

2009 15th International Conference on Parallel and Distributed Systems

(ICPADS 2009)

**Shenzhen, China
8-11 December 2009**



IEEE Catalog Number: CFP09036-PRT
ISBN: 978-1-4244-5788-5

2009 15th International Conference on Parallel and Distributed Systems

ICPADS 2009

Table of Contents

Message from the General and Program Co-Chairs

Reviewers

Keynote

Session 1: Peer-to-Peer I

Prediction-Based Prefetching to Support VCR-like Operations in Gossip-Based P2P VoD Systems	1
<i>Tianyin Xu, Weiwei Wang, Baoliu Ye, Wenzhong Li, Sanglu Lu, and Yang Gao</i>	
Quality of Service in Peer-to-Peer IPTV Networks	9
<i>Xiaosong Lou, Kai Hwang, and Gaogang Xie</i>	
Decentralized Adaptive Routing for Reliability in Event Broker Networks	18
<i>Shruti P. Mahambre and Umesh Bellur</i>	

Session 2: Parallel Computing with GPU

On the Robust Mapping of Dynamic Programming onto a Graphics Processing Unit	26
<i>Shucaai Xiao, Ashwin M. Aji, and Wu-chun Feng</i>	
CUDA Accelerated LTL Model Checking	34
<i>Jiří Barnat, Luboš Brim, Milan Češka, and Tomáš Lamr</i>	
Improving Performance of Matrix Multiplication and FFT on GPU	42
<i>Xiang Cui, Yifeng Chen, and Hong Mei</i>	

Session 3: Cluster Network

Flexible Multi-link Ethernet Binding System for PC Clusters with Asymmetric Topology	49
<i>Taiga Yonemoto, Shin'ichi Miura, Toshihiro Hanawa, Taisuke Boku, and Mitsuhisa Sato</i>	
Evaluation of ConnectX Virtual Protocol Interconnect for Data Centers	57
<i>Ryan E. Grant, Ahmad Afsahi, and Pavan Balaji</i>	

uStream: A User-Level Stream Protocol over Infiniband	65
<i>Yao Lin, Jizhong Han, Jinjun Gao, and Xubin He</i>	

Session 4: Mobile and Sensor Computing I

WormCircle: Connectivity-Based Wormhole Detection in Wireless Ad Hoc and Sensor Networks	72
<i>Dezun Dong, Mo Li, Yunhao Liu, and Xiangke Liao</i>	

Broadcasting with Optimized Transmission Efficiency in 3-Dimensional Wireless Networks	80
<i>Yung-Liang Lai and Jehn-Ruey Jiang</i>	

Contour-cast: Location-free Data Dissemination and Discovery for Wireless Sensor Networks	88
<i>Zhigang Li, Nong Xiao, Yunhao Liu, and Xue Liu</i>	

Optimizing Base Station Deployment in Wireless Sensor Networks Under One-hop and Multi-hop Communication Models	96
<i>Yunyue Lin, Qishi Wu, Xiaoshan Cai, and Nageswara S.V. Rao</i>	

Session 5: Novel Memory Systems

Minimizing Memory Access Schedule for Memories	104
<i>Jingtong Hu, Chun Jason Xue, Wei-Che Tseng, Meikang Qiu, Yingchao Zhao, and Edwin H.-M. Sha</i>	

When Misses Differ: Investigating Impact of Cache Misses on Observed Performance	112
<i>Vlastimil Babka, Lukáš Marek, and Petr Tůma</i>	

A Light-weight Code Cache Design for Dynamic Binary Translation	120
<i>Wei Chen, Li Shen, Hongyi Lu, Zhiying Wang, and Nong Xiao</i>	

Snooping and Ordering Ring - An Efficient Cache Coherence Protocol for Ring Connected CMP	126
<i>Fei Cao and Zhiyong Liu</i>	

Session 6: Resource Management and Load Balancing

Feedback-Control-Based Performance Regulation for Multi-Tenant Applications	134
<i>Hailue Lin, Kai Sun, Shuan Zhao, and Yanbo Han</i>	

Allocation of Clients to Multiple Servers on Large Scale Heterogeneous Platforms	142
<i>Olivier Beaumont, Lionel Eyraud-Dubois, Hejer Rejeb, and Christopher Thraves</i>	

Dynamic Load Balancing for Parallel Numerical Simulations Based on Repartitioning with Disturbed Diffusion	150
<i>Henning Meyerhenke</i>	

