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**Proceedings of the
Second International Conference on
Parallel, Distributed, Grid and Cloud Computing
for Engineering**

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Proceedings of the Tenth International Conference on Computational Structures Technology

Edited by: B.H.V. Topping, J.M. Adam, F.J. Pallarés, R. Bru and M.L. Romero

Proceedings of the Seventh International Conference on Engineering Computational Technology

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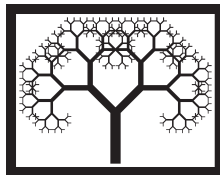
Proceedings of the Fifth International Conference on Engineering Computational Technology

Edited by: B.H.V. Topping, G. Montero, R. Montenegro

**Proceedings of the
Second International Conference on
Parallel, Distributed, Grid and Cloud Computing
for Engineering**

Edited by
P. Iványi and B.H.V. Topping

Including special sessions organised by
**J. Kruis, V. Vondrak, B.N. Chetverushkin, P. Bouvry,
S. Khan, D. Tromeur-Dervout, S. Roller, M.M. Resch,
A.I. Khan, A.H.M. Amin and J. Magiera**



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Contents

Preface

Domain Decomposition Methods in Engineering Computations

Special session organised by J. Kruis and V. Vondrak

- 1 Parallelization of the Total-FETI-1 Algorithm for Contact Problems using PETSc
D. Horák and Z. Dostál
- 2 The Inexact Solution of the Primal Part in the Domain Decomposition Method
M. Menšík
- 3 TBETI and TFETI Algorithms for Contact Shape Optimization Problems
V. Vondrák, T. Kozubek, M. Sadowská and Z. Dostál
- 4 The OOSol Scalable Library Based on a Domain Decomposition Method
D. Horák, P. Kabelíková, M. Merta and V. Vondrák
- 5 An Efficient Parallel Solver for Elasto-Plastic Problems of Mechanics
M. Čermák, T. Kozubek and A. Markopoulos
- 6 Newton-Krylov-Schur Method with a Nonlinear Localization: Parallel Implementation for Post-Buckling Analysis of Large Structures
J. Hinojosa, O. Allix, P.-A. Guidault and Ph. Cresta
- 7 Nonlinear Analysis of Masonry Structures using Mesoscale Partitioned Modelling
L. Macorini and B.A. Izzuddin
- 8 Parallel Computing of a Prestressed Concrete Containment Structure
T. Koudelka, T. Krejčí and J. Kruis
- 9 Efficient Tools for Solution of Coupled Heat and Moisture Transfer
J. Kruis and J. Maděra
- 10 A Three-Scale Domain Decomposition Method for the Simulation of Delamination and Buckling Interaction in Composites
K. Saavedra, O. Allix and P. Gosselet
- 11 Simulation of Moving Particles on a Backward Acting Grate using Implicit Integration and Domain Decomposition
K. Samiei, G. Berhe and B. Peters

- 12 Parallel Algorithms for Particle-Turbulence Two-Way Interactions in a Weakly Compressible Jet by Direct Numerical Simulation
D.B. Li, J.R. Fan, F.X. Yi, S.Q. Lu and K.F. Cen
- 13 A Parallel Computation of a Characteristic Curve Method in a Domain Decomposition System
Q. Yao, M. Ogino and H. Kanayama
- 14 Automatic Decomposition of Discretized Surfaces for Parallel Processing
S.H. Lo, H. Borouchaki and P. Laug
- 15 Parallelization of Isogeometric Analysis on Memory Distributed Computing Platforms
D. Rypl and B. Patzák
- 16 Parallelisation of Nonlinear Structural Analysis using Dual Partition Super-Elements
G.A. Jikhio and B.A. Izzuddin
- 17 An External Code Coupler based on a Subdomain Decomposition Method Extended to Non-Linear Cases
A. Batti, M. Brun, A. Gravouil and A. Combescure

