

Abstract Submitted  
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**Gamma Strength Function for  $p$ -process Nucleosynthesis Calculations**<sup>1</sup> C.T. ANGELL, S. HAMMOND, H.J. KARWOWSKI, UNC and TUNL, E. KWAN, G. RUSEV, A. TONCHEV, Duke and TUNL, J.H. KELLEY, NCSU and TUNL, A. MAKINAGA, H. UTSUNOMIYA, Konan U. — The Gamma Strength Function (GSF) is a key component for calculating photodisintegration reaction rates used for the  $p$ -process modeling. During the  $p$ -process, the nucleus can be thermally excited lowering the effective threshold of photodisintegration. To calculate the reaction rates for excited states, the GSF is taken from an extrapolation of the low-energy tail of the giant dipole resonance. A new technique for determining the GSF using nuclear resonance fluorescence was developed, and measurements were taken for  $^{142}\text{Nd}$  and  $^{150}\text{Nd}$  at  $E_\gamma = 4 - 9$  MeV. The experiment was done at the HIGS facility using a polarimeter consisting of four clover detectors. The results will be presented, and the impact on  $p$ -process calculations will be discussed.

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