

Abstract Submitted
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Performance Results of the ATLAS Pixel Detector with First Collision Data MASAYUKI KONDO, University of Texas at Dallas, ATLAS COLLABORATION — The ATLAS Pixel Detector is the innermost detector of the ATLAS experiment at CERN's Large Hadron Collider (LHC) with approximately 80 million electronic channels. It is a high-acceptance, high resolution, low-noise tracking device designed to distinguish individual charged tracks within the dense jets produced in proton collisions at the LHC. Calibration of the Pixel Detector modules' alignment with respect to each other and other components of the ATLAS Inner Detector is accomplished using real tracks. Alignment was first performed using cosmic-ray data from Autumn 2008 in which 5 million tracks without the solenoid magnetic field and 2.6 million tracks with the magnetic field were recorded. More recently, tracks from the first proton-proton collisions during December 2010 are used. The performance of the Pixel Detector with cosmic rays and the first LHC collisions at $\sqrt{s} = 0.9$ TeV and 2.36 TeV will be reported. Currently tracking performance is statistically limited by the number of tracks available for alignment, but it is sufficient for the first observation of composites such as K_s^0 mesons. Continual improvement is anticipated during 2010 LHC running.

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