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Validation of the SiPM-on-Tile Readout Chain for the CMS High Granularity Calorimeter

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For the upcoming high-luminosity LHC, the endcap calorimeters of the CMS experiment will be replaced by the high-granularity calorimeter (HGCAL), a sampling calorimeter using silicon sensors in the front and plastic scintillators read out by SiPMs in the back. After successfully integrating the SiPM-on-Tile sensors with the Serenity back-end hardware, we have conducted detailed system tests to validate the functionality and performance of the readout chain. In this contribution, we will describe our system validation setup and showcase results from bench-top tests and beam tests.

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