Abstract Submitted
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Jet-medium interaction at non-zero net baryon density[1] LIPEI DU, ULRICH HEINZ, Ohio State Univ - Columbus — Jet-medium interaction in heavy-ion collisions is a multi-scale problem involving weakly coupled hard processes, such as jet production, and soft, strongly-coupled processes, including the thermalization and fluidization of the energy-momentum exchanged between the jet constituents and the QGP medium. Medium response, which appears as enhanced soft particle production around the jet axis in the final state, is important to interpret observables such as radius dependence of jet suppression and jet shape. Unlike previous studies, in this work we explore jet-medium interaction at non-zero net baryon density, where holographic models predict that jet energy loss $\hat{e}$ and transverse momentum broadening $\hat{q}$ show interesting features near the phase transition. We study the propagation of the energy and momentum deposited by jets into a medium with non-zero chemical potential, produced at different beam energies. By looking at the contribution from jet-medium interactions to both charged particle spectra and net proton production we demonstrate the importance of considering chemical potential dependent $\hat{e}(T, \mu)$ and $\hat{q}(T, \mu)$ and gain insights into additional constraints on QGP properties from studying jet-medium interactions at low collision energies.

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