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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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