Contribution ID: **30** Type: **Parallel session talk**

Low Gain Avalanche Detectors for Precision Timing in the CMS MTD Endcap Timing Layer

Tuesday 26 May 2020 09:00 (18 minutes)

The time information assigned to each track will enable the use of 4D reconstruction algorithms and will further discriminate in the time domain interaction vertices within the same bunch crossing to recover the track purity of vertices in current LHC conditions. The endcap region of the MTD, called the Endcap Timing Layer (ETL) will be instrumented with silicon-based low gain avalanche detectors (LGADs), covering the high radiation pseudo-rapidity region between $|\eta|$=1.6 and 3.0. Each endcap will be instrumented with a two-disk system of LGADs, read out by Endcap Timing Readout Chips (ETROCs), being designed for precision timing measurements. We will present an overview of the MTD ETL design, which is detailed in the recent technical design report. We will also present the R&D and test beam studies that were integral for achieving the ETL design, as well as recent progress on the development of the ETROC readout electronics.

Funding information

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Session Classification: Sensors: Solid-state position sensors

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