

MODIFICHE ALLA PROCEDURA DI SCAN

29 maggio 2020

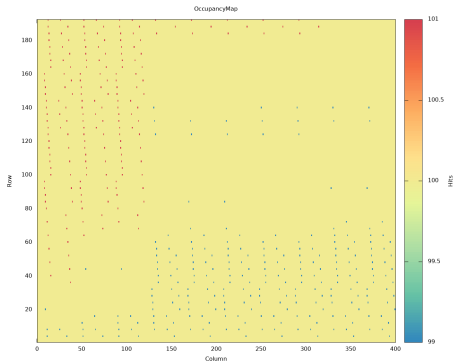
Modifiche alla procedura di scan

Nuovi scan:

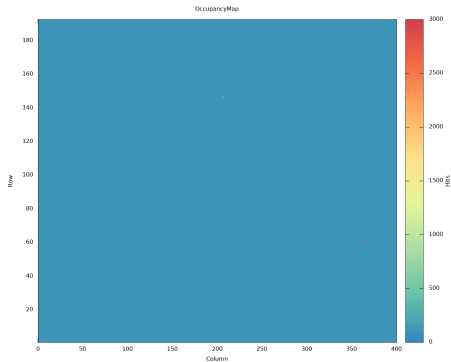
- solo chip di Milano (per evitare interferenze nei risultati con l'altro chip)
- utilizzo del file di configurazione
rd53a_TravellingChip_MI_Trimmed.json
- aumento della tensione a 1.85 V

Digital scan

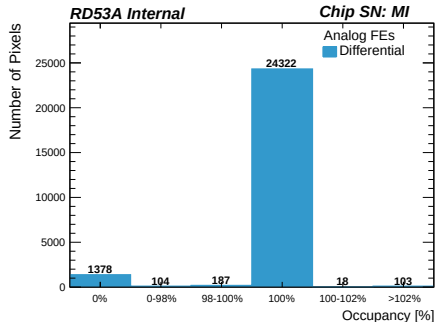
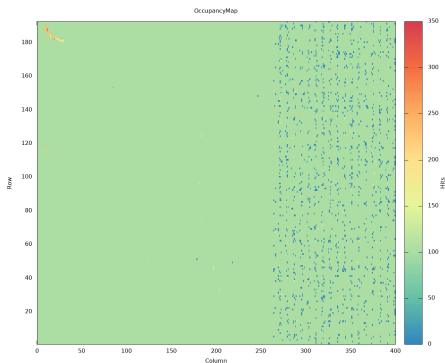
Tensione: 1.8 V



