

Conference Agenda

International Conference on Parallel Computing

Date: Tuesday, 12/Sep/2017

8:30 - 9:00	Registration				
9:00 - 9:15	Conference Opening				
9:15 - 9:45	Opening Speech: Maria Chiara Carrozza				
9:45 - 10:00	Announcements				
10:00 - 10:30	Keynote Talk 1: Gustav Kalbe				
10:30 - 11:00	Keynote Talk 2: Andris Ambainis				
11:00 - 11:30	Coffee Break & Exhibition				
11:30 - 12:30	<p>A1: High Performance Numerical Solving - 1</p> <p>Application of Eisenstat-SSOR Preconditioner to Realistic Stress Analysis Problem by Parallel Cache-Cache Computing <u>Kuniyoshi Abe, Seiji Fujino</u></p> <p>Communication avoiding Neumann expansion preconditioner for LOBPCG method: Convergence property of exact diagonalization method for Hubbard model <u>Susumu Yamada, Toshiyuki Imamura, Masahiko Machida</u></p>	<p>B1: Parallel Systems for Physics and Simulations - 1</p> <p>Further aspects of a performance portable framework for molecular simulations <u>William Robert Saunders, Eike Hermann Müller, James Grant</u></p> <p>Modeling of Water Purification on Supercomputers Tatiana Kudryashova, Sergey Polyakov</p>	<p>C1-REPARA: Third International Workshop on Reengineering for Parallelism in Heterogeneous Parallel Platforms - 1</p>	<p>D1-ParaFPGA: Keynote - Christian Pilato: Bridging the Gap between Software and Hardware Designers</p>	E1-MiniSymp
12:30 - 14:00	Lunch				
14:00 - 15:00	<p>A2: High Performance Numerical Solving - 2</p> <p>Porting of the DBCSR library for</p>	<p>B2: Parallel Systems for Physics and Simulations - 2</p> <p>Memetic Phase Retrieval and HPC for the Imaging of Matter</p>	<p>C2-REPARA: Third International Workshop on Reengineering for Parallelism in Heterogeneous Parallel Platforms -</p>	<p>D2-ParaFPGA: High Level Synthesis techniques and applications</p>	E2-MiniSymp

	<p>Sparse Matrix-Matrix Multiplications to Intel Xeon Phi systems Iain Bethune, Andreas Gloess, Juerg Hutter, Alfio Lazzaro, Hans Pabst, Fiona Reid</p> <hr/> <p>Performance Prediction of a Parallel-in-Time Solver based on MGRIT. Valeria Mele, Emil Costantinescu, Luisa Carracciuolo, Luisa D'Amore</p>	<p>at Atomic Resolution <u>Alessandro Colombo</u>, Liberato De Caro, Davide Emilio Galli</p> <hr/> <p>Benchmarking a hemodynamics application on Intel based HPC systems: preliminary results Ferdinando Auricchio, Marco Fedele, Marco Ferretti, Adrien Lefieux, Rodrigo Romarowski, <u>Luigi Santangelo</u>, Alessandro Veneziani</p>	2		
15:30 - 16:00	Coffee Break & Exhibition				
15:30 - 18:30	<p>A3: High Performance Numerical Solving - 3</p> <p>On parallel performance and numerical stability of the pipelined Conjugate Gradient and BiCGStab algorithms <u>Siegfried Cools</u>, Jeffrey Cornelis, Wim Vanroose</p> <hr/> <p>Solving Sparse Linear Systems of Equations using CAF Ambra Abdullahi Hassan, Valeria Cardellini, Salvatore Filippone</p> <hr/> <p>Design Towards Modern High Performance LA Library Enabling Heterogeneity and Flexible Data Formats Toshiyuki Imamura, Daichi Mukunoki, Yusuke Hirota, Susumu Yamada, Masahiko Machida</p> <hr/> <p>Spectral acceleration of parallel iterative eigensolvers for large scale scientific computing</p>	<p>B3: Parallel Systems for Physics and Simulations - 3</p> <p>A Highly-Scalable, Algorithm-Based Fault-Tolerant Solver for Gyrokinetic Plasma Simulations Michael Obersteiner, Alfredo Parra Hinojosa, Heene Mario, Hans-Joachim Bungartz, Dirk Pflüger</p> <hr/> <p>Parallel ray tracing algorithm for numerical analysis in radiative media physics Olga Olkhovskaya, Vladimir Gasilov, Mikhail Yakobovskiy, Alexey Kotelnikov</p> <hr/> <p>A Parallel Simulator of Quench in Superconducting Magnets <u>Giuseppe Ciaccio</u>, Valerio Calvelli, Fabio Di Benedetto</p> <hr/> <p>SPMC: Scalable Python Markov Chain Monte Carlo with application to Bayesian parameter inference in stochastic ecological models Jonas Sukys, Mira Kattwinkel</p> <hr/> <p>A Parallel Module for Multiblock Structured Grids in JASMIN and its Applications <u>Hong Guo</u>, Aiqing Zhang,</p>	<p>C3-REPARA: Third International Workshop on Reengineering for Parallelism in Heterogeneous Parallel Platforms - 3</p>	<p>D3-ParaFPGA: Spatial computing</p>	<p>E3-MiniSymp</p>

