Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Designing an Integrated Data Acquisition System for a Modular Cosmic Ray Test Stand[1] KOLBY KIESLING, Abilene Christian University — The modular cosmic ray test stand (CRTS) is an array of plastic scintillators with photo-multiplier tubes (PMTs) used to determine efficiencies of prototype detectors using cosmic ray muons. The CRTS is a fully adjustable detector array using 80/20 with two shelves of four scintillators, each one 20 cm by 180 cm in size, with PMTs attached to both ends. Development of a VME-based data acquisition system (DAQ) has started with goals to benchmark prototype detectors at Abilene Christian University for use at national laboratories. The VME DAQ is composed of a NIM constant fraction discriminator, MCFD-16, which splits ECL out signals to a VME time to digital converter, MTDC-32, and VME charge density integrator, MQDC-32. The Wiener VM-USB is used for event execution and readout on the VME bus. Additionally, a Wiener MPODC is used to control the voltage supply to the PMTs. To monitor the behavior of the equipment as well as quality of data that is collected, MIDAS software has been utilized. This presentation will describe the design process of developing the MIDAS-based DAQ and its early implementation.

[1]This research was supported by US DOE MENP Grant DE-FG02-03ER41243

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Date submitted: 24 Jul 2019 Electronic form version 1.4