GPGPU Computing Systems

Special session organised by B.N. Chetverushkin

- 18 GPU-Based Two-Dimensional Flow Simulation Steering using Coherent Structures
M. Ament, S. Frey, F. Sadlo, T. Ertl and D. Weiskopf
- 19 An Explicit Algorithm for Porous Media Flow Simulation using GPUs
D.N. Morozov, B.N. Chetverushkin, N.G. Churbanova and M.A. Trapeznikova
- 20 DIANA: A Device Abstraction Framework for Parallel Computations
A. Panagiotidis, D. Kauker, S. Frey and T. Ertl
- 21 Parallel Computing and Challenges for Thin Film Optics Technology
A.V. Tikhonravov and M.K. Trubetskov
- 22 Efficient Finite Element Geometric Multigrid Solvers for Unstructured Grids on Graphics Processing Units
M. Geveler, D. Ribbrock, D. Göddeke, P. Zajac and S. Turek
- 23 The Scalable GPU-based Parallel Algorithm for Uniform Pseudorandom Number Generation
M.V. Iakobovski, M.A. Kornilina and M.N. Voroniuk
- 24 GPU-Based Parallel Nonlinear Conjugate Gradient Algorithms
V. Galiano, H. Migallón, V. Migallón and J. Penadés
- 25 Numerical Simulation of Continuous Media Problems on Hybrid Computer Systems
B.N. Chetverushkin, E.V. Shilnikov and A.A. Davydov
- 26 Scalable Implementation of the Two-Dimensional Triangular Discrete Element Method on a GPU Platform
L. Zhang, S.F. Quigley and A.H.C. Chan
- 27 A Program Suite for Gas Dynamic Problems
S. Polyakov, T. Kudryashova, A. Sverdlin, A. Kononov and O. Kosolapov
- 28 Parallel Simulation of Shield Tunnelling on Distributed Memory and GPGPU Systems
J. Stascheit, M. Eitzen and G. Meschke
- 29 Processing Cryptanalysis of Hash Functions using Graphics Processing Units
J. Gómez, C. Gil, F.G. Montoya, A.L. Márquez, G. Molero and A. Alcayde

High Performance Green Computing

Special session organised by P. Bouvry and S. Khan

- 30 Anti-Load Balancing to Reduce Energy Consumption
C. Thiam and G. Dacosta
- 31 Scheduling Problems resulting from Limiting Computing Power
F. Guinand
- 32 A Model for Energy-efficient Task Mapping on Milliclusters
F. Pinel and P. Bouvry
- 33 Energy Consumption Optimisation in HPC Service Centres
A. Kipp, L. Schubert, J. Liu, T. Jiang, W. Christmann and M. vor dem Berge
- 34 The Need for a Global CO2 Lifecycle Model in IT Service Centers
J. Liu
- 35 Virtual Machine Migration: A Comparative Study of Storage Viewpoints
A. Ortiz, F. Thiebolt, P. Stolf, G. Da Costa and A. Sayah

Parallel Preconditioning Techniques

Special session organised by D. Tromeur-Dervout

- 36 Parallel Preconditioning and Modular Finite Element Solvers on Hybrid CPU-GPU Systems
V. Heuveline, D. Lukarski, C. Subramanian and J.-P. Weiss
- 37 Parallel Preconditioners for Saddle-Point Problems
M. Ferronato, C. Janna and G. Gambolati
- 38 Parallel Implementation of a Preconditioner Based on Sub-Structuring
P.R.B. Devloo, F.A.M. Menezes, T. Dias dos Santos and N. Shauer
- 39 A Study of ILU Factorization for Schwarz Preconditioners with Application to Computational Fluid Dynamics
F. Pacull, S. Aubert and M. Buisson
- 40 Parallel Algebraic Domain Decomposition Solver for the Solution of Augmented Systems
E. Agullo, L. Giraud, A. Guermouche, A. Haidar and J. Roman
- 41 Numerical Investigations and Parallel Implementation of the ARAS2 Preconditioning Technique
T. Dufaud and D. Tromeur-Dervout

