

Abstract Submitted
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Lifetime Measurements in ^{162}Dy S.R. LESHER, Univ. of Wisconsin - La Crosse, A. APRAHAMIAN, R.C. DE HAAN, Univ. of Notre Dame, H.G. BÖRNER, M. JENTSCHHEL, Institut Laue Langevin, Grenoble, France, D.D. WARNER, Daresbury, UK, R.F. CASTEN, Wright Nuclear Structure Laboratory, Yale Univ. — There has been great debate over the existence of low-lying vibrational excitations in deformed nuclei – The original picture presented by Bohr & Mottelson was one of collective vibrations superimposed on a deformed ground state shape, however empirically, it has been difficult to determine if the observed excitations are indeed vibrational in nature or excitations built on two-single particle states. One signature of collectivity is the extraction of absolute $B(E2)$ transition probabilities from measured lifetimes. The complete spectroscopy of ^{162}Dy was recently published up to 4 MeV [1], we have measured the lifetimes of several levels in the ^{162}Dy nucleus using the GRID technique at The Institut Laue-Langevin in Grenoble, France. The Dy target was inserted into the core of a 60 MW high flux beam reactor and the line width was measured using a double flat crystal spectrometer (GAMS4) of perfect Silicon crystals. The GRID technique allows measurements of lifetimes from a few picoseconds and lower. Preliminary lifetime measurements will be presented.

[1] A. Aprahamian, *et al.*, Nucl. Phys. A **764** 42 (2006). This work was supported by the NSF under contract number PHY07-58100.

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