Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Detection of Neutrons and Charged-Particles emitted in Peripheral and Mid-Peripheral Collisions of ^{124,136}Xe and ^{112,124}Sn Nuclei at E/A = 50 MeV[1] A.B. MCINTOSH, J. BLACK, S. HUDAN, C.J. METELKO, R. YANEZ, R.T. DE SOUZA, Indiana Univ., A. CHBIHI, GANIL, M. FAMIANO, W. Michigan Univ., M.O. FREGEAU, J. GAUTHIER, J. MOISAN, R. ROY, Univ. Laval, S. BIANCHIN, C. SCHWARZ, W. TRAUTMANN, GSI — To investigate peripheral and mid-peripheral heavy ion collisions, neutrons and charged particles emitted in the cross-bombardment reactions ^{124,136}Xe + ^{112,124}Sn @ E/A = 50 MeV were measured. Projectile-like fragments at small angles ($2.8^\circ \leq \theta \leq 14.5^\circ$) were identified by their atomic number and large velocity ($V/V_{beam} \geq 0.5$) in the Si-Si-CsI(Tl)/PD array FIRST with high angular resolution ($\Delta\theta \approx 0.1^\circ$). Intermediate mass fragments (IMF: $Z \geq 3$) detected in FIRST were isotopically identified. At larger angles ($30^\circ \leq \theta \leq 45^\circ$), light-charged particles and IMFs were isotopically identified in the silicon-strip array LASSA. With the DEMON array, pulse-shape discrimination and TOF were used to identify neutrons and measure their kinetic energies. Calibration of the charged particle detectors using fragmentation beams and electronic pulsers will be described. Elemental and isotopic resolution obtained with FIRST and LASSA will be shown; preliminary results will be presented.

[1]U.S. Department of Energy, Grant No. DE-FG02-88ER40404.

Alan McIntosh
Indiana University

Date submitted: 10 Jan 2008 Electronic form version 1.4