Coupling Techniques for Multi-Scale and Multi-Physics Applications

Special session organised by S. Roller and M.M. Resch

- 42 The Lattice Boltzmann Method for Fluid-Structure Interaction Phenomena
S. Geller, C. Janssen, M. Krafczyk, S. Kollmannsberger and E. Rank
- 43 Multi-Scale Modelling by Coupling Three-Dimensional Computational Fluid Dynamics Codes with System Models
P. Bayrasy, J.V. Peetz and K. Wolf
- 44 Distributed Coupling for Multi-Scale Simulations
H. Klimach and S. Roller

45 High Performance Communication Framework for Large Scale Workflows
X. Wang, U. Küster, M. Resch and E. Focht

46 MuPIF: A Distributed Multi-Physics Integration Tool
B. Patzák

Parallel Genetic Algorithms: Methods and Applications

Special session organised by B.H.V. Topping and P. Iványi

47 Parallel Memetic Algorithms for Multi-Objective Bin-Packing Problems
A. Fernández, C. Gil, A.L. Márquez, R. Baños, M.G. Montoya and M. Parra

48 Parallel Direct Search in Structural Optimization
J.B. Cardoso, P.G. Coelho and A.L. Custódio

49 A Cooperative Multi-Objective Island Parallel Model for Wind Farm Planning
A.L. Márquez, C. Gil, R. Baños, M.G. Montoya, F.G. Montoya and F. Manzano-Agugliaro

Pattern Recognition and Data Mining with Clouds, Grids, and Wireless Sensor Networks

Special session organised by A.I. Khan and A.H.M. Amin

50 Spatio-Temporal Forest Fire Detection using a Distributed Hierarchical Graph Neuron within an Integrated Wireless Sensor Network-Grid Environment
A.H. Muhamad Amin and A.I. Khan

Engineering Software Refactoring for the (Ubiquitous) Parallel Computing Era

Special session organised by J. Magiera

51 Refactoring of the Basic BLAS Library Routines for Automatic Optimal Performance on Different Multicore PC Platforms
J. Magiera and M. Chmielik

Service Oriented Computing

52 Providing QoS through Service Level Agreements in High Performance Computing
R. Kübert

Hybrid Parallelisation

53 Framework for the Hybrid Parallelisation of Simulation Codes
R.-P. Mundani, M. Ljucović and E. Rank

Performance Tuning

54 Timing Collective Communications in an Empirical Optimization Framework
K. Benkert, E. Gabriel and S. Roller

Parallel Solvers

55 Proper Orthogonal Decomposition in Decoupling Dynamical Systems
T. Pham and D. Tromeur-Dervout

- 56 A Comparison of Different Parallel Techniques Applied to the Solution of the Navier-Stokes Equations
J. Cotela, R. Rossi, E. Oñate and P. Dadvand
- 57 A Graph-Grammar Based Multi-Frontal Parallel Direct Solver for One, Two and Three-Dimensional Partial Differential Equations
P. Obrok and M. Paszyński
- 58 An Efficient Scalable Solver for the Global Ocean Sea-Ice Model MPIOM
F. Wilhelm, P. Adamidis and V. Heuveline
- 59 Design, Analysis, Implementation and Deployment of a High-Performance, Out-of-Core, Parallel, Dense Direct Linear Solver
B. Lizé and G. Sylvand

Cluster Computing

- 60 A Simultaneous Solution for General Linear Equations with Subspace Decomposition
G. Molnárka and N. Varjasi

