

Longevity studies for the CMS Drift Tubes towards HL-LHC

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The High Luminosity LHC (HL-LHC) program will pose a great challenge for the CMS Muon System. Existing subdetectors, which consist of Drift Tubes (DT), Resistive Plate Chambers (RPC) and Cathode Strip Chambers (CSC), will have to operate at 5 times larger instantaneous luminosity than the designed for, and, consequently, will have to sustain about 10 times the original LHC integrated luminosity. Longevity of DT system will be crucial to ensure a good performance in the CMS barrel region. Assessing DT performance is part of the upgrade program. In this talk will be reported the outcome of the accelerated irradiation studies, carried on at the CERN Gamma Irradiation Facility (GIF++) and recently concluded. These studies allowed to estimate performance of DT up to 3 times HL-LHC, and to plan a strategy to keep the longevity effects under control.

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