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Qualification of macro-pixel sensor assemblies for the CMS Phase-2 tracker

The Phase-2 upgrade of the CMS detector for the high luminosity era of the LHC, will install a new tracking system to cope with the increased pileup and track multiplicity. The inner layers of the outer tracker will be equipped with pixel-strip (PS) modules that have a high segmentation to provide an accurate position measurement. A PS module contains two types of silicon sensors, namely, strip and macro-pixel (PS-p) sensors. The PS-p sensor and its readout chip (the macro-pixel ASIC, or MPA) together form the macro-pixel sub-assembly (MaPSA). A rigorous quality control (QC) procedure has been developed and validated using prototype MaPSAs. This talk will describe the MaPSA QC setup and procedure, and the measurement results on the prototypes.

Collaboration / Activity

CMS

Primary author: BHATTACHARYA, Soham (CMS (CMS Fachgruppe Searches))

Presenter: BHATTACHARYA, Soham (CMS (CMS Fachgruppe Searches))

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