A Prediction for Less Nuclear Shadowing in pA at High Energies

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Abstract

We predict less nuclear shadowing in pA collisions than is observed in $leptonA$ collisions at high energies. In fact, the ratio of the cross section of pA to pp ($R = \sigma_{pA}/(A * \sigma_{pp})$) for fixed Q^2 becomes flat at high energies (small x). This surprising result differs from the behavior observed in $leptonA$ collisions where R decreases at high energies. The difference between these two systems results from the color structure of the g probe in pA compared to the γ^* probe in $leptonA$ which does not have color structure.

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