Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

New precision lifetime measurement of the first excited state of ^{12}Be C.J. LISTER, C. MORSE, P. CHOWDHURY, E. MERCHAN, V.S. PRASHER, U. Massachusetts, LOWELL, E.A. MCCUTCHAN, T.D. JOHNSON, A. SONZOGNI, BNL, H. IWASAKI, V.M. BADER, D. BAZIN, S. BECEIRO NOVO, A. GADE, C. LOELIUS, E. LUNDERBERG, F. RECCHIA, D. WEISSHAAR, K. WHITMORE, MSU — ^{12}Be presents an important opportunity for nuclear structure studies. It has a canonically magic number of neutrons, N = 8, but on the other hand the beryllium isotopes are well-known for their α-clustering behavior. ^{12}Be is at the limit of computationally feasible GFMC ab initio calculations, and is experimentally accessible for the purposes of making precision measurements. Although recent experiments indicate that ^{12}Be favors the development of clustering over magicity, the electromagnetic decay properties of this system are poorly constrained due to the single measurement (_30% uncertainty) of the B(E2; 2^+-0^+) value. Here we present a new precise measurement of the 2^+ state lifetime using GRETINA at NSCL. We find that the lifetime is about a factor of two shorter than previously reported, so even more collective and clustered then expected. The implications for the structure of ^{12}Be will be discussed.

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Date submitted: 01 Jul 2016 Electronic form version 1.4