

1 Overview of STAR Measurements on Flow, Chirality, and 2 Vorticity

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7 Abstract

8 The STAR experiment at RHIC studies Quantum Chromodynamics (QCD) via relativistic heavy
9 ion collisions. Anisotropic flow are sensitive to the initial geometry and expansion dynamics in
10 heavy-ion collisions, and are a valuable probe to study the Equation of State of the produced
11 matter. Global angular momentum and anisotropic flow each can generate vorticity in QCD matter
12 produced in heavy-ion collisions, leading to the polarization of hyperons. The strong magnetic field
13 created by the spectator protons can cause charge separation because of the QCD chiral anomaly
14 from vacuum fluctuations through the phenomenon known as the chiral magnetic effect. In this
15 talk, we will present measurements by STAR experiment related to flow, chirality, and vorticity,
16 which probe the QCD matter created in these collisions.

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