Abstract Submitted
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LENS: Light Transport[1] ZACHARY YOKLEY, Virginia Tech, THE LENS COLLABORATION — The LENS detector uses an optically segmented 3D lattice, a scintillation lattice (SL), that channels light via total internal reflection from a scintillation event down channels parallel to the 3 primary Cartesian axes to the edge of the detector. This unique design provides spatial and temporal resolution required to distinguish the internal background of ^{115}In from the neutrino signal. Optical segmentation is achieved with Teflon films. Currently a 400 liter prototype, miniLENS, is being developed to demonstrate the internal background rejection techniques needed for LENS. This requires that miniLENS be shielded from external backgrounds from the surrounding materials and the photomultiplier tubes (PMTs). This shielding is provided by a water tank that surrounds miniLENS. In order to retain the channel information and separate the PMTs from the detector the LENS collaboration has developed light guides (LGs) made from multilayer films. These LGs transport light both by total internal and specular reflection providing an efficient means of coupling the SL through the water shield to the PMTs outside the water tank. This talk will discuss light transport in the SL as well as the design and construction of the LGs in the context of miniLENS.

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