



Contribution ID: 59

Type: **Presentation**

Scintillation Light in MicroBooNE After 5 Years of Data Taking

Wednesday, 21 September 2022 14:55 (15 minutes)

The MicroBooNE experiment is a Liquid Argon Time Projection Chamber (LArTPC) placed along Booster Neutrino Beam (BNB) at Fermilab. Its primary physics goal is to contribute to addressing the elusive short-baseline MiniBooNE low energy excess. MicroBooNE records and utilises both the ionisation charge and scintillation light produced inside the TPC to select and reconstruct its events. The scintillation light collected through a plane of PhotoMultiplier Tubes (PMTs) is also used for accurate event timing and cosmic muon rejection with the latter being an important driver for detectors, such as MicroBooNE, located on the surface. A good understanding of light modeling and its related systematic uncertainties is crucial to evaluate their impact on physics analyses. The experience acquired from MicroBooNE regarding how the stability of the scintillation light behaves and evolves during the 5 years of the primary physics run will be discussed. This will help inform the next many years long running Short-Baseline Neutrino (SBN) and DUNE programmes to properly understand the physics of the scintillation light in LArTPCs.

Primary author: BASQUE, Vincent (Fermilab)

Presenter: BASQUE, Vincent (Fermilab)

Session Classification: Long-term light yield stability

Track Classification: Light/charge readout (PMT, SiPM, WLS, electronics etc.)