Tensione: 1.85 V

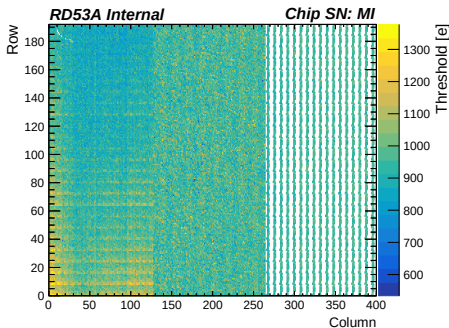


Analog scan

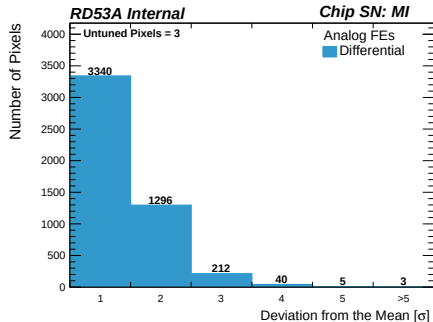


Pixel analizzati = 26112

Threshold scan



Threshold map



Pixel analizzati = 4896

goodDiff_0n

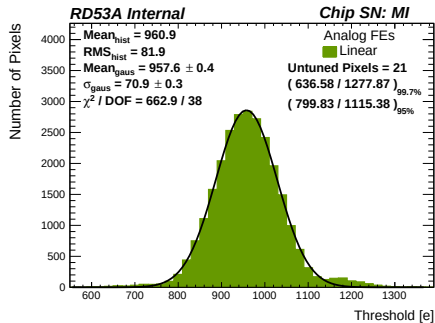
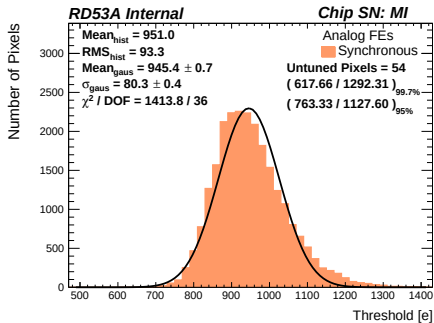
Alcuni pixel del FE differenziale hanno dei difetti all'uscita del comparatore. Per escludere questi pixel dall'analisi di root si può porre a 1 la variabile goodDiff_0n: lo si fa nel Threshold scan ma non nel digital scan.

	0	1	2	3	4	5	6	7
0	red	red	green	green	red	red	red	red
1	red	red	red	green	red	red	red	red
2	red	red	red	green	red	red	red	red
3	red	red	red	green	green	red	red	red
4	red	red	red	green	green	red	red	red
5	red	red	red	green	green	red	red	red
6	red	red	red	green	red	red	red	red
7	red	red	red	red	green	red	red	red

```
std::array<std::array<unsigned, 8>, 8> mask;  
mask[0] = {{0, 0, 1, 1, 0, 0, 0, 0}};  
mask[1] = {{0, 0, 0, 1, 0, 0, 0, 0}};  
mask[2] = {{0, 0, 0, 1, 0, 0, 0, 0}};  
mask[3] = {{0, 0, 0, 1, 1, 0, 0, 0}};  
mask[4] = {{0, 0, 0, 1, 1, 0, 0, 0}};  
mask[5] = {{0, 0, 0, 1, 1, 0, 0, 0}};  
mask[6] = {{0, 0, 0, 1, 0, 0, 0, 0}};  
mask[7] = {{0, 0, 0, 0, 1, 0, 0, 0}};
```

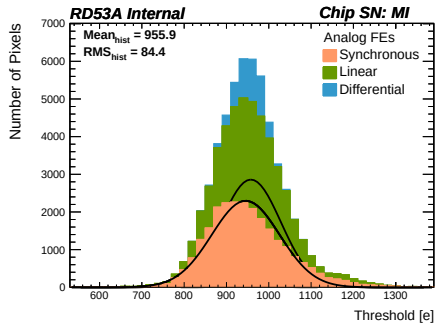
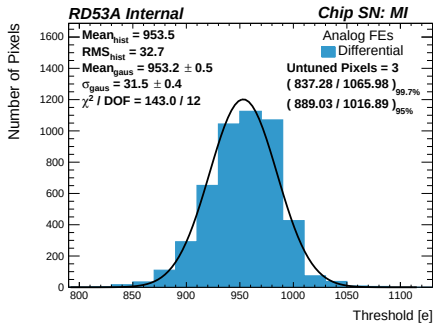
52 pixel inattivi in ogni core -> 21216 totali

