Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Finding the Incompressibility of Nuclear Matter[1] JENNIFER KACHEL, Cyclotron Institute, Texas A&M University (REU student from Marietta College) — The incompressibility coefficient is an important ingredient of nuclear matter's Equation of State and is significant to understanding neutron stars, supernova explosions and heavy ion collisions. Nuclear matter's incompressibility (K_{nm}) can be determined from the energy of the isoscalar Giant Monopole Resonance theory of nuclei: a collective mode of the nucleus in which the protons and neutrons oscillate in phase. We determined the compressibility coefficients for a set of nuclei using data for the energy of the monopole resonances and the mass radii. Using an $A^{-1/3}$ expansion analogous to that of the mass formula we extract K_{nm}. Upon examination of the coefficients of the expansion, it becomes evident that more data is needed to deduce an accurate value for K_{nm}.

[1]Funded by DOE and NSF-REU Program.

Jennifer Kachel
Cyclotron Institute, Texas A&M University
(REU student from Marietta College)

Date submitted: 03 Aug 2011 Electronic form version 1.4