

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

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Inclusive and diffractive dijet photoproduction in ultraperipheral Pb-Pb collisions at the LHC

Thursday 14 December 2023 10:00 (30 minutes)

Photoproduction of dijets is an important complementary probe of the partonic structure of protons, nuclei and real photons in QCD. We will review applications of the next-to-leading order (NLO) perturbative QCD in the framework of collinear factorization to inclusive and diffractive dijet photoproduction in heavy-ion ultraperipheral collisions (UPCs) in the kinematics of the Large Hadron Collider (LHC). We will demonstrate that this approach provides a good description of the preliminary ATLAS data in the inclusive case and has the potential to improve the determination of small- x nuclear parton distribution functions (nPDFs) by a factor of 2. In the diffractive case, we will focus on the effect of the strong nuclear shadowing and the sensitivity to mechanisms of QCD factorization breaking in diffraction.

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