Contribution ID: **509** Type: **Poster**

Muon Momentum Calibration in ATLAS

Friday 19 July 2024 20:40 (20 minutes)

Muon reconstruction performance plays a crucial role in the precision and sensitivity of the LHC data analysis of the ATLAS experiment. Di-muon J/Psi and Z resonances are used to calibrate to per-mil accuracy the detector response for muons. This poster aims to provide an overview and the current status of the Muon Momentum Calibration within the ATLAS detector, thus the study of the procedure used to identify the corrections to the simulated muon transverse momenta to precisely describe the measurement of the same quantities in data. The results achieved are fundamental for improving the reach of measurements and searches involving leptons, such as Higgs decays to dimuons and ZZ or low/high mass searches in the beyond-the-standard model sector as well as high-precision physics analyses, such as the measurement of the W boson mass.

Alternate track

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Yes

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Session Classification: Poster Session 2

Track Classification: 12. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors