

Abstract Submitted  
for the DNP07 Meeting of  
The American Physical Society

**Coulomb Excitation of Radioactive  $^{21}\text{Na}$  with TIGRESS and BAMBINO**<sup>1</sup> MICHAEL SCHUMAKER, University of Guelph, TIGRESS AND BAMBINO COLLABORATION — The first experiment to use modules of the TRIUMF-ISAC Gamma-Ray Escape-Suppressed Spectrometer (TIGRESS) with an accelerated radioactive ion beam has been performed successfully, using the ISAC facility at TRIUMF. The low-energy structures of the five-particle nuclei  $^{21}\text{Na}$  and  $^{21}\text{Ne}$  were examined, in order to test model predictions of these deformed nuclei. For  $^{21}\text{Na}$ , the  $\pm 86\%$  uncertainty on the previously accepted B(E2) value, resulting from the dominance of M1 decay in these nuclei, has made comparison difficult. Beam particles were accelerated to 1.7 MeV/A, and Coulomb excited in a  $^{nat}\text{Ti}$  target. Recoiling projectile and target ions were detected by the BAMBINO segmented silicon detector, while  $\gamma$ -ray yields were determined using two TIGRESS detectors perpendicular to the beam axis. For  $^{21}\text{Na}$  and  $^{21}\text{Ne}$ , Coulomb excitation from the  $3/2^+$  ground state to the  $5/2^+$  state was observed. Strongly enhanced B(E2) values were determined, which will be compared with the simplest quadrupole rotor model, and shell model predictions.

<sup>1</sup>Supported by the Natural Sciences and Engineering Research Council of Canada, the DOE, UC-LLNL, Contract W-7405-ENG-48, the National Science Foundation, and the U.K. Engineering and Physical Sciences Research Council.

Michael Schumaker  
University of Guelph

Date submitted: 29 Jun 2007

Electronic form version 1.4