

Abstract Submitted
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Proof-of-principle measurement of beta-delayed neutron precursor ^{89}Br using VANDLE¹ STANLEY PAULAUSKAS, R. GRZYWACZ, M. MADURGA, S. PADGETT, The University of Tennessee at Knoxville, VANDLE COLLABORATION — The Versatile Array of Neutron Detectors at Low Energy (VANDLE) uses the time of flight technique to measure the energy of neutrons from various nuclear processes. Beta delayed neutrons from fission fragments typically have an energy below 1 MeV, making measurements of their energy challenging. This has led to the use of a reliable off-the-shelf digital electronics system to instrument VANDLE. However, the timing resolution and neutron-energy threshold of the system required investigation. Timing resolutions better than 1 ns have been obtained. The digital system can be operated with low thresholds to obtain high detection efficiency for low energy neutrons ($E > 150$ keV). A proof-of-principle experiment using ^{89}Br was conducted at the Holifield Radioactive Ion Beam Facility (HRIBF) at Oak Ridge National Laboratory (ORNL). ^{89}Br is produced in proton induced fission of ^{238}U and was chosen because its neutron energy spectrum has been measured by G. Ewan et. al. (Z. Phys. A. 318, 309-314, (1984)).

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