Market-Based Load Balancing for Distributed Heterogeneous Multi-Resource Servers	158
<i>Chih-Chiang Yang, Kun-Ting Chen, Chien Chen, and Jing-Ying Chen</i>	

Session 7: Mobile and Sensor Computing II

A Decentralized Storage Scheme for Multi-Dimensional Range Queries over Sensor Networks	166
<i>Lei Xie, Lijun Chen, Daoxu Chen, and Li Xie</i>	
Polygon-Based Tracking Framework in Surveillance Wireless Sensor Networks	174
<i>Md. Zakirul Alam Bhuiyan, Guojun Wang, and Jie Wu</i>	
Constructing Optimal Clustering Architecture for Maximizing Lifetime in Large Scale Wireless Sensor Networks	182
<i>Huan Li, Jierui Cao, and Junwu Xiong</i>	
CCQR: Constant Cost Quality-based Routing Protocol in Delay Tolerant Networks	190
<i>Tao Li, Chao Dong, and Guihai Chen</i>	

Session 8: Multicore

An Improved Parallel Access Technology on Routing Table for Threaded BGP	198
<i>Gao Lei, Lai Mingche, and Gong Zhenghu</i>	
Exploiting TLS Parallelism at Multiple Loop-Nest Levels	205
<i>Venkatesan Packirisamy and Antonia Zhai</i>	
Modeling Data Access Contention in Multicore Architectures	213
<i>Surendra Byna, Xian-He Sun, and Don Holmgren</i>	
Towards High-Performance Network Intrusion Prevention System on Multi-core Network Services Processor	220
<i>Xiang Wang, Yaxuan Qi, Baohua Yang, Yibo Xue, and Jun Li</i>	

Session 9: Algorithms & Applications

A Novel Optimization Method to Improve De-duplication Storage System Performance	228
<i>Chuanyi Liu, Yibo Xue, Dapeng Ju, and Dongsheng Wang</i>	
Scalability of Macroblock-level Parallelism for H.264 Decoding	236
<i>Mauricio Alvarez Mesa, Alex Ramirez, Arnaldo Azevedo, Cor Meenderinck, Ben Juurlink, and Mateo Valero</i>	
A Cache-Efficient Parallel Gauss-Seidel Solver with Alternating Tiling	244
<i>Peng Di, Jingling Xue, Changjun Hu, and Jingjing Zhou</i>	
Optimizing End-to-end Performance of Distributed Applications with Linear Computing Pipelines	252
<i>Yi Gu, Qishi Wu, Anne Benoit, and Yves Robert</i>	

Session 10: Network Processor

DBS: A Bit-level Heuristic Packet Classification Algorithm for High Speed Network	260
<i>Baohua Yang, Xiang Wang, Yibo Xue, and Jun Li</i>	
Network Interface Architecture for Scalable Message Queue Processing	268
<i>Noboru Tanabe, Atsushi Ohta, Pulung Waskito, and Hironori Nakajo</i>	
Field-Based Branch Prediction for Packet Processing Engines	276
<i>David Bermingham, Zhen Liu, Xiaojun Wang, and Bin Liu</i>	

Session 11: GPU Programming

RankBoost Acceleration on both NVIDIA CUDA and ATI Stream Platforms	284
<i>Bo Wang, Tianji Wu, Feng Yan, Ruirui Li, Ningyi Xu, and Yu Wang</i>	
Program Optimization of Array-Intensive SPEC2k Benchmarks on Multithreaded GPU Using CUDA and Brook+	292
<i>Guibin Wang, Tao Tang, Xudong Fang, and Xiaoguang Ren</i>	
Optimal Data Distribution for Versatile Finite Impulse Response Filtering on Next-Generation Graphics Hardware Using CUDA	300
<i>Patrik Goorts, Sammy Rogmans, and Philippe Bekaert</i>	

Session 12: Interconnection Network

Pancyclicity and Panconnectivity in Augmented k-ary n-cubes	308
<i>Yonghong Xiang and Iain A. Stewart</i>	
A Fault-Free Unicast Algorithm in Twisted Cubes with the Restricted Faulty Node Set	316
<i>Jianxi Fan, Shukui Zhang, Xiaohua Jia, and Guangquan Zhang</i>	
Routing, Broadcasting, Prefix Sums, and Sorting Algorithms on the Arrangement Graph	324
<i>Yifeng Li and Ke Qiu</i>	

