

CMS RPC upgrade program

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The LHC will be upgraded in several phases that will allow significant expansion of its physics program. The luminosity of the accelerator is expected to exceed $5 \times 10^{34} \text{cm}^{-2}\text{s}^{-1}$. In order to sustain the harsher conditions and to help maintaining good trigger efficiency and performance the Resistive Plate Chambers (RPC) system of the CMS experiment will be upgraded.

The present RPC system would continue to operate, and it would be upgraded with new Link Boards system. In addition, the coverage of the RPC system would be increased up to pseudo rapidity of 2.4 by installing a new generation of improved RPCs (iRPCs). Their design and configuration are optimized to sustain higher rates and hence to survive the harsh background condition during HL-LHC operation. The iRPC are equipped with newly developed electronics designed to read out the detectors from both sides, allowing in this way a good spatial resolution along the strips $O(\text{cm})$. The status of the upgrade project will be presented.

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