

Abstract Submitted
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Waveform Analysis Optimization for the ^{45}Ca Beta Decay Experiment RYAN WHITEHEAD, Univ of Tennessee, Knoxville, ^{45}Ca COLLABORATION — The ^{45}Ca experiment is searching for a non-zero Fierz interference term, which would imply a tensor type contribution to the low-energy weak interaction, possibly signaling Beyond-the-Standard-Model (BSM) physics. Beta spectrum measurements are being performed at LANL, using the segmented, large area, Si detectors developed for the Nab and UCNB experiments. 10^9 events have been recorded, with 38 of the 254 pixels instrumented, during the summers of 2016 and 2017. An important step to extracting the energy spectra is the correction of the waveform for pile-up events. A set of analysis tools has been developed to address this issue. A trapezoidal filter has been characterized and optimized for the experimental waveforms. This filter is primarily used for energy extraction, but, by adjusting certain parameters, it has been modified to identify pile-up events. The efficiency varies with the total energy of the particle and the amount deposited with each detector interaction. Preliminary results of this analysis will be presented.

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