DNP10-2010-000026

Abstract for an Invited Paper
for the DNP10 Meeting of
the American Physical Society

Exploring the QCD landscape with high-energy nuclear collisions

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Physical systems undergo phase transitions when external parameters such as the temperature or density are varied. In general, the phase diagram reflects our understanding how the system reacts to given fundamental interactions. Quantum chromodynamics (QCD), the basic theory of strong interactions, is no exception and has a phase diagram in four dimension (corresponding to temperature, and 3 chemical potentials for conserved charge, baryon number and strangeness). The two fundamental properties of QCD, related to confinement and chiral symmetry, allow for two corresponding phase transitions in the theory. The QCD scale factor $\sim$ 200 MeV allows for the phase diagram to be explored experimentally by colliding nuclei at varying beam energies. Theoretically it is explored through QCD calculations on lattice by at varying temperature and chemical potentials. In this talk, after briefly discussing the lattice QCD results on phase transition and existence of a critical point in the phase diagram, we will review the related observations from high energy nuclear collision experiments at the LHC and at RHIC. Particular emphasis will be given to recent experimental efforts to locate the critical point.