

10th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Heavy Flavor Kinematic Correlations in Cold Nuclear Matter

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It has been proposed that the azimuthal distributions of heavy flavor quark-antiquark pairs may be modified in the medium of a heavy-ion collision. This assumption was tested through next-to-leading order (NLO) calculations of the azimuthal distribution, $d\sigma/d\phi$, including transverse momentum broadening, employing $\langle k_T^2 \rangle$ and fragmentation in exclusive $Q\bar{Q}$ pair production [1].

The results have been compared to $p + p$ and $p + \bar{p}$ data on $Q\bar{Q}$ azimuthal correlations [1] as well as $b\bar{b}$ mass, pair p_T , rapidity, rapidity gap, p_T asymmetry and azimuthal difference correlations in $p + p$ collisions through their decays to $J/\psi J/\psi$, as measured by LHCb [2]. Agreement with the data was found to be excellent.

Possible cold and hot matter effects on these correlations are investigated through the effects of nuclear modifications of the parton densities, enhanced k_T broadening and energy loss.

[1] R. Vogt, Phys. Rev. C {bf 98} (2018) 034907.

[2] R. Vogt, arXiv:1908.05320 [hep-ph], submitted to Phys. Rev. C.

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Collaboration (if applicable)

Track

Heavy Flavor and Quarkonia

Contribution type

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