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CROC_v1 Pixel Chip Calibration for the Phase-2 CMS Inner Tracker

The Compact Muon Solenoid (CMS) detector is currently undergoing a Phase-2 upgrade, in preparation for operation in the High-Luminosity LHC. Once upgraded, the CMS will incorporate a completely new tracker. The pixel chips for the Inner Tracker are developed by the RD53 collaboration.

In this poster, we will present the latest calibration test results for the RD53B-CMS (CROC_v1) chips with sensors. We are studying the chip's performance to optimize the calibration process for the real experiment scenario and testing the latest DAQ system features.

In particular, our focus is on adjusting the hit detection threshold and signal gain using the internal calibration circuit. We are also working on threshold calibration and latency tuning of the HitOR trigger (triggering if any pixel in the array registers a hit), using a radioactive X-ray source for these purposes. More details on these studies will be presented in the poster.

Collaboration / Activity

CMS Collaboration

Primary author: AMBROZAS, Marijus (Vilnius University)

Presenter: AMBROZAS, Marijus (Vilnius University)

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