

Table of Contents

Theory

A Hybrid Approach to Reaction-Diffusion Processes Simulation	1
<i>O. Bandman</i>	
Formal Verification of Coherence for a Shared Memory Multiprocessor Model	17
<i>M. Barrio-Solórzano, M.E. Beato, C.E. Cuesta, and P. de la Fuente</i>	
Static Analysis for Secrecy and Non-interference in Networks of Processes .	27
<i>C. Bodei, P. Degano, F. Nielson, and H.R. Nielson</i>	
Consensus in One Communication Step	42
<i>F. Brasileiro, F. Greve, A. Mostefaoui, and M. Raynal</i>	
Design Space Exploration for Massively Parallel Processor Arrays	51
<i>F. Hannig and J. Teich</i>	
GCA: Global Cellular Automata. A Flexible Parallel Model	66
<i>R. Hoffmann, K.-P. Völkmann, S. Waldschmidt, and W. Heenes</i>	
Cellular-Pipelined Algorithm Architecture for Polynomial Computing	74
<i>V. Markova</i>	
MetaPL: A Notation System for Parallel Program Description and Performance Analysis	80
<i>N. Mazzocca, M. Rak, and U. Villano</i>	
First-Order 2D Cellular Neural Networks Investigation and Learning	94
<i>S. Pudov</i>	
Quiescent Uniform Reliable Broadcast as an Introduction to Failure Detector Oracles	98
<i>M. Raynal</i>	
A Transaction Processing Model for the Mobile Data Access System	112
<i>K. Segun, A.R. Hurson, and A. Spink</i>	
Characterizing Timed Net Processes Categorically	128
<i>I.B. Virbitskaite</i>	
Mapping Heterogeneous Task Graphs onto Networks: Execution Time Optimization	142
<i>N. Vodovoz</i>	

An $O[n^3/z^3]$ Reduction Procedure for Determining the Maximum Degree of Parallelism in Parallel Applications	150
<i>I.V. Zotov and V.S. Titov</i>	

Software and Architecture

ARTCP: Efficient Algorithm for Transport Protocol for Packet Switched Networks	159
<i>I.V. Alekseev and V.A. Sokolov</i>	

Extension of Java Environment by Facilities Supporting Development of SPMD Java-Programs	175
<i>A. Avetisyan, S. Gaissaryan, and O. Samovarov</i>	

Mechanisms of Parallel Computing Organization for NeuroCluster	181
<i>L.K. Babenko, A.G. Chefranov, P.A. Fedorov, A.Yu. Korobko, and O.B. Makarevich</i>	

Parallel SPMD-Tasks Graph Description Language for Network Clusters ..	186
<i>L.K. Babenko, A.G. Chefranov, and R.V. Trotsenko</i>	

Optimizing Metacomputing with Communication-Computation Overlap ..	190
<i>F. Baude, D. Caromel, N. Furmento, and D. Sagnol</i>	

WebCluster: A Web-Accessible Cluster Computing System Based on Coordination and Mobility	205
<i>P. Ciancarini and D. Rossi</i>	

On Using SPiDER to Examine and Debug Real-World Data-Parallel Applications	211
<i>T. Fahringer, K. Sowa-Pieklo, J. Luitz, and H. Moritsch</i>	

Experimental Version of Parallel Programs Translator from Petri Nets to C++	226
<i>E.A. Golenkov, A.S. Sokolov, G.V. Tarasov, and D.I. Kharitonov</i>	

Typing the ISA to Cluster the Processor	232
<i>B. Goossens</i>	

Send-Recv Considered Harmful? Myths and Truths about Parallel Programming	243
<i>S. Gorlatch (invited paper)</i>	

UNICORE: A Grid Computing Environment for Distributed and Parallel Computing	258
<i>V. Huber</i>	

Parallel Adaptive Mesh Refinement with Load Balancing for Finite Element Method	266
<i>S. Kopyssov and A. Novikov</i>	

