



Beitrag ID: 211

Typ: Talk

Exclusive quarkonium photoproduction in nucleus-nucleus UPCs at the LHC in NLO QCD

Dienstag, 28. März 2023 14:20 (20 Minuten)

We present the first study of coherent exclusive quarkonium (J/ψ , Υ) photoproduction in ultraperipheral nucleus-nucleus collisions (UPCs) at the LHC in the framework of collinear factorization and next-to-leading order (NLO) perturbative QCD. We make predictions for the J/ψ and Υ rapidity distributions for the cases of lead (Pb) and oxygen (O) beams and quantify their dependence on the choice of the hard scale, nuclear PDFs and their uncertainties, and models for nuclear generalized parton distribution functions (GPDs). We demonstrate that our approach provides a simultaneously good description of all available Run 1 and Run 2 LHC data on J/ψ photoproduction in Pb-Pb UPCs and makes definite predictions for photoproduction of heavy quarkonia in heavy-ion UPCs at the LHC.

Experiment/Theory

Theory/Phenomenology

Affiliation

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Sitzung Einordnung: Parallel: Heavy Flavours & Quarkonia

Track Klassifizierung: Heavy flavor and quarkonia