XXXI International Conference on Neutrino Physics and Astrophysics

ID contributo: 471

Tipo: Poster

A 6Li-doped pulse shape sensitive plastic scintillator for reactor antineutrino detection

martedì 18 giugno 2024 17:30 (2 ore)

Large-scale 6Li-doped pulse shape sensitive plastic scintillator is one of several technologies under development within the Mobile Antineutrino Demonstrator project. Liquid scintillator with similar capabilities was one of key aspects of the aboveground reactor antineutrino detection demonstration by the PROSPECT experiment. However, a plastic material is considered a requirement for truly mobile above-ground detection systems suited to reactor monitoring for safeguards. The new formulation of plastic scintillator is being developed in partnership with Eljen Technologies and can be obtained in multi-liter single volumes enabling the construction of segments at meter-scale lengths. We will present a summary of measured performance criteria, which include attenuation length, stability, pulse shape sensitivity, and neutron efficiency measurements.

This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344. LLNL-ABS-861441

Poster prize

No

First affiliation

LLNL

Second affiliation

Collaboration (if any)

Mobile Antineutrino Demonstrator

Given name

Cristian

Surname

Roca

Institutional email

rocacatala1@llnl.gov

Gender

Male

Autori principali: ROCA CATALA, Cristian (LLNL); BOWDEN, Nathaniel; LI, Viacheslav (LLNL) Relatori: ROCA CATALA, Cristian (LLNL); BOWDEN, Nathaniel Classifica Sessioni: Poster session and reception 1

Classificazione della track: New technologies for neutrino physics