Optimization in Silicon Photomultiplier Readout\textsuperscript{1} NHAN PHAM, University of Texas at Arlington — In the field of neutrino detectors, the use of Liquid Argon Time Projection Chambers (LArTPC’s) is quickly becoming the one of the leading choices due to Argon’s copious production of both ionization and scintillation light. Silicon Photomultiplier (SiPM) are explored for use in LArTPC for detecting scintillation light. To observe and to modify the signals from SiPM’s, an operational amplifier (Op-Amp) will be used. The presented analysis is split into two parts. The first case is aimed to find the optimal amplification utilizing a common Op-Amp and demonstrating its functionality. The second is aimed at the use of a SiPM for a radioactive source deployment done for the Liquid Argon in A Testbeam (LArIAT) experiment. Future work is focused on work for readout by using a low-cost microcontroller (Arduino) and direct scintillation light underway at UTA’s cryogenic laboratory.

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Date submitted: 25 Sep 2016

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