

SNO+ water purification and radium and radon assay techniques

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The SNO+ cavity is currently filled with 7400 tonnes of ultra pure water. The water purification system was developed for the SNO experiment prior to SNO+ and is now fully recommissioned and used to refill the SNO+ cavity and acrylic vessel. The water from Creighton mine is purified by going through series of filters, reverse osmosis units, UV light and an ion-exchanged unit. It is degassed and regassed with N₂, it is then cooled down by chillers before entering the cavity. The U-238 and Th-232 content of purified water is monitored by doing regular radon and radium assays. The radon assays are done by degassing radon from water and passing it through multiple radon traps, the radium assays is performed by using columns containing membranes coated with hydrous titanium oxide (HTIO). In this talk an overview of SNO+ purification system and the status of radon and radium assays after recommissioning are given.

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