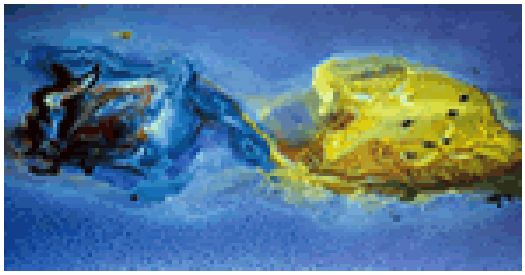

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Study of deconfined quark matter at zero temperature and high density

Sunday, 5 August 2018 17:10 (20 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 σ. After the deconfinement is achieved at $\mu_q > 1000$ MeV we observe a monotonous decrease of the spatial string tension σ_s which ends up with σ_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, color singlet and triplet free energies and other physical quantities on the chemical potential.

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