PaCT-2017 Program

MONDAY, September 4	
19:00	**PaCT-2017 WELCOME PARTY**
TUESDAY, September 5	
8:00-9:00	**REGISTRATION AND WELCOME COFFEE**
8:50-9:00	**OPENING SESSION**
9:00-10:30	**OVERTURE** **Chair: Roman Wyrzykowski**
9:00-9:30	*Accelerated analysis of biological parameters space using GPUs* Marco Nobile, Giancarlo Mauri
9:30-10:00	*Experimenting with a context-aware language,* Chiara Bodei, Pierpaolo Degano, Gian-Luigi Ferrari, Letterio Galletta
10:00-10:30	*Parallel algorithm with modulus structure for simulation of seismic wave propagation in 3D multiscale multiphysics media* Vladimir Tcheverda, Vadim Lisitsa, Galina Reshetova, Victor Kostin
10:30-11:00	**COFFEE BREAK**
11:00-12:30	**SYSTEM ALGORITHMS FOR HETEROGENEOUS COMPUTER SYSTEMS** **Chair: Pierpaolo Degano**
11:00-11:30	*A novel string representation and kernel function for the comparison of I/O access patterns* Raul Torres, Julian Kunkel, Manuel Dolz, Thomas Ludwig
11:30-11:50	*Islands-of-cores approach for harnessing SMP/NUMA architectures in heterogeneous stencil computations* Lukasz Szustak, Roman Wyrzykowski, Ondrej Jakl
11:50-12:20	*Performance evaluation of two load balancing algorithms on a hybrid parallel architecture* Tiago Marques do Nascimento, Rodrigo Weber dos Santos, Marcelo Lobosco
12:20-12:30	**GENERAL ANNOUNCEMENTS AND PHOTO SESSION**
12:30-14:00	**LUNCH**

14:00-15:30	**TECHNOLOGICAL ASPECTS OF NUMERICAL MODELING** **Chair: Vladimir Tcheverda**
14:00-14:25	*Scalable computations of GeRa code on the base of software platform INMOST* Igor Konshin, Ivan Kapyrin
14:25-14:45	*Parallel algorithms for an implicit CFD solver on tree-based grids* Pavel Pavlukhin, Igor Menshov (KIAM RAS)
14:45-15:10	*Technological aspects of the hybrid parallelization with OpenMP and MPI* Oleg Bessonov
15:10 – 15:30	*Performance aspects of collocated and staggered grids for Particle-in-Cell plasma simulation* Sergey Bastrakov, Igor Surmin, Evgeny Efimenko, Arkady Gonoskov, Iosif Meyerov
15:30-16:00	**COFFEE BREAK**
16:00-17:25	**PARALLEL ALGORITHMS** **Chair: Thomas Ludwig**
16:00-16:25	*Application of graph models to the parallel algorithms design for the motion simulation of tethered satellite systems* Alexandr Kovartsev, Victor Zhidchenko
16:25-16:45	*Parallel algorithm for solving constrained global optimization problems* Konstantin Barkalov, Ilya Lebedev
16:45-17:05	*The DiamondTetris algorithm for maximum performance vectorized stencil computation* Anastasia Perepelkina, Vadim Levchenko
17:05 – 17:25	*Software implementation of mathematical model of thermodynamic processes in a steam turbine on high-performance system* Aleksandr Sukhinov, Aleksandr Chistyakov, Alla Nikitina, Irina Yakovenko, Vladimir Parshukov, Nikolay Efimov, Vadim Kopitsa, Dmitriy Stepovoy
WEDNESDAY, September 6	
9:00-10:30	**FINE GRAIN COMPUTATIONS AND DISCRETE SYSTEMS** **Chair: Achour Mostefaoui**
9:00-9:25	*A new class of smallest four-state FSSP partial solutions for one-dimensional ring cellular automata* Hiroshi Umeo
9:25-9:45	*Parallel implementation of cellular automaton model of the carbon corrosion under the influence of the electrochemical oxidation* Karl K. Sabelfeld, Eugene N. Gribov, Anastasiya Kireeva, Natalia Maltseva
9:45-10:10	*Finite and infinite computations and a classification of two-dimensional cellular automata* Louis D'Alotto

