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POS-36 - Radon Assays in SNO+

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Radon-222 and its daughters are a primary background within SNO+, a large liquid scintillator detector located deep underground at SNOLAB, designed to detect rare neutrino interactions. Therefore it is crucial to determine the remaining trace amounts contributing to the experiments background signal carefully.

A cryogenic radon trapping system is used to monitor the backgrounds observed in both water and scintillator phases of the experiment, this system has been improved and must be tested and then operated frequently. Concentrations up to 8×10^{-5} Rn atoms/L (1.6×10^{-17} g $^{238}\text{U/g}$ LAB) can be measured within scintillator, and 3.5×10^{-14} g $^{238}\text{U/g}$ H₂O in water.

Some of the data taken so far and the expectations will be shown in this poster.

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