

Meeting 19th February 2016

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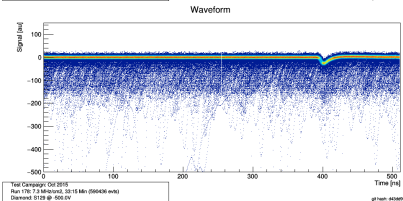
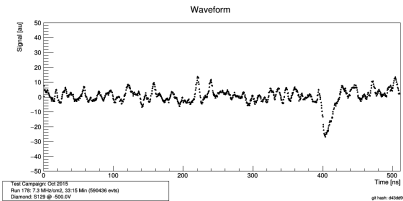
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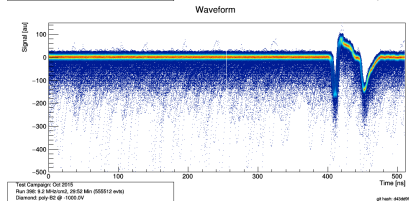
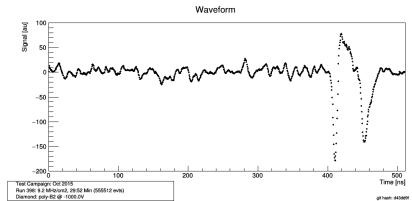


Waveforms

External Pulser (S129)

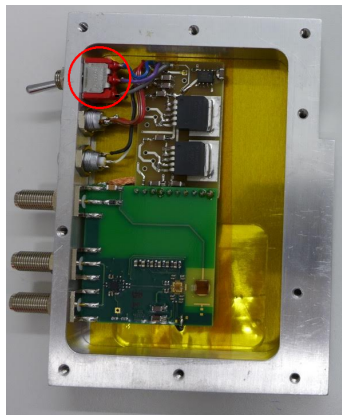
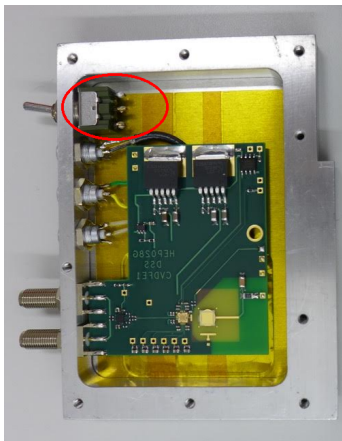


Internal Pulser (poly-B2)





Pulser





Distribution Cuts

Used Cuts:

- Pedestal Sigma: correct for base line shifts
- saturated Events: will most certainly influence pulser signal
- Event Range: use the same event range (exclude first 5 min)
- Pulser

Irrelevant Cuts:

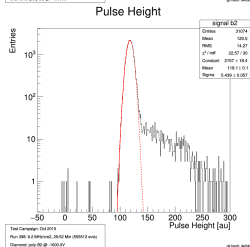
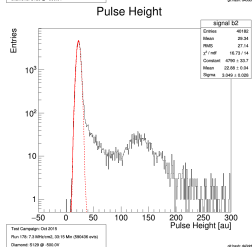
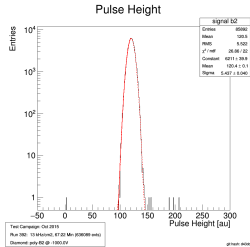
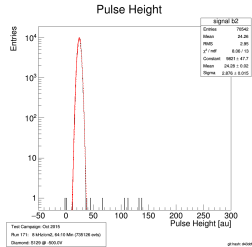
- tracks, χ^2 , track-angle
- bucket

Varying Cuts:

- beam interruptions

Distributions

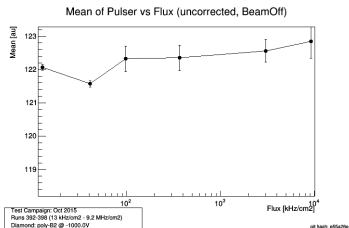
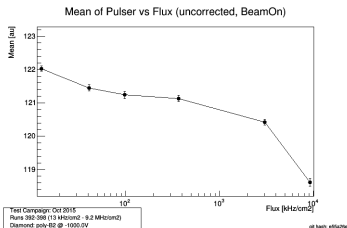
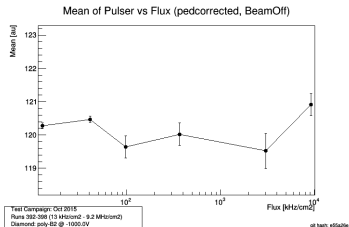
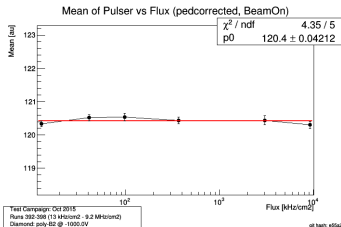
Distributions



