

Название публикации:

IT-ecosystem of the hybrilit heterogeneous platform for high-performance computing and training of IT-specialists

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Аннотация:

HybriLIT heterogeneous platform that is a component of the Multifunctional Information and Computing Complex (MICC) of Joint Institute for Nuclear Research. HybriLIT includes GOVORUN supercomputer and education and testing polygon; its platform is based on the latest computation architectures (processors; co-processors; graphical accelerators), and also modern software such as Intel Cluster Studio, CUDA, MATLAB, etc; thus, allowing to carry out extra-massive computations and reach sufficient acceleration, and also to provide training courses on parallel programming technologies and work on HPC-platforms for students, PhD students and young scientists [1]. In order to increase the efficiency of work on the heterogeneous platform HybriLIT, there appears a need to develop an information-computing environment for work with parallel programming technologies that provides users with possibility to use the resources of the supercomputer for carrying out resource-intensive and massive parallel tasks, use the applied software packages adapted for hybrid architectures, and also develop and debug applications using modern IT solutions and frameworks such as machine learning approaches for accelerating experimental data analysis. Software and information environment are also a convenient tool for organization of tutorials. The developing software and information environment, together with a heterogeneous computing system and a components for providing computations using application packages with a developed graphical interface, form an IT-ecosystem that allows you not only to carry out effective HPC computations, but it is also a fruitful platform for training IT-specialists in the HPC-sphere. © 2018 Gheorge Adam, Maxim Bashashin, Dmitry Belyakov, Margarit Kirakosyan, Mikhail Matveev, Dmitry Podgainy, Tatiana Sapozhnikova, Oksana

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Ключевые слова:

Education programs, Heterogeneous platforms, High performance computing, IT Ecosystem, Parallel programming technologies