

# SNO+ Americium-Beryllium Source Calibration and Simulation

*Tuesday, August 20, 2024 9:25 AM (10 minutes)*

Before we can search for neutrinoless double beta decay with the SNO+ neutrino detector, we must be sure that we understand the optics of the detector as well as possible. In particular, the 2.2 MeV and 4.4 MeV energies are of interest. The AmBe source will serve to calibrate the detector to these two energy levels. SNO+ is a very sensitive experiment, and as such, deploying a source in the detector without fully knowing what we expect to see is out of the question. My work has been simulating the AmBe source inside of the detector to better understand what data. I simulated the source in positions along the x, y and z axes in the detector, as well as all 3-dimensional positions between said axes in 0.5 m steps. I also analyzed data from the neck and the edges of the acrylic vessel, which are points of interest for this simulation. In addition to working on the simulation, I have been assisting in preparing the DCR for the AmBe source's deployment in scintillator.

## What area of study best describes your talk?

Physics

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

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