



SBND Status

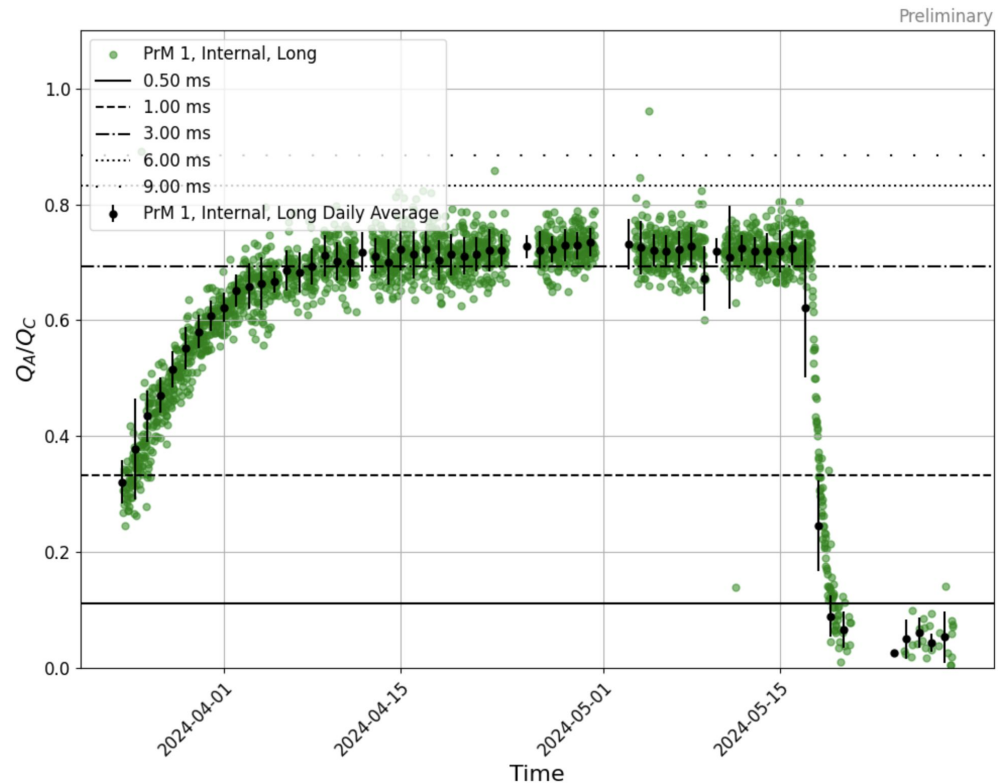
Michelle Stancari, [Lauren Yates](#)
Proton PMG / All Experimenters' Meeting
June 6, 2024

Cryogenics Commissioning: LAr Filter Regeneration

LAr filter regeneration was completed in recent weeks

Have an (expected) decrease in purity from the time when filters were bypassed for regeneration, but expect steady-state purity may improve going forward

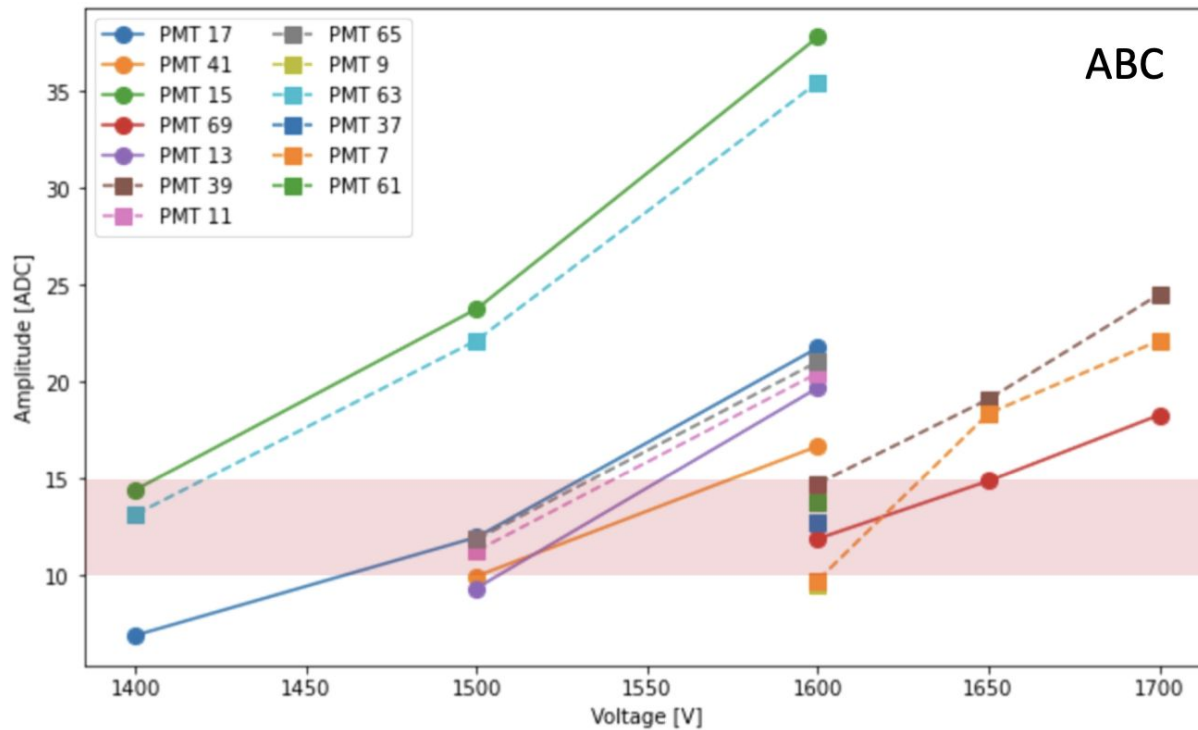
This is another milestone towards wrapping up cryo commissioning