Session 13: Virtual Machines

A Functional Classification Based Inter-VM Communication Mechanism with Multi-core Platform	332
<i>Cheng Luo, Yuebin Bai, Ting Chen, Cong Xu, and Liang Zhang</i>	
PaS: A Preemption-aware Scheduling Interface for Improving Interactive Performance in Consolidated Virtual Machine Environment	340
<i>Yubin Xia, Chun Yang, and Xu Cheng</i>	
CFS Optimizations to KVM Threads on Multi-Core Environment	348
<i>Wei Jiang, Yisu Zhou, Yan Cui, Wei Feng, Yu Chen, Yuanchun Shi, and Qingbo Wu</i>	
Optimizing Inter-Domain Communication	355
<i>Hongyong Zang, Yuzhong Sun, and Kuiyan Gu</i>	

Session 14: Networks and Novel Applications

ERN: Emergence Rescue Navigation with Wireless Sensor Networks	361
<i>Shen Li, Andong Zhan, Xiaobing Wu, and Guihai Chen</i>	
Traffic-Known Urban Vehicular Route Prediction Based on Partial Mobility Patterns	369
<i>Guangtao Xue, Zhongwei Li, Hongzi Zhu, and Yunhuai Liu</i>	
An Optimized String Transformation Algorithm for Real-Time Group Editors	376
<i>Bin Shao, Du Li, and Ning Gu</i>	
Modified Simultaneous Algebraic Reconstruction Technique and its Parallelization in Cryo-electron Tomography	384
<i>Xiaohua Wan, Fa Zhang, and Zhiyong Liu</i>	

Session 15: Scheduling I

An Evaluation of Communication Factors on an Adaptive Control Strategy for Job Co-allocation in Multiple HPC Clusters	391
<i>Jinhui Qin and Michael A. Bauer</i>	
Real-time Task Assignment with Replication on Multiprocessor Platforms	399
<i>Jian (Denny) Lin and Albert M.K. Cheng</i>	
A Heuristic Energy-aware Scheduling Algorithm for Heterogeneous Clusters	407
<i>Yu Li, Yi Liu, and Depei Qian</i>	
Data-bandwidth-aware Job Scheduling in Grid and Cluster Environments	414
<i>De-Yu Chen, Jan-Jan Wu, and Pangfeng Liu</i>	

Session 16: Peer-to-Peer II

Efficient Update Propagation by Speculating Replica Locations on Peer-to-Peer Networks	422
<i>Ai Hayakawa, Masato Asahara, Kenji Kono, and Toshinori Kojima</i>	
A Study of Group Size Effects on a Hybrid P2P System	432
<i>Ping-I Chou and Pangfeng Liu</i>	
Papnet: A Proximity-aware Alphanumeric Overlay Supporting Ganesan On-Line Load Balancing	440
<i>Martin Raack, Dominic Battré, André Höing, and Odej Kao</i>	
Towards Keyword Search over Relational Databases in DHT Networks	448
<i>Jian Yu, Jihong Guan, Jianliang Xu, and Shuigeng Zhou</i>	

Session 17: Cluster and Cloud Systems

Reliable Software Distributed Shared Memory Using Page Migration	456
<i>Jinpil Lee and Mitsuhsisa Sato</i>	
MPI-NeTSim: A Network Simulation Module for MPI	464
<i>Brad Penoff, Alan Wagner, Michael Tüxen, and Irene Rüngeler</i>	

