

Detector Modules for the CMS Phase II Outer Tracker

Monday, 30 June 2014 11:00 (30 minutes)

For the high-luminosity LHC (HL-LHC), CMS will install a new silicon tracker. As a result of the expected increase in instantaneous luminosity by a factor of five compared to the LHC design value, the granularity will be significantly increased in order to cope with the higher track density. Moreover, the expected radiation dose requires the use of more radiation hard sensor material that has to be cooled to temperatures below -20°C. It is also planned to use information from the tracker in the Level-1 trigger of CMS. For this purpose the detector modules will consist of a stack of two silicon sensors that will allow for the determination of the transverse momentum and the generation of a trigger signal directly on the module and at each bunch crossing. Currently two different module types are foreseen, a stack of two silicon strip sensors at large radii and a stack of a pixel and a strip sensor at inner radii. The contribution will discuss the module designs and the status of the ongoing R&D activities.

Primary author: MUSSGILLER, Andreas (Deutsches Elektronen-Synchrotron (DE))

Presenter: MUSSGILLER, Andreas (Deutsches Elektronen-Synchrotron (DE))