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Research note

Investigation of nuclear structure function and angular distribution of scattered leptons from ^{40}Ca and ^{56}Fe nuclei

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Abstract

In this paper, we calculate nuclear structure function and EMC effect of ^{40}Ca and ^{56}Fe nuclei. To achive the goals, we consider Fermi motion and binding energy contrbiution in the harmonic oscillator model. In this model, harmonic oscillator parameter $\hbar\omega$ related to shells root mean square radius and for free nucleon structure functions, is obtained from GRV's free nucleon structure functions. Then, we calculate differential cross section of lepton scattering from those nuclei at the E=4.8 GeV and E=4.032 GeV. The obtained results show good agreement with available experimental data.

Keywords: structure function, Fermi motion, EMC effect, scattering cross section

For full article, refer to the Persian section