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The spectra and the anisotropic flow of dileptons from a magnetized QCD matter

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Inspired by a recent observation of enhancement in the dilepton rate from a magnetized QCD medium [1], we utilize a hydrodynamic model framework to incorporate the impact of the space-time evolution of the system on such properties [2]. In particular, we investigate the transverse momentum (p_T) spectra and even flow harmonics such as v_2 and v_4 with a focus on the impacts of the strength and lifetime of the magnetic field. We find that there is an enhancement in the p_T spectra in the presence of the external field, which grows with its strength. Another interesting observation is the existence of nonzero flow harmonics in the presence of even a very weak magnetic field. Such observations allow one to consider dileptons as a strong candidate for use as a magnetometer for a hot and magnetised QGP.

1. Phys. Rev. D 106, 056021 (2022)
2. Panda et al [In preparation]

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