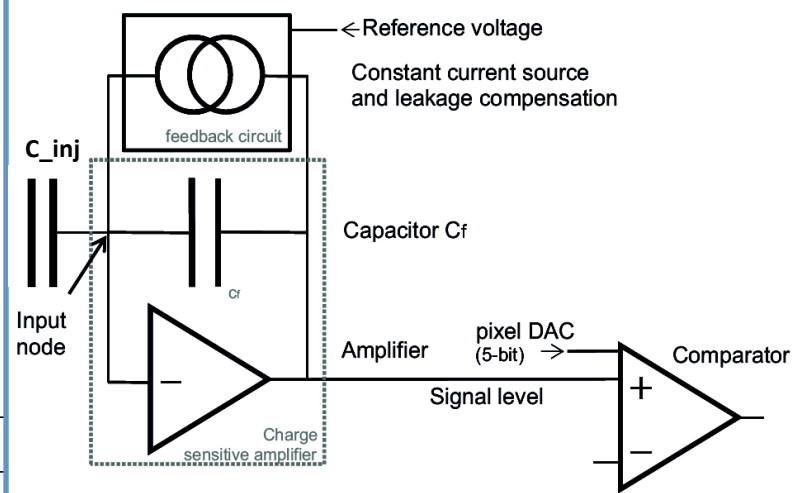
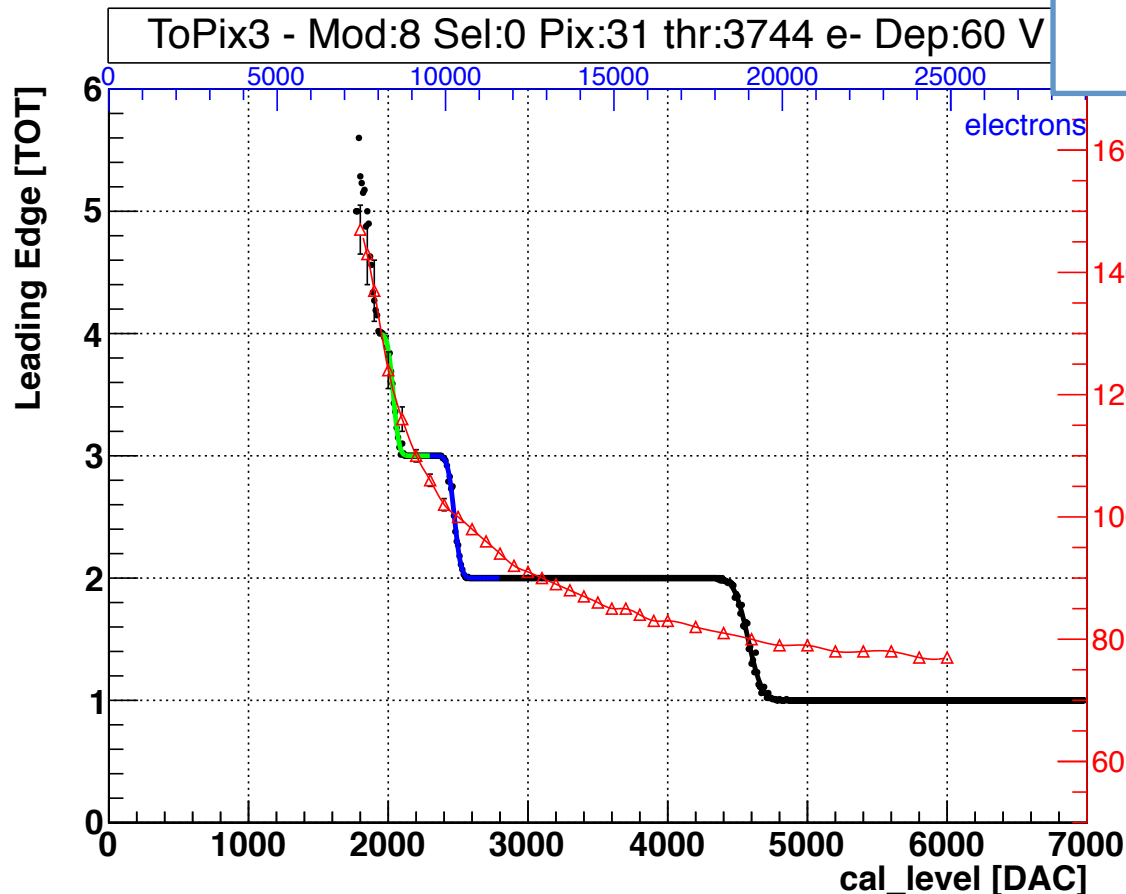


ToPix 3 Measurements

11. September 2012 | Simone Esch s.esch@fz-juelich.de

Time Walk Measurement



- V_{ref} : 700 mV
- V_{ref_d} : 650 mV
- $C_{feedback}$: 12 fF
- $c_{injection}$: 36 fF
- depletion voltage: 60 V

Threshold:

