Contribution ID: **31** Type: **not specified**

Exclusive vector meson production at next-to-leading order in the Color Glass Condensate framework

Sunday 25 September 2022 15:55 (20 minutes)

Exclusive vector meson production is a powerful process to probe the small Bjorken-x structure of protons and nuclei, as such processes are especially sensitive to gluonic structure and also provide access to the spatial distribution of small-x gluons in nuclei. A powerful theoretical framework to study such high-energy processes is the Color Glass Condensate (CGC) effective field theory. So far, most calculations in the CGC framework have been done at the leading order. Recent theoretical developments on the NLO heavy vector meson wave function [1] and the NLO virtual photon light-front wave function [2,3] have made it possible to go beyond the leading order in exclusive vector meson production, allowing us to calculate this process at NLO in the dipole picture for the first time. In this talk, I will discuss the calculation of the NLO corrections to heavy vector meson production in the nonrelativistic limit [4,5], and to light vector meson production in the limit of large photon virtuality [6].

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Presenters: PENTTALA, Jani; PENTTALA, Jani (University of Jyväskylä (FI))

Session Classification: Recent theoretical results on QCD and saturation

Track Classification: Recent theoretical results on QCD and saturation