



Contribution ID: 172

Type: Poster

Test beam performance studies with the sTGC

The forthcoming luminosity upgrade of LHC to super-LHC (sLHC) will increase the expected background rate in the forward region of the ATLAS Muon Spectrometer by approximately the factor of five. Some of the present Muon Spectrometer components will fail to cope with these high rates and will have to be replaced. The results of a test of a device consisting of 8 layers of Thin Gap Chambers (TGC) using the 180 GeV/c muons at the SPS-H8 muon beam at CERN are presented. The goal of the test was to study the tracking and triggering capabilities of the newly developed TGC system in the ATLAS muon spectrometer after high-luminosity upgrades of the LHC. The analysis of the recorded data shows a very good position resolution as a function of angle, varying from 100 to 150 microns for each plane for its use in trigger to 60 to 130 microns with offline reconstruction, as a function of the incident angle. Another test in the same beam conditions, has been realized in order to check a new electronic chain (very front end and front end) ; this new front end has been developed for the micromegas detectors and slightly modified for the TGC; the first results of this tests are presented.

quote your primary experiment

ATLAS TGC sLHC

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Track Classification: Gaseous Detectors