Status Update

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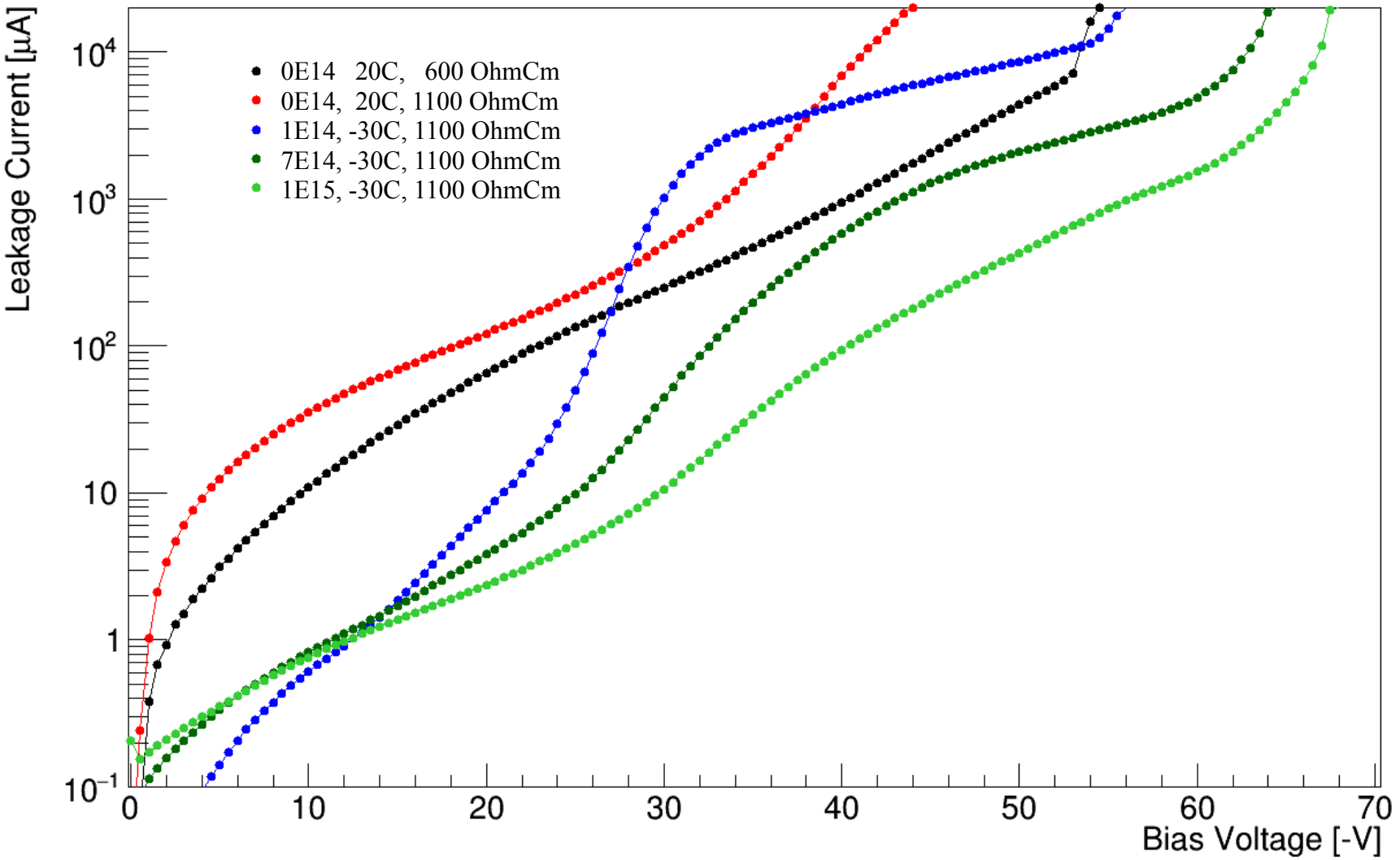
LF2 – Irradiated devices

- Sent 6 LF2 chips to JSI Ljubljana for neutron irradiation:
  - 2x 1E14 n_{eq}/cm^2
  - 2x 7E14 n_{eq}/cm^2
  - 2x 1E15 n_{eq}/cm^2
- Assembled one device of each fluence
- Performed same tests as for unirradiated devices, but at -30C

