Abstract Submitted
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Gluon saturation search using direct γ+hadron correlations in LHCb[1] CESAR DA SILVA, Los Alamos Natl Lab, LHCB COLLABORATION — Previous DIS results from HERA show a fast increasing of the gluon density in protons towards small Bjorken-x fractional momentum. The size of gluons is inversely proportional to the Q^2 momentum transfer of the process. Hence, gluons from processes where $Q^2(x)$ is smaller than $Q_S^2(x)$ are supposed to be saturated. The scale $Q_S^2(x)$ in proton and nucleus are still to be determined experimentally. The LHCb experiment is a single arm detector in LHC with vertexing, tracking, p, K, pi, e, μ identification and calorimetry in the region $1.6< \eta < 4.9$, which can access $x \sim 10^{-6} - 10^{-4}$, up to two orders of magnitude smaller than HERA. A direct probing of small-x and small Q^2 gluons can be performed with direct γ+hadron correlation measurements. This talk is going to report the status of the analysis efforts aimed of finding evidences of gluon saturation and its scale $Q_S^2(x)$ at LHCb. Future detector improvements in gluon saturation and heavy ion measurements with real-time analysis and a soft particle tracker in LHCb are also going to be discussed.

[1]DOE/OS Nuclear Physics

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