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First Measurement of Statistical Gamma-ray Transitions in ^{88}Sr at TUNL via Inelastic Neutron Scattering[1] S. CARTER, BSC and TUNL, G. RUSEV, C. ARNOULD, W. TORNOW, Duke U. and TUNL, M. GOODEN, J.H. KELLEY, NCSU and TUNL, S.L. HAMMOND, UNC and TUNL, L. STEVENS, WFU and TUNL — Predictions of the intensity distribution of γ rays emitted by product nuclei of a certain nuclear reaction are of interest for nuclear astrophysics to estimate the photon flux during a supernova as well as for applied physics for calculating radiation shielding, for instance. Furthermore, by knowing the average γ-ray spectrum for a given isotope we can predict whether the nucleus will transmute if it is exposed to a strong γ flux as the "hot supernova-explosion scenario" suggests. We report results for the distribution of γ rays following the ^{88}Sr(n,n'γ) reaction. This experiment, carried out for the first time at TUNL's FN 10 tandem, aims at measurement of the statistical γ rays and is complementary to our previous experiments on ^{87}Sr(n,γ) at LANSCE and ^{88}Sr(γ, γ') at the High Intensity γ-Ray Source Facility.

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