Luca Bergamaschi,
Angeles Martinez

Scalable block-tridiagonal eigensolvers in the context of electronic structure calculations

Alejandro Lamas Daviña, Xavier Cartoixà, Jose E. Roman

Solving Sparse Triangular Systems on a Multicore Machine

Sirine Marrakchi,
Mohamed Jemni

Zeyao Mo

Performance Evaluation and Optimization of MagnetoHydroDynamic Simulation for Planetary Magnetosphere with Xeon Phi KNL

Keiichiro Fukazawa,
Takeshi Soga, Takayuki Umeda, Takeshi Nanri

Date: Wednesday, 13/Sep/2017

9:00 - 10:00	Keynote Talk 3: Marco Aldinucci				
10:00 - 11:00	<p>A4: Real-Time and Adaptive Systems - 1</p> <p>Optimizing Communication and Synchronization in CAF Applications Alessandro Fanfarillo, Davide Del Vento, Patrick Nichols</p> <hr/> <p>Self-scheduling for Heterogeneous Distributed Tasks Luis A. García-González, César R. García-Jacas, Liesner Acevedo-Martinez, Rafael Trujillo-Rasua, Dirk Roose</p>	<p>B4: Energy Awareness and Efficiency - 1</p> <p>A Bottleneck-centric Tuning Policy for Optimizing Energy in Parallel Programs Mark Endrei, Chao Jin, Minh Dinh, David Abramson, Heidi Poxon, Luiz Derose, Bronis R de Supinski</p> <hr/> <p>Energy Saving and Thermal Management Opportunities in a Workload-Aware MPI Runtime for a Scientific HPC Computing Node Daniele Cesarini, Andrea Bartolini, Luca Benini</p>	<p>C4: GPU computing - 1</p> <p>Comprehensive Optimization of Parametric Kernels for Graphics Processing Units Xiaohui Chen, Marc Moreno Maza, Ning Xie</p> <hr/> <p>Strategies for Forward Modelling of Infrared Radiative Transfer on GPUs Paul F Baumeister, Benedikt Rombach, Thorsten Hater, Sabine Griessbach, Lars Hoffmann, Markus Buehler, Dirk Pleiter</p>	<p>D4-E-Aware: Energy Aware Scientific Computing on low power and heterogeneous architectures - 1</p>	E4-MiniSymp
11:00 - 11:30	Coffee Break & Exhibition				
11:30 - 12:30	<p>A5: Real-Time and Adaptive Systems - 2</p> <p>State-Aware Concurrency Throttling Daniele De Sensi, Peter Kilpatrick, Massimo Torquati</p> <hr/> <p>On architecture for future petascale computing Ludek Kucera</p>	<p>B5: Energy Awareness and Efficiency - 2</p> <p>Optimizing a RBF Interpolation Solver for Energy on Heterogeneous Systems Patrick Schiffmann, Dirk Martin, Gundolf Haase, Günter Offner</p> <hr/> <p>Implications of Reduced-Precision Computations in HPC: Performance, Energy and Error Stefano Cherubin, Giovanni Agosta, Imane Lasri, Erven Rohou, Olivier Sentieys</p>	<p>C5: GPU computing - 2</p> <p>Real-Time Simulation and Prognosis of Smoke Propagation Using GPUs - Complex Geometries and Dynamic Domain Extension Anne Severt, Lukas Arnold</p> <hr/> <p>GPU Accelerated Storage Efficient Implementation of the QR Decomposition Peter Benner, Martin Köhler, <u>Carolin Penke</u></p>	<p>D5-E-Aware: Energy Aware Scientific Computing on low power and heterogeneous architectures - 2</p>	E5-MiniSymp
12:30 - 14:00	Lunch				