Accelerating MapReduce with Distributed Memory Cache	472
<i>Shubin Zhang, Jizhong Han, Zhiyong Liu, Kai Wang, and Shengzhong Feng</i>	
Quantification of Security for Compute Intensive Workloads in Clouds	479
<i>Junaid Arshad, Paul Townend, and Jie Xu</i>	
Session 18: Power Management	
Energy-Efficient Sensor Data Acquisition Based on Periodic Patterns	487
<i>Guan-Rong Lin, Yao-Chung Fan, En Tzu Wang, Tao Zou, and Arbee L.P. Chen</i>	
tk-coverage: Time-Based K-Coverage for Energy Efficient Monitoring	495
<i>Zheng Yang, Bin Xu, Saier Ye, and Baijian Yang</i>	
Energy Minimization and Latency Hiding for Heterogeneous Parallel Memory	503
<i>Meikang Qiu, Gang Wu, Chun Jason Xue, Jingtong Hu, Wei-Che Tseng, and Edwin H.-M. Sha</i>	
A Power-Aware Routing Protocol with Signal Strength Variation in Mobile Ad Hoc Networks	511
<i>Chuan-Chi Weng and Ching-Wen Chen</i>	
Session 19: SoC and Embedded Systems	
Multiprocessor System-on-Chip Profiling Architecture: Design and Implementation	519
<i>Po-Hui Chen, Chung-Ta King, Yuan-Ying Chang, and Shau-Yin Tseng</i>	
Exploiting Parallelism through High Level Optimization on a Heterogeneous Multicore SoC	527
<i>Ming Yan, Peng Zhao, Ziyu Yang, and Sikun Li</i>	
An Application Mapping Scheme over Distributed Reconfigurable System	535
<i>Chao Wang, Lianghua Miao, Bin Xie, and Tianzhou Chen</i>	
Speculation with Little Wasting: Saving Cost in Software Speculation through Transparent Learning	543
<i>Yunlian Jiang, Feng Mao, and Xipeng Shen</i>	
Session 20: Security and Trust Computing	
Partitioned Computation to Accelerate Scalar Multiplication for Elliptic Curve Cryptosystems	551
<i>Keke Wu, Dawei Li, Huiyun Li, Tingding Chen, and Fengqi Yu</i>	
DVM-MAC: A Mandatory Access Control System in Distributed Virtual Computing Environment	556
<i>Deqing Zou, Lei Shi, and Hai Jin</i>	
Is Straight-line Path Always the Best for Intrusion Detection in Wireless Sensor Networks	564
<i>Yun Wang, Yoon Kah Leow, and Jun Yin</i>	

Privacy Reference Monitor – A Computer Model for Law Compliant Privacy Protection	572
<i>Fei Xu, K.P. Chow, Jingsha He, and Xu Wu</i>	

Session 21: Performance Evaluation & Modeling

Early Performance Evaluation of Dawning 5000A and DeepComp 7000	578
<i>Yuan Yu, Yunquan Zhang, Ting Wang, Jiachang Sun, Xianyi Zhang Yuxin Tang, and Li Rao</i>	
Understanding Network Saturation Behavior on Large-Scale Blue Gene/P Systems	586
<i>Pavan Balaji, Harish Naik, and Narayan Desai</i>	
Providing Responsiveness Requirement Based Consistency in DVE	594
<i>Wei Zhang, Hangjun Zhou, Yuxing Peng, and Sikun Li</i>	
A Population Dynamics Model for Data Streaming over P2P Networks	602
<i>Jialing Xu, Guang-Hua Yang, and Victor O.K. Li</i>	

Session 22: Innovative Systems and Tools

JOR: A Journal-guided Reconstruction Optimization for RAID-Structured Storage Systems	609
<i>Suzhen Wu, Dan Feng, Hong Jiang, Bo Mao, Lingfang Zeng, and Jianxi Chen</i>	
A Parallel SystemC Environment: ArchSC	617
<i>Hao Ziyu, Qian Lei, Li Hongliang, Xie Xianghui, and Zhang Kun</i>	
A Hybrid Parallel Framework for the Cellular Potts Model Simulations	624
<i>Kejing He, Yi Jiang, and Shoubin Dong</i>	

Session 23: Ubiquitous Networking

E-TCP: Enhanced TCP for IEEE802.11e Mobile Ad Hoc Networks	632
<i>Consolée Mbarushimana and Ali Shahrabi</i>	
SCN4M-DL: An Adaptive Directory-Less Service Discovery System for MANETs	640
<i>Haibin Weng, Yuanfeng Wen, Beihong Jin, and Biao Zhang</i>	
Queuing Based Traffic Model for Wireless Mesh Networks	648
<i>Yunxia Feng, Xingfa Shen, Zhigang Gao, and Guojun Dai</i>	

Session 24: Scheduling II

Implementation of the AdaBoost Algorithm for Large Scale Distributed Environments: Comparing JavaSpace and MPJ	655
<i>Virginie Galtier, Stéphane Genaud, and Stéphane Vialle</i>	
A Tabu Search for the Heterogeneous DAG Scheduling Problem	663
<i>Yi Wen Wong, Rick Siow Mong Goh, Shyh-Hao Kuo, and Malcolm Yoke Hean Low</i>	
Double-layer Scheduling Strategy of Load Balancing in Scientific Workflow	671
<i>Yan Ma and Bin Gong</i>	

