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Effects of in-medium k_T broadening on di-jet observables

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Heavy ion collisions at high energies can be used as an interesting way to recreate and study the medium of the quark-gluon plasma (QGP). We particularly investigate the jets produced in hard binary collisions and their interactions with a tentative medium. These jets were obtained numerically from the Monte-Carlo simulations of hard collisions using the KATIE-framework [1], where parton momenta within the colliding nucleons were describe by means of transverse momentum distributions (TMD). We evolved these jets within a medium that contains both, transverse kicks (yielding a broadening in momentum transvers to the jet-axis) as well as medium induced radiation within the MINCAS-framework [2] following the works of [3,4]. After favorable comparison of our results with experimental LHC-data on jet-quenching we make predictions for the decorrelation of dijets. In particular, we study deviations from a transverse momentum broadening that follows a Gaussian distribution. References: [1] A. van Hameren, Comput.Phys.Commun. 224 (2018) 371-380 [2] K. Kutak, W. Płaczek, R. Straka, Eur.Phys.J. C79 (2019) no.4, 317 [3] J.-P. Blaizot, F. Dominguez, E. Iancu, Y. Mehtar-Tani, JHEP 1301 (2013) 143 [4] J.-P. Blaizot, F. Dominguez, E. Iancu, Y. Mehtar-Tani, JHEP 1406 (2014) 075

Collaboration (if applicable)

Track

Jets and High Momentum Hadrons

Contribution type

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