RADIAL FLOW IN THE INTERACTION OF RELATIVISTIC DEUTERONS WITH A GOLD TARGET

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The kinetic energy spectra of intermediate mass fragments have been studied for 4.4 GeV d+Au collisions at the Dubna Nuclotron with the FASA [1] 4π detector array.

Experimental kinetic energy spectra were compared to that obtained by the multi-body Coulomb trajectory calculations with the various values of radial flow. The analysis has been done on an event by event basis. The multibody Coulomb trajectory calculations of all charged particles have been performed starting with the initial break-up conditions given by the combined model INC [2] + SMM [3]. A comparison of the experimental and calculated kinetic energy spectra of carbon fragments is presented in Fig.1.

It was found good agreement of measured and calculated kinetic energy spectra including a radial flow. The research was supported by Grant No. 15-2-02745 from Russian Foundation for Basic Research.
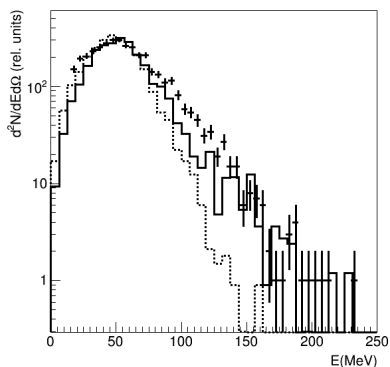

Fig. 1. The kinetic energy spectra of carbon fragments (Ө=87°) obtained by the interaction of deuterons 4.4 GeV with a gold target. Points – experimental data. Solid line – INC+SMM calculations with radial flow β=0.12c. Dotted line corresponds to INC+SMM calculations without radial flow.

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