NUCLEAR REACTION MECHANISM STUDY OVER A WIDE TARGET MASS RANGE FOR ^{6}Li AND ^{12}C IONS

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In this experiment we have bombarded ^{24}Mg and ^{181}Ta targets with the 150-MeV ^{6}Li beam and have measured $d^2\sigma/d\Omega dE$ for producing hydrogen, helium, and lithium isotopes. The detector telescope consisted of 200-μm and 1000-μm silicon detectors in front of a 1.5-cm hyper-pure germanium detector. This combination stopped all fragments for which the cross sections were large enough to measure, e.g., 80-MeV protons and elastic ^{6}Li. Data were taken at scattering angles between 15° and 90° in 15° steps and at 120° and 150°. The measured production cross sections will initially be compared with pre-equilibrium[1] and thermodynamic[2] calculations. Similar data will be acquired with 340-MeV ^{12}C projectiles when this beam becomes available.

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1) Marshall Blann, Ann. Rev. Nucl. Sci. 25, 123 (1975).

2) G.D. Westfall, R.G. Sextro, A.M. Zebelman, G.W. Butler, and E.K. Hyde, Phys. Rev. C 17, 1368 (1978).