



Contribution ID: 58

Type: Talk

## Observation of deconfinement in a cold dense quark medium

*Monday, 21 May 2018 17:30 (30 minutes)*

We present the recent results on the confinement/deconfinement transition in lattice SU(2) QCD with two flavors of quarks at finite quark density and zero temperature. In the region  $\mu_q \sim 1000$  MeV we observe the confinement/deconfinement transition which manifests itself in rising of the Polyakov loop and vanishing of the string tension  $\sigma$ . After the deconfinement is achieved at  $\mu_q > 1000$  MeV we observe a monotonous decrease of the spatial string tension  $\sigma_s$  which ends up with  $\sigma_s$  vanishing at  $\mu_q > 2000$  MeV. To study the properties of cold dense quark medium we measure the dependence of chiral and diquark condensates, quark density, topological susceptibility and other physical quantities on the chemical potential.

**Primary authors:** Dr NIKOLAEV, Aleksandr (Far Eastern Federal University); Dr MOLOCHKOV, Alexander (Far Eastern Federal University); Mr KOTOV, Andrey (ITEP); Dr ILGENFRITZ, Ernst-Michael (JINR Dubna, BLTP); Dr BRAGUTA, Victor (ITEP); Dr BORNIAKOV, Vitaly (Institute for High Energy Physics NRC "Kurchatov Institute")

**Presenter:** Dr NIKOLAEV, Aleksandr (Far Eastern Federal University)

**Session Classification:** Contributed Talks