Contribution ID: **922** Type: **Poster**

Energy-dependence of the chiral magnetic effect in expanding holographic plasma

Wednesday 6 April 2022 17:30 (4 minutes)

Based on a holographic far-from-equilibrium calculation of the Chiral Magnetic Effect (CME) in an expanding quark-gluon plasma, we study collisions at various energies. We compute the time evolution of the CME current in the presence of a time-dependent axial charge density and subject to a time-dependent magnetic field. The plasma expansion leads to a dilution and eventual annihilation of the CME current after approximately 5 fm/c. We study distinct combinations of how the initial magnetic field and initial axial charge behave with changing initial energy as proposed in the previous literature. Most scenarios we consider lead to an increasing CME current, integrated over time, when increasing the initial energy. This would make it more likely to observe the CME at higher collision energies. However, in the scenario that the axial charge and magnetic field are fixed while the initial energy is decreased, the holographic plasma shows an increasing time-integrated CME current. This is the only one of the six scenarios which we studied which would suggest the CME to be more likely found at lower collision energies.

Authors: Mr CARTWRIGHT, Casey (The University of Alabama); Dr SCHENKE, Bjoern (Brookhaven National Laboratory); Prof. KAMINSKI, Matthias (The University of Alabama)

Presenter: Mr CARTWRIGHT, Casey (The University of Alabama)

Session Classification: Poster Session 1 T02 / T03

Track Classification: Chirality, vorticity and spin polarization