Contribution submission to the conference SMuK 2023

Quality control for SiPM-on-tile section of the CMS HGCAL at DESY — •Daria Selivanova — Deutsches Elektronen-Synchrotron (DESY), Hamburg

The new High-Luminosity era of the LHC challenges the detector development field to implement technology in a new way. A detector under construction, the High Granularity Calorimeter (HGCAL) for CMS, is based on two detection technologies: silicon sensors and SiPM-on-tile boards. The highly segmented structure of the two will allow both electromagnetic and hadronic showers to be utilised in the energy reconstruction and the identification of particles.

The SiPM-on-tile component of the HGCAL consists of scintillator tiles wrapped in a reflective foil and photodetectors (SiPMs), mounted on a board with HGCROC readout electronics. The ability of each individual scintillator component (a tile) to fulfil the performance requirements stands on a choice of methods of production, wrapping and placement. That is why quality control (QC) measures have been implemented in the Tile Assembly Center (TAC) at DESY to monitor parameters at every stage. Two test stands have been developed to measure the size of the wrapped tile and to measure its light yield. Several tests have been performed using the setups with a variety of tiles to ensure consistency of measurements and to measure tile-to-tile wrapping variation and light output.

Part:	**T**
Type:	**Vortrag;Talk**
Topic:	**3.05 Kalorimeter; 3.05 Calorimeters**
Email:	**daria.selivanova@desy.de**