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B(E2) in heavy Pd nuclei through the time-of-flight method AARON CHESTER, Michigan State University/NSCL, NSCL 03029 COLLABORATION[1] — The onset of deformation in even nuclei is manifested by a decreasing energy of the 2^+ excited state, E(2^+), correlated with an increase in the reduced transition probability B(E2). It is surprising to observe for A$\geq$110 Pd nuclei that as E(2^+) decreases so does B(E2) as reported by the National Nuclear Data Center. This trend was investigated with the time-of-flight method using a plunger device designed in collaboration with the University of Cologne, Germany. The plunger consists of a moveable target and a stationary passive degrader. A fast beam of ^{114}Pd was Coulomb-excited to the 2^+ state on the plunger target. The degrader, downstream of the target, was used to slow the nuclei. Gamma-rays emitted before and after the degrader were measured at different Doppler shifts due to the change in velocity. A modified Segmented Germanium Array setup used for gamma-ray detection provided an optimal balance of sensitivity to changes in velocity and energy resolution. The ratio of the peak intensities yields information about the lifetime of the state of interest. A new B(E2) value was found for ^{114}Pd that is twice as large as the previous measurement, but follows the expected trend.

[1]The 03029 Collaboration included a group from University of Cologne, Germany headed by Alfred Dewald.

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