Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Coulomb Excitation with CARIBU Beams: Octupole Strength in ^{144}Ba Measured with GRETINA and CHICO2[1] BRIAN BUCHER, Lawrence Livermore National Laboratory, SHAOFEI ZHU, Argonne National Laboratory, ANL, LBNL, LLNL, ROCHESTER, FLORIDA ST, LIVERPOOL, MARYLAND, NOTRE DAME, OHIO, & W. SCOTLAND COLLABORATION — The neutron-rich barium isotopes sit in one of the few mass regions on the nuclear chart observed to display octupole correlations. These isotopes are challenging to study since they lie far from stability and are thus difficult to produce in large quantities. In particular, this region is interesting for studying the evolution of octupole correlations since the enhancement of the E1 strength drops by an order of magnitude from ^{144}Ba to ^{146}Ba, where shell corrections appear to play a significant role. To provide unambiguous insight into the octupole correlations, B(E3) strengths have been measured using Coulomb excitation of ^{144}Ba beams at 650 MeV on a 1 mg/cm^2 ^{208}Pb target. This experiment represents the first successful measurement utilizing re-accelerated CARIBU beams combined with the γ-ray tracking array GRETINA and the auxiliary charged-particle detector CHICO2. Preliminary results from the experiment will be presented.

[1]This work is supported by the U.S. Department of Energy, Office of Nuclear Physics, under contract no. DE-AC02-06CH11357 (ANL), DE-AC02-05CH11231 (LBNL, GRETINA), DOE DE-AC52-07NA27344 (LLNL), and NSF.

Brian Bucher
Lawrence Livermore National Laboratory

Date submitted: 01 Jul 2014 Electronic form version 1.4