Contribution ID: **476** Type: **Poster**

The ATLAS New Small Wheel Simulation and Reconstruction Software and Detector Performance Studies

Wednesday, May 26, 2021 5:12 AM (18 minutes)

The New Small Wheels (NSW) are replacing the innermost stations of the two endcap sides of the ATLAS Muon Spectrometer. NSW are equipped with 2 new detector technologies: small strips Thin Gap Chambers (sTGC) and Micromegas (MM). The assembly of the first wheel, composed by 64 Micromegas and 64 sTGC modules, is almost completed. The software for simulation and reconstruction is also well advanced to be ready for data taking in 2022. The detectors response is simulated and compared with real data from cosmic rays and test-beam. Nominal geometries and misalignments and deformations are implemented, together with other deviations from nominal operating conditions resulted from the detectors validation studies. Trigger and reconstruction performance studies are carried out in different configurations.
After an overview of the software implementation and the adopted strategies, a summary of the studies carried out will be presented.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

Funding information

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Session Classification: Posters: Trackers

Track Classification: Experiments: Experiments: Trackers