Contribution ID: **73** Type: **Poster**

Geometrical scaling description for the exclusive production of vector mesons and DVCS

Monday 19 March 2018 16:00 (1 hour)

In this work, we investigate the exclusive production of particles in scattering processes in the so-called saturation region. Within this scheme the phenomenon of geometric scaling takes place: cross sections are functions only of a dimensionless combination of the relevant kinematic variables, which happens both in inclusive and diffractive cases, as in the production of vector mesons. In particular, the scaling variable is given in general by $\tau = Q^2/Q_s^2$, where Q^2 is the photon virtuality and Q_s represents the saturation scale, which drives the energy dependence and the corresponding nuclear effects.
Based on the scaling property, we are able to derive a universal expression for the cross sections for the exclusive vector meson production and deeply virtual Compton scattering (DVCS) in both photon-proton and photon-nucleus interactions. This phenomenological result describes all available data from DESY-HERA for ρ, ϕ and J/ψ production and DVCS measurements. A discussion is also carried out on the size of nuclear shadowing corrections on photon-nucleus interaction.

This work has been published in the following paper https://journals.aps.org/prd/abstract/10.1103/PhysRevD.96.054015

Summary

Authors: GREGOLETTO BEN, Felipe (Universidade Federal do Rio Grande do Sul (UFRGS)); MACHADO, Magno (Universidade Federal do Rio Grande do Sul); Dr SAUTER, Werner (UFPel)

Presenter: GREGOLETTO BEN, Felipe (Universidade Federal do Rio Grande do Sul (UFRGS))

Session Classification: Monday Posters