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p_T dependent correlation between initial spatial anisotropy and final momentum anisotropy in heavy ion collisions

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The initial spatial asymmetry of the overlapping zone between two colliding nuclei in heavy ion collisions gives rise to the final momentum anisotropy characterized by the anisotropic flow parameters. The efficiency of conversion from initial spatial anisotropy (ϵ_n) to final momentum anisotropy (v_n) is quantified by the linear correlation between ϵ_n and v_n. We have studied the transverse momentum, collision centrality and beam energy dependence of the correlation for charged particles using a hydrodynamical model framework [1]. The p_T dependent correlation shows a strong dependence on the mass and p_T of the emitted particles. In addition, we see that the relative fluctuation in anisotropic flow is strongly sensitive to the value of shear viscosity of the medium whereas the correlation coefficient shows no such dependence on η/s.
Reference:
[1] S.Thakur, S.K.Saha, P.Dasgupta, R.Chatterjee and S.Chattopadhyay,"p_T dependence of the correlation between initial spatial anisotropy and final momentum anisotropies in relativistic heavy ion collisions",Nucl. Phys. A \textbf{1014} (2021), 122263
doi:10.1016/j.nuclphysa.2021.122263
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