IVs for different irradiations

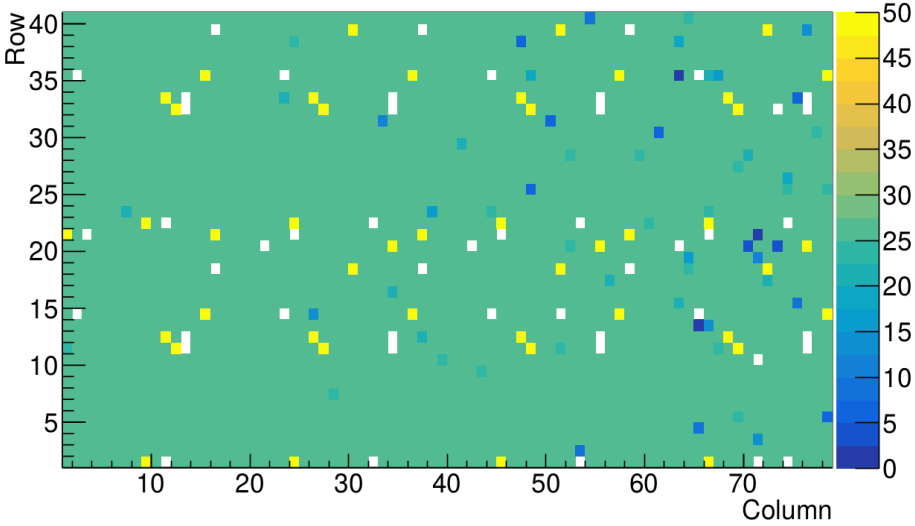


Note: higher irradiated devices seem to have better I-V behavior at -30C.
Simulated breakdown voltage was at ~80V → getting closer with irradiation!

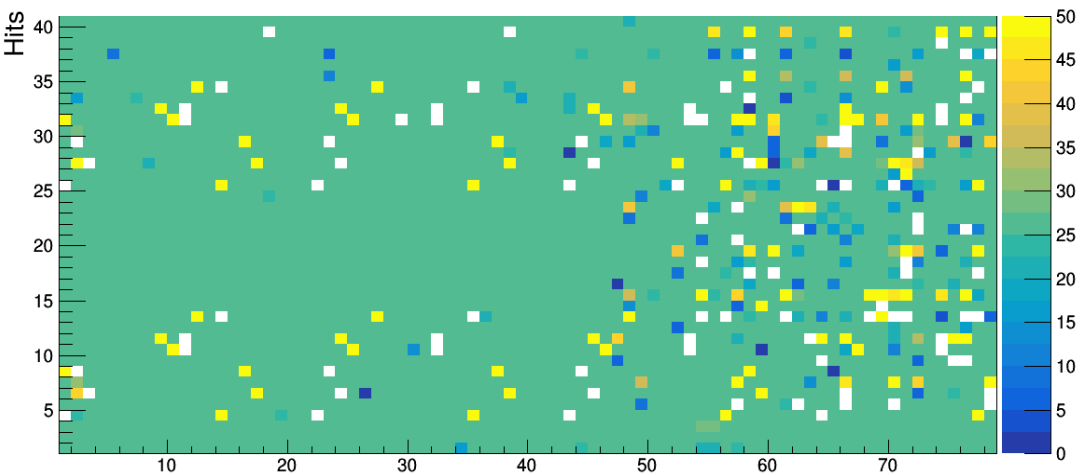
LF2 – Analog Scans

- Analog scans performed with the same setting for all devices
  → No DAC tuning for each device done

