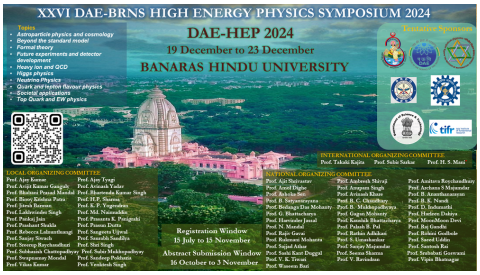

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Anisotropic flow predictions for identified and strange hadrons in $O + O$ collisions at $\sqrt{s_{\rm NN}}$ = 7 TeV at the LHC

The upcoming $O + O$ collision run at the Large Hadron Collider (LHC) at $\sqrt{s_{\rm NN}}$ = 7 TeV offers a unique opportunity to explore the behavior of matter under extreme conditions, bridging the gap between small and large collision systems. In this study, we provide predictions for the transverse momentum (p_T) spectra and flow observables for different centrality classes in $O + O$ collisions. Our predictions utilize two different approaches, including hydrodynamic and transport models, to analyze the behavior of the particle spectra and flow coefficients for identified (pions, kaons, protons) and strange hadrons. We explore particle-by-particle flow behavior and compare the response of the system to initial conditions across various models, which provide insights into the underlying partonic and hadronic dynamics. The study presents comparisons of flow harmonics (i.e, v_n, n=2, 3, ...) with the existing experimental measurements and demonstrates how $O + O$ collisions can serve as a benchmark to understand the transition from small to large systems, contributing to our knowledge of the Quark-Gluon Plasma (QGP) and collective phenomena in heavy-ion collisions.

Field of contribution

Phenomenology

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