

**IX German-Russian Young Scientists' School and Conference on Parallel Programming and High Performance Computing**

Novosibirsk, Akademgorodok, July 10 – July 21

**Monday, July 10**

09:00 Registration

**10:00** **Opening**

**11:00** *Parallel hardware architectures and Supercomputing Technology (I)*

12:30 Lunch

**14:00** *Parallel hardware architectures and Supercomputing Technology (II)*  
*Supercomputing in Europe, PRACE*

15:30 Coffee break

**16:00** *Parallel Programming Models*

17:30 End of programme for the day

**Tuesday, July 11**

**10:00** *OpenMP: Introduction and Execution Model*

11:30 Coffee break

**12:00** *OpenMP: Worksharing Directives*

13:00 Lunch

**14:00** *OpenMP: Data Environment*

15:30 Coffee break

**16:00** *OpenMP: Pitfalls*  
*OpenMP 4.0 & 4.5 Extensions*

17:30 End of programme for the day

**Wednesday, July 12**

**10:00** *MPI Overview*

11:30 Coffee break

**12:00** *MPI Process Model*

13:00 Lunch

**14:00** *Point-to-Point Communication*

15:30 Coffee break

**16:00** *Non-Blocking Communication*

17:30 End of programme for the day

## Thursday, July 13

- 10:00 *Collective Communication*
- 11:30 Coffee break
- 12:00 *Error Handling & Virtual Topologies*
- 13:00 Lunch
- 14:00 *Groups & Communicators, Environment Management*
- 15:30 Coffee break
- 16:00 **Vladimir Kikhtenko**, ICT SB RAS «*Git: Version control systems*»
- 17:30 End of programme for the day

## Friday, July 14

- 10:00 *One-sided Communication*
- 11:30 Coffee break
- 12:00 *Shared Memory One-sided Communication*
- 13:00 Lunch
- 14:00 **Dennis Chirkov**, ICT SB RAS «*Using MPI and OpenMP to speed up non-stationary flow simulation of hydraulic turbines*»
- 14:40 T. Imankulov, **E.G. Kenzhebek**, KazNU «*Development of a hybrid (MPI+OpenMP) parallel algorithm for solving the Poisson equation* »
- 15:00 **N.M. Kassymbek**, T.S. Imankulov, KazNU «*Speedup of oil displacement problem simulation by using the potential of modern microprocessors*»
- 15:20 **D.V. Klyuchinskiy**, HFY «*Parallel implementation of linearized 1D Godunov scheme with OpenMP*»
- 15:40 Coffee break
- 16:00 **M.B. Mustafin**, T.S. Imankulov, KazNU «*Development of a hybrid (MPI+CUDA) parallel algorithm for solving the Poisson equation*»
- 16:20 **D. Yatzenko**, BIC SB RAS «*Computation of powder diffraction pattern from nanoparticles*»
- 16:40 **N.K. Kadyrbek**, M.E. Mansurova, KazNU «*Parallelization of automated factographic information extraction from text documents*»
- 17:00 **B.B. Dossanov**, KazNU «*Parallelization of automated lightweight ontology construction*»
- 17:20 End of programme for the day

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**Monday, July 17**

- 10:00** *Derived Datatypes*
- 11:30 Coffee break
- 12:00** *Parallel File I/O*
- 13:00 Lunch
- 14:00** *Parallel File I/O – fileviews*
- 15:30 *Coffee break*
- 16:00** *MPI and Threads*
- 17:30 End of programme for the day

**Tuesday, July 18**

- 10:00** *Domain Decomposition of structured and unstructured grids*
- 11:30 Coffee break
- 12:00** *Program optimization for single processor performance (I)*
- 13:00 Lunch
- 14:00** *Program optimization for single processor performance (II)*
- 15:30 Coffee break
- 16:00** *Program optimization for single processor performance (III)*
- 17:30 End of programme for the day

**Wednesday, July 19**

- 10:00** *HPC Clusters: Introduction & Infrastructure*
- 11:30 Coffee break
- 12:00** *HPC Cluster Network & Storage*
- 13:00 Lunch
- 14:00** *Cluster Operation Concepts & Batch Systems*
- 15:30 Coffee break
- 16:00** *Storage Concepts & Monitoring*
- 17:30 End of programme for the day

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**Thursday, July 20**

- 10:00** *Hybrid Programming on Modern Clusters*
- 11:30 Coffee break
- 12:00** *Introduction to PGAS Programming with GASPI*
- 13:00 Lunch
- 14:00** *Hackathon (I)*
- 15:30 Coffee break
- 16:00** *Hackathon (II)*
- 17:30 End of programme for the day

**Friday, July 21**

- 10:00** *Hackathon (III)*
- 11:30 Coffee break
- 12:00** *Hackathon presentation*  
*Closing*
- 13:00 End of programme for the School and Conference