$$50 \text{ mV} * 12 \text{ fF} / Q(e^-) = 3744 e^-$$

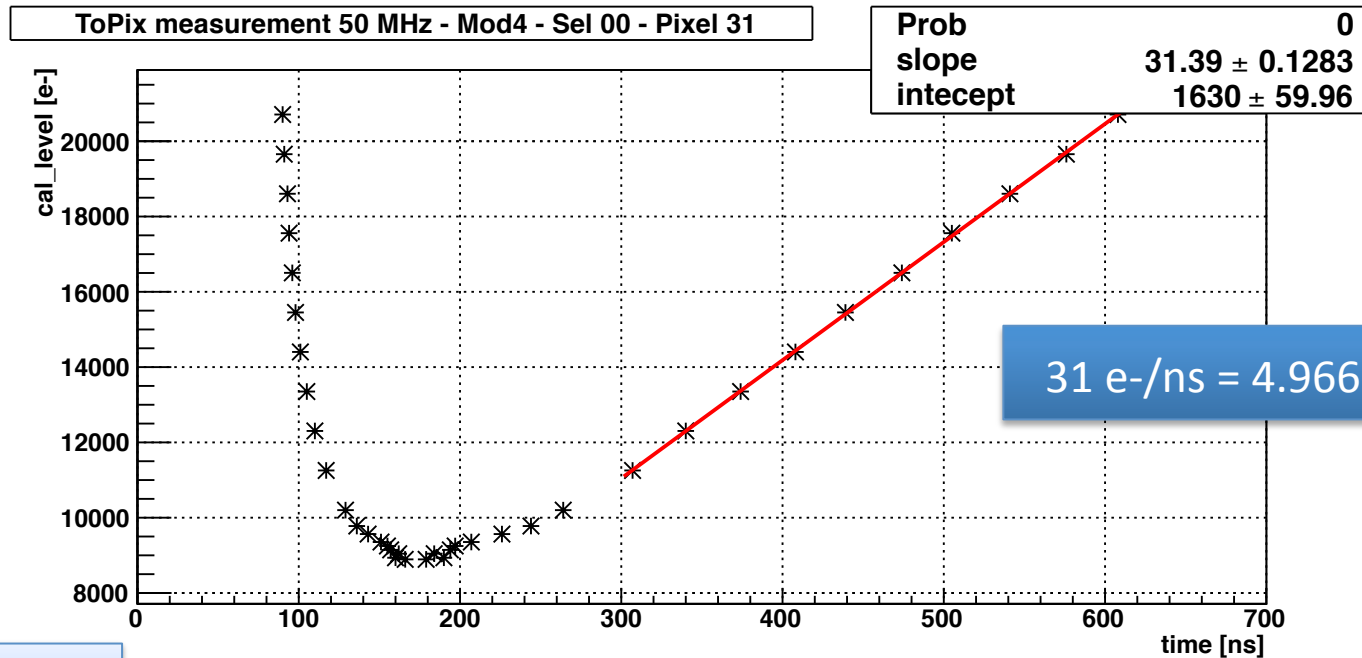
Pixel threshold 1834 DAC

$$\Leftrightarrow 0.03264 \text{ V (calibration func.)}$$

$$\Leftrightarrow 7335 e^- (?)$$

→ Source measurement in preparation to have well defined deposit charge

Time Walk Measurement

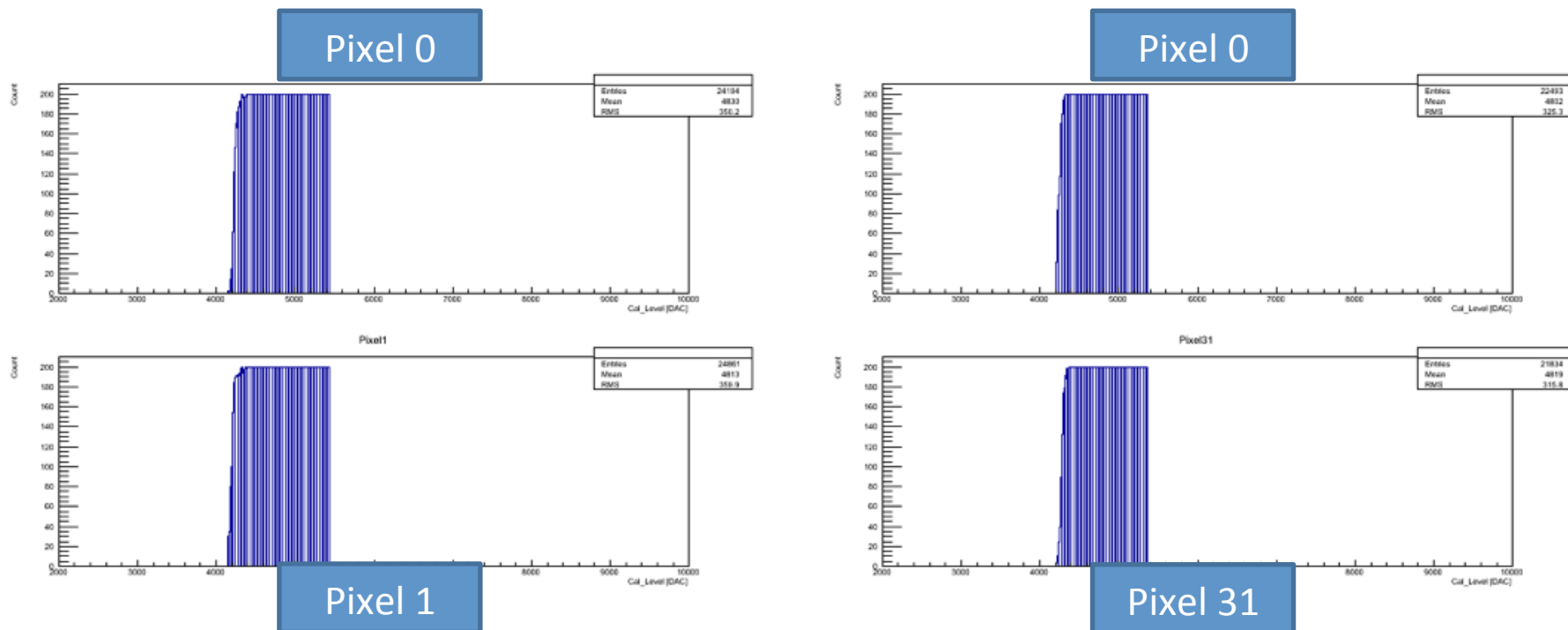


31 e-/ns = 4.966 nA

$C_{inj} = 36 \text{ fF}$

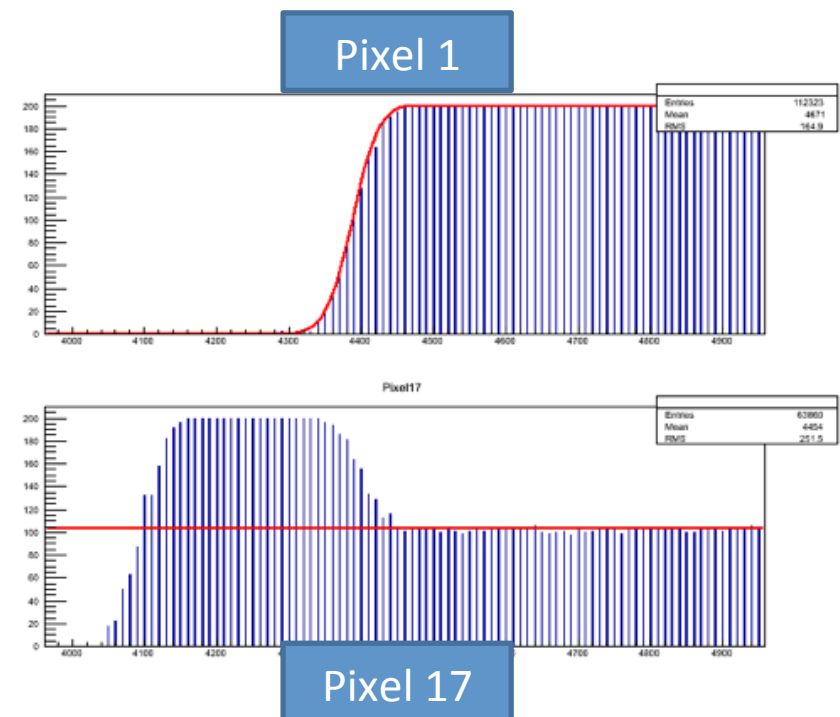
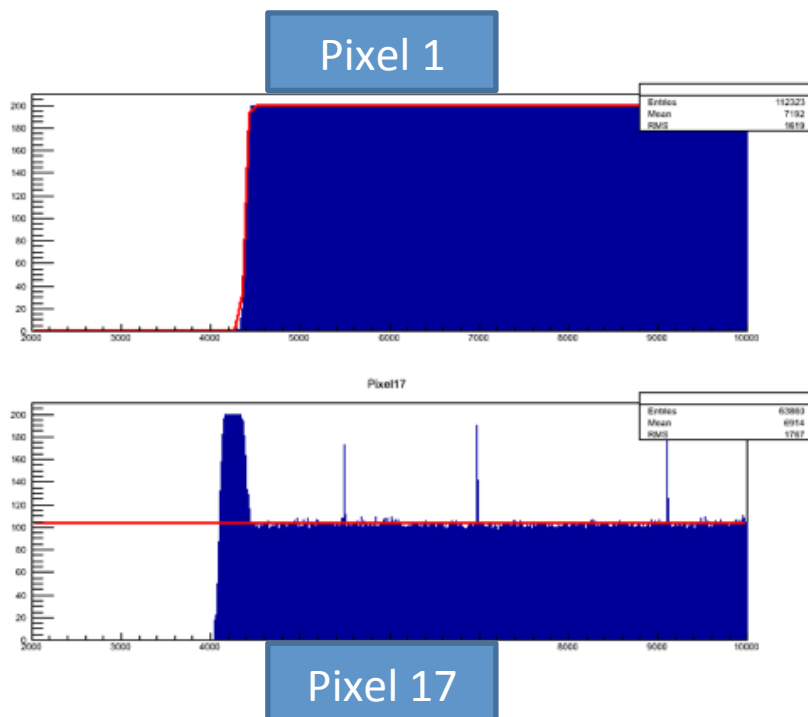
Simultaneous scan of pixels

Scanning two pixels on the same side of the double column at the same time.



