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Muon Forward Tracker in ALICE at the LHC

ALICE is an experiment designed to study heavy-ion collisions at the LHC at CERN. The Muon Forward Tracker (MFT) is one of the major ALICE upgrades installed during the Long Shutdown 2 to cope with the maximum interaction rate of 50 kHz for Pb-Pb collisions in Runs 3 and 4.

The MFT is a high-resolution tracking detector consisting of 10 layers of ALPIDE silicon pixel sensors with CMOS technology. The detector was designed to extend the physics program of ALICE by adding vertexing capabilities at forward rapidities and providing track information in front of the absorber of the Muon Spectrometer.

This contribution will review the design of the MFT and provide an overview of the technical aspects of the commissioning phase, outlining hardware and software implementations. It will also include insights into the detector structure, integration into the ALICE experimental setup, and a report on detector performance in 2022 and 2023 data taking.

Submission declaration

Original and unpublished

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Track Classification: Pixel sensors for tracking