowka, Empirical Analysis of Parallelism Overheads on CMPs

#### **Workshop on Language-Based Parallel Programming Models**

28. Hervé Paulin, On the Definition of Service Abstractions for Parallel Computing
29. Robert Numrich, A Team Object for Co-Array Fortran
30. Matko Botincan, Paola Glavan and Davor Runje, Verification of Causality Requirements in Java Memory Model is Undecidable

#### **Workshop on Performance Evaluation of Parallel Applications on Large-Scale Systems**

31. Alin Suci, Tudor Carean and Andre Sez nec, Parallel HAVEGE
32. Janusz Borkowski, Performance debugging of parallel compression on multicore machines
33. Dominic Dunlop, Sebastien Varrette and Pascal Bouvry, Deskillling HPL - Using an Evolutionary Algorithm to Automate Cluster Benchmarking
34. Maciej Drozdowski, Energy Considerations for Divisible Load Processing
35. Ivan Lirkov, Yavor Vutov, Marcin Paprzycki and Maria Ganzha, Parallel Performance Evaluation of MIC(0) Preconditioning Algorithm for Voxel micro-FE Simulation
36. Wlodzimierz Funika, Bartosz Kryza, Renata Slota, Jacek Kitowski, Kornel Skalkowski, Jakub Sendor and Dariusz Krol, Monitoring of SLA Parameters within VO for the SOA paradigm

#### **Workshop on Scheduling for Parallel Computing**

37. Wilfried Jakob, Alexander Quinte, Wolfgang Süß and Karl-Uwe Stucky, Fast Multi-objective Rescheduling of Grid Jobs to Constrained Resources by Heuristics and Evolution
38. Piotr Switalski and Franciszek Sere dynski, Study on GEO Metaheuristic for Solving Multiprocessor Scheduling Problem
39. Tomas Ebenlendr, Semi-Online Preemptive Scheduling: Study of Special Cases
40. Lukasz Masko and Marek Tudruj, Comparison of Program Task Scheduling Algorithms for Dynamic SMP Clusters with Communication on the Fly
41. Ondrej Zajicek, Jiri Sgall and Tomas Ebenlendr, Online Scheduling of Parallel Jobs on Hypercubes: Maximizing the Throughput

42. Joanna Berlinska, Fully Polynomial Time Approximation Schemes for Scheduling Divisible Loads

#### **Grid Applications and Middleware Workshop**

43. Piotr Bala, Krzysztof Benedyczak, Marcin Lewandowski and Aleksander Nowinski, UNICORE Virtual Organizations System

44. Leif Lindback, Vladimir Vlassov, Shahab Mekarizadeh and Gabriele Violino, Churn Tolerant Virtual Organization File System for Grids

45. Darin Nikolow, Renata Slota and Jacek Kitowski, Replica Manager for National Data Storage

46. Andrea Clematis, Angelo Corana, Daniele D'Agostino, Antonella Galizia and Alfonso Quarati, Performance Based Matchmaking on Grid

47. Marek Ciglan, Ondrej Habala, Ladislav Hluchy and Viet Tran, Application of ADMIRE Data Mining and Integration Technologies in Environmental Scenarios

#### **Workshop on Large Scale Computations on Grids**

48. Artur Olszak, HyCube: A DHT routing system based on a hierarchical hypercube geometry

49. Emanouil Atanassov, Aneta Karaivanova and Todor Gurov, Quasirandom approach in the grid application SALUTE

50. Bartosz Balis, Bartosz Kowalewski and Marian Bubak, Leveraging Complex Event Processing for Grid Monitoring

51. Jaroslaw Kawecki and Maciej Smolka, A Framework for Observing Dynamics of Agent-Based Computations

52. Salvatore Venticinque, Rocco Aversa, Beniamino Di Martino and Renato Donini, Mobile Agents for Management of Native Applications in GRID

#### **Workshop on Parallel Computational Biology**

53. Simon A. Berger and Alexandros Stamatakis, Accuracy and Performance of Single versus Double Precision Arithmetics for Maximum Likelihood Phylogeny Reconstruction

