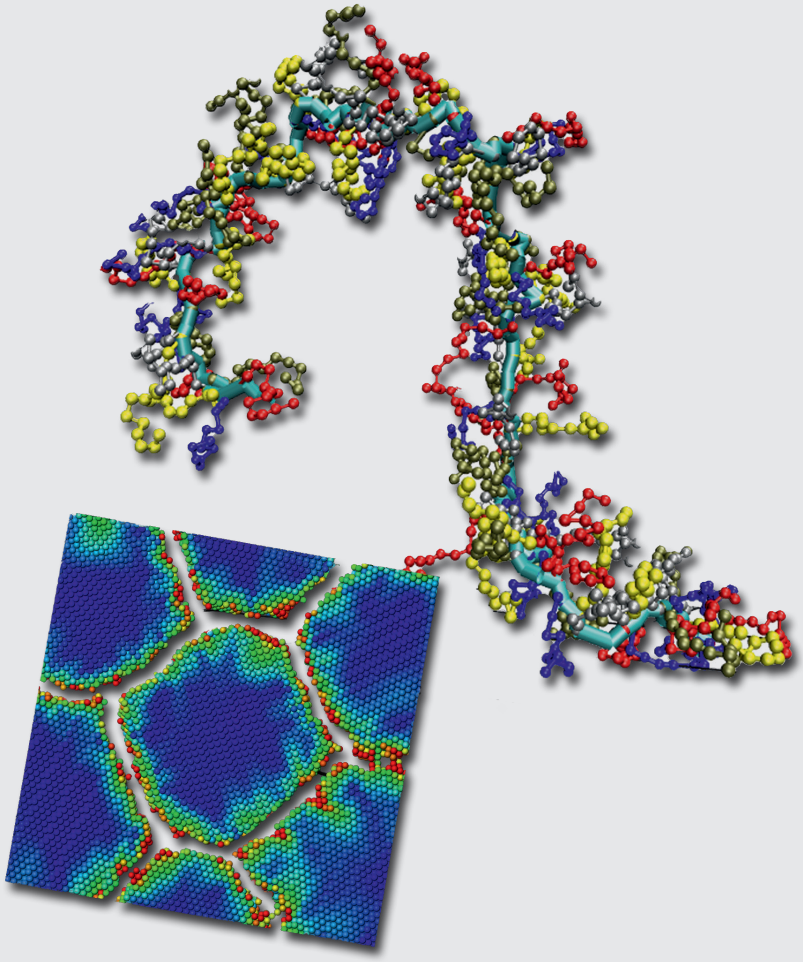
John von Neumann Institute for Computing

NIC Symposium 2010

24 - 25 February 2010 | Jülich, Germany

G. Münster, D. Wolf, M. Kremer (Editors)

Proceedings



NIC Series

Forschungszentrum Jülich GmbH
John von Neumann Institute for Computing (NIC)

NIC Symposium 2010 – Proceedings

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Contents

Entering the Petaflop-Era – New Developments in Supercomputing
N. Attig, F. Berberich, U. Detert, N. Eicker, Th. Eickermann, P. Gibbon, W. Gürich, W. Homberg, A. Illich, S. Rinke, M. Stephan, K. Wolkersdorfer, Th. Lippert **1**

The NIC Research Groups

Quark Mass Dependence of the QCD Equation of State
F. Karsch, W. Söldner **13**

Numerical Studies of Structures and Phases in (Nano-) Systems in Reduced Geometry
D. Mutter, Ch. Schieback, J. Neder, F. Bürzle, K. Franzrahe, A. Geng, P. Nielaba **21**

Towards Precision B-Physics from Non-Perturbative Heavy Quark Effective Theory
ALPHA Collaboration: M. Della Morte, J. Heitger, R. Sommer **31**

Astrophysics

Introduction by P. L. Biermann **41**

Clusters of Galaxies in the MareNostrum Universe
St. Gottlöber, G. Yepes, J. Forero-Romero, V. Turchaninov **45**