First PMT Gain Equalization

Photon Detection System (PDS) team has analyzed data that we have collected with PMTs at several voltages

PMTs now ramped to initial operational voltages based on that analysis



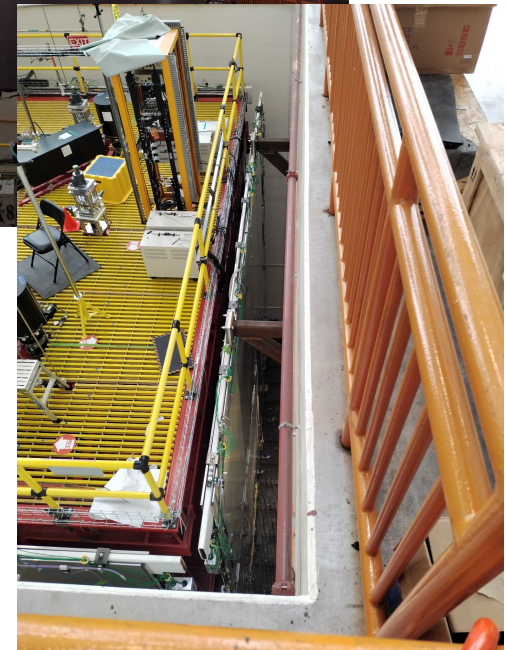
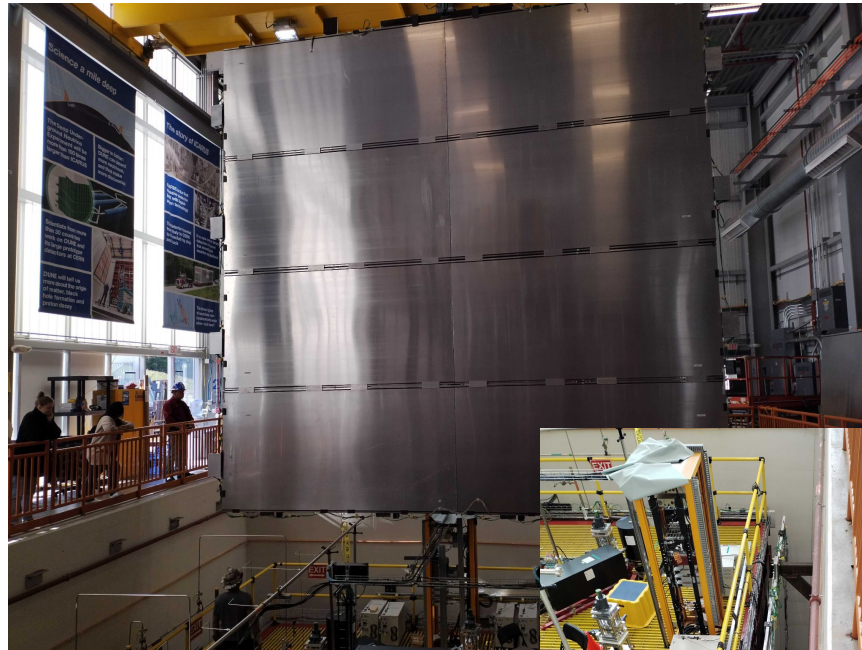
Fitted single PE ADC peaks for several SBND PMTs at different voltages, with a band showing the target gain in ADC that will then determine the operational PMT voltages

