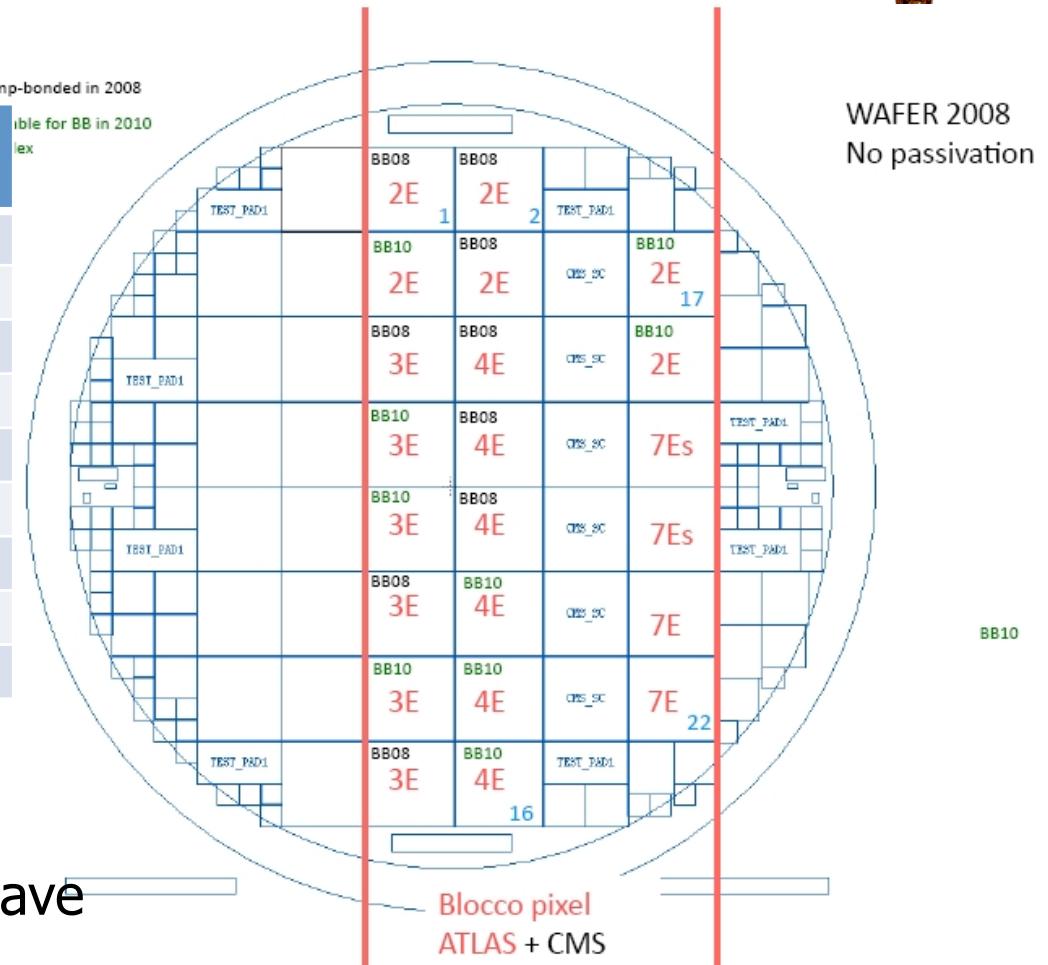




test pre-Irradiation

ID on Wafer	ID FE-I3	Sensor Type	V_bd	Irraggiamento	Test after IRRAD
3	06051	2E	60	3 10e15	
17	09051	2E	-	Genova	-
18	05051	2E	-	1 10e15	X
7	07051	3E	65	1 10e15	X - TB, X
9	07052	3E	60	3 10e15	X
13	08052	3E	60	5 10e15	
12	08051	4E	25	1 10e15	X
14	09052	4E	60	3 10e15	X - TB, X
16	05052	4E	65	5 10e15	



- ✓ Single chip tuned (@20V) to have
 - Threshold ~ 3200 e
 - TOT(Q=20ke) = 60 BC
- ✓ Am Source scan to verify ToT tuning (0.5 Mhits, ~ 250 entries per pixel)
- ✓ Noise scan vs HV

