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Comparison of TPB and bis-MSB as VUV Waveshifters

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Future neutrino and dark matter experiments require the detection of scintillation photons from detectors that use liquid noble elements as the active detector medium. These scintillation photons are generated in the VUV region (< 200 nm) of the spectrum.
We present here the results of comparative studies of the absorption spectra in the VUV of the waveshifters bis-MSB (p-bis(o-methylstyryl)benzene) and TPB (1,1,4,4-tetraphenyl-1,3-butadiene). We obtained these results using prototype light guides designed to detect scintillation photons in the liquid argon TPC of the proposed Long Baseline Neutrino Experiment (LBNE). We compare our measurements longward of 200 nm with spectra we found in the literature.

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