Nuclear Effect Study Under K Factor's Nonconstancy

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Abstract: A consistent approach to estimating nuclear effect functions $R_V^A(x_2)$ and $R_S^A(x_2)$ based on numerical iteration technique is presented in the quark-parton model when taking into account the nonconstancy of quantum chromodynamics correction factor K. $R_V^A(x_2)$ and $R_S^A(x_2)$ correspond respectively to the valence quark distributions for one bound nucleon within the nucleus and to the sea quark ones. Related numerical analysis is given for nuclei $_6C^{12}$, $_{20}Ca^{40}$, and $_{26}Fe^{56}$. As the basis, it adopts both experimental data of the high energy proton-nucleus Drell-Yan process and of the high energy lepton-nucleus deep inelastic scattering.

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