

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Study of the $^{11}\text{B}(\vec{p}, \alpha)^8\text{Be}$ Reaction using polarized protons below 5.1 MeV.¹ SETH HENSHAW, SEAN STAVE, MOHAMMAD AHMED, MATTHEW BLACKSTON, BRENT PERDUE, HENRY R. WELLER, Duke/TUNL, RALPH FRANCE, TOM LEWIS, J.P. METZKER, Georgia College and State University, RICHARD PRIOR, MARK SPRAKER, North Georgia College and State University, ALEX KUSNEZOV, St. Lawrence University — Cross section and analyzing power data have been obtained for proton energies between 0.4 and 5.1 MeV. The experiment was performed using the TUNL polarized proton beam, eight Silicon-surface barrier detectors, and an enriched ^{11}B target deposited on a thin carbon backing. Energies below 1.1 MeV were obtained using an Aluminum degrading foil. Preliminary results indicate analyzing powers for the $^{11}\text{B}(\vec{p}, \alpha_1)^8\text{Be}^*$ reaction at the ~ 0.675 MeV resonance which are consistent with zero and a cross section angular distribution which is isotropic. Previous measurements of the absolute angle integrated cross section on top of this resonance have produced results having significant variations. Preliminary results for analyzing powers and cross sections will be presented along with experimental details and possible implications for energy production in an aneutronic $^{11}\text{B} + \text{p}$ fusion reactor.

¹This work was partially supported by the USDOE grant Nos. DE-FG02-97ER41033 and DE-FG02-97ER41046.

Seth Henshaw
Duke/TUNL

Date submitted: 09 Jan 2008

Electronic form version 1.4