

Radon Mitigation for SNO+

Radon is an unwanted background in current rare-event search experiments taking place at SNOLAB. The radon is ever-present and naturally occurring due to the uranium and thorium in the surrounding rock in the mine, and as such poses challenges when creating a system for radon mitigation. SNO+ is a multi-purpose neutrino detector and radon is one of the backgrounds that needs to be well understood and reduced as much as possible. This includes in-situ analysis as well as ex-situ measurement through assays. The assays are performed to monitor and quantify the radon content in the water shield or the nitrogen covergas system. The assay programme is extensive and originates from the SNO experiment. One method of radon mitigation that is currently being explored is a radon trap that can be attached to the covergas system of the Universal Interface (UI) that will use charcoal to remove some radon, thereby lowering the radon content. Ongoing efforts that use charcoal as a medium to trap radon are quite extensive and include some dark matter experiments as well as assay efforts currently taking place at SNOLAB.

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