



Contribution ID: 1185
compétition)

Type: Oral (Student, In Competition) / Orale (Étudiant(e), inscrit à la

Rn-222 Assays for SNO+

Monday 13 June 2016 11:45 (15 minutes)

SNO+ is a large, underground neutrino detector, redesigned from the SNO detector. Three separate phases of SNO+ will provide a diverse study of neutrinos, with one phase specifically dedicated to the search for neutrinoless double beta decay in Te-130. At a depth of 2 km underground, SNO+ is shielded from many cosmogenics, yet the decay of U-238 within the surrounding rock leads to high (~3.54 pCi/L) levels of Rn-222 in the air. Two cryotrapping units capable of collecting Rn-222 into Lucas cells are under development: one for the water shielding tank surrounding the cavity, the other for the scintillator fluid inside the detector. Once radon has been collected the Lucas cells are then taken to surface and counted, which will verify if the targets of $3.5\text{E}-13$ g U/g water and $\sim 1\text{E}-17$ g U /g scintillator are met. The status of both units and the Lucas cell counting system are discussed. The scintillator collector is under construction, the water unit is undergoing recommissioning, and the Lucas cell counting system will be updated.

Author: RUMLESKIE, Janet (Laurentian University)

Presenter: RUMLESKIE, Janet (Laurentian University)

Session Classification: M1-4 Neutrinoless Double Beta Decay I (PPD-DNP-DTP) / Double désintégration beta sans neutrino I (PPD-DPN-DPT)

Track Classification: Particle Physics / Physique des particules (PPD)