

ELASTIC AND INELASTIC SCATTERING OF THE ^{12}C IONS BY THE ^{12}C NUCLEUS AT ENERGY 61 MeV

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The angular distributions of the elastic and inelastic ^{12}C ions scattering on the ^{12}C nuclei were measured at the energy of $E_{\text{lab}}(^{12}\text{C}) = 65$ MeV for the transitions to the ground and 4,44 MeV (2+) excited states of ^{12}C . From the data analysis within the framework of the optical model and coupled reaction model the channel parameters of Woods-Saxon optical potential and ^{12}C deformation parameter were found, which provide satisfactory description of the $^{12}\text{C}+^{12}\text{C}$ scattering angular distributions. The energy dependence of the optical model parameters for the $^{12}\text{C} + ^{12}\text{C}$ interactions was studied.