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# Detector performance studies for the CMS High Granularity Calorimeter

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The CMS High Granularity Calorimeter will replace the existing endcap calorimeters for the High-Luminosity phase of LHC. It will be based on hexagonal silicon pad sensors (in the highest radiation regions) and scintillator tiles with on-tile SiPM readout (in the lower radiation regions). Prototypes of both detector types have been made and tested extensively in laboratories and beams, with many devices also undergoing irradiations to study before/after performance. We present a summary of the results of these tests, focusing on the measured performance in terms of signal production, calibration, resolution (position, energy and time) and stability. We compare with the expected performance using detailed GEANT4-based simulations.

## Secondary topics

## Applications

Design concepts for future calorimeter at the energy frontier

## Primary topic

Silicon

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