

# Table of Contents

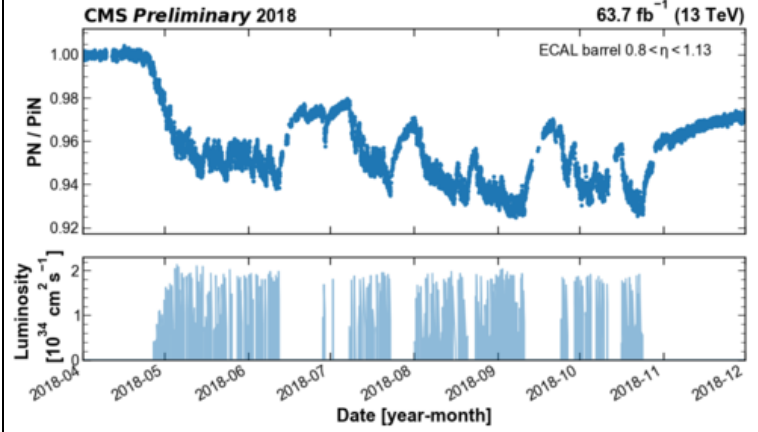
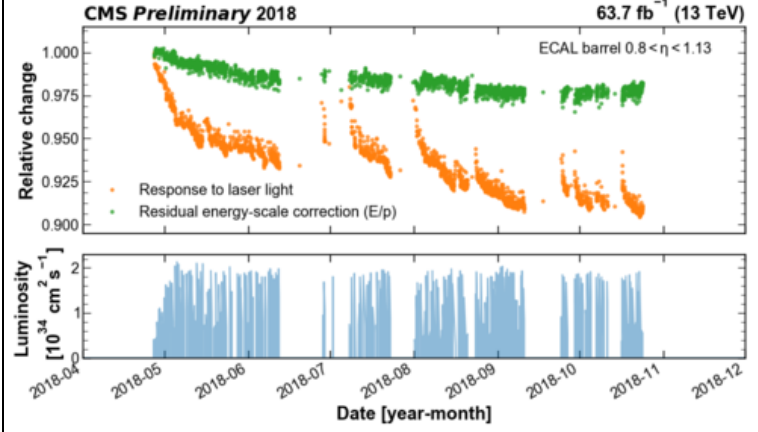
CMS-DP-2019/030CMS ECAL Laser Monitoring.....	1
---	---

# CMS ECAL Laser Monitoring

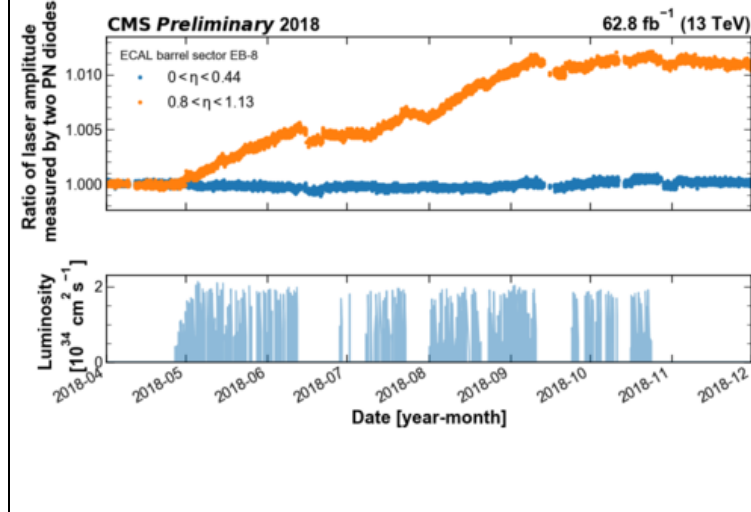
**Abstract:** CMS ECAL Laser monitoring system plots.

CDS entry [↗](#)

iCMS entry [↗](#)

Figure	Caption
<p>pdf version</p> 	<p>History of the measurement in 2018 of the laser amplitude by PiN and PN diodes through an optical fiber, all components of the ECAL Laser Monitoring System.</p> <p>The plot shows the ratio of the 447 nm laser amplitude measured inside ECAL by a PN diode covering the pseudorapidity range <math>0.8 &lt; \eta &lt; 1.13</math>, to the measurement at the injection by a PiN diode, as a function of the date in 2018. The values are normalized to the first measurement. The variation of the ratio is due to the ageing of the diodes and the change of transparency of the optical fibers that deliver the laser pulses to the various components inside the ECAL. The bottom panel shows the instantaneous luminosity delivered by the LHC.</p>
<p>pdf version</p> 	<p>History of ECAL response to laser and E/p residual correction in 2018, for one barrel module.</p> <p>Relative response to 447 nm laser light injected in the ECAL crystals, measured by the ECAL laser monitoring system for one barrel module covering the pseudorapidity range <math>0.8 &lt; \eta &lt; 1.13</math>, and the residual energy-scale correction determined by the energy-to-momentum ratio (E/p) of electrons from W and Z boson decays after the application of the transparency corrections, as a function of the date in 2018. The values of each curve are normalized to the first corresponding measurement. The residual energy-scale corrections are essentially independent of the instantaneous luminosity delivered by the LHC, shown in the bottom panel.</p>

pdf version



History of PN Diodes laser amplitude measurement in 2018.

Ratio of 447 nm laser amplitude measured by two PN diodes subject to the same laser light inside one ECAL barrel sector (EB-8) in two different detector modules ( $0 < \eta < 0.44$  and  $0.8 < \eta < 1.13$ ). The presence of two diodes allows to probe the stability of the laser monitoring system. The curves illustrate a module with normal behaviour (module 0) and a problematic one (module 3). For the few modules that present an anomalous behaviour, one PN diode is still functional and is used to derive calibration constants by the ECAL laser monitoring system. The bottom panel shows the instantaneous luminosity delivered by the LHC.

This topic: CMSPublic > EcalDPGResultsCMSDPS2019030

Topic revision: r5 - 2019-10-02 - AminaZghiche



Copyright &© 2008-2022 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

or Ideas, requests, problems regarding TWiki? use Discourse or Send feedback