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Elastic Scattering of 344.5 MeV ^{12}C Ions From ^{11}B Nucleus



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Abstract: The angular distribution of the elastic scattering differential cross section of 344.5 MeV ^{12}C ions from ^{11}B nucleus is calculated and compared with the experimental data as well as the previously published calculations. The real part of the central optical potential is derived using the double-folding and single-folding procedures assuming Gaussian forms of the nucleon-nucleon and alpha-nucleon interactions, respectively. A nuclear matter density distribution function of ^{11}B consisting of a spherical part plus a quadrupole term is used. The inclusion of the quadrupole term is found necessary to obtain good fits to the experimental data.

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