

UPC 2023: International workshop on the physics of Ultra Peripheral Collisions

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Latest UPC Results at STAR

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Relativistic heavy ions are sources of strong electromagnetic fields which produce photon-induced interactions. These interactions are usually studied in ultra-peripheral collisions (UPCs) of the relativistic heavy ions. The UPCs can produce di-lepton or di-hadron pairs via the $\gamma\text{-}\gamma$ interactions or produce vector mesons via the γ -nuclear interactions. Both the photo-produced vector mesons and the lepton/hadron pairs carry the original electromagnetic field. In addition, the photo-produced vector mesons are sensitive to the gluon parton distribution of the entire target nucleus (coherent production) or the individual nucleons (incoherent production).

In this talk, recent STAR results on vector mesons, di-lepton pairs, and di-hadron photo-production will be discussed. The measurements will be compared with available models to discuss the relevant implications.

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Session Classification: Reports from the RHIC and LHC experiments

Track Classification: Session 1: Vector meson photoproduction