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Longevity studies for the CMS-RPC system

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In the next decades, the Large Hadron Collider (HL-LHC) will run at very high luminosity (5*10ˆ34 cmˆ-2 sˆ-1). During this period the CMS RPC system will be subjected to high background conditions which could affect the performance inducing aging effects. A dedicated consolidation program is ongoing which must certify the present CMS RPC system for the HL-LHC running period. At the CERN Gamma Irradiation Facility (GIF++) few RPC detectors are exposed to intense gamma radiation for a period equivalent to the expected integrated charge at HL-LHC. The main parameters (currents, rate, resistivity) are under monitoring as a function of the integrated charge and the performance studied with muon beam. After having collected a significant amount of the total irradiation preliminary results will be presented.

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Session Classification: High Luminosity / High Rate