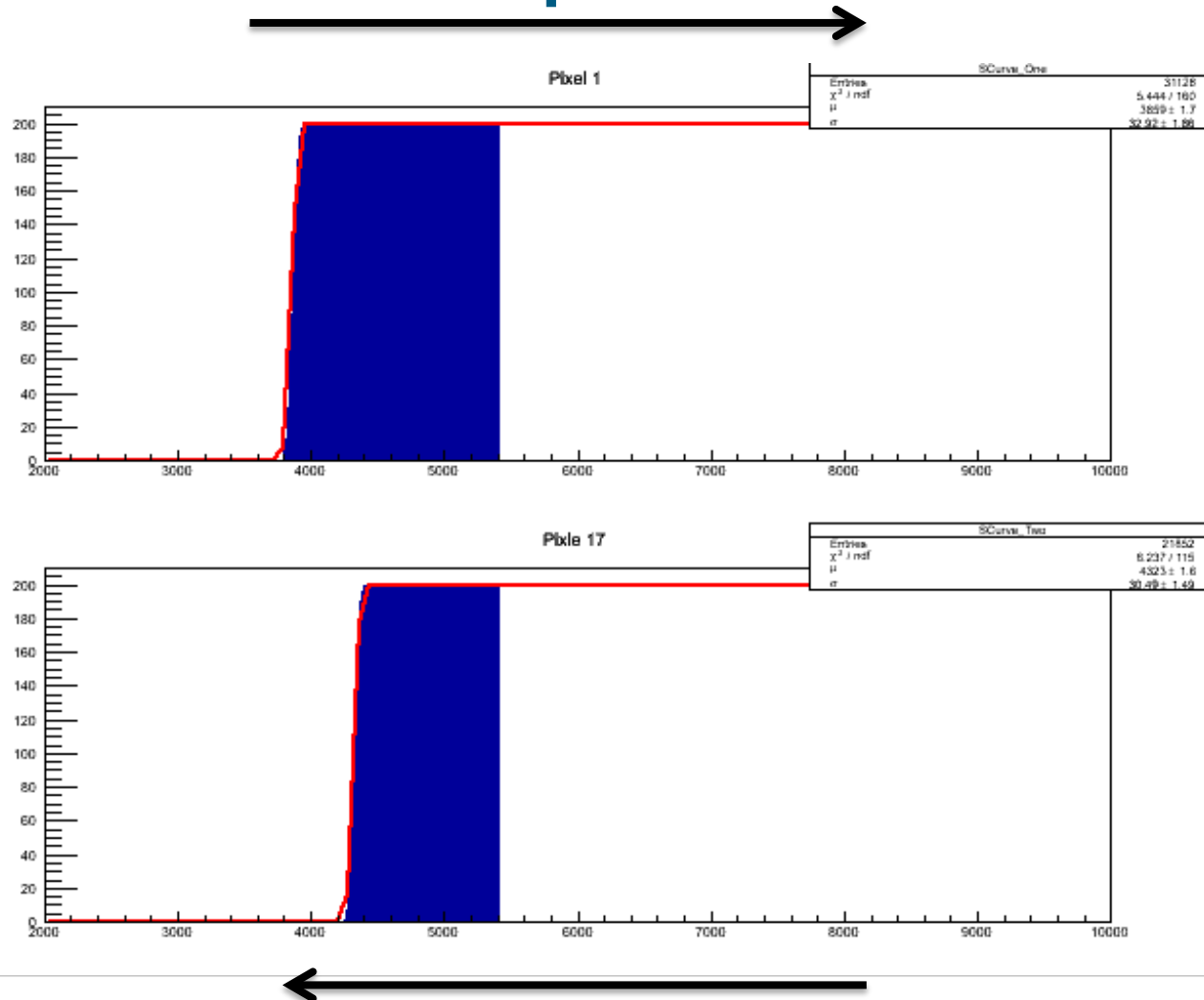
Simultaneous scan of pixels

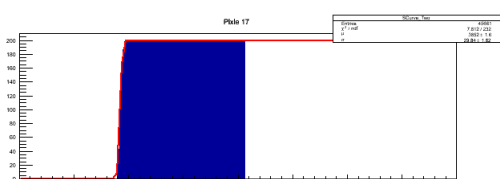
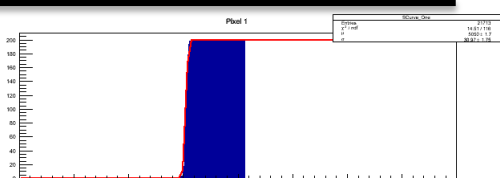
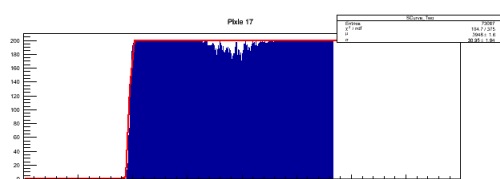
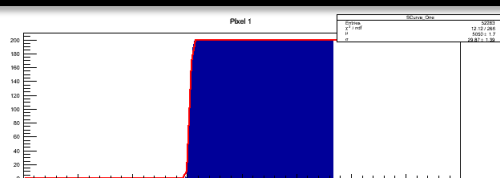
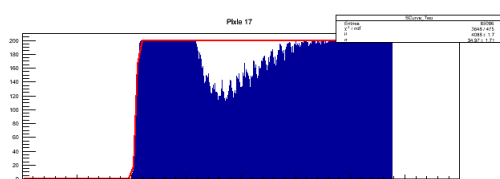
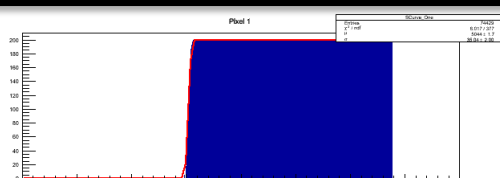
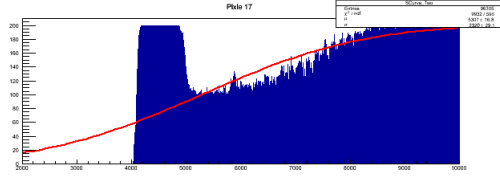
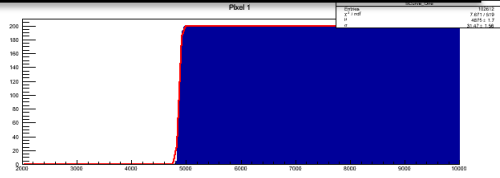
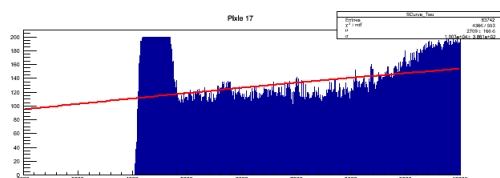
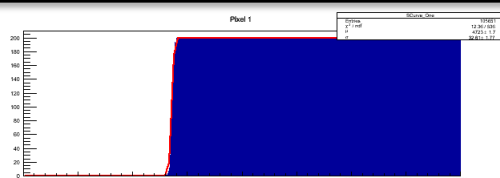
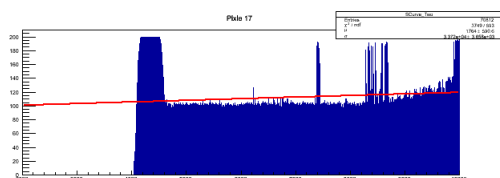
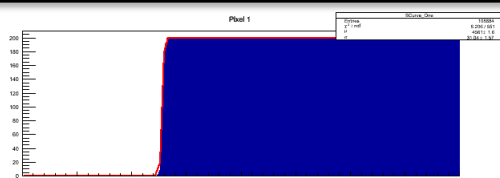
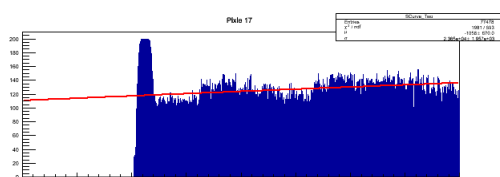
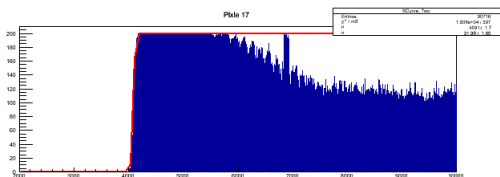
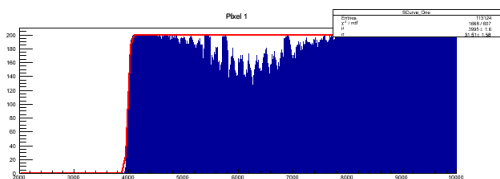
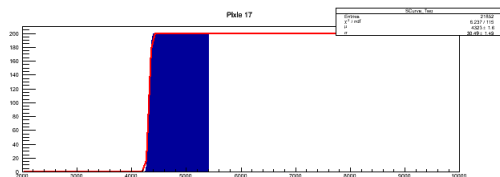
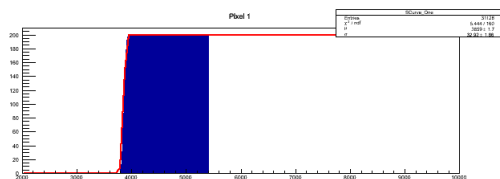
Scanning two pixels on the same side of the double column at the same time.



- Effect not depending on distance between pixels
- Involved pixel and threshold of pixels has effect

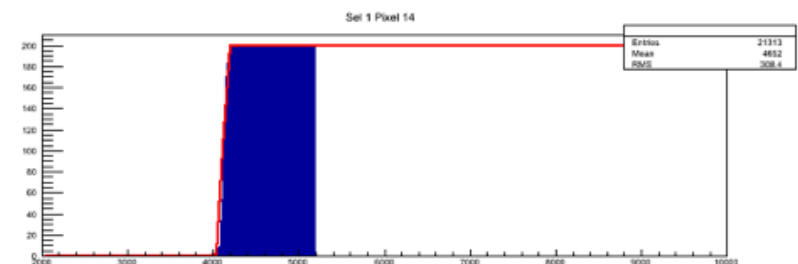
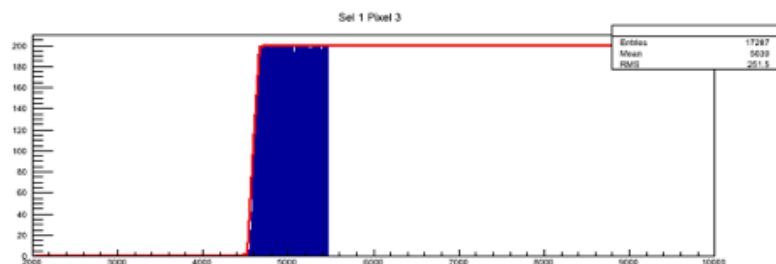
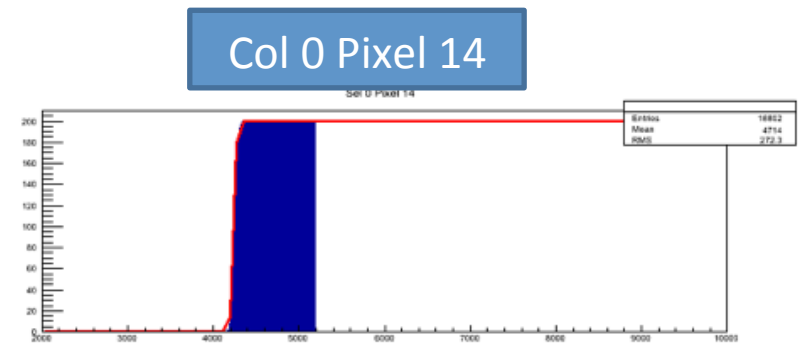
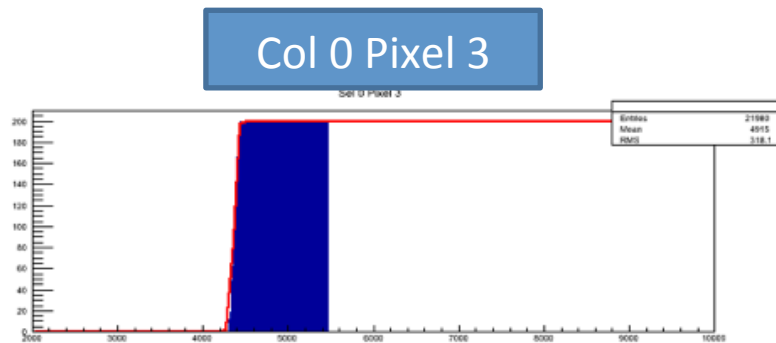
Simultaneous scan of pixels





Simultaneous scan of pixels

Scanning two pixels on different sides of the double column at the same time.



