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Radial flow induced by inhomogeneous magnetic field in heavy ion collisions

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We argue that the existence of an inhomogeneous external magnetic field can lead to radial flow in transverse plane. Our aim is to show how the introduction of a magnetic field generalizes the Bjorken flow. We investigate the effect of an inhomogeneous weak external magnetic field on the transverse expansion of in-viscid fluid created in high energy nuclear collisions. Finally we use the solutions for the transverse velocity and energy density in the presence of a weak magnetic field, to estimate the transverse momentum spectrum of protons and pions emerging from the Magneto-hydrodynamic solutions.

Collaboration name

Track

Hydrodynamics, chirality and vorticity

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