



Contribution ID: 39

Type: **Presentation**

Measurements of Wavelength Shifters' conversion efficiency in the Vacuum Ultraviolet region using Synchrotron Light

Saturday, 23 September 2017 14:15 (15 minutes)

The Time Projection Chambers with noble gases are a powerful neutrino detector. The light emitted by the scintillation process is mostly invisible to the most common light detection systems. The vastly used solution to this problem is to use wavelength shifters to downshift the high energy scintillation photons into less energetic ones.

Some Wavelength shifters' characteristics are not yet precisely measured. This work shows the most important results from the measurement of one of those characteristics, the integrated emission spectra. The excitation light range was chosen to include all noble gases emission peaks, and was achieved using synchrotron light provided in collaboration with Toroidal Grating Monochromator line (TGM) team at Brazilian Synchrotron Light Laboratory (LNLS).

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Session Classification: Saturday Afternoon

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