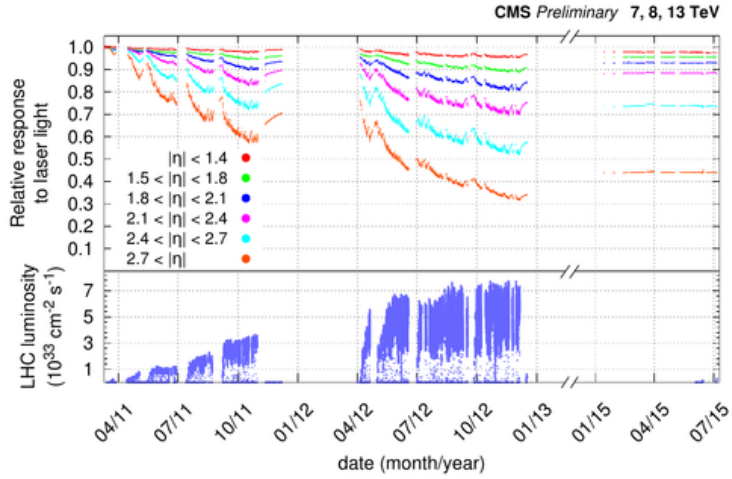
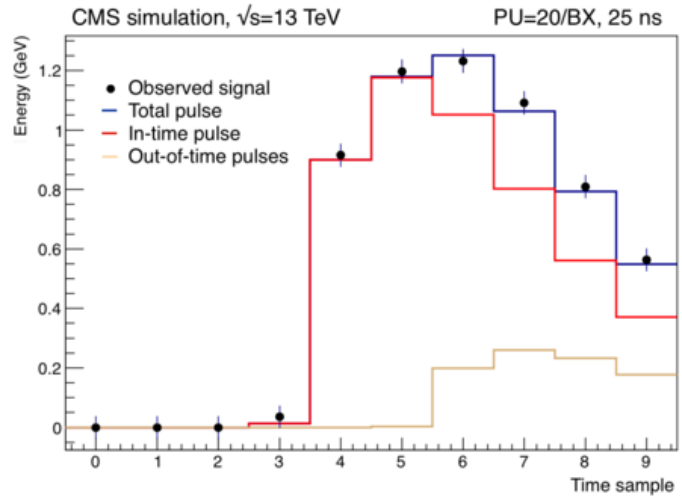
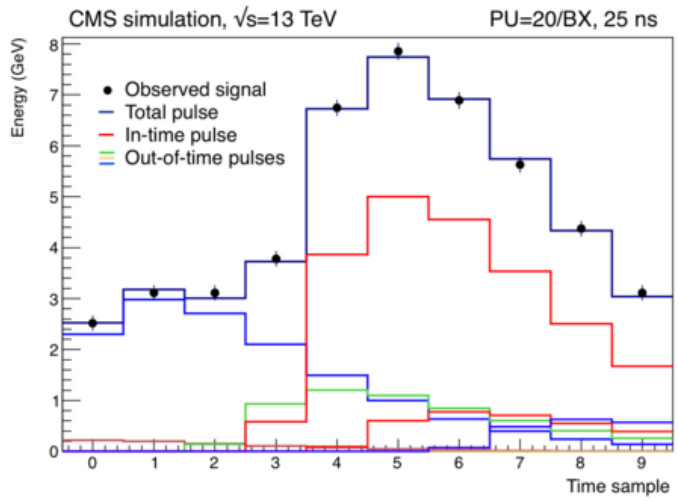
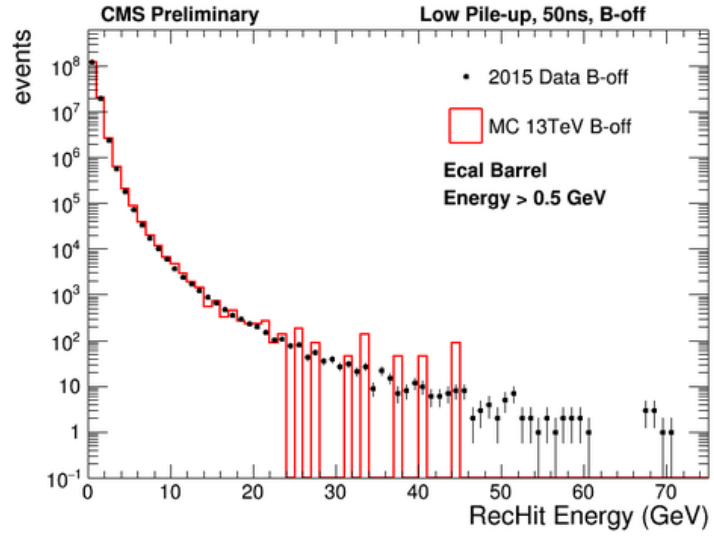
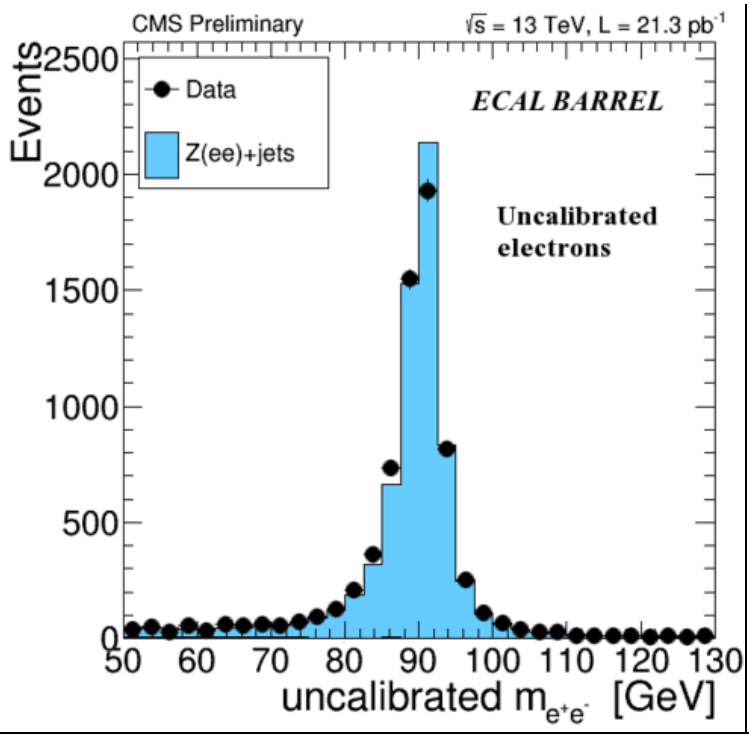
ECAL performance plots approval for EPS 2015, contained in CMS DPS 2015-016.

