

# Real-time alignment and calibration performance of LHCb with Run 3 data

*Thursday 18 July 2024 16:45 (15 minutes)*

The upgraded LHCb detector is taking data at a five times higher instantaneous luminosity than in Run 2. To cope with the harsher data taking conditions, LHCb deployed a purely software based trigger composed of two stages: in the first stage the selection is based on a fast and simplified event reconstruction, while in the second stage a full event reconstruction is used. This gives room to perform a real-time alignment and calibration after the first trigger stage, allowing to have an offline-quality detector performance in the second stage of the trigger. In this talk we will present the framework and the procedure for a real-time alignment of the LHCb detector and show key figures such as tracking and PID performance on Run 3 data.

## Alternate track

1. Computing, AI and Data Handling

## I read the instructions above

Yes

**Author:** VOS, Keri (Nikhef National institute for subatomic physics (NL))

**Co-author:** Mr XU, Zehua (CERN)

**Presenter:** Mr XU, Zehua (CERN)

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

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