Abstract Submitted
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Beta-delayed neutron emission studies with a C^{7}LYC array at CARIBU[1] GEMMA WILSON, PARTHA CHOWDHURY, CHRISTOPHER LISTER, TRISTAN BROWN, UMass Lowell, MICHAEL CARPENTER, ANL, THOMAS CHILLERY, PATRICK COPP, EMERY DOUCET, UMass Lowell, ALAN MITCHELL, ANU, GUY SAVARD, SHAOFEI ZHU, ANL — This work is a study of β-delayed neutron and γ emission from ^{94}Rb at CARIBU. Beta-delayed neutron emission studies are important in the astrophysical r-process, nuclear structure and for nuclear reactor safety and design. Approximately 150 γ rays are known in the daughter ^{94}Sr, many of which are unplaced. An estimated 26% of γ rays are thought to be missing. The probability of β-delayed neutron emission in ^{94}Sr is 10.2(2)%. Recently[1], substantial γ-decay from above the neutron separation energy in ^{94}Rb has been reported. This research is aimed at understanding this high-lying γ-strength. The experiment employed the X-Array (a high efficiency HPGe clover array), SCANS (Small CLYC Array for Neutron Scattering) and the SATURN decay station (Scintillator And Tape Using Radioactive Nuclei) for γ, fast neutron and β-particle detection, respectively. Data were collected in a triggerless digital data acquisition system, with detected β, n, and γ events correlated offline. Techniques, analysis and first results will be discussed. [1] J. L. Tain et al, Phys. Rev. Lett 115 (062502) 2015

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