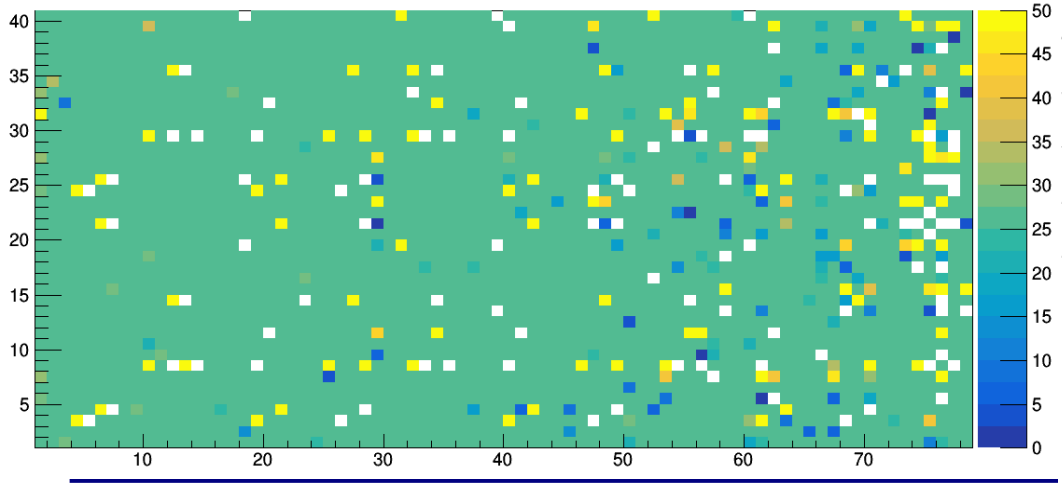
Unirradiated



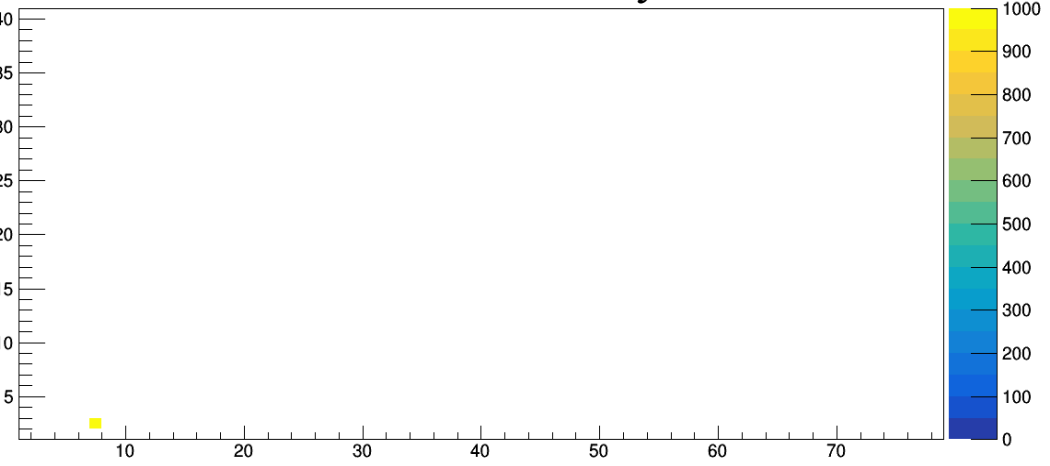
1E14



7E14



1E15: 1 noisy pixel dominates readout.
Even at thr=2.5V still noisy!