- fit only left side of the gaussian (least corrupted by signal)
- pedestal correction: subtraction of the mean of the pedestal fit

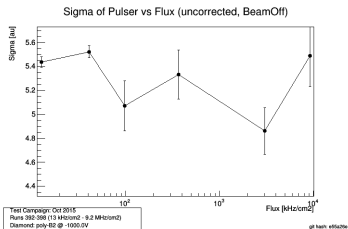
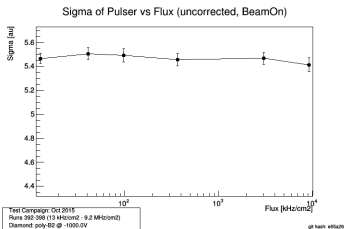
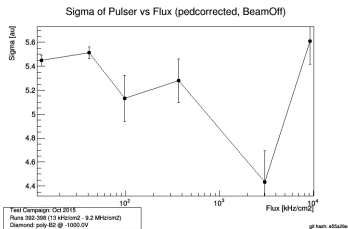
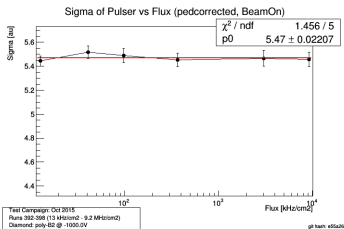


II6B2 neg





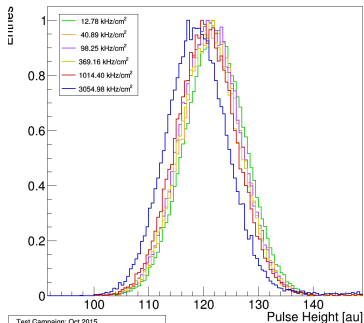
Rate Dependence





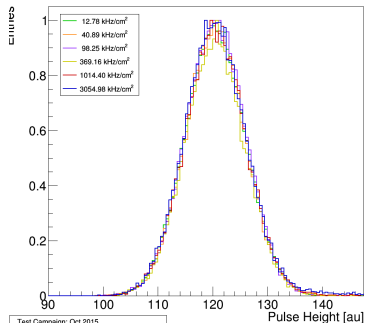
Histograms

Pulser Distributions UnCorrected



git hash: c162440

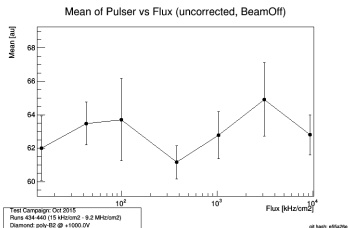
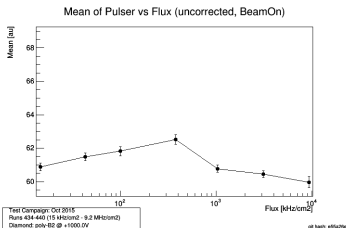
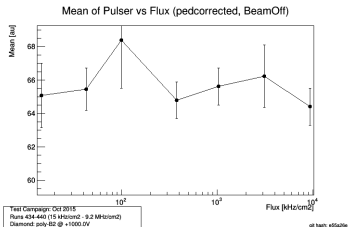
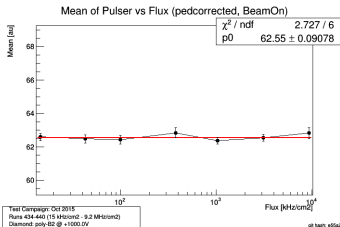
Pulser Distributions PedestalCorrected



