

Impact of nuclear deformation on longitudinal flow decorrelations in high-energy isobar collisions

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Fluctuations of harmonic flow along pseudorapidity η , known as flow decorrelations, is an important probe of the initial condition and final state evolution of the quark-gluon plasma. We show that the flow decorrelations are sensitive to the deformations of the colliding nuclei. This sensitivity is revealed clearly by comparing flow decorrelations between collisions of isobars, $^{96}\text{Zr}+^{96}\text{Zr}$ and $^{96}\text{Ru}+^{96}\text{Ru}$, which have different deformations. Longitudinal flow decorrelations in heavy-ion collisions is a new tool to probe the structure of colliding nuclei.

Theory / experiment

Theory

Group or collaboration name

Author: Dr NIE, Maowu (Shandong University (SDU))

Presenter: Dr NIE, Maowu (Shandong University (SDU))

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