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Modeling Trigger Delay of the SuperCDMS experiment.

Monday, August 19, 2024 3:55 PM (10 minutes)

SuperCDMS (Cryogenic Dark Matter Search) is a dark matter direct detection experiment at SNOLAB; while the construction is underway, the Simulations group aims to build a model that reconstructs the energy deposition in an event based on the output of the detector electronics. An unknown delay time exists between the energy deposition and the peak of the measured pulse, which I aimed to model. I developed a pipeline capable of generating simulated noise sequences of arbitrary length based on the noise spectrum measured from the detectors; using this tool, I examined the discrepancies between the simulated and actual pulses. My work enables accurate reconstruction of the deposition time based on the detectors' output.

What area of study best describes your talk?

Physics

If you answered 'Other', please provide the study area.

Primary author: WU, Tom (University of Toronto)

Presenter: WU, Tom (University of Toronto)

Session Classification: Presentations