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Cerenkov Detectors for Beam Quality Measurement

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A new detector to measure the machine induced background at larger radii has been developed and installed in the CMS experiment at LHC. It consists of 40 modules, each comprising a quartz bar read out by a photo-multiplier. Since Cerenkov radiation is emitted in a forward cone around the charged particle trajectory, these detectors can distinguish the directions of the machine induced background.

The back-end consists of a micro TCA readout with excellent time resolution. The performance of the detector modules measured in several test-beam campaigns will be reported. The installation in CMS will be described, and first results about operating the detector during data taking will be given.

Collaboration

CMS BRIL Project

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