ЛАБОРАТОРИЯ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

Thursday, 29 August 2019, at 15.00
Room 310

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Lattice QCD multiGPU simulation on HybriLIT cluster

Lattice QCD is a very computationally demanding method that allows to reliably study QCD in the strong coupling regime. Lattice QCD poses several numerical challenges such as GPU memory limitation and inversion of large and ill-conditioned matrices. In the recent 2-3 years it was realized that multiGPU algorithms can address these challenges and provide us with the opportunity to study QCD in previously unreachable regimes. In this talk I will present the multiGPU algorithm developed by the JINR and ITEP lattice group (Kotov, Nikolaev, Astrakhantsev). I will cover several multiGPU programming subtleties that are necessary to create high-performance Lattice QCD code and will discuss the multiGPU programming opportunities at the HubriLIT cluster.