Test after irradiation



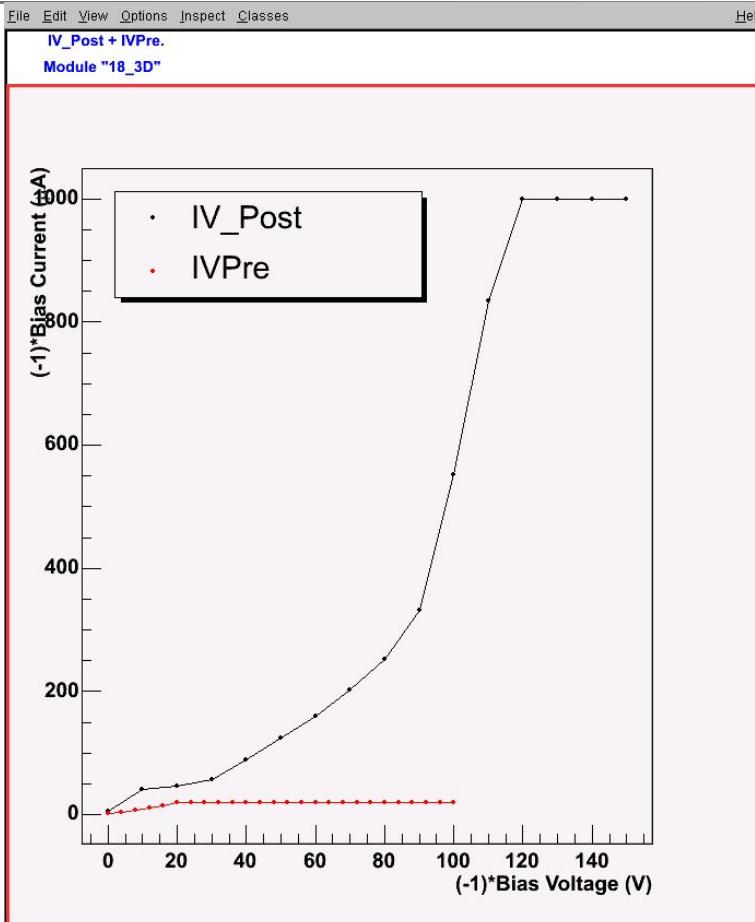
- Test done @ $T \sim -20^\circ C$
- ✓ IV scan
- ✓ Re-tuning @ $V_{nominal}$ (Higher than before irradiation)
 - Threshold $\sim 3200 e^-$
 - TOT($Q=20ke$) = 60 BC
- ✓ Standard calibration @ $V_{nominal}$: Xtalk, Threshold, Monleak, ToT calib, Am Source scan
- ✓ Standard calibration repeated for a couple of other voltages settings
- ✓ Noise scan vs HV

