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Reconstruction of known particle decays in proton-proton collisions at energies of 900 GeV and 7 TeV with the ATLAS Inner Detector

The ATLAS experiment is one of two general purpose detectors at the Large Hadron Collider. ATLAS is equipped with a charged particle tracking system consisting of three subdetectors, which provide high precision measurements with fine detector granularity. The pixel and microstrip subdetectors, which use silicon technology, are complemented with the transition radiation tracker.

The reconstruction of known particle decays is an important tool to understand the performance of the ATLAS Inner Detector and its track and vertex reconstruction and particle identification capabilities. Using data taken at center-of-mass energies of 0.9 TeV and 7 TeV, several different particle decays such as K short, Λ , D , K etc. have been reconstructed and their properties compared to MC predictions.

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