Contribution ID : **34** Type : **not specified**

Fotoproducción Nuclear del Vector Mesón J/Ψ

Content

Ultra-peripheral collisions (UPCs) serve as a powerful tool to investigate the strong interaction in high-energy regimes through the exclusive photoproduction of vector mesons. In this work, we focus on the production of the vector meson J/ψ in Pb–Pb and Pb–p collisions, using data reported by the ALICE and CMS collaborations. We explore whether the energy dependence of the production cross section can be described using the Balitsky–Fadin–Kuraev–Lipatov (BFKL) evolution equation, without the explicit inclusion of gluon saturation effects.

To complement this analysis, we also consider a phenomenological approach based on the Golec-Biernat–Wüsthoff (GBW) model to study the energy dependence of photoproduction off a proton. Furthermore, the role of next-to-leading-order (NLO) corrections within the BFKL formalism is investigated to assess their impact on the description of the data.

This study aims to shed light on gluon dynamics at small Bjorken-x, contributing to the understanding of the transition between perturbative and non-perturbative regimes in Quantum Chromodynamics (QCD).

Summary

Ultra-peripheral collisions (UPCs) provide a unique probe of the strong interaction at high energies through the exclusive photoproduction of vector mesons. This study analyzes recent ALICE and CMS data on J/Ψ production in Pb-Pb and Pb-p collisions to explore whether their energy dependence can be described using BFKL evolution, without explicitly including gluon saturation effects. Additionally, a framework based on the GBW model is used to study the energy dependence on a proton. The role of next-to-leading-order (NLO) corrections in the BFKL formalism is also investigated. These findings contribute to understanding gluon dynamics and the transition between perturbative and non-perturbative QCD.

Primary author(s) : Mr. RANGEL RAMÍREZ, Ricardo (Universidad de las Américas Puebla)

Co-author(s) : Dr. HENTSCHINSKI, Martin (Universidad de las Américas Puebla)

Presenter(s) : Mr. RANGEL RAMÍREZ, Ricardo (Universidad de las Américas Puebla)