

Search for local strong parity violation in STAR using multiple observables

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Parity-odd domains from QCD are predicted to cause charge separation of quarks across the reaction-plane created in non-central relativistic heavy ion collisions–The Chiral Magnetic Effect [1]. Here we present several measurements to search for charge separation across the reaction-plane at STAR. We use three different observables: a three point correlator, a multiplicity asymmetry correlator, as well as a reaction-plane dependent balance function. The correlations are studied differentially and are presented for several Au+Au collision energies: 200, 62.4, 39, 11.5, and 7.7 GeV. We will discuss the sensitivities of these latest measurements to possible parity odd signals and parity even backgrounds.

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