Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Scaling of projectile residue yields from peripheral heavy-ion collisions below the Fermi energy G.A. SOULIOTIS, D.V. SHETTY, A. KEKSIS, M. JANDEL, M. VESELSKY, S.J. YENNELLO, Cyclotron Institute, Texas A&M University — The scaling properties of the yields of isotopically resolved projectile residues from very peripheral collisions of ^{86}Kr(25MeV/nucleon) and ^{64}Ni(25MeV/nucleon) on ^{64,58}Ni and ^{124,112}Sn target pairs are invesrigated. The reactions of ^{86}Kr were studied with the MARS recoil separator. Their yields and isoscaling properties have already been discussed [1,2]. The reactions of ^{64}Ni were studied with the Superconducting Solenoid (BigSol) Line. In the present study, special attention is given to neutron-rich projectile fragments produced in peripheral collisions. For these fragments, isoscaling in the usual sense is not observed: e.g. the yield ratios of the isotopes of a given element do not follow an exponential dependennce on neutron number. Comparison of the measured yield ratios with model calculations using either a deep-inelastic transfer code (DIT) [3] code or a BNV transport code [4] followed by a deexcitation code seem to reproduce the observed hehavior of the measured yield ratios. These comparisons may offer the possibility to extract information on the nuclear symmetry energy (and its density dependence) from the process of peripheral nucleon exchange. [1] G.A. Souliotis et al., Phys. Rev. C 68, 024605 (2003). [2] G.A. Souliotis et al., Phys. Rev. Lett. 91, 022701 (2003). [3] L. Tassan-Got et al., Nucl. Phys. A524, 121 (1991). [4] V. Baran et al., Nucl. Phys. A 730, 329 (2004).

George Souliotis
Cyclotron Institute, Texas A&M University

Date submitted: 26 May 2005 Electronic form version 1.4