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THE STRUCTURE FUNCTIONS OF ${}^4\text{He}$ NUCLEUS AND THEIR ASYMPTOTICS

Density distributions, pair correlation functions, momentum distributions and form factors of ${}^4\text{He}$ nucleus are calculated. Long distance asymptotic behavior of density distributions and pair correlation functions is studied. Comparison with experimental data is carried out for charge form factors and momentum distributions, which calculated for different potentials of nucleon-nucleon interaction. On the example of proton momentum distribution in ${}^4\text{He}$ it is shown that for large momenta asymptotic behavior is determined by short-range repulsion in potential of nuclear interaction.

Keywords: four-nucleon nucleus ${}^4\text{He}$, density distribution, form factor, momentum distribution, asymptotics.