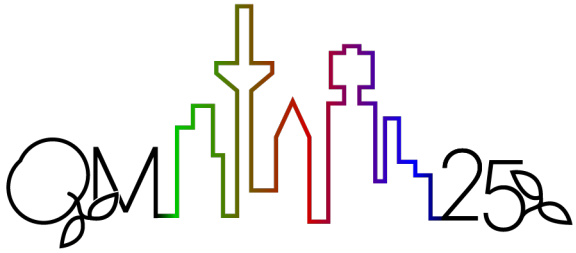

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Anisotropic flow in O-O collisions from a hybrid approach

In small collision systems like O-O, the initial energy density profile and pressure gradients driving anisotropic flow are expected to exhibit greater fluctuations compared to larger systems such as Pb–Pb. This emphasizes the significance of initial nuclear geometry and raises questions about the applicability of hydrodynamic evolution in this regime. Investigating collective signals in these small systems can provide critical insights into the dynamics of the quark-gluon plasma.
To explore this, we compare several models: the hadronic transport model SMASH, the SMASH-vHLLE-hybrid approach, and Angantyr, which serves as a baseline without collective effects. Our setup allows to compare calculations with and without hydrodynamic evolution on equal footing. We calculate the elliptic and triangular flow coefficients as a function of centrality and multiplicity in O-O collisions at sqrt(s)=7TeV, using both Woods-Saxon and alpha-clustered nuclear configurations. Our results demonstrate that the impact of nuclear configuration on these observables is highly model-dependent.

Category

Theory

Collaboration (if applicable)

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