Quark Confinement and the Hadron Spectrum XI



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The hot QCD matter produced in any heavy ion collision with a nonzero impact parameter is produced within a strong magnetic field. We study the imprint that these fields leave on the azimuthal distributions and correlations of the produced charged hadrons. The magnetic field is time-dependent and the medium is expanding, which leads to the induction of charged currents due to the combination of Faraday and Hall effects. We find that these currents result in a charge-dependent directed flow v1 that is odd in rapidity and odd under charge exchange. It can be detected by measuring correlations between the directed flow of charged hadrons at different rapidities, $\langle v1\pm(y1)v1\pm(y2)\rangle$.

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