54. Peter Steffen, Robert Giegerich and Mathieu Giraud, GPU Parallelization of Algebraic Dynamic Programming

55. Sangmi Pallickara, Marlon Pierce, Qunfeng Dong and ChinHua Kong, Enabling Large Scale Scientific Computations for Expressed Sequence Tag Sequencing over Grid and Cloud Computing Clusters

56. Marco Terzer and Joerg Stelling, Parallel Extreme Ray and Pathway Computation

57. Sarah Richardson, Brian Olson, Jessica Dymond, Randal Burns, Srinivasan Chandrasegaran, Jef Boeke, Amarda Shehu and Joel Bader, Automated Design of Assemblable, Modular, Synthetic Chromosomes

#### **Minisymposium on Applications of Parallel Computation in Industry and Engineering**

58. Fedorov Mykhaylo, Parallel Implementation of a Steady State Thermal and Hydraulic Analysis of Pipe Networks in OpenMP

59. Christophe Denis, Numerical Health Check of Industrial Simulation Codes from HPC Environments to New Hardware Technologies

60. Katerina Taskova, Peter Korosec and Jurij Silc, A Distributed Multilevel Ant-Colony Approach for Finite Element Mesh Decomposition

- 61. Maximilian Emans, AMG for linear systems in engine flow simulations
- 62. Boris Digas, Lidiya Melnikova and Valerii Rozenberg, Application of Parallel Technologies to Modeling Lithosphere Dynamics and Seismicity
- 63. Aleksandr Igumenov and Julius Zilinskas, Parallel Topology Optimization of Truss Structure
- 64. Bogdan Rosa and Lian-Ping Wang, Parallel implementation of particle tracking and collision in a turbulent flow
- 65. Tamito Kajiyama, Davide D'Alimonte, Jose C. Cunha and Giuseppe Zibordi, High-Performance Ocean Color Monte Carlo Simulation in the Geo-Info Project
- 66. Peter Arbenz, Jorg Bryner and Christine Tobler, Parallelized transient elastic wave propagation in orthotropic structures
- 67. Raimondas Ciegis, Parallel Numerical Solver for Modelling of Electromagnetic Properties of Thin Conductive Layers
- 68. Zbigniew Piotrowski, Marcin Kurowski, Bogdan Rosa and Michal Ziemianski, eulag model for multiscale flows - towards the petascale generation of mesoscale numerical weather prediction (nwp)

**Minisymposium on Interval Analysis**

- 69. Iwona Skalna, A global optimization method for solving parametric linear systems whose input data are rational functions of interval parameters
- 70. Vladik Kreinovich and Irina Perfilieva, From Gauging Accuracy of Quantity Estimates to Gauging Accuracy and Resolution of Measuring Physical Fields
- 71. Bartłomiej Kubica and Adam Wozniak, An interval method for seeking the Nash equilibria of non-cooperative games
- 72. Ekaterina Auer and Andreas Rauh, Toward Definition of Systematic Criteria for the Comparison of Verified Solvers for Initial Value Problems
- 73. Iwona Skalna, Direct method for solving parametric interval linear systems with non-affine dependencies
- 74. Ludmila Dymova, Mariusz Pilarek Pilarek and Roman Wyrzykowski, Solving the systems of interval linear equations with use of modified interval dividing procedure
- 75. Malgorzata Jankowska, Practical Usage of some C++ Libraries for Floating-Point Conversions and Computations in Interval Arithmetic
- 76. Pavel Sevastjanov, Pawel Bartosiewicz and Kamil Tkacz, A new method for normalization of interval weights
- 77. John Pryce,

**Minisymposium on Novel Data Formats and Algorithms for High Performance Computing**

- 78. A Fast Minimal Storage Factorization of Symmetric Linear Indefinite Matrices by Fred Gustavson and Jerzy Wasniewski
- 79. Dependency-Driven Scheduling of Dense Matrix Factorizations on Shared-Memory Systems by Jakub Kurzak, Hatem Ltaief, Jack J. Dongarra, and Rosa M. Badia
- 80. A Parallel Non-Square Tiled Algorithm for Solving a Kind of BVP for Second-Order ODEs by Przemyslaw Stpiczynski

