

Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Sensitivity of the Derived $B(E2)$ Transition Strength to Nuclear Structure Models STEPHEN WEPPNER¹, Department of Physics, Florida State University — Identifying the structure of exotic nuclei via scattering observables is an interesting theoretical challenge. Starting with a microscopic optical model, which has a clear delineation between structure and the interaction introduced at the onset, we have a natural tool to examine the role of the structure in the calculation. In the past this model was used to ascertain the sensitivities of the elastic scattering observables to the structure of the nucleus, with the differences between models being minimal at intermediate scattering energies. We now examine the role of the nuclear structure model in the calculation of an inelastic proton-nucleus scattering observable: the differential cross-section for the first $0+ \rightarrow 2+$ transition of the nucleus. We will study how this observable and the related $B(E2)$ matrix element and deformation parameter are affected by the use of a variety of different structure inputs used in the calculation.

¹Permanent address: Collegium of Natural Sciences, Eckerd College

Stephen Weppner
Department of Physics, Florida State University

Date submitted: 14 Jan 2005

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