

INVESTIGATION OF NUCLEAR REACTIONS IN D + T SYSTEM

**O. O. Belyuskina, S. V. Berdnichenko, V. I. Grantsev, V. O. Grashilin, M. I. Doronin,
T. I. Kibkalo, K. K. Kisurin, V. O. Kisurin, O. V. Kovalenko, M. F. Kolomiets,
A. L. Lytvynsky, I. O. Mazny, M. V. Makovskiy, O. M. Mofa, S. E. Omelchuk,
G. P. Palkin, Yu. S. Roznyuk, B. A. Rudenko, L. S. Saltykov, V. G. Savchuk,
V. S. Semenov, L. I. Slyusarenko, B. G. Struzhko, V. A. Shityuk, A. M. Schur**

The results of measurement of inclusive of protons, deuterons and ^3He spectra in the range $16^\circ \leq \theta_{\text{L.C.}} \leq 67.4^\circ$ formed in the process of interaction of nuclei of deuterium and tritium are presented. Characteristic features of proton energy spectrum are described owing to the account of ^4H sequential decay and final state interaction of a singlet neutron-proton pair processes. The account in the $^3\text{H}(d, ^3\text{He})nn$ reaction of processes of final state two neutron interaction and successive decay through $^4\text{He}^*$ ($E_x = 21.2$, $\Gamma = 0.7$ MeV) resonance amplitude and Watson - Migdal amplitude allowed to describe the ^3He nucleus spectrum shape. Experimental differential cross sections of elastic deuteron scattering on Tritium were obtained. The experiment was carried out on U-240 INR cyclotron with deuteron beam energy of 36.9 MeV. Energy spectra of protons and ^3He -particles were studied.