

The upgrade of the LHCb RICH detector

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The two LHCb RICH detectors operated at the luminosity of $\sim 4 \times 10^{32} \text{ cm}^{-2} \text{ s}^{-1}$, providing an excellent PID until the end of Run2 in 2018. From the beginning of Run3 in 2021 the Level 0 hardware trigger of the experiment will be removed to allow a data readout at the full rate of 40 MHz and the luminosity will be increased to $\sim 2 \times 10^{33} \text{ cm}^{-2} \text{ s}^{-1}$. In order to adapt the RICH system to the new readout rate the current HPD detectors with embedded electronics limited to readout event rate of 1 MHz will be replaced by MaPMTs with external readout electronics. Moreover, in order to maintain the average occupancy of the old RICH detector in the upgraded configuration, a reoptimization of the optics is required. In this talk the state of the art of the upgraded opto-electronics chain and the performance expected for Run3 will be presented together with the automated procedures to test the quality of the RICH photon detectors and support electronics

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