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First Results From GRIFFIN: Half-Lives of Neutron Rich $^{128-130}$Cd RYAN DUNLOP, University of Guelph, GRIFFIN COLLABORATION — Half-lives of $N = 82$ nuclei below doubly-magic ^{132}Sn are key input parameters for any astrophysical r-process scenario and play an important role in the formation and shape of the second r-process abundance peak. Shell-model calculations for neutron-rich nuclei near the $N = 82$ neutron shell closure that are not yet experimentally accessible have been performed by adjusting the quenching of the Gamow-Teller (GT) operator to reproduce the ^{130}Cd half-life. The calculated half-lives of other nuclei in the region are known to be systematically too long. Recently, a shorter half-life for ^{130}Cd was measured by the EURICA collaboration that resolves this discrepancy by scaling the GT quenching by a constant factor for all of the nuclei in the region. Distinguishing between these discrepant half-life measurements for ^{130}Cd is thus of critical importance. We have measured the half-lives of $^{128-130}$Cd using the high-efficiency GRIFFIN γ-ray spectrometer at TRIUMF, which improves the precision of the ^{128,129}Cd half-lives, and confirms the shorter half-life of ^{130}Cd recently reported by the EURICA collaboration. Details of the GRIFFIN experiments will be presented and the implications of the resulting half-lives discussed.

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