

Study of the CMS Phase 1 Pixel Pilot Blade Data Reconstruction

The Compact Muon Solenoid (CMS) detector is one of two general-purpose detectors that reconstruct the products of high energy particle interactions in the Large Hadron Collider (LHC) at CERN. The silicon pixel detector is the innermost component of the CMS tracking system. The detector which was in operation between 2009 and 2016 has now been decommissioned. An upgraded one is in preparation for installation in the beginning of 2017. During the previous shutdown period of the LHC, a prototype readout system and a third disk was inserted into the old forward pixel detector with eight prototype blades constructed using the new digital read-out chips. Testing the performance of these pilot modules enabled us to gain operational experience with the upgraded detector. In this poster, the data reconstruction of the data taken with the new modules is presented including information on the calibration of the reconstruction software. The hit finding efficiency and residual of these new modules are also shown.

Primary author: Mr VAMI, Tamas Almos (Wigner RCP)

Co-author: Dr VESZPREMI, Viktor (Wigner RCP)

Presenter: Mr VAMI, Tamas Almos (Wigner RCP)

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