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Lifetime and relative g factor measurements in ^{104,106,108}Pd isotopes G. ILIE, V. WERNER, D. RADECK, T. AHN, C.W. BEAUSANG, L. BETTERMANN, R.J. CASPERSON, R. CHEVRIER, N. COOPER, T.C. BONNIWELL, A. HEINZ, E. HOLLAND, D. MCCARTHY, B. PAUERSTEIN, M.K. SMITH, J.R. TERRY, E. WILLIAMS — The purpose of this research was the proof-of-principle for the new g-plunger technique to measure the deorientation and the lifetime of a state after an inverse kinematics reaction. The deorientation effect is due to the hyperfine interaction between the nuclear spin and the surrounding electron configurations. The attenuation of γ-ray angular distributions has been measured for the 2_1^+ and 4_1^+ states of ^{104}Pd, ^{106}Pd and ^{108}Pd. The beams with energies of 324 MeV, 330 MeV and 336 MeV, respectively, were Coulomb excited into their 2_1^+ state on a ^{24}Mg target. Forward scattered Mg was detected after passing a Cu foil, which served as a stopper for the beam. We measured the time-dependence of the attenuation as a function of distance, in parallel to measuring the lifetimes of the 2_1^+ and 4_1^+ states. This attenuation is used to measure the g factor of the decaying states relative to each other. In this work, hyperfine parameters have been calibrated for the Pd isotopes. The results of this work and a discussion of the parameterization used to fit the data in this work will be presented. Research was supported by the U.S. Department of Energy under Grant No. DE-FG02-91ER-40609.

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