

2010 IEEE International Conference on Cluster Computing Workshops and Posters

(CLUSTER WORKSHOPS 2010)

**Heraklion, Greece
20 – 24 September 2010**



IEEE Catalog Number: CFP1087K-PRT
ISBN: 978-1-4244-8395-2

TABLE OF CONTENTS

Mobile-Subjective Programming for Massively Multithreaded Shared Memory Applications.....	1
<i>M. Vance, P.M. Kogge</i>	
Facilitating Co-Design for Extreme-Scale Systems Through Lightweight Simulation	8
<i>C. Engelmann, F. Lauer</i>	
Efficient Sparse Matrix-Matrix Multiplication on Heterogeneous High Performance Systems	16
<i>J. Siegel, O. Villa, S. Krishnamoorthy, A. Tumeo, X. Li</i>	
Confidence: Analyzing Performance With Empirical Probabilities.....	24
<i>B.W. Settlemeyer, S.W. Hodson, J.A. Kuehn, S.W. Poole</i>	
Parallel Sorting Algorithms for Optimizing Particle Simulations.....	32
<i>M. Hofmann, G. Rungger, P. Gibbon, R. Speck</i>	
Investigation of Selection Strategies in Parallel Branch and Bound Algorithm with Simplicial Partitions	40
<i>R. Paulavicius, J. Zilinskas, A. Grothey</i>	
Investigation of Parallel Particle Swarm Optimization Algorithm With Reduction of the Search Area	46
<i>A. Lancinskas, J. Zilinskas, P.M. Ortigosa</i>	
Optimization of Topology of Truss Structures Using Grid Computing	51
<i>A. Igumenov, J. Zilinskas, K. Kurowski, M. Mackowiak</i>	
Identifying Cloud Computing Usage Patterns.....	55
<i>D. Petcu</i>	
THOR: A Transparent Heterogeneous Open Resource Framework	63
<i>J.L. Vazquez-Poletti, J. Perhac, J. Ryan, A.C. Elster</i>	
Run-time Optimization of Sends, Receives and File I/O.....	69
<i>T. Natvig, A.C. Elster</i>	
Applicability of Dynamic Selection of Implementation Variants of Sequential Iterated Runge–Kutta Methods	77
<i>N. Kalinnik, M. Korch, T. Rauber</i>	
GPU-Based Segmentation of Cervical Vertebra in X-Ray Images.....	85
<i>S.A. Mahmoudi, F. Lechron, P. Manneback, M. Benjelloun, S. Mahmoudi</i>	
GPU Implementation of the Pixel Purity Index Algorithm for Hyperspectral Image Analysis	93
<i>S. Sanchez, A. Plaza</i>	
Object Storage Semantics for Replicated Concurrent-writer File Systems	100
<i>P. Carns, R. Ross, S. Lang</i>	
Supporting High-Performance I/O at the Petascale: The Event Data Store for ATLAS at the LHC	110
<i>P. Van Gemmeren, D. Malon</i>	
Comprehensive Data Infrastructure for Plant Bioinformatics	117
<i>C. Jordan, D. Stanzione, D. Ware, J. Lu, C. Noutsos</i>	
H5hut: A High-Performance I/O Library for Particle-based Simulations	122
<i>M. Howison, A. Adelmann, E.W. Bethel, A. Gsell, B. Oswald, Prabhat</i>	
pWalrus: Towards Better Integration of Parallel File Systems into Cloud Storage	130
<i>Y. Abe, G. Gibson</i>	
Network-based Processing versus Host-based Processing: Lessons Learned	137
<i>G. Shainer, A. Ancel</i>	
Design and Evaluation of Remote Memory Disk Cache.....	141
<i>C. Park, S. Kim, H. Han, H. Eom, H.Y. Yeom</i>	
Power-aware, Dependable, and High-Performance Communication Link Using PCI Express: PEARL	145
<i>T. Hanawa, T. Boku, S. Miura, M. Sato, K. Arimoto</i>	
Cloud-based Synchronization of Distributed File System Hierarchies	149
<i>S. Uppoor, M.D. Flouris, A. Bilas</i>	
Low-latency Explicit Communication and Synchronization in Scalable Multi-core Clusters	153
<i>C. Kachris, G. Nikiforos, V. Papaefstathiou, X. Yang, S. Kavadias, M. Katevenis</i>	
Non-blocking Adaptive Cycles: Deadlock Avoidance for Fault-tolerant Interconnection Networks	157
<i>G. Zarza, D. Lugones, D. Franco, E. Luque</i>	
A Multi-Pronged Approach to Benchmark Characterization	161
<i>N. Puzovic, S.A. McKee, R. Eres, A. Zaks, P. Gai, S. Wong, R. Giorgi</i>	
Early Experience of Building a Cloud Platform for Service Oriented Software Development.....	165
<i>H. Sun, X. Wang, C. Zhou, Z. Huang, X. Liu</i>	

Adaptable Scheduling Schemes for Scientific Applications on Science Cloud	169
<i>S. Kim, Y. Kim, N. Song, C. Kim</i>	
Fault-Tolerance for Exascale Systems	172
<i>M.R. Varela, K.B. Ferreira, R. Riesen</i>	
A Package for OpenCL Based Heterogeneous Computing on Clusters with Many GPU Devices.....	176
<i>A. Barak, T. Ben-Nun, E. Levy, A. Shiloh</i>	
Accelerating Data Clustering on GPU-based Clusters under Shared Memory Abstraction.....	183
<i>K.I. Karantasis, E.D. Polychronopoulos, G.N. Dimitrakopoulos</i>	
A Multi-Platform Linear Algebra Toolbox for Finite Element Solvers on Heterogeneous Clusters.....	188
<i>V. Heuveline, C. Subramanian, D. Lukarski, J. Weiss</i>	
Efficient Complex Matrix Multiplication on the Synergistic Processing Element of the Cell Processor.....	194
<i>Q. Bourgerie, P. Fortin, J. Lamotte</i>	
High Performance Triangle versus Box Intersection Checks	202
<i>T.V. Christensen, S. Karlsson</i>	
Assessment of Barrier Implementations for Fine-Grain Parallel Regions on Current Multi-core Architectures.....	208
<i>S.A. Berger, A. Stamatakis</i>	
Author Index	