Abstract Submitted
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Study of the Chiral Magnetic Effect with Pair Invariant Mass Using Anomalous-Viscous Fluid Dynamics LEON TONG, University of California, Los Angeles — High-energy heavy-ion collisions aim to create a deconfined quark gluon plasma (QGP). The QGP may acquire a chirality imbalance through vacuum transition, and manifest a charge separation along the magnetic field generated by spectator protons, known as the chiral magnetic effect (CME) [1]. The CME-induced charge separation has been extensively searched for using azimuthal correlations between two charged hadrons ($\Delta\gamma$). In particular, the invariant mass of the hadron pair has been explored to relate the observed $\Delta\gamma$ to non-CME mechanisms, such as resonance decays [2]. We shall apply the same analysis to heavy-ion events simulated by the anomalous-viscous fluid dynamics (AVFD) model, which can be implemented with and without the CME signal. By comparing the two cases, we want to determine the roles of the CME signal and the resonance decays in the landscape of the pair invariant mass, and help interpret the experimental data. [1] D. Kharzeev, Progress in Particle and Nuclear Physics 75 (2014) 133. [2] J. Adam [STAR Collaboration], arXiv:2006.05035.

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