

The hydrodynamics description of anisotropic flow and flow fluctuations in $\sqrt{s_{NN}}=5.02$ TeV Pb-Pb collisions at the LHC

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Initial state fluctuations and final state anisotropic flows have provided powerful tools for studying the evolution dynamics and transport properties of quark-gluon plasma produced in relativistic heavy-ion collisions. The quantitative research on anisotropic flow fluctuations may provide a unique potential to constrain the initial state models of heavy-ion collisions.

In this talk, we present detailed hydrodynamic studies on the flow and flow fluctuations in $\sqrt{s_{NN}}=5.02$ TeV Pb-Pb collisions at the LHC. The elliptic flows and their fluctuations are calculated as a function of transverse momentum and centrality. Our result demonstrates that flow fluctuation is sensitive to the initial state models, especially the granularity of the initial state fluctuations. We further investigate the transverse momentum decorrelation of the flow angle and magnitude and find that their decorrelation is sensitive to initial model and insensitive to transport properties of the QGP.

Theory / experiment

Theory

Group or collaboration name

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