

Recent highlights from the GRIFFIN spectrometer

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Large arrays of gamma-ray detectors coupled with auxiliary detection systems provide a powerful and versatile tool for studying exotic nuclei through nuclear spectroscopy at radioactive ion beam facilities. GRIFFIN (Gamma-Ray Infrastructure For Fundamental Investigations of Nuclei) is a state-of-the-art facility dedicated to beta decay spectroscopy with rare-isotope beams, situated at the TRIUMF-ISAC-I facility in Vancouver, Canada [1]. GRIFFIN is composed of 16 Compton-Suppressed HPGe clover detectors complemented by a powerful suite of ancillary detector sub-systems that includes plastic-scintillators for beta tagging, LN2-cooled Si(Li) detectors for conversion electron measurements and an array of eight LaBr3(Ce) scintillators for fast-timing measurements. The spectrometer supports a variety of research in the areas of nuclear structure, nuclear astrophysics, and fundamental symmetries. Recent experiments using GRIFFIN will be discussed including: transition strengths in ^{50}Sc from lifetime measurements, using the half life of ^{34}Ar to guide the choice of theoretical radiative and isospin symmetry breaking corrections for Fermi super allowed beta emitters, probing cross-shell excitations on the border of the island of inversion using gamma-gamma angular correlations in ^{34}Si , and the nature of quasiparticle configurations in ^{160}Gd are explored using the high-statistics beta decay of ^{160}Eu .

[1] A.B. Garnsworthy et al. ,NIM. A 918, 9 (2019)

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