

STUDY OF PROJECTILE FRAGMENTATION OF ^{40}Ar ON ^9Be TARGET AT 40·A MEV

Erdemchimeg B.^{1,2}, Mikhailova T.I.¹, Artyukh A. G.¹, Toro M.Di³,
Sereda G.Yu.M.^{1,4}, Wolter H.H.⁵

¹Joint Institute for Nuclear Research, Dubna, Russia;

²Mongolian National University, NRC, Ulaanbaatar, Mongolia;

³Lab. Naz. del Sud (LNS), INFN, Catania, Italy;

⁴Institute for Nuclear Research NAS, 252650, Kyiv, Ukraine;

⁵Faculty of Physics, University of Munich, Garching, Germany

E-mail: erd_mn@yahoo.com

The projectile-like fragments emitted at forward angles were studied for the reaction ^{40}Ar (40·A MeV) + ^9Be . Their velocity, isotope and charge distributions have been measured. The experiment was performed at the wide aperture kinematics separator COMBAS at Flerov Laboratory of Nuclear Reactions of Joint Institute for Nuclear Research (FLNR, JINR) [1]. Peripheral nuclear collisions at Fermi energies are of interest to produce new elements far from the stability line. Velocity distributions of individual isotopes show the contribution of two reaction modes: direct break-up at beam velocities and dissipative scattering which leads to a lower energy tail. Transport theories such as Boltzmann-Nordheim-Vlasov (BNV) approach can be used to describe this latter type of process [2]. To compare with the experiment one has to take into account the evaporation from excited pre-fragments. This is done with the use of Statistical Multifragmentation Model (SMM) of Bondorf, Mishustin and Botvina [3]. The results of calculations were compared to the experiment.

1. A.G.Artyukh *et al.* // Nucl. Instrum. Methods. A.1999. V.426. P.605.

2. G.F.Bertsch, S.DasGupta // Phys. Rep. 1988. V.160. P.189.

3. J.P.Bondorf *et al.* // Phys. Rep. 1995. V.257. P.133.