

Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Probing densities of hot nuclei R. TRIPATHI, Cyclotron Institute, Texas A&M University, S. WUENSCHHEL, G.A. SOULIOTIS, S. GALANOPOULOS, Z. KOHLEY, K. HAGEL, D.V. SHETTY, K. HUSEMAN, L.W. MAY, S.N. SOISSON, B.C. STEIN, S.J. YENNELLO — Study of density dependence of symmetry energy requires quantitative information about the excitation energy dependence of nuclear density. In the present work, kinetic energy spectra of fragments arising from the reactions $^{78,86}\text{Kr} + ^{58,64}\text{Ni}$, ($E_{lab} = 35$ MeV/A) have been analyzed to get information about the nuclear density. A reconstructed quasi-projectile was chosen as the fragmenting source with appropriate conditions. In order to investigate the excitation energy dependence of the nuclear density, kinetic energy spectra of fragments, gated on different excitation energy of the fragmenting source, were analyzed within the framework of a binary break up. In order to account for the variation in Coulomb repulsion seen by a fragment in different break up events, an average Coulomb repulsion was calculated by varying the charge of the residual nucleus. In the analysis, the radius constant was one of the free parameters. The density profile obtained from the values of radius constant at various excitation energies was found to be in a reasonable agreement with that reported in literature based on similar analysis.

R. Tripathi
Cyclotron Institute, Texas A&M University

Date submitted: 22 Oct 2009

Electronic form version 1.4