81. Novel Algorithms for In-Place Transposition by Fred G. Gustavson, Lars Karlsson, B. Kagstrom
82. An Efficient Algorithm for In-Place Transposition of Matrices Stored in Column or Row Major Format by Fred G. Gustavson, Lars Karlsson, B. Kagstrom

**Workshop on Complex Collective Systems**

83. Anna Manka-Krason and Krzysztof Kulakowski, Frustration and collectivity in spatial networks
84. Konrad Kulakowski and Jaroslaw Was, Two Concurrent Algorithms of Discrete Potential Field Construction
85. Andrea Portz and Armin Seyfried, Modeling Stop-and-Go Waves in Pedestrian Dynamics
86. Frederic Pinel and Pascal Bouvry, Weakness Analysis of a Key Stream Generator Based on Cellular Automata
87. Bartlomiej Placzek, Fuzzy cellular model for on-line traffic simulation
88. Antoine Tordeux, Sylvain Lassarre and Michel Roussignol, An adaptive time gap car-following model
89. Mirosław Szaban and Franciszek Serebinski, Properties of Safe Cellular Automata-based S-Boxes
90. Ekaterina Kirik, Tat'yana Yurgel'yan and Dmitriy Krouglov, Artificial Intelligence of virtual people in CA FF pedestrian dynamics model
91. Wolfram Klein, Gerta Köster and Andreas Meister, Towards the Calibration of Pedestrian Stream Models
92. Pavlos Progiias, Emmanouela Vardaki and Georgios Sirakoulis FPGA Realization of a Cellular Automata based Epidemic Processor
93. Maria Vittoria Avolio, Donato D'Ambrosio, Salvatore Di Gregorio, Valeria Lupiano, Rocco Rongo and William Spataro, Evaluating Lava Flow Hazard at Mount Etna (Italy) by a Cellular Automata based Methodology

**Main track of PPAM09**

94. Krzysztof Jurczuk, Marek Kretowski and Johanne Bezy-Wendling, Vascular Network Modeling - Improved Parallel Implementation on Computing Cluster
95. Leszek Marcinkowski, A balancing domain decomposition method for a discretization of a plate problem on nonmatching grids
96. Marcin Kuta, Wojciech Wojcik, Michal Wrzeszcz and Jacek Kitowski, Application of Stacked Methods to Part-of-Speech Tagging of Polish
97. Angel Rodriguez-Rozas, Juan A. Acebron and Renato Spigler, On the performance of a new parallel algorithm for large-scale simulations of nonlinear partial differential equations
98. Maciej Lawrynczuk, Computationally Efficient Nonlinear Predictive Control Based on State-Space Neural Models
99. Gun Srijuntongsiri and Stephen Vavasis, Properties of Polynomial Bases Used in a Line-surface Intersection Algorithm
100. Liesner Acevedo, Victor M. Garcia, Antonio M. Vidal and Pedro Alonso, Partial Data Replication as a strategy for Parallel Computing of the Multilevel Discrete Wavelet Transform
101. Fredrik Manne and Md. Mostofa Ali Patwary, A Scalable Parallel Union-Find Algorithm for Distributed Memory Computers