10:10 – 10:30	*Generating maximal domino patterns by cellular automata agents* Rolf Hoffmann, Dominique Désérable
10:30 – 11:00	***COFFEE BREAK***
11:00- 12:30	**SCHEDULING** **Chair: Sergei Gorlatch**
11:00- 11:30	*Cyclic anticipation scheduling in grid VOs with stakeholders preferences* Victor Toporkov, Dmitry Yemelyanov, Anna Toporkova, Petr Potekhin
11:30- 11:50	*An experimental study of workflow scheduling algorithms for heterogeneous systems* Alexey Nazarenko, Oleg Sukhoroslov
11:50- 12:10	*Comparison of auction methods for job scheduling with absolute priorities* Artem Tikhomirov, Pavel Telegin, Anton Baranov
12:10 – 12:30	*Stopwatch automata-based model for efficient schedulability analysis of modular computer systems* Alevtina Glonina, Anatoly Bahmurov
12:30- 14:00	**LUNCH**
14:00- 15:30	**APPLICATIONS: OPTIMIZATION** **Chair: Victor Toporkov**
14:00- 14:20	*Parallel computing for time-consuming multicriterial optimization problems* Evgeny Kozinov, Victor Gergel
14:20- 14:40	*A functional approach to parallelizing data mining algorithms in Java* Ivan Kholod, Sergei Gorlatch, Andrey Shorov
14:40- 15:10	*Parallelizing metaheuristics for optimal design of multiproduct batch plants on GPU* Andrey Borisenko, Sergei Gorlatch
15:10 – 15:40	*Energy efficiency of applications on the RCS Tornado computing cluster with liquid cooling in different temperature modes* Alexander Moskovsky
15:40- 17:00	**POSTER SESSION & COFFEE**
1	*Parallelizing inline data reduction operations for primary storage systems* Jeonghyeon Ma, Chanik Park
2	*The algorithm of control program generation for optimization of LuNA programs execution* Anastasia Tkacheva
3	*Parallel calculation of diameter constrained network reliability* Denis Migov, Sergei Nesterov
4	*Defining order of execution in Aspect programming language* Sergey Arykov
5	*Automation development framework of scalable scientific web applications based on subject domain knowledge* Igor Bychkov, Gennady Oparin, Vera Bogdanova, Anton Pashinin, Sergey Gorsky
6	*Auto-vectorization of loops on Intel 64 and Intel Xeon Phi: analysis and evaluation* Olga Moldovanova, Mikhail Kurnosov
7	*Multiple-precision residue-based arithmetic library for parallel CPU-GPU architectures:*

	data types and structure Konstantin Isupov, Alexander Kuvaev, Mikhail Popov, Anton Zaviyalov
8	*The implementation of cellular automata interference of two waves in LuNA fragmented programing system* Valentina Markova, Mike Ostapkevich
9	*Predictive modeling of suffocation in shallow waters on a multiprocessor computer system* Aleksandr Sukhinov, Albert Isayev, Aleksandr Chistyakov, Alla Nikitina, Vladimir Sumbaev, Maksim Abramov, Alena Semenyakina
10	*Distributed algorithm of dynamic multidimensional data mapping on multidimensional multicomputer in the LuNA fragmented programming system* Georgy Schukin, Victor Malyshkin
11	*PGAS approach to implement Mapreduce framework based on UPC language* Aday Shomanov, Darkhan Akhmed-Zaki, Madina Mansurova
12	*A parallel locally-adaptive 3D model on Cartesian nested-type grids.* Igor Menshov, Victor Sheverdin
13	*Fragmentation of IADE method using LuNA system* Sergey Kireev, Norma Alias
14	*Combining parallelization with overlaps and optimization of cache memory usage* Lev Gervich, Said Ammaev, Boris Steinberg
15	*Multi-granularity partitioning and scheduling method for streaming programs on multi-CPU and multi-GPU heterogeneous architectures* Junqing Yu，Wenbin Chen，Ruirui Yang
THURSDAY, September 7	
SOCIAL PROGRAM **CONFERENCE DINNER**	
FRIDAY, September 8	
9:00-10:30	**APPLICATIONS: OPTIMIZATION AND DATA ANALYSIS** **Chair: Dominique Désérable**
9:00-9:40	*Computations with numerical infinities and infinitesimals* Yaroslav D. Sergeyev
9:40 10:05	*A fine-grained parallel particle swarm optimization on many-core and multi-core architectures* Nadia Nedjah, Rogério Calazan, Luiza de Macedo Mourelle
10:05-10:30	*Globalizer - a parallel software system for solving global optimization problems* Alexander Sysoyev, Konstantin Barkalov, Vladislav Sovrasov, Ilya Lebedev, Victor Gergel
10:30-11:00	**COFFEE BREAK**

11:00-12:30	**DISTRIBUTED ALGORITHMS** **Chair: Evgeny Ivashko**
11:00-11:25	*A probabilistic causal message ordering mechanism* Achour Mostéfaoui, Stéphane Weiss
11:25-11:45	*Distributed data fusion for IoT* Rustem Dautov, Salvatore Distefano
11:45 – 12:10	*Properties of the conservative parallel discrete event simulation algorithm* Liliia Ziganurova, Lev Shchur
12:30-14:00	**LUNCH** **Meeting of the Program Committee** Papers selection for the special issue of an Int. Journal
14:00-15:30	**YOUNG SCIENTISTS SESSION** **Chair: Victor Gergel**
14:00-14:25	*Dynamic scheduling of computational workload for hybrid (CPU+GPU) multicomputers* Vladislav Perepelkin, Nikolay Belyaev
14:25-14:45	*Automated parallelization of a simulation method of elastic wave propagation in media with complex 3D geometry surface on high-performance heterogeneous clusters* Nikita Kataev, Alexander Kolganov, Pavel Titov
14:45 -15:10	*Congestion game scheduling implementation for high-throughput virtual drug screening using BOINC-based desktop grid* Natalia Nikitina, Evgeny Ivashko, Andrei Tchernykh
15:10 – 15:30	*The optimization of traffic management for cloud application and services in the virtual data center* Denis Parfenov, Irina Bolodurina
15:30-15:45	**CLOSING SESSION. AWARDS FOR BEST PAPERS.** **Co-chairs: Victor Gergel, Victor Malyshkin**

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