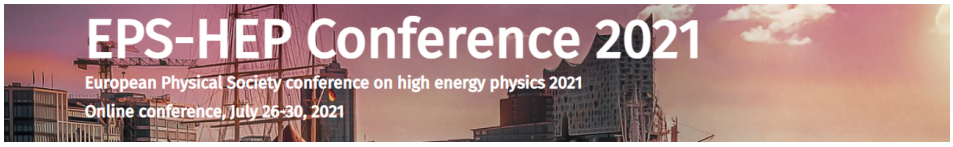

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Particle reconstruction performance studies of sMDT detector for the HL upgrade of the ATLAS Muon System

The expected High Luminosity Large Hadron Collider (HL-LHC) operations require the experiments at the LHC to upgrade the detectors with new technologies to cope with an increased event rate. A new small-diameter Monitored Drift Tube (sMDT) chamber has been developed to upgrade the Muon Spectrometer of the ATLAS experiment. A prototype sMDT chamber has been constructed at the University of Michigan to demonstrate the required performance. In this talk I outline the methodology used to determine the detector tracking resolution and efficiency with cosmic ray muons, which includes a reconstruction of sMDT data and a simulation of the test chamber with Geant4.

Collaboration / Activity

ATLAS Collaboration

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