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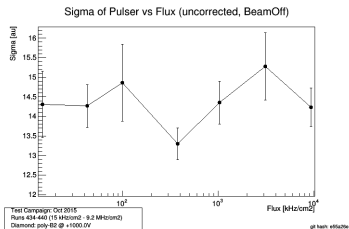
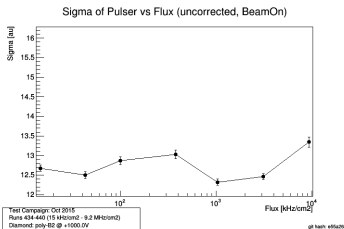
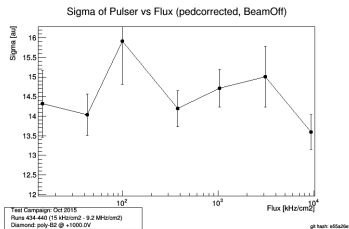
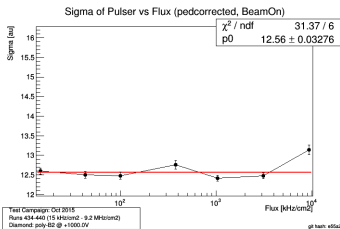


II6B2 pos



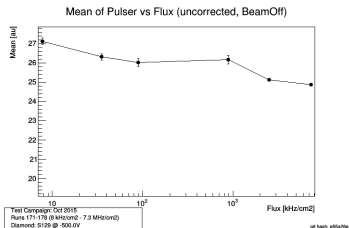
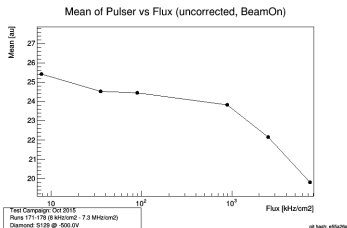
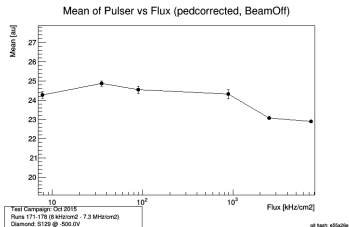
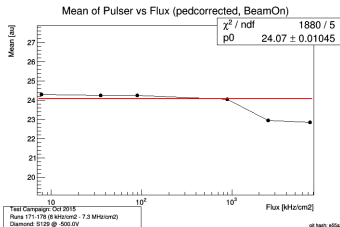


Rate Dependence



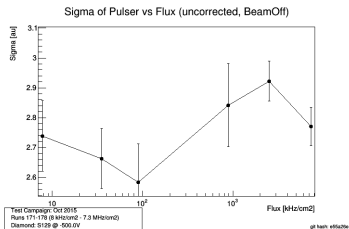
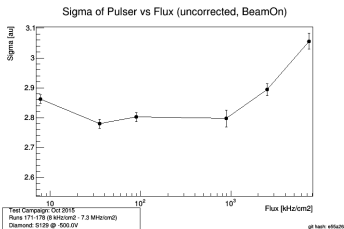
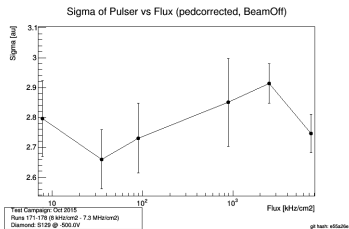
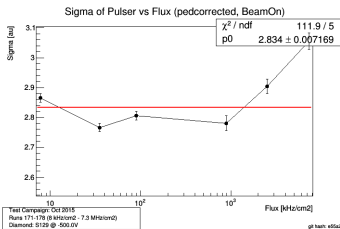


