



Contribution ID: 31

Type: Oral Presentation

The background rejection capabilities of highly-pixelated solid-state detectors

Friday, June 17, 2022 2:15 PM (15 minutes)

Highly-pixelated solid-state detectors offer outstanding capabilities in the identification and rejection of backgrounds from natural radioactivity. I will present the background identification techniques developed for the DAMIC experiment, which employs silicon CCDs to search for dark matter. DAMIC has demonstrated the capability to disentangle and measure the activities of every β emitter from the ^{32}Si , ^{238}U and ^{232}Th chains in the silicon target. Similar techniques will be adopted by the Selena Neutrino Experiment, which will employ hybrid amorphous $^{82}\text{Se}/\text{CMOS}$ imagers to perform spectroscopy of $\beta\beta$ decay and solar neutrinos. I will present the proposed experimental strategy for Selena to achieve zero-background in a 100 ton-year exposure.

Primary author: Prof. CHAVARRIA, Alvaro (University of Washington)

Presenter: Prof. CHAVARRIA, Alvaro (University of Washington)

Session Classification: LRT 2022 - presentations

Track Classification: Experiment Backgrounds, Models, Simulations