High Energy Physics - Phenomenology

Longitudinal Scaling of Elliptic Flow in Landau Hydrodynamics

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This study presents generalization of the Landau hydrodynamic solution for multiparticle production applied to non-central relativistic heavy ion collisions. Obtained results shows longitudinal scaling of elliptic flow v_2 as a function of rapidity shifted by beam rapidity ($y-y_{beam}$) for different energies ($\sqrt{s_{NN}}=62.4$ GeV and 200 GeV) and for different systems (Au-Au and Cu-Cu). It is argued, that the elliptic flow and its longitudinal scaling is due to the initial transverse energy density distribution and initial longitudinal thickness effect.

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