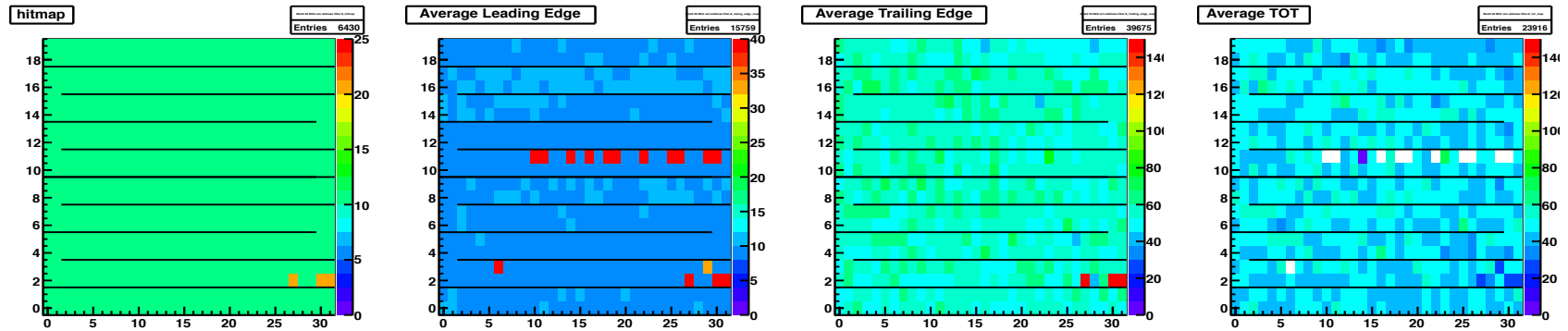
Col 1 Pixel 3

Col 1 Pixel 14

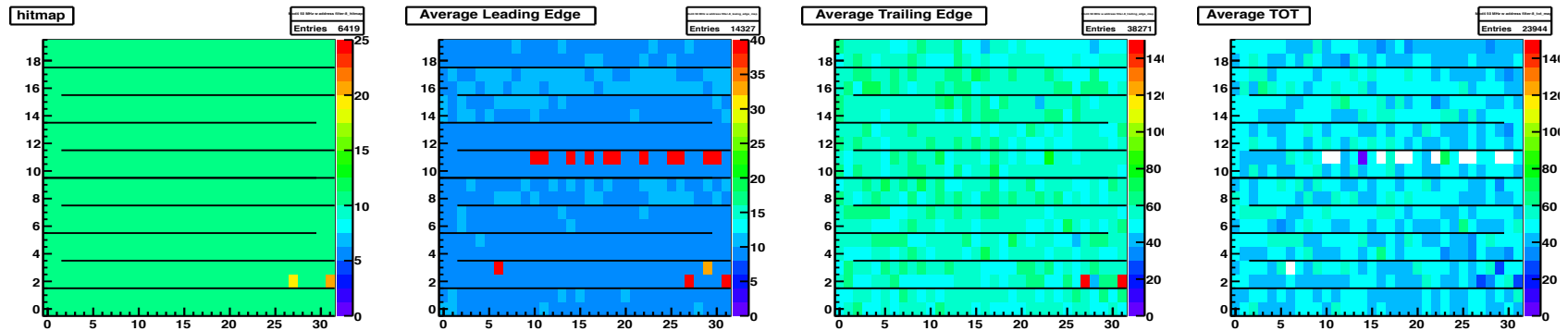
No interaction seen up to now

Operation at 50 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

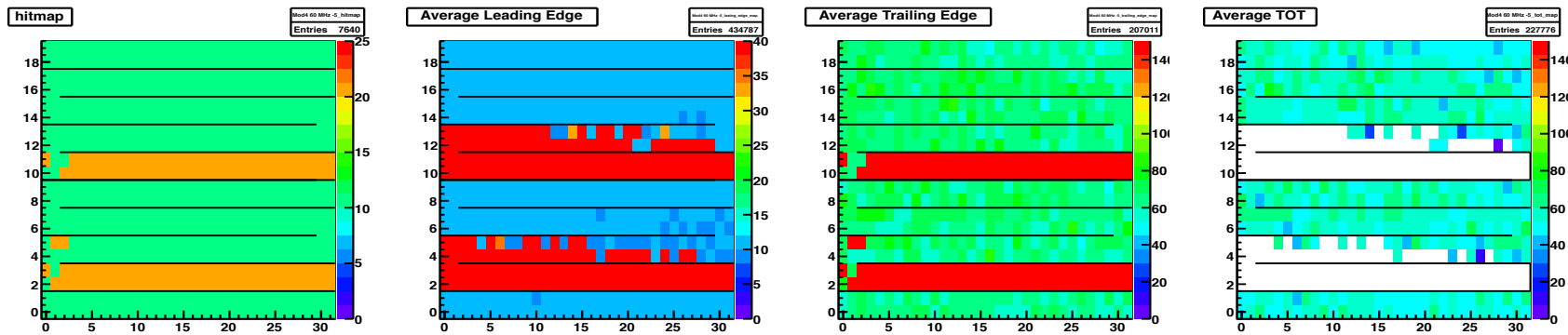
Average Leading
Edge

Average Trailing
Edge

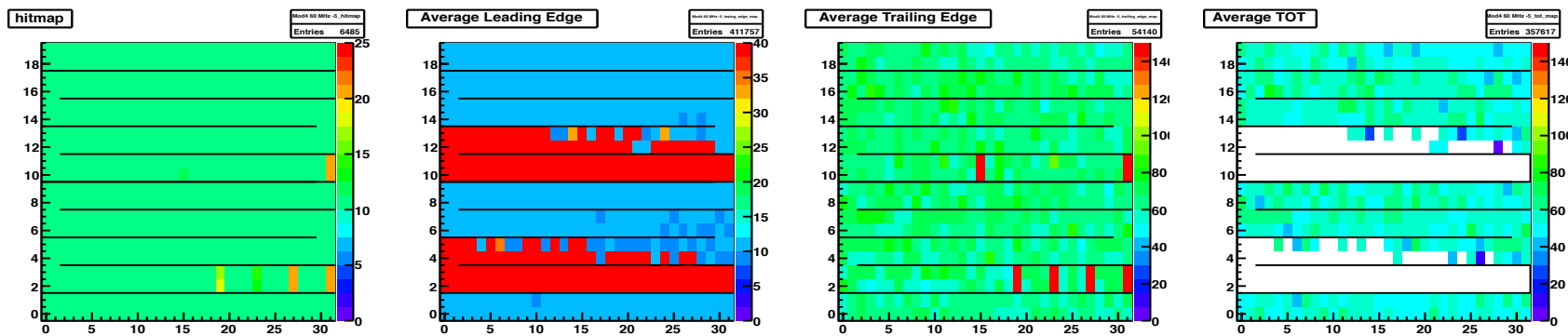
Average TOT

Operation at 60 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

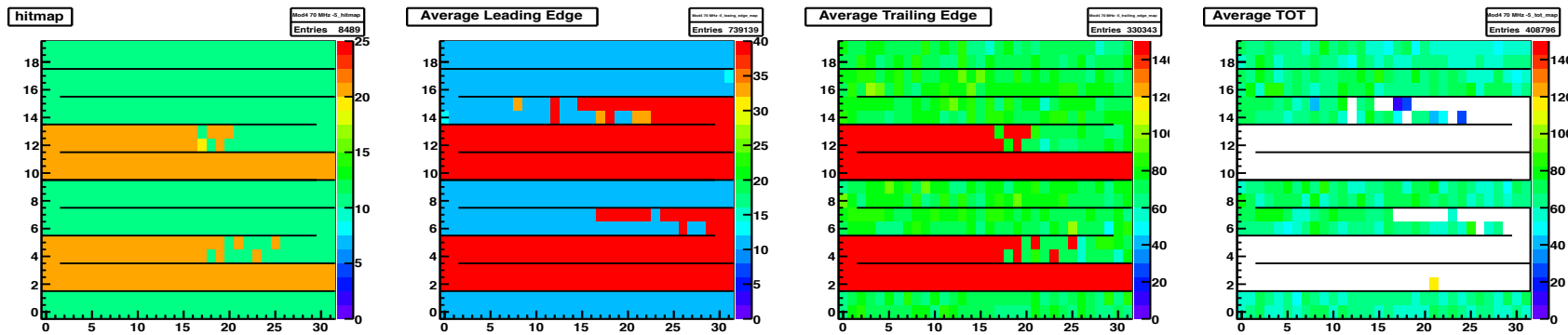
Average Leading
Edge

Average Trailing
Edge

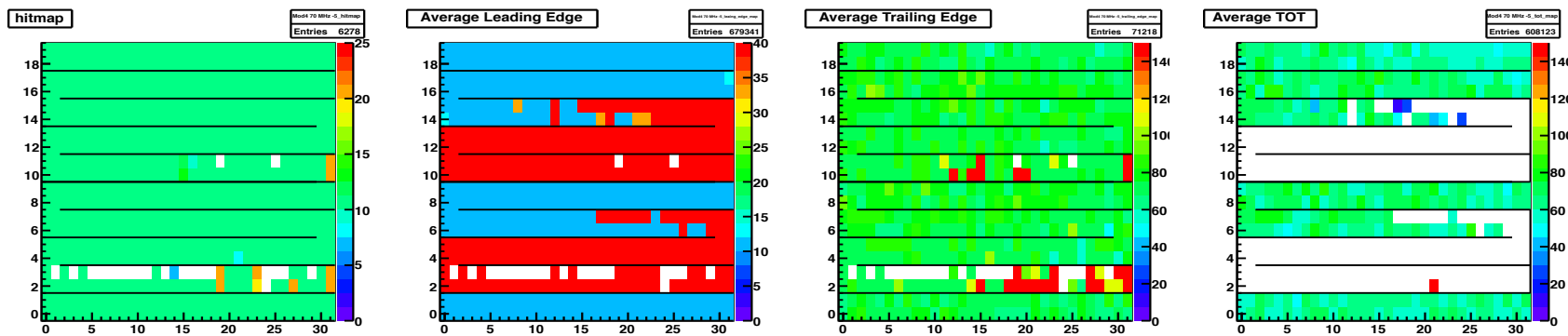
