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Searching for high density effects in photon induced reactions

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We discuss possible processes which can be used to pin down the presence of high gluon densities in both photon-proton and photon-nucleus collisions. The presence of such high gluon density itself can then be argued to be characteristic for a regime of QCD where the possible on-set of gluon saturation can be observed. To this end we use the spinor helicity formalism to calculate the cross section for production of three partons of a given polarization in Deep Inelastic Scattering (DIS) off proton and nucleus targets at small Bjorken x . The resulting expressions are used to study azimuthal angular correlations between produced partons in order to probe the gluon structure of the proton or nucleus.

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