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Phase diagram of QCD in (B,T,μ) space from analytical continuation

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We study the phase diagram of QCD at nonzero temperature, chemical potential and magnetic field. Simulations are performed with $N_f=2+1$ stout improved staggered quarks (with physical masses) and nonzero imaginary chemical potential. Results for real μ values are obtained by means of analytical continuation. By studying the renormalized chiral condensate and its dependence on the parameters of the system we measure the position and the width of the chiral phase transition. We determine the curvature of chiral pseudo-critical line (in the $T-\mu$ plane) of QCD and its dependence on the magnitude of the magnetic field.

Authors: Dr BRAGUTA, Victor (ITEP); KOTOV, Andrey; Dr NIKOLAEV, Aleksandr (Swansea University); Dr CHERNODUB, Maxim (University of Tours, CNRS); MOLOCHKOV, Alexander (Far Eastern Federal University)

Presenter: KOTOV, Andrey

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