Average TOT

Operation at 70 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

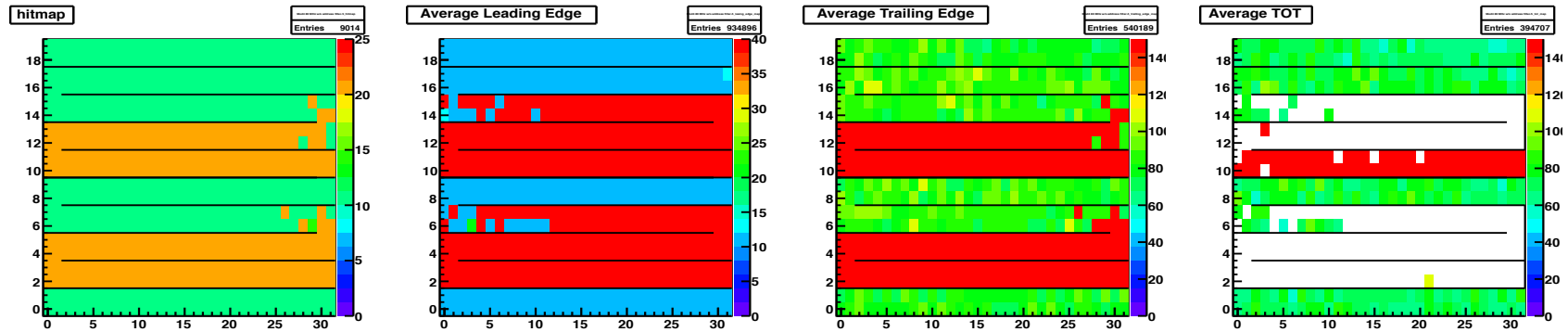
Average Leading
Edge

Average Trailing
Edge

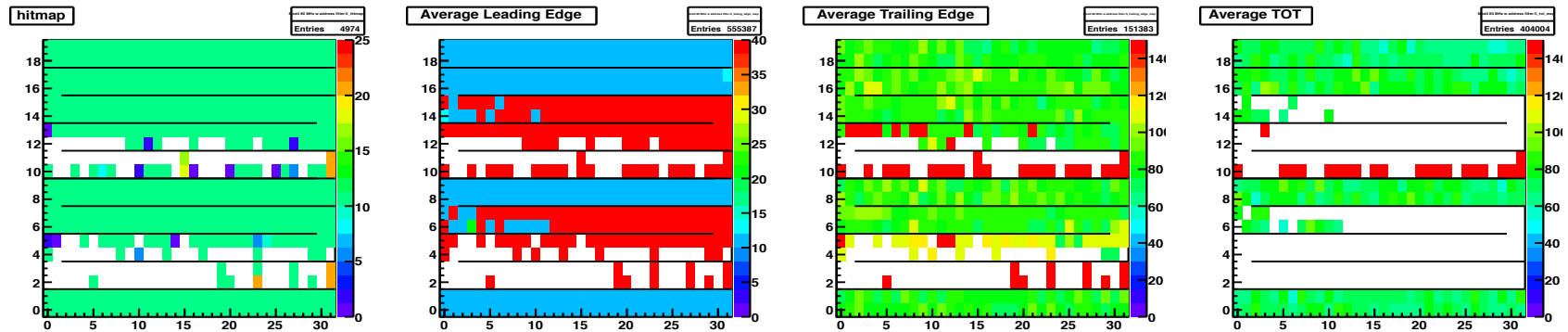
Average TOT

Operation at 80 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

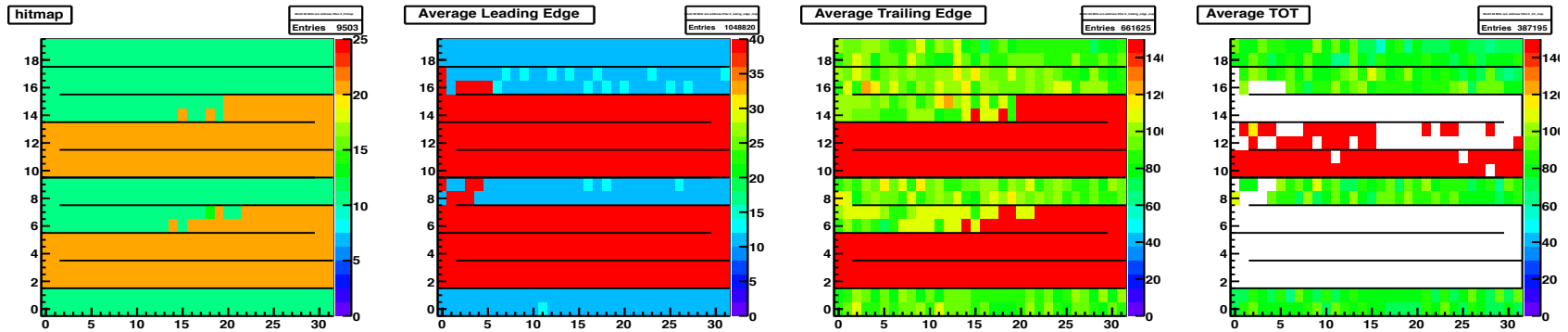
Average Leading
Edge

Average Trailing
Edge

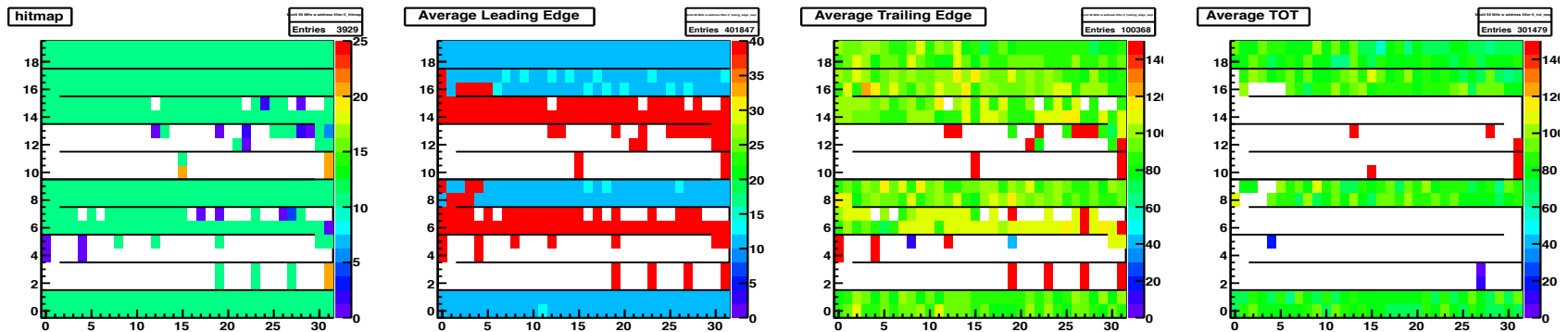
Average TOT

Operation at 90 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

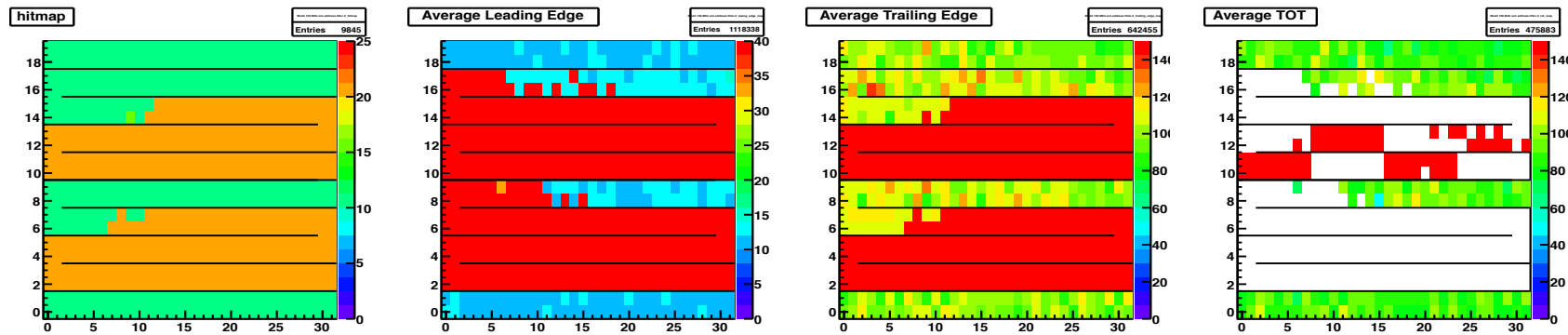
