Contribution ID: **75** Type: **not specified**

Phase-1 Upgrade for the CMS Hadron Endcap Calorimeter

Friday, 26 October 2018 13:30 (10 minutes)

The CMS hadronic calorimeter (HCAL) employs a plastic-scintillator-based endcap detector. The CMS HCAL Phase 1 upgrade involves installing silicon photomultipliers (SiPM) to measure light from scintillators in the detector. The SiPM signals are digitized by custom readout cards, called QIE cards, using the charge integration and encoder version 11 (QIE11) chip. The QIE cards for the HCAL endcap (HE) were tested and calibrated at FNAL. Then at CERN the QIE cards completed high radiation tests in the CHARM facility and muon/pion energy measurements in testbeam. Finally, the HE readout electronics were installed in CMS in 2018. The HCAL endcaps were calibrated using two Co-60 radiation sources. During physics data-taking in 2018, the HCAL online software (HCOS) configures and monitors the readout electronics to ensure data quality. This talk will summarize the testing, installation and commissioning of the HE Phase 1 upgrade readout system.

Primary author: SMITH, Caleb (Baylor University)

Presenter: SMITH, Caleb (Baylor University)

Session Classification: Young Physicists' Lightning Round Session 3