Concurrent Implementation of Structurally Synthesized Programs	277
<i>S. Lämmermann, E. Tyugu, and V. Vlassov</i>	
An Associative Version of the Bellman-Ford Algorithm for Finding the Shortest Paths in Directed Graphs	285
<i>A.S. Nepomniaschaya</i>	
Fusion of Concurrent Invocations of Exclusive Methods	293
<i>Y. Oyama, K. Taura, and A. Yonezawa</i>	
Computational Portal: Remote Access to High-Performance Computing . . .	308
<i>V.V. Prokhorov</i>	
Event Logic Programming	314
<i>R. Ramirez and A.E. Santosa</i>	
Techniques for Increasing Performance of CORBA Parallel Distributed Applications	319
<i>R. Schevchenko and A. Doroshenko</i>	
Manager-Worker Parallelism versus Dataflow in a Distributed Computer Algebra System	329
<i>W. Schreiner</i>	
Communication Interface CoIn	344
<i>E. Sidorov, S. Bobkov, and S. Aryashev</i>	
Design of a Tool for Providing Dynamic Network Information to an Application	350
<i>M. Sosonkina and G. Chen</i>	
Compilation Principle of a Specification Language Dedicated to Signal Processing	358
<i>J. Soula, Ph. Marquet, A. Demeure, and J.-L. Dekeyser</i>	
An Approach to Composing Parallel Programs	371
<i>L.-E. Thorelli and V. Vlassov</i>	
Web-Based Parallel Simulation of AGVs Using Java and JINI	379
<i>R. Ye, W.-J. Hsu, and Z.-H. Liu</i>	

Applications

On the Parallelezation of Domain Decomposition Methods for 3-D Boundary Value Problems	385
<i>V.N. Babin, V.P. Il'in, and A.S. Pylkin</i>	
Parallel Generation of Percolation Beds Based on Stochastic Cellular Automata	391
<i>S. Bandini, G. Mauri, and G. Pavesi</i>	

Parallel Simulation of 3D Incompressible Flows and Performance Comparison for Several MPP and Cluster Platforms	401
<i>O. Bessonov, D. Fougère, and B. Roux</i>	
Distributed Simulation of Hybrid Systems with HLA Support	410
<i>A. Borshchev, Yu. Karpov, and P. Lebedev</i>	
Application of the Parallel Computing Technology to a Wave Front Model Using the Finite Element Method	421
<i>A. Chambarel and H. Bolvin</i>	
A General Parallel Computing Approach Using the Finite Element Method and the Objects Oriented Programming by Selected Data Technique.	428
<i>A. Chambarel and D. Fougère</i>	
Parallel Implementation of a Corrected DSMC Method	436
<i>S. Ignatieva and V. Memnonov</i>	
Parallel Algorithms for Non-stationary Problems: Survey of New Generation of Explicit Schemes.	442
<i>Yu.M. Laevsky, P.V. Banushkina, S.A. Litvinenko, and A.A. Zotkevich</i>	
Tool Environments in CORBA-Based Medical High Performance Computing.	447
<i>T. Ludwig, M. Lindermeier, A. Stamatakis, and G. Rackl (invited paper)</i>	
Parallel Algorithms for the Analysis of Biological Sequences	456
<i>G. Mauri and G. Pavesi</i>	
Some Parallel Monte Carlo Algorithms	469
<i>G.A. Mikhailov (invited paper)</i>	
Implementation of the Parallel Four Points Modified Explicit Group Iterative Algorithm on Shared Memory Parallel Computer	480
<i>M. Othman and A.R. Abdullah</i>	
A Parallel Expressed Sequence Tag (EST) Clustering Program.	490
<i>K. Pedretti, T. Scheetz, T. Braun, Ch. Roberts, N. Robinson, and T. Casavant</i>	
Protein Sequence Comparison on the Instruction Systolic Array.	498
<i>B. Schmidt, H. Schröder, and M. Schimmmler</i>	
SCI-Based LINUX PC-Clusters as a Platform for Electromagnetic Field Calculations	510
<i>C. Trinitis, M. Schulz, M. Eberl, and W. Karl</i>	
Author Index	515

Parallel Computing Technologies

6th International Conference, PaCT 2001, Novosibirsk,

Russia, September 3-7, 2001 Proceedings

Malyskin, V. (Ed.)

2001, XII, 524 p., Softcover

ISBN: 978-3-540-42522-9