S129 neg





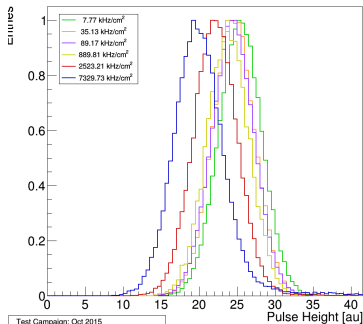
Rate Dependence





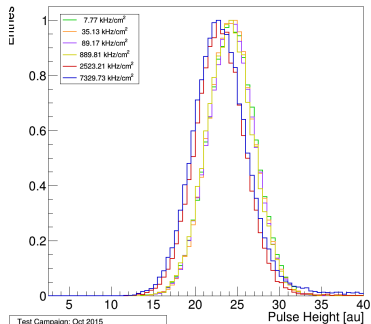
Histograms

Pulsar Distributions UnCorrected



git hash: c162440

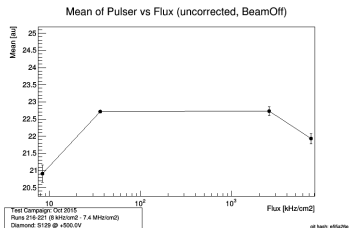
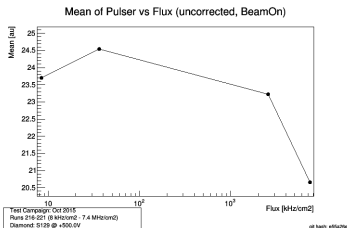
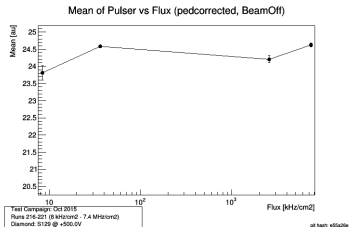
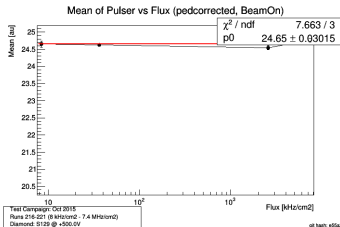
Pulsar Distributions PedestalCorrected



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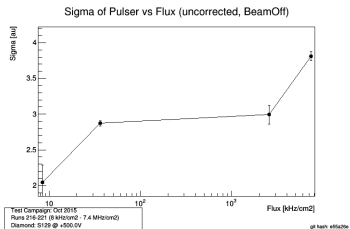
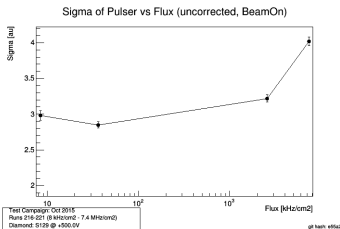
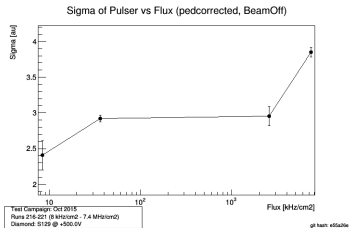
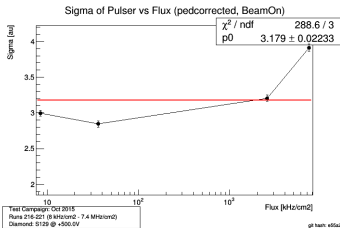


S129 pos





Rate Dependence

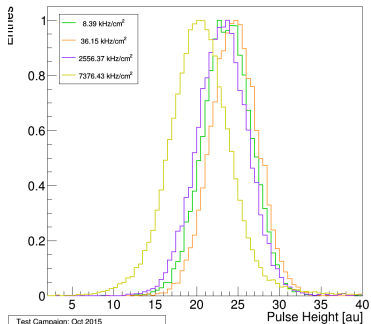




Rate Dependence

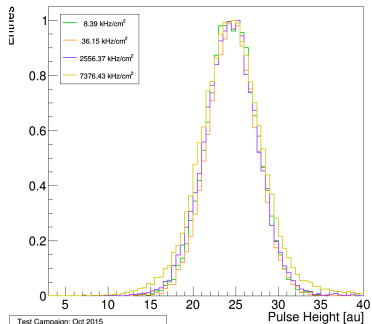
Histograms

Pulser Distributions UnCorrected



git hash: e65a81e

Pulser Distributions PedestalCorrected

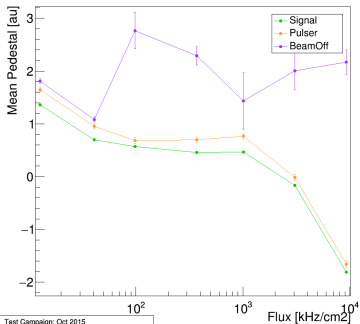


git hash: e65a81e



II6B2

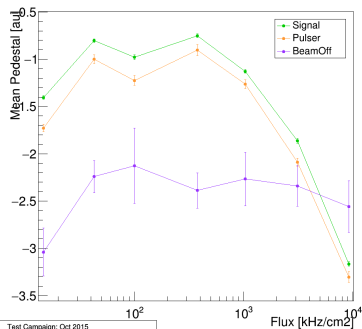
Pedestal Mean in ab2



Test Campaign: Oct 2015
Runs 392-398 (13 kHz/cm² - 9.2 MHz/cm²)
Diamond: poly-B2 @ -1000.0V

