

High Precision Half Life Measurement of ^{26}Na with GRIFFIN

Saturday, 18 February 2023 17:15 (15 minutes)

A high-precision half-life measurement for the radioactive isotope, ^{26}Na , was performed at TRIUMF's Isotope Separator and Accelerator (ISAC) facility. This is the first experimental test of the high-efficiency Gamma-Ray Infrastructure for Fundamental Investigations of Nuclei (GRIFFIN) spectrometer for performing high precision ($\pm 0.05\%$ or better) half-life measurements [1]. In this talk, I will discuss new results of the half-life obtained from gating on 1809-keV γ -ray photopeaks that include corrections for pile-up and deadtime losses. The results obtained from these techniques will be compared to a previous high-precision measurement of the that employed direct β counting [2].

KEYWORDS: radioactive isotope, half-life, deadtime, pile-up

References

1. A. B. Garnsworthy *et al.*, *Nucl. Instrum. Methods Phys. Res. A*, vol. **918**, 0168-9002, (2019).
2. G. F. Grinyer *et al.*, *Phys. Rev. C*, vol. **71**, 044309, (2005).

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