

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



Contribution ID: 5

Type: **Oral Presentation**

Heavy Flavor Kinematic Correlations in Cold Nuclear Matter

Monday, June 1, 2020 11:00 AM (20 minutes)

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 $J/\psi, \psi, \psi'$, 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.

This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344 and supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics (Nuclear Theory) under contract number DE-SC-0004014.

Collaboration (if applicable)

Track

Heavy Flavor and Quarkonia

Contribution type

Contributed Talk

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Session Classification: Parallel

Track Classification: Heavy Flavor and Quarkonia