Average Leading
Edge

Average Trailing
Edge

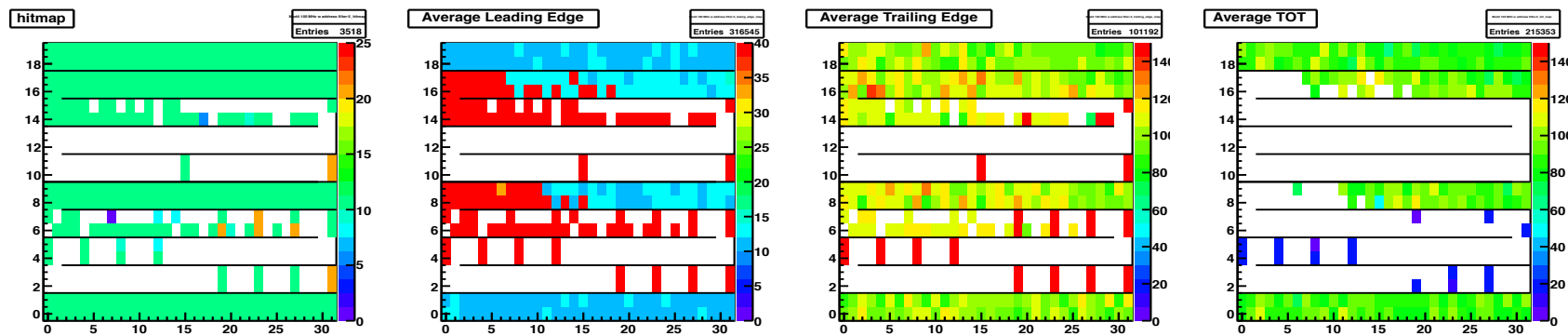
Average TOT

Operation at 100 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

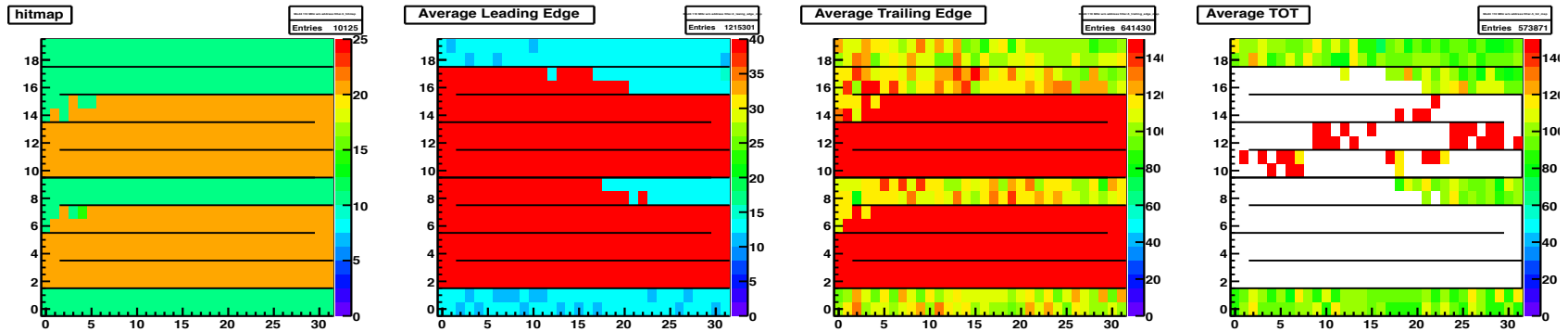
Average Leading
Edge

Average Trailing
Edge

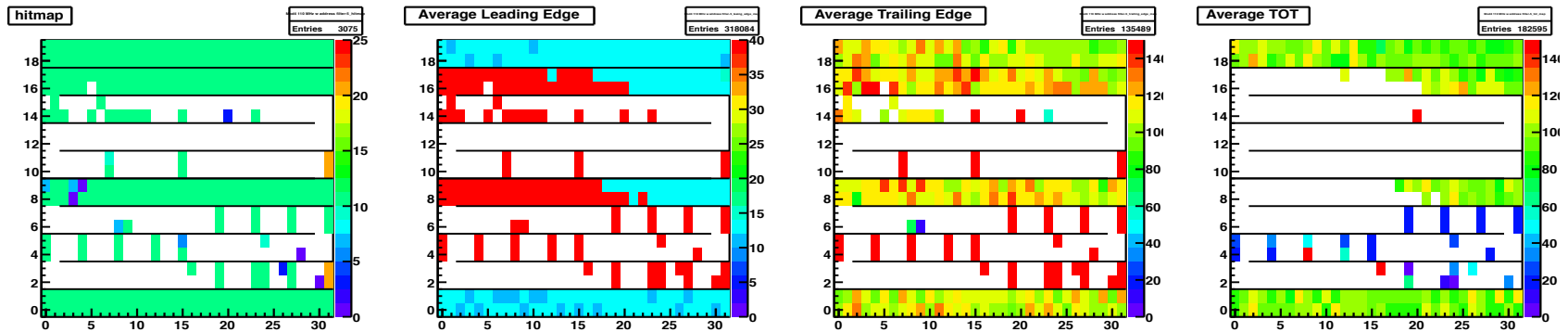
Average TOT

Operation at 110 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

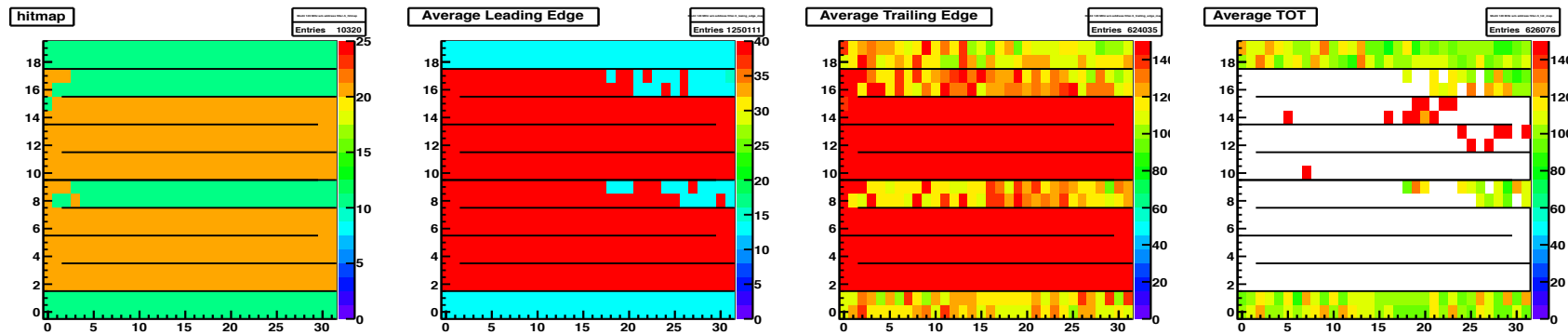
Average Leading
Edge

Average Trailing
Edge

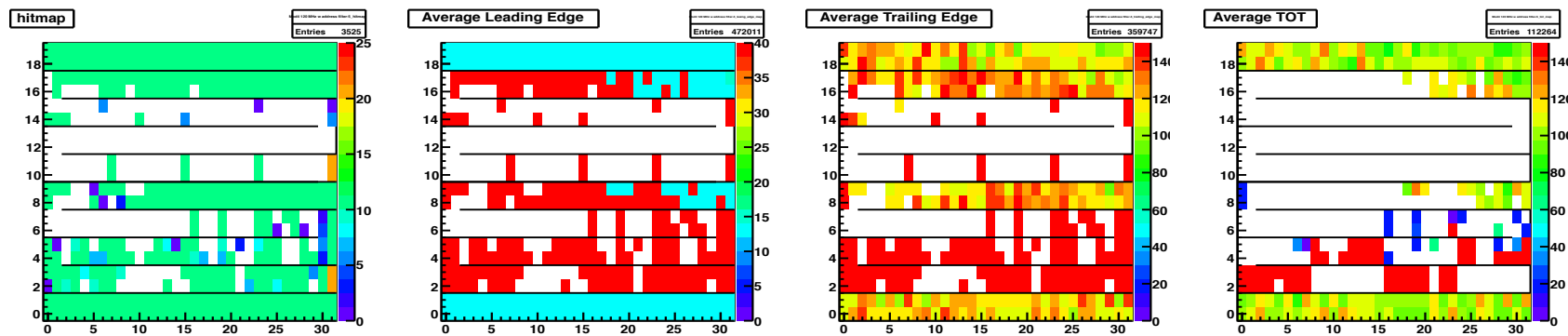
Average TOT