<p>14:00 - 15:00</p>	<p>A6: Real-Time and Adaptive Systems - 3</p> <p>CalCul: A Python-based Workspace for High-Performance Parameters-Survey in Scientific Legacy Codes <u>Gal Oren</u>, Guy Malamud</p> <hr/> <p>Comparing Actor System Topologies and Parameters Using BeCoMe Marco Grebe, Tilman Lacko, Rita Loogen</p>	<p>B6: Energy Awareness and Efficiency - 3</p> <p>Design-time Analysis for the READEX Tool Suite Anamika Chowdhury, Madhura Kumaraswamy, Michael Gerndt</p> <hr/> <p>A nature-inspired, anytime and parallel algorithm for Big Data stream clustering Giandomenico Spezzano, <u>Andrea Vinci</u></p>	<p>C6: GPU computing - 3</p> <p>A fast implementation of a multidomain spectral finite elements method on CPU and GPU applied to ultrasound propagation <u>Carlos Carrascal-Manzanares</u>, Alexandre Imperiale, Gilles Rougeron, Vincent Bergeaud, Lionel Lacassagne</p> <hr/> <p>SYCL-BLAS: Combining expression trees and kernel fusion on heterogeneous systems <u>José I. Aliaga</u>, Ruyman Reyes, Mehdi Goli</p>	<p>D6-E-Aware: Energy Aware Scientific Computing on low power and heterogeneous architectures - 3</p>	<p>E6-MiniSymp</p>
<p>15:00 - 15:30</p>	<p>Coffee Break & Exhibition</p>				
<p>15:30 - 18:00</p>	<p>Session 7: Industrial Session</p>				

Date: Thursday, 14/Sep/2017

9:00 - 10:00	Keynote Talk 4: Didier El Baz				
10:00 - 11:00	<p>A8: GPU computing - 4</p> <p>3D Ultrasound Imaging with a GPU-based Chirp Zeta Transform Beamforming Maria Palmese, Andrea Trucco, Angelo Corana, Francesco Dondi, Maurizio Mongelli</p> <hr/> <p>Parallel Scientific Workflow Management Systems on GPU : experiments with Chiron and SPOC Racha Ahmad, Vitor Sousa, Daniel de Oliveira, Mathias Bourgoïn, Marta Mattoso, Emmanuel Chailloux</p>	<p>B8: High Performance Graph Analytics - 1</p> <p>Using Complex-Network Properties For Efficient Graph Analysis Thomas Messi Nguélé, Maurice Tchunte, Jean-François Méhaut</p> <hr/> <p>Characterization of genomic data using graph databases Mattia D'Antonio, Paolo D'Onorio De Meo, Giuseppe Fiameni, Claudio Cacciari</p>	<p>C8: Load Balancing and Fault Tolerance - 1</p> <p>Improving the Performance of Parallel SpMV Operations on NUMA Systems with Adaptive Load Balancing Christian Neugebauer, Rudolf Berrendorf, Florian Mannuss</p> <hr/> <p>Load balancing with p4est for Short-Range Molecular Dynamics with ESPResSo Steffen Hirschmann, Malte Brunn, Dirk Pflüger, Colin W. Glass</p>	<p>D8: Compiler Directives for Parallel Computing - 1</p> <p>Task Based Parallelism with OpenMP: A Case Study with DL_POLY_4. Aidan Bernard, Gerard Chalk, Alin Marin Elena, Luke Mason</p> <hr/> <p>An efficient SIMD implementation of pseudo-Verlet lists for neighbour interactions in particle-based codes James S. Willis, Matthieu Schaller, Pedro Gonnet</p>	E8-MiniSymp
11:00 - 11:30	Coffee Break & Exhibition				
11:30 - 12:30	<p>A9: Efficient I/O and Networking</p> <p>Parallel IO in the LFRic Infrastructure Samantha Vanessa Adams, Olga Abramkina, Yann Meurdesoif, Mike Rezny</p> <hr/> <p>Distributed event-based computing Andrew David Brown, Simon William Moore, David Barrie Thomas, Andrey Andrey Mokhov, Jeffrey Stephen Reeve</p>	<p>B9: High Performance Graph Analytics - 2</p> <p>Efficient multi GPU implementation of exact and approximated k-Nearest Neighbour Search Adrian Marek Klusek, Witold Dzwiniel</p> <hr/> <p>Optimal Diffusion for load balancing in regular graphs Katerina Dimitrakopoulou, Nikolaos M. Missirlis</p>	<p>C9: Load Balancing and Fault Tolerance - 2</p> <p>Dynamic Load Balancing of Monte Carlo Particle Transport Applications on HPC Clusters Thomas Gonçalves, Marc Pérache, Frédéric Desprez, Jean-François Méhaut</p> <hr/> <p>Enabling Application-Integrated Proactive Fault Tolerance Dai Yang, Josef Weidendorfer, Carsten Trinitis, Tilman Küstner</p>	<p>D9: Compiler Directives for Parallel Computing - 2</p> <p>Exploiting Hierarchical Parallelism in an Astrophysical Equation of State using OpenACC and OpenMP Bronson Messer, Thomas Papatheodore</p> <hr/> <p>ON THE IMPLEMENTATION OF OPENMP AND HYBRID MPI/OPENMP PARALLELIZATION STRATEGIES FOR AN EXPLICIT DG SOLVER Andrea Crivellini, Matteo Franciolini</p>	E9-MiniSymp
12:30 - 14:00	Lunch				
14:00 - 15:00	Keynote Talk 5: Jack Dongarra				

