ID contributo: **33** Tipo: **non specificato**

Status of the upgrade of the CMS Inner Tracker for HL-LHC

martedì 20 febbraio 2024 10:20 (20 minuti)

The High Luminosity program of the LHC collider (HL-LHC), expected to start in 2029, will provide almost a factor 5 increase in the instantaneous luminosity and a factor 10 in the integrated luminosity compared to the current LHC.

The HL-LHC poses unprecedented challenges to the inner tracking pixel-based systems: pixel hit rates up to 3 GHz/cm^2, hadron fluences exceeding 10^{16} n$_{eq}$/cm^2, total ionizing dose up to 1 Grad, extended detector acceptance up to $|\eta|$=4.

This contribution will review the most relevant design and technological choices taken by the CMS collaboration for the upgrade of its Inner Tracker, along with the ongoing validation of the prototypes in preparation for large-scale production.

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Classifica Sessioni: System 1