General comments

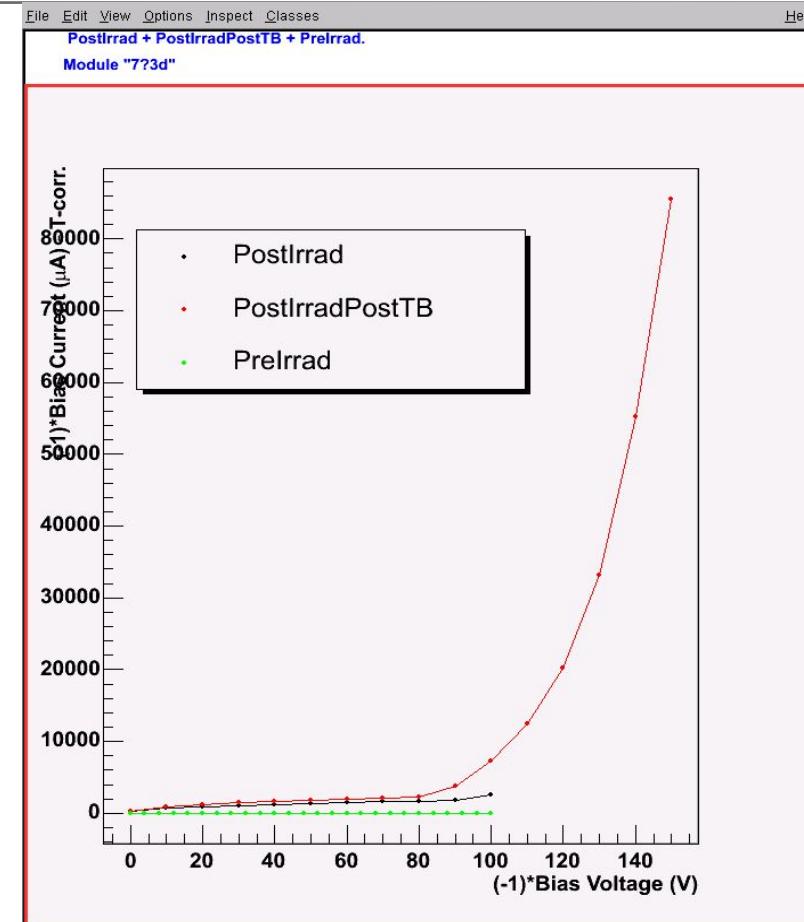


- Il bias da applicare per svuotare il sensore è ovviamente cambiato
- In generale l'elettronica funziona bene anche per alti livelli di irraggiamento
- È necessario un re-tuning per riportare soglia e TOT a valori desiderati
- I pixel rumorosi sono così rumorosi che si devono disabilitare sia il loro HIT bus che il loro preamplificatore per fare lo SCAN di sorgente

Preliminary results: few examples



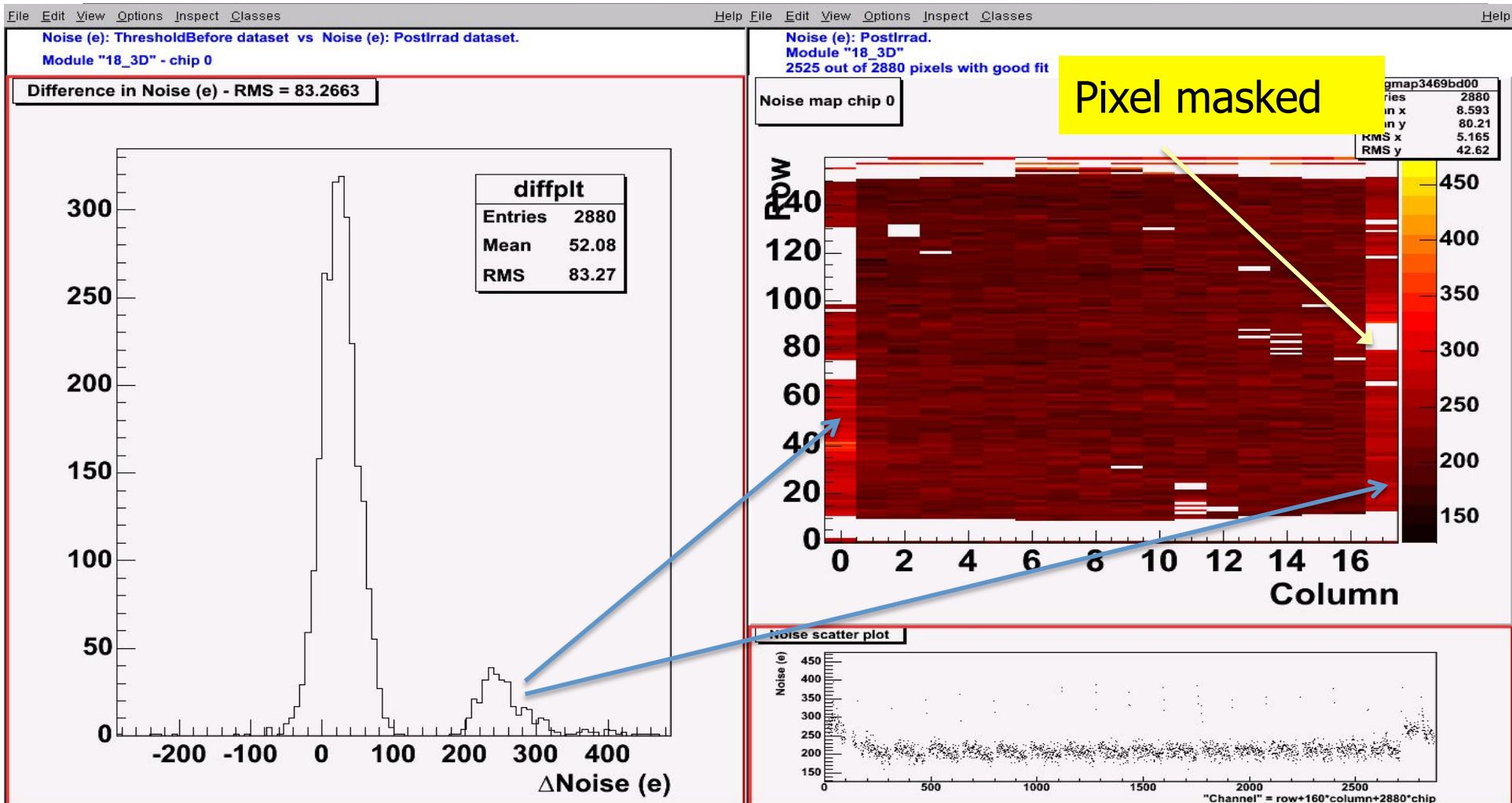
18 ($2E - 1*10^{15}$)



