

Abstract Submitted
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Optimization in Silicon Photomultiplier Readout¹ 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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