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Antonio Laganà Marina L. Gavrilova
Vipin Kumar Youngsong Mun
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Computational Science and Its Applications – ICCSA 2004

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Assisi, Italy, May 14-17, 2004
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University of Perugia, Department of Chemistry
Via Elce di Sotto, 8, 06123 Perugia, Italy
E-mail: lag@unipg.it

Marina L. Gavrilova
University of Calgary, Department of Computer Science
2500 University Dr. N.W., Calgary, AB, T2N 1N4, Canada
E-mail: marina@cpsc.ucalgary.ca

Vipin Kumar
University of Minnesota, Department of Computer Science and Engineering
4-192 EE/CSci Building, 200 Union Street SE, Minneapolis, MN 55455, USA
E-mail: kumar@cs.umn.edu

Youngsong Mun
SoongSil University, School of Computing, Computer Communication Laboratory
1-1 Sang-do 5 Dong, Dong-jak Ku, Seoul 156-743, Korea
E-mail: mun@computing.soongsil.ac.kr

C.J. Kenneth Tan
Queen's University Belfast, Heuchera Technologies Ltd.
Lanyon North, University Road, Belfast, Northern Ireland, BT7 1NN, UK
E-mail: cjtan@optimanumerics.com

Osvaldo Gervasi
University of Perugia, Department of Mathematics and Computer Science
Via Vanvitelli, 1, 06123 Perugia, Italy
E-mail: ogervasi@computer.org

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Preface

The natural mission of Computational Science is to tackle all sorts of human problems and to work out *intelligent* automata aimed at alleviating the burden of working out suitable tools for solving complex problems. For this reason Computational Science, though originating from the need to solve the most challenging problems in science and engineering (computational science is the key player in the fight to gain fundamental advances in astronomy, biology, chemistry, environmental science, physics and several other scientific and engineering disciplines) is increasingly turning its attention to all fields of human activity.

In all activities, in fact, intensive computation, information handling, knowledge synthesis, the use of ad-hoc devices, etc. increasingly need to be exploited and coordinated regardless of the location of both the users and the (various and heterogeneous) computing platforms. As a result the key to understanding the explosive growth of this discipline lies in two adjectives that more and more appropriately refer to Computational Science and its applications: interoperable and ubiquitous. Numerous examples of ubiquitous and interoperable tools and applications are given in the present four LNCS volumes containing the contributions delivered at the 2004 International Conference on Computational Science and its Applications (ICCSA 2004) held in Assisi, Italy, May 14–17, 2004.

To emphasize this particular connotation of modern Computational Science the conference was preceded by a tutorial on Grid Computing (May 13–14) concerted with the COST D23 Action (METACHEM: Metalaboratories for Complex Computational Applications in Chemistry) of the European Coordination Initiative COST in Chemistry and the Project *Enabling Platforms for High-Performance Computational Grids Oriented to Scalable Virtual Organization* of the Ministry of Science and Education of Italy.

The volumes consist of 460 peer reviewed papers given as oral contributions at the conference. The conference included 8 presentations from keynote speakers, 15 workshops and 3 technical sessions. Thanks are due to most of the workshop organizers and the Program Committee members, who took care of the unexpected exceptional load of reviewing work (either carrying it out by themselves or distributing it to experts in the various fields).

Special thanks are due to Noelia Faginas Lago for handling all the necessary secretarial work. Thanks are also due to the young collaborators of the High Performance Computing and the Computational Dynamics and Kinetics research groups of the Department of Mathematics and Computer Science and of the Department of Chemistry of the University of Perugia. Thanks are, obviously,

due as well to the sponsors for supporting the conference with their financial and organizational help.

May 2004

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Table of Contents – Part II

Grid Computing Workshop

Advanced Simulation Technique for Modeling Multiphase Fluid Flow in Porous Media	1
<i>Jong G. Kim, Hyoung Woo Park</i>	
The P-GRADE Grid Portal	10
<i>Csaba Németh, Gábor Dózsa, Róbert Lovas, Péter Kacsuk</i>	
A Smart Agent-Based Grid Computing Platform	20
<i>Kwang-Won Koh, Hie-Cheol Kim, Kyung-Lang Park, Hwang-Jik Lee, Shin-Dug Kim</i>	
Publishing and Executing Parallel Legacy Code Using an OGS Grid Service	30
<i>T. Delaitre, A. Goyeneche, T. Kiss, S.C. Winter</i>	
The PROVE Trace Visualisation Tool as a Grid Service	37
<i>Gergely Sipos, Péter Kacsuk</i>	
Privacy Protection in Ubiquitous Computing Based on Privacy Label and Information Flow	46
<i>Seong Oun Hwang, Ki Song Yoon</i>	

Resource Management and Scheduling Techniques for Cluster and Grid Computing Systems Workshop