Massively Parallel Computations

- 61 Making Massively Parallel Computations Available for End Users
H. Dignonnet

Parallel Mesh Generation

- 62 Efficient Lattice Modelling of the Fracture Process Zone Extent in Cementitious Composites
P. Frantík, V. Veselý and Z. Keršner
- 63 An Automatic Joining Mesh Approach for Computational Fluid Dynamics to Reach a Billion Cell Simulations
Y. Fournier, J. Bonelle, P. Vezolle, C. Moulinec and A.G. Sunderland
- 64 Parallel CAD Surface Meshing
P. Laug and H. Borouchaki

Multigrid Methods

- 65 Multithreads and MPI Adaptive AMG Linear Solver for Parallel Navier-Stokes Approaches
P. Vezolle, Y. Fournier, C. Moulinec and N. Tallet

Object Oriented Methods and Frameworks

- 66 Enabling High Performance Computing for Java Applications using the Message-Passing Interface
A. Cheptsov, M. Assel, B. Koller and G. Gallizo
- 67 Finite Element based Structural Optimization using Object-Oriented Parallel Programming
H. Masching, M. Fischer, M. Firl and K.-U. Bletzinger
- 68 General Parallel Finite and Spectral-Element Oriented C/C++ Framework
A.D. Otero and J. Quinteros

Particle Simulations

- 69 Multiparticle Collision Dynamics on the Cell Broadband Engine using CellSs
A. Schiller, G. Sutmann, L. Martinell, P. Bellens and R. Badia

Monte Carlo Simulations

- 70 A Provident Parallel Dynamic Monte Carlo Method
Y.H. Lau
- 71 Stochastic Response of Reinforced Concrete Structures to Technical Seismicity
J. Brozovsky and P. Konecny
- 72 Parallel Wolff Cluster Algorithm for n -Component Vector Spin Models
J. Kaupužs, R.V.N. Melnik and J. Rimšāns

Image Processing

- 73 P2P-Based Image Recognition for Component Tracking in a Large Engineering Domain
A. Amir, A.H.M. Amin and B. Srinivasan
- 74 Parallel Matrix Algorithms for Image Processing
P. Kotas, V. Vondrák, P. Praks and M. Stachoň

Visualization

- 75 VisPartDEM: Grid Visualization Tool for Particle Systems
A. Kačeniauskas, R. Pacevič, D. Markauskas and R. Kačianauskas

Error Propagation

- 76 Estimation of Error Propagation in Multiprocessor Computation
A. Iványi and M.M. Iványi
- 77 Coupling HPC and Numerical Validation: Accurate and Efficient Simulation of Large-scale Hydrodynamic Events
C. Moulinec, C. Denis, N. Durand, R.W. Barber, D.R. Emerson, X.J. Gu, E. Razafindrakoto, R. Issa and J.-M. Hervouet

Science Gateways for Grid and Cloud Systems

- 78 A New Framework to Build Science Gateways based on EnginFrame and Liferay
R. Rotondo, R. Barbera, G. La Rocca, A. Falzone, P. Maggi and N. Venuti
- 79 Migrating the TeraGrid User Portal and Website to Liferay
M. Dahan, S. Mock, P. Nuthulapati, R. Dooley, P. Hurley and M. Hanlon
- 80 New Science Gateways for Advanced Computing Simulations and Visualization using the Vine Toolkit
P. Dziubecki, P. Grabowski, M. Krysiński, T. Kuczyński, K. Kurowski, T. Piontek and D. Szejnfeld
- 81 The Swiss Grid Proteomics Portal
P. Kunszt, L. Espona Pernas, A. Quandt, E. Schmid, E. Hunt and L. Malmström

Grid Technology

- 82 Computation of Protein Separation using a Grid Environment
T. Garcia, M. Chau and P. Spiteri
- 83 Parallel Solution of the Sequence of Obstacle Problems in a Grid Environment
M. Chau, R. Couturier, J. Bahi and P. Spiteri
- 84 A Distributed Abstract State Machine for Grid Systems: A Preliminary Study
A. Bianchi, L. Manelli and S. Pizzutilo
- 85 Deploying SAP Services on a Grid
D. Benenati, S. Cavalieri and E. Mastriani
- 86 A Grid-Based Computational Platform for Simulation of Structural Systems with Detailed Responses
Y.C. Lin and H.M. Chen

