

Abstract Submitted  
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**Analyzing Deuteron Scattering at 100 MeV/u Through Optical Model Parameters** EMILY MORGAN, University of Notre Dame — Nuclear incompressibility is the curvature of the equation of state of nuclear matter at saturation density. The preferred medium through which we quite effectively study and then constrain incompressibility is the isoscalar giant monopole resonance (ISGMR), one breathing mode of the nucleus. Using the nuclear optical model to both fit and reproduce elastic and inelastic scattering patterns, respectively, we can translate our calculations to the strength of the monopole and ultimately incompressibility. With the advent of radioactive beam facilities have come excellent experimental advancements. From here we begin to discern which probes are ideal for use in nuclear collisions. Deuterium is presently being tested for its feasibility. The Research Center for Nuclear Physics at Osaka University in Japan was home to just such an experiment. A 196 MeV  $^2\text{H}$  beam was impinged on  $^{116}\text{Sn}$ ,  $^{28}\text{Si}$  and  $^{58}\text{Ni}$  targets to measure the elastic and inelastic cross-sections at various angles. These angular distributions have been analyzed using the hybrid optical model. Results of this analysis will be presented.

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