Tests of SiPM-on-Tile modules for the CMS HGCAL

Our group works on the development of highly granular hadronic calorimeters based on small scintillator tiles read out by Silicon Photomultipliers (SiPMs). This "SiPM-on-tile" technology will be used for the upgrade of the calorimeter endcap of the CMS detector for HL-LHC, the High Granularity Calorimeter (HGCAL). An important ingredient for these calorimeters is the readout electronics, which is fully integrated into the detector layers.

We have started to build the first active elements that will be installed in the CMS detector, and the production will ramp up during this year. The active elements will be tested and characterised at DESY before they are sent on to be integrated into the HGCAL. The tests comprise basic electronics tests in the lab, tests in a climate chamber at -30 degree C and tests with particles (cosmic muons and particle beams).

The student is supposed to contribute to the tests and to the analysis of the results.

Group

FH-FTX-DTA

Project Category

B2. Development of experimental equipment (hardware-oriented)

Special Qualifications

enjoy working with hardware and electronics; prior experience is an advantage, but not necessary

DESY Site

Hamburg

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