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Chiral Magnetic Effect with dynamical axial charge in holography

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Previous real-time studies of the CME in holography have only dealt with chiral anomalies stemming from the coupling of the currents in the dual field theory to external (non-dynamical) gauge fields. These are introduced via Chern-Simons terms in the bulk description. We will here extend the results with the inclusion of a dynamical contribution to the anomaly, which in QCD arises from the dynamics of gluons. Its holographic realization is well known to be achieved by rendering the bulk gauge field massive. This will allow to study axial charge dissipation as well as to introduce charge generation by a proper choice of the initial state. We will present results for typical parameters of the collisions at RHIC at LHC which are relevant for the CME.

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