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Small-strip Thin Gap Chambers (sTGC's) and the New Small Wheel Upgrade of ATLAS

Wednesday, 1 September 2021 13:05 (25 minutes)

The instantaneous luminosity of the Large Hadron Collider at CERN will be increased by about a factor of five with respect to the design value by undergoing an extensive upgrade program over the coming decade. The largest phase-1 upgrade project for the ATLAS Muon System is the replacement of the present first station in the forward regions with the New Small Wheels (NSWs) during the long-LHC shutdown in 2019-2021. Along with resistive strips Micromegas, the NSWs will be equipped with eight layers of small-strip thin gap chambers (sTGC).
The new system is designed to assure high tracking efficiency, reduction of fake trigger rates and precision measurement of muon tracks.
The two Small Wheels are called A and C and cover a positive and negative pseudorapidity acceptance in the range $|\eta|$ =1.3 to 2.7.
The commissioning in surface of the NSW-A at CERN has been successfully completed in the end of June 2021 and the wheel is currently under installation in ATLAS. The integration and commissioning of the NSW-C is well advanced, aiming at installation on October 2021.
The sTGC design, construction and integration status will be discussed, along with their performance studies obtained with cosmic rays during the detectors integration and validation phase.

Details

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Is the speaker for that presentation defined?

Yes

Is this abstract from experiment?

Yes

Name of experiment and experimental site

ATLAS MUON

Internet talk

Maybe

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