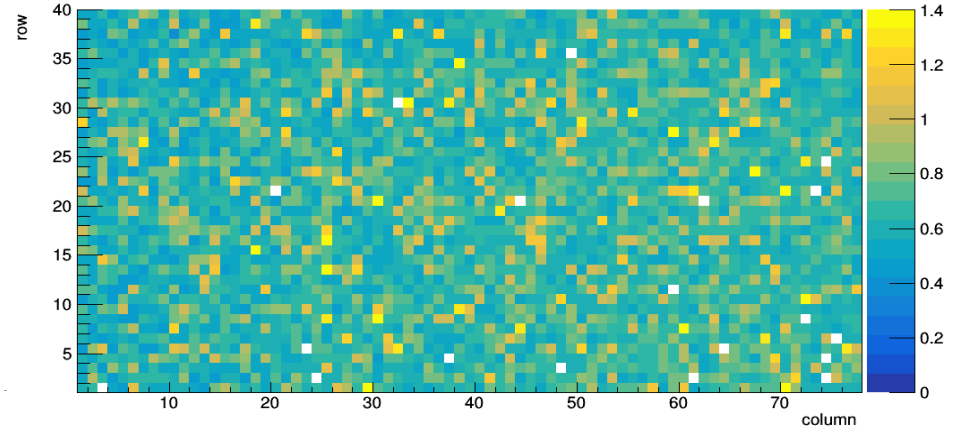


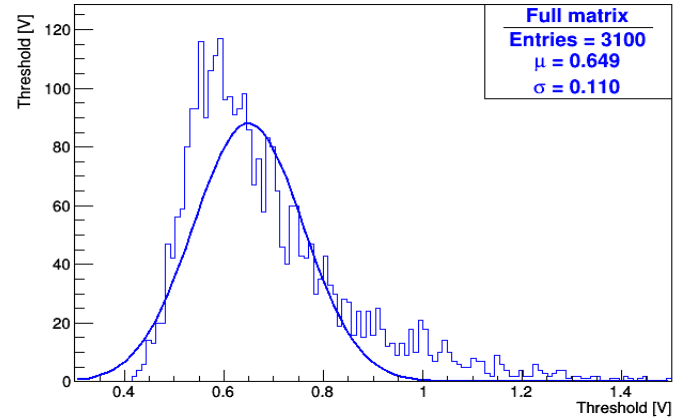
LF2 – Threshold Scans

Threshold map

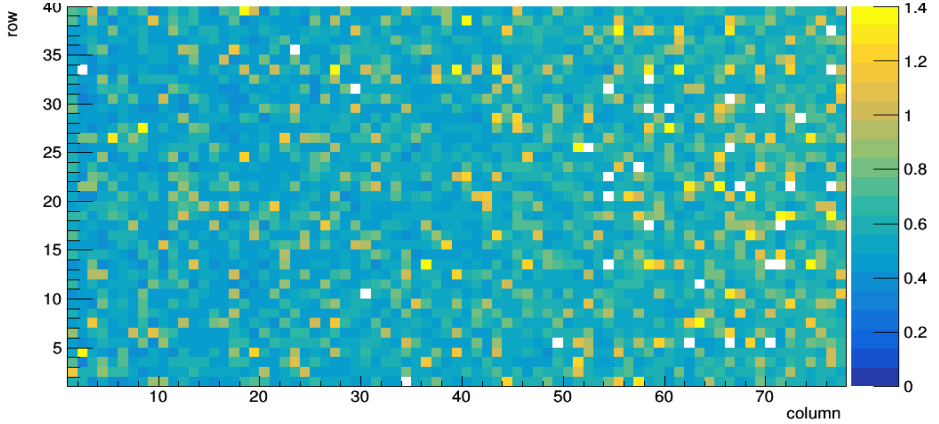
Threshold distribution

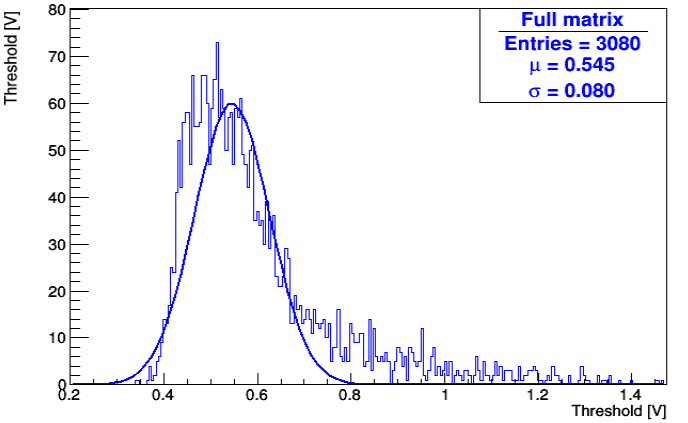
Unirrad



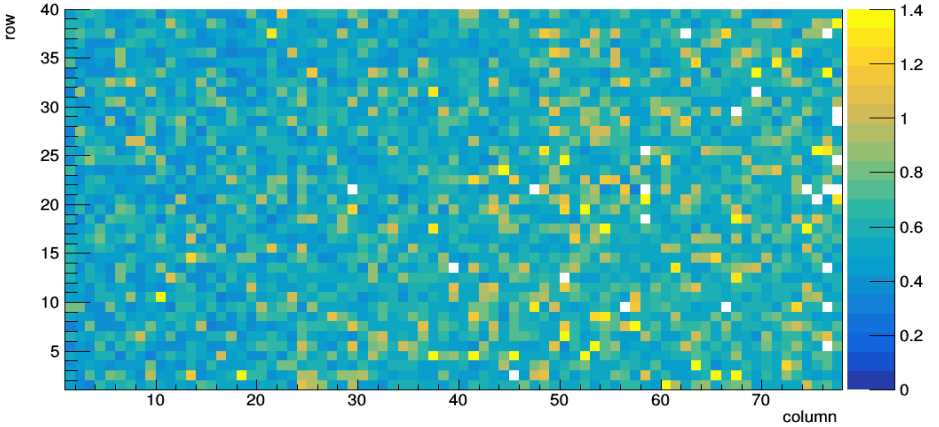


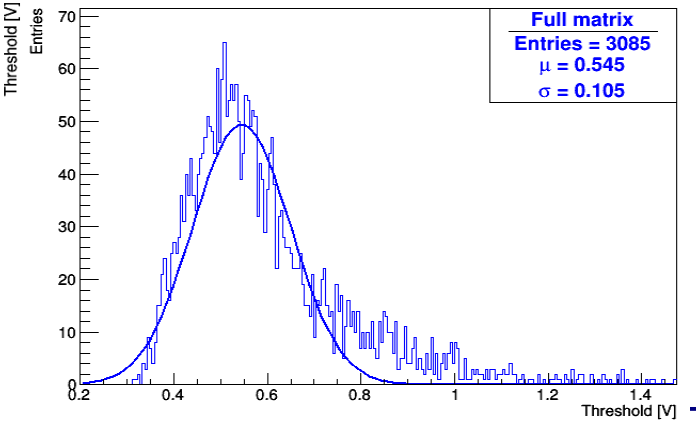
1E14





7E14





LF2 – Irradiated devices summary

- Irradiated 6 sensors and tested one of each fluence:
  - 2x 1E14 n_{eq}/cm^2
  - 2x 7E14 n_{eq}/cm^2
  - 2x 1E15 n_{eq}/cm^2
- IV behavior seems to improve
- All chips still configurable and responding
- Analog and threshold scan seem to give similar results, independent of irradiation
- 1E15 has a noisy pixel that makes readout impossible
  → Will try to mount the other module to see if this helps
- TODO: Check if all devices see Sr90 source