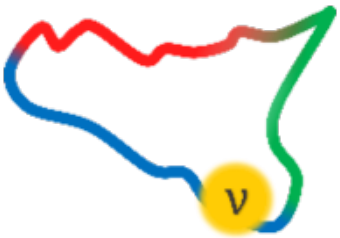

Contribution ID: **16** Type: **Poster & Mini-talk**

Energy calibration of bulk events in the BULLKID detector

Monday, June 23, 2025 5:00 PM (7 minutes)

BULLKID is a cryogenic, solid-state detector designed for direct searches of particle Dark Matter candidates, with mass ≤ 1 GeV/c^2, and coherent neutrino-nucleus scattering. It is based on an array of dice carved in 5 mm thick crystals, sensed by phonon mediated Kinetic Inductance Detectors. In previous works, the array was calibrated with bursts of optical photons, which are absorbed in the first micrometer of the dice and behave as surface events. In this work, I present the reconstruction of bulk events through
the X-rays generated by a ^{241}Am source and by the lead holder of the detector.
The peaks resolution is ~ 4.5% and their mean are shifted by −10 % with respect to the optical calibration. The resolution is further improved by a factor ~ 1.9 combining the signal from neighbors dice. These results confirm the performance of the detector in view of the physics goals of the BULLKID-DM experiment.

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