Abstract Submitted for the DNP10 Meeting of The American Physical Society

Nuclear Dipole Resonance in N = 82 Nuclei¹ A.P. TONCHEV, Duke/TUNL, S.L. HAMMOND, UNC/TUNL, J.H. KELLEY, NCSU/TUNL, E. KWAN, Duke/TUNL, H. LENSKE, U. of Giessen, Germany, R. RAUT, G. RU-SEV, W. TORNOW, Duke/TUNL, N. TSONEVA, U. of Giessen, Germany — In stable and weakly bound neutron-rich nuclei, a resonance-like concentration of dipole states has been observed for excitation energies around the neutron separation energy. This clustering of strong dipole states has been named the pygmy dipole resonance (PDR) in contrast to the giant dipole resonance that dominates the E1 response. High-sensitivity studies of E1 and M1 transitions in N = 82 nuclei using the nearly monoenergetic and 100% linearly-polarized photon beams from TUNL's High-Intensity-Gamma-Ray Source facility will be presented. The nuclear dipolestrength distribution of the PDR has been measured and novel information about the character of this mode of excitation has been obtained. The data will be compared to calculations using statistical and quasiparticle random-phase approximation methods.

¹Supported in part by DOE grant DE-FG02-97ER41033, DE-FG02-97ER41041, DE-FG02-97ER41042, DE-FG52-06NA26155.

A. P. Tonchev Duke/TUNL

Date submitted: 29 Jun 2010

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