Abstract Submitted
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Measurement of the ^{19}F(α,n) Cross Section for Nuclear Safeguards Science[1] C.S. REINGOLD, J.A. CIZEWSKI, S. BURCHER, B. MANNING, Rutgers, W.A. PETERS, Joint Institute for Heavy Ion Research, R.R.C. CLEMENT, Idaho National Lab, D.W. BARDAYAN, M.S. SMITH, ORNL, E. STECH, S. STRAUSS, W.P. TAN, M. WIESCHER, Notre Dame, M. MADURGA, University of Tenn., S. ILYUSHKIN, Colorado Sch. of Mines, VANDLE COLLABORATION — A precise measurement of the ^{19}F(α,n) cross section will improve Non Destructive Assays (NDA) of UF_6 and other actinide-fluoride samples via neutron detection techniques. We will determine the cross section with two complementary approaches. First, we will bombard a LaF_3 target with a pulsed ^{4}He beam from the Notre Dame FN tandem accelerator; second, we will send a fluorine beam from the ORNL tandem through a pure helium gas target. The neutron spectra from both of these reactions will be measured using the Versatile Array of Neutron Detectors at Low Energy (VANDLE), and coincident γ rays with a HPGe detector. We report here on data taken with VANDLE and a HPGe detector on a LaF_3 target. My poster outlines the motivation for this experiment, explains the stages of this experiment, the current experimental setup, and preliminary data.

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