git hash: e65a28e

Pedestal Mean in ab2



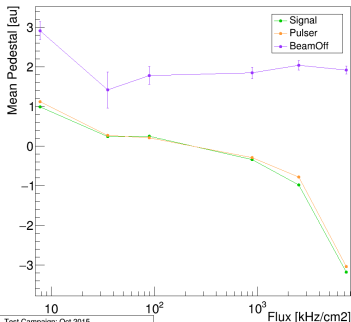
Test Campaign: Oct 2015
Runs 434-440 (15 kHz/cm² - 9.2 MHz/cm²)
Diamond: poly-B2 @ +1000.0V

git hash: e65a28e



S129

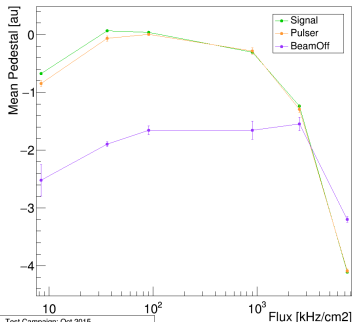
Pedestal Mean in ab2



Test Campaign: Oct 2015
Runs 171-178 (8 kHz/cm2 - 7.3 MHz/cm2)
Diamond: S129 @ -500.0V

git hash: e65a28e

Pedestal Mean in ab2



Test Campaign: Oct 2015
Runs 216-221 (8 kHz/cm2 - 7.4 MHz/cm2)
Diamond: S129 @ +500.0V

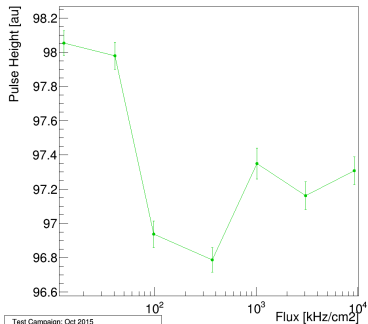
git hash: e65a28e



Pulse Heights

II6B2

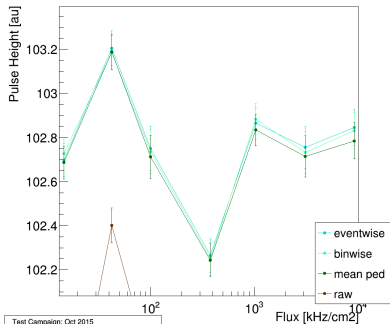
Pulse Height poly-B2 @ -1000.0V vs Flux



Test Campaign: Oct 2015
Runs 392-398 (13 kHz/cm² - 9.2 MHz/cm²)
Diamond: poly-B2 @ -1000.0V

git hash: e65a88e

Pulse Height poly-B2 @ 1000.0V vs Flux



Test Campaign: Oct 2015
Runs 434-440 (15 kHz/cm² - 9.2 MHz/cm²)
Diamond: poly-B2 @ +1000.0V

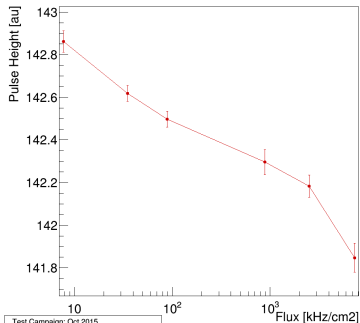
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Pulse Heights

II6B2

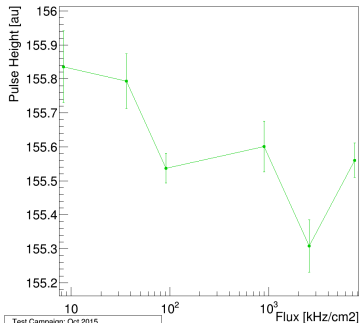
Pulse Height S129 @ -500.0V vs Flux



Test Campaign: Oct 2015
Runs 171-178 (8 kHz/cm² - 7.3 MHz/cm²)
Diamond: S129 @ -500.0V

git hash: e65a28e

Pulse Height S129 @ 500.0V vs Flux



Test Campaign: Oct 2015
Runs 216-221 (8 kHz/cm² - 7.4 MHz/cm²)
Diamond: S129 @ +500.0V

git hash: e65a28e



Conclusion

- measurements with two different pulsers:
 - ▶ internal
 - ★ reflection in front of the main pulse
 - ▶ external
 - ★ should be increased
- poly/internal has wider pulser distribution
- pulser unstable/rate dependent without pedestal correction
- after pedestal correction pulser signal is stable
 - ▶ except for high rate runs of S129 at -500V
- pedestal at beam interrupts rather stable with rate
- pulse heights of pos and neg look similar
- almost no difference in pulser pulseheight with opposite polarity
 - ▶ pulser signal too small?