Contribution ID: **8** Type: **not specified**

Effect of Exposure to Optical and Near UV Light on Waveshifter Efficiency

Thursday, 30 May 2013 10:50 (25 minutes)

Current and future neutrino and dark matter experiments use waveshifters to detect the VUV scintillation photons from liquid noble elements. The efficiency of these waveshifters can be affected by exposure to optical and near UV light. We have compared the degradation of the absorption efficiency of bis-MSB (p-bis(o-methylstyryl)benzene) and TPB (1,1,4,4-tetraphenyl-1,3-butadiene) on prototype light guides designed to detect scintillation photons in the liquid argon TPC of the proposed Long Baseline Neutrino Experiment (LBNE). We obtained these results by exposing light guides made with either TPB or bis-MSB to optical and (optical + near UV) light and then comparing them to unexposed light guides. We tested the efficiency of the waveshifters in a dark box at 245 nm. The experimental results reported here were obtained over a month of exposure.

Primary author: MUFSON, Stuart (Indiana U)

Co-authors: Mr BAPTISTA, Brian (Indiana University); Dr WITTINGTON, Denver (Indiana University)

Presenter: MUFSON, Stuart (Indiana U)

Session Classification: Scintillation Light from Noble Elements - R&D Efforts