

Abstract Submitted
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VUV light reflectivity measurements from PTFE in Liquid Xenon for the LZ Dark Matter experiment KIRILL PUSHKIN, University of Michigan, LZ COLLABORATION — The LUX-Zeplin (LZ) collaboration is the next generation of the experiment to search for Dark Matter in the Universe with a dual-phase detector based on liquid xenon (LXe) with a target mass of 7 ton. LXe dual phase detectors are very sensitive probes to search for WIMP dark matter interactions. The LZ collaboration is conducting R&D to study VUV light reflectivity from PTFE (Teflon) in LXe. Teflon is used in dual phase detectors both as an electrical insulator and as reflector of VUV scintillation light (~ 175 nm) to improve photon detection with photomultiplier tubes (PMTs). However, experimental data for the reflectance of VUV light from PTFE in LXe is not sufficiently conclusive. We present a new technique of measuring the light reflectivity from PTFE by varying the fractional area of the PMT in the detector. PTFE reflectivity measurements were performed as a function of Teflon wall thickness in the range of 2 mm to 9.5 mm. The method, apparatus and experimental results will be presented.

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