

STUDY ELASTIC SCATTERING OF DEUTERONS FROM ^{13}C NUCLEI WITH OPTICAL AND FOLDING MODELS

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The scattering of nucleons and complex nuclear particles (deuterons, alpha particles, heavy ions) on the nuclei is an important source of information about nuclear structure [1]. But the parameters of optical potential of interaction of particles with light nuclei at low and medium energies, derived from the analysis of differential cross sections of elastic scattering in the optical model, are subject to ambiguities and require reliable estimates.

In order to obtain reliable information about the potential of nuclear interaction, obtained in a cyclotron U150M of Institute of Nuclear Physics(Almaty, Kazakhstan), the experimental data on the scattering of deuterons in ^{13}C nuclei at $E_{(d)} = 14.5$ and 18 MeV analyzed both in terms of the standard optical model with the set of potentials in the parameterized form and finding its parameters by comparing the theoretical and experimental cross sections, and within a microscopic model in which the potentials are based on the effective nucleus-nucleus forces [2].

In this paper we carried out a comparative analysis of the elastic scattering of deuterons from ^{13}C nuclei in the optical and folding models.

1. G.R.Satchler // Direct Nuclear Reactions. N.Y.-Oxford: Oxford Univ. Press, 1983.
2. G.R.Satchler, W.G.Love. Folding model potentials from realistic interactions for heavy-ion scattering // Phys. Rep. 1979. V.55.