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Azimuthal Asymmetries of the multiple interactions in Ultra-Peripheral heavy ion Collisions

In recent years, there has been a surge of interest in the electromagnetic processes underlying dilepton production in two-photon scattering, particularly in the context of Ultra-Peripheral heavy ion Collisions (UPC). Our research delves into this phenomenon by examining the azimuthal asymmetry that arises from the multiple interactions of energetic leptons with the medium in UPC scenarios.

We have calculated the $\cos 2\phi$ and $\cos 4\phi$ asymmetries and discovered that they are significantly large. These findings could provide valuable insights into the electromagnetic characteristics of the quark-gluon plasma formed during hadronic heavy-ion collisions, thereby enhancing our understanding of this complex state of matter.

Category

Theory

Collaboration (if applicable)

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