

CMS strip detector upgrade for the HL-LHC

A significant upgrade of the LHC accelerator is planned to become operational mid of the next decade. This High Luminosity LHC will increase the design luminosity by a factor of five to about $5 \times 10^{34} \text{ cm}^{-2}\text{s}^{-1}$ or even beyond, making an upgrade of the detectors unavoidable. To cope with this environment, the outer tracker of the CMS experiment has to face an increase in particle density inducing more radiation damage and higher occupancy. Furthermore, the tracker has to provide information to the level one hardware trigger.

The CMS Tracker Collaboration has developed a concept for a new tracking system, which uses intelligent dual sensor modules with high granularity. The talk will give an overview on the layout of the proposed outer tracker and will closely review the design of the modules. Special emphasis will be placed on the developments in sensor design and production.

Primary author: DRAGICEVIC, Marko (HEPHY Vienna)

Presenter: DRAGICEVIC, Marko (HEPHY Vienna)