

Abstract Submitted
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Fine Structure of the Giant $M1$ Resonance in ^{90}Zr ¹ G. RUSEV, E. KWAN, A.P. TONCHEV, W. TORNOW, Duke U. and TUNL, A.S. ADEKOLA, S.L. HAMMOND, UNC and TUNL, C. HUIBREGTSE, J.H. KELLEY, NCSU and TUNL, S. FRAUENDORF, U. Notre Dame, F. DÖNAU, R. SCHWENGNER, A. WAGNER, Research Center Dresden-Rossendorf, Germany — The High-Intensity $\tilde{\gamma}$ -ray Source of the Triangle Universities Nuclear Laboratory, in connection with high-resolution Ge detectors, opens up the possibility to deduce precisely the strengths and locations of individual $M1$ transitions, comprising the giant $M1$ resonance, and to distinguish them unambiguously from $E1$ and $E2$ deexcitations. We will present the results of an investigation of the fine structure of the giant $M1$ resonance in ^{90}Zr performed with polarized and mono-energetic photon beams from 7 to 11 MeV. The strength of numerous $M1$ transitions will be compared to calculations using the quasiparticle-random-phase approximation in a Wood-Saxon potential and with the Instantaneous Shape Sampling model in order to study the observed fragmentation.

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