

Probing the nuclear deformation with three-particle asymmetric cumulant in isobar collisions at RHIC

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Isobar collisions at RHIC provide unique opportunities to study the geometry and fluctuations raised from the deformation of the colliding nuclei. Using iEBE-VISHNU hybrid model, we predict $ac_2\{3\}$ ratios between these two collision systems and demonstrate that the ratios of $ac_2\{3\}$, as well as the ratios of the involving flow harmonics and event-plane correlations, are sensitive to quadrupole and octupole deformations, which provides strong constrain on the shape differences between Ru and Zr.

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