Plots

Figure	Caption
pdf version 	***History of relative response*** Relative response to laser light (440 nm in 2011 and 447 nm from 2012 onwards) injected in the ECAL crystals, measured by the ECAL laser monitoring system, averaged over all crystals in bins of pseudorapidity, for the 2011, 2012 and early 2015 data taking periods. The response change observed in the ECAL channels is up to 6% in the barrel and it reaches up to 30% at ~ 2.5, the limit of the tracker acceptance. The response change is up to 70% in the region closest to the beam pipe. The recovery of the crystal response during the Long-Shutdown-1 period is visible. The response is not fully recovered, particularly in the region closest to the beam pipe. These measurements are used to correct the physics data. This is an update of the plots appearing in CMS-DP-2012/007 and CMS-DP2012/015, and includes measurements taken up to July, 09th 2015. The bottom plot shows the instantaneous LHC luminosity delivered during this time period.
pdf version 	***Example of rechit reconstruction in EB on 25ns MC*** Example of fitted pulses for simulated events with 20 average pileup interactions and 25 ns bunch spacing, for a signal in the barrel. Dots represent the 10 digitized samples, the red distributions (other light colors) represent the fitted in-time (out-of time) pulses with positive amplitude. The dark blue histograms represent the sum of all the fitted contributions. Plot contained in CMS-CR-2014/410.

