Abstract Submitted
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Discrete deexcitations in 235U from Nuclear Resonance Fluorescence[1] E. KWAN[2], C.R. HOWELL, R. RAUT, G. RUSEV, A.P. TONCHEV, W. TORNOW, Duke/TUNL, A.S. ADEKOLA, S.L. HAMMOND, H.J. KARWOWSKI, UNC/TUNL, R. PEDRONI, NCA&T, J.H. KELLEY, NCSU/TUNL — Systematics of the even-even rare-earth nuclei suggest a concentration of $M1$ excitations peaking around 3 MeV with a $\sum B(M1)\uparrow$ strength of $\sim 3\mu_N^2$. In addition, a linear dependence on the square of the ground-state deformation was observed in the systematics of the $\sum B(M1)\uparrow$ strengths. The actinide region is interesting for investigation of the "scissors" mode of $M1$ excitations because it has neutron-rich nuclei with large deformations. Evidence of $M1$ resonances concentrated around 2.0-2.5 MeV were found in ^{238}U & ^{232}Th. A research program has been initiated at TUNL to measure dipole transitions in the actinide using HIγS. Nearly monoenergic & circular polarized γ-ray beams below 3.0 MeV was used to measure transitions in ^{235}U. More than 20 transitions were observed. The integrated cross sections, $B(M1)$ strengths & branching transitions intensities will be presented and compared with previous measurements.

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