

Abstract Submitted
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Silicon Detector System and Noise Modeling CHAN HO PARK,
Lawrenceville School, RICHARD KYUNG, Seoul National University — We can postulate that dark matter are WIMPS, more specifically, Majorana particles called neutralinos floating through space. Upon neutralino-neutralino annihilation, they create a greater burst of other particles into space: these being all kinds of particles including anti-deuterons which are the indications of the existence of dark matter. For the development of the silicon detector, many factors including noise, shaping times and leakage current are considered. It is also an object of this study to find out factors affected by parallel noise such as leakage current and parallel resistance. High noise is not desirable, so we tried to avoid noise because it blurs the accurate readings that measure the x-ray signatures by adding a passivation material. We searched for the optimal resolution at which the FWHM is at a minimum at a specific shaping time, and for this, we used different shaping times to find the optimal resolution. Results shows where the paint/passivation material affects, and when is the best shaping time for the resolution measurement.

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