



Contribution ID: 338

Type: **not specified**

Water-based Liquid Scintillator R&D effort at BNL towards a large-scale neutrino detector

Wednesday 15 May 2024 14:00 (15 minutes)

The large-scale Water-based Liquid Scintillator (WbLS) detector is a new opportunity for the neutrino community to accomplish competent long-baseline neutrino oscillation and unprecedented low-energy neutrino measurements. Several table-top WbLS detection systems have been implemented at BNL and LBNL.

It is critical to advance further with a mid-scale demonstrator to understand and tune the WbLS property and stability.

A 1-ton detector located at BNL instrumentation building, with WbLS contained in an acrylic tank that coupled with 2" and 3" PMTs outside, was built in 2022. In addition, a 30-ton detector at BNL, equipped with Hamamatsu 10" PMTs submerged in the WbLS, is being built with the same team. Various liquid materials were developed and filled sequentially in the 1-ton detector. The performance and stability of WbLS for cosmic muons and an alpha source were measured with the 1-ton detector. In this presentation, the latest experiment's status and the physics results will be shown.

Author: YANG, Guang (Brookhaven National Lab)

Presenter: YANG, Guang (Brookhaven National Lab)

Session Classification: Instrumentation

Track Classification: Instrumentation