Hydrodynamical analysis of anisotropic transverse flow at SPS and RHIC

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Abstract

We discuss the anisotropic transverse flow in non-central heavy-ion collisions at the relativistic energies within a full (3+1) dimensional hydrodynamic model. We point out that the resonance decays after freeze-out play an important role in understanding the observed elliptic flow of pions. Due to decay kinematics, the contribution from resonance decays to the spectra reduces the anisotropy of observed particle. By using the numerical results of hydrodynamic simulation which is so tuned that we reproduce the one particle spectra in non-central collisions at the SPS energy, we show how large the reduction effect is for elliptic flow of pions. Moreover, we make a quantitative prediction of elliptic flow at the RHIC energy.

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