Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Precision excited-state lifetime measurements of neutron-rich Li isotopes[1] C. MORSE, C.J. LISTER, G.L. WILSON, UML, E.A. MCCUTCHAN, BNL, G. HACKMAN, M. BOWRY, R. CABALLERO-FOLCH, L.J. EVITTS, A.B. GARNSWORTHY, J. HENDERSON, A. KURKJIAN, J.P. MEASURES, M. MOUKADDAM, P. RUOTSALAINEN, J. SMALLCOMBE, J.K. SMITH, D. SOUTHALL, M. WILLIAMS, TRIUMF, A.J. MITCHELL, ANU, C.Y. WU, LLNL
— Recent successes with *ab initio* calculations are allowing increasingly subtle nuclear phenomena to be investigated, such as Δ-isobar and meson exchange effects which are necessary to reproduce $M1$ properties of nuclei. In order to guide such explorations, precise experimental data are required to discriminate between various theoretical descriptions. The lithium isotopes, which are dominated by $M1$ spin-flip transitions, provide an ideal testing ground for such studies. We have performed lifetime measurements of the excited states of ^{7,8}Li, as well as explored the feasibility of such an experiment on ^{9}Li, to provide precise data on the $M1$ transition matrix elements in these nuclei. The experiment used the Doppler Shift Attenuation Method to measure the lifetimes at TRIUMF with TIGRESS, with the excited states populated by inverse (d, p) reactions. Preliminary results from the analysis will be presented.

[1]This research was supported by the U.S. Department of Energy, Office of Nuclear Physics, under Grants DE-FG02- 94ER40848

Chris Morse
Univ of Mass - Lowell

Date submitted: 01 Jul 2016 Electronic form version 1.4