

# Conference Program

## Facing the Multicore-Challenge II

September 28-30, 2011  
 Karlsruhe Institute of Technology

### Wednesday, September 28, 2011

09:30h - 10:15h	<b>Registration and Coffee</b>
10:15h - 10:30h	<b>Welcome and Opening</b>
10:30h - 11:30h	Invited Talk <b>Only the First Steps of the Parallel Evolution have been taken thus far</b> James R. Reinders, Intel
Paper Session I	<b>Parallel Programming Languages</b> <span style="float: right;">Chair: J.-P. Weiß</span>
11:30h - 11:55h	Paper 1 <b>Performance and Productivity of New Programming Languages</b> <u>Iris Christadler</u> , Giovanni Erbacci, Alan D. Simpson
11:55h - 12:20h	Paper 2 <b>Towards high-performance implementations of a custom HPC kernel using Intel Array Building Blocks</b> <u>Alexander Heinecke</u> , Michael Klemm, Hans Pabst, Dirk Pflüger

12:20h -13:30h	Lunch Break
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Paper Session II	<b>Manycore and FPGAs</b> <span style="float: right;">Chair: D. Kramer</span>
13:30h - 13:55h	Paper <b>AHDAM: an Asymmetric Homogeneous with Dynamic Allocation Manycore Chip</b> <u>Charly Bechara</u> , Nicolas Ventroux, Daniel Etiemble
13:55h - 14:20h	Paper <b>FPGA Implementation of the Robust Essential Matrix Estimation with RANSAC and the 8-point and the 5-point Method</b> <u>Michał Fularz</u> , Marek Kraft, Adam Schmidt, Andrzej Kasiński
14:20h - 15:10h	Short Talks I <b>Verifying Programs on Relaxed Memory Models</b> Alexander Linden <b>Modeling Performance through Memory-Stalls</b> Roman Iakymchuk <b>Efficient Serial and Parallel Coordinate Descent Methods for Huge-Scale Convex Optimization</b> Martin Takac <b>Interval Arithmetic for Graphics Processors</b> Marko Nehmeier

15:10h - 15:45h	Coffee Break
15:45h - 17:45h	Tutorial <b>The SMPSSs Programming Model</b> Marta Garcia, Barcelona Supercomputing Centre, Spain Rainer Keller, HLRS, Stuttgart, Germany

19:30h - 22:00h	Conference Dinner: <b>Badisch Brauhaus</b>
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## Thursday, September 29, 2011

09:00h - 10:00h	Invited Talk <b>Balance principles for algorithm-architecture co-design</b> Richard Vuduc, Georgia Institute of Technology, USA
Paper Session III	<b>Parallel Applications and GPUs</b> <span style="float: right;">Chair: R. Keller</span>
10:00h - 10:25h	Paper <b>Hybrid Parallelization of a Realistic Heart Model</b> <u>Dorian Krause</u> , Mark Potse, Thomas Dickopf, Rolf Krause, Angelo Auricchio, Frits Prinzen
10:25h - 10:50h	Paper <b>Using Free Scheduling for Programming NVIDIA Cards</b> Włodzimierz Bielecki, <u>Marek Palkowski</u>
10:50h - 11:20h	Coffee Break and Poster Session
11:20h - 13:00h	Tutorial <b>Principles of Multicore Optimization</b> Jan Treibig, RRZE Erlangen, Germany

13:00h-14:00h	Lunch Break
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Paper Session IV	<b>GPU Computing</b> <span style="float: right;">Chair: J.-P. Weiß</span>
14:00h - 14:25h	Paper <b>GPU Accelerated Computation of the Longest Common Subsequence</b> <u>Katsuya Kawanami</u> , Noriyuki Fujimoto
14:25h - 14:50h	Paper <b>Experiences with High-Level Programming Directives for Porting Applications to GPUs</b> Oscar Hernandez, Wei Ding, Barbara Chapman, Ramanan Sankaran, Richard Graham, <u>Christos Kartsaklis</u>
14:50h - 15:15h	Paper <b>A GPU Algorithm for Greedy Graph Matching</b> <u>B. O. Fagginger Auer</u> , R. H. Bisseling

15:15h - 15:45h	Coffee Break and Poster Session
15:45h - 17:15h	Tutorial <b>Unleash the Power of Modern CPUs through Vectorization and Parallelization</b> Hans Pabst, Intel

18:00h - 19:30h	Social Event: <b>ZKM Car Culture</b>
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## Friday, September 30, 2011

Paper Session V	<b>Parallel Numerical Methods</b> <span style="float: right;">Chair: R. Keller</span>
09:00h - 09:25h	Paper <b>Efficient AMG on Heterogeneous Systems</b> <u>Jiri Kraus</u> , Malte Förster
09:25h - 09:50h	Paper <b>A GPU-Accelerated Parallel Preconditioner for the Solution of the Boltzmann Transport Equation for Semiconductors</b> <u>Karl Rupp</u> , Ansgar Jüngel, Tibor Grasser
09:50h - 10:15h	Paper <b>Parallel Smoothers for Matrix-based Geometric Multigrid Methods on Locally Refined Meshes Using Multicore CPUs and GPUs</b> Vincent Heuveline, <u>Dimitar Lukarski</u> , Nico Trost, Jan-Philipp Weiss
10:15h - 10:45h	Coffee Break and Poster Session
10:45h - 11:35h	Short Talks II (4 Talks) <b>Effects of 3-D Stacked Vector Cache on Energy Consumption</b> Ryusuke Egawa <b>Latency Reduction in Parallel Streaming Applications</b> Sebastian Mattheis <b>Communication Efficiency in ProActive</b> Marek Nowicki <b>Towards Efficient Two-Level Preconditioned Conjugate Gradient on the GPU</b> Rohit Gupta
11:35h - 12:45h	Panel Discussion <b>Where does Manycore Lead Us? Where are we now?</b> Rich Vuduc, Victor Pankratius, Hans Pabst, Jan-Philipp Weiß

12:45h-13:45h	Lunch Break
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13:45h - 14:35h	<p>Short Talks III <span style="float: right;">Chair: D. Kramer</span></p> <p><b>The symbolic manipulation system FORM and its parallelization</b> Takahiro Ueda</p> <p><b>Evaluation of maximum likelihood fits on GPU devices using CUDA</b> Felice Pantaleo</p> <p><b>Employing a High-Level Language for Porting Numerical Applications to Reconfigurable Hardware</b> Mareike Schmidtbreick</p> <p><b>Analysis of Event Processing Design Patterns and their Performance Dependency on I/O Notification Mechanisms</b> Ronald Strebelow</p>
14:35h - 14:45h	Wrap-Up and Closing

	<b>Overview of Posters</b>
	<p><b>Two Level Preconditioned CG Method on the GPU</b> Rohit Gupta</p> <p><b>A GPU Parallel Coordinate Descent Method for Large-Scale Truss Topology Design</b> Martin Takac</p> <p><b>Verifying Programs on Relaxed Memory Models</b> Alexander Linden</p>