Abstract Submitted
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Measuring the partial width of the ^{56}Ni proton-capture resonance through (d,n) with VANDLE and MoNA-LISA WILLIAM PETERS[1], Joint Institute for Heavy Ion Research & ORNL, R. GRZYWACZ, M. MADURGA, S. PAULAUSKAS, S. TAYLOR, J. ALLEN, U. Tenn. Knoxville, J.A. CIZEWSKI, B. MANNING, M.E. HOWARD, Rutgers, D.W. BARDAYAN, S.D. PAIN, ORNL, R.C.C. CLEMENT, INL, S. ILYUSHKIN, P.D. O'MALLEY, Col. Sch. of Mines, R. IKEYAMA, U. Wisconsin LaCrosse, R.L. KOZUB, K.D. LONG, Z.J. BERGSTROM, U. Tenn. Tech., P.A. DEYOUNG, Hope, W.F. ROGERS, Westmont, J. SMITH, M. JONES, T. BAUMANN, M. THOENNESSEN, MSU/NSCL, VANDLE AND MONA COLLABORATION — Due to the long half-life of ^{56}Ni and the low proton threshold of ^{57}Cu, the (p,γ) reaction on ^{56}Ni is the linchpin reaction for heavier elements in the *rp* process of explosive nucleosynthesis. A new attempt to measure the proton partial width of the excited $1/2^-$ state in ^{57}Cu and to indirectly extract the proton-capture resonance strength was performed at the National Superconducting Cyclotron Laboratory using the Versatile Array of Neutron Detectors at Low Energy (VANDLE) along with the MoNA-LISA neutron array. The VANDLE setup of digitizing electronics was event-matched to the MoNA-LISA-Sweeper data acquisition system. After a test run with a stable ^{40}Ca beam, a beam of ^{56}Ni impinged onto a deuterated polyethylene target inducing (d,n) transfer reactions to predominantly single-proton states in ^{57}Cu. These experiments were the commissioning experiments for VANDLE with a transfer reaction. Details of the unique experimental setup will be presented as well as current analysis of the data with both ^{40}Ca and ^{56}Ni beams.

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