

Large scale beam-tests of silicon and scintillator-SiPM modules for the CMS High Granularity Calorimeter for HL-LHC

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The High Granularity Calorimeter (HGCAL) will replace the existing CMS endcap calorimeters for the HL-LHC era. The electromagnetic part, as well as the first layers of the hadronic part, foresees around 600 square metres of silicon sensors as the active material. The remainder of the HGCAL, in the lower radiation environment, will use plastic scintillator with on-tile SiPM readout. Prototype hexagonal silicon modules, featuring a new ASIC (Skiroc2-CMS), together with a modified version of the scintillator- SiPM CALICE AHCAL, have been built and tested in beams at CERN. This setup represents a full slice through HGCAL. We present first results on stability, linearity and energy resolution for incident electrons, pions and muons.

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