

Nuclear Experiment

A Study of the QCD Critical Point Using Particle Ratio Fluctuations

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Dynamical fluctuations in global conserved quantities such as baryon number, strangeness, or charge may be observed near a QCD critical point. Results from new measurements of dynamical K/π and p/π ratio fluctuations are presented. The commencing of a QCD critical point search at RHIC has extended the reach of possible measurements of dynamical K/π and p/π ratio fluctuations from Au+Au collisions to lower energies. The STAR experiment has performed a comprehensive study of the energy dependence of these dynamical fluctuations in Au+Au collisions at the energies $\sqrt{s_{NN}} = 7.7, 11.5, \text{ and } 39 \text{ GeV}$. New results are compared to previous measurements and to theoretical predictions from several models.

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