

Analyzing a novel class of background events in the SNO+ detector

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The SNO+ experiment is located 2km underground at SNOLAB with the primary purpose of studying neutrino interactions. The detector is a 12-metre-diameter acrylic sphere filled with 780 tonnes of liquid scintillator, which produces light when a charged particle passes through it. This volume is surrounded by almost 10000 photomultiplier tubes (PMTs), which detect the light from the scintillator. At SNO+, a minimal, well-understood detector background is crucial to obtain meaningful data, thus the background is constantly analyzed. Through this, a new population of background events were observed that do not fall into the SNO+ analysis region, but are interesting in their spatial, temporal, and energy distributions. This presentation will describe these events, as well as the work we've done to narrow down their source.

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