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## **ELASTIC AND INELASTIC SCATTERING OF $^{11}\text{B}$ IONS BY $^{14}\text{C}$ AT 45 MeV**

New experimental data for differential cross sections of  $^{14}\text{C}(^{11}\text{B}, ^{11}\text{B})^{14}\text{C}$  inelastic scattering at the energy  $E_{\text{lab.}}(^{11}\text{B}) = 45$  MeV for transitions of  $^{11}\text{B}$  nucleus to the excited states of 2,12 - 8,56 MeV were obtained. Experimental data were analyzed within optical model and coupled-reaction channels method. Elastic and inelastic scattering of nuclei, reorientation of spin of  $^{11}\text{B}$  and simplest transfers of nucleons and clusters were included in the coupling scheme. Woods - Saxon optical model parameters of  $^{14}\text{C} + ^{11}\text{B}$  interaction and deformation parameters of  $^{11}\text{B}$  nucleus were deduced. Optical potential, deduced from the fit of experimental data, is compared to the respective folding-potential, calculated by the method of double-folding. Isotopic differences of optical model potentials for  $^{12,13,14}\text{C} + ^{11}\text{B}$  interaction, using the results of recent publications of  $^{12,13}\text{C} + ^{11}\text{B}$  elastic and inelastic scattering at similar energies, were investigated. Contributions of one- and two-step transfers of nucleons and clusters into the elastic and inelastic channels of  $^{14}\text{C} + ^{11}\text{B}$  scattering were defined.

*Keywords:* heavy-ion scattering, optical model, coupled-reaction-channels method, spectroscopic amplitudes, optical potentials, reaction mechanisms.