

Charge-Balance Correlations from Hydrodynamic Calculations

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Lattice Gauge Theory confidently provides the equation of state, charge susceptibilities, and with less confidence, the diffusion constant and viscosity. These elements, combined with other measurements, strongly constrain the hydrodynamic evolution of high-energy heavy-ion collisions and the evolution of correlation functions indexed by charge. This leads to predictions for the charge balance function. In addition to providing a strong test of whether the QCD matter created in the collision, these effects account for most, if not all, of the observable used to search for parity fluctuations. Results will be provided to illustrate how the degree to which correlations from this effect account for the parity observable measured by STAR, and the range at which it might vary.

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