Contribution ID: 15

Type: not specified

Characterizing Photomultiplier Tubes in nEXO's Outer Detector

Thursday 17 August 2023 15:30 (15 minutes)

The nEXO experiment aims to search for neutrinoless double beta decay in liquid 136Xe. It uses an inner detector, consisting of a time projection chamber, contained within an outer detector. The outer detector, filled with D2O and lined with photomultiplier tubes, shields the experiment passively by stopping cosmic backgrounds in the heavy water and actively by detecting the Cherenkov radiation emitted by traversing muons. In this talk, I will explain the challenges of characterizing the resistance and dark rate of PMTs, testing the light tightness of our PMT test enclosure and simulating the impact on photon collection of the position and orientation of the PMTs in the outer detector. As a result of these projects, we have begun defining a procedure for characterizing all the PMTs that will serve in nEXO's outer detector.

Topics - Please choose one:

Particle Astro

Author:KARAM, Kristofer (Université de Montréal)Presenter:KARAM, Kristofer (Université de Montréal)Session Classification:Session II