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## Water Assay Using Hydrous Titanium Oxide Technique for the SNO+ Experiment

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SNO+ is a multipurpose neutrino physics detector, located 2 km deep underground at SNOLAB in Sudbury, Canada. The SNO+ Acrylic Vessel (AV) will be filled with 780 tons of liquid scintillator, Linear Alkyl Benzene (LAB). The AV is surrounded by about 7000 tonnes of ultrapure light water, which shields the detector from naturally occurring radioactivity in the surrounding rock, PMTs etc. To achieve the radiopurity requirements for physics data, the water must be very clean on the level of  $^{238}\text{U}$ :  $2.06 \times 10^{-13}$  gU/g water and  $^{232}\text{Th}$ :  $5.20 \times 10^{-14}$  gTh/g water. The existing water assay technique, Hydrous Titanium Oxide (HTiO), is used for assaying the radioactive backgrounds in the water from different regions of the SNO+ detector. Several steps are involved: deposition, extraction, elution, and secondary concentration. The amount of Ra in the sample is then determined by Bi-Po coincidence counting and the amount of  $^{232}\text{Th}$  and  $^{238}\text{U}$  present in the water is determined as well. All steps involved in the HTiO assay technique are presented as well as a sample analysis.

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