Threshold scan: dispersion di soglia



Target: 1000 elettroni

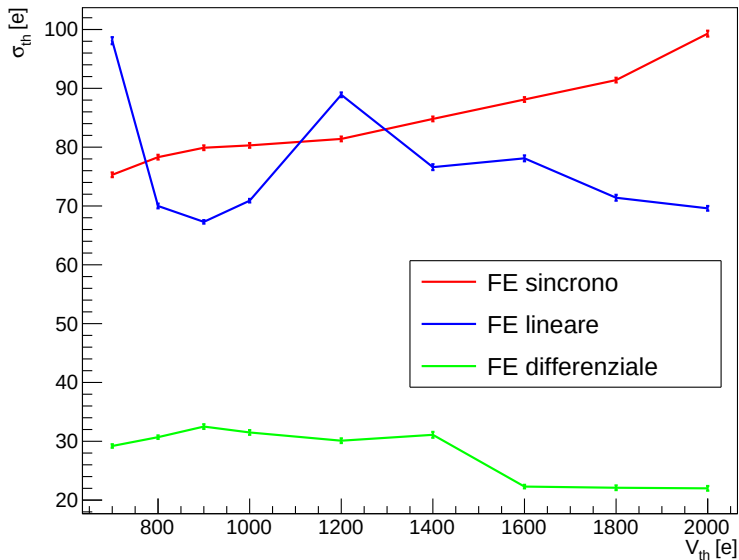
Threshold scan: dispersion di soglia



Target: 1000 elettroni

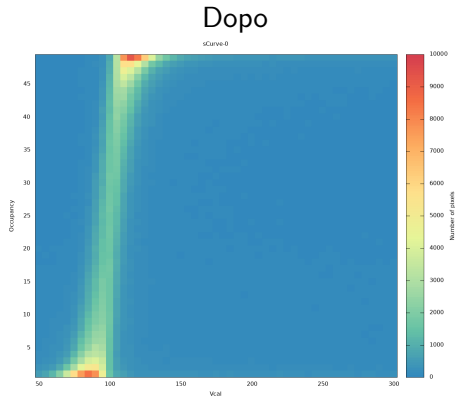
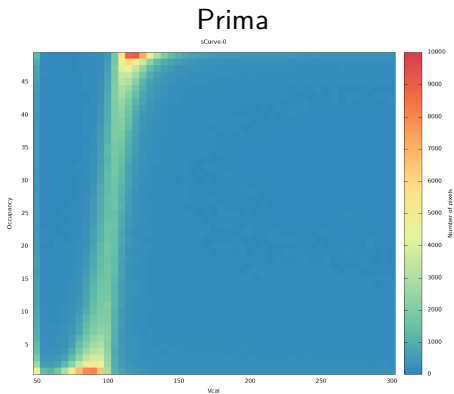
Dispersione soglia vs soglia

Dispersione soglie



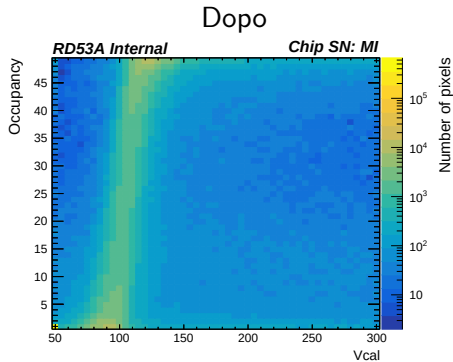
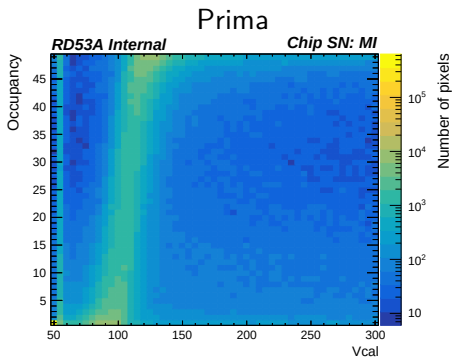
S-curve

- Inversione loop su InjVcalDiff e Mask Loop
- Output scan:



s-curve

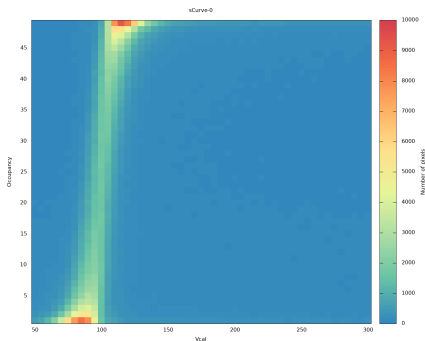
- Output root:



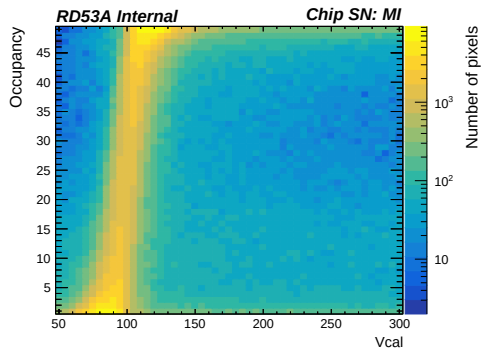
s-curve

- Confronto output scan e root:

Output scan



Output root



Prossimi obiettivi

- s-curve per ogni FE
- Individuazione della soglia minima ammissibile