

The LHCb RICH Upgrade II

Tuesday 16 May 2023 16:45 (25 minutes)

The LHCb experiment is planning a phase II Upgrade to fully exploit the potential of Hi-Lumi LHC. Starting from Run5, the LHCb experiment is expected to operate with a 50-fold increase in luminosity compared to its original design. The RICH system at LHCb is in charge of delivering charge particle identification over a wide momentum range: 2.6-100 GeV. The RICH1 and RICH2 detectors have been operated since 2008 and underwent a major Upgrade during LS2. The unprecedented conditions expected for Upgrade II will require a brand new upgrade to the RICH system to cope with the extremely harsh conditions, requiring significant improvements in the resolution of the reconstructed Cherenkov angles and reduction in the peak occupancy. This ambitious programme requires the re-design of the optical system, the increase of granularity and the employment of timing. The key elements towards this improvement will be presented together with the ongoing R&D programme.

Requested length

20 minutes

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