102. Peter Krusche and Alexander Tiskin, Parallel Longest Increasing Subsequences in Scalable Time and Memory
103. Anna Wawrzynczak and Michael Alania, Numerical solution of the time and rigidity dependent three dimensional second order partial differential equation
104. Zbigniew Czech, Wojciech Mikanik and Rafal Skinderowicz, Implementing a parallel simulated annealing algorithm
105. Piotr Pawliczek and Witold Dzwiniel, Parallel implementation of multidimensional scaling algorithm based on particle dynamics
106. Bouguerra Mohamed Slim, Thierry Gautier, Denis Trystram and Jean-Marc Vincent, A Flexible Checkpoint/Restart Model in Distributed Systems
107. Eugeniusz Zieniuk and Agnieszka Boltuc, Iterative solution of linear and nonlinear boundary problems using PIES
108. Jean-Pierre Jung and Ibrahima Sakho, Graphs Partitioning: An Optimal MIMD Queueless Routing For BPC-Permutations on Hypercubes
109. Jerzy Brzezinski, Cezary Sobaniec and Dariusz Wawrzyniak, A Formal Approach to Replica Consistency in Directory Service
110. Jan Kwiatkowski, Radoslaw Iwaszyn, Automatic Program Parallelization for Multicore Processors
111. Wlodzimierz Bielecki and Marek Palkowski, Extracting both affine and non-linear synchronization-free slices in program loops
112. Marcin Gorawski, Extended Cascaded Star Schema for Distributed Spatial Data Warehouse
113. Maciej Wielgosz and Ernest Jamro, Hardware implementation of the exponent based computational core for an exchange-correlation potential matrix generation
114. Robert Janczewski, Anna Malafiejska and Michal Malafiejski, Intervalwavelength assignment in all-optical star networks
115. Oleg Maslennikov, Anatolij Sergiyenko, Natalia Maslennikowa, Piotr Ratuszniak and Marcin Wozniak, Application Specific Processors for the Autoregressive Signal Analysis
116. Marcin Sredynski, Pascal Bouvry and Tomasz Ignac, Probabilistic Packet Relaying in Wireless Mobile Ad Hoc Networks
117. Mariusz Flasiński, Janusz Jurek and Szymon Mysliński, Parallel computing scheme for graph grammar-based syntactic pattern recognition
118. Radim Blaheta, Ondrej Jakl, Roman Kohut and Jiri Stary, GEM - a Platform for Advanced Mathematical Geosimulations
119. Arkadiusz Szymczak and Maciej Paszynski, Graph grammar based Petri nets model of concurrency for self-adaptive hp-Finite Element Method with rectangular elements
120. Yusuke Onoue and Seiji Fujino, A dense matrix structure for reduction of computational cost applicable to a group of IDR(s) methods
121. Pawel Gepner, David L. Fraser and Michal F. Kowalik, Evaluating Performance of New Quad-Core Intel Xeon

5500 Family Processors for HPC

122. Rafal Weislo and Witold Dzwinel, Particle model of tumor growth and its parallel implementation

123. Stanislaw Gepner, Jerzy Majewski and Jacek Rokicki, Dynamic load balancing for adaptive parallel flow problems

124. Jan Kwiatkowski, Marcin Pawlik, Dariusz Konieczny, Mariusz Frasz, Request Distribution in Hybrid Processing Environment

125. Grzegorz Kolaczek, Adam Wasilewski, Software Security in the Model for Service Oriented Architecture Quality

126. Rafał Scherer, Janusz Starczewski, Leszek Rutkowski, Relational Type-2 Interval Fuzzy Systems

127. Marcin Korytkowski, Rafał Scherer, Neuro-fuzzy Systems Based on Generalized Parametric Triangular Norms

128. P. Domagalski et al., Vine Toolkit - grid-enabled portal solution for community driven computing workows with meta-scheduling capabilities

### **Posters**

129. Ludmila Dymova, Fuzzy solution of interval nonlinear equations

130. Sarah Clayton, Neil Urquhart and Jon Kerridge, Application of CoSMoS Parallel Design Patterns to a Pedestrian Simulation

131. Włodzimierz Funika and Piotr Pegiel, A role-based approach to self-healing in autonomous monitoring systems

132. Magdalena Godlewska and Bogdan Wiszniewski, Distributed MIND - a new processing model based on mobile interactive documents

133. Janusz Borkowski and Marek Tudruj, Designing execution control in programs with global application states monitoring

134. Tomasz Olas, Robert Lesniak, Roman Wyrzykowski, Paweł Gepner, Parallel adaptive finite element package with dynamic load balancing for 3D thermo-mechanical problems