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Contribution ID: 3132 Type: **Poster Competition (Graduate Student) / Compétition affiches (Étudiant(e) 2e ou 3e cycle)**

(G*) (POS-41) SNO+ backgrounds: Po210 on the acrylic vessel surface and Rn222 in cavity water

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SNO+ is a 780 tonnes of liquid scintillator neutrino detector located at Sudbury, ON in Vale's Creighton mine. 2km of rock above reduce cosmic radiation and enable rare event searches. However, radioactive material in the rock can decay and produce radiation in the region of interest of SNO+. This presentation will show the results for the daughter of U238 in the rock: Rn222, which is part of the external backgrounds that need to be monitored regularly. The water assay technique is used to find the Rn222 concentration in the cavity water surrounding the detector. In addition, the analysis of the SNO+ scintillator data during partial fill and the wavelength shifter addition period helps to understand the Po210 (Rn222 daughter) activity on the acrylic vessel surface of the detector. These results will also be presented.

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