Big Data Analysis Tasks on the «Govorun» Supercomputer (SCG2020)

On 16 September 2020, a scientific and memorial workshop dedicated to the 90th anniversary of the birth of Nikolai Nikolaevich Govorun took place in the Laboratory of Information Technologies of the Joint Institute for Nuclear Research. This person together with M.G. Meshcheryakov created the Laboratory of Computing Techniques and Automation (now the Laboratory of Information Technologies), and his contribution to the development of automation of scientific studies at JINR and in the USSR can hardly be overestimated. The seminar, which was held in a hybrid format, was attended by friends of Nikolai Nikolaevich and members of his family, employees of LIT and other JINR Laboratories, specialists of the Intel and "RSC Technologies" companies. The scientific part of the workshop "Big Data Analysis Tasks on the "Govorun" Supercomputer" (BDAT2020) was devoted to novel concepts and approaches implemented on the "Govorun" supercomputer to solve tasks facing JINR and related to Big Data analysis and processing.

The reports at the workshop covered both the issues of utilizing the "Govorun" supercomputer for theoretical research, for example, for complex resource-intensive calculations within lattice quantum chromodynamics, and the issues of experimental data processing. The latter comprised reports dedicated to data processing and analysis in high-energy physics, in particular, for the MPD experiment of the NICA megaproject, and to the application of neural network approaches to solve the tasks of HEP and radiation biology. A number of reports considered the use of Big Data analytics methods in solving applied tasks, specifically, in the socio-economic area.

Editors:

- **Vladimir V. Korenkov,** Doctor of Technical sciences, Director of the Laboratory of Information Technologies JINR
- **Dmitry V. Podgainy**, PhD, Heterogeneous Computing Team Leader of the Laboratory of information technology JINR
- **Andrey V. Nechaevskiy**, lead programmer of the Laboratory of information technology JINR

Program Committee:

- **Vladimir V. Korenkov,** Doctor of Technical sciences, Director of the Laboratory of Information Technologies JINR
- **Alexander B. Degtyarev**, Doctor of Technical sciences, Professor of Department of Computer Modelling and Multiprocessor Systems, Saint Petersburg State University
- **Alexander A. Moskovsky**, CEO, Russian Supercomputer Technologies, Moscow

Workshop programme:

- "Govorun" supercomputer for JINR tasks
  D.V. Podgainy (LIT)
- Lattice QCD simulation on the "Govorun" supercomputer
  V.V. Braguta (LTP, NRC «Kurchatov Institute» – ITEP)
- Computing for the MPD experiment
  O.V. Rogachevsky (VBLHEP)
- Neural network approach for the tasks of high energy physics
  G.A. Ososkov (LIT)
- Machine and deep learning algorithms for the tasks of radiation biology
  A.V. Stadnik (LIT)
- Organizing work with Big Data on the "Govorun" supercomputer
  A.A. Moskovsky (RSC Technologies)
- Platform for stream and batch processing of Big Data on the example of network traffic analysis
  I.S. Kadochnikov (LIT)
- Overview of methods for intellectual processing of texts in socio-economic applications
  S.D. Belov (LIT)
- On the way from virtual computing to virtual data processing
  A.B. Degtyarev (SPbU)
- An Approach for Image Quality Assessment Using Intuitionistic Fuzzy Sets
  A.V. Nechaevskiy (JINR)

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Vladimir V. Korenkov, Dmitry V. Podgainy, Andrey V. Nechaevskiy