

# Probing nuclear parton density and fluctuation with ultra-peripheral collisions at RHIC

*Friday, 3 November 2023 09:00 (30 minutes)*

The STAR experiment at the Relativistic Heavy-Ion Collider has recently released findings regarding exclusive coherent and incoherent photoproduction of  $J/\psi$  mesons in Au+Au ultra-peripheral collisions (UPCs). In this talk, I will delve into the preliminary findings and examine how they influence our understanding of nuclear parton density within heavy nuclei and the event-by-event density fluctuation. The data will be rigorously assessed through quantitative comparisons with various models. Furthermore, I will outline prospective avenues for future research opportunities in UPCs.

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**Session Classification:** Conference talks