

Effects of final state interactions on charge separation in relativistic heavy ion collisions

Charge separation is an important consequence of the Chiral Magnetic Effect. Within the framework of a multi-phase transport model, the effects of final state interactions on initial charge separation are studied. We demonstrate that charge separation can be significantly reduced by the evolution of the Quark-Gluon Plasma produced in relativistic heavy ion collisions. Hadronization and resonance decay can also affect charge separation. Moreover, our results show that the Chiral Magnetic Effect leads to the modification of the relation between the charge azimuthal correlation and the elliptic flow that is expected from transverse momentum conservation only. The transverse momentum and pseudorapidity dependences of, and the effects of background on the charge azimuthal correlation are also discussed.

Reference:

Effects of final state interactions on charge separation in relativistic heavy ion collisions, Guo-Liang Ma, Bin Zhang, arXiv:1101.1701 [nucl-th]

Primary authors: ZHANG, Bin (Arkansas State University); MA, Guo-Liang (Shanghai Institute of Applied Physics)

Presenters: ZHANG, Bin (Arkansas State University); MA, Guo-Liang (Shanghai Institute of Applied Physics)

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