7 ($3E - 1*10^{15}$)

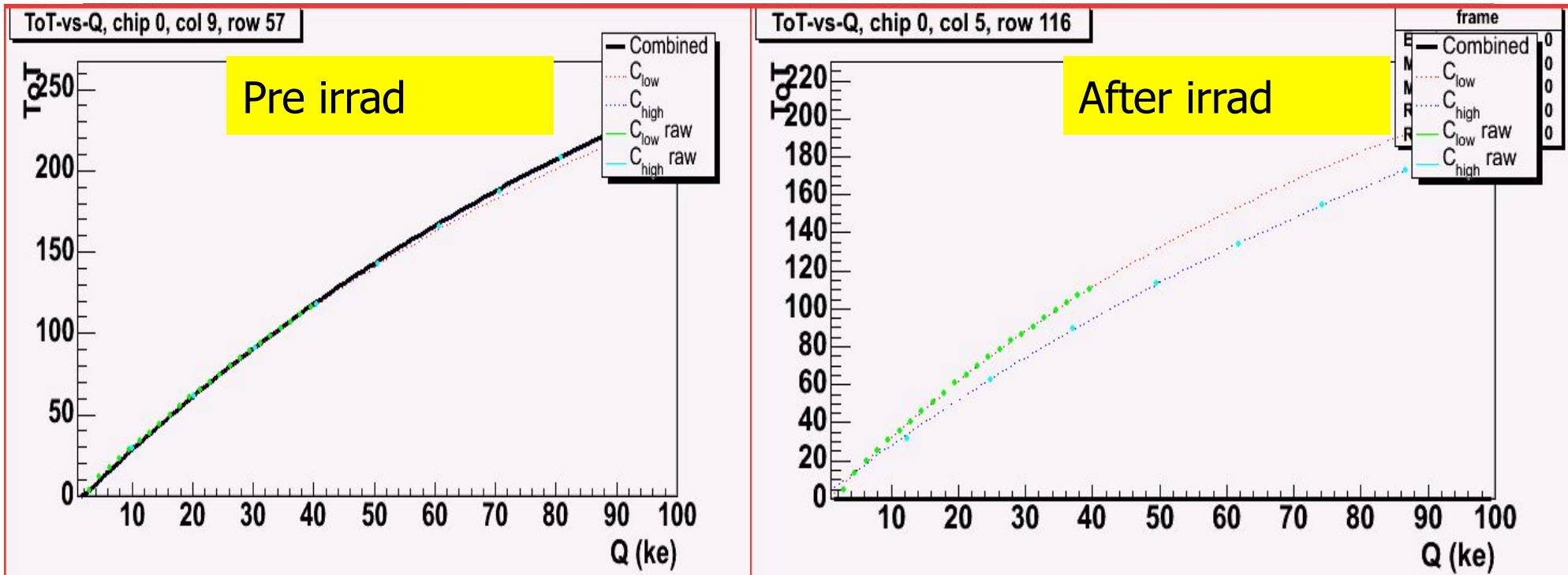
IV SCAN before and after irradiation

Preliminary results: few examples