Unravelling the Mechanism how Stars Explode
A. Marek, B. Müller, H.-Th. Janka **53**

Protoplanetary Discs in Young Dense Clusters
S. Pfalzner, Ch. Olczak, Th. Kaczmarek, M. Steinhausen **61**

Computational Biology and Biophysics

Introduction by U. H. E. Hansmann **69**

Structure and Dynamics of Large Biological Molecules: ATP-Binding Cassette (ABC) Transporters
J.-H. Lin, J. Akola, R. O. Jones **71**

The Inhibition of Hydrogenase by Dioxygen
G. La Penna **79**

Protein Folding and Structure Prediction at the Simulation Laboratory Biology
J. H. Meinke, S. Mohanty, O. Zimmermann **87**

Chemistry
Introduction by W. Klopper **95**

Ionic Liquids
St. Zahn, B. Kirchner **97**

Atomistic Simulations on Polymeric Nitrogen
J. Kotakoski **105**

Prebiotic Peptide Synthesis on Blue Gene Platforms at "Iron-Sulfur-World" Conditions
N. N. Nair, E. Schreiner, D. Marx **111**

Calculation of ^{31}P and ^{183}W NMR Chemical Shifts and Nuclear Spin Spin Coupling Constants in Phosphinidenoid and Other Transition Metal Complexes by the ZORA DFT Method
G. von Frantzius, R. Streubel **119**

Elementary Particle Physics
Introduction by R. Kenway **129**

Dynamical Overlap Fermions with Small Pion Masses and Topology
N. Cundy, I. Koutsou, Th. Lippert, A. Schäfer **131**

Lattice QCD with Fat Clover Fermions: *Ab Initio* Determination of Flavour Non-Singlet Mesons and Baryons
Z. Fodor **139**

QCD Simulations with Light, Strange and Charm Dynamical Quark Flavours
K. Jansen **147**

Tuning Lattice QCD to Petascale on Blue Gene/P
St. Krieg, Th. Lippert **155**

Materials Science
Introduction by R. O. Jones **165**

Deformation Processes in Nanostructured Metals and Alloys
K. Albe, A. Stukowski, J. Schäfer, Y. Ritter, D. Farkas **167**

Anisotropic Magnetic Interactions in Low Dimensions
G. Bihlmayer, M. Heide, Y. Mokrousov, A. Thiess, St. Heinze, St. Blügel **175**

Pattern Formation: From the Macro- to the Nanoscale
E. A. Brener, M. Fleck, C. Hüter, H. Müller-Krumbhaar, D. Pilipenko, D. Temkin, R. Spatschek **183**

First Principles Approach for Vibrational Relaxation of Adsorbates on Semiconductor Surfaces
S. Sakong, P. Kratzer **191**

Determination of Structure and Electronic Properties of Free, Supported and Ligand Protected Metal Clusters by Density Functional Theory
M. Walter, M. Moseler **199**

Magnetic Properties of Co and Ni Multilayers on Diamond Surfaces
B. Stärk, P. Krüger, J. Pollmann **207**

Condensed Matter
Introduction by K. Binder and A. Muramatsu **215**

Quantum Transport Through a Nano-Device: A Numerical Renormalization Group Approach to Open Quantum Systems
F. B. Anders **219**

Van der Waals Interaction of Molecules on Surfaces from First Principles
P. Lazić, N. Atodiresei, V. Caciuc, St. Blügel **227**

On the Potential of Semiconductor Quantum Dots as Active Media for Future Semiconductor Lasers
M. Lorke, P. Gartner, F. Jahnke, W. W. Chow **235**

Simulation of Magnetic Friction
M. P. Magiera, D. E. Wolf **243**

Three-Body Strongly Correlated Polar Molecules in Optical Lattices
L. Bonnes, St. Wessel **251**

Computational Soft Matter Science
Introduction by K. Kremer **259**

Phase Transitions and Relaxation Processes in Macromolecular Systems: The Case of Bottle-Brush Polymers
H.-P. Hsu, W. Paul, P. E. Theodorakis, K. Binder **263**

