



Contribution ID: 144

Type: Poster

Performance of the BRIL Luminometers at CMS for Run 2

Monday 15 July 2019 19:40 (20 minutes)

CMS features three luminosity subdetectors capable of providing real-time (“online”) luminosity on a bunch-by-bunch level independently of the main CMS data acquisition system: the Fast Beam Conditions Monitor (BCM1F), the hadronic forward calorimeter (HF), and the Pixel Luminosity Telescope (PLT). These luminometers have operated since the beginning of Run 2 (2015–2018) at the LHC. In order to obtain an accurate luminosity measurement, we use van der Meer scans to provide the absolute calibration, whereas corrections for effects such as efficiency loss due to radiation damage, nonlinear effects at high instantaneous luminosity, or effects due to the bunch train structure of the beams, are measured and subsequently applied. The calibration of the online luminosity subdetectors, the applied corrections, and comparisons with offline measurements using the pixel cluster counting (PCC) method and the radiation monitoring system (RAMSES) are covered.

Author: MEYER, Arnd (Rheinisch Westfaelische Tech. Hoch. (DE))

Presenter: KARACHEBAN, Olena (CERN)

Session Classification: Wine & Cheese Poster Session

Track Classification: Detector R&D and Data Handling