Workshops

P2P-NVE-09 I

A Supply-and-Demand Model for On-Demand Streaming in Networked Virtual Environments	679
<i>Shih-Cheng Fang, Chung-Ta King, Chiu-Ping Chang, and Wen-Nan Wang</i>	
Group-Based Peer-to-Peer 3D Streaming Authentication	685
<i>Mo-Che Chan, Jehn-Ruey Jiang, Chao-Wei Hung, and Wei Tsang Ooi</i>	
Evaluation of the HyperVerse Avatar Management Scheme Based on the Analysis of Second Life Traces	692
<i>Markus Esch, Wei Tsang Ooi, and Ingo Scholtes</i>	

iVCE-09 I

A Service-oriented Programming Platform for Internet-Based Virtual Computing Environment	700
<i>Donggang Cao, Zan Xiao, and Weizhong Shao</i>	

IWACI-09 I

Experiences Running OGSA-DQP Queries against a Heterogeneous Distributed Scientific Database	706
<i>Helen X. Xiang</i>	
Cyberinfrastructure on Tumor Gene Expression Data Processing	711
<i>Wenjun Lu, Yue Wu, Zongtian Liu, Qing Li, and Xiangfeng Luo</i>	
Towards Hybrid Grid Infrastructure for Large Simulations	716
<i>Dan Chen and Congcong Bian</i>	
Towards a Scalable Real-Time Cyberinfrastructure for Online Computer Games	722
<i>Sergei Gorlatch, Frank Glinka, and Alexander Ploss</i>	

PMAC-2WN-09 I

A Transmit Antenna Selection for MIMO Wireless Ad-Hoc Networks in Lossy Environment	728
<i>Yindong Zhang, Liusheng Huang, Hongli Xu, and Xueyong Xu</i>	
BER Performance Evaluation of Tail-Biting Convolution Coding Applied to Companded QPSK Mobile WiMax	734
<i>Brian G. Stewart and Athinarayanan Vallavaraj</i>	
Broadcasting in Fully Connected Trees	740
<i>Hovhannes Harutyunyan and Edward Maraachlian</i>	

P2P-NVE-09 II

Optimizing Unstructured Peer-to-Peer Overlays with Topology Awareness	746
<i>Hao Liao, Po-Shen Yeh, and Hung-Chang Hsiao</i>	
Anadem: A Hybrid Overlay Network for Content-Based Data Distribution	752
<i>Zheng Zhong and Wang Yi-Jie</i>	
A Replica Placement Algorithm for Hybrid CDN-P2P Architecture	758
<i>Hai Jiang, Zhan Wang, Albert K. Wong, Jun Li, and Zhongcheng Li</i>	
Measuring the Influence of Active Measurement on Unstructured Peer-to-Peer Network	764
<i>Ying Sha, Zhibin Zhang, and Jianlong Tan</i>	

iVCE-09 II

Mobility of Internet-Based Virtual Computing Environment	770
<i>Siqi Shen, Ji Wang, Rui Shen, Shengdong Zhang, and Pei Fan</i>	
Performance under Failure of Multi-tier Web Services	776
<i>Bing Xie, Yong Chen, Xian-He Sun, and Hui Jin</i>	
A Peer-to-Peer Media Streaming System Based on the iVCE Platform	782
<i>Jiqing Wu, Yuxing Peng, and Rui Shen</i>	
Measurement and Analysis of BitTorrent Availability	787
<i>Lin Ye, Hong-li Zhang, Wei-zhe Zhang, and Jian Tan</i>	

IWACI-09 II

Association Link Network: An Incremental Semantic Data Model on Organizing Web Resources	793
<i>Zheng Xu, Xiangfeng Luo, and Wenjun Lu</i>	
A Case of Parallel EEG Data Processing upon a Beowulf Cluster	799
<i>Yufeng Yao, Jinyi Chang, and Kaijian Xia</i>	
A Fast and Intelligent Resource Allocation Service for Service-Oriented Grid	804
<i>Zhao Guopeng, Shen Zhiqi, and Miao Chunyan</i>	
A Symmetric Matchmaking Engine for Web Service Composition	810
<i>Sizhe Sun, Xinhuai Tang, Xiaozhou Yuan, and Delai Chen</i>	

PMAC-2WN-09 II

Evaluation of a Performance Prediction Tool for Peer-to-Peer Distributed Computing Applications	814
<i>Julien Bourgeois, Jean-Baptiste Ernst-Desmulier, and François Spies</i>	
Comparing Methods for the Efficient Analysis of PEPA Models of Non-repudiation Protocols	821
<i>Yishi Zhao and Nigel Thomas</i>	
Detection of Conjunctive Stable Predicates in Dynamic Systems	828
<i>Xinli Wang, Jean Mayo, Guy Hembroff, and Chunming Gao</i>	

