Abstract Submitted
for the TSF16 Meeting of
The American Physical Society

Monitoring a liquid argon neutrino detector by Arduino. ILKER PARMAKSIZ, University of Texas at Arlington — Liquid Argon Time Projection Chambers (LArTPC's) are becoming one of the premier neutrino detector technologies being used in short-baseline oscillation experiments (such as Fermilab's Short-Baseline Neutrino Platform) and future long-baseline experiments (such as the Deep Underground Neutrino Experiment). A great deal of research is still underway to improve and understand these detectors and the development of small-scale LArTPC teststands at universities will aid in this effort. The University of Texas Arlington is building such a purified LArTPC teststand and thus requires active monitoring of many components as well as exploring low cost readout solutions for simple data acquisition. In this talk, we will present work done to utilize inexpensive micro-controllers (such as Arduinos) to actively monitor and control the cryogenic setup as well as some preliminary work to use these micro-controllers to readout various detector components including purity monitors and silicon photomultipliers (SiPM's). Acquiring data from Arduino to actively both store on computer and upload it to web-servers to get the alive view of the data from Internet , and notifying users via text message for abnormal temperature changes in the system.

ilker parmaksiz
University of Texas at Arlington

Date submitted: 24 Sep 2016 Electronic form version 1.4