NONFACTORIZED DISTORTED-WAVE IMPULSE APPROXIMATION IN THE THEORY OF QUASIFREE SCATTERING. ^{12}C(p, 2p)^{11}B REACTION AT AN ENERGY OF 156 MeV

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S u m m a r y

A new simple formalism of the nonfactorized distorted wave impulse approximation (DWIA) is proposed. This formalism that takes only the direct mechanism into account is used for the theoretical analysis of the ^{12}C(p,2p)^{11}B reaction at an energy of 156 MeV in the symmetric coplanar geometry. One-particle $1p_{3/2}$ and $1s_{1/2}$ bound states of protons in ^{12}C are generated by the Woods—Saxon shell potential. As the distorted waves, their three-dimensional analytic representations are used. Taking into account the distorting interactions in the input and output channels and employing a reliable description of proton bound states, we obtain a proper quantitative description of the angular correlation functions of the emitted protons. It is found that the dominant contribution to the reaction cross-section is due to a triplet state of the two colliding protons. At the same time, the descent way from the energy surface in the two-nucleon t-matrix is found to be of minor relevance.