

2. EXPERIMENTAL STUDY OF THE EXCITED STATES OF HELIUM ISOTOPES IN THE REACTIONS ${}^7\text{Li}(d, {}^{3,4,6}\text{He})$ AT DEUTERON ENERGY OF 37 MeV

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The processes of formation of stable and unstable states of ${}^{3-6}\text{He}$ recoil nuclei in the exit channels of reactions ${}^7\text{Li}(d, {}^{3,4,6}\text{He})$ have been studied in kinematically complete and incomplete experiments at deuteron energy of 37 MeV. The excitation cross-sections of ground and the number of excited states of these nuclei have been determined. The possible mechanisms of continuum formation in inclusive spectra of ${}^{3,4,6}\text{He}$ nuclei have been also studied. The probability of decay of resonance ${}^5\text{He}^*(16,75 \text{ MeB})$ into $d + t$ channel in reaction ${}^7\text{Li}(d, {}^4\text{He}){}^5\text{He}$ has been determined from the analysis of inclusive and exclusive experiments. Obtained data essentially differs from that obtained at the study of binary reactions.