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The relativistic contribution of states with a nonzero orbital angular momentum to the binding energy and the form factors of the triton

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Three nucleon system (triton) was considered. Relativistic properties of this system were investigated. For this relativistic generalization of Faddeev approach was used. As two particle T-matrix which contained in relativistic Faddeev equation we used solution of Bethe-Salpeter equation. So eventually we had Bethe-Salpeter-Faddeev (BSF) equation for describe three nucleon system. As potential of nucleon-nucleon (NN) interaction we used separable potential. Form factors of this potential taken in Yamaguchi-type function. Using of separable potential in particular allow to reduce integration on two variables into integration on one variable in BSF equation. Six states $1S_0, 3S_1, 3D_1, 3P_0, 3P_1$ and $1P_1$ with different angular momenta were considered. For this we made particle wave decomposition of BSF equation. System of 12 integral equations (for real and imaginary parts of amplitudes of $1S_0, 3S_1, 3D_1, 3P_0, 3P_1$ and $1P_1$ states) was solved with used iteration method. Bound state energy of triton and amplitudes of S, P and D states was found. Amplitudes used for calculation electric and magnetic form factors of triton.

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