Abstract Submitted
for the TSF13 Meeting of
The American Physical Society

Improvement of Environmental Monitoring for the SeaQuest Detector[1] ELIZABETH CARLISLE, Abilene Christian University, SEAQUEST COLLABORATION — SeaQuest(Fermilab E906), uses the 120 GeV accelerator at Fermilab to collide protons with a fixed target. The primary targets are liquid hydrogen and liquid deuterium. SeaQuest will study the anti-down to anti-up quark asymmetry known to exist in the sea of gluons, quarks, and antiquarks in the proton and neutron. Recording environmental conditions is important, since detector performance and response can vary with conditions such as humidity, temperature and pressure, which vary over time. Due to the size of the detector hall, there are vertical temperature gradients, so temperature must be measured at varying heights. Another important need is to monitor temperature in electronics racks to know when they are overheating. The requirements of the equipment to be used were that it had to be ethernet based and rely only on non-proprietory software. Also, in order to be used during a data run, it has to be fast enough to be recorded in the 55 second gaps between proton spills. This presentation will focus on our solution for measuring environmental conditions, as well as how the time it took to read out data was dropped from 17.5 seconds to 6.9 seconds.

[1]This research supported in part by the U.S. DOE under grant #DE-FG02-03ER41243

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Date submitted: 13 Sep 2013 Electronic form version 1.4