

Conference for Junior Researchers
Facing the Multicore-Challenge

March 17-19, 2010, Heidelberg, Germany

www.multicore-challenge.org

Heidelberg Academy of Sciences

Conference Organizers:

Rainer Keller
*Oak Ridge National Labs, USA,
and HLRS, Germany*
David Kramer
Jan-Philipp Weiss
*Karlsruhe Institute of Technology,
Germany*

Conference Support and Venue:

Heidelberg Academy of Sciences
Heidelberg, Germany

Important Dates:

Paper Submission Deadline:

Extended until December 18, 2009

Notification of Acceptance:

January 25, 2010

Camera-ready Papers:

February 21, 2010

Short Talks and Posters:

January 24, 2010

Conference:

March 17-19, 2010

Invited Speakers:

David A. Bader
Georgia Tech, Atlanta, USA
Jesus Labarta
*Barcelona Supercomputing Centre,
Spain*
Robert Strzodka
MPI Informatik, Saarbrücken, Germany

Program Committee

See next page.

Conference Proceedings:

All accepted papers will be published in the Conference Series of the Heidelberg Academy of Sciences.

Contact:

General information:

info@multicore-challenge.org

Conference Website:

<http://www.multicore-challenge.org>

Conference theme: We are facing an inevitable paradigm shift towards multicore technologies where parallelism is now affecting all kinds of software development processes – from large-scale numerical simulation to desktop commodity applications. In recent systems parallelism spreads over several systems levels and heterogeneity is growing on the node as well as on the chip level. Data is kept across a nested hierarchy of memory stages and data locality becomes of paramount importance. Most applications and algorithms are not yet ready to utilize available capabilities and a tremendous effort is required to close the gap. Different technologies and processing models, non-adjusted interfaces, and incomplete tool chains complicate holistic programming approaches and impede programmer's productivity. On the other hand, resource contention, data conflicts and hardware bottlenecks keep performance away from theoretical peak. At the current state of the art in technologies and methodologies an interdisciplinary approach is required to tackle the obstacles in multicore computing. Compute- and memory-intensive applications can only benefit from the full hardware potential if all features on all system levels are taken into account in a holistic approach.

This conference aims to combine new aspects of multicore microprocessor technologies, parallel applications, numerical simulation, software development and tools. Contributions are welcome from all participating disciplines. Particular emphasis is placed on the support and advancement of young researchers.

Submission topics for conference submissions include (but are not limited to):

- Emerging hardware architectures and multicore technologies
- Parallel programming models, environments and languages
- Parallelization strategies in hybrid and hierarchical setups
- Hardware-aware computing and auto-tuning strategies
- Heterogeneous computing, adaptive and reconfigurable computing
- Mathematical modeling and design of parallel algorithms
- Aspects of microprocessor technologies and prospects of manycores
- Virtualization strategies and hardware transparency
- Library and tool support
- Scalability issues and portability of software solutions
- Performance analysis and modeling; memory behavior analysis
- Compiler techniques and code optimization strategies
- Efficient numerical methods and mathematical modelling
- Practice and experience of multicore programming
- Parallel applications and benchmarks

Paper Submission Guidelines: You are invited to submit papers up to 12 pages in Springer LNCS-style (including up to 6 keywords and an abstract of no more than 350 words) describing unpublished, original, and recent work related to the conference theme. Please follow the submission instructions on <http://www.multicore-challenge.org/submission>.

Short talks: Graduate students and Ph.D. students are encouraged to present a short talk (10 min.) on their current research project. Please submit a one-page abstract of your work.

Program Committee:

David A. Bader, Georgia Tech, USA
Michael Bader, TUM, Munich, Germany
Rosa Badia, Barcelona Supercomputing Centre, Spain
Richard Barrett, Oak Ridge National Labs, Oak Ridge, USA
Mladen Berekovic, TU Braunschweig, Germany
Arndt Bode, TUM, Munich, Germany
George Bosilca, University of Tennessee, Knoxville, USA
Jim Bovay, Hewlett-Packard, USA
Rainer Buchty, KIT, Karlsruhe, Germany
Mark Bull, EPCC, Edinburgh, United Kingdom
Hans-Joachim Bungartz, TUM, Munich, Germany
Franck Cappello, LRI, Université Paris Sud, France
Claudia Fohry, Kassel University, Germany
Richard Graham, Oak Ridge National Labs, Oak Ridge, USA
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Ben Juurlink, TUD, Delft, Netherlands
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Rainer Keller, Oak Ridge National Labs, Oak Ridge, USA
Hiroaki Kobayashi, Tohoku University, Japan
Manfred Krafczyk, TU Braunschweig, Germany
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Anton Lokhmotov, Imperial College, London, United Kingdom
Dieter an Mey, RWTH Aachen, Germany
Bernd Mohr, FZ Jülich, Germany
Claus-Dieter Munz, Stuttgart University, Germany
Norihiro Nakajima, JAEA and CCSE, Tokyo, Japan
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