Studying Directed Assembly of Diblock Copolymers on Patterned Substrates by Soft, Coarse-Grained Models
M. Müller, K. Ch. Daoulas **271**

Membrane-Protein Interactions in Lipid Bilayers: Molecular Simulation versus Elastic Theory
B. West, F. Schmid **279**

Semidilute Polymer Solutions under Shear Flow
G. Sutmann, C.-C. Huang, R. G. Winkler, G. Gompper **287**

Earth and Environment
Introduction by U. Hansen **295**

IMACCO: Virtual Institute for Inverse Modelling of the Atmospheric Chemical Composition
H. Elbern, A. Strunk, L. Nieradzik, N. Goris, J. Schwinger, K. Kasradze **297**

Turbulent Rotating Rayleigh-Bénard Convection
St. Stellmach, U. Hansen **305**

Adaptive Optimization of GOCE Gravity Field Modeling
W.-D. Schuh, J. M. Brockmann, B. Kargoll, I. Krasbutter **313**

Computer Science and Numerical Mathematics
Introduction by M. Griebel **321**

Threshold Determination for Reliable Quantum Error Correction
B. Trieu, R. Kennedy, M. Richter **323**

Optimization of Packing Problems with Heuristic Algorithms Suited for Parallel Enablement
J. J. Schneider **331**

Performance Tuning in the Petascale Era
F. Wolf, D. Böhme, M. Geimer, M.-A. Hermanns, B. Mohr, Z. Szebenyi, B. J. N. Wylie **339**

Hydrodynamics and Turbulence
Introduction by D. Kröner **347**

Study of Compressible and Quasi-Incompressible Flows with QUADFLOW Flow Solver
A. Bosco, B. Reinartz **349**

DNS of Finite-Size Particles in Turbulent Flows
H. Homann, J. Bec, R. Grauer **357**

Geometrical Properties of Small Scale Turbulence
N. Peters, L. Wang, J.-P. Mellado, J. H. Göbbert, M. Gauding, Ph. Schäfer, M. Gampert **365**

Shallow Moist Convection
T. Weidauer, C. Junghans, O. Pauluis, M. Pütz, J. Schumacher **373**

Computational Plasma Physics
Introduction by K.-H. Spatschek **381**

Plasma Simulation with Parallel Kinetic Particle Codes
P. Gibbon, R. Speck, B. Berberich, A. Karmakar, L. Arnold, M. Mašek **383**

Statistics, Structures and Alignment in Compressible MHD Turbulence
R. Grauer, J. Dreher, C. Beetz, C. Schwarz **391**

The John von Neumann Institute for Computing (NIC) was established in 1998 by Forschungszentrum Jülich and Deutsches Elektronen-Synchrotron DESY to support the supercomputer-oriented simulation sciences. In 2006, GSI Helmholtzzentrum für Schwerionenforschung joined NIC as a contract partner.

The core task of NIC is the peer-reviewed allocation of supercomputing resources to computational science projects in Germany and Europe. The NIC partners also support supercomputer-aided research in science and engineering through a three-way strategy:

- Provision of supercomputing resources for projects in science research and industry.
- Supercomputer-oriented research and development by research groups in selected fields of physics and natural sciences.
- Education and training in all areas of supercomputing by symposia, workshops, summer schools, seminars, courses amd guest programmes for scientists and students.

The NIC Symposium is held biennially to give an overview on activities and results obtained by the NIC projects in the last two years. The contributions for this fifth NIC Symposium are from projects that have been supported by the IBM supercomputers JUMP and Blue Gene/P in Jülich and the APE topical computer at DESY in Zeuthen. They cover selected topics in the fields of Astrophysics, Biophysics, Chemistry, Elementary Particle Physics, Materials Science, Condensed Matter, Computational Soft Matter Science, Earth and Environmental Research, Computer Science, Hydrodynamics and Turbulence, and Plasma Physics.

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