15:00	Coffee Break & Exhibition
-	
16:00	

16:00	Social Event: Excursion & Conference Dinner
-	
22:30	

Date: Friday, 15/Sep/2017

9:00 - 10:00	Keynote Talk 6: Thomas Ludwig				
10:00 - 11:00	<p>A10: Parallel Solutions for AI and Machine Learning</p> <p>Implementing Deep Neural Networks on Fresh Breeze Jack Dennis, Lei Huang, William Lim, Hsiang-Huang Wu, Yuzhong Yan</p> <hr/> <p>A performance study of machine and deep learning frameworks on CINECA HPC systems Giuseppe Fiameni, Riccardo Zanella</p>	<p>B10: Big Data Analytics</p> <p>Predicting Dataset Popularity for CMS Big Data Marco Meoni, Raffaele Perego, Nicola Tonellotto</p>	<p>C10: Parallelism in Constrained and Custom Devices</p> <p>Deeply Heterogeneous Many-Accelerator Infrastructure for HPC Architecture Exploration José Flich, Alessandro Cilaro, Mario Kovač, Rafael Tornero, Jose Maria Martínez, Tomas Picornell</p>	D10-EDGE: IoT and Edge Computing - 1	E10-MiniSymp
11:00 - 11:30	Coffee Break & Exhibition				
11:30 - 13:00	<p>A11: High-level Parallel Programming Models</p> <p>Towards Distributed Parallel Programming Support for the SPar DSL Dalvan Griebler, Luiz Gustavo Fernandes</p> <hr/> <p>An Easy High Level Programming Front-End for Concurrent Collections Gervasio Daniel Perez, Sergio Fabian Yovine</p> <hr/> <p>High-level Parallel Implementation of Swarm Intelligence-based Optimization Algorithms with Algorithmic Skeletons Fabian Wrede, Breno Augusto de Melo Menezes, Luis Filipe de Araujo Pessoa, Bernd Hellingrath, Fernando Buarque</p>	<p>B11: Array Programming</p> <p>Vectorization Strategies for Ant Colony Optimization on Intel Architectures Victoriano Montesinos, José Cánovas, José Manuel García Carrasco</p> <hr/> <p>A GPU Based Optimization Strategy Efficient on Other Modern Architectures Ludomir Oteski, Guillaume Colin de Verdière, Sylvain Contassot-Vivier, Stéphane Vialle, Juliette Ryan</p>	<p>C11: Parallel Programming and Clouds</p> <p>Adaptive Execution of Parallel Programs on Grids and Clouds Vaidy Sunderam</p> <hr/> <p>Scientific Workflows on Clouds: optimize performance and resource utilization in a cost-effective HPC virtual cluster Fabio Tordini, Ivan Merelli, Pietro Liò, Marco Aldinucci</p>	D11-EDGE: IoT and Edge Computing - 2	E11-MiniSymp

	de Lima Neto, Herbert Kuchen				
13:00	Closing Session				
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13:15					
13:15	Lunch				
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14:30					