

Building LBNE photon library

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Implement the attenuation function of Light Guide

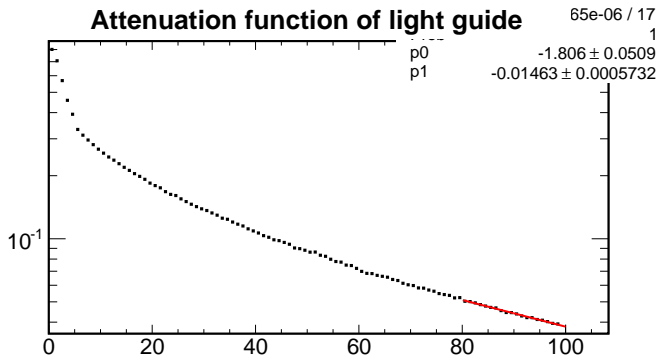


Figure: Attenuation function of the light bar

Interpolating the attenuation for distance shorter than 1m, and using an exponential function fit from the test data for distance longer than 1m.

Implement the attenuation function of Light Guide

- Time consumption: It still takes 4 million hours of CPU time.
- The volume of the library: <2GB
- Building a pre-library with binning the light guide, then implementing the attenuation function in conversion the pre-library to a smaller library.
- A pre-library for 1000 voxels is 58KB, the library is 20KB after conversion.
- Be careful with merging 10 bins into one channel.

Transmission of light through wire mesh

The light guide will be sandwiched by wire mesh.
The transmission of light through the wire mesh is unknown.
We are considering to set up a test at Duke.