Operation at 120 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

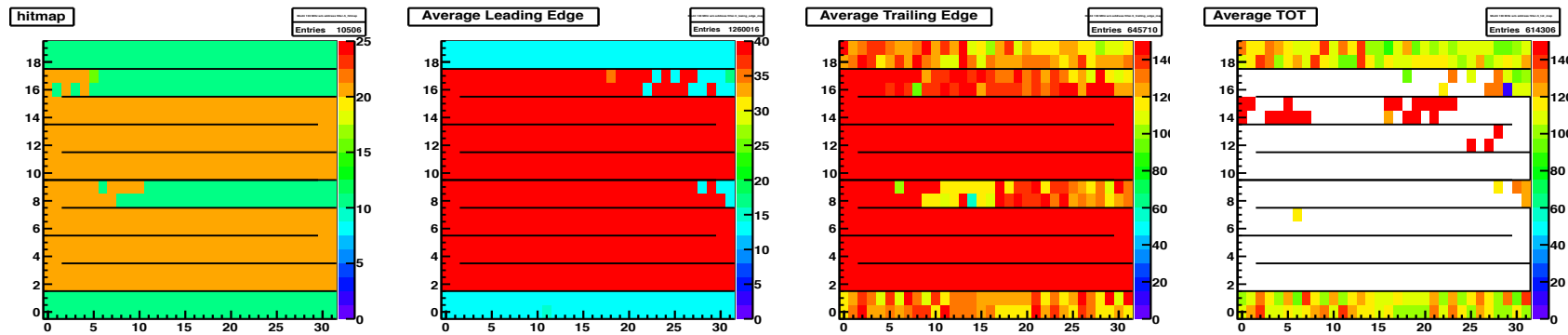
Average Leading
Edge

Average Trailing
Edge

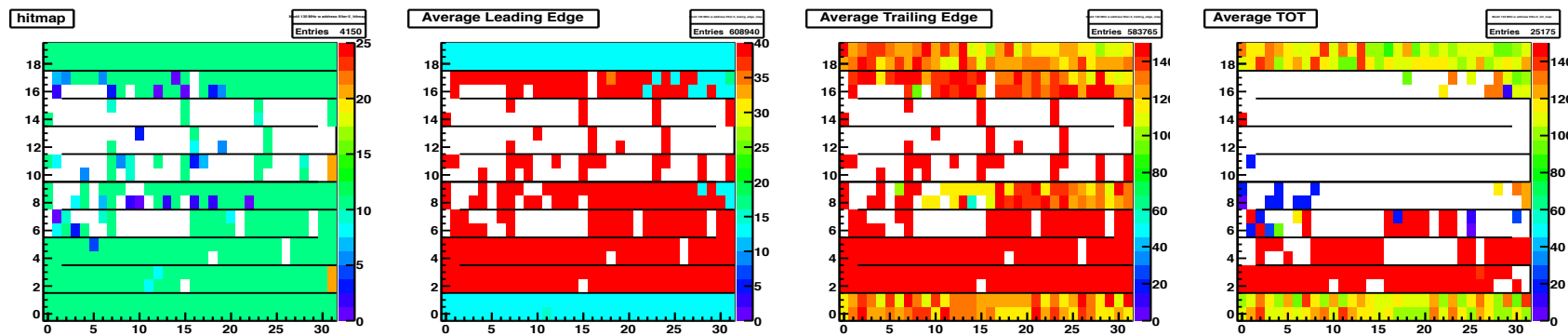
Average TOT

Operation at 130 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

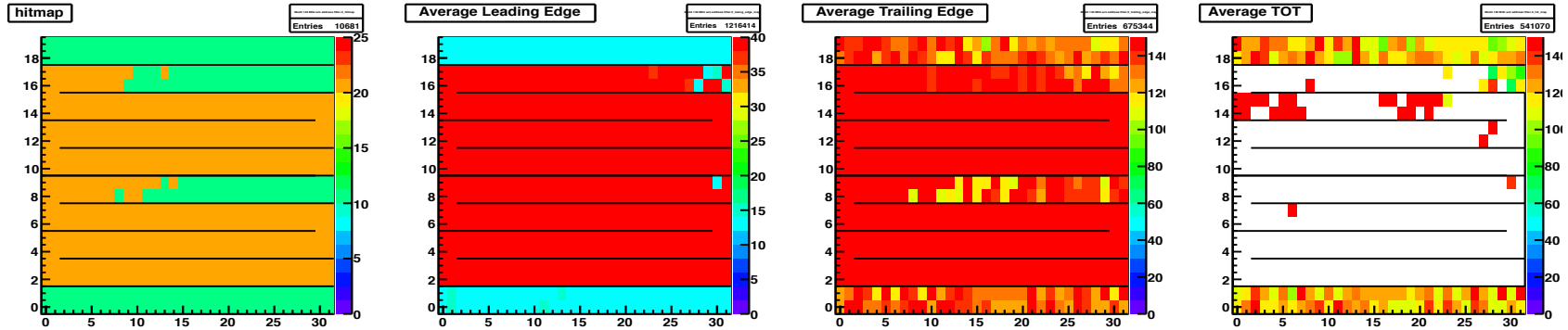
Average Leading
Edge

Average Trailing
Edge

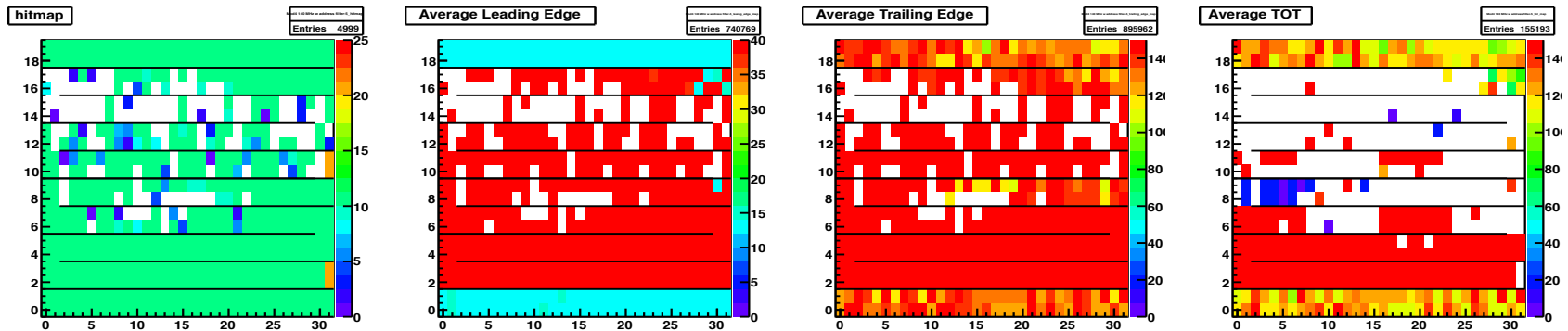
Average TOT

Operation at 140 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

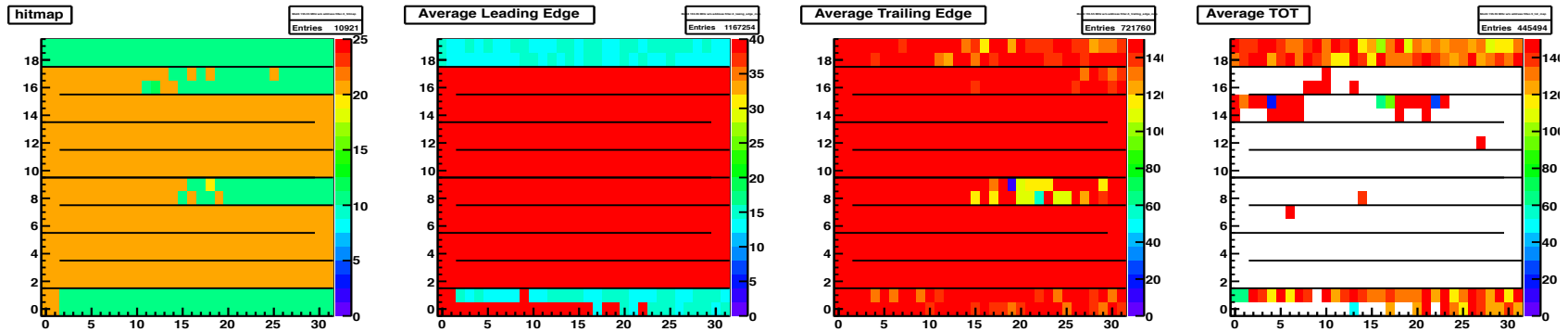
