

RELATIVISTIC FORM FACTORS OF THREE-NUCLEON NUCLEI IN THE FRAMEWORK OF THE BETHE-SALPETER-FADDEEV FORMALISM

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Based on articles [1, 2] a relativistic generalization of formulas for form factors of three-nucleon nuclei was obtained. The formulas for the form factors took into account the orbital moments of the nucleons inside the nuclei from 0 to 2, that is, the S , P and D states. The form factors were calculated as functions of the transmitted momentum of the scattered electron up to 2 GeV. Moreover, for form factors nucleons used the models of the dipole fit, a model of a relativistic harmonic oscillator and a vector dominance model. The solutions of the Bethe – Salpeter – Faddeev equation [4] were used as the amplitudes of the states of the nucleus used to calculate the form factors. At the same time, the potential of the nucleon-nucleon interaction is taken in a separable form using the Yamaguchi functions for form factors of potential [3].

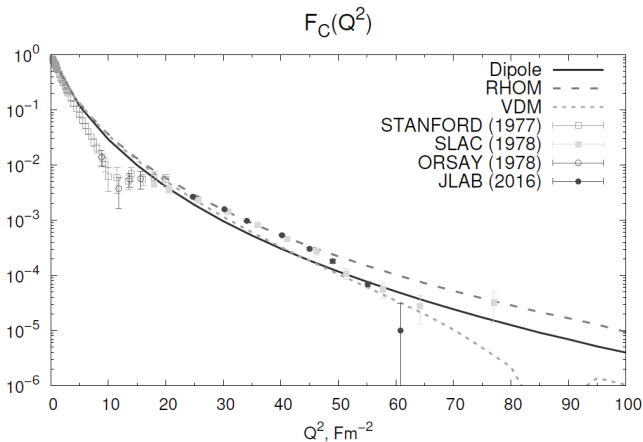


Fig. 1. Helium-3 form factors: Dipole - dipole fit, RHOM - relativistic harmonic oscillator model, VDM - vector dominance model.

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