Application-Oriented Scheduling in the KNOWLEDGE GRID: A Model and Architecture	55
<i>Andrea Pugliese, Domenico Talia</i>	
A Monitoring and Prediction Tool for Time-Constraint Grid Application	66
<i>Abdulla Othman, Karim Djemame, Iain Gourlay</i>	
Optimal Server Allocation in Reconfigurable Clusters with Multiple Job Types	76
<i>J. Palmer, I. Mitrani</i>	
Design and Evaluation of an Agent-Based Communication Model for a Parallel File System	87
<i>María S. Pérez, Alberto Sánchez, Jemal Abawajy, Víctor Robles, José M. Peña</i>	

Task Allocation for Minimizing Programs Completion Time in Multicomputer Systems	97
<i>Gamal Attiya, Yskandar Hamam</i>	
Fault Detection Service Architecture for Grid Computing Systems	107
<i>J.H. Abawajy</i>	
Adaptive Interval-Based Caching Management Scheme for Cluster Video Server	116
<i>Qin Zhang, Hai Jin, Yufu Li, Shengli Li</i>	
A Scalable Streaming Proxy Server Based on Cluster Architecture	126
<i>Hai Jin, Jie Chu, Kaiqin Fan, Zhi Dong, Zhiling Yang</i>	
The Measurement of an Optimum Load Balancing Algorithm in a Master/Slave Architecture	136
<i>Finbarr O'Loughlin, Desmond Chambers</i>	
Data Discovery Mechanism for a Large Peer-to-Peer Based Scientific Data Grid Environment	146
<i>Azizol Abdullah, Mohamed Othman, Md Nasir Sulaiman, Hamidah Ibrahim, Abu Talib Othman</i>	
A DAG-Based XCIGS Algorithm for Dependent Tasks in Grid Environments	158
<i>Changqin Huang, Deren Chen, Qinghuai Zeng, Hualiang Hu</i>	
Running Data Mining Applications on the Grid: A Bag-of-Tasks Approach	168
<i>Fab��rio A.B. da Silva, S��lvia Carvalho, Hermes Senger, Eduardo R. Hruschka, Cl��ver R.G. de Farias</i>	
Parallel and Distributed Computing Workshop	
Application of Block Design to a Load Balancing Algorithm on Distributed Networks	178
<i>Yeijin Lee, Okbin Lee, Taehoon Lee, Ilyong Chung</i>	
Maintenance Strategy for Efficient Communication at Data Warehouse . .	186
<i>Hyun Chang Lee, Sang Hyun Bae</i>	
Conflict Resolution of Data Synchronization in Mobile Environment	196
<i>YoungSeok Lee, YounSoo Kim, Hoon Choi</i>	
A Framework for Orthogonal Data and Control Parallelism Exploitation	206
<i>S. Campa, M. Danelutto</i>	

Multiplier with Parallel CSA Using CRT's Specific Moduli (2^k-1 , 2^k , 2^k+1)	216
<i>Wu Woan Kim, Sang-Dong Jang</i>	
Unified Development Solution for Cluster and Grid Computing and Its Application in Chemistry	226
<i>Róbert Lovas, Péter Kacsuk, István Lagzi, Tamás Turányi</i>	
Remote Visualization Based on Grid Computing	236
<i>Zhigeng Pan, Bailin Yang, Mingmin Zhang, Qizhi Yu, Hai Lin</i>	
Avenues for High Performance Computation on a PC	246
<i>Yu-Fai Fung, M. Fikret Ercan, Wai-Leung Cheung, Gujit Singh</i>	
A Modified Parallel Computation Model Based on Cluster	252
<i>Xiaotu Li, Jizhou Sun, Jiawan Zhang, Zhaohui Qi, Gang Li</i>	
Parallel Testing Method by Partitioning Circuit Based on the Exhaustive Test	262
<i>Wu Woan Kim</i>	
A Parallel Volume Splatting Algorithm Based on PC-Clusters	272
<i>Jiawan Zhang, Jizhou Sun, Yi Zhang, Qianqian Han, Zhou Jin</i>	

Molecular Processes Simulation Workshop

Three-Center Nuclear Attraction Integrals for Density Functional Theory and Nonlinear Transformations	280
<i>Hassan Safouhi</i>	
Parallelization of Reaction Dynamics Codes Using P-GRADE: A Case Study	290
<i>Ákos Bencsura, György Lendvay</i>	
Numerical Implementation of Quantum Fluid Dynamics: A Working Example	300
<i>Fabrizio Esposito</i>	
Numerical Revelation and Analysis of Critical Ignition Conditions for Branch Chain Reactions by Hamiltonian Systematization Methods of Kinetic Models	313
<i>Gagik A. Martoyan, Levon A. Tavadyan</i>	
Computer Simulations in Ion-Atom Collisions	321
<i>S.F.C. O'Rourke, R.T. Pedlow, D.S.F. Crothers</i>	
Bond Order Potentials for a priori Simulations of Polyatomic Reactions	328
<i>Ernesto Garcia, Carlos Sánchez, Margarita Albertí, Antonio Laganà</i>	