

Ageing study for the present CMS-RPC system at HL-LHC

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Due to the increased luminosity, the background conditions at HL-LHC will be much harsher and can affect the performance of the RPC detector being used in CMS Experiment at LHC. In order to understand the sustainability of CMS-RPC system, a dedicated longevity study is ongoing at CERN Gamma Irradiation Facility (GIF++). For this study, few spare RPC detectors are being exposed to intense gamma radiations to estimate the impact of HL-LHC conditions up to an integrated charge equivalent to the integrated luminosity of 3000 fb^{-1} . The main RPC detector parameters (currents, rate, resistivity) are regularly monitored as a function of the integrated charge in order to check any degradation/aging effect in detector performance. After having collected a significant amount of the total irradiation to RPC detectors, preliminary results based on performance the detectors will be presented.

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