CRT Installation & Integration

West and south side CRT walls were installed in May, completing the side CRT

Data-taking with CRT walls is happening regularly, including beam data to allow us to confirm timing and synchronization

CRT walls are also being used to trigger readouts enriched in crossing muons, useful for commissioning and calibration efforts

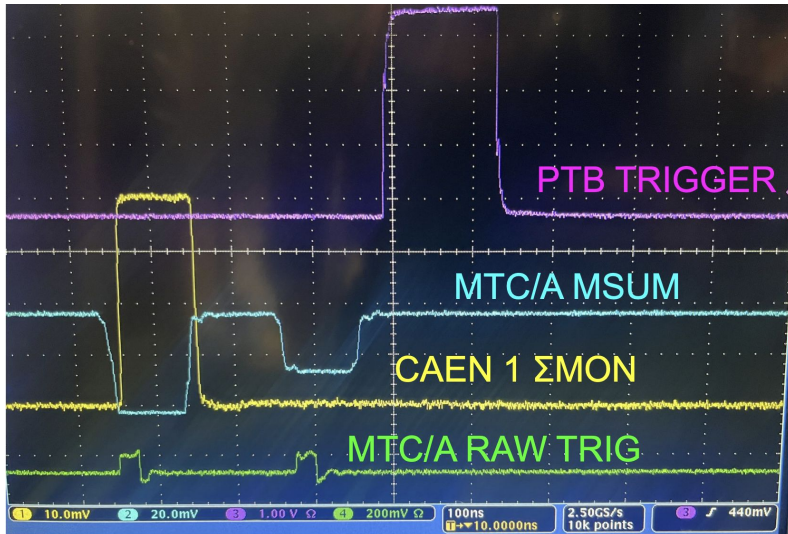


Photos from south CRT installation, last Friday, May 31

DAQ & Trigger

Significant progress on integrating all subsystems in DAQ and verifying time synchronization, trigger functionality

Commissioning of the light-based trigger system, which is expected to be the workhorse of the SBND physics program, has started



Light-related trigger logic signals in the SBND hardware trigger system during a recent run.

Monitoring of a recent run incorporating the light-based trigger logic, showing the trigger and event-building rates in real time

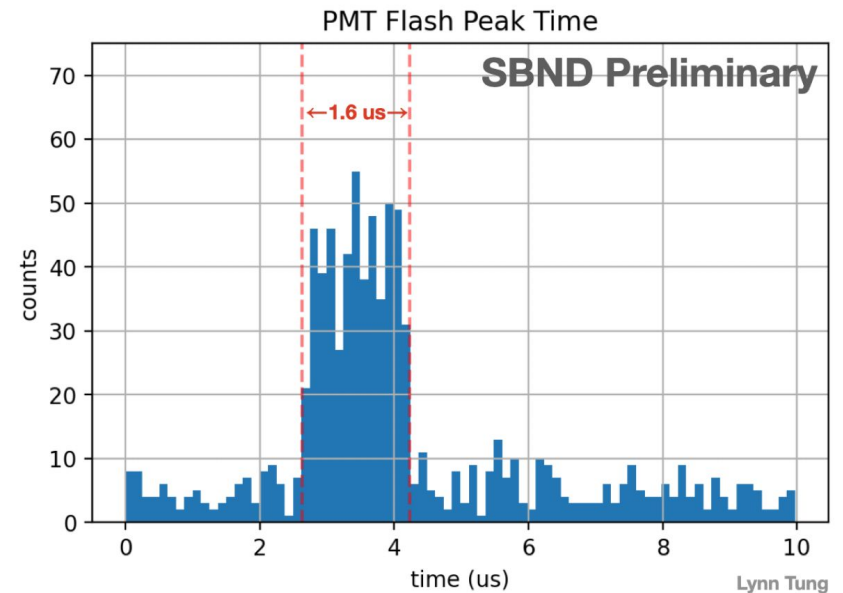


Observation of Beam Flashes

In the past month, we've collected beam data with the PMT HV up and have studied beam timing by looking for an excess of flashes from neutrinos observed in PMTs

We see an excess of 1.6us within our 10us PMT readout window, which is what we expect for BNB

This is a **huge** milestone for our PDS, DAQ, trigger, and beam/timing commissioning teams!



Lynn Tung