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Initial fluctuations and dynamical fluctuations in small systems

Relativistic heavy-ion collisions provide opportunities for people to explore new material states Quark Gluon Plasma (QGP). As the limit of the QGP material generation system, the small collision system is a topic of great concern at present. Both theoretical and experimental results point out that the collective flow that characterizes the existence of QGP has a significant signal in the small collision systems. In this discussion, we will study the properties of QGP from fluctuation signals. The fluctuation of the collective flow of the small collision system in LHC not only depends on the initial conditions and the collision multiplicity, but also obviously depends on the dynamic fluctuation of the QGP expansion. Such fluctuations are obviously different in the p-pb and Pb-Pb collisions. Of course, these differences are caused by the fluctuations of initial color charge. The study of various fluctuation signal sources provides necessary theoretical support for experimental exploration of the basic properties of possible QGP droplets.

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