Cloud Computing

- 87 Smart Job Scheduling for High-Performance Cloud Computing Services
N. Muhtaroglu and I. Ari
- 88 UnaGrid/UnaCloud: A Desktop Grid and Cloud Computing Solution
H.E. Castro, M.J. Villamizar and E.E. Rosales
- 89 Cloud Computing as an Information Technology Infrastructure for Civil Engineering SMEs
M. Dolenc and R. Klinec

Computational Fluid Dynamics

- 90 Direct Numerical Simulation of a Turbulent Lifted Jet Flame Experiment by Means of Parallel Computing
F.X. Yi, D.B. Li, S.Q. Lu, J.R. Fan and K. Luo
- 91 Parallel Paradigm for Ultraparallel Multi-Scale Brain Blood Flow Simulations
L. Grinberg and G.E. Karniadakis
- 92 Design and Performance Aspects of a Computational Fluid Dynamics Computational Steering Application
P. Wensch, O. Wensch and E. Rank

Engineering Applications

- 93 Threat Detection in Urban Water Distribution Systems with Simulations Conducted in Grids and Clouds
G. von Laszewski, L. Wang, F. Wang, G.C. Fox and G.K. Mahinthakumar
- 94 MPI/OpenMP Parallelisation of the Harmonic Coupled Finite-Strip Method
M. Nikolić, D.D. Milašinović, Ž. Živanov, P. Marić, M. Hajduković, A. Borković and I. Milaković
- 95 Parallel Real Time Computation of Large Scale Pedestrian Evacuations
B. Steffen, U. Kemloh, M. Chraïbi and A. Seyfried
- 96 Finite Element High-Performance Code for Seismic Wave Propagation in Heterogeneous Media
C.J. Martins
- 97 Worker-Based Simulation for Subsea Pipeline Design Software
J. Muylle, B.H.V. Topping and R. Denis

Author Index

Keyword Index

Preface

This volume comprises the summaries of contributed papers presented at The Second International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering (PARENG 2011) held in Ajaccio, Corsica, France, 12-15 April 2011. The full papers from the conference are available on the accompanying CD-ROM.

The special sessions included in this volume of Proceedings are:

- Domain Decomposition Methods in Engineering Computations
organised by J. Kruis and V. Vondrak
- GPGPU Computing Systems
organised by B.N. Chetverushkin
- High Performance Green Computing
organised by P. Bouvry and S. Khan
- Parallel Preconditioning Techniques
organised by D. Tromeur-Dervout
- Coupling Techniques for Multi-Scale and Multi-Physics Applications
organised by S. Roller and M.M. Resch
- Parallel Genetic Algorithms: Methods and Applications
organised by B.H.V. Topping and P. Iványi
- Pattern Recognition and Data Mining with Clouds, Grids, and Wireless Sensor Networks
organised by A.I. Khan and A.H.M. Amin
- Engineering Software Refactoring for the (Ubiquitous) Parallel Computing Era
organised by J. Magiera

We are particularly grateful to the special session organisers. The following sessions are also included in this volume:

- Service Oriented Computing
- Hybrid Parallelisation
- Performance Tuning
- Parallel Solvers
- Cluster Computing
- Massively Parallel Computations
- Parallel Mesh Generation
- Multigrid Methods
- Object Oriented Methods and Frameworks
- Particle Simulations
- Monte Carlo Simulations
- Image Processing

- Visualization
- Error Propagation
- Science Gateways for Grid and Cloud Systems
- Grid Technology
- Cloud Computing
- Computational Fluid Dynamics
- Engineering Applications

Other papers presented at this conference are published as follows:

- *The Review Lectures are published in:*
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- *The Invited Lectures are published in:*
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