Abstract Submitted
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Differential recoil-distance lifetime measurement of the 2_1^+ state in ^{74}Rb C. MORSE, H. IWASAKI, K. WHITMORE, C. LOELIUS, V. BADER, T. BAUGHER, D. BAZIN, J. BERRYMAN, A. GADE, C. LANGER, E. LUNDERBERG, F. RECCHIA, R. STROBERG, C. WALZ, D. WEISSHAAR, NSCL/MSU, R. WADSWORTH, York U., A. LEMASSON, GANIL, T. BRAUNROTH, A. DEWALD, IKP Cologne, I.Y. LEE, LBNL, C. BANCROFT, D. BAROFSKY, J. LLOYD, A. WESTERBERG, K. WIMMER, CMU — The structure of ^{74}Rb has received much attention because of its unique location in the nuclear chart. It lies in a region of rapid increase of E2 strength along the N=Z line between ^{72}Kr and ^{76}Sr, and coexistence between prolate and oblate shapes is known to be present in neighboring ^{74}Kr. These observations make the understanding of collectivity in ^{74}Rb highly desirable, but in contrast to neighboring nuclei, little is known about the nature of ^{74}Rb beyond its level scheme. To address this problem, we have performed an experiment to measure the lifetime of the 2_1^+ state in ^{74}Rb using a previously undemonstrated differential plunger technique. This was accomplished using the new NSCL TRIPLEX plunger in combination with GRETINA, taking advantage of the latter system's capabilities to achieve sufficient resolution for the new technique. Results will be presented and implications for the structure of ^{74}Rb will be discussed.

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