P2P-NVE-09 III

iRank: Supporting Proximity Ranking for Peer-to-Peer Applications	836
<i>Yongquan Fu and Yijie Wang</i>	
A Diffusive Load Balancing Scheme for Clustered Peer-to-Peer Systems	842
<i>Ying Qiao and Gregor v. Bochmann</i>	
Cowtra: A COntribution Willingness-Based Two-phase Bandwidth Resource Allocation Algorithm in P2P Network	848
<i>Cai Chen, Sen Su, Kai Shuang, and Fangchun Yang</i>	

iVCE-09 III

A Forwarding-Based Task Scheduling Algorithm for Distributed Web Crawling over DHTs	854
<i>Xiao Xu, Wei-Zhe Zhang, Hong-Li Zhang, Bin-Xing Fang, and Xin-Ran Liu</i>	
A Steady Network Coordinate System for Network Distance Estimating	860
<i>Yifei Zhang and Hongli Zhang</i>	
HyperSpring: Accurate and Stable Latency Estimation in the Hyperbolic Space	864
<i>Yongquan Fu and Yijie Wang</i>	
Using Grid Middleware to Query a Heterogeneous Distributed Version of the SDSS Database	870
<i>Helen X. Xiang</i>	
A User-Level Remote Paging System for Grid Computing	876
<i>Tyng-Yeu Liang, Po-Sen Wang, Po-Jen Lo, and Jin-An Huang</i>	

IWACI-09 III

Extending POP-C++ to Integrate Web Services into Parallel Objects	882
<i>Thanh-Nguyen Ngo, Tuan-Anh Nguyen, and Tran Van Hoai</i>	
Sequential Pattern Mining in Data Streams Using the Weighted Sliding Window Model	886
<i>Chuan Xu, Yong Chen, and Rongfang Bie</i>	
SPBCA: Semantic Pattern-Based Context-Aware Middleware	891
<i>Xiaoming Zhou, Xinhuai Tang, Xiaozhou Yuan, and Delai Chen</i>	
The Vulnerability Analysis Framework for Java Bytecode	896
<i>Tang Hong, Chen Hua, Zhao Gang, Liu Qiang, and Zhao Jinjin</i>	
Research on Technologies of Building Experimental Environment for Network Worm Simulation	902
<i>Huang Minhuan, Kuang Xiaohui, Wen Yan, Tang Hong, and Xu Fei</i>	

MCSS-09 I

Adaptive Multi-versioning for OpenMP Parallelization via Machine Learning	907
<i>Xuan Chen and Shun Long</i>	
Parallel Lexicographic Names Construction with CUDA	913
<i>Weidong Sun and Zongmin Ma</i>	
Count Sort for GPU Computing	919
<i>Weidong Sun and Zongmin Ma</i>	
Low Overhead Object Communication Scheme in CMP Implementation of Object-Oriented Programming	925
<i>Licheng Xue and Feng Shi</i>	

iVCE-09 IV

A Virtual Machine Server Aggregation Algorithm Based on Hierarchical Clustering	931
<i>Feng Huang and Dongsheng Li</i>	
Enhancing Reliability for Virtual Machines via Continual Migration	937
<i>Wenchao Cui, Dianfu Ma, Tianyu Wo, and Qin Li</i>	
Creating Virtual Networks for Distributed Virtual Computing Environment	943
<i>Dongsheng Li, Yixin Chen, and Feng Huang</i>	
A Runtime Reputation Based Grid Resource Selection Algorithm on the Open Science Grid	949
<i>Zhengxiong Hou, Xingshe Zhou, Mike Wilde, Jianhua Gu, and Mihael Hategan</i>	
GOS Security: Design and Implementation	955
<i>Lin Yu, Li Zha, Xiaoning Wang, Haojie Zhou, and Yongqiang Zou</i>	

MCSS-09 II

Solving 2D Nonlinear Unsteady Convection-Diffusion Equations on Heterogenous Platforms with Multiple GPUs	961
<i>Canqun Yang, Zhen Ge, Juan Chen, Feng Wang, and Yunfei Du</i>	
A Process Fusion Approach for MPI Performance Enhancement on Multi-core Systems	967
<i>Li Lu and Xiaoge Wang</i>	
Domain-specific Pattern Matching Based Automatic Parallelization: Demonstrated by 2-D Prestack Migration	973
<i>Zhen Cao, Yuan Dong, and Shengyuan Wang</i>	

Author Index