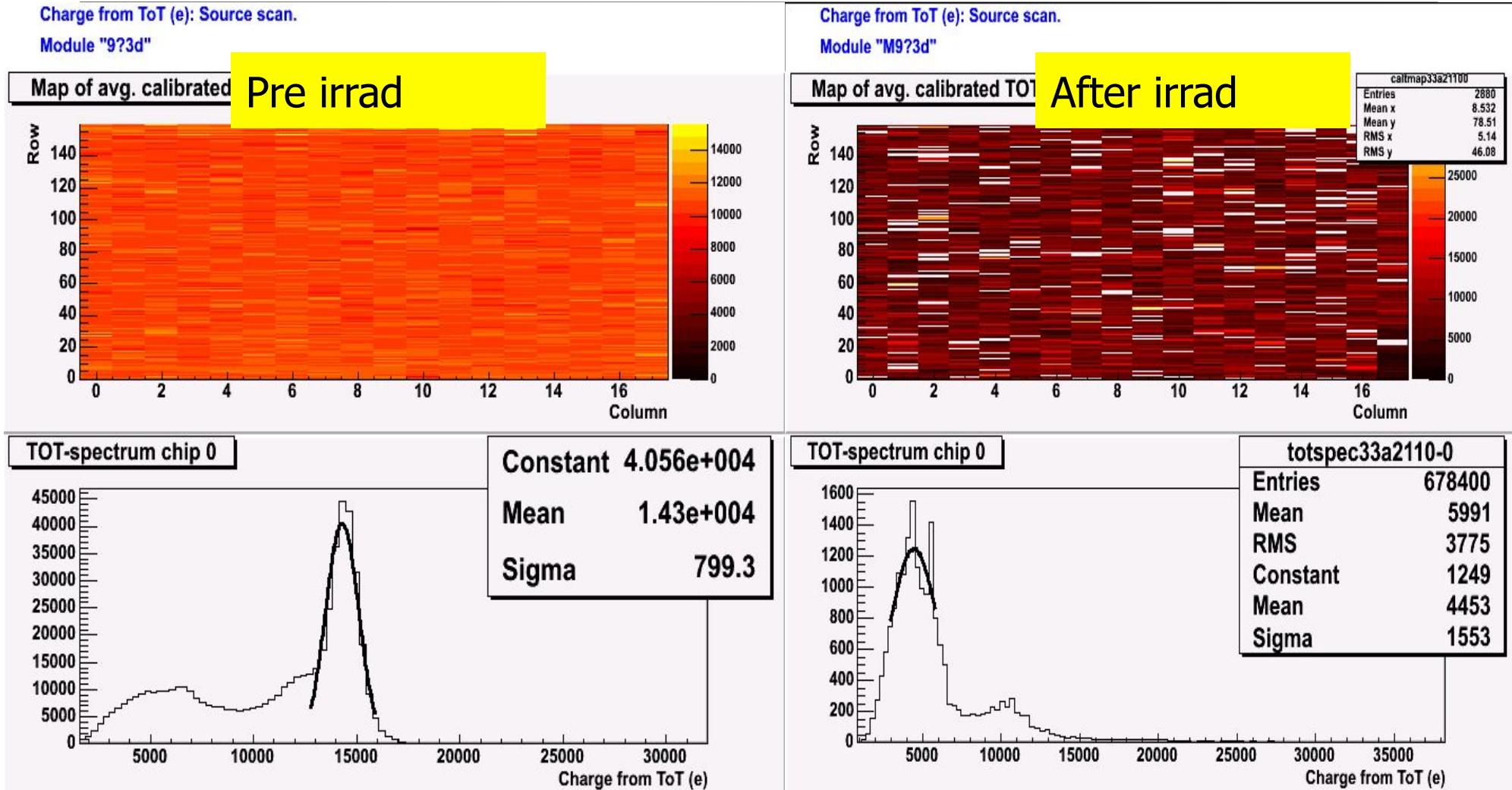
Noise increases after irradiation:
Difference before and after irradiation

