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## CHARACTERIZATION OF PLANAR SENSORS BONDED TO RD53A READOUT CHIP FOR CMS PHASE 2 INNER TRACKER SYSTEM

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One of the challenges of the CMS detector is to get a good and reliable data, hence it is necessary to work with more versatile, more compact and resistance devices, so the CMS collaboration scheduled from 2024 to mid-2026 an upgrade program called High-Luminosity LHC (HL-LHC) Phase 2, CMS detector will have a completely new silicon tracking detector. The work proposed is to carry out test beam studies of planar sensors exposed to a 120 GeV proton beam at FTBF (Fermilab Test Beam Facility) in order to analyse efficiency, cluster size and hit resolution before and after radiation leading to choose an optimal operation of these sensors.

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