Average Leading
Edge

Average Trailing
Edge

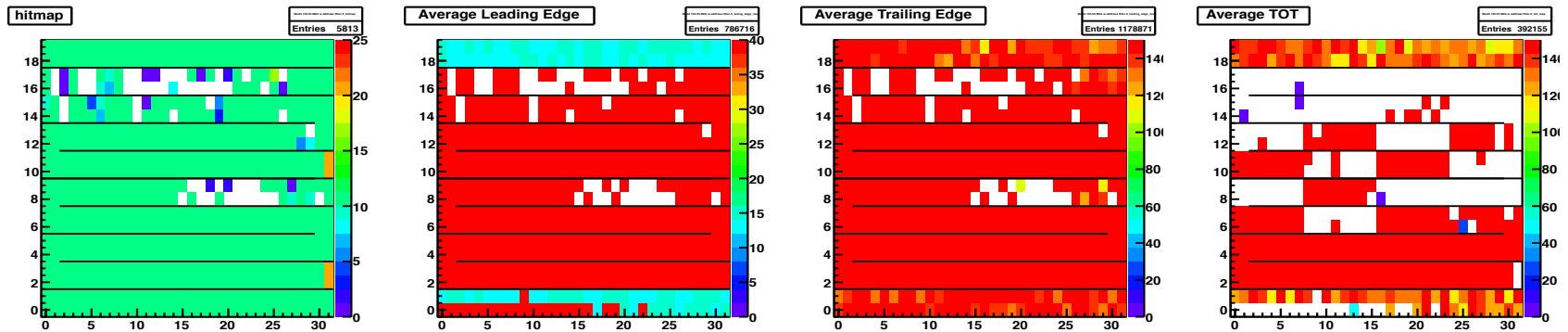
Average TOT

Operation at 155.55 MHz

w/o address filter



w address filter



Hitmap
10 inj. = green
20 inj. = orange

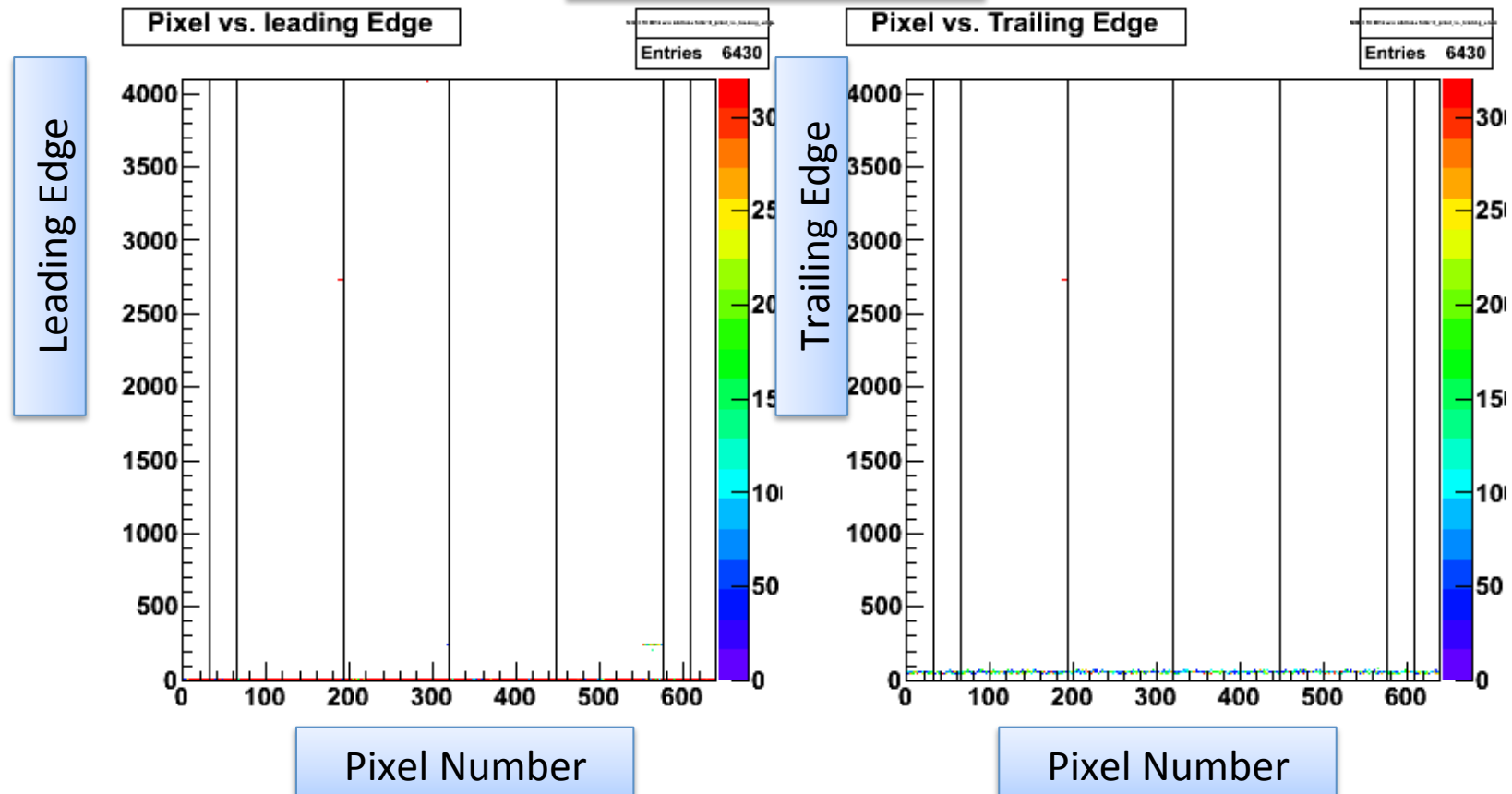
Average Leading
Edge

Average Trailing
Edge

Average TOT

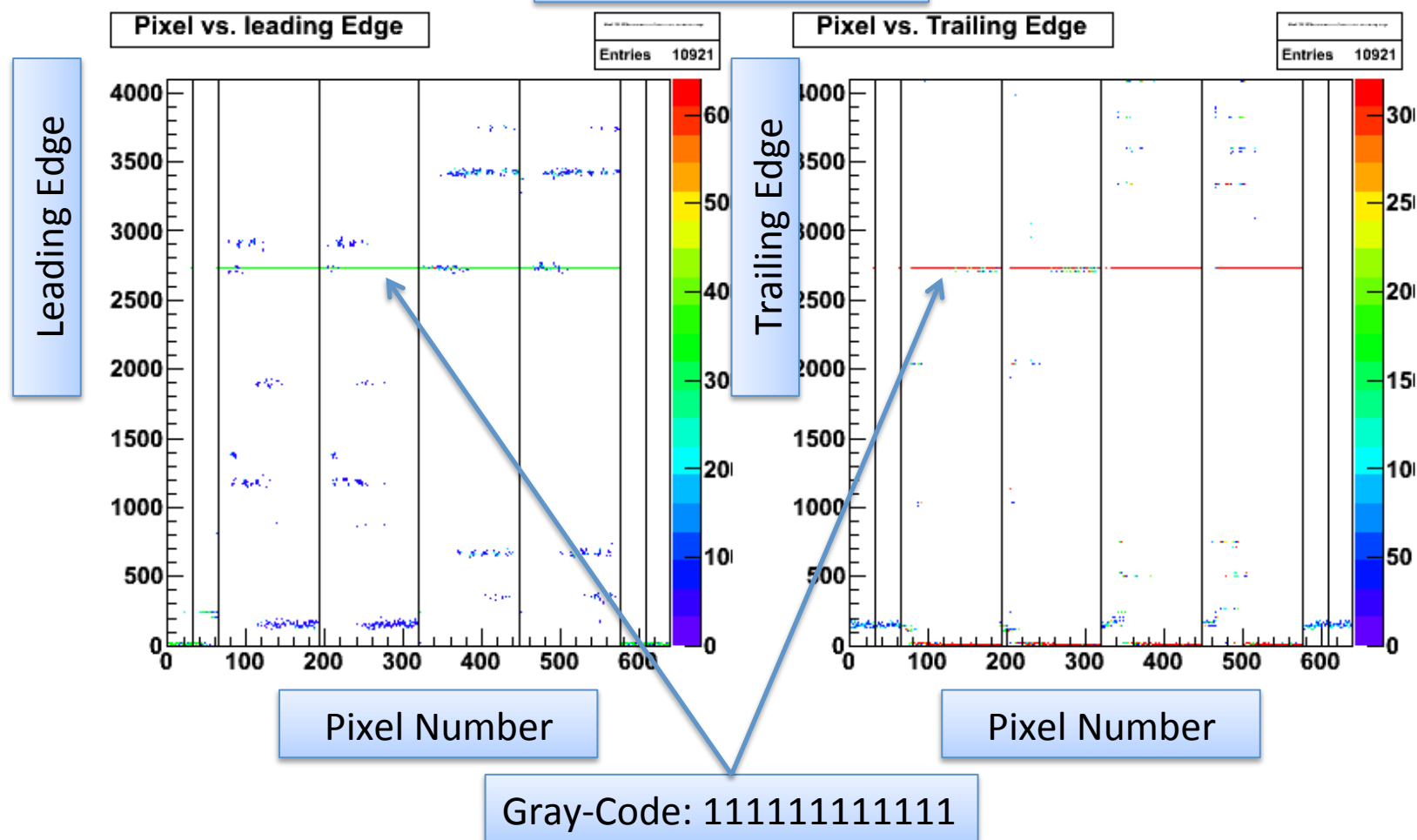
Operation at 50 MHz

w/o address filter



Operation at 155.55 MHz

w/o address filter



Dankeschön



Thank you for your attention

Backup Slides

Operation at 155.55 MHz

w address filter