Preliminary results: few examples



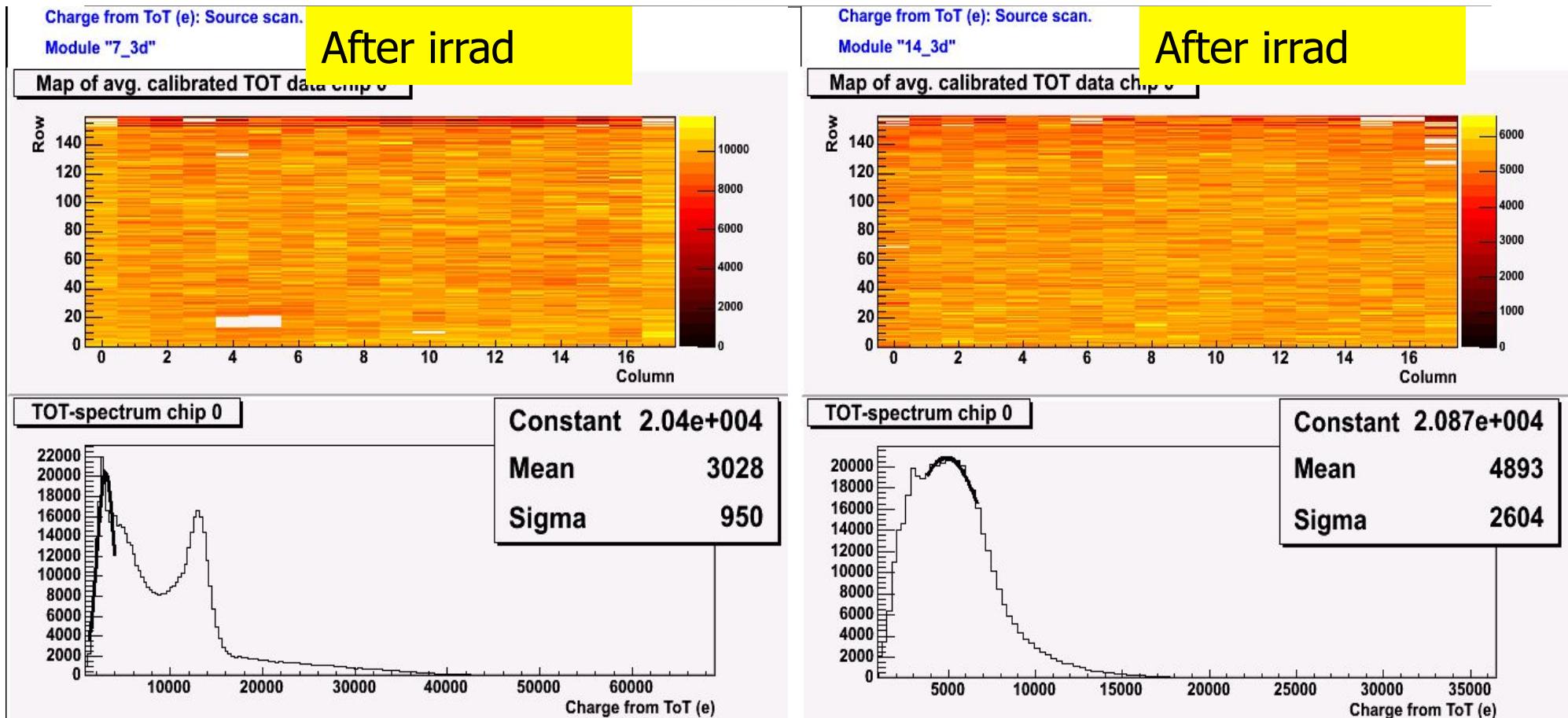
ToT calibration before and after irradiation:
Calibration with Clow and Chigh differs a lot after irrad.
9 ($3E - 3 \times 10^{15}$ - even if ToT re-tuning after irrad)

Preliminary results: few examples



ToT spectrum before and after irradiation
9 ($3\text{E} - 3\text{*}10\text{e}15$)

Preliminary results: few examples



7 ($3E - 1*10^{15}$)

14 ($4E - 3*10^{15}$)

Source SCAN after irradiation (TB sensors)