Contribution ID: **17** Type: **not specified**

Testing and Assembly of the High Density Interconnect Circuits for the CMS Forward Pixel Detector Upgrade

Monday, 9 June 2014 13:30 (20 minutes)

The CMS pixel detector is the innermost component of the all-silicon tracking system located closest to the interaction point. The foreseen increase of the instantaneous and integrated luminosities at the LHC necessitate an upgrade of the pixel detector in order to maintain the excellent tracking performance of the CMS detector. The main new features of the upgraded pixel detector would be ultra-light mechanical design with four barrel layers and three end-caps on either side of the interaction region, and a digital readout chip with higher rate capability and a new cooling system. The forward pixel detector will have 672 detector modules with 44 million pixels of the size 100 x 150 micrometers. The modules consist of silicon sensors bump-bonded to readout chips. A high-density-interconnect (HDI) circuit is glued on top of the sensor and is wire-bonded to 2x8 array of readout chips. HDI provide signal and power distribution for the readout circuitry. The group from SUNY at Buffalo group is responsible for the detailed testing and assembly of the HDIs at Fermilab. The talk will present our contribution to the testing and assembly of the HDI circuit boards.

Primary authors: GODSHALK, Andrew (SUNY at Buffalo); Dr KUMAR, Ashish (State University of New York at Buffalo); Dr DOLEN, James (University at Buffalo); ALYARI, Maral (SUNY at Buffalo); GORDON, Matthew (SUNY at Buffalo)

Presenter: GODSHALK, Andrew (SUNY at Buffalo)

Session Classification: Session 2