

Splitting effect of light nuclei momentum distributions at fragmentation of iron ions with energy of 230 MeV/nucleon.

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The results of iron fragmentation on different targets at energy 230 MeV/nucleon are presented. Experimental data were obtained with the FRAGM experiment and TWA heavy ion facility, which has a unique opportunity to measure the momentum distribution of fragments with high resolution at small angles [1,2]. In contrast to the typical fragmentation, where the momentum spectra have Gaussian-like shapes, the emission of light fragments has a double-humped structure. This splitting effect is most clearly manifested in proton spectra. An attempt to describe the effect by asymmetric fission and multifragmentation is discussed. Experimental data are compared with the results of the FRS-GSI measurements [3] and with the predictions of various models of nucleus-nuclear collisions.

[1] B.M. Abramov et al., Phys.Atom.Nucl. 85, 1541 (2022).

[2] A.A. Kulikovskaya et al., Phys.Atom.Nucl. 85, 466 (2022).

[3] P. Napolitani et al., Phys.Rev. C 70, 054607 (2004).

Section

Experimental and theoretical studies of nuclear reactions

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