pdf version 	***Example of rechit reconstruction in EE on 25ns MC*** Example of fitted pulses for simulated events with 20 average pileup interactions and 25 ns bunch spacing, for a signal in the endcaps. Dots represent the 10 digitized samples, the red distributions (other light colors) represent the fitted in-time (out-of time) pulses with positive amplitude. The dark blue histograms represent the sum of all the fitted contributions. Plot contained in CMS-CR-2014/410.
pdf version 	***Comparison of rechit energy in EB between first 2015 Data and MC with B-off*** Comparison of rechit energy in EB, between first 2015 Data and MC at 50 ns bunch spacing with very low pile-up and B-off. An energy selection of 500 MeV and the goodness of the rechit amplitude fit are required in order to reject anomalous signals in data.
pdf version	***Z->ee invariant mass plot for 2015 data, from the reconstruction of di-electron events with both electrons in the ECAL Barrel*** ;The plot includes only electrons reconstructed in the ECAL barrel. The calibrations applied to these early 50ns RunII data are the Run1 ones, extrapolated in time using the laser measurements only. The simulation is not tuned in terms of the noise observed in this dataset, and assumes a calibration precision that will be achieved at the end of the 50ns LHC run (not yet applied to the data). No attempt of pileup reweighting is done. Data and MC are normalized to the same entries



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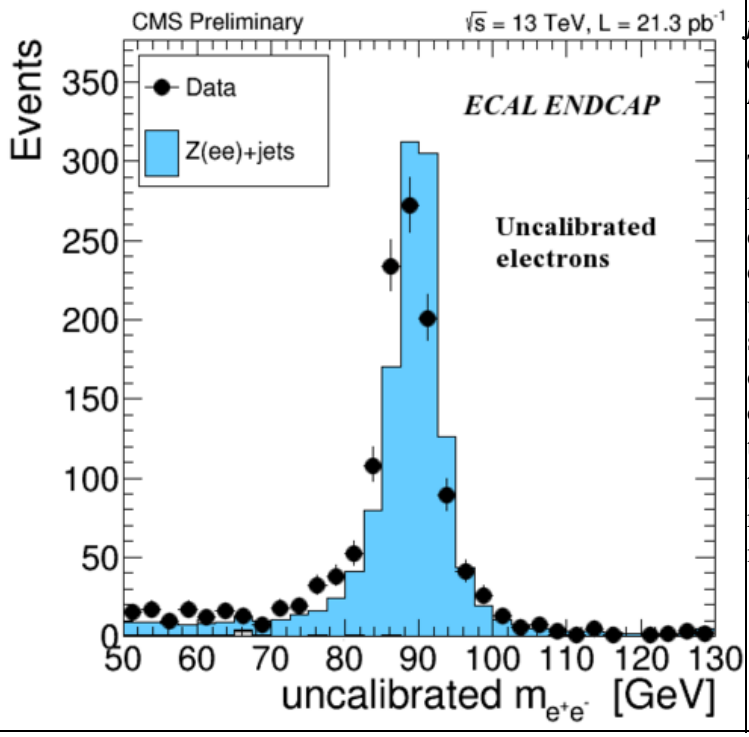

Z->ee invariant mass plot for 2015 data, from the reconstruction of di-electron events with both electrons in the ECAL Endcap

The plot includes only electrons reconstructed in the ECAL endcap. The calibrations applied to these early 50ns RunII data are the Run1 ones, extrapolated in time using the laser measurements only. The simulation is not tuned in terms of the noise observed in this dataset, and assumes a calibration precision that will be achieved at the end of the 50ns LHC run (not yet applied to the data). No attempt of pileup reweighting is done. Data and MC are normalized to the same entries

-- AlessioGhezzi - 2015-08-07

This topic: CMSPublic > EcalDPGResultsCMSDPS2015016
Topic revision: r2 - 2015-08-07 - AlessioGhezzi

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