

/opt/indico/archive/2016/C8/40222322483

_logo_small.jpg

Contribution ID : 58

Type : **Contributed Oral**

The LHCb Calorimeter system: design, performance and upgrade

Wednesday, 1 March 2017 10:05 (0:20)

Content

The LHCb Calorimeter system consists of four subdetectors: a Scintillating Pad Detector (SPD) and a Pre-Shower detector (PS) in front of an electromagnetic calorimeter (ECAL) which is followed by a hadron calorimeter (HCAL). They are used to select high transverse momentum hadron, electron and photon candidates for the L0 trigger, and provide the identification of electrons, photons and hadrons, as well as the measurement of their energies and positions.

The first part of this talk will be devoted to the design and operation of the present system. This will include monitoring and calibration procedures for LHC Run I (2010-2012) and Run II (2015-2018), the detector performance figures and measurement of radiation degradation of various detector components. The achieved performance will be illustrated by distributions for selected B decays.

Finally, the plans for the LHCb Calorimeter system upgrade will be discussed. The Phase I upgrade during LHC LS2 (2019-2020) will consist mainly in removal of the PS and SPD subdetectors and full replacement of the ECAL and HCAL frontend electronics, in order to enable 40 MHz detector operation without L0 trigger. The options for further upgrades, planned for LHC LS3 (2024-2026) and beyond, imply essential revision of the ECAL detector.

Summary

Primary author(s) : Dr. GUZ, Yury (IHEP Protvino)

Presenter(s) : Dr. GUZ, Yury (IHEP Protvino)

Session Classification : Calorimetry

Track Classification : Calorimetry