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Nota di contenuto	Workshop on Scheduling for Parallel Computing (SPC 2009) -- Fully Polynomial Time Approximation Schemes for Scheduling Divisible Loads -- Semi-online Preemptive Scheduling: Study of Special Cases -- Fast Multi-objective Reschulding of Grid Jobs by Heuristics and Evolution -- Comparison of Program Task Scheduling Algorithms for Dynamic SMP Clusters with Communication on the Fly -- Study on GEO Metaheuristic for Solving Multiprocessor Scheduling Problem -- Online Scheduling of Parallel Jobs on Hypercubes: Maximizing the Throughput -- The Third Workshop on Language-Based Parallel Programming Models (WLPP 2009) -- Verification of Causality Requirements in Java

Memory Model Is Undecidable -- A Team Object for CoArray Fortran -- On the Definition of Service Abstractions for Parallel Computing -- The Second Workshop on Performance Evaluation of Parallel Applications on Large-Scale Systems -- Performance Debugging of Parallel Compression on Multicore Machines -- Energy Considerations for Divisible Load Processing -- Deskilling HPL -- Monitoring of SLA Parameters within VO for the SOA Paradigm -- A Role-Based Approach to Self-healing in Autonomous Monitoring Systems -- Parallel Performance Evaluation of MIC(0) Preconditioning Algorithm for Voxel ? FE Simulation -- Parallel HAVEGE -- The Fourth Grid Applications and Middleware Workshop (GAMW 2009) -- UNICORE Virtual Organizations System -- Application of ADMIRE Data Mining and Integration Technologies in Environmental Scenarios -- Performance Based Matchmaking on Grid -- Replica Management for National Data Storage -- Churn Tolerant Virtual Organization File System for Grids -- The Fourth Workshop on Large Scale Computations on Grids (LaSCoG 2009) -- Quasi-random Approach in the Grid Application SALUTE -- Mobile Agents for Management of Native Applicationsin GRID -- Leveraging Complex Event Processing for Grid Monitoring -- Designing Execution Control in Programs with Global Application States Monitoring -- Distributed MIND – A New Processing Model Based on Mobile Interactive Documents -- A Framework for Observing Dynamics of Agent-Based Computations -- HyCube: A DHT Routing System Based on a Hierarchical Hypercube Geometry -- Workshop on Parallel Computational Biology (PBC 2009) -- Accuracy and Performance of Single versus Double Precision Arithmetics for Maximum Likelihood Phylogeny Reconstruction -- Automated Design of Assemblable, Modular, Synthetic Chromosomes -- GPU Parallelization of Algebraic Dynamic Programming -- Parallel Extreme Ray and Pathway Computation -- Minisymposium on Applications of Parallel Computation in Industry and Engineering -- Parallelized Transient Elastic Wave Propagation in Orthotropic Structures -- Parallel Numerical Solver for Modelling of Electromagnetic Properties of Thin Conductive Layers -- Numerical Health Check of Industrial Simulation Codes from HPC Environments to New Hardware Technologies -- Application of Parallel Technologies to Modeling Lithosphere Dynamics and Seismicity -- AMG for Linear Systems in Engine Flow Simulations -- Parallel Implementation of a Steady State Thermal and Hydraulic Analysis of Pipe Networks in OpenMP -- High-Performance Ocean Color Monte Carlo Simulation in the Geo-info Project -- EULAG Model for Multiscale Flows – Towards the Petascale Generation of Mesoscale Numerical Weather Prediction -- Parallel Implementation of Particle Tracking and Collision in a Turbulent Flow -- A Distributed Multilevel Ant-Colony Approach for Finite Element Mesh Decomposition -- Minisymposium on Interval Analysis -- Toward Definition of Systematic Criteria for the Comparison of VerifiedSolvers for Initial Value Problems -- Fuzzy Solution of Interval Nonlinear Equations -- Solving Systems of Interval Linear Equations with Use of Modified Interval Division Procedure -- Remarks on Algorithms Implemented in Some C++ Libraries for Floating-Point Conversions and Interval Arithmetic -- An Interval Method for Seeking the Nash Equilibria of Non-cooperative Games -- From Gauging Accuracy of Quantity Estimates to Gauging Accuracy and Resolution of Measuring Physical Fields -- A New Method for Normalization of Interval Weights -- A Global Optimization Method for Solving Parametric Linear Systems Whose Input Data Are Rational Functions of Interval Parameters -- Direct Method for Solving Parametric Interval Linear Systems with Non-affine Dependencies -- Workshop on Complex Collective Systems -- Evaluating Lava Flow

Hazard at Mount Etna (Italy) by a Cellular Automata Based Methodology -- Application of CoSMoS Parallel Design Patterns to a Pedestrian Simulation -- Artificial Intelligence of Virtual People in CA FF Pedestrian Dynamics Model -- Towards the Calibration of Pedestrian Stream Models -- Two Concurrent Algorithms of Discrete Potential Field Construction -- Frustration and Collectivity in Spatial Networks -- Weakness Analysis of a Key Stream Generator Based on Cellular Automata -- Fuzzy Cellular Model for On-Line Traffic Simulation -- Modeling Stop-and-Go Waves in Pedestrian Dynamics -- FPGA Realization of a Cellular Automata Based Epidemic Processor -- Empirical Results for Pedestrian Dynamics at Bottlenecks -- Properties of Safe Cellular Automata-Based S-Boxes.

Sommario/riassunto

Wearepleasedtopresenttheproceedingsofthe8thInternationalConference on Parallel Processing and Applied Mathematics - PPAM 2009, which was held in Wrocla w, Poland, September 13-16, 2009. It was organized by the Department ofComputer andInformationSciencesof theCzestochowaUniversity ofTechno- logy,withthehelpoftheWroc lawUniversityofTechnology,FacultyofComputer Science and Management. The main organizer was Roman Wyrzykowski. PPAM is a biennial conference. Seven previous events have been held in di'erentplacesinPolandsince1994. Theproceedingsofthelastfourconferences havebeenpublishedbySpringerintheLectureNotes in Computer Science series (Nal ecz´ ow, 2001,vol.2328;Czestochowa,2003,vol.3019; Poznan´, 2005,vol.3911; Gdan´sk, 2007, vol. 4967). The PPAM conferences have become an international forum for exchanging ideasbetweenresearchersinvolvedinparallelanddistributedcomputing, incl- ing theory and applications, as well as applied and computational mathematics. The focus of PPAM 2009 was on models, algorithms, and software tools which facilitate e'cient and convenient utilization of modern parallel and distributed computing architectures, as well as on large-scale applications. Thismeeting gatheredmorethan210participantsfrom 32countries.A strict refereeing process resulted in the acceptance of 129 contributed presentations, while approximately46% of the submissionswere rejected. Regular tracksof the conference covered such important ?elds of parallel/distributed/grid computing and applied mathematics as: - Parallel/distributed architectures and mobile computing - Numerical algorithms and parallel numerics - Parallel and distributed non-numerical algorithms - Tools and environments for parallel/distributed/grid computing - Applications of parallel/distributed computing - Applied mathematics and neural networks Plenary and Invited Speakers The plenary and invited talks were presented by: - Srinivas Aluru from the Iowa State University (USA) - Dominik Behr from AMD (USA) - Ewa Deelman from the University